

Central and Local Government Relations in Asia

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Central and Local Government Relations in Asia

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Edited by Naoyuki Yoshino and Peter J. Morgan

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Central and Local Government Relations in Asia

Achieving Fiscal Sustainability

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Preface

Sustainable and inclusive growth in emerging Asian economies requires continued high levels of public sector investment in infrastructure, education, health, and social services. However, the increasing complexity and regional diversity of these investment needs make it difficult to plan and execute such investments centrally. Therefore, these responsibilities, especially with regard to infrastructure investment, need to be devolved progressively more to regional governments, which have a better understanding of local needs. However, the growth of sources of revenue and financing for local governments has not kept pace, forcing them in some cases to rely on unorthodox funding measures such as shadow banking, or else cutting spending below desired levels. Moreover, the ability to raise funds varies widely among regions and districts, leading to the need for systems of both horizontal and vertical transfers to support equitable levels of spending and to achieve minimum performance targets set by the central government. Even if adequate funding is available, there need to be safeguards to ensure that debt levels are sustainable.

Fiscal decentralization has been implemented in many Asian economies as a response to these needs, as well as a result of political shifts, mainly the increasing democratization in some economies. However, it is still a work in progress. There are many inconsistencies between revenue and expenditure assignments at the local government level, as well as a lack of clarity and overlapping assignments, which typically lead to inadequate funding shortfalls, at least in some districts. Transfer programs also have issues, including the lack of equity and disincentives for own-revenue generation. Some economies have enabled local governments to borrow significant amounts to cover shortfalls, but systems to monitor such borrowing and ensure sustainability are still being developed. Capacity limitations at the local level also make the effective implementation of fiscal decentralization more difficult.

The purpose of this book is to take stock of some major issues regarding fiscal decentralization in Asia, and to develop findings and policy recommendations. However, it is not intended to be a comprehensive examination of all issues, or to cover all economies in the region. Part I provides an overview of the issues of fiscal decentralization. In Chapter 1, Morgan

and Trinh provide a framework for examining issues related to expenditure assignments, revenue assignments, intergovernmental transfer programs, and mechanisms for monitoring and enforcing fiscal sustainability at the local level. In Chapter 2, Smoke examines the political, institutional, and environmental factors that have hindered the effectiveness of fiscal decentralization programs.

Part II examines mechanisms for promoting fiscal sustainability at the local government level. In Chapter 3, Chakraborty examines whether the application of fiscal rules has resulted in an increase in the fiscal space for public capital investment spending in major Indian states. The analysis shows that there is a negative relationship between fiscal rules and public-capital investment spending at the state level during the rules based fiscal regime. In Chapter 4, Barrios and Martínez-López investigate the way the differences in fiscal capacities, which are primarily determined by regional differences in gross domestic product per capita, influence regional public borrowing depending on the existing fiscal equalization scheme. In Chapter 5, Martínez-Vazquez and Vulovic analyze the effects of the various broad types of borrowing regulations on the narrow definition of fiscal sustainability at the subnational level.

Part III provides studies of central–local government relations related to specific topics in individual economies. In Chapter 6, Fan and Wan explore the efficiency of the transfer system in the People's Republic of China (PRC). They evaluate the equalized effects of transfers with data of 2,800 countries from 1995 to 2009, investigate the function of earmarked transfer on vertical governance, and estimate the impacts of transfer on local economic growth rates. In Chapter 7, Zhang and Li show how innovative fund raising and financing channels can lead to the upgrading of local governments' infrastructure construction and public service capability in the PRC. In Chapter 8, Nasution describes the division of responsibilities between the central and local governments, government financing and administration of public funds and state-owned enterprises, the fiscal transfer system, and the need of the subnational governments to expand their capacities to mobilize their own revenues in Indonesia. In Chapter 9, Bessho provides an overview of Japan's local public administration and finance systems and analyzes how Japan's municipalities restore their fiscal balance after a fiscal shock. In Chapter 10, Morgan and Trinh describe the experience of fiscal decentralization in Viet Nam, including recent issues and policy.

Part IV examines the behavioral implications of central–local government relations. In Chapter 11, Das investigates whether the composition of expenditure of the subnational governments in India has an impact on the degree of indebtedness of the states. In Chapter 12, Goel and Saunoris

analyze the effect of the various forms of government decentralization on institutional quality in a large sample of nations. In particular, they use corruption and the shadow economy to proxy for institutional quality, and virtual, physical, and fiscal decentralization to account for the different dimensions of government decentralization.

Inevitably, issues and conditions vary across economies to such an extent that it is difficult to draw broad or consistent lessons from these studies. Nonetheless, we believe that these studies will provide valuable insights for policy makers dealing with issues of fiscal decentralization in Asia.

We acknowledge the support of many individuals and institutions in the production of this book. Most of the studies in this book were presented at the conference on 'Public Power Division and Fiscal Expenditure Responsibility' organized by the Asian Development Bank Institute and the Zhongnan University of Economics and Law in Wuhan, the PRC on 24–25 October 2015. Keiko Aoki provided able administrative support. Muriel Ordonez and Jera Beah H. Lego supervised the production and editing process, and Ainslie Smith provided able editing of the whole book.

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Abbreviations

| | |
|-------|-------------------------------------------------------|
| 2SLS | two-stage least squares |
| ADB | Asian Development Bank |
| ADF | Augmented Dickey–Fuller |
| ATBs | auction treasury bills |
| BBR | budget balance rule |
| BOT | build–operate–transfer |
| BPK | <i>Badan Pemeriksa Keuangan</i> (Supreme Audit Board) |
| CCCPC | Central Committee of the Communist Party of China |
| CEMAC | Central African Economic and Monetary Community |
| CG | central government |
| CGS | central government subsidy |
| CICC | China International Capital and Corporation Limited |
| CNY | PRC yuan |
| CPC | Communist Party of China |
| CPP | Cambodia People’s Party |
| DAK | <i>Dana Alokasi Khusus</i> (special allocation funds) |
| DAU | <i>Dana Alokasi Umum</i> (General Allocation Fund) |
| DBH | <i>Dana Bagi Hasil</i> (Equalization Grant) |
| DR | debt rule |
| EDP | excessive debt procedure |
| ER | expenditure rule |
| FE | fixed effects |
| FRA | Fiscal Responsibility Act |
| FRBMA | Fiscal Responsibility and Budget Management Act |
| FRL | Fiscal Responsibility Law |
| FY | fiscal year |
| GDP | gross domestic product |
| GMM | generalized method of moments |
| GOI | Government of India |
| GRH | Gramm–Rudman–Hollings Act |
| GSDP | gross state domestic product |
| HCMC | Ho Chi Minh City |
| HRM | human resource management |
| IFIs | independent fiscal institutions |

| | |
|--------|----------------------------------------------------------|
| IHPH | Iuran Hak Pengusahaan Hutan |
| IMF | International Monetary Fund |
| IPS | Im, Pesaran, and Shin |
| IPSASB | International Public Sector Accounting Standards Board |
| JFM | Japan Finance Organization for Municipalities |
| LAT | local allocation tax |
| LDIF | Local Development Investment Fund |
| LG | local government |
| LLC | Levin, Lin, and Chu |
| LSDV | least square dummy variable |
| MIMIC | multiple indicators, multiple causes |
| MOF | Ministry of Finance |
| NAD | Province <i>Aceh Nangru Darussalam</i> |
| NGO | nongovernment organization |
| NSDP | net state domestic product |
| NTPs | national target programs |
| ODA | Official Development Assistance |
| OECD | Organisation for Economic Co-operation and Development |
| OLS | ordinary least squares |
| P2P | peer-to-peer |
| PBG | performance-based grant |
| PFF | Public Financial Funds |
| PFM | public financial management |
| PIT | personal income tax |
| PPP | public-private partnership |
| PRC | People's Republic of China |
| PSDH | Provisi Sumber Daya Hutan |
| PWC | PriceWaterhouseCoopers |
| R&D | research and development |
| SCS | structural current spending |
| SFD | standard fiscal demand |
| SFR | standard fiscal revenue |
| SG | state government |
| SNG | subnational government |
| SOCB | state-owned commercial bank |
| SOE | state-owned enterprise |
| SPV | special purpose vehicle |
| TOT | transfer-operate-transfer |
| TSA | Treasury Single Account |
| UNCTAD | United Nations Conference on Trade and Development |
| UNDESA | United Nations Department of Economic and Social Affairs |
| US | United States |

| | |
|------|-------------------------------|
| US\$ | United States dollar |
| VAT | value added tax |
| VCP | Vietnamese Communist Party |
| VECM | vector error-correction model |
| VND | Vietnamese dong |

PART I

Frameworks for Central–Local Government Relations

1. Frameworks for central–local government relations and fiscal sustainability

Peter J. Morgan and Long Q. Trinh

1.1 INTRODUCTION

Sustainable and inclusive growth in emerging Asian economies requires continued high levels of public sector investment in areas such as infrastructure, education, health, and social services. These responsibilities, especially with regard to infrastructure investment, need to be devolved increasingly to the regional government level. However, growth of sources of revenue and financing for local governments has not necessarily kept pace, forcing them, in some cases, to rely on unorthodox funding measures such as shadow banking, or else cutting spending below needed levels. Even if adequate funding is available, there need to be safeguards to ensure that debt levels are sustainable.

In this chapter, we review alternative models of the relationship between central and local governments, and provide an overview and assessment of different financing mechanisms for local governments, including tax revenues, central government transfers, bank loans, and bond issuance, with a focus on the context of emerging Asian economies. The chapter also reviews financing mechanisms for local governments and mechanisms for maintaining fiscal stability and sustainability at both the central and local government levels. Based upon the evidence on the decentralization process in Asia, we propose some policy implications for improving central–local government relations and fiscal sustainability.

1.2 OVERVIEW OF GOVERNMENT DECENTRALIZATION IN ASIA

1.2.1 Government Decentralization in Asia

It is hard to determine when the process of decentralization started in Asia, but it is widely agreed that, from the 1990s, the decentralization process gained momentum and that subnational governments have become the cornerstone of Asian economic development (White and Smoke, 2005). Extensive decentralization processes are under way throughout Asia, including the People's Republic of China (PRC), Cambodia, India, Indonesia, the Republic of Korea, and the Philippines.

Both structural and political forces have driven the decentralization process in Asia. While economic and demographic factors (i.e., structural factors) acted as a trigger for decentralization processes, powerful political forces 'precipitated and shaped it' (White and Smoke, 2005) in some countries, including Indonesia, Thailand, and the Philippines, and, to some extent, Viet Nam and the PRC (Nickson et al., 2008). After a long period of economic growth and rapid urbanization, pressures to provide services to a rapidly expanding and increasingly concentrated population are growing so fast that central governments cannot effectively and efficiently act as the major provider of basic services. As a result, central governments have had to empower local governments to share their burdens.¹

1.2.2 Local Government Size and Complexity

The region also has a considerable variation in the number of tiers of local government and the average population covered by local governments. Some countries have two tiers (Indonesia, Japan, and Thailand); some such as the Philippines, the Republic of Korea, Viet Nam, and Pakistan have three tiers; while the PRC has four tiers. India has one tier in urban areas and at most three tiers in the rural areas (Nickson et al., 2008). Each country also puts priorities on different tiers of government. For example, to minimize the probability of provincial separatism, Indonesia has a system that favors sub-provincial governments. The Philippines has a multilayered system that diffuses subnational power among different jurisdictions (White and Smoke, 2005). Average population size in each territory for which a local government is responsible also varies widely, ranging from only 8,000 people in Thailand to more than 550,000 people in Indonesia (see Table 1.1).

Table 1.1 Basic development indicators and local government organization

| Country | GDP per capita, current \$ (2013) | Total population, million (2013) | Urbanization, % (2013) | Type of government | Type of state | Number of local governments* | Average size of local government** |
|----------------|-----------------------------------|----------------------------------|------------------------|-------------------------|---------------|------------------------------|------------------------------------|
| PRC | 6,992 | 1,357.38 | 53.2 | Communist | Unitary | 2,860 | 474,608 |
| Indonesia | 3,624 | 251.27 | 52.3 | Republic | Unitary | 450 | 558,374 |
| India | 1,455 | 1,279.50 | 32.0 | Parliamentary Democracy | Federal | 9,624 | 112,115 |
| Japan | 38,634 | 127.34 | 92.5 | Constitutional Monarchy | Unitary | 1,820 | 70,220 |
| Korea, Rep. of | 25,998 | 50.22 | 82.2 | Republic | Unitary | 230 | 209,010 |
| Pakistan | 1,275 | 181.19 | 37.9 | Republic | Federal | 396 | 384,091 |
| Philippines | 2,787 | 97.57 | 44.6 | Republic | Unitary | 1,621 | 51,300 |
| Thailand | 6,229 | 67.45 | 47.9 | Constitutional Monarchy | Unitary | 7,874 | 7,924 |
| Viet Nam | 1,909 | 89.71 | 32.3 | Communist | Unitary | 662 | 135,512 |

Notes:

GDP = gross domestic product; PRC = People's Republic of China.

* Data in 2004.

** Measured by population per local government unit.

Sources: World Bank World Databank (<http://databank.worldbank.org/data/home.aspx>) accessed 17 April 2016; Nickson et al. (2008).

1.2.3 Institutional Barriers

The decentralization process in Asian economies suffers from various institutional barriers that may impede the realization of benefits from such processes.

- *Legal frameworks for local government.* Asian countries' legal frameworks for local government vary widely. Except for the case of the PRC, where there is no formal legal framework for local government, all countries have a set of one or more laws that define the decentralization framework, and some of them, including India, the Republic of Korea, the Philippines, and Thailand, have a constitutional basis for subnational government. However, there is a wide gap between having a formal legal framework and implementing it. For example, although the PRC has no formal basis for local government, it is one of the most decentralized countries in the world (World Bank, 2002). On the other hand, in Thailand and Cambodia, implementation of laws regarding local government has been rather slow and incomplete (White and Smoke, 2005).
- *Inappropriately designed and implemented budget systems.* In the PRC and to some extent Viet Nam, due to weak information management systems, budget compilation usually does not cover all revenues and expenditures and is only an incremental feature (i.e., budget estimations are usually based on past levels, not on future needs). Furthermore, planning and budgeting processes are disconnected and poorly coordinated. In the PRC, for example, budgets are usually compiled around the last three months of the fiscal year, which is not enough time to have a comprehensive and detailed budget (ADB, 2014). In India, the budget process is not even generally operational (Bahl et al., 2005). This has caused various deficiencies in budget implementation such as delays and fragmentation, or poor management of cash flows and liabilities, accumulation of arrears, and revenue retention. Moreover, monitoring and accounting data are neither timely nor accurate. Auditing is typically weak and evaluation almost nonexistent (White and Smoke, 2005).
- *Weak fiscal management capacity.* While fiscal management capacities of local governments are of high quality in Japan and the Republic of Korea, they are rather weak in developing economies. In some developing countries, weak revenue management capacity causes local governments not fully to use their rights to collect their own taxes. At the other extreme, some local governments have abused their rights and have implemented too many taxes that

account for a small share of total revenues but have high administrative costs. Expenditure management is also weak. For example, many local governments in Indonesia and the Philippines do not fully spend their resources and have accumulated a large stock of fiscal reserves (see more in section 1.3.3).

- *Underdeveloped financial information management systems.* Many Asian economies do not have a standardized financial information management system to monitor and act in a timely manner to avoid fiscal risks at the local government level. An appropriate financial system should provide comprehensive, transparent, timely, and accurate information of local government finances. Moreover, the local governance finance information system should be a part of a national finance information system. Treasury Single Account (TSA), a system that captures all on-budget and off-budget flows, is not implemented in most developing Asian economies. In developed economies, TSA is viewed as a sound practice in modern public finance (ADB, 2014).
- *Strong influence of central government on local governments.* In principle, local governments should act as self-governing institutions. However, in most Asian economies, they operate under a legal framework defined by either the central government in countries with unitary systems such as the PRC, Indonesia, Japan, the Republic of Korea, the Philippines, Thailand, and Viet Nam, or provincial or state governments in countries with federal systems such as India and Pakistan. This hinders local governments' ability to ensure their national and local accountability. National accountability, or central oversight of local administrations, tends to be stronger but suffers from ambiguous and overlapped functional allocations between local and central governments; incomplete flows of information, especially from local governments to the central government; inadequate monitoring; and conflicts between the central and local governments over various aspects such as the pace, direction, and scope of decentralization (White and Smoke, 2005).
- *Local accountability* in many Asian economies remains problematic because the central governments still have rather strong power over local governments. For example, in Pakistan, local governments do not have any influence over grant-aid programs in their jurisdiction since such programs are determined by the provincial or national legislators. Similarly, in Thailand, the Ministry of the Interior could intervene to terminate or modify local policies if they believe that such policies contradict or threaten national policies or interests. Central governments also have strong influence over the number and

pay levels of local staff (White and Smoke, 2005). In the PRC, Viet Nam, and Pakistan, senior local government staff are appointed by the central government (Nickson et al., 2008).

1.3 EXPENDITURE ASSIGNMENTS

This section reviews and assesses different theoretical foundations for expenditure assignments and how expenditure functions are assigned in Asian economies.

1.3.1 Theoretical Foundations for Expenditure Assignments

According to Shah (2008), expenditure assignments should meet the following requirements: (i) efficient provision of public service; (ii) fiscal efficiency (i.e., minimizing the differential between imputed benefit from public services and tax burden); (iii) equal treatment of citizens across localities; (iv) effective redistribution; and (v) provision of quasi-private goods (such as health, education, or social insurance) and other principles such as economic stabilization and spending discretion. Following these principles should ensure an efficient and equitable delivery of public services. Seminal works by Musgrave (1959) and Oates (1972) provide the foundation for functional assignments. Musgrave suggested that the activities of government should be separated into three functions: macroeconomic stabilization, income redistribution, and resource allocation. Economic stabilization and income redistribution are ordinarily assigned to the central government, whereas local governments take responsibility for the resource allocation function.

The first fundamental step in the design of a system of intergovernmental fiscal relations should be a clear assignment of functional responsibilities among different levels of government (Martinez-Vazquez et al., 2006). One of the first sets of criteria for reassignment of functions and for coordination among the government tiers was proposed by Wittmann (1973, as cited in Dafflon, 2006). This set of criteria has been adopted in Austria, Switzerland, and recently in transitional economies (Dafflon, 2006). This set of criteria can be categorized into three subgroups: (i) general policy criteria, (ii) financial and technical criteria, and (iii) efficiency criteria. General policy criteria involve the coherence of the local government's policies with other horizontal and vertical policies and the equality of access to comparable categories of public goods and services. Financial criteria are related to the balance between the assigned functions and the local governments' capacity to finance the budget out of their own revenue sources.

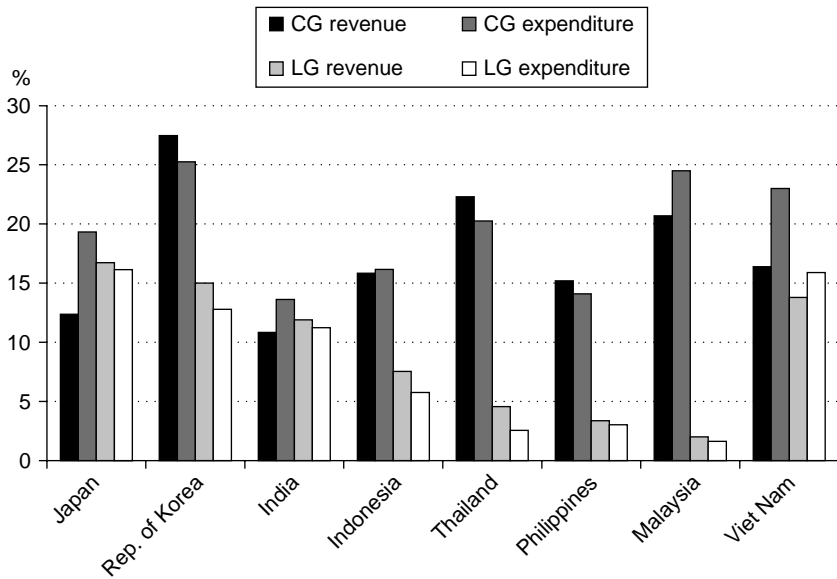
This implies that any reassignment of functions should not create further fiscal imbalances or, if imbalance is inevitable, it must be compensated through unconditional grants or revenue sharing with higher levels of government. Efficiency criteria correspond to those traditionally discussed in fiscal policy theory: economies of scale and geographical externalities.

Failure to have a clear and concrete assignment of expenditure responsibilities among the various governmental levels may lead to instability in intergovernmental relations and to inefficient provision of public services. Moreover, advances in technology and other aspects, together with changes in people's preferences, human capital, and relative endowments of the regions of a country, will cause what is considered the best assignment to change over time (Martinez-Vazquez et al., 2006).

1.3.2 Expenditure Assignments in Asia

There is a wide variation in expenditure assignment across Asian economies, both in terms of share of local government expenditure in total public expenditure and of the expenditure functions (see Figure 1.1 and Table 1.2). The share of local government expenditure in total government expenditure is rather high in some economies such as Japan (accounting for 58.3 percent of total public expenditure in 2012, including social welfare), the Republic of Korea (60 percent of consolidated public expenditure in 2010), the PRC (about 85 percent of recorded total public spending in 2010), India (about 66 percent of consolidated government spending in 2010), and Viet Nam (about 55.6 percent in 2012), whereas it is much lower in some others such as Indonesia (35 percent of total public expenditure in 2006), the Philippines (25 percent in 2005), and Thailand (26 percent in 2010). Using subnational government spending might give a misleading picture, however. A high level of spending carried out by local government does not always mean that the local government is the one who makes expenditure decisions. For example, in Viet Nam, although local government expenditure accounted for a large share of total public expenditure, before the State Budget Law took effect in 2004, the local governments essentially acted as the agents of the central government, which set the service levels and standards (Mountfield and Wong, 2005).

Similarly, expenditure functions also vary widely in Asian economies. In most economies, local governments take full or partial responsibility for providing education, health, social welfare, infrastructure, and community development (see Table 1.2). Local governments in Indonesia and Thailand are assigned to carry out education and health services. In the Philippines, while provision of health services is a joint responsibility, education remains a central government responsibility. The PRC's local



Notes:

CG = central government; LG = local government.

Whereas Japan's CG share of expenditure in gross domestic product does not include social security, other countries' CG figures include social security expenditure.

Source: International Monetary Fund Government Fiscal Statistics Portal.

Figure 1.1 Central government and local government revenues and expenditures as percentage of gross domestic product (2006, 2010–2013)

governments, however, have to bear considerable expenditure responsibilities. They are responsible not only for providing education and health services but also for providing unemployment benefits and pensions, even at the lowest levels of government. These two spending items are rather inappropriate for local governments because they not only require a huge financial resource but also have a cyclical nature. Usually, the central government will either carry out, or share with local governments to carry out, these responsibilities (Mountfield and Wong, 2005).

Table 1.2 Subnational government functional assignments and expenditure shares

| Country | Local government functions | Local government share of expenditure |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Japan | Education, health, social welfare (basic social services), public investment | 58.3% in 2012 for all levels (31.6% for subnational level, 26.7% for lower tier levels) |
| Korea, Republic of | Local administration; public services that enhance residents' welfare; local industrial development of agriculture and commerce; regional development and local environmental facilities; public services that promote education, sports, culture, and art; environmental protection, including pollution prevention; and local civil defense and fire protection. | 45% in 2010 (17% for upper tier level, 28% for lower tier level); 15% of local education subsidy (under Local Government Education Act). |
| PRC | Broad legal division of responsibility between levels without disaggregation; in practice, multiple levels perform many functions concurrently. | 85% in 2010. |
| India | Twenty-nine detailed functions to rural local bodies; another list of 18 detailed functions to urban local bodies. | 66% for all levels in 2010. |
| Indonesia | Health, education, environment, and infrastructure, among numerous others; provinces were originally assigned mainly coordination and gap-filling roles. | About 35% for all levels in 2006 (7% for upper tier level, 28% for lower tier levels). |
| Philippines | Health (joint responsibility with central government), social services, environment, agriculture, public works, education, tourism, telecommunications, and housing. | About 25% (2005) (11% for upper tier level; 14% for lower tier levels). |
| Thailand | Infrastructure, quality of life, community and social order, planning and investment and promotion of trade and tourism, management of natural resources and the environment, and culture, values, and local wisdom; but slow progress on implementation. | About 26% for all levels; expected to increase (2010). |

Table 1.2 (continued)

| Country | Local government functions | Local government share of expenditure |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Viet Nam | Main functions remain centralized but different levels share responsibilities in practice; subnational governments dominate in agriculture, forestry, irrigation, fisheries, power, water, education, and health. | About 55.6% for all levels in 2012. |

Note: PRC = People's Republic of China.

Sources: Mountfield and Wong (2005); Lewis and Searle (2010); and some Asian national statistics.

1.3.3 Issues in Expenditure Assignments in Asia

Unclear and overlapping expenditure assignments

In many Asian economies, expenditure assignments are rather unclear and overlapping. Lack of legal documents clarifying the functions of local governments is also attributed to the unclear assignment of functions between local and central governments (Lewis and Searle, 2010). For example, in Indonesia, despite law revisions, there is a lack of clarity regarding central and local functions as well as inconsistencies between various laws (Nasution, Chapter 8 in this book). The same situation is found in the Philippines (Manasan, 2015). Meanwhile, in Thailand, local offices of the central government operate in parallel with local government, which makes the service delivery confused. In the PRC and Viet Nam, expenditure assignments are unclear due to the system of nested hierarchies of the administrative system. Under this system, the central government sets rules for provincial governments, but also sets rules for local government at the district level (Mountfield and Wong, 2005). The lack of clear functional assignments is also due to the resistance of the central government to sharing its authority with the provincial level as in Viet Nam, the PRC, and the Philippines (Mountfield and Wong, 2005). In the Republic of Korea, there is some lack of clarity in functional assignments, but the misassignment of functions also seems to be an issue since the central government owns the revenues while local governments execute the expenditure assignments (Lewis and Searle, 2010).

Increasing unfunded mandates

Unfunded mandates are also problems for local governments in Asian economies. For example, in the Philippines, local governments face a number of significant unfunded mandates including the salaries of local civil servants; the benefits of health sector employees; insurance premiums for impoverished residents; and financial support for many central government agencies operating in their jurisdiction such as policy, fire protection, and the courts (Lewis and Searle, 2010; Manasan, 2015). The situation is also a growing issue in Bangladesh, India, Japan, the Republic of Korea, and Pakistan (Martinez-Vazquez, 2011).

Limited spending autonomy

Local governments in Asian economies have limited autonomy in how to use their funds. Japan's central government determines spending levels and standards for services that local governments provide. In developing Asian economies, local governments often have been assigned many functional responsibilities, but they are not given the authority to decide sectoral spending allocations. This is partly because a large proportion of transfers from the central government is tied to specific sectors, functions, or services. For example, in Indonesia, 20 percent of the total local government budget should go to education (Nasution, Chapter 8 in this book). In the Philippines, the central government limits the amounts that local governments can spend on certain classes of expenditures (Manasan, 2015). They also set the minimum levels on particular types of spending, such as 20 percent of a transfer from central government must be set aside for development spending. In Thailand, all local government budgets must be approved by higher-level governments, which often insist on significant changes. Similarly, expenditures of lower-level local governments in the PRC and Viet Nam have to get approval from higher levels of government, and the central government can influence local spending by a number of mechanisms, including expenditure laws and regulations, spending mandates, and political controls.² In India, whereas the state governments are given complete authority over expenditures, local governments' spending autonomy is very restricted. Since many local governments in India are dependent on intergovernmental fiscal transfers, they could be viewed as implementing agencies of the states (Lewis and Searle, 2010).

Weak expenditure management

In some Asian economies such as Indonesia and the Philippines, local governments do not fully spend the resources to which they have access and have accumulated a large stock of fiscal reserves. Currently, local governments in Indonesia have fiscal reserves equal to 25 percent of annual local

government expenditure, while those in the Philippines have 35–40 percent (Lewis and Searle, 2010).

1.4 REVENUE ASSIGNMENTS

To make fiscal decentralization produce sustainable net benefits, local governments must control their own sources of revenue. Local governments that lack independent sources of revenue can never truly enjoy fiscal autonomy, because they remain under the financial control of the central government. Therefore, important questions include which level of government should choose the taxes to be imposed at any level, the tax bases, tax rates, and which level should enforce and administer the various taxes. This is commonly referred to as the tax assignment problem.

1.4.1 Theoretical Foundations for Revenue Assignments

Several models, including the standard fiscal federalism model, leviathan model, and second fiscal federalism model, have recommendations for optimal tax assignments.

Based upon the argument that optimal tax assignment is strictly related to the normative optimal assignment of expenditure function to levels of governments, the standard fiscal federalism model advanced by Oates (1972) and Musgrave (1959) suggests the following rules for tax assignments between central and local governments: (i) lower levels of governments should levy taxes on relative immobile bases or assets; (ii) they should levy taxes with a base that is evenly distributed among jurisdictions; and (iii) they should rely on taxes with a yield that is relatively stable in real terms. Accordingly, corporate income tax, natural resource taxes, personal income tax, and value-added tax (VAT) should be the responsibility of the central government, while local governments may impose taxes on land and property in addition to some user charges, and regional governments may impose retail sales taxes and a few excise taxes as well as surcharges on personal income or payroll taxes (i.e., piggyback tax).

The leviathan approach proposes an opposite view of the optimal tax assignment. According to this view, politicians and bureaucrats will act like leviathans. They would maximize their spending power by setting taxes to maximize total revenue from the private sector. This implies that local governments would be assigned broad tax bases to minimize tax evasion and tax erosion and/or impose higher rates on less elastic bases. To limit such leviathan behavior, Brennan and Buchanan (1980) proposed that tax competition among local governments should be encouraged.

Accordingly, local government taxes should then be imposed on mobile factors to trigger such competition. Tax competition provides efficiency gains by reducing the monopoly powers of government units.

However, both standard fiscal federalism and leviathan approaches are widely criticized (see, e.g., Ambrosanio and Bordignon, 2015). This has led to the emergence of the so-called second-generation fiscal federalism model (Oates, 2008), which strongly supports a significant degree of tax autonomy for local governments. First, local governments would be more likely and able to allocate and control their expenditures efficiently and effectively if they are allowed to control their own resources. This implies that the appropriate way to assign taxes depends on how spending responsibilities have been assigned. Second, local governments should be allowed to affect the volumes of revenues significantly at the margin through their own policy choices. And the best way to do this is for them to set their own tax rates.

Local government taxation assignments

Bahl and Bird (2008) proposed four principles to follow in assigning revenue to local government:

- Ideally, at least the local government in the richest jurisdiction would be able to raise adequate revenue to finance the services for its residents.
- Local government taxes should only be levied on the residents who will benefit from the services provided by local governments.
- Governments at all levels should bear clear public responsibility at the margin for financing expenditures for which they are politically responsible.
- Local government taxes should not unduly distort the allocation of resources.

The literature (e.g., Bird, 2010; Robotti and Dollery, 2008; and Ambrosanio and Bordignon, 2015) identified some candidates for local taxes as follows (see Table 1.3):

- *User charges.* User charges are suitable for all levels of local government and should be implemented whenever possible. The problem is that this type of revenue is not usually adequate to finance major expenditure responsibilities decentralized to local jurisdictions.
- *Property taxes.* Property taxes are often considered the most appropriate revenue source for local government. Their advantages include immobile tax bases and stable and predictable tax revenues, but

Table 1.3 Characteristics of local government taxes

| Criteria | User charge | Property tax | Excises | Personal income tax | Payroll tax | Sales tax | Business tax |
|--------------------------|---------------------------------|---------------------------------|------------------------|--------------------------------------------------|---------------------------------|------------------------|---------------------------------------------------------------|
| Government level | Sub-provincial/local government | Sub-provincial/local government | Provincial/state level | Provincial/state level | Provincial/state level | Provincial/state level | Sub-provincial/local government and/or provincial/state level |
| Revenue adequacy | No | Yes | No | No | Yes (in industrial areas) | Yes | No |
| Payers vs. beneficiaries | Yes | Yes | No | No | Depending on employment pattern | Depending on mobility | Depending on design |
| Local accountability | Yes | Low | Low | Low (depending on the degree of rate discretion) | Yes | Yes | Low |
| Administrative cost | Moderate | High | Low | Not feasible | Moderate | Moderate | Sometimes high |
| Compliance cost | Low | Not high | Low | Moderate | Not high | Moderate | High |
| Potential for corruption | Moderate | Moderate | Low | High | Low | Moderate | High |
| Distortional impact | Low | Moderate | Low | Moderate | Not high | No | High |
| Reducing disparities | No | No | No | No | No | No | No |

Source: Bird (2010).

they also have difficulties, including how to determine the tax base, and estimating land and building values. This tax is also costly and difficult to administer, thus it is not suitable for small jurisdictions (Robotti and Dollery, 2008). Another issue relates to the low elasticity of this tax revenue with respect to nominal income (OECD, 2003).

- *Personal income taxes.* In some developed Asian economies, local governments can impose surtaxes on the national income tax base. The imposition of personal income tax at the local jurisdiction level can also be justified on a benefit basis: the local government could impose a flat rate tax for public services especially used by residents in jurisdictions. Because this tax is highly visible, it may promote local accountability (Robotti and Dollery, 2008). However, some potential problems include (i) uneven distribution of income tax bases so that poorer jurisdictions may not have adequate resources for financing a minimum standard of public services; (ii) mobile tax bases, which could create some distortions, including undesirable spillover effects; (iii) and inefficiency arising due to the vertical tax competition (Ambrosanio and Bordignon, 2015).
- *Business taxes.* The principle forms of business taxation that could be levied at the local level include corporate income tax, payroll tax, and turnover tax. They are generally not considered to be good sources of revenues because (i) it is difficult to determine the geographical source of income and profits, and (ii) it may distort the location of economic activities and resource allocation among jurisdictions. However, local governments can impose local business taxes if the investment is specific to the locality such that a firm cannot easily relocate (Feld and Schneider, 2001).
- *Consumption tax.* Among consumption taxes, excises are considered to be well suited for local governments, thanks to their ease of administration and minimum distortion effects (Ambrosanio and Bordignon, 2015). However, experience has shown that the revenue from excises accounts for a small share of local government revenues.
- *VAT.* It is argued that the VAT does not fit well for local governments due to high administrative and compliance costs, and problems arising from cross-jurisdictional trade and tax fraud, tax exporting, and transfer pricing. But the VAT could be suitable for local governments if it is reorganized, such as the dual VAT system (proposed by Bird and Gendron, 1998), viable integrated VAT (Keen and Smith, 1998), and compensating VAT (Varsano, 2000; McLure, 2000). Among those, the compensating VAT system was originally proposed for developing countries such as Brazil and India. Under this

system, sales to local purchasers (registered traders, households, and unregistered traders) would be subject to the local VAT, but sales to purchasers in other jurisdictions would be zero-rated for local VAT and subject instead to a compensating VAT. However, adopting this system requires the presence of both significant federal tax presence and a comprehensive and complex administration to guarantee appropriate clearing and avoid distortion of collection incentives.

Bird (1999) proposed a local low-rate VAT levied on the basis of income rather than consumption to replace other local taxes imposed on business. He argued that this tax would be less distorting than local profits and capital taxes, more neutral, and more stable than the usual corporation income tax. Some countries such as Italy and Germany have introduced forms of this tax to provide subnational governments with additional own revenues to finance local public expenditure (Bird, 1999).

1.4.2 Revenue Assignments in Asia

Tax revenues are more decentralized in more developed economies in the region, including Japan, the Republic of Korea, and, to some extent, the PRC. In Japan, local governments at different levels collected about 40 percent of total tax revenues in 2007 while own-source revenues accounted for one-third of total revenues of both prefectures and municipalities. In 2011, local governments in the Republic of Korea raised about 35 percent of national public revenue, and own-source revenues accounted for 60 percent of total local government revenues. In the PRC, local governments collect about 40 percent of total national tax revenues.

However, tax revenues are much more centralized in other Asian developing economies. In India, revenues raised by state and local governments account for about 33 percent of total consolidated public revenue, of which local governments could only raise 10 percent of total state and local government revenues. Indonesia's local government revenues are only about 8 percent to total public revenues. The corresponding figures are 10 percent in the Philippines, 15 percent in Thailand, and about 45 percent in Viet Nam.

There is a wide variation in the types of taxes that central governments assigned to local governments (see Table 1.4). In Japan, local taxes include enterprise, consumption, and personal income taxes, but the most important local taxes are the residential and nonresidential property taxes.³ Similarly, the property, consumption, and income taxes are the three most important taxes for local governments in the Republic of Korea (of which the property taxes account for 50 percent of total local tax revenues).

Table 1.4 Own-source revenue assignments

| Country | User charge | Property tax | Excise tax | Personal income tax | General sales tax | Business tax |
|--------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------|
| Japan | Yes (on education, health care, social welfare) | Yes (tax on ownership or use of landholding, property acquisition, fixed assets) | Yes (tax on ownership or use of light motor vehicles, automobile acquisition, tobacco, mineral products, light oil delivery) | Yes (inhabitant tax) | Yes (wide range of specific taxes) | Yes (mostly from corporate net income) |
| Korea, Republic of | Yes (in the form of local education tax) | Yes (property acquisition tax, property tax) | Yes (e.g., tobacco tax; automobile tax, including fuel tax; tobacco tax; leisure tax) | Yes (resident tax) | Yes (local consumption tax) | Yes (local income tax) |
| India | Yes | Yes (only at the SG level, lower level LGs shared with SG) | Yes (only at the SG level, lower level LGs shared with SG) | Yes | Yes | Yes |
| PRC | No (but 'informal' or 'illegal' local extra-budgetary fees) | Yes | No (but having taxes on vehicle and vessel use) | No (albeit PIT is assigned to SNGs, LGs act as collecting agent) | No (but revenue sharing with CG) | Yes (business tax on gross receipts, an enterprise income tax, and other surcharges and surtaxes) |

Table 1.4 (continued)

| Country | User charge | Property tax | Excise tax | Personal income tax | General sales tax | Business tax |
|-------------|-----------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------|----------------------------------|---------------------------------------------|
| Indonesia | Yes (rather numerous) | Being introduced | Yes (on motor vehicles and fuel, minerals) | No (albeit PIT is assigned to SNGs, LGs act as collecting agent) | No | Yes (but limited to a few sectors) |
| Philippines | Yes (rather numerous) | Yes (rates set by SNGs subject to a maximum) | No | Not exactly, though the community tax is in the form of a poll tax. | No | Yes (relatively large revenue source) |
| Thailand | Yes (transportation, public utilities, and markets) | No (except for the land development tax and house and land tax, with the rate set by CG) | No | No | No (but revenue sharing with CG) | Yes (but limited sectors and business-type) |
| Viet Nam | Yes | No (only some taxes on land and housing and transfer of land use rights) | No | No (but revenue sharing with CG) | No (revenue sharing with CG) | Yes (just beginning) |

Note: CG = central government, LG = local government, PIT = personal income tax, PRC = People's Republic of China, SG = state government, SNG = subnational government.

Sources: Lewis and Searle (2010); Mochida (2006); ADB (2014); Manasan (2015); Nasution (Chapter 8 in this book).

In other economies, the various types of property taxes (such as land-use taxes or land-development taxes) are the most important sources of revenues. Local governments in Thailand, the Philippines, and, recently, Indonesia are assigned some business taxes (Lewis and Searle, 2010).

1.4.3 Issues for Revenue Assignments in Asia

Mismatches between expenditure responsibilities and resource capacities

Most Asian developing economies face mismatches between expenditure and resource capacities. In India, most municipal governments generally operate under severe fiscal constraints. Due to limited own sources of revenues, local governments, except some large urban local governments, do not have adequate resources to provide their assigned services (Oommen, 2008). The situation in the PRC is slightly different. After the 1994 fiscal reform, local governments became more resource-constrained since their responsibilities remain the same while intergovernmental transfers cannot offset the losses caused by the more centralized revenue system. The inadequacy of resources and responsibilities is greater at the lower level of governments. In Indonesia, skewedness in the distribution of resources across local governments implies that some local governments have insufficient resources with which to discharge their functions (Hofman and Cordeiro Guerra, 2005).

Few sources of tax revenue

Most central governments in Asian economies assign property taxes to local governments. However, they are either permitted only on a very narrow base (such as unused land in Cambodia) or subject to maximum rates set by the central government (such as in the PRC and the Philippines). Also, property values may not be regularly updated and tend to be much lower than market values (for example, in Viet Nam, the government property value is 50 to 100 percent of the market value, especially in urbanizing areas). Meanwhile, only a few economies assign some business taxes to local governments and modest excises and fees, including those on motor fuel in Indonesia, vehicle and vessel use in the PRC, and public transportation in Thailand. With regard to other major taxes, except for Japan and the Republic of Korea, most local governments in Asian economies are not permitted to collect personal income taxes or general sales taxes, although they could be potentially large sources of finance for local governments (White and Smoke, 2005).

Low level of revenue autonomy

Not only do local governments have a limited number of taxes, but their tax autonomy is also limited. Local governments in Japan and the Republic of

Korea have reasonable controls over most taxes assigned to them, although the central governments define the tax base and tax range. Local governments in Japan are also allowed to create their own taxes, but very few of them utilize this autonomy (Lewis and Searle, 2010). Similar to the cases of Japan and the Republic of Korea, the central government of Indonesia defines tax bases and allows local governments to have some flexibility in setting tax rates. This, however, is rather limited due to the ceiling rates imposed by the central government. In the Philippines, local governments are allowed to have some taxes of their own, but local governments could only make changes to these taxes every three years. In other economies such as Viet Nam, Thailand, and Malaysia, local governments do not have tax discretion, except for some charges and fees (Lewis and Searle, 2010). The situation is similar in the PRC and some federal states such as India and Pakistan, although the provincial and state governments in these economies are given more tax autonomy (Martinez-Vazquez, 2011).

Incentive problems in revenue assignments

Low levels of revenue autonomy can cause incentive problems in raising revenue. For example, in the PRC and Viet Nam, the lack of formal revenue assignments creates unpredictability and reduces accountability. Furthermore, in the PRC, due to their size, most provinces assign revenues to lower levels of government, and then leave each layer to work out arrangements with the one below it. This may cause uncertainty about revenues at the lower levels. In the Philippines and Indonesia, the transfer of significant shares of tax collection from the provincial to sub-provincial levels may reduce provincial incentives for collecting their own revenues (Taliercio, 2005).⁴ Incentive problems may arise in developed economies such as the Republic of Korea, where local tax authorities seem to make insufficient use of the control they have over the rates of their assigned taxes. This, according to Lee (2006), could be due to the disincentives imposed by the transfer system.

Weak tax administration at the local government level

In many economies such as India, local governments do not fully utilize their taxing powers. In India, local government officials explained that if they use optional taxes under their authority, councils and/or citizens would be reluctant to pay. The same situation is seen in the Philippines where the many local officials do not use the tax authority that is available to them. Meanwhile, at the other extreme, some jurisdictions collect many nuisance taxes and thus tax administration cost efficiency is low (Manasan, 2015).

1.5 INTERGOVERNMENTAL TRANSFER MECHANISMS

1.5.1 Theoretical Foundations for Transfer Mechanisms

Generally, intergovernmental transfers are a necessary complement to decentralization. They not only are the means for decentralization to be realized but also can correct some adverse effects caused by decentralization. Transfers are viewed as fulfilling three main purposes: (i) to finance the vertical fiscal gap between expenditure and revenue-raising responsibilities; (ii) to ensure horizontal balance due to differences in fiscal capacities among jurisdictions; and (iii) to allow the central government to monitor the execution of local government programs. Therefore, two factors affect the design of intergovernmental fiscal transfers: (i) the consequences of decentralization, and (ii) the central government's degree of oversight over local governments' decision making.

Instruments of intergovernmental fiscal transfer

Intergovernmental transfers or grants can be broadly classified into two categories: unconditional and conditional transfers.

- Unconditional transfers (i.e., general-purpose transfers) are a type of general budget support without any conditions for getting the transfer. Such transfers are intended to preserve local autonomy and enhance interjurisdictional equity. Formula-based general-purpose transfers are very common. Theoretically, unconditional transfers have only income effects (Shah, 2007).
- Conditional transfers (specific-purpose transfers) are intended to provide incentives for governments to undertake specific programs or activities. Conditional transfers could be either input-based transfers (i.e., transfers for a specific type of expenditure such as capital expenditures or operating expenditures), or output-based transfers (i.e., transfers that require attainment of certain results in service delivery). Input-based conditionality is often intrusive and unproductive, whereas output-based conditionality can advance grantors' objectives while preserving local autonomy. Conditional transfers have not only income effects but also substitution effects (Shah, 2007).

Principles for designing fiscal transfers

The design of intergovernmental fiscal transfer has implications for fiscal sustainability. Barrios and Martínez-López (Chapter 4 in this book) show

that the indebtedness of jurisdictions with different fiscal capacities is affected by expected revenues redistributed through intergovernmental transfers. Thus, the design of intergovernmental fiscal transfers should take into account (i) the size of the pool available for distribution; (ii) the basis for distributing transfers; and (iii) the conditionality attached to transfers. Moreover, based upon the experience in Latin America, Martinez-Vazquez and Sepulveda (2012) suggested that the design of transfers should follow these principles:

- ensure flexible use of transfers by local governments so that spending decisions can reflect regional differences in demand patterns,
- enable periodical adjustment to changing socioeconomic circumstances,
- ensure stability in the flow of resources, and
- minimize the volatility of transfers due to economic or political reasons.

Fiscal transfer objectives and instruments to achieve those objectives

Bridging vertical fiscal gaps Vertical fiscal gaps occur because of (i) inappropriate assignments of responsibilities; (ii) centralization of taxing powers; (iii) tax competition among jurisdictions; and (iv) lack of tax room at the local levels due to heavy tax burdens imposed by the central government. Vertical fiscal gaps could be solved by various policies such as the reassignment of responsibilities, further tax decentralization or tax abatement, and tax-base sharing (by allowing local governments to levy surcharge on a given tax). Fiscal transfer instruments, such as revenue sharing and/or unconditional formula-based transfers, should be adopted only as second-best measures since they tend to weaken local government's accountability to local taxpayers.

Revenue sharing is a type of unconditional transfer. The central government shares a predetermined ratio of its revenues to local governments. This is a relatively simple way to provide a reasonably secure and growing amount of revenues to local governments. However, it leaves no discretion to the jurisdictions in terms of revenue raising, even at the margin. The absence of such discretion detracts from fiscal and political accountability (Boadway and Shah, 2009).

Horizontal fiscal equalization Fiscal equalization transfers are instruments to deal with horizontal fiscal equity concerns. Transfers from the central government to local governments can eliminate regional differentials in net fiscal benefits (i.e., the imputed benefits from public spending

minus the tax burden) arising from decentralization. To eliminate differential net fiscal benefits, the central government should design a comprehensive fiscal equalization program that equalizes fiscal capacity (the ability of local governments to raise revenues from their own tax bases using national average tax rates) to a national average standard level and provides compensation for differential expenditure needs and costs due to inherent cost disabilities (but not due to different policies implemented at the local government level). In principle, a properly designed fiscal equalization transfer program corrects distortions that may cause fiscally induced migration by equalizing net fiscal benefits across jurisdictions. A reasonable estimate of the costs and benefits of providing public services in various jurisdictions is essential to measure net fiscal benefits. Measures of differential revenue-raising abilities and the needs and costs of providing public services in different jurisdictions must be developed. Equalization of net fiscal benefits could then be attempted by adopting a standard of equalization and establishing the means of financing the needed transfers.

A number of countries, including Australia, Canada, the PRC, Denmark, and Indonesia, have introduced fiscal equalization programs. However, there is a lot of variation among countries in terms of legal foundation (i.e., constitution-based or law-based), type of program (paternal program or fraternal program⁵), types of contribution to the common pool (formula-based or arbitrary), and method of equalization. Overall, experience suggests that (i) having an explicit standard regarding the total pool and the allocation among recipient units will ensure transparency and accountability in such programs, and (ii) fiscal need compensation should be carried out through specific-purpose transfers (Shah, 2007). Table 1.5 summarizes the characteristics of different kinds of transfer programs.

Setting national minimum standard and ensuring national unity The central government can use conditional nonmatching grants to local governments to deal with under-provision of public services that have redistributive purposes such as education, health, or social welfare, and/or restricted access to such services by the poor and the old, who are those most in need. This type of transfer can also be used to deal with infrastructure deficiencies in poorer jurisdictions to strengthen national unity. The conditions for this transfer may not only be the specific use of grant funds, but also attainment of standards in quality, access, and level of services. Input-based grants fail to create such an accountability environment.

Benefit spillover compensation Due to a lack of proper incentives, local governments are reluctant to provide adequate services that may benefit other jurisdictions' citizens. A system of open-ended matching transfers

Table 1.5 Formula-based equalization transfers

| Types of transfer | General characteristics | Remarks |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Transfer based on equal per capita allocation | Simplest system; requiring only information about population | Suitable for countries at an early stage in their intergovernmental arrangements Does not takes into account other factors such as income per capita |
| Formula based on general indicators of expenditure needs | Include other indicators such as poverty incidence, area, population density, and infant mortality | It is hard to link the factors with reasons for spending or transfer. |
| Formulas based on specific indicators of expenditure needs | More complex; using distinct indicators of needs for each local expenditure responsibility | Avoids using factors under the direct control of subnational governments; requires more information |
| Formulas based only on fiscal capacity | Transfer based on differences in fiscal capacity | Use of the potential rather than actual addresses the problem of incentives; this formula assumes that each province has the same per capita expenditure needs |
| Formulas that consider both expenditure needs and fiscal capacity | Most general approach to equalization systems; relies not only on needs but also on the ability to provide for these own resource revenues | This equalization formula is used in an increasing number of countries such as Australia, the People's Republic of China, Japan, and the Republic of Korea. They can be complex and require a considerable amount of information |

Source: Adapted from Boadway (2015).

based on expenditures will provide incentives to increase expenditures. Because the extent of the spillover is usually difficult to measure, the matching rate will be somewhat arbitrary. However, such transfers have not been implemented in developing countries.

Aligning local priorities with national priorities To induce local governments to follow the priorities set by the central government, the latter can provide open-ended matching transfers with matching rates that vary inversely with the recipient's fiscal capacity. Use of ad hoc grants is inadvisable since ad hoc grants are unlikely to result in behavioral responses that are consistent with the grantor's objectives.

Infrastructure deficiencies and macroeconomic stability The central government can use fiscal transfers to achieve cyclical stabilization in jurisdictions. Unconditional transfers could increase during the downturn periods to encourage local expenditures and reduce when the economy is in an upswing.

Table 1.6 presents justifications for intergovernmental fiscal transfers and alternative policies.

1.5.2 Intergovernmental Fiscal Transfers in Asian Economies

Within a country, there are large differences among jurisdictions in terms of natural endowments, economic opportunities, and levels of development. In such an environment, fiscal decentralization could lead to a large horizontal fiscal imbalance, because of both different revenue potentials and costs of delivering services. In the PRC, for instance, own revenues per capita of the richest province are 15 times those of the poorest region. These disparities are even higher in Indonesia, the Philippines, and Viet Nam, and much higher at the sub-provincial level (Hofman and Cordeiro Guerra, 2005; Nasution, Chapter 8 in this book; Manasan, 2015). Equalization grants from the central government are the instrument to mitigate these imbalances.

Local governments in Asian economies are heavily dependent on transfers and revenue sharing from the central government, even in developed economies such as Japan and the Republic of Korea. While local governments in Japan and the Republic of Korea receive nearly 40 percent of their revenues from intergovernmental fiscal transfers, the dependence of local governments on intergovernmental fiscal transfers is heavier in developing economies. Intergovernmental fiscal transfers (both from the central government and state governments in federal states) account for nearly 60 to 66 percent of local government revenues in the PRC, 90 percent in India, 90 percent in Indonesia, 70 percent in the Philippines, 85 percent in Thailand, and about half in Viet Nam. Table 1.7 presents the relative importance of different types of intergovernmental fiscal transfers.

There are multiple transfers from central governments to local governments in Asia, and the size of each type in total transfers is different from country to country. However, most of the Asian economies use equalization

Table 1.6 Justifications for intergovernmental fiscal transfers and alternative policies

| Justifications | Types of grant | Alternative policies |
|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| 1. Vertical fiscal gap | | |
| a. Gap between functions and resources | General lump-sum grant (or specific grants with amounts calculated according to needs); no bailout | New assignment of functions/resources; fiscal decentralization or tax sharing |
| b. Budget deficit | | New assignment of function or tax sharing |
| c. Excessive central tax rate | | Fiscal decentralization or tax sharing |
| d. Small or weak local tax base | | Material tax harmonization |
| e. Limited or few tax revenues | General lump-sum grants | Reorganization of territorial structure to establish a correspondence between institutional and functional dimensions |
| 2. Spillover effect | Open-ended specific matching grants; no closed-ended matching grants | |
| 3. Equitable access to social services | Specific lump-sum grants | |
| 4. Minimum standards/Merit goods/National priorities | | |
| a. Minimum standard to facilitate production factor mobility/to defend the interest of minorities | Conditional nonmatching output-based grants | |
| b. Imposition of the center's social priorities | Open-ended matching grants | |
| 5. Horizontal fiscal gaps | | |
| a. Inequitable distribution of natural resources | General lump-sum grants (sharing, redistribution) | |
| b. Gaps in financial capacity | | |
| c. Differences in costs/needs, opportunities to generate an economy of scale, for demographic, topographic, socioeconomic reasons | Specific matching grants (correction or compensation) | New assignment of functions/resources, intergovernmental collaboration |

Table 1.6 (continued)

| Justifications | Types of grant | Alternative policies |
|------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 6. Macroeconomic policies | | |
| a. Stabilization (encouraging or discouraging local spending) | For encouraging local spending: specific lump-sum grants (incentives) | Encourage private sector participation |
| b. Regional development | Sectoral grants (incentives and supports) | Help establishing framework conditions; regional policies to encourage development of private sectors; support for new activities |

Source: Adapted from Dafflon and Madies (2011).

Table 1.7 Intergovernmental fiscal transfers as a revenue source of local government

| Country | Share of transfers in total local revenues (%) | Relative importance of type of transfer | | |
|--------------------|------------------------------------------------|-----------------------------------------|-----------------|-----------------|
| | | Revenue sharing | General purpose | Special purpose |
| Japan | 40 | High | Low | Medium |
| Korea, Republic of | 40 | High | Low | Medium |
| PRC | 60–66 | High | Low | Low |
| India | 90 | Medium | Low | High |
| Indonesia | 90 | Medium | High | Low |
| Philippines | 70 | Low | High | Low |
| Thailand | 85 | Low | Low | High |
| Viet Nam | 50 | High | Medium | Medium |

Note: PRC = People’s Republic of China.

Source: Lewis and Searle (2010).

grant systems to address horizontal fiscal imbalances (see Table 1.8). These systems rely on formulas to determine distribution, and some of them use formulas to determine the resource pools. The revenue capacities and the expenditure needs of local governments are taken into account in

Table 1.8 *Intergovernmental transfer and equalization grants in selected Asian economies*

| | PRC | Indonesia | Philippines | Thailand | Viet Nam |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Equalization Principles | 16 poorest provinces received an ad hoc grant; formula for calculating equalization grant introduced but not implemented | All provinces receive a formula-based equalizing grant (25% of CG revenues after revenue sharing) | All provinces receive a fixed share of CG tax revenues (equal to 40% of 3-year average internal tax collections) | Equalizing grants allocated in an ad hoc manner to provincial-level governments; a formula is used to calculate grants for lower level of governments | Grants allocated to provinces with shortage of revenues; a formula is used to calculate the required expenditure needs and revenue capacity |
| Main Features | Formula for expenditure needs and revenue capacity based on provincial GDP, student/teacher ratio, no. of civil servants, and population density | Plays a major role in central-local intergovernmental transfers; expenditure needs estimated as function of population, poverty, land area, and construction cost index; revenue capacity estimated as standardized own revenues plus share of tax revenues and 75% of natural resources revenues | Makes up 94%–97% of total transfers; provinces (23% of total decentralization funds), cities (23%), municipalities (34%), and barangays (20%); formula is based on population, land area, and equal sharing | At subnational level: 95% of total devolving functions; at lower level, allocations are based on equal share (25%), population (30%), area (5%), local revenues (excluding grants), and specific grants received (20%) | LG expenditure needs minus total revenues from 100% decentralization taxes and fees and shared tax revenues (between CG and LG) |

| | | | | | |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------|
| Equalizing or Not | Weak (limited resources devoted for ad hoc grants) | Medium (imperfections in the formula) | Medium; 40% is not enough in light of rapid urbanization in the country | Weak (lack of transparency in allocations; leads to self-interested politics and delays in allocation decisions) | Weak |
| Other Programs with Equalizing Characteristics | Other unconditional transfers (such as tax rebates, and gap-filling transfers) and hundreds of earmarked grants. But lack of mechanisms to ensure effective use | Special allocations (but small, accounting for 3%) | None | Programs such as education and development projects | National target programs |

Note: CG = central government, GDP = gross domestic product, LG = local government, PRC = People's Republic of China.

Sources: Hofman and Cordeiro Guerra (2005); ADB (2014); Manasan (2015); Nasution (Chapter 8 in this book).

some economies (e.g., the PRC, Indonesia, and Viet Nam), whereas only expenditure needs are considered in some others such as Thailand and the Philippines (Hofman and Cordeiro Guerra, 2005).

Some Asian economies use performance-based transfers (e.g., incentives or innovative transfer mechanisms). Japan incorporates some incentives into its transfer system. As fiscal capacity declines, the central government increases the amount of grants as an incentive for local tax collection efforts. In addition, there are some special-purpose grants acting as performance incentives but the mechanisms of such grants are rather unclear (Lewis and Searle, 2010). Similarly, the Republic of Korea also dedicates special-purpose grants to stimulate certain kinds of spending and incentive mechanisms for own-source revenues. The PRC has some types of incentives for economic development in various provinces. These incentives, however, are somewhat ad hoc and may cause competition among provinces. The PRC central government has offered special privileges and incentives to local governments, but such privileges lack institutionalized supervision (Lan and Chen, 2010). In India, many states have integrated performance incentives into revenue-sharing schemes for local governments to encourage revenue collection efforts, service management, and so forth. However, it is argued that this system seems to reward past behavior rather than encourage future performance (Lewis and Searle, 2010). These kinds of incentives were also implemented in Indonesia, where the central government allocated 10 percent of the national property tax to local governments based on their previous year's tax collection performance. However, this system has been discontinued (Martinez-Vazquez, 2011; Nasution, Chapter 8 in this book). The Philippines also experimented with performance-based transfers. However, there is some evidence that larger transfers provide a disincentive to local tax efforts, especially in the early stage of decentralization (Lewis and Searle, 2010; Manasan, 2015). Thailand and Viet Nam, on the other hand, have not explicitly incorporated performance-based grants into their intergovernmental fiscal transfers.

1.5.3 Issues Regarding Transfers in Asia

Poor design of equalization grant systems

In Asian developing economies, equalization grants usually are not well designed. For example, in the PRC, the distribution of equalization grants is complex, nontransparent, and ad hoc (Bahl and Martinez-Vazquez, 2006). This ad hoc feature has tended to widen the fiscal disparities as only 3 percent of total central transfers went to the 16 poorest provinces. In many cases, equalizing grants in the PRC are actually de-equalizing (ADB, 2014). The situation is similar in India, where

transfers from state governments to local government are usually ad hoc (Oommen, 2008).

Inflexible equalization schemes

In some Asian economies, equalization schemes have remained unchanged for a long time and have lagged behind the speed of urbanization in those economies. For example, in the Philippines, local governments receive 40 percent of internal revenue allocation since its decentralization inception, but this rate is too low relative to the rapid urbanization observed in the country (Manasan, 2015). The same situation is observed in Indonesia (Hofman and Cordeiro Guerra, 2005; Nasution, Chapter 8 in this book).

Flypaper effect

The so-called ‘flypaper effect’ refers to the tendency of local governments to spend revenues from increases in grants rather than reduce local taxes commensurately. Bessho (Chapter 9 in this book) finds evidence of the flypaper effect in Japan. Specifically, his estimation work shows that an increase in grants-in-aid adheres strongly to government investment, with nearly all of a permanent increase in grants resulting in a permanent increase in government investment. Fan and Wan (Chapter 6 in this book) also find that a 1 percent increase in earmarked transfers was associated with a 5 percent increase in local spending on infrastructure in the PRC, but lump-sum transfers did not have an effect.

1.6 LOCAL GOVERNMENT DEBT FINANCING

Local government borrowing can be a significant source of revenue for local governments, especially when revenue assignments and fiscal inter-governmental transfers do not meet the expenditure assignments and local investment needs.

1.6.1 Local Government Debt Financing Instruments

There are two major types of debt instruments available to finance local government capital expenditures: commercial loans and bonds.

Loans are provided by a financial institution (e.g., commercial bank) directly to the local government. Access to commercial loans is less complicated (and cheaper) than bond issuance since the credit analysis could be performed directly by the lender. However, commercial loans usually have short maturity and high interest rates, and thus are not suitable for large and long-lived capital investment projects. This implies that commercial

loans are more suitable for small and medium-sized jurisdictions where the demand for large and long-lived capital investments is usually lower than in larger jurisdictions.

Bonds are issued by local governments either directly or via financial intermediaries (e.g., funds, banks) to institutional or individual investors. The administrative and time costs for bond issuance are usually high. However, compared with commercial loans, bonds usually have lower interest rates and longer maturity and thus are more suitable for larger investment projects in large municipalities. There are two types of bonds: general obligation bonds and revenue bonds. General obligation bonds are used to finance public goods investments such as roads, bridges, public parks, and are secured by the local government's overall revenue stream. Revenue bonds do not depend on the general taxing power of local government but only on the stream of revenues generated by the specific project.

A number of conditions need to be met to take advantage of bond issuance. First, local government finances should undergo rigorous creditworthiness assessments by independent credit rating agencies. This requires disclosure of independently audited public financial accounts, thus strengthening the role of markets in fiscal monitoring and surveillance. Second, a subnational bond market should be developed as a part of a subnational credit supply system. Development of this market will help local governments have a more sustainable and stable source of finance, but also allows the wider participations of institutional investors. To do so, a set of security regulations, including regulations on credit rating agencies, broker-dealers, underwriters, and auditors, should be in place and such regulations should be similar across sovereign, sub-sovereign, and corporate bonds (Liu, 2010). Transparency and governance standards are among the most important factors determining the success of such markets (ADB, 2014).

Local government financing of infrastructure projects and other public services may be enhanced by using public–private partnerships (PPPs) to attract private funding and management of such projects. Experiences from economies where PPPs are actively used show that PPP projects are usually faster to complete, more cost-effective, and have higher quality (Burger and Hawkesworth, 2013). Another advantage of PPPs is the risk sharing between the public and private sectors, which reduces risks for local government budgets. However, such transactions tend to be complex and difficult to manage. To implement PPPs successfully, profitable components attractive to private investors need to be carved out, and project components and risks need to be allocated to those who are best able to manage them. Also, local governments need the managerial capacity to successfully implement PPPs.

1.6.2 Subnational Borrowing in Asia

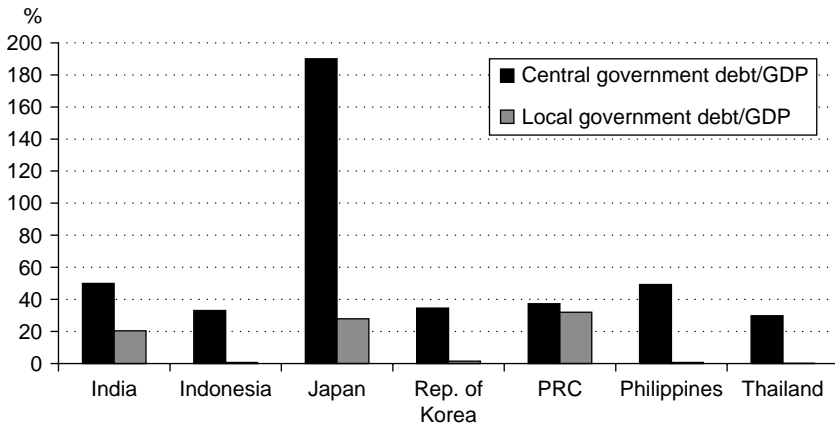
Except for local governments in the PRC and district-level governments in Viet Nam, all tiers of local governments in Asian economies are permitted to borrow from various financial sources, including the central government's funds, commercial banks and other financial institutions, and bond issuance. Each country has its own control systems including 'prior consultation' mechanisms, and quota systems, or restrictions on the purposes of borrowing. In Japan, the PRC, and, to some extent, India, local government borrowing is rather large, but in most other Asian economies including the Republic of Korea, it is small.

In Japan, local governments are legally allowed to borrow from commercial banks and to issue bonds. Issuing domestic bonds has become more common. However, local governments have to consult with the central government prior to such issuance, which helps the central government to keep some control over their borrowing. Recently, Japan's central government has committed to shifting from administrative controls on borrowing to a system based more on fiscal rules and market disciplines (Lewis and Searle, 2010). Local government debt is large. Figure 1.2 shows that, in 2011, the outstanding debt of Japan's local government was about 27.9 percent of gross domestic product (GDP), the second-highest level among Organisation for Economic Co-operation and Development economies (OECD, 2013).

Similar to Japan, local governments in the Republic of Korea also are allowed to borrow from commercial banks or public loans funds, or to issue bonds for capital spending and funds necessary for recovering from natural disasters. However, in the Republic of Korea, local governments mostly borrow from the central government's public loan funds, and recently from 'regional development funds' operated by the upper level of local governments. The Korean central government also replaced its strict 'permission system' on local borrowing with a new 'quota' system. However, the Korean local governments' total outstanding debt was low, accounting for only about 1.5 percent of GDP in 2012 (OECD, 2013).

Although PRC local governments are not allowed to borrow under the current law, many do. They borrow directly from commercial banks and other financial institutions or indirectly through local-government-owned trust and investment corporations. These loans are backed by either fixed assets (e.g., land) or implicit government guarantees. Due to 'illegal' borrowing, it is difficult to have accurate estimates of local government debt, which makes debt management difficult.⁶

In India, subnational governments are also able to borrow from the central government, donors (with central government guarantees), public



Notes:

GDP = gross domestic product, PRC = People's Republic of China.

Year of data: PRC: central government, 2013 and local government, end of June 2013; Japan: 2011; Republic of Korea: 2012; India: 2012/2013; Philippines, Thailand, and Indonesia: 2013.

Sources: Government of India (2015); International Monetary Fund (2015); OECD (2013); ADB (2014); Bank of Thailand (2016); and Philippine Bureau of Local Government Finance (2016).

Figure 1.2 Central government debt/gross domestic product and local government debt/gross domestic product in some Asian economies (%)

and private financial institutions, and capital markets. Many subnational governments, especially urban local governments, have borrowed. In India, total outstanding debts of local government reached 20.4 percent of GDP in 2013.

In Indonesia and the Philippines, local governments are allowed to borrow for capital investment from government sources, private financial institutions, and bond markets. However, local government borrowing in both economies is limited, and is mostly from the central governments or from international donors with the central governments' guarantees. According to Nasution (Chapter 8 in this book) and Manasan (2015), the total outstanding debts of local governments in Indonesia and the Philippines are less than 1 percent of their GDP.

Thailand's lower levels of local government (i.e., municipalities and subdistricts) can only borrow if the higher-level government approves. They can use the debt finance for local capital expenditure. In practice, local government borrowing is very limited. Government transfers, lending

from international financial institutions, and local fiscal reserves are still the major sources of finance for local infrastructure development (Lewis and Searle, 2010).

In general, local governments in Asian economies rarely use PPPs to finance infrastructure investment. According to the ADB (2014), in the PRC, this source of funds accounts for only about 1 percent of public investment, much lower than the share of PPPs in public investment observed in countries that actively use PPPs (about 10 to 15 percent of public investment).

1.6.3 Issues in Local Government Borrowing in Asia

Obstacles to local government borrowing

In developed economies including Japan and the Republic of Korea, local government bonds are the standard means of financing local budget deficits (ADB, 2014). However, among developing Asian economies, local government borrowing is rather small except in the PRC, although there is a growing demand for finance to fund infrastructure investment and provide social services. This is partly because a lack of reliable financial data at the lower local government level, restricted borrowing authority, and lack of ex post insolvency policy undermine the creditworthiness of local governments and ultimately make them unattractive to financial institutions (White and Smoke, 2005). Meanwhile, the lack of secondary markets for local government bonds hinders the participation of institutional investors, thus bond issuance is limited (Manasan, 2015). There are also restrictions on the minimum credit rating of bonds that investors such as pension funds and insurance companies can buy.

Excessive local government borrowing

At the other extreme, the high borrowing rates of local governments in Japan and the PRC have raised the question of the sustainability of local government debts in these economies, especially in the case of the PRC, where local governments are not legally allowed to borrow from the financial institutions. This issue is discussed further in section 1.7.

Limited use of public–private partnerships

As mentioned earlier, the share of PPPs in government spending is very low, only about 1 percent on average in Asia. This reflects many difficulties in developing attractive projects, accurately estimating costs and benefits, allocating risks, and responding to changing and unforeseen circumstances. The capacity of government officials to manage such projects is also a significant constraint.

Inappropriate borrowing

The problem in India is that most local government borrowing appears to finance current expenditure, not capital expenditure (Lewis and Searle, 2010). Also, most local government borrowing in the PRC is from the commercial banks, accounting for about 80 percent of total borrowing. This leads to the problem of maturity mismatch, as borrowing from commercial banks is mostly short term (nearly half needs to be repaid in three to five years), while most of the borrowing is for capital expenditure, the debt of which, in principle, will take much longer to be repaid. Das (Chapter 11 in this book) also finds that, in India, state governments tend to use revenue increases to finance current spending rather than investment, so that the positive impact of public investment spending on growth and indebtedness tends to be limited.

1.7 FISCAL RISKS AND MECHANISMS TO MAINTAIN LOCAL GOVERNMENT FINANCIAL STABILITY

Except for Japan and the PRC (and India in the 1990s), local government fiscal risks are relatively small because of strict regulation of their borrowing by the central government. However, the trend of decentralization, coupled with the increasing demand for financial resources to adequately match expenditure assignments and infrastructure demands and limited revenue discretion, ultimately is likely to lead the central governments of Asian economies to give more autonomy to local governments to access capital markets. This section reviews fiscal sustainability issues for local governments in Asian economies and the mechanisms for maintaining fiscal stability and sustainability at the local government level.

1.7.1 Fiscal Sustainability at the Local Government Level

Fiscal sustainability at the local government level is defined in various ways. The International Public Sector Accounting Standards Board (IPSASB) defines local government's fiscal sustainability as the ability of a jurisdiction to provide its assigned services and meet its commitments in the short, medium, and long run (IPSASB, 2008). Therefore, fiscal sustainability has three dimensions: fiscal capacity, service capacity, and vulnerability. Meanwhile, in their report on Australian Local Fiscal Sustainability, PricewaterhouseCoopers (PWC) defines fiscal sustainability as a council's ability to manage 'expected financial requirements and financial risks and shocks over the long term without the use of disruptive revenue and

expenditure measures’ (PWC, 2006: 95 as cited in Dollery and Grant, 2011: 38). More simply than IPSASB or PWC, Chapman (2008: 115) defined fiscal sustainability as ‘the long-run capability of a government to consistently meet its financial responsibilities’. He also suggested that fiscal sustainability is affected by three types of pressures: cyclical, structural, and intergovernmental.

However, according to Dollery and Grant (2011), the abovementioned definitions do not take into account societal and environmental objectives and functions of governments. Hagist and Vatter (2009) provide a more comprehensive definition by highlighting the importance of demographic changes and population mobility. They argued that it is inappropriate to focus only on fiscal gaps or debt without taking into account the future economic strength of the debtor. Therefore, a jurisdiction’s budget is defined to be fiscally sustainable if (i) it allows the government to maintain its current level of provision of public goods/services without changes in taxes and other revenues, and (ii) the ratio of a jurisdiction’s public equity (net assets) to its ‘production potential’⁷ is constant over time.

Although fiscal sustainability at the local and national government levels shares some common features, such as both being subject to macroeconomic shocks or structural changes (including demographic change, urbanization trends, mobility of people and business, and changes in consumption patterns) and the pattern of intergovernmental relationships, according to Ianchovichina et al. (2007), fiscal sustainability at the local and national levels differs in several aspects:

- Local governments cannot issue their own currency, thus seigniorage does not have any role in local government finance.
- If the local government borrows mostly from public sources, local government finances would have less credit risk.
- Local government finance is not directly affected by foreign exchange risk if they are prohibited from borrowing from external sources without approval and guarantees from the central government. However, they may be indirectly affected through real interest rate shocks (as in the case of Mexico in 1994–1995).
- If local governments are small in terms of economic size, they cannot influence the interest rates on their borrowings.
- Local government’s revenue discretion is usually limited, especially in developing countries, which means they face constraints in adjusting revenues to changed conditions.
- Local government fiscal sustainability could be affected by the central government’s policies to the extent they influence their fiscal balances and economic growth.

1.7.2 Fiscal Risks at the Local Government Level

This section examines factors that affect the fiscal sustainability of local governments.

Macroeconomic shocks

Depending on their economic and financial structures, as well as various institutional characteristics, different countries are more or less vulnerable to, and impacted by, different types of macroeconomic shocks such as trade-related shocks, financial crises, and so forth.⁸ These shocks could impact local government finances through a number of channels, including (i) significant fluctuations in own and shared revenues; (ii) potential changes in the systems of intergovernmental fiscal arrangements such as changes in revenue-sharing formulas and/or in fiscal rules or other borrowing controls; and (iii) sharp and abrupt changes in the availability of capital market financing when such financing is allowed. If such shocks are sufficiently large and long, they could threaten the fiscal sustainability of local governments.

Counter-crisis policy by central government

Counter-crisis policy by the central government could have long-term effects on local government fiscal positions. The recent global financial crisis of 2008–2009 is a good example. Before the global financial crisis, fiscal situations in many developing countries were quite stable, with public debt under control. The global financial crisis had negative effects on economic growth in almost all Asian economies. The central governments in Asian developing countries implemented various policy packages to stimulate their economies. Such stimulus packages, however, could potentially cause the fiscal position of local governments to become unsustainable. For example, in the PRC, the central government allowed local governments to issue bonds with a yearly quota of CNY200 billion in 2009, 2010, and 2011. Moreover, the central government also encouraged local governments to establish ‘borrowing platforms’⁹ to expand their investment financing. As a result, local governments borrowed as much as they could. In 2009, the total debt owed by local governments increased to 20.6 percent of GDP. Despite recent policy tightening over the financing through these platforms, the high level of debts may have longer-run impacts on local government finances.

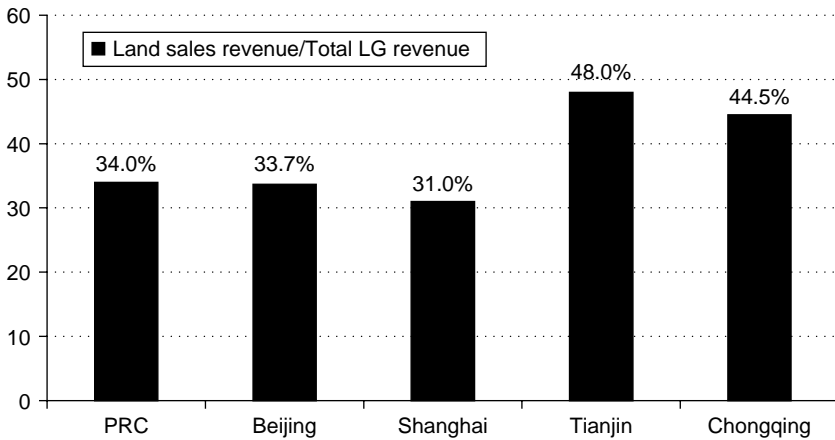
Emergence of special-purpose vehicles and under-regulated shadow banking

Since the 1990s, many urban development investment corporations have been established in the PRC and in some other countries. In the PRC, by the

end of 2011, there were 6,575 special-purpose vehicles (SPVs) at all levels of governments (Liu and Qiao, 2013). These SPVs play a vital role in the rapid transformation of cities in Asia. However, without well-developed regulatory frameworks and corporate governance structures, these types of firms contain significant fiscal risks for local governments. First, these SPVs' operations and financing are generally opaque and formal accountability is often weak (ADB, 2014). Although commercial banks still are the major financiers for SPVs in the PRC, accounting for about 70 percent of all borrowing of SPVs, the shares of funding from the shadow banking system, which consists of non-bank financial institutions, has recently increased (ADB, 2014). By the end of 2013, shadow banking was the third biggest source of finance, accounting for 10.3 percent of the CNY17.9 trillion balance of local government debts at the end of 2013 (Elliot et al., 2015). Although the shadow banking system in the PRC is not as large as in developed economies,¹⁰ it is very risky because (i) it lacks a strong safety net, such as guaranteed deposit insurance or lender of last resort facilities from the central banks, and (ii) it also operates with a different and usually lower level of regulatory oversight.¹¹ Secondly, it is argued that the management competence of these firms is usually low, which, coupled with the generally weak credit analysis skills in banks, insurance and trust funds, and other financial institutions, will tend to hinder the performance of these firms. Thirdly, although most of the projects carried out by the SPVs are infrastructure projects such as roads, railways, and industrial park construction, only some of them could generate enough revenue to fully meet debt costs in the long term. Finally, if an SPV becomes insolvent, without a well-developed insolvency mechanism, the local government's finances will be heavily impacted.

Lending to state-owned enterprises

Although in many Asian economies a large number of state-owned enterprises (SOEs) have been partially privatized, financial institutions continue to provide them with preferential credits, especially to carry out projects identified as priorities by the central government. They also receive off-budget resources in the forms of deferred taxes or arrears accruals on debt services and other contractual payments. According to Sano (2014), by the end of June 2013, the debts of wholly SOEs and partially privatized SOEs in the PRC had reached CNY3.1 trillion, or 17.5 percent of total local government debt. This raises the question of whether the SOEs are functioning as an alternative financing route in place of SPVs. Given the limited governance capabilities of SOEs, the expansion of financing via SOEs could heighten the risk of insolvency for local governments.



Note: LG = local government, PRC = People's Republic of China.

Sources: *China Statistical Yearbook*; CICC Research Department (cited in Lu and Sun, 2013).

Figure 1.3 Land sales revenue as a share of local government revenue (% , 2009)

Land financing

Rapid urbanization and economic development in Asian economies have helped to turn land sales into a large source of funds for local governments. Country experiences show that land financing could increase fiscal risks because of (i) frequently incorrect estimates of the economic value of land; (ii) the volatility of capital budgets, especially during periods of economic stress; and (iii) the use of land as collateral for local government borrowing, especially in cases where insolvency mechanisms for local governments and local SPVs are not well developed. In the PRC, land-based financing amounted to two-thirds of local government expenditure in 2010 (ADB, 2014) and accounted for over 30 percent of revenues in a number of major cities (see Figure 1.3). Many local governments in the PRC have extensively used the revenues from land sales for repayment of previous debts. In 2013, income from transfer of land-use rights (i.e., land sales) was expected to be used for repayment of CNY3.5 trillion out of CNY9.4 trillion debt balance of 11 provincial-level entities, 316 cities, and 1,396 counties (Sano, 2014). Debt repayment could be hindered if income from land sales failed to increase as much as anticipated due to an economic slowdown. In many cases, land transactions are off-budget and off-balance-sheet. This could lead to misuse of public property by public officials and institutions. These

considerations provide an incentive for local governments to act like a land monopolist.¹²

Softening budget constraints

Policy loopholes observed in a number of Asian economies have led local governments to seek additional sources of finance to supplement loans or grants from the central government. However, such additional borrowing is usually unchecked (Ianchovichina et al., 2007). In economies with a history of bailouts, Martinez-Vazquez and Vulovic (Chapter 5 in this book) find that primary balances on average are lower at both central and local governments. Thus, if the central government cannot commit to a no-bailout policy or cannot limit local government borrowing, local governments have incentives to run unsustainable deficits. Fiscal rules are discussed in section 1.7.3.

1.7.3 Managing Fiscal Risks

Local government fiscal risks can be managed through two channels: fiscal rules (i.e., ex ante regulations of borrowing and monitoring of the local government fiscal positions) and ex post insolvency mechanisms to deal with cases when local governments become insolvent. According to Liu and Pradelli (2012), ex ante fiscal rules and ex post insolvency mechanisms complement each other. Insolvency mechanisms increase the pain of circumventing ex ante fiscal rules for lenders and subnational borrowers, thereby enhancing the effectiveness of preventive rules. Without insolvency mechanisms, ex ante regulations could lead to excessive administrative control and game playing between the central and local governments. Overreliance on ex ante regulations could limit the role of markets in monitoring subnational borrowing and debt, however. Latin American and Asian experiences showed that local governments are more likely to tax and spend prudently if they are subject to hard budget constraints (Gooptu, 2005).

Ex ante regulations

Ex ante regulations specify the purpose, types, and procedures of local government borrowing that are allowed. A well-designed regulatory framework should satisfy several criteria: (i) transparency; (ii) penalties for excessive borrowing; (iii) local government access to own-source revenues; (iv) the separation of fiscal policy from monetary policy; and (v) local government accountability via the political process. There also needs to be scope for change, as circumstances and capabilities evolve.

Ex ante regulations can be classified into four broad categories: (i) market discipline; (ii) rule-based controls; (iii) administrative controls; and

(iv) cooperation between different levels of government (Ter-Minassian and Craig, 1997). Table 1.9 presents the main ideas, advantages, disadvantages, and preconditions for each type of regulation. It can be seen that market discipline and administrative controls are so extreme and demanding that they are usually not appropriate for developing economies. Martinez-Vazquez and Vulovic (Chapter 5 in this book) found that the cooperative approach has a positive effect on improving fiscal performance at both the central and local government levels even in the case of high levels of local government debts and high dependence of local government on intergovernmental transfers. However, this approach seems inapplicable to most developing countries, given the absence of the culture of cooperation and discipline required for its success. Thus, a rule-based approach seems to be the most appropriate approach for borrowing controls in Asian economies. This approach is able to combine the benefits of local government autonomy with the required limitations on local government behavior (Alm and Indrawati, 2004). It must be kept in mind, however, that Martinez-Vazquez and Vulovic (Chapter 5 in this book) find that none of the broad types of subnational borrowing regulations seem to have a distinct significant direct effect on the narrow definition of fiscal sustainability at the subnational level.

Rule-based approach

Motivation for rule-based approach to borrowing controls (fiscal rules) Fiscal rules are incentive schemes or mechanisms that introduce for a certain period (medium or long-term) constraints on the main fiscal variables (revenues, expenditures, new indebtedness) using quantitative limits (Grembi and Manoel, 2012). Kopits (2001) argued that it is generally better to have subnational fiscal rules because they can help to curb subnational fiscal outcomes even in an institutional context with soft rule enforcement (Grembi et al., 2011).

Strategic considerations According to Liu and Pradelli (2012), designing fiscal rules should consider the following issues: (i) borrowing should be allowed only for long-term public capital investment; (ii) analyzing the overall fiscal space available for both national and local government entities; (iii) estimating financing development needs and the existing contingent liabilities; (iv) distinguishing local governments' general budget and SPV financing to monitor differentiated debt indicators; (v) developing analytical tools and models to estimate appropriate thresholds for debt indicators; and (vi) designing a broad fiscal architecture for policy coordination and surveillance. In addition, fiscal rules should be simple,

Table 1.9 Approaches of *ex ante* regulations

| Approach | Market discipline | Administrative controls | Cooperative approach | Rule-based controls |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Main ideas | <ul style="list-style-type: none"> Market forces will ensure the manageable level of local government debt | <ul style="list-style-type: none"> Central government uses administrative measures to control local governments' borrowing | <ul style="list-style-type: none"> Limitations on local government borrowing are results of negotiation process between the central and local governments | <ul style="list-style-type: none"> Central government sets fiscal rules for local government |
| Advantages | <ul style="list-style-type: none"> Emphasis on self-control Monitoring by credit rating agencies | <ul style="list-style-type: none"> Potential central government control Better terms and conditions Useful for foreign borrowing | <ul style="list-style-type: none"> Promote dialogue Enhance responsibility of local government policy makers | <ul style="list-style-type: none"> Transparent Avoid bargaining |
| Disadvantages/ requirements/ preconditions | <ul style="list-style-type: none"> Require comprehensive, timely, and reliable information Suitable for economies with developed financial markets No access to privileged financing No previous history of bailouts High primary balances (both at central and local government level) | <ul style="list-style-type: none"> Ability of central government to effectively monitor and implement controls | <ul style="list-style-type: none"> Constitutional underpinnings Culture of fiscal of discipline Suitable for economies with developed financial markets Existence of institutions for cooperative decision making or strong bargaining position of central government | <ul style="list-style-type: none"> Sound and credible rules (well-defined, transparent, and flexible) Clear coverage and full information needed |
| Countries adopted | Canada, Australia | PRC, Viet Nam, Japan, United Kingdom | Argentina, Austria, Denmark, some EU countries | Brazil, Chile, United States, Spain |

Note: EU = European Union, PRC = People's Republic of China.

Sources: Adapted from Ter-Minassian and Craig (2007) and Martinez-Vazquez and Vulovic (Chapter 5 in this book).

transparent, coherent with the fiscal objectives, and harmonious with other public policy goals such as structural reforms (Kopits and Symansky, 1998). Moreover, Chakraborty (Chapter 3 in this book) argues that ‘one size fits all’ uniform rules may not be suitable since different jurisdictions operate at different levels of sustainable deficits, and thus imposing uniform rules may constrain capital spending in some jurisdictions. Furthermore, for successful adoption of fiscal rules, a clear definition of intergovernmental relationships and hard budget constraints is necessary (e.g., Kopits, 2001 and Ter-Minassian and Fedelino, 2007).

Identifying critical fiscal rules and thresholds Two primary issues need to be addressed (Liu, 2010). The first is to identify (the most) critical fiscal rules for assessing the fiscal sustainability of local government. Liu and Pradelli (2012) proposed a minimum set of five indicators to monitor debt and associated fiscal risks:

- (i) The total local government debt-to-GDP ratio, to monitor the aggregate debt of all tiers of local government.
- (ii) The debt-service-to-own-revenue ratio, applied uniformly to each individual local government general budget, to ensure financial capacity to service debt and provide incentives for own revenue collection.
- (iii) A ‘golden rule’ (e.g., operating fiscal balance must be zero, preferably over the cycle) applied to both SPVs and local government budgets, to promote debt-financed infrastructure investment.
- (iv) An infrastructure-sector-specific debt-to-revenue ratio (preferably revenue net of operating expenditures), applied to SPVs, requiring operations to be sufficiently profitable in cash terms to repay SPVs’ debt obligations.
- (v) The guarantees extended by subnational governments to SPVs and other local governments, which are a source of contingent liabilities.

In addition, local governments could be allowed to borrow in the capital market if they have undertaken fiscal and governance reforms and received a market-based or a similar system credit rating. All new borrowing should be in compliance with the debt limits (Liu and Pradelli, 2012).

The second issue is to determine the standard thresholds for each of these ratios. Determining fiscal sustainability at the local government level is a country-period-specific exercise, which depends on the growth rate, primary balance, interest rates, and the creditworthiness of the government. For example, countries with higher growth rates, lower interest rates, and conservative fiscal policies should have higher debt limits (Liu, 2010).¹³

Additional fiscal rules for SPVs In addition to the above indicators (iii) and (iv), Liu and Pradelli (2012) proposed some further regulations on SPVs' borrowing – that they should be set to take into account their nature and the services they provide. In addition, regulations can be imposed on lenders to contain the risks of non-performing loans from this sector. Lenders must set aside risk-adjusted capital reserves with higher reserves required for less creditworthy SPVs. If an SPV has a lower credit assessment, the required capital reserve could be raised to discourage lending to such SPV (Liu and Pradelli, 2012).

Midterm fiscal framework In some Latin America economies, to ensure that fiscal accounts move within a sustainable debt path and to better respond to shocks and cyclicalities that affect local government finance, the ex ante regulatory framework also requires that local governments establish a midterm fiscal framework and a transparent budgetary process. The latter facilitates debates by executive and legislative branches on spending priorities, funding sources, and required fiscal adjustments (Liu and Waibel, 2011).

Fiscal transparency Another aspect of ex ante regulation is to carry out measures to ensure fiscal transparency. These measures include having an independent audit of subnational financial accounts, making periodic policy disclosures of key fiscal data, exposing hidden liabilities, and moving off-budget liabilities on budget. In India, several states have started to move off-budget liabilities onto the budget and have introduced a measure of consolidated fiscal deficit broader than the conventional fiscal deficit (Liu and Waibel, 2011).

Fiscal rules in Asia

A number of Asian economies have established fiscal rules as a tool to maintain fiscal discipline. The nature of these rules is summarized in Table 1.10. It is not always easy for countries to follow their rules, however. Of the four economies in Table 1.10, only Hong Kong, China has generally been successful in keeping to the rules, reflecting its generally strong fiscal conditions and low levels of expenditures.

Indonesia and Thailand have also established debt management offices to increase the efficiency of their fund-raising activities. The objectives of these offices (summarized in Table 1.11) can be seen primarily as ways to reduce the cost of government debt. However, they have only been established recently, and it is unclear to what extent they can actually contribute to lowering the amount of government debt. The Philippines has recently begun developing mechanisms to measure and monitor subnational

Table 1.10 Elements of fiscal rules in Asia

| Economy | Expenditure rule | Revenue rule | Budget balance rule | Debt rule | Key elements of fiscal rules |
|------------|------------------|--------------|---------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hong Kong, | | | Yes | | The budget should always display an operating surplus, i.e., an excess recurrent revenue over recurrent expenditure. Originally, the target was to reduce the fiscal deficit to 3% of GDP by 2008. The escape clause in the fiscal rule law (FRBMA) allows the government not to comply with the targets in exceptional circumstances 'as the central government may: Total central and local government debt specify'. |
| China | | Yes* | | | |
| India | | | | | |
| Indonesia | | | Yes | Yes | DR (since 2004) should not exceed 60% of GDP. BBR: The consolidated national and local government budget deficit is limited to 3% of GDP in any given year. |
| Japan | Yes | | Yes | | ER: The Fiscal Management Strategy in effect since 22 June 2010 introduced a Medium-term Fiscal Framework including an 'Overall Expenditure Limit' (the amount of the General Account Expenditure, excluding debt repayment and interest payment, should not exceed that of the previous fiscal year). BBR: The Fiscal Management Strategy introduced in 2010 (with effect of 2011) a pay-as-you go rule, which implies that any measure that involves increases in expenditure or decreases in revenue need to be compensated by permanent reductions in expenditures or permanent revenue-raising measures. |

Notes:

BBR = budget balance rule, DR = debt rule, ER = expenditure rule, FRBMA = Fiscal Responsibility and Budget Management Act 2003, GDP = gross domestic product.

* Implemented by the Government of India until 2008.

Source: Budina et al. (2012).

Table 1.11 Role of debt management offices in emerging Asia

| Country | Objectives |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indonesia | <ul style="list-style-type: none"> • Manage government debt portfolio in an effective, transparent, and accountable manner • Control debt issuance and procurement by maintaining a borrowing capacity that supports fiscal sustainability • Establish development financing independence by prioritizing domestic financial sources and developing an efficient and stable domestic market • Promote international cooperation in obtaining alternative financial sources as well as supporting regional financial market stability |
| Thailand | <ul style="list-style-type: none"> • Manage public debt to achieve low costs subject to acceptable risks • Develop the domestic bond market to be one of the three main pillars of the financial market • Evaluate and mobilize feasible funds to finance government's infrastructure products • Modernize technology to support the Public Debt Management Office's operations |

Sources: Ministry of Finance of the Republic of Indonesia; the presentation of Mr. Widjanarko, Director, Directorate General of Debt Management at the 8th UNCTAD Debt Management Conference, Geneva, 14–16 November 2011; and Public Debt Management Office of Thailand (<http://www.pdmo.go.th/en/about.php?m=about> accessed on 15 February 2016).

liabilities, and the department intends to create an early warning system to identify impending local debt defaults.

Ex post insolvency mechanisms

Although ex ante regulations could mitigate the possibility of a fiscal crisis of local governments, insolvency could still occur, potentially due to mismanagement or external shocks that are beyond their controls. To complement the ex ante regulations, ex post regulation is designed to deal with an insolvent local government. If a local government becomes insolvent, negotiations with each creditor are costly, impracticable, and potentially harmful to the interests of other creditors, especially when the number of creditors is large, such as in the case of local government bond issues. Therefore, a collective framework for resolving debt claims is more appropriate. Moreover, a clear and transparent insolvency mechanism allows collective enforcement and facilitates efficient debt adjustment (Liu and Waibel, 2011).

A well-designed insolvency mechanism has multiple objectives: (i) enforcing hard budget constraints on local government; (ii) permitting an insolvent local government to maintain the provision of essential services; and (iii) restructuring local government debts and reorganizing debt management, restoring financial health and facilitating the ability of that government to reenter the capital market later. Designing an insolvency mechanism should take into account differences between public and private insolvency, choices between judicial or administrative approaches, and the operation of insolvency procedures (Liu and Waibel, 2011).

Public versus private bankruptcy The difference between public and private bankruptcy lies in the nature of services provided by public organizations. Even when government agencies become insolvent, the services they provide should be maintained. Moreover, many countries do not allow creditors to attach the assets of local governments as they do private sector assets. Additionally, local governments typically have some taxation power. Thus, the insolvency framework needs to balance incentives for the local governments to move out of bankruptcy and the need to repay creditors. In principle, the insolvency framework should take into account issues such as equitable sharing of adjustment costs, a limitation on the local government's ability to provide nonessential services, and a limitation on creditors' remedies, including the cancellation of debt (Liu and Waibel, 2011).

Judicial versus administrative approaches There are two major approaches to subnational insolvency: judicial and administrative approaches. Various hybrids also exist. Under judicial procedures, the courts make key decisions to guide the restructuring process, including when and how a municipal insolvency is triggered, the priority structure for allocating repayments to competing claims, and deciding which services should be continued. The advantage of this approach is that it minimizes political pressures. Administrative approaches usually allow a higher level of government to intervene in the entity concerned, temporarily taking direct political responsibility for many aspects of financial management.

Insolvency procedures An effective insolvency procedure contains three main elements: (i) definition of the insolvency trigger for the procedure; (ii) fiscal adjustment by the debtor to bring spending in line with revenues and borrowing in line with the capacity to service debt; and (iii) negotiations between the debtor and creditors to restructure debt obligations. Each country has its own legal definitions of procedural triggers for starting insolvency proceedings. For example, Hungary and the United States

define insolvency as inability to pay; South Africa uses one set of triggers for serious financial problems and another for persistent material breach of financial commitments.

Debt restructuring lies at the heart of any bankruptcy framework. In administrative interventions, the higher level of government often restructures the local government's debt obligations into longer-term debt instruments. However, administrative procedures tend to lack the power to discharge debt. Insolvency laws attempt to balance creditor rights, the inability of a subnational entity to pay, and the continued need of the subnational governments to provide essential public services. It formalizes the relationship between creditors and the subnational debtors in financial distress. Insolvency laws preserve the legal order by superseding contractual violations with a new legal act. A procedure for local government insolvency recognizes that resolving financial distress through mechanisms guided by law is preferable to muddling through repeated, costly, and often unsuccessful negotiations.

Insolvency mechanisms in Asia

While some Asian economies have adopted *ex ante* measures to manage local government sustainability, except for Japan and, to some extent, the Republic of Korea, none of them has developed a comprehensive *ex post* insolvency mechanism. The Republic of Korea introduced local financial analysis and diagnosis (LFAD) in 2005 to guarantee soundness, efficiency, and accountability of local fiscal management. If a local government proves to be inefficient and unsound in its financial management, it is subject to a financial diagnosis and is required to devise a recovery plan in cooperation with the central government. Once the plan is executed, an evaluation of performance is carried out. However, the LFAD system could not provide a detailed procedure to deal with the insolvency of the local governments. In 2007, the Government of Japan enacted the 'Law Relating to the Financial Soundness of Local Governments'. This law requires local governments to publish their financial statistics. It also proposes procedures to enable local governments to decide on mechanisms to restore financial soundness as well as formulate plans aimed at promoting the sound management of public enterprises. The law also identifies administrative and financial measures for the implementation of such plans.

Need for capacity building

The decentralization process has placed substantial administrative and institutional burdens on local governments in most of the Asian economies. This is partly due to poor public financial management capacities in most of the Asian economies, except for Japan and the Republic of Korea.

Upgrading of public expenditure management needs to be accompanied by strengthening the capacity of local civil servants. Some measures could be adopted by Asian economies such as increasing cooperation with local regional universities to design special public financial management or rotating local government officials as in Japan. Furthermore, the central government could have measures to (i) consolidate and simplify the public financial management regulatory regimes for local governments; (ii) enhance training with regard to core regulatory requirements; (iii) provide incentives for local government officials to undertake professional study and training; and (iv) adopt new teaching technology through e-learning courses and opportunities (linked to professional accreditation) for local government officials.

To facilitate public expenditure management at the local level, the capacity of civil servants in the central government should also be enhanced. For example, in the Philippines, such capacity-building programs have equipped civil servants in the central government with knowledge to support fiscal innovations by local governments.

1.8 CONCLUSIONS AND POLICY IMPLICATIONS

As discussed in sections 1.2 and 1.4, Asian developing economies have a long way to go in their process of fiscal decentralization.¹⁴ Issues that Asian economies face include (i) unclear and overlapping expenditure assignments; (ii) mismatches between expenditure responsibility and revenue responsibility; (iii) mismatches between responsibilities and authority, reflecting limited discretion and power in both expenditure decisions and revenue-raising authority; (iv) rising horizontal fiscal imbalances; (v) increasing informality of fiscal activities; (vi) weak local capacity in carrying out their fiscal management responsibilities; and (vii) issues relating to local government borrowing. The underlying issue is that the central government is the agency that designs the relationship between the central and local governments in many Asian economies.

Moreover, the fiscal decentralization literature has identified a number of factors that can impact negatively on welfare gains from decentralization:

- local elites or powerful interest groups having a substantial scope to capture spending decisions;
- lack of transparency of local government operations, due to their poor public financial management systems;

- excessive fragmentation of local jurisdictions, which ultimately limits the benefits of economies of scale in certain types of spending (e.g., infrastructure);
- fuzzy assignments of spending responsibilities across levels of government; and/or the central government being excessively involved in local spending decisions; and
- inadequate intergovernmental transfer systems to compensate for mismatches in revenue-raising capacities and spending needs (related to, e.g., geographic or demographic factors) among jurisdictions.

Asian economies' fiscal decentralization processes contain all of the above-named factors that can have negative welfare effects. This implies that these economies need to tackle a number of issues to enable fiscal decentralization to improve their citizens' welfare.

1.8.1 Reassessing the Roles of Central Governments in the Decentralization Process

The central government plays an important role in managing decentralization. To make decentralization work, the central government should reassess its role in the process, including:

- creating a platform for the participation of all the relevant parties, including jurisdiction citizens in the decentralization process;
- assigning an adequately powerful agency to manage the decentralization process at all levels of government;
- playing an active role in raising the capacity of local governments;
- setting up mechanisms to hold local governments accountable in fulfilling their responsibilities; and
- avoiding micromanagement and reassertion of its authority.

1.8.2 Expenditure Assignments

Getting the relationship between the national and local governments right is pivotal for a successful decentralization process that supports fiscal stability. In most Asian developing economies, expenditure assignments may need to be reassessed. The roles of each level of government's expenditure responsibilities should be clearly stipulated, and there should not be overlapping assignments among levels of governments or among government agencies at the same level. Assignments should take into account the resources available to local governments, and unfunded mandates associated with social welfare services seen in many economies should be avoided.

1.8.3 Revenue Assignments

Resources should be matched to the extent possible with the functions that the central government has assigned to local governments.

- There are some potential sound and productive sources of revenue that the central governments in Asia could assign for local governments, including fuel and vehicles taxes; property taxes; payroll taxes; and surcharges on the central personal income tax, sales taxes, and business taxes. For property taxes, revaluation of property values should be done regularly to ensure that they reflect market values.
- Local governments should be permitted to establish their own taxes, within a flexible framework proposed by the central government. However, this should be accompanied by regulations to avoid a situation wherein local governments create a large number of nuisance taxes.
- Distortions caused by taxes should be carefully monitored and kept to a minimum.
- Allowing local governments to establish their own local taxes should be accompanied with improving their tax administration, including strengthening the capacity of such administration.
- There should be an adequate regulatory framework for adoption of public-private partnerships.

1.8.4 Intergovernmental Fiscal Transfers

Having a well-designed system of intergovernmental fiscal transfers is very important for realizing the benefits of decentralization in Asia. There are a number of actions that Asian economies should take to achieve this.

- The central governments of Asian economies should assess transfer mechanisms in relation to the equalization goals and priorities regarding income levels, fiscal capacity, expenditure needs, and per capita revenues.
- For economies that have adopted formula-based equalization grant calculations, those formulas should be updated regularly, not only to capture increasing expenditure needs but also changes in revenue capacity. The formulas should also be improved to increase their transparency and the predictability of revenues.
- Performance-based conditional grants should be adopted as an important instrument for intergovernmental transfers, but care should be taken to minimize negative incentive effects.

1.8.5 Fiscal Risks and Fiscal Sustainability

To mitigate fiscal risks, Asian economies should have strategies to better manage the borrowings of local governments and quasi-local government agencies. Asian economies should improve their local government financial information management systems and integrate them into the national finance information system.

Central governments in Asia should consider changing their current approach to controlling local government borrowings from the administrative control approach to either rule-based approaches (for developing economies) or a mixture of rule-based and market-based approaches (for economies with well-developed financial markets).

Budget constraints should be hardened. Central governments should commit to a no-bailout policy to discourage local governments from running unsustainable deficits. Some policies to harden budget constraints include (i) giving more expenditure and revenue-raising autonomy to local governments, and (ii) stopping unconditional bailouts of local governments that experience large fiscal deficits or fiscal crises.

Land financing should be limited in countries where land is used as the main form of financing for major infrastructure projects. In case land financing is used, land values should be evaluated at the beginning of the project, not after the project finishes.

Local government bond markets should be deepened, and the range of bonds should be expanded. This implies that Asian economies should further strengthen their bond market regulations and standardize reporting and monitoring frameworks. The credit analysis skills of civil servants and rating agencies should be improved.

Central governments in Asian economies could also require local governments to develop midterm fiscal frameworks and transparent budgetary processes. Ex ante fiscal rules should be embedded in such frameworks. Fiscal transparency at the local government level should also be improved. To better manage the borrowings of local governments and increase the efficiencies of funds raised, Asian economies could also establish debt management offices similar to those in Indonesia and Thailand.

So far, most Asian economies lack a mechanism to deal with insolvency of local governments. Three factors should be taken into account in designing an insolvency mechanism: (i) distinguishing between insolvency of local governments (and other quasi-local government agencies such as SPVs) and that of private firms; (ii) determining the approaches to deal with insolvency; and (iii) designing the insolvency procedures.

Besides designing ex ante regulations and ex post insolvency mechanisms, Asian economies could set up an early warning system. Having such

a system could help to identify local governments with high fiscal risks, and enable them to take necessary actions to prevent fiscal crises. ADB (2014) proposed a core set of early warning indicators, including debt burden, ratio of debt to on-budget revenue, debt service ratio, debt dependency ratio, and share of short-term debt.

1.8.6 Capacity Building

Upgrading of public expenditure management needs to be accompanied by strengthening the capacity of local civil servants. Some measures could be adopted by Asian economies such as: (i) increasing cooperation with local regional universities to design special public financial management courses; (ii) rotating local government officials; (iii) consolidating and simplifying the public financial management regulatory regimes for local governments; (iv) enhancing training with regard to core regulatory requirements; (v) providing incentives for local government officials to undertake professional study and training; and (vi) adopting new teaching technologies for local government officials. The capacity of civil servants in the central government should also be enhanced.

NOTES

1. Indonesia and the Philippines adopted decentralization policies after the fall of authoritarian regimes (the Philippines' Marcos in 1986 and Indonesia's Suharto in 1997). Meanwhile, the dominance of the military in politics, coupled with pro-democracy movements, led to the development of decentralization frameworks. The PRC and Viet Nam embarked on decentralization in response to increasing demands by people for participation in development and for good governance at the local government level (White and Smoke, 2005).
2. But in practice, local governments in the PRC have different methods to overcome fiscal constraints, including use of off-budget solutions and 'inappropriate' use of loan funds. Moreover, they have freedom in using nontax revenues.
3. However, there is a duplication of tax bases between national tax and local taxes. For example, individual and corporate incomes and corporations are taxed at the national, prefecture, and municipal levels and private consumption is taxed at the national and prefectural levels (Aoki, 2008).
4. This trend, however, has not been seen recently (Manasan, 2015).
5. Paternal programs are ones in which higher levels of governments finance equalization at lower levels; fraternal programs are programs in which governments at the same level establish a common pool, to which rich jurisdictions contribute and from which poor jurisdictions draw.
6. While some sources estimate this figure to be about \$120 billion, of which one third is commercial borrowing, other sources argue that this figure could amount to \$1,700 billion with additional lending commitments of \$1,900 billion (i.e., more than 40 percent of GDP) (Lewis and Searle, 2010; Naito, 2015).
7. The jurisdiction's 'production potential' is directly related to the quality and quantity of the local labor force (Hagist and Vatter, 2009).

8. For example, trade-related shocks have had comparatively large impacts on countries with high degrees of export concentration; vulnerability to changes in the terms of trade; and dependence on tourism, emigrant remittances, and foreign direct investment. Meanwhile, sudden stops in capital flows have tended to affect more frequently and strongly countries relatively more dependent on external financing (i.e., with large current account or fiscal deficits, or large external debt refinancing needs); more dollarized; with inflexible exchange rate regimes; and with weaker financial systems (Fanelli and Jimenez, 2009).
9. ‘Borrowing platforms’ are entities, either a local-government-owned corporation or a public financial institution, which takes bank loans on behalf of the local government and which is backed by government guarantees, collateral such as land or other public property, or a legally secured future cash flow of the projects concerned (Fan and Lu, 2012). An SPV is also a type of borrowing platform.
10. According to Elliot, Kroeber, and Qian (2015), the size of shadow banking in the PRC was about CNY25 trillion, or 43 percent of GDP in 2013, much smaller than the size of the shadow banking in the United States, which was 150 percent of GDP.
11. Recently, the PRC authorities have issued a number of documents and guidance to strengthen the regulation of shadow banks, and to outline the framework and principles regulating how local governments raise, use, and repay their debts. The Ministry of Finance also approved a local debt swap scheme (Naito, 2015).
12. The PRC central government has recently recognized the risk of local governments caused by using land as collateral for borrowing, and required banks to provide loans to local governments at their current market value rather than at their projected value after the investment (Naito, 2015 and Sano, 2014).
13. For more details on analytical tools for monitoring subnational debt indicators and determining debt thresholds, see Liu and Pradelli (2012).
14. See Appendix Table 1A.1 for a summary of intergovernmental fiscal relationships in selected Asian economies.

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APPENDIX

Table 1A.1 Summary of intergovernmental systems in selected Asian economies

| | Resource adequacy | Fiscal discretion | Performance incentives | Management capacity |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Japan | LG current and capital resources adequate | Tax authority over rates and bases limited. Spending controlled to a large degree by CG through delegation of responsibility and mandates | CG uses incentives in block grants to encourage revenue effort. Some performance incentives incorporated into specific purpose grants | High-quality tax administration and expenditure management, within narrowly assigned responsibilities |
| Korea, Republic of | LG current and capital resources seem adequate. Recently increasing pressure due to additional demand for social welfare services | Authority over local tax bases and rates is limited. LGs have reasonable control over spending their own-source revenue, but other spending is controlled to a large degree by central government | Some incentive mechanisms to encourage better performance | Good quality tax administration although too little use of tax rate authority. Good expenditure management |
| People's Republic of China | LG resource constraints, increasingly problematic, especially at the lowest level of government | Limited formal fiscal discretion. Off-budget activity significant | Performance incentives focused on economic development | Good quality tax administration and expenditure management, albeit significant variation |
| India | Large urban LG resources reasonably adequate; small urban and rural LGs severely resource constrained | LGs have little fiscal discretion. States control local taxing and spending to a large extent | States have made significant use of incentives, but reward focus on past not future behavior | Weak tax administration and expenditure management |

| | | | | |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indonesia | Some LGs have insufficient funds | LGs set tax rate under the centrally imposed ceilings; LGs have nearly complete discretion over spending | Used to use performance incentives, block transfers, but discontinued | LGs need to reinforce their tax administration and spending management. Large cash reserves |
| Philippines | Inadequate resources for many LGs, particularly municipalities | LGs set some tax rates but can make changes only every 3 years. CG influences LG spending; unfunded mandates rising | Explicit use of incentives limited to employment of transfer intercept in cases of nonrepayment of loans | LGs need to improve taxes and spending management. Significant cash reserves |
| Thailand | LGs resources need to be linked to responsibilities and the legislated amount of the shared tax transfer should reflect these responsibilities | Taxing discretion limited to minor charges/fees; spending heavily influenced by CGs | No experience with performance incentives | Using some measures to increase local efforts to improve taxes administration and expenditure management – such as tax system computerization and contracting out services |
| Viet Nam | LGs resource adequacy questionable; especially for development and maintenance of infrastructure | LGs have limited tax authority. Moderate discretion over management of service delivery | No experience with performance incentives | Tax administration completely centralized. Spending reasonably well managed, low wage bills |

Note: LG = local government, CG = central government.

Source: Lewis and Searle (2010).

2. Looking beyond conventional intergovernmental fiscal frameworks: principles, realities, and neglected issues

Paul Smoke

2.1 INTRODUCTION

Fiscal decentralization and intergovernmental relations have been prominent aspects of public sector reform in developing countries for decades. Actual performance, however, has often lagged expectations, both in terms of policy (relative to design principles and the extent to which systems are implemented as designed) and results (fiscal outcomes – local revenue generation, and use of intergovernmental transfers, among others – as well as developmental and governance goals).¹

The lackluster performance is a function both of how the mainstream framework is used and its basic limitations. While beneficial, the framework is normative and dominantly technical, and it fails to consider key elements of context that intrinsically shape how decentralization is designed and performs. There is consensus in the literature that context matters for decentralization, but the usual catalog of factors – degree of development, nature of the system (federal versus unitary), levels of capacity, and ‘political will’, among others – does not do justice to the scope and variety of potentially pertinent concerns. Even if basic principles were interpreted in a more expansive and nuanced way for system design, there are typically compelling implementation challenges that also merit specific attention. Although the mainstream approach has been invaluable in many countries and in various respects, it is on its own fundamentally insufficient to shape pragmatic policy.

The next section provides a short synopsis of the broader landscape of fiscal decentralization, highlighting some key assumptions and expectations of the mainstream approach, as well as some of the challenges encountered in applying it. This is followed by a selective overview of

Asian countries that have pursued decentralization, illustrating the great diversity of intergovernmental systems even in one region.² The following section turns to neglected factors underlying the shape fiscal decentralization takes, with an emphasis on a range of political economy factors and the lack of adequately strategic implementation. Finally, a summary and some suggestions are provided regarding how to think about intergovernmental fiscal relations more productively and pragmatically, and a few avenues for future research are outlined.

2.2 THE LANDSCAPE OF FISCAL DECENTRALIZATION AND INTERGOVERNMENTAL RELATIONS

The starting point for considering alternative ways to think about intergovernmental fiscal relations is to evoke the fundamentals of conventional thinking. This section briefly reminds the reader of some basics,³ and then reviews selected recognized challenges to applying the mainstream approach.

2.2.1 The Basics

Several elements are commonly considered essential to create an enabling environment for sustainable subnational government fiscal performance. First and foremost, clearly defined constitutional and/or legal provisions regarding fiscal structure are required. Basic principles for assigning public functions and revenues to subnational governments are well documented elsewhere.⁴ It is sufficient here to indicate that they involve determining appropriate local functions (considering spatial demand heterogeneity relative to scale economies and externalities) and revenues (with a concentration on benefit taxes and immobile tax bases). Additional principles cover the sharing of national resources with subnational governments in order to meet desired objectives (such as revenue adequacy, improving efficiency, and/or equity, among others).

In addition to basic provisions for dividing functions and resources, it is considered important to define accountability relationships – with citizens through elections (if there is devolution) and/or other local means, with higher levels of government, and between legislators and administrators at the subnational level.⁵ Structures and managerial processes of local administration and governance need to be set up or modified. All levels require appropriate staffing, planning, budgeting, public financial management, and audit systems, among others. There is a general appreciation

that these elements should create an effective balance between reasonable fiscal autonomy exercised by subnational levels to promote downward accountability and legitimate upward accountability to help ensure standards and deal with national interest concerns. Frameworks are needed to enable local governments to partner with peer governments, private sector firms, and nongovernment organizations in the execution of their duties. Such provisions include, for example, mechanisms for joint undertakings, procurement regulations, and public–private partnerships.

As if these fiscal, political, and administrative requirements were not sufficiently demanding, there are other elements of the broader legal framework that are not specific to decentralization, but that likely condition the ability of subnational governments to perform as conventional theory expects. These include, for example, rule of law, property rights, civic association rights, and freedom of information and media, among others.

2.2.2 Commonly Recognized Challenges

National governments often follow the basic logic of the core fiscal decentralization principles in shaping intergovernmental fiscal policy and generally also take some steps to deal with the additional structures, procedures, and non-decentralization-specific elements of the broader public sector framework noted above. At the same time, there are well-acknowledged challenges to pulling everything together.⁶

First, even the most technical aspects of intergovernmental system design are not entirely straightforward to manage. Various trade-offs are inherent in the fiscal decentralization principles, making their application potentially difficult and contentious. If the framework is applied in a diligent way, hard decisions will still have to be taken, and there will be a need for inherently elusive coordination among elements of the system that may be primarily influenced by different actors. For example, particular services may be devolved without a strong linkage to the structure of intergovernmental finances. Getting the elements of the system to work together can be a daunting task.

Second, decentralization policy and intergovernmental system designers and implementers are often constrained by a deficit of adequate and reliable information. Even data that exist may be managed by separate agencies, be defined in a way that does not sufficiently capture what needs to be measured, cover different time periods, or be modified over time, among others. Without the right information, designing and managing intergovernmental relations effectively can be hindered.

Third, lack of capacity is also recognized as an important constraint

on advancing intergovernmental fiscal relations and effective local fiscal performance. Even with a well-designed system, low-capacity local governments will be unable to act so as to realize the potential benefits of decentralization in terms of how they raise resources, use transfers, and manage public expenditures. There has been much attention to capacity building, but also concerns that conventional approaches have not met their objectives.

Fourth, interjurisdictional variations may be inadequately considered in setting up intergovernmental systems. Regional, provincial, and metropolitan governments are often in a position to assume major functions and raise substantial revenues if offered the opportunity, but conditions can be substantially different in more rural and more remote locations with less diversified economic bases and a high incidence of poverty.

Finally, the importance of political obstacles to productive decentralization and intergovernmental relations is recognized, but often in a fairly ad hoc way and/or in terms of the vague assertion that there is not adequate political will to apply fiscal principles appropriately.⁷ So-called 'second generation' fiscal federalism focuses on issues that move beyond the technical concerns of first generation theory, but not in an integrated way.⁸ And while the point about political will may in a general sense be correct, the implication that politicians should just follow the normative advice of fiscal experts is not a very powerful approach for formulating how to improve on the status quo.

2.3 THE DIVERSITY OF ASIAN EXPERIENCES

Having briefly reviewed mainstream thinking, it is useful to ground the discussion in a review of how selected countries in Asia have organized their systems. This section briefly compares eight Asian countries – Bangladesh, Cambodia, India, Indonesia, Pakistan, the Philippines, Sri Lanka, and Viet Nam.⁹ This discussion summarizes key fiscal matters that are treated in more detail elsewhere, but there is also coverage of other elements of the intergovernmental systems expected to affect fiscal performance.¹⁰

2.3.1 Overview

At the risk of stating the obvious, decentralization occurs in countries of all sizes and in highly diverse contexts. Countries differ by physical area and the size and composition of the population, among many others. Some countries have reached middle-income status, while others are still poor. A number of countries have long experience with decentralization

and democratization, while others have been more centralized and less openly governed. While some countries are relatively stable, others are in postconflict or conflict situations. Many of these characteristics surely influence how decentralization is pursued, although not always in apparently systematic ways.

To demonstrate the diversity involved, several basic comparisons of the eight countries listed above are provided.¹¹ There is significant variation in the structure of their intergovernmental systems, their decentralization policy frameworks, and how they compare in terms of subnational powers and functions. There are also major differences in their levels of local autonomy and the nature and strength of their subnational accountability mechanisms. These considerations go well beyond traditional fiscal concerns, but are important because, as noted above, they can influence how decentralization and intergovernmental relations unfold on the ground.

This synopsis is neither comprehensive nor authoritative, and there are deficiencies and ambiguities in the underlying data. The purpose is not to be definitive, but to provide a sense of extreme differences across countries and suggest that conventional fiscal decentralization frameworks do not adequately take into account certain diverse contextual characteristics that necessarily affect intergovernmental relations and how subnational governments function and perform. Note that this section mostly describes the country systems – underlying drivers of reform are further explored in section 2.4.

2.3.2 Fundamental Intergovernmental Structures

Most countries considered here – with the exceptions of India and Pakistan – are unitary governments. This means that the national government is the center of power and makes decisions regarding decentralization to lower tiers. In the federal systems, the states or provinces have some control over the roles of local bodies.

Each country uses multiple types of subnational government (see Table 2.1). The situation is further complicated by the fact that various units listed in the table need not be at different levels – for example, there can be multiple types of subnational government at the same level, such as the more urbanized *kota* and less urbanized *kabupaten* in Indonesia, which have comparable legal status. Certain levels are devolved units with elected governments and autonomous powers, while others are deconcentrated administrative entities.

Relationships among levels can also vary – some are fairly autonomous while others are more hierarchical, leading to differences in intergovernmental relations that surely affect performance. In certain cases, such as

Table 2.1 Subnational government systems

| Subnational levels/Types of government | |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bangladesh | <ul style="list-style-type: none"> ● Rural local (<i>parishads</i>): <i>zila</i> (districts, 64); <i>upazila</i> (subdistricts, 510); union (5,000) ● Urban local: city corporations (11); <i>pourashavas</i> (municipalities, 315) ● Hill district authorities (3) |
| Cambodia | <ul style="list-style-type: none"> ● Provinces (23, including 3 municipal) and capital ● Districts (159) and municipalities (26) ● Communes and <i>sangkat</i> (municipal communes, 1,621) divided into villages |
| India | <ul style="list-style-type: none"> ● States (28, 11 special status) and union territories (7) ● Urban local: municipal corporations (138), municipalities (1,595), towns (2,108) ● Rural local (<i>panchayati raj</i>): <i>zila</i> (districts, 593), <i>samities</i> (blocks, 6,087), <i>gram</i> (villages, 239,432) |
| Indonesia | <ul style="list-style-type: none"> ● Provinces (34, of which 5 are special regions) ● Local governments: <i>kota</i> (cities, 98), <i>kabupaten</i> (rural districts, 410), special capital, district ● <i>Kecamatan</i> and <i>desa</i> (subdistricts and villages, 69,249) – these two lower tiers have limited formal roles, although the role of villages is being increased |
| Pakistan | <ul style="list-style-type: none"> ● Provinces (4), territories (4), and capital territory ● Districts (<i>zilas</i>, 96); <i>tehsils</i> (337); unions (6,022) |
| Philippines | <ul style="list-style-type: none"> ● Regions (18, 1 autonomous) ● Provinces (79) ● Cities (112), municipalities (1,496), <i>barangays</i> (villages, 41,944) |
| Sri Lanka | <ul style="list-style-type: none"> ● Provinces (9) ● Urban: municipal councils (large urban areas, 23); urban councils (smaller urban areas, 41) ● Rural: <i>pradeshiya sabhas</i> (rural, 257) |
| Viet Nam | <ul style="list-style-type: none"> ● Provincial level: provinces (58) and (centrally controlled) municipalities (5) ● District level (700): provincial cities/urban districts, towns, and rural districts ● Commune level (>11,000): townships, communes (rural), and wards (urban) |

Sources: World Bank online data; Local Development International (2013); Smoke (2013a); World Bank (2015a); and European Commission (2015).

India, Indonesia, and the Philippines, there are special states or regions with some type of preferential treatment, and capital (and/or other major) cities may have a specific designation.

2.3.3 Essentials of the Intergovernmental Policy Framework

Each of the countries under consideration has developed a decentralization and intergovernmental relations policy framework. There is, however, much variation across countries – in terms of the constitutional and/or legal foundations of the system, the nature and strength of empowerment and intergovernmental relations, and other factors.

All countries here have formalized decentralization in a constitution, a stronger provision than law to the extent that it is more difficult to change, but the degree of detail differs. In Cambodia and Pakistan, the Constitution refers only in a general way to local government. Other countries define more specific roles of each level in the Constitution (Sri Lanka) or laws (Indonesia, the Philippines). In some cases, constitutional reform initiated decentralization, while the framework was retrofitted to match evolving policy elsewhere.

Despite constitutional and legal mandates, needed subsequent laws further detailing decentralization design and operations often remain incomplete or fragmented. In some cases, this is because decentralization is in earlier phases, but in others it may reflect intentional delay of the reform process (see the political economy discussion in section 2.4). There is not uncommonly weak coordination of reform, resulting in policy inconsistencies that weaken the prospects for subnational governments to play their intended role.

In India, Pakistan, Sri Lanka, and Viet Nam, intermediate tiers are more prominent than local tiers. In contrast, Indonesia and the Philippines privilege local tiers. Design can also be based on other factors. Bangladesh, India, and Sri Lanka, for example, empower urban more than rural areas. In some cases, relationships among levels are hierarchical, as in Bangladesh, Sri Lanka, and Viet Nam, as are state–local relations in the federal countries. In other cases, each level is more independent, as in Indonesia and the Philippines, indicating a need for dedicated efforts to coordinate levels as needed.

Although space limitations preclude detailed treatment here, other major aspects of the intergovernmental framework, including the nature and strength of fiscal rules, subnational oversight mechanisms, management systems, and partnership frameworks, are generally provided for.¹² A few countries have more advanced policies on multiple fronts, but their relevance varies since local governments in some cases have limited autonomy

and/or do not significantly use revenue and borrowing powers accorded to them.

Other elements of the framework are detailed to various degrees. Development planning and public financial management (PFM) systems are officially in place in each country (in India and Pakistan, local procedures are regulated by the state or province), but in some cases, such as Bangladesh and Sri Lanka, they are less developed, and not all countries have dedicated subnational PFM. The PFM systems are rarely strong, but in all cases there appear to be ongoing efforts to improve them. While there is movement to adopt medium-term expenditure frameworks, linkages between development plans, public investment programs, and annual budgets are a weakness in the countries covered here. Some countries, such as Indonesia and the Philippines, have made progress, but there are not exemplary cases of countries overcoming this significant system flaw.

2.3.4 Subnational Government Fiscal Empowerment

The degree of fiscal empowerment of subnational governments and their role in public spending varies greatly.¹³ In most cases, subnational expenditure¹⁴ constitutes 20–35 percent (the mix varies among levels) of the total, but with outliers. Subnational spending in Sri Lanka and Bangladesh is respectively less than 1 percent and 3 percent (not including deconcentrated spending), compared with 56 percent in Viet Nam and 66 percent in India. Functions are often shared across multiple levels, and there is a tendency for lower spending shares at the more local levels (with exceptions, such as Indonesia and the Philippines).

The extent and clarity of expenditure assignments vary, but subnational government roles are often subject to interpretation and contestation. Even with greater formal clarity, as in Indonesia and the Philippines, there is ongoing ambiguity and debate. On balance, there is a propensity for ample oversight – even interference – from higher levels. In the majority of these countries, decentralized revenue sources (including borrowing) are fairly limited and not very productive, although performance in urban areas is often better. Most subnational governments in these cases heavily rely on intergovernmental transfers (see Table 2.2). A number of countries (Indonesia, Pakistan, and the Philippines) share a few individual national taxes, but only in Viet Nam does this approach dominate subnational finances. Unconditional transfers are the main revenue in Indonesia and the Philippines. Revenue sharing by formula (federal to state and state to local) is substantial in India, but the latter transfers are governed by individual state finance commissions, so there is considerable diversity. Unconditional transfers are also important in Cambodia, Pakistan, and

Table 2.2 Shared taxes and intergovernmental transfers

| | Shared taxes | Unconditional transfers | Conditional transfers |
|-------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bangladesh | No major individually shared taxes | Annual Development Program Block grant is a modest program based on a formula | Most transfers are earmarked for salaries, ministry activities, and development projects (including aid) |
| Cambodia | No major individually shared taxes | Formula-based commune and district block transfers; low share of national revenues; system evolving | Provinces receive line ministry allocations, not transfers; conditional transfers allowed but not widely used |
| India | Limited individual tax sharing (state to local varies); shared goods and services tax under development | Federal government shares with states by formula a large revenue pool, state finance commissions allocate to lower levels; federal transfers to locals go through states | Conditional transfers have been growing (most from ministries, some through major schemes); allocated in various ways; use of performance-based grants is on the rise |
| Indonesia | Selected taxes/state-owned enterprise revenues shared with subnational levels | Formula-based Dana <i>Alokasi Umum</i> revenue sharing accounts by law for at least 26% of domestic revenues | <i>Dana Alokasi Khusus</i> initially limited, but funding has grown, with required matching and performance conditions |
| Pakistan | 2.5% of general sales tax; provincial tax piggybacking allowed | Provinces rely on unconditional transfers; some provinces (e.g., Punjab) make transfers to districts | Ad hoc federal and provincial grants are earmarked for local recurrent and capital spending |
| Philippines | National wealth composite (national revenues from certain bases) and tobacco excise tax shared | Internal Revenue Allotment (>90% of transfers) allocates by formula 40% of internal revenues; 23% each to provinces and cities, 34% to municipalities, 20% to <i>barangays</i> | Minor categorical but not highly conditional grants, including the Municipal Development Fund, the Local Government Empowerment Fund, and the Calamity Fund |
| Sri Lanka | No major individually shared taxes | Finance Commission allocates ad hoc grants to local bodies | Earmarked central transfers fund local salaries |
| Viet Nam | Some taxes shared fully (e.g. natural resource); others (e.g. VAT) partly | Equalization transfer funds jurisdictions if expenditures based on minimum standards exceed resources from shared taxes | Resources once provided through sectoral budget allocations (through unified budget system) now provided as conditional transfers |

Note: VAT = value added tax.

Sources: Local Development International (2013); Smoke (2013a); World Bank (2015a); and European Commission (2015).

Sri Lanka – the former are small (set periodically by the Ministry of Economy and Finance) and the latter two are set by national finance commissions. Bangladesh makes limited use of unconditional transfers.

Conditional transfers are particularly important in Bangladesh and essential for certain purposes in other countries (e.g., local salaries in Sri Lanka). In countries with large unconditional transfers, such as Indonesia and the Philippines, conditional transfer programs are much less prominent, although they have been growing in importance, increasingly in the form of performance-based grants. In most other countries, conditional transfers are not major instruments or are used on a more ad hoc basis. Clearly, intergovernmental transfers are the revenue backbone of the systems covered here, but they are used in diverse ways. Degree of conditionality, rules by which transfer pools are determined and allocated, and provisions for sharing among different lower levels have strong implications for the ability of, and incentives for, local governments to meet their functional obligations and promote development in their territories.

2.3.5 Subnational Government Autonomy

The operational autonomy allowed to subnational (especially local) governments, which is central to mainstream theory, is mixed in the countries covered here (see Table 2.3). In some cases, local governments primarily implement centrally planned and financed activities with limited latitude for local influence. Yet the degree of central government involvement varies, and in some cases local actors have considerable legal power. In Indonesia and the Philippines, for example, local governments have high autonomy over a large portfolio. In Cambodia only the lowest tier has established budget autonomy, and only for limited purposes and with few funds. In a number of countries, such as Pakistan, Sri Lanka, and Viet Nam, regional governments have some powers and also determine and manage what lower tiers do.

In several countries, including Cambodia, Indonesia, and the Philippines, there are, at least at certain levels, dedicated local budgets. In Viet Nam, local budgets are embedded in a unified national budget. The implications of these different arrangements, however, are not unambiguous. In Indonesia and the Philippines, for example, oversight mechanisms, conditional transfers, and central involvement in local functions have grown in recent years, somewhat constraining local autonomy. Similarly, although Viet Nam has a unified budget, subnational governments have increasingly been allowed more discretion. There is also asymmetric treatment in some countries, e.g., regional or urban governments enjoy greater *de jure* or *de facto* discretion than other tiers.

Table 2.3 *Subnational autonomy: budgeting, staffing, and revenue generation*

| | Budgeting and expenditure control | Human resource management | Revenue generation |
|-------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Bangladesh | Central ministry funding dominates; many transfers not transparent or unreliable | Most hiring requires central approval and many local staff report to central ministries | Municipalities set (with central approval) rates or charges as per national guidelines |
| Cambodia | Communes prepare budget; district and provincial budgets getting more autonomous | Commune councils have few staff; financed/appointed by central ministries | Communes may legally levy certain revenues, but details require follow-up laws |
| India | States regulate local budgets but some flexibility if not indebted | State public service commissions regulate hiring; local autonomy varies by state | Revenue autonomy is narrow and faces other regulatory and political constraints |
| Indonesia | Originally autonomous with higher-level legal review; now increased oversight | National regulations allow discretion; Law 32/2004 expanded oversight of hiring | Comparatively good, but restrictions and often underutilized by local governments |
| Pakistan | Districts may form their own budgets following district government budgeting rules | District and <i>tehsil</i> governments hire staff as per formal provincial guidelines | Some discretion; city districts and <i>tehsils</i> set property rates under guidelines |
| Philippines | Local governments prepare budgets with legality review by the next-higher level | National civil service regulations allow meaningful local discretion | National guidelines allow nontrivial local government revenue discretion |
| Sri Lanka | Some discretion in local budget but technical capacity often limited | Provinces hire local staff and influence human resource management; center appoints provincial chief | Local governments have highly constrained revenue autonomy |
| Viet Nam | Unified budget; cities/provinces have more discretion; provinces oversee local budgets | All staff under national civil service; local staff selected locally with higher approval | Most revenue shared, not independent; provinces have more discretion |

Sources: Local Development International (2013); Smoke (2013a); World Bank (2015a); and European Commission (2015).

Regarding subnational civil service, local administrative and technical personnel in Bangladesh and Cambodia are largely appointed by central governments or are under central management, and provinces play this role in Sri Lanka. If local governments must answer to their constituents for fiscal performance but cannot control staff who deliver services, the nature and strength of local accountability may be weakened. In other countries, such as India, Indonesia, Pakistan, and the Philippines, local governments have some hiring discretion. Yet local staff management is typically subject to national (in India and Pakistan, state or provincial) regulation and avenues for higher-level intervention.

As already noted above, local revenue autonomy is relatively limited. Subnational governments are assigned revenue sources, especially in Indonesia and the Philippines, but yields are often well below potential. With a few exceptions, local authority over revenue bases or rates is weak. Feeble revenue generation may weaken both performance and accountability relationships between local governments and their constituents.

2.3.6 Subnational Government Accountability

Some political decentralization has been adopted in the countries covered here (see Table 2.4), with elections at all or most subnational levels. Subnational council and assembly elections are generally direct (although only at one level in Cambodia). Most countries have a multiparty electoral system, although its practical relevance varies. In Cambodia, local competition is curtailed by the dominance of the Cambodia People's Party (CPP). In Indonesia, Pakistan, and Sri Lanka, some political parties are ethnically or religiously based. In Viet Nam, the Vietnamese Communist Party (VCP) oversees nominations, but some competition is derived from rivalry among party factions. The different experiences offer varying and uncertain degrees of citizen influence in choosing local representatives.

Local elections are fundamental in devolved systems but they are a relatively blunt instrument of accountability and require supplementation. Most countries covered here (except Cambodia and the Philippines) have passed right-to-information laws to improve transparency. There are, however, sometimes exclusions, and laws may not be strongly promoted or embraced. Other measures to foster local accountability include processes that give citizens a way to engage in subnational decision making.

Some participatory mechanisms target initial steps (such as providing inputs into plan and budget priorities in Cambodia) while others allow citizens to comment on plans and budgets prepared by local governments (as in Pakistan). Feedback on subnational government performance – complaint bureaus, citizen surveys, and other measures – are also used, at

Table 2.4 *Subnational accountability: elections, competition, and participation*

| | Elections | Political competition | Civic participation |
|-------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Bangladesh | Elections at <i>upazila</i> , union, <i>pourashava</i> , and city, not <i>zila</i> | Two dominant parties, but others participate in elections | Ward committees represent citizen interests, handle requests, and accept feedback (nonbinding) |
| Cambodia | Direct commune elections; higher levels indirectly elected | Officially multiparty, but competition limited by dominant CPP | Open planning forum; open council meetings and councils required to respond to comments |
| India | Elections in <i>panchayati raj</i> in states exceeding 2 million population | Many parties but variation by state; some council members are nominated | Participation encouraged but use uneven; some feedback means, including civil society |
| Indonesia | Elections for local and provincial assemblies occur every 5 years | Many parties compete; some parties are national, others regional | Citizen input is required but uneven in practice; also some surveys and feedback mechanisms |
| Pakistan | Regular provincial/local elections required under new system | Multiparty competition robust; some parties linked to tribes or clans | Citizen consultation mandated prior to budget passage, but generally limited; some feedback means |
| Philippines | Directly elected councils at all levels; size varies by population and type (province, city, etc.) | Competitive multiparty system, but parties are relatively weak; dynastic politics are important | Participation mechanisms are used but uneven in practice; provision for citizen charters, report cards, etc. taking root |
| Sri Lanka | Councils are directly elected at provincial, municipal, and village levels | Multiple political parties (often an ethnic/religious basis); national parties control local nominations | Citizens may submit requests and input for planning and budgeting; center adopted a citizen charter to collect and address grievances |

Table 2.4 (continued)

| | Elections | Political competition | Civic participation |
|----------|------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Viet Nam | Local direct elections at all levels, but candidates vetted by the VCP | VCP dominates but pluralistic (internal factional competition) | Participation adopted for 2006–10 national development plan; some provinces are promoting local participation and feedback |

Note: VCP = Vietnamese Communist Party; CPP = Cambodia People’s Party.

Sources: Local Development International (2013); Smoke (2013a); World Bank (2015a); and European Commission (2015).

least in limited ways, in most of these countries. Evidence on the impact of participation on local government behavior and performance, however, is limited and mostly anecdotal. It shows positive effects as well as perfunctory or corrupted experiences. Thus, the extent to which such mechanisms meaningfully promote accountable local governance remains an open question.

2.3.7 Summary Comments

Although all countries covered here are technically decentralized and many have at least some features of devolution, there is striking variation in terms of how subnational levels are empowered, the relationships among levels, and the types and quality of accountability mechanisms. Few robust generalizations can be drawn. Casual observation suggests that weak and poorly articulated policy frameworks reduce the likelihood of effective performance. Even more robust frameworks, however, provide no guarantee that the system will work as designed and produce intended results.

An important limitation of the mainstream approach to decentralization is its inability to explain why an intergovernmental system takes its current form. Without delving more into that question, analysts typically fall back on conventional policy advice that often produces compromised systems and mediocre results. It is time to consider how to transcend the status quo in thinking about this important element of public sector reform.

2.4 NEGLECTED CONSIDERATIONS

The mainstream fiscal decentralization and intergovernmental relations framework and other relevant literature provide useful guidance on how to design and assess relevant systems. The brief review of selected Asian countries above suggests they often do use this knowledge, yet some systems have features that seem inconsistent with core principles. Several considerations beyond the norms of traditional analysis, as suggested above, can help to illuminate the forces behind system design and performance.

2.4.1 National and Intergovernmental Political Dynamics

The mainstream framework is based on the premise that the primary goals of decentralization are to improve service delivery, increase efficiency, promote development, and reduce poverty, among others. In reality, many countries adopt reform more for political reasons than developmental ones.¹⁵ Such efforts can be part of a staged process of comprehensive public sector reform, but they are often responses to political or economic crises that create demands or open doors for change. In the urgency of dealing with crisis, policies may be adopted quickly with insufficient analysis or consensus.

The importance of political motivations does not mean that economic, social, and other conventional goals are not important in practice – indeed, attaining such results can promote and reinforce political aims that drive reform. It is, however, reasonable to state that in planning immediate measures, the conventional goals of decentralization that often serve as official public justification may take a back seat to political imperatives related to political credibility, conflict mitigation, and power consolidation, among others.

The political forces underlying the evolution and form of decentralization in the countries reviewed in the previous section are powerful and diverse. Since Bangladesh attained independence from Pakistan in 1971, there have been various attempts to decentralize, but the parameters of the system have changed as the political landscape shifted between more and less democratic regimes (Fox and Menon, 2011; Fjeldstad, 2014; and Barkat et al., 2015). When the national government changes, there has been a tendency to create new subnational structures and reverse the outgoing government's reforms as the new party in power seeks to secure a local electoral base. This persistent instability has left local governments on balance fairly weak.

As a small, relatively ethnically homogeneous country that has endured

significant conflict, Cambodia was long centralized with hierarchical administration. Decentralization was first pursued as a political strategy by the CPP under Hun Sen in 2001 when the party's national dominance was perceived to be under threat (Blunt and Turner, 2005; Smoke and Morrison, 2011; Ojendal and Kim, 2013). Experts advised starting reform at higher levels, but CPP began with lower-tier communes to consolidate support at the grassroots level (its core base) while avoiding urban areas (where opposition was strong). Furthermore, only minor resources were allocated, alleviating perceived threats to the power of central ministries and provincial governors. When CPP dominance was again challenged as new elections approached in 2008, reform was expanded upward to district, provincial, and municipal levels. Political realities, however, led to defining a system with heavy central oversight and control.

The intergovernmental system in India is a product of its long history and reflects traditional governance as well as colonial and post-independence political and institutional dynamics (Rao and Bird, 2010; Kalirajan and Otsuka, 2012; Mathur, 2014; World Bank, 2014; Murthy and Mahin, 2015; and Venketesu, 2016). Contextual realities led to power sharing in a federal system, constraining what the federal government can do to push state governments to empower lower levels (if it were so inclined). Constitutional amendments in the 1990s did provide a framework for stronger substate governments, but necessarily left definition of specifics to the states. Thus, the political dynamics in each state determine the extent to which local bodies are empowered. On balance, there has been more willingness to promote political relative to administrative or fiscal decentralization.

Powerful political realities also shaped Indonesian decentralization. After independence, a strong center was created to build national unity in the ethnically diverse country (Alm et al., 2004; Eckardt, 2008; Lewis, 2010; Decentralization Support Facility, 2012; Holzacker et al., 2016). Deconcentration established provinces as national agents – local governments were not elected and accountability was upward. When the Suharto regime succumbed to the 1990s' Asian economic crisis, a proposed antidote to centralized crony capitalism was devolution. Reform, however, mainly empowered local governments, given concerns that strong provinces with elected governments could fuel conflict, federalism, or separatism. Although there have been attempts to rebalance the system to some extent, local governments remain the main empowered level of the subnational government system.

Pakistan has cycled between military regimes and civilian governments since independence. Local government empowerment was largely promoted by the military to build local support. Civilian regimes, in

contrast, have generally seen local governments as competitors for political space and have instead favored stronger provinces (Khattak et al., 2010; Musarrat and Azhar, 2012; Shah, 2010; 2012; Cheema et al., 2014). The current federal system has strengthened provinces and placed local governments largely under their control. The intergovernmental system uses a mix of institutions responsible for public functions including local governments, deconcentrated administrative units, and provincial governments, but the power lies substantially with the higher tiers.

Another large and diverse country, the Philippines had subnational administration during the colonial period, and this continued after independence (Hutchcroft, 2004; Capuno, 2007; Matsuda, 2011; and Yilmaz and Venugopal, 2013). During the Marcos era, policies promoted improved subnational administrations that were heavily managed by the center. After Marcos fell in 1986, a consensus arose to reestablish democracy, and the new Constitution promoted decentralization, local autonomy, and civic participation. The system that emerged resulted from hotly debated political compromises, including pleasing municipal mayors by empowering them, limiting provincial finances to constrain electoral competition from provincial governors, and creating a (recently abolished) constituency development fund that gave members of Congress resources to provide local projects that often infringed on local government functions, among others. As in Indonesia, there have been attempts to rebalance power, but local governments remain its anchor.

Sri Lanka's decentralization of central power to subnational provincial governments was primarily pursued to mitigate the considerable ethnic conflict between the Tamil minority in the north and the Sinhalese majority residing elsewhere, although achieving balanced regional growth was also cited as a factor (Herath, 2009; Leitan and Tressie, 2010; Liyanahetti, 2012; Gunawardena, 2013). Local governments are firmly under the provinces, and power overall remains fairly centralized, with the central government executing or overseeing many functions officially intended to be more significantly managed at the provincial and local levels. The direction of the new government that came to power in 2015 with respect to decentralization remains unclear, with mixed signals.

Local administrations in Viet Nam are hierarchical arms of the central state in a unitary system dominated by the VCP (Kolko, 2004; Malesky, 2004; Nguyen-Hoang and Schroeder, 2010; World Bank, 2015b). At the same time, demands of economic reform (including better services) and a need to reinforce political legitimacy created a situation in which provinces, and to a lesser extent districts, have since the mid-1980s benefited from more autonomy. Some analysts portray the VCP as functionally pluralist, such that factions compete for power, wealth, and autonomy for their

jurisdictions. This has led to a form of de facto political decentralization, which has been gradually reinforced by formal policies that are empowering subnational actors.

In short, national politics substantially shape the structure of intergovernmental systems and decentralization policy. Political considerations can influence which levels are empowered, the extent of subnational autonomy, and the process and support structures through which reforms occur on the ground. Stronger decentralization often reflects a need to build political support or to reduce ethnic or other conflicts, while reluctance may reflect an aversion of central actors to ceding functions and resources to lower levels. Thus, those seeking to rebalance the intergovernmental system and support decentralization reform need to be aware of historical and political influences, so as to better understand if, how, and where there might be national political space to do so.

A final critical point is that the dynamics underlying decentralization are not fixed. Some countries have cycled between more and less decentralization and modified its form. Even without formal policy changes, reform can stall or be reversed through official or informal government actions. Situations can change rapidly in unstable or competitive political environments or if a crisis abates or a new one emerges, producing incentives to shift course by recentralizing or decentralizing (or appearing to do so). In some cases, even with no major changes in core political conditions, key central actors may challenge implementation of formally adopted reform. Such actors may not value decentralization or may over time develop active resistance if they decide reform is detrimental to them. These latter dynamics often emerge in the response of government agencies to political decisions to decentralize, to which we now turn.

2.4.2 Central Government Bureaucracy

National political economy dynamics may determine the main goals and the basic characteristics of intergovernmental relations, but the detailed efforts involved in designing and executing reforms is managed by often diverse central agencies. These agencies, however, rarely have common perspectives on subnational governments, leading to potentially great divergence in visions about how the system should function and the nature and extent of their role, even if a strong national mandate seems to be in place.

A range of national actors typically plays a part in determining, executing, and overseeing reforms.¹⁶ There is usually an agency in charge of subnational government, such as a ministry of local government or interior. Various agencies are often charged with specific elements of public management, such as finance, civil service, planning, etc. Such actors are often

wary of subnational autonomy. Finally, sectoral bodies – for agriculture, education, health, water, among others – tend to focus more on service delivery than on supporting decentralization. Any of these actors may obstruct or delay local empowerment, sometimes with good intentions but sometimes as a matter of pure self-interest.

Given this diverse cast of characters, some interagency means of managing reform is needed, but this has been elusive.¹⁷ Without coordination or well-constructed incentives for national agencies to meet individual obligations and to work harmoniously, they often function at cross-purposes and develop inconsistent policies. For example, a local government ministry policy may empower local governments, while a finance or a sectoral ministry may adopt policies that reduce the discretion of local governments over functions for which they are legally accountable to constituents.

Situations along these lines are common, and some examples were suggested above. In Bangladesh, Pakistan, and Sri Lanka, for example, use of conditional transfers (for budgeting and/or staffing) has been prominent. There may also be turf wars between ministries, especially if roles are unclearly specified. In Cambodia and Indonesia, for example, competing local financial regulations were separately issued by the ministries in charge of finance and local government.¹⁸ There can even be battles within ministries, as there was between different directorates in the Indonesian Ministry of Finance during debates over the (eventually accomplished) devolution of the property tax and the (still in process) development of an improved subnational borrowing framework.

National ministries may even engage directly in providing locally assigned functions, as, for example, in the Philippines. Central actors may also empower special districts, parastatals, or private actors to manage legally devolved services. Such measures may be justified – the need to balance national and local objectives, to maintain standards, etc. were noted above. Even if justified, it is important to understand the consistency of such efforts with the formal framework, how decisions are made (criteria based or arbitrary), and whether there is sufficient coordination to limit policy incoherence that may harm the overall fiscal system.¹⁹

Another consideration is the actions of international donor agencies as supporters of government agencies, particularly in aid-dependent countries.²⁰ Donors may privilege their own priorities and accountability systems, even creating parallel mechanisms. This can damage unified system development and burden counterpart governments. Despite public claims to promote alignment and build institutions, such initiatives are challenging and time consuming, a risky combination for donors in the prevailing development assistance climate, which privileges documenting positive results more than developing improved systems and processes.

Equally important, donors, like government agencies, have diverse priorities. A donor committed to decentralization may not prioritize service delivery. A finance ministry concerned with overall public resource use will prioritize central oversight over subnational autonomy. Sectoral agencies tend to privilege service delivery, valuing decentralization only insofar as it promotes their goals. Some donors may even prefer to bypass local governments in favor of community or private sector empowerment. If donors seek out country agencies that share their views, they can reinforce the type of government policy inconsistency noted above. For example, one donor may assist a local government ministry working to support devolved health as per a decentralization law, while another may support a health ministry with a tendency towards a more centralizing approach.²¹

Such situations cannot be completely avoided – governments and donors are not homogeneous entities. They can have different priorities, and indeed they are supposed to do so. Finance or health ministry reforms supported by like-minded donors may even appropriately rebalance intergovernmental relationships when decentralization has gone too far.²² Still, it is important to be aware of the potential for such behavior and how it might affect the organization, financing, and sustainability of public sector action.

2.4.3 Local Political Dynamics

Although not the core concern of this chapter, how subnational governments ultimately use any powers and resources they are given under decentralization and intergovernmental reform substantially depends on the structure of local political power. Available empirical evidence is limited, conflicting, and hard to interpret; there is general recognition that conducive conditions can support decentralization benefits, but elite capture, patronage, corruption, etc. are also possible.

Accountability mechanisms in place at the local level affect how these dynamics play out.²³ Fiscal decentralization theory assumes a means for citizens to discipline how local governments raise and use public resources, but it says little about the details. The democratic decentralization literature posits fair elections as the most fundamental requirement.²⁴ As illustrated above, the experience of subnational elections in Asia is diverse. Elections are conducted, but not always at all levels or at the most empowered levels. Electoral competition varies, and higher-level actions, as noted above, can constrain local government discretion, leading citizens to feel disempowered and to disengage from local politics. Such a situation can undermine even cutting-edge fiscal decentralization reforms.

Whatever the local political economy dynamics, elections are a lumpy local accountability tool. Other accountability mechanisms – participatory

planning and budgeting, public meetings, complaint mechanisms, report cards, among others – are often used to lay a foundation for better use of subnational government powers and functions.²⁵ At the same time, even well-designed mechanisms are often technical and perfunctory. If not sufficiently inclusive, if rigged by local elites, if results are ignored, or if the public does not embrace them (or fears using them), they are unlikely to improve local fiscal behavior.

As if the intricacy of subnational government institutions and politics was not perplexing enough, another factor in many countries is the convoluted array of other local actors. Deconcentrated agencies may exist in parallel with local governments, with both involved in the same services in the same locations. Other mechanisms, such as constituency or community development funds, may also finance other actors to perform local government functions. If multiple uncoordinated actors with distinct sources of funding are competing for public functions in a locality, citizens may be puzzled about what to hold their elected local governments accountable for, weakening decentralization.

2.4.4 Implementation

The decentralization and intergovernmental relations literature privileges system design consistent with mainstream principles. Although systems must be adequately designed, even a normatively flawless system must be operationalized, and in a way that reflects political economy realities and other more commonly acknowledged constraints, such as resource and capacity deficiencies. Recently there has been growing interest in moving beyond design to considering how to implement and sequence decentralization in a sustainable way.²⁶

A central concern is the complexity of reform and the need for multiple elements of the intergovernmental system to work together. This includes the various dimensions of the system (administrative, fiscal, and political) as well as the functional components of operations (civil service, planning, financial management, service delivery, etc.). There may be an urgent political logic to hold local elections or give resources to local areas quickly, but poorly empowering elected councils or developing a strong fiscal system when staffing and accountability channels are weak are not likely to support developmental or governance goals. Thus, there is a need to recognize and incorporate to the extent possible the interdependency of inherently linked dimensions and components.

Another often-underappreciated factor is the stark asymmetry of subnational governments in many countries. Decentralization reforms tend to be fairly standardized. There is often differential treatment of specific

classes of government – provinces versus local governments, or urban versus rural governments, for example – but all entities within an individual category are not likely to be similarly capacitated or proven performers. Thus, giving all of them the same powers and functions concurrently is questionable policy.

Perhaps most critically, the structural and operational changes involved in reform often require major shifts in the attitudes and behaviors of all actors. Central agencies – perhaps against their instincts and perceived interests – need to cede powers and convert their role from managing and controlling to monitoring and facilitating. Local governments must perform new functions and work cooperatively (with peers and at other levels); local staff and elected local officials must (under devolution) work together; and local officials (elected and appointed) must interact with constituents. Citizens must grasp their rights and duties and hold local governments to account. Donors, particularly in aid-dependent countries, need to collaborate with each other and support country systems and policies.

These behavioral shifts are politically and institutionally substantial and are unlikely to be realized rapidly or without careful effort. If too many changes are rolled out quickly without measures to influence attitudes, to create incentives, and to develop capacity, reform will be unlikely to take root, offering political validation to anti-decentralization forces. If reform is too slow and produces little visible change, local governments and their constituents will likely become frustrated and lose interest.

In practice, two contrasting approaches frame the range of national approaches to implementation.²⁷ In the traditional fiscal federalism scenario, a robust national framework is issued, and while technical assistance and training are typically offered, the main onus to comply primarily falls on relevant central and subnational actors. This could be branded as a ‘sink or swim’ approach. On the other extreme, the center manages implementation, such that decentralization of rights and responsibilities outlined in the framework would occur as per central rules and preferences. Under this ‘paternalistic’ approach, the implementation of official decentralization policy is neither automatic nor guaranteed.

Although some form of both is common, neither extreme is likely to be fruitful in most developing countries. The sink or swim approach may work for more capacitated provincial or urban governments with active citizens if local governments want power and central actors support this, but those without capacity will be unable to conform. A highly paternalistic approach, however, can be counterproductive unless well developed and structured to roll out genuine reforms. If a centrally managed approach is used to hinder capable local governments from assuming their intended

roles, or if it is applied in a politicized or inconsistent way, reform is not likely to reap major benefits.

A compromise approach could be asymmetric. Local governments with more capacity can be subject to sink or swim, while weaker ones could take on functions more slowly, receiving support as they make progress. Such a 'developmental' strategy may have common end points, but the trajectory to realizing them could be partially tailored to local circumstances, with different mixes of empowerment, transfer conditions, and development finance arrangements (e.g., the mix of grants, subsidized loans, and market loans). Critics argue that such an approach can be manipulated and get mired in bureaucracy, and conservative or obstructive managers might slow reform. Still, some alternative approach is worth considering given experience with the dominant options.

Another consideration in developing an implementation strategy is how the central government can use innovative mechanisms to facilitate performance.²⁸ Conditional transfers may help, although mostly to ensure spending on priority services – there is no guarantee of quality, and conditions can induce undesirable distortions.²⁹ It is possible, however, to attach performance conditions, ranging from use of specific inputs to service outputs. Experience with sectoral performance-based grants (PBGs) in developing countries, including in sectors like education and health, has produced mixed results.³⁰ A number of middle-income countries have also adopted sectoral PBGs. India's 13th and 14th Finance Commissions, for example, promote service incentive schemes,³¹ and Brazil uses incentives in several sectors, including health. Other Latin American countries have used sectoral PBGs, including Chile (education), Colombia (education, health, water, and sanitation), and Peru (multiple sectors plus local roles in national policies, e.g., nutrition).³²

A second class of PBGs is broader (non-sector specific, some unconditional). Such PBGs have been used primarily in less developed countries with weaker capacity and in the process of developing or substantially reforming subnational government systems. These have tended to incentivize adoption of new systems and procedures and faithful execution of formal plans and budgets rather than service delivery or other outputs. Such compliance grants have been used in various ways in many lower-income countries in Asia and Africa – Bangladesh, Cambodia, Nepal, Tanzania, and Uganda, among others.³³

Indonesia recently adopted performance-based conditional transfers (DAK) that reimburse local governments if they realize certain physical output standards, follow procurement guidelines, and comply with environmental and social safeguards (Ellis et al., 2011). The Philippines developed the Seal of Good Housekeeping and Performance Challenge Fund

programs to improve performance.³⁴ If local governments meet specific good governance criteria under the former, they receive resources under the latter. These programs seem promising, but they are too new to evaluate robustly.

In addition to sectoral, general compliance, and PBGs, other mechanisms have been used to incentivize local government performance.³⁵ Enforceable accountability mechanisms, such as the central government performance contracts with local governments used in Rwanda and other African countries, can be created.³⁶ There has also been a range of experiences with ‘tournament-based approaches’ that bring formal recognition to local government achievements, such as competitions to reward (financially or otherwise) improved service delivery or other accomplishments (adopted in various ways in several countries, including the Philippines).³⁷

Any of these approaches may be influenced by political economy and fiscal conditions. The bureaucratic fragmentation discussed above, for example, can be challenging to navigate. If multiple ministries create ad hoc incentives that create inconsistencies in systems or behaviors, problems may result. In a few cases, such as Indonesia, some local governments do not spend funds they receive through large unconditional transfers, which may raise questions about the value of more resources. It should be possible to determine if a local government merits additional funding, but this needs to be framed beyond target behaviors of fragmented individual incentives. Despite these challenges, it seems sensible to look for ways to create productive incentives to facilitate better implementation.

Capacity building is clearly essential for implementation. There has been criticism of the dominant ‘supply-driven’ (by the national government) approach, which emphasizes a mechanical, standardized, and comprehensive approach to teaching skills in a traditional classroom setting.³⁸ Efforts to promote ‘demand-driven’ (by local governments) and ‘on-the-job’ training are less common, but on the rise. A mixture is likely needed, with both general training and efforts to meet requests for developing skills that users need for immediate purposes. In addition, there have been concerns that capacity building is unduly focused on developing technical skills of government staff. More attention to governance capacity that extends beyond civil servants to local legislators and citizens might be beneficial, and capacity building can be tied to implementation strategies by progressively targeting the development of capacities needed to improve performance as decentralization rolls out.

Finally, beyond national approaches, a local implementation strategy is also important, but would have to be framed somewhat differently. Given the demanding nature of reforms, even higher-capacity subnational governments will have to think strategically about taking steps that involve

major modifications to how they do business. Modest and more politically feasible reforms could set the stage for rolling out more difficult or contentious steps in particular jurisdictions. New approaches and processes could be used experimentally and adjusted prior to full adoption. A local strategy will, of course, have to reflect the national strategy, and some type of criteria-based negotiation between central and local actors may increase the chances of successful reform.

2.5 CONCLUDING THOUGHTS: MOVING BEYOND THE MAINSTREAM APPROACH

Central governments in developing countries often respect – if selectively and imperfectly – mainstream decentralization and intergovernmental relations principles in crafting formal frameworks and policies. These principles are rather general, so there is some space to take liberty in applying them. Such flexibility is welcome because the contexts in which they are being used vary greatly. Yet the actual intergovernmental fiscal systems that emerge often seem to exhibit problematic features, and the high expectations placed on results are often unsatisfied.

2.5.1 Recapping Dimensions of Expanded Thinking

The mainstream framework itself can explain some of the divergence between theory and practice since there are recognized trade-offs involved in applying its principles. There are also assumptions (some implicit) regarding requirements for effective systems that underlie mainstream theory but are not dealt with by it in any depth – rule of law, local political mechanisms, transparency, and minimum capacity, among others. The extent to which these conditions are met can help to explain whether systems produce expected results. The premise here, however, is that other underexplored factors also need to be considered in applying the principles and interpreting the findings from such analysis.

Institutional diversity

The role of context is widely recognized, but much of the literature treats it superficially. Basic fiscal federalism is framed in terms of a broad central–local distinction. Later work recognizes intermediate tiers and the centrality of states in federal systems but does not capture the intricately layered and interlinked institutional landscape that often exists. Although most observed power-sharing arrangements are not necessarily inherently beneficial or problematic, the operation and performance of local governments

must be interpreted in terms of the larger framework and the formal and informal interactions among multiple actors.

Policy fragmentation

A related concern is how to integrate components of the subnational system (administrative, fiscal, political). Many reforms separately deal with individual components based on relatively narrow concerns. This may result, for example, in strong fiscal powers that are not subject to local political and administrative discipline, or elections for local councils that are not adequately empowered or resourced. If synergies are not adequately recognized and incorporated, individual efforts that seem well designed may disappoint. In the fiscal arena alone, poor harmonization among revenues – own source, transfers, and borrowing – can create perverse incentives and inhibit performance.

National political economy dynamics

Intergovernmental reforms are seldom pursued mainly to achieve developmental outcomes valued by normative approaches. Although such goals may provide the official rationale for reform, underlying drivers tend to be more political – consolidating power, responding to crisis, competing with emerging opposition, etc. The primacy of such objectives may lead to selective or superficial use of core design principles and outright violations – devolving functions to an ‘inappropriate’ level, retaining local functions at higher levels, etc. Understanding why certain design features are chosen – and if nonadherence to norms is justifiable – is essential. Policy analysts typically push for adopting ‘technically superior’ alternatives, but these may be infeasible. There is rarely anything reformers can do to influence dominant underlying forces; they can only be more aware of them and look for the best opportunities for productive reform within prevailing constraints.

National bureaucratic behavior

Some of the most problematic dynamics surrounding intergovernmental relations unfold in the national bureaucracy. Agencies with different perspectives usually dominate the detailed definition of various elements of new systems and procedures. How they behave (formally or informally) in managing implementation is critical. Uncoordinated central policies produced under institutional fragmentation are often reinforced by international donors pushing their own agendas. The policy inconsistencies that emerge can collectively inhibit the performance potential of subnational governments. Thus, it is critical for reformers and external actors to understand the interests and activities

of key central actors and seek ways to limit policies that push the system in divergent directions.

Local political economy dynamics

Even if official policies are faithful to best principles, coordinated, and enjoy strong national support, local political economy dynamics can affect implementation. The nature of local economic and social relations, the quality of accountability processes, relations between elected officials and staff, the extent of nondemocratic practices (patronage, corruption, etc.), the strength of civil society, and many other local contextual features affect whether subnational and intergovernmental systems can operate effectively. Factors may also vary within countries. If challenges are identified, there may be opportunities to alleviate the effects of negative local dynamics and build on what is positive.

Implementation

There is growing awareness that effort is needed to devise more strategic approaches to implementation. Reform that is too swift and deep may stretch subnational government competencies and jeopardize central bureaucratic acceptance, but overly sluggish efforts could dishearten supporters and encourage centralizing reactions. If there is to be more strategic implementation, the first step is to be clear on priority goals and how they relate to underlying political economy and other contextual realities. Of course, this is always done in any reform effort to some degree, but experience suggests the need for more systematic and robust analysis in assessing what is desired and feasible.

Once there is some clarity, the next step is to look for appropriate starting points in the reform trajectory. Preferred options would offer a reasonable probability of success but be meaningful enough to visibly signal change. Asymmetric starting points can be constructive. It may help to negotiate – around principles and guidelines that promote consistency and fairness – individualized starting points and reform steps with subnational governments, placing direct responsibility on them for what they agree to do. Reform steps could be linked to central initiatives to develop capacity (with the caveats noted above) and provide incentives to improve performance progressively. Means to motivate local governments could include enforceable accountability mechanisms (such as performance contracts), financial inducements (such as compliance or performance-based grants), and competitions (tournament-based approaches), among others.

2.5.2 Looking Forward

The mainstream approach to fiscal decentralization and intergovernmental relations remains a sound analytical starting point, but it treats only lightly or overlooks certain vital conceptual and practical concerns, and on its own does not provide sufficient operational guidance to policy makers. This chapter outlines selected concerns that could help analysts to shape better policies. Although including them is likely to push many specialized researchers and policy makers outside of their comfort zones, that is exactly what is needed. Given the diverse contexts and experiences, working through the complexity may seem overwhelming, but an all-inclusive analysis is not required. The real need is for doing 'good enough' assessments that incorporate issues beyond mainstream thinking that matter in a particular case. There is also potential value in adapting strategies as experience generates lessons. Such a reflective and iterative approach is consistent with the broader evolving 'doing development differently' literature.³⁹

There is a pressing need for multi-methodology research that incorporates neglected perspectives, particularly political economy, into the mainstream. Researchers and policy makers also need to better document and evaluate how implementation strategies and supporting mechanisms have been used. Does more gradual and asymmetric treatment (based on competence and/or performance) of subnational governments improve the prospect of successful and sustainable intergovernmental systems? How can incentives and innovative capacity building support strategic reform? There is encouraging evidence that provides clues to productive avenues for reform, but it is mostly anecdotal. Considerable further investigation is needed to cultivate a fuller understanding of practice and form the basis for workable policy measures.

Additional work is needed to develop the type of approach outlined here and to illustrate its application and potential utility. In the meantime, analysts can do more to deepen their understanding of the context of decentralization. It is feasible to document more systematically relevant national and subnational political and bureaucratic dynamics, and to assess the implications of such analysis for how to pursue more pragmatic, strategic, and sustainable decentralization and intergovernmental relations reforms.

NOTES

1. Examples of synthetic reviews on various aspects of decentralization performance include World Bank (2005); Bardhan and Mookherjee (2006); Smoke et al. (2006);

- Treisman (2007); Connerley et al. (2010); United Cities and Local Governments (2010); Martinez-Vazquez (2011); Martinez-Vazquez and Vaillancourt (2011); Local Development International (2013); Dickovick and Wunsch (2014); Ojendal and Dellnas (2013); Gadenne and Singhal (2014); and Faguet and Poschi (2015).
2. There is no attempt to exhaustively cover the region; the chapter focuses on countries the author has worked on or has access to information on.
 3. See Morgan and Trinh (Chapter 1 in this book) for more detail.
 4. This field emerged under the rubric of fiscal federalism as advanced by Oates (1972). Useful reviews include Boadway and Shah (2009); Bahl et al. (2013); Ahmad and Brosio (2014); and Blöchliger (2014).
 5. Although devolution to elected governments has emerged as a generally preferred form of decentralization in international circles, other forms can be appropriate in certain situations. See Connerley et al. (2010).
 6. Broader decentralization reform needs and the challenges of realizing them are covered in a range of literature, including Manor (1998; 2013); Bardhan and Mookherjee (2006); Shah (2006); Cheema and Rondinelli (2007); Boex and Yilmaz (2010); Connerley et al. (2010); United Cities and Local Governments (2010); Eaton et al. (2011); Martinez-Vazquez (2011); Ojendal and Dellnas (2013); Faguet (2014); and Smoke (2015).
 7. More detail on broader perspectives for considering political concerns is provided in section 2.4.
 8. Examples of second generation fiscal federalism literature include Oates (2005) and Weingast (2009; 2014).
 9. The material on the countries comes from a range of sources, but the information in the tables was largely drawn from four major sources: Local Development International (2013); Smoke (2013a); World Bank (2015a); and European Commission (2015). Additional references on each country are provided in section 2.4.1.
 10. Fiscal and regulatory mechanisms for many of the countries are covered more in Morgan and Trinh (Chapter 1 of this book).
 11. Table 1.1 in Chapter 1 of this book provides basic socioeconomic and institutional data on most of the countries covered here.
 12. More information is provided in World Bank (2005; 2015a); Smoke (2013a); European Commission (2015); and Morgan and Trinh (Chapter 1 of this book).
 13. See Morgan and Trinh (Chapter 1 of this book) for more detail on fiscal systems in several Asian countries.
 14. Note that in some cases it is not possible to distinguish devolved and deconcentrated spending fully.
 15. Examples of broader work on the political economy of decentralization include Bardhan and Mookherjee (2006); Smoke et al. (2006); Connerley et al. (2010); Altunbas and Thornton (2012); Ojendal and Dellnas (2013); Romeo (2013); Faguet (2014); and Ponce-Rodriguez et al. (2016).
 16. Various aspects of the bureaucratic dynamics surrounding decentralization are elaborated in Tendler (1997); Litvack et al. (1998); Smoke (2007); and Eaton et al. (2011).
 17. Eaton et al. (2011) discuss coordination approaches.
 18. Eaton et al. (2011) discuss these examples, with which the author has a personal familiarity.
 19. The political economy of decentralization and public sector reform is discussed in Eaton et al. (2011). Green (2005) and Fedelino and Smoke (2013), respectively, considered civil service and public financial management reform in the larger context of public sector reform.
 20. A review of donor behavior related to decentralization is summarized in Development Partner Working Group on Decentralization and Local Governance (2011); Smoke and Winters (2011); and Dickovick (2014).
 21. See Eaton et al. (2011) and Development Partner Working Group on Decentralization and Local Governance (2011) for examples.

22. Dickovick (2011) and Smoke (2013b) examined cases of recentralization and stalled decentralization.
23. Yilmaz et al. (2010); Grindle (2013); and Ribot (2013) reviewed accountability from various perspectives.
24. Local elections are reviewed in Bland (2010) with a more formal empirical assessment in Ponce-Rodriguez et al. (2016).
25. Boulding and Wampler (2010); Brinkerhoff and Azfar (2010); Blair (2013); and Cheema (2013) provide useful reviews of citizen engagement mechanisms.
26. Approaching decentralization implementation is considered in various ways by Shah and Thompson (2004); Falletti (2005); Bahl and Martinez-Vazquez (2006); Ebel and Weist (2006); Bahl and Bird (2008); Smoke (2010; 2014); Martinez-Vazquez and Vaillancourt (2011); and Olum (2014).
27. Smoke (2010) discussed these models in more detail.
28. Lewis and Smoke (2012) reviewed the theory and practice of performance incentives.
29. Conditional transfers are discussed in Morgan and Trinh (Chapter 1 of this book).
30. Lewis and Smoke (2012) reviewed some of these experiences.
31. Government of India (2010; 2015) provide details.
32. Rojas (2011) discussed the Latin American cases.
33. Steffensen (2010) provides a review of these grants and experiences in a range of countries.
34. Open Budget Partnership (2013) discussed this case.
35. Lewis and Smoke (2012) discussed other mechanisms.
36. Versailles (2012) reviewed the Rwanda experience.
37. Zinnes (2009) provides a review of tournament-based approaches and assesses some cases.
38. Capacity building in the context of human resource management in decentralizing environments is reviewed in Green (2005).
39. Examples include Andrews et al. (2013); Booth and Unsworth (2014); Levy et al. (2014); and Rocha Menocal (2014).

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PART II

Mechanisms for Promoting Fiscal Sustainability at the Local Government Level

3. Federalism, fiscal space, and public investment spending: do fiscal rules impose hard-budget constraints?

Pinaki Chakraborty

3.1 INTRODUCTION

India is a federal country of 29 states and seven centrally administered union territories. It has a highly decentralized federal fiscal structure where state governments spend more than 56 percent of total public spending although their share in combined revenue is only 38 percent. Although there are multiple channels of transfers, this gap in revenue and expenditure is met primarily through vertical transfers from the central government to the states through the statutory Finance Commission route.¹ Burgeoning fiscal deficits at the subnational level were a major issue in India's fiscal management during the 1990s and early 2000s. During this period, piecemeal attempts were made to bring in fiscal discipline at the state level at the insistence of the central government and also through state-specific interventions by multilateral institutions, such as the Asian Development Bank and the World Bank.

In order to ensure fiscal discipline, the Twelfth Finance Commission of India (Finance Commission, 2005) had recommended rules-based fiscal control at the state level, which created a mechanism to provide performance incentive transfers for better fiscal management.² Performance incentives were linked to a reduction in state-level fiscal and revenue deficits relative to gross state domestic product (GSDP) within a rules-based fiscal framework.³ The Thirteenth Finance Commission (Finance Commission, 2010) further reinforced this process of legislative control over deficits by providing separate performance incentive grants.

According to the Twelfth Finance Commission recommendations, if a state enacted a Fiscal Responsibility Act (FRA) specifying 3 percent of GSDP as the upper bound of the fiscal deficit and eliminating the deficit in the current account of the budget, i.e., revenue deficit, within a specific period (by fiscal year (FY) 2008–09), the state became eligible for debt

rescheduling. Also, if a state adhered to those targets specified in the act, part of the state debt to the federal government was written off. All states in India now have an FRA. The provisions of the acts across states are similar, particularly with regard to revenue and fiscal deficit reductions. Since the primary objectives of the acts are to phase out revenue deficits and to put an overall cap on borrowing limits, the core emphasis, on the one hand, is to improve public capital investment at least to the extent of borrowing in the event of no revenue surplus (for state-specific rules, see Appendix Table 3A.1). The fixed borrowing limit of 3 percent of GSDP, on the other hand, is to ensure overall fiscal sustainability of the subnational debt through hard-budget constraints. State-specific acts also imposed limits on government guarantees and associated contingent liabilities and off-budget borrowings.

The main objective of this chapter is to examine whether the application of fiscal rules has resulted in an increase in the fiscal space for public capital investment spending in Indian states. The focus of the paper is on state-level capital spending reflected in state budgets, not total public sector investment in a state, as data for the latter are not readily available. For aggregate public sector investment in a state there are measurement issues involved with intra-public sector transactions and investments. It is difficult to arrive at a precise estimate and thus not considered in the present analysis.

Although macroeconomic stabilization is a federal government function, subnational deficit controls have implications for both macroeconomic stabilization and overall fiscal management since the central government and the states are co-equal partners in public spending. Both levels of government have large fiscal imbalances. In other words, fiscal and macroeconomic stability in a large federation like India depends not only on the central government's fiscal deficits but also on states' deficits. In the pre-FRA period, the states together had a fiscal deficit almost equal to that of the federal government. The average fiscal deficit for all states was 4.5 percent of gross domestic product (GDP) from 1998–99 to 2003–04, while the central government's fiscal deficit was 5.2 percent of GDP for the same period. Since the combined deficits of the states are large, given the multilevel fiscal structure, an overall deficit reduction could not be fully achieved if both levels of government do not control the deficits. From this point of view, this research adds value in understanding the complexities of macro fiscal policies in a large federal system.

3.2 FISCAL RULES: ARE THEY USEFUL?

Rules may be necessary to restrain governments that engage in discretionary policies that have a deficit bias (Buchanan and Wagner, 1977) and to allow for consistency in policy commitments (Kydland and Prescott, 1977). Kopits (2001) argued for a well-designed rules-based fiscal policy for mitigating a country's vulnerability in succumbing to a crisis. According to Kopits, inconsistency between fiscal stance and exchange rate rules has played an important role in the currency crisis of many countries (e.g., the Russian Federation, Brazil, and Ecuador). This was also due to the capital outflow where foreign investors' perception about government solvency was an important factor. Khemani and Wane (2008) argued that in decentralized economies, the existence of fiscal rules could be useful for incentivizing the state and local governments for better fiscal performance to maintain fiscal prudence. However, the incentive structure may need to be designed so that local governments do not circumvent transfer conditionality, and hence, do not follow fiscal rules. Extant empirical literature such as Krogstrup and Wälti (2008), Feld and Kirchgässner (2006), and Schaltegger (2001) show that fiscal rules have a significant impact on budget balances. A few studies carried out on United States' data show that the strength of fiscal rules was directly proportional to the reduction in unexpected deficits (Poterba, 1995; Alt and Lowry, 1994; Alesina and Bayoumi, 1996). In the case of provinces in Canada a few studies indicate that provincial legislation against deficits led to stronger budget balances, other things being equal (Tellier and Imbeau, 2004). There is limited literature on the impact of fiscal rules on fiscal performance in emerging market economies (Chakraborty and Dash, 2013).

3.3 WHY FISCAL RULES MAY NOT WORK?

Milesi-Ferreti and Moriyama (2004) analyzed the effectiveness of fiscal rules in light of 'creative accounting'. Milesi-Ferreti and Moriyama (2004) argued that creative accounting may increase in the presence of fiscal rules but there is surprisingly little theoretical and empirical work on the subject. Using a two-period model developed by von Hagen and Harden (1996) and assuming that fiscal rules are being imposed on the 'measured' fiscal balance and that the penalty must be paid if creative accounting is detected, it is observed that budget transparency is inversely proportional to creative accounting. Additionally, even if the costs of engaging in creative accounting are large, tighter rules may still induce creative accounting. Manasse (2007) discussed the incentive effects of budget limits. According

to this study, when limits are imposed on the deficit–output ratio, governments keep the deficit just below the limit to avoid sanctions and have no incentive to practice fiscal consolidation during ‘good times’. These rules then also indirectly have large negative effects on welfare.

Apart from rules-based fiscal control, there have been wide-ranging international experiences of structural adjustment lending for fiscal consolidation with mixed outcomes. A World Bank (1992)⁴ review observed that adjustment lending was associated with a fiscal deficit reduction and an increase in revenue, but the general spending cuts were often at the expense of critically important operations and maintenance and too much spending on salary relative to non-salary inputs. Mavrotas and Ouattara (2003), while analyzing the effect of development assistance on public sector behavior, observed that official development assistance reduced revenue in the short run but raised it in the long run. The study by Gupta et al. (2003) of foreign aid in 107 countries from 1970 to 2000 observed that while concessional loans were associated with higher domestic revenue, mobilization grants had the opposite effect.

3.4 APPROPRIATE STRUCTURE FOR FISCAL RULES

The key goal of fiscal rules is to achieve higher credibility for fiscal policy by reducing discretionary intervention in the conduct of macroeconomic policies even though the attainment of such credibility may involve a substantial gestation period. With regard to the design, fiscal rules should be well defined, transparent, focused, consistent with macroeconomic policies, simple, flexible enough to accommodate cyclical fluctuations, enforceable, and supported by efficient policies (Kopits and Symansky, 1998). It has been argued that indicators need to be operationally simple, flexible, growth oriented, and easily monitored. In the case of India, the fiscal rules imposed are simple and applied with uniform targets of deficit reduction across states.

Two key components of the design of fiscal rules are to ensure their sustainability and decide on an optimal level of fiscal rules indicators. The literature on sustainable fiscal rules has evolved since the 1990s when rules were considered to be appropriate if they respected the inter-temporal budget constraint. Spaventa (1987) finds that a design where sustainability of fiscal rules is based on the satisfaction of budget constraints does not take into account the financial situation of the public sector. Using a sovereign debt framework that assumes a government cannot choose the duration of its debt, (Hatchondo et al., 2012) shows that placing a debt

ceiling may prove beneficial for the government as an expectation for a lower debt level would lead to a decline in interest rates. They also find that lower debt ceilings lead to a lower responsiveness of interest rates to income shocks and consumption volatility becomes less, as fiscal policy becomes less procyclical. Pappa and Vassilatos (2007) and Poplawski et al. (2008) find that debt ceilings may be better indicators than a ceiling on the government's deficit.

A more recent framework by Bertelsmann (2013) supports the establishment of independent fiscal institutions (IFIs) as an important component of ensuring that fiscal rules are adhered to. The design of the IFIs should include close monitoring and evaluation of the rules on a continuous basis. The IFIs could exercise an advisory role and report the true magnitude of government liabilities and project long-term implications of fiscal policy and fiscal announcements. Arguments in favor of IFIs are that they can lead to better transparency in public finances and can undertake the task of monitoring and compliance of fiscal rules and include sanctions for nonobservance of a debt ceiling at a more sophisticated level. IFIs can also encourage and assist governments to publish public finance data on regular intervals.

3.5 SUBNATIONAL FISCAL RULES IN INDIA

In India, some states introduced fiscal rules prior to the recommendations of the Twelfth Finance Commission at the insistence of the World Bank and the Asian Development Bank. This was done through multilateral structural adjustment lending to the states by these banks (Rao and Chakraborty, 2007). The Twelfth Finance Commission's recommendations became operational from the FY 2005–06.⁵ The states that enacted FRAs prior to this and consequent upon the recommendations of the Twelfth Finance Commission are given in Appendix Table 3A.2.⁶ The Twelfth Finance Commission proposed the following incentive structure of an FRA:

Each state should enact a fiscal responsibility legislation, which should, at a minimum, provide for (a) eliminating revenue deficit by 2008–09; (b) reducing fiscal deficit to 3 per cent of GSDP or its equivalent, defined as the ratio of interest payment to revenue receipts; (c) bringing out annual reduction targets of revenue and fiscal deficits; (d) bringing out annual statement giving prospects for the state economy and related fiscal strategy; (e) bringing out special statements along with the budget giving in detail number of employees in government, public sector, and aided institutions and related salaries (Finance Commission, 2005: 260–61).

To avail of debt consolidation and relief facility, all the states (except Sikkim and West Bengal) enacted an FRA with uniform deficit targets (both revenue and fiscal deficits) after the submission of the Twelfth Finance Commission Report in 2004. Already existing state-specific FRAs were amended to comply with the prescribed recommendations of the Twelfth Finance Commission. It is important to highlight that the Twelfth Finance Commission emphasized that all states needed only to legislate an FRA as prescribed to receive debt consolidation and relief facility. In addition to adhering to the commission's prescription of numerical deficit targets, different states volunteered to impose different fiscal restrictions on themselves, such as targeting outstanding liabilities, implementing institutional rules for expenditure management, and timely review of fiscal performance (Simone and Topalova, 2009). The process of fiscal consolidation continued from 2005–06 to 2009–10, the award period of the Twelfth Finance Commission. The Thirteenth Finance Commission (Finance Commission, 2010) also proposed an incentive framework to ensure that the states remain within the FRA deficit targets. There was apprehension that after the global financial crisis, maintaining fiscal prudence would be a challenging task.

As articulated in the Thirteenth Finance Commission Report, in 2009–10 combined (central and states) debt to GDP ratio remained high (82 percent), despite fiscal correction through the implementation of a fiscal responsibility framework from 2005 to 2010. The Thirteenth Finance Commission proposed a target of 68 percent for combined central and state debt to GDP ratio to be achieved by the FY 2014–15 with the central government debt to GDP ratio reaching 45 percent. The commission had taken the elimination of the revenue deficit as the long-term and permanent target for both the central and state governments. The commission's prescribed fiscal consolidation path for the central government required a decline in the revenue deficit from 4.8 percent of GDP as projected for the FY 2009–10, to a revenue surplus of 0.5 percent of GDP by 2014–15. These prescriptions of fiscal consolidation in turn allowed for the acceleration in capital expenditure to 3.5 percent of GDP by 2014–15. As assessed by the Thirteenth Finance Commission, the proposed fiscal consolidation path was growth promoting as it focused on eliminating revenue deficits to ensure that net public borrowing was exclusively used for growth-enhancing public investment.⁷

As observed in the Thirteenth Finance Commission Report, 26 states (under the FRAs) reached their expenditure and debt targets ahead of the scheduled time frame and showed significant fiscal correction. According to the commission, the main reason behind the fiscal correction was the benefit of a higher share of central taxes due to high central tax buoyancies

and an improvement in the tax revenues of the states. State debt to GSDP also reduced sharply during this period, to below 30 percent of GDP. However, there were wide variations in fiscal performance among the states (discussed in section 3.6). In order to continue and strengthen the process of fiscal consolidation at the state level, the Thirteenth Finance Commission made the following recommendations:

- The medium-term fiscal plan makes explicit the values of the parameters underlying expenditure and revenue projections and the band within which these parameters can vary while remaining consistent with the targets of the Fiscal Responsibility and Budget Management Act (FRBMA).
- The FRBMA should specify the nature of shocks that would require the relaxation of the FRBMA targets.
- States should amend or enact FRBMA to incorporate the worked-out fiscal reform path. State-specific grants recommended for a state should be released upon compliance (Finance Commission, 2010: 6).
- All states should set up an independent review and/or monitoring feature under the FRBMA. Attempts should also be made to prepare statements on revenue consequences of capital expenditure, public–private partnerships and related liabilities, physical and financial assets, and vacant public land and buildings.

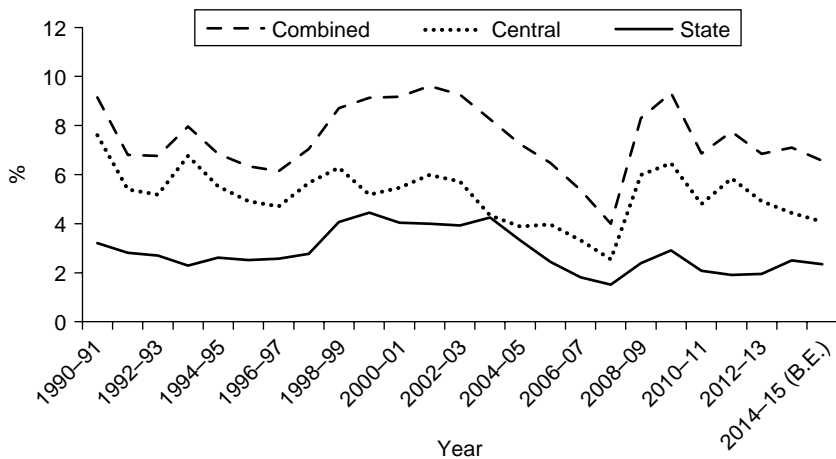
3.6 KEY FISCAL INDICATORS: THE LONG-RUN TREND

This section discusses the long-run fiscal trend. In 1991, a large combined fiscal deficit to the order of 9.9 percent of GDP (the central government's fiscal deficit at 6.6 percent and the states at 3.19 percent), a huge external current account deficit coupled with a dwindling foreign exchange reserve, are considered factors that contributed to the macroeconomic crisis and consequent economic reforms in India. One key component of the big bang economic reform was fiscal consolidation. Fiscal reform was a combination of tax reforms, expenditure rationalization, and the management of public debt reforms. I will discuss these briefly.

As part of fiscal reform, a major tax reform initiative was undertaken to overhaul India's complex tax system. The main components of the tax reform were simplification, rationalization, moderation in the tax rates, and modernization of tax administration. The peak rate of personal income tax was reduced from 50 percent in 1991 to 30 percent in 1997–98.⁸

The reform in indirect taxes comprised reductions in customs tariffs and union excise duties. A sharp rate reduction of indirect taxes contributed to the decline in indirect tax revenue during the 1990s. But direct tax revenue had shown commendable growth during this period. As the share of indirect taxes was much higher than direct taxes, increases in direct taxes could not offset the revenue loss from indirect taxes.

As revenues were not buoyant, fiscal consolidation in the initial years of economic reform was achieved by reducing discretionary development spending by reducing capital expenditure for public investment. However, the success achieved in containing the deficit during the first half of the 1990s was short lived. The impact of the Fifth Pay Commission award created an explosive fiscal imbalance at the central government level as well as in the states, taking the combined fiscal deficit to 9.39 percent of GDP in 1999–2000 (see Figure 3.1). However, the fiscal deficit started declining gradually from 2002–03 and reached an all-time low of 4 percent in 2007–08. This was a spectacular improvement in the fiscal situation of all levels of government since 1991. This phase was also characterized by high buoyancy of revenues. From 2003–04 to 2007–08 central revenue grew at the rate of 18.58 percent per annum, and the states' revenue grew at the rate of 16.46 percent per annum. The GDP growth during the same period was 8.89 percent per annum.



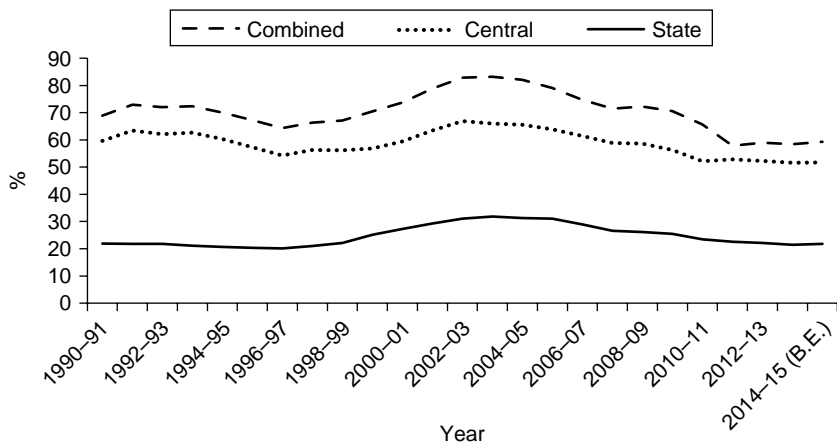
Note: B.E. = budget estimates.

Sources: Reserve Bank of India, *Handbook of Statistics on Indian Economy* (various issues); Central Statistical Organization.

Figure 3.1 Fiscal deficit as percentage of GDP

In 2003, the central government enacted the FRBMA. As mentioned earlier, the states also enacted FRA on the recommendation of the Twelfth Finance Commission. All the states, except West Bengal and Sikkim, enacted their respective FRAs during this period. Many public finance specialists attributed the decline in deficits up to 2007–08 to the FRAs. However, with the global financial crisis, India is again experiencing a high level of fiscal imbalance (see Figure 3.1) especially at the central government level. The movement of the fiscal deficit as a percentage of GDP from 1990–91 to 2014–15 (budget estimates, BE) is given in Figure 3.1. However, the states remained fiscally prudent after the global financial crisis. The outstanding debt to GDP ratio also declined significantly during recent years (see Figure 3.2) and reached well below the targeted level recommended by the Thirteenth Finance Commission for both the central and state governments.

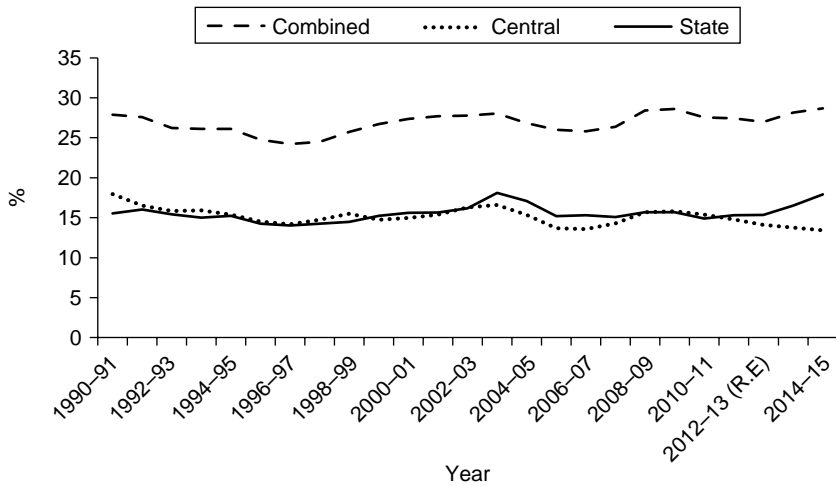
Although key indicators of fiscal prudence, that is, the deficit and debt as a percentage of GDP, have declined for the states over the years, it is important to examine the expenditure profiles of the central government and the states. As evident from Figure 3.3, aggregate expenditure to GDP ratios (all states) declined gradually until 2011–12 and started increasing from 2012–13. If we consider capital expenditure alone, it is



Notes: B.E. = budget estimates.

Sources: Reserve Bank of India. *Handbook of Statistics on Indian Economy* (various issues); Central Statistical Organisation.

Figure 3.2 Outstanding debt as percentage of GDP



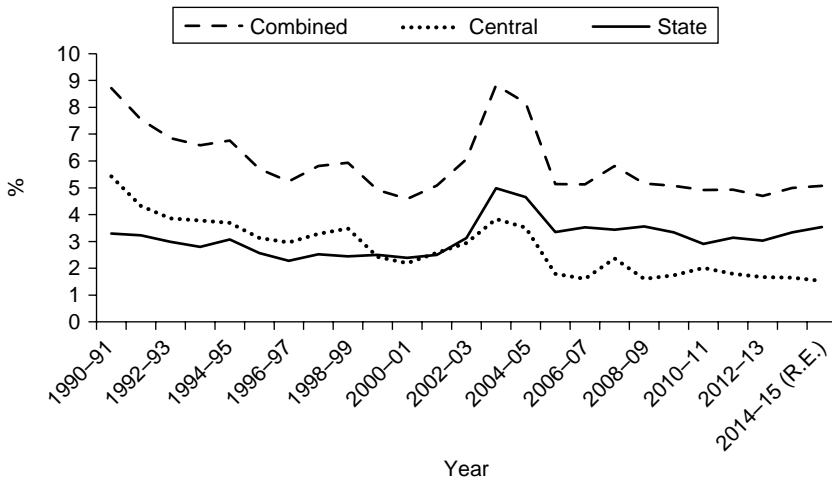
Note: R.E. = revised estimates.

Sources: Reserve Bank of India, *Handbook of Statistics on Indian Economy* (various issues); Central Statistical Organization.

Figure 3.3 Total expenditure as percentage of GDP

evident that there has been a decline in the central government's capital expenditure to GDP ratio from 2003-04. However, from 2002-03 capital expenditure of the states in relation to GDP is higher compared to the central government (see Figures 3.3 and 3.4). In other words, post-FRA, state governments have become the primary drivers of capital spending for the social and economic sectors, while the central government's capital expenditure to GDP ratio continued to decline during this period. It needs to be highlighted that in the pre-FRA period, the central government was the primary driver of capital spending and this is not true any longer. This shift in capital spending at the state level is an important development. It needs to be examined how this shift plays out in the medium term in terms of the composition and quality of public investment spending.

Our analysis shows that the era of rules-based fiscal control witnessed a sharp reduction in the overall fiscal imbalance at the state level. This improvement in fiscal health can be characterized as an intertemporal reduction in both fiscal and revenue deficits to GDP ratio. The states' fiscal position, as evolved up to 2007-08, generated a revenue surplus and brought down the gross fiscal deficit to GDP ratio below the 3 percent



Note: R.E. = revised estimates.

Sources: Reserve Bank of India, *Handbook of Statistics on Indian Economy* (various issues); Central Statistical Organisation.

Figure 3.4 Capital expenditure as percentage of GDP

FRA target. This also implies that the states have over-adjusted their fiscal deficits. At the state level, fiscal consolidation has been achieved through higher own tax revenue mobilization, largely due to the introduction of value added tax (VAT) in 2005; increased central devolution due to buoyant central government taxes; and the reduction in revenue expenditure to GSDP ratio, primarily due to the decline in economic and social services expenditures and the interest burden.⁹ It is argued that the improved fiscal balance has also contributed to the increase in the fiscal space at the state level. Although, in the post global financial crisis years there was fiscal expansion at the central government level, resulting in a sharp increase in the fiscal deficit of the central government, the states continued with fiscal restraints. In aggregate, all state fiscal deficits remained below the FRA target between 2008-09 and 2014-15 (preliminary estimates). However, differences were observed in the inter-state fiscal imbalance profile. Although the rate of increase of deficits was different in different states, most states were able to generate revenue surpluses and successfully reduced their fiscal deficits below 3 percent of GSDP during the post-FRA period. It needs to be emphasized that the states that achieved these targets also had a better history of fiscal

Table 3.1 Major fiscal indicators (% to GSDP)

| | Revenue deficit | | Fiscal deficit | | Primary deficit | |
|----------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|
| | Average before FRBMA | Average after FRBMA | Average before FRBMA | Average after FRBMA | Average before FRBMA | Average after FRBMA |
| <i>Group A</i> | | | | | | |
| Goa | 1.7 | -0.5 | 4.6 | 2.8 | 1.7 | 0.8 |
| Maharashtra | 2.4 | -0.3 | 4.1 | 1.6 | 2 | -0.1 |
| Haryana | 1.4 | 0.5 | 3.3 | 2.3 | 0.9 | 0.9 |
| Gujarat | 3.2 | 0 | 5.1 | 2.4 | 2.3 | 0.4 |
| Tamil Nadu | 1.7 | -0.2 | 2.8 | 2 | 1 | 0.4 |
| <i>Group B</i> | | | | | | |
| Kerala | 2.7 | 2.2 | 4.2 | 3.4 | 1.7 | 1 |
| Punjab | 3.3 | 2.3 | 4.8 | 3.3 | 1.2 | 0.4 |
| Karnataka | 0.9 | -0.8 | 3.1 | 2.5 | 1.4 | 0.8 |
| Andhra Pradesh | 1.6 | -0.4 | 4.1 | 2.4 | 1.3 | 0.5 |
| West Bengal | 4.9 | 2.5 | 5.1 | 3.3 | 1.7 | 0.3 |
| <i>Group C</i> | | | | | | |
| Rajasthan | 3.3 | -0.1 | 5.7 | 2.1 | 2 | -0.4 |
| Jharkhand | 1.3 | -1 | 6.1 | 2.7 | 4.5 | 0.8 |
| Chhattisgarh | 0.4 | -2.5 | 2.7 | 0.7 | 0.6 | -0.4 |
| Madhya Pradesh | 2.3 | -2.5 | 4.9 | 2.2 | 2.1 | 0.1 |
| Odisha | 3.7 | -2.2 | 6 | 0 | 1.7 | -1.9 |
| Uttar Pradesh | 3 | -0.4 | 5 | 3.4 | 1.7 | 0.6 |
| Bihar | 2.1 | -2.6 | 5.6 | 2.2 | 1.2 | -0.1 |

Notes:

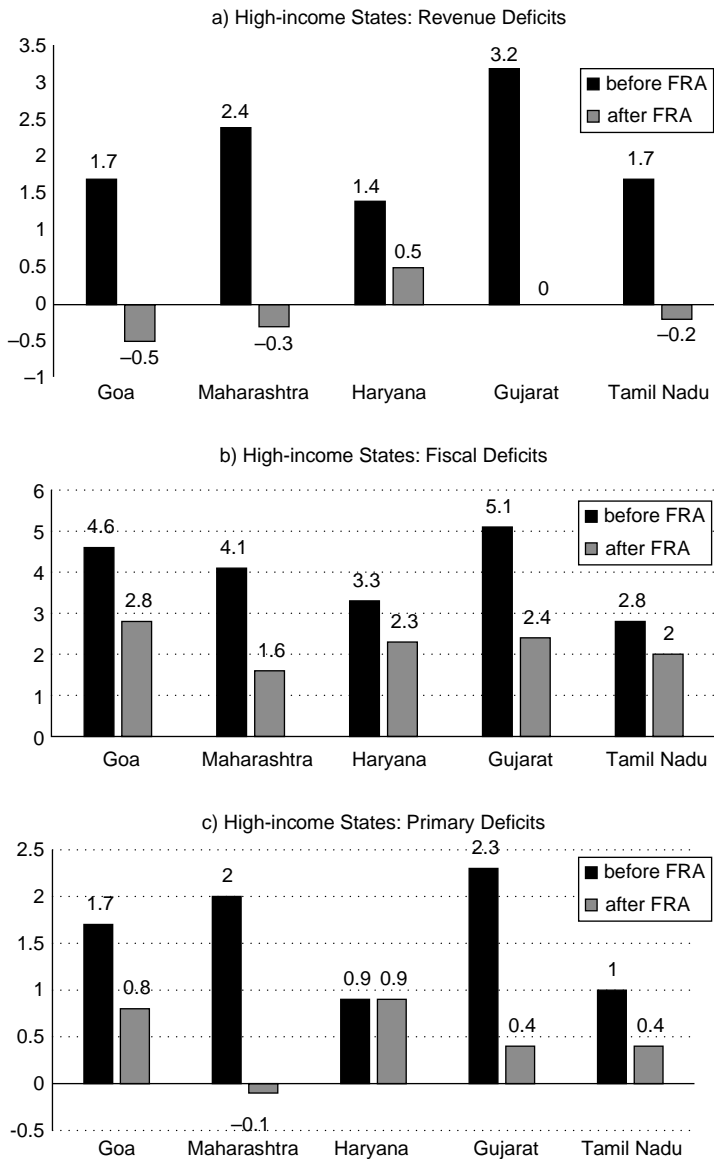
FRBMA = Fiscal Responsibility and Budget Management Act.

The time frames of state-specific averages differ across states as different states introduced an FRA at different times. For details see Appendix 3A.2.

'-' sign indicates surplus.

Source: Reserve Bank of India (2015).

management and fiscal prudence (see Table 3.1). A comparison of the fiscal imbalance profile before and after FRA implementation are given in Figures 3.5a to 3.5i. In these figures, the states are categorized as high-, middle-, and low-income states. As evident, most states over adjusted their fiscal deficits. My data analysis also suggests that low-income states have adjusted their deficits more compared to high- and middle-income states. In other words, states have borrowed less than the prescribed limit of borrowing under the FRA except Kerala, Punjab, and West Bengal.



Note: FRA = Fiscal Responsibility Acts.

Source: Compiled by the author.

Figure 3.5(a-i) Revenue, fiscal, and primary deficits, high-, middle-, and low-income states as a percentage of gross state domestic product

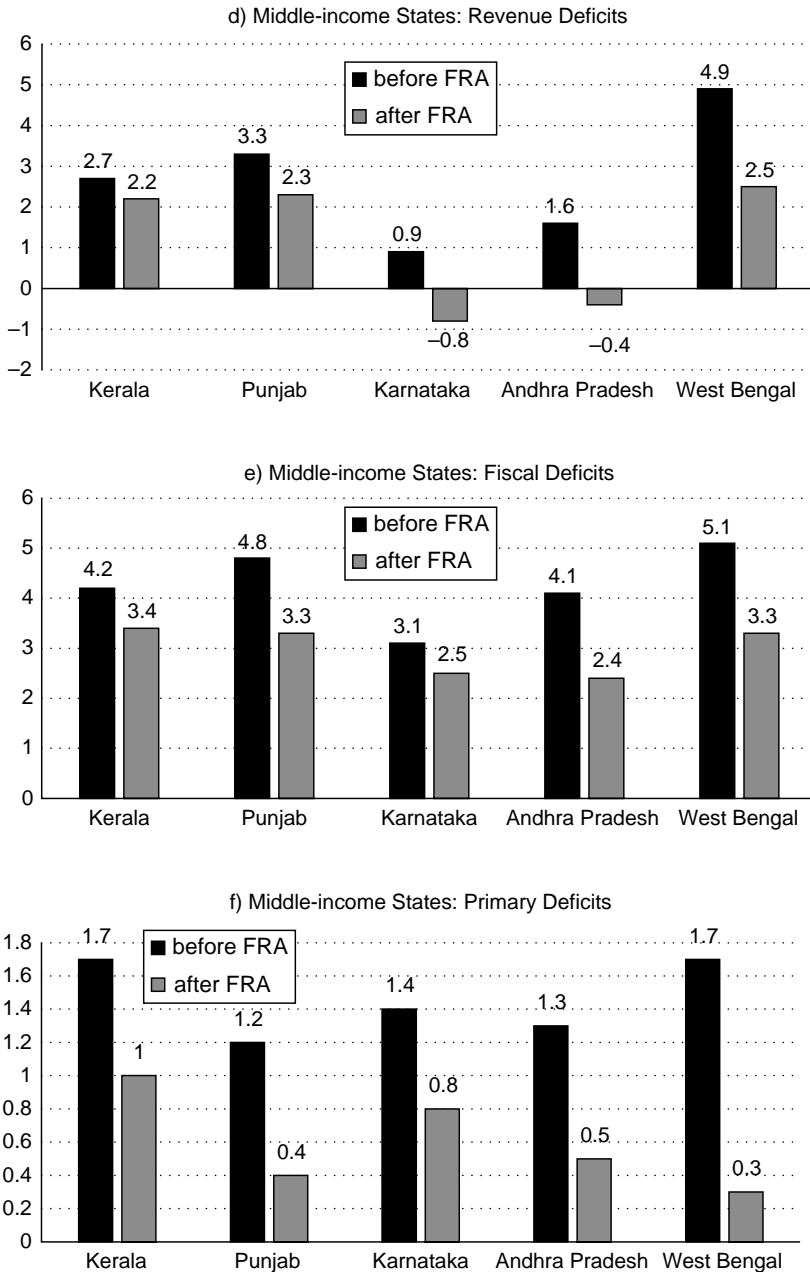


Figure 3.5(a-i) (continued)

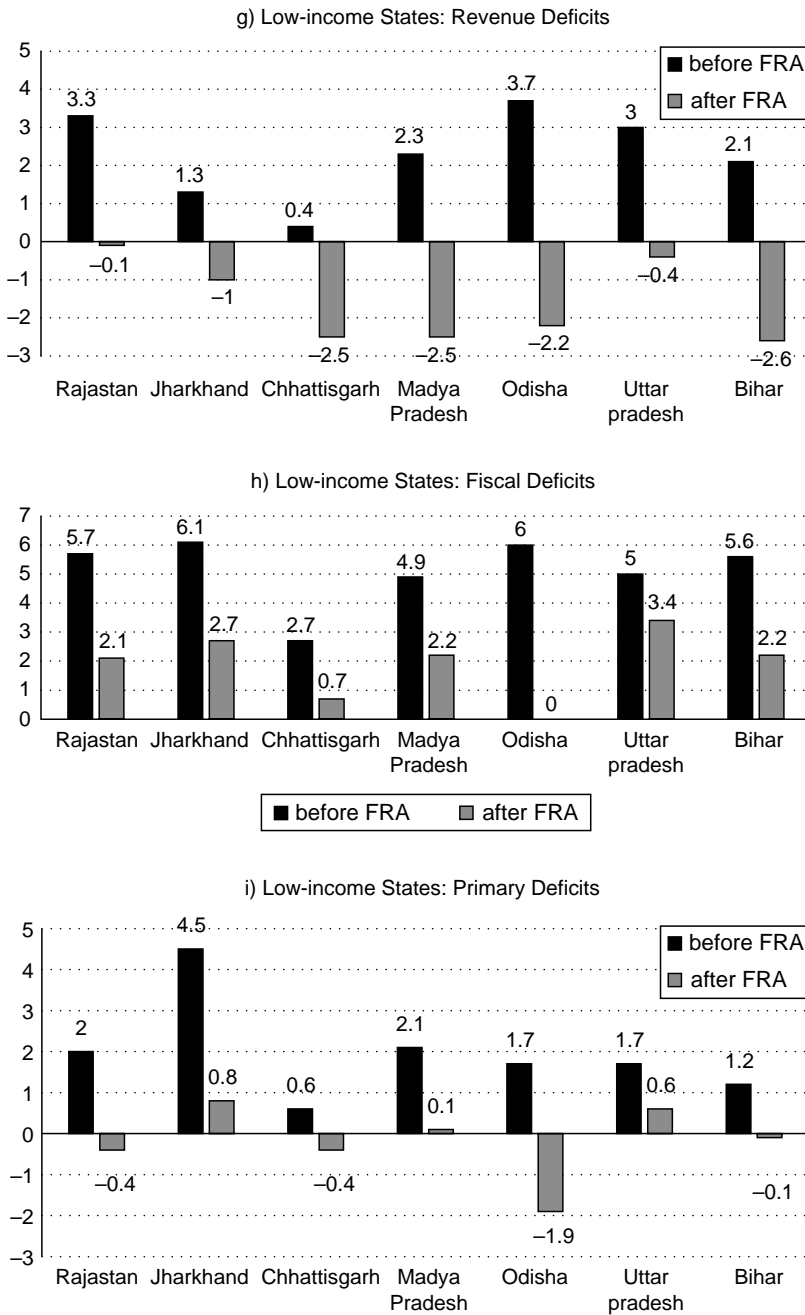


Figure 3.5(a-i) (continued)

These three states had to borrow to finance the deficits in their revenue accounts.

The descriptive analysis of fiscal balance also suggests that the overall state-level fiscal balance has improved with the introduction of fiscal rules. However, state-specific fiscal imbalances are different across states especially with regard to revenue deficits. On the one hand, a few states continued to have deficits in their revenue accounts, implying borrowed resources are being used for revenue expenditure purposes. On the other hand, if fiscal deficits are considered, most states remained within the prescribed 3 percent FRA target.

This descriptive analysis does not conclusively establish the exact impact of fiscal rules on fiscal balances and the way state-level fiscal consolidation has been achieved and the nature of the relationship between different state-level macro and fiscal variables. There needs to be control for such factors to examine the impact of fiscal rules on fiscal balance and spending. The descriptive analysis also does not help in understanding the process of fiscal adjustment in a rules-based fiscal control regime across states. Due to multiple factors a panel data analysis – which suits the studies that deal with dynamic changes – is used to address these issues. The analysis used a dataset of 14 major non-special category states¹⁰ spread over 15 years – from 2000–01 to 2014–15 – to examine fiscal rules and public investment spending at the state level. This study used the Arellano Bond Panel estimation.¹¹

3.7 THE ECONOMETRIC ESTIMATION

The final model has been defined to include two different determinants (per capita GSDP and per capita central transfer) and two different dummies (VAT and FRA), with the FRA dummy being the most important variable of interest.

Econometrically, the model can be specified as follows:

$$K_{i,t} = \delta K_{i,t-1} + \beta_1 gpc_{i,t} + \beta_2 igft_{i,t} + \beta_3 D_{1,vat} + \beta_4 D_{2,fra} + u_{i,t}$$

$$u_{i,t} \sim \text{IID}(0, \sigma_u^2) \quad (3.1)$$

where K = per capita capital outlay
 gpc = GSDP in per capita (in nominal terms)
 $igft$ = per capita intergovernmental fiscal transfers
 $D_{1,vat}$ = 0; before VAT
= 1; after VAT

Table 3.2 Fiscal impact on capital outlay

| Variable | Per capita capital outlay |
|---------------------------|---------------------------|
| L.K | 0.526*** (5.35) |
| igft | 0.167*** (6.58) |
| gpc | 0.00413** (2.52) |
| D ₁ .vat | 164.0*** (2.64) |
| D ₂ .fra | -135.6* (-1.91) |
| Const. | -34.6 (-0.88) |
| No. of observations = 190 | |
| Wald chi2(5) = 1522.11 | |
| Prob > chi2 = 0.000 | |

Notes:

L.K means lag of per capita capital outlay.

t-statistics in parentheses.

* p < 0.1; ** p < 0.05; *** p < 0.01.

Source: Author's computations based on Reserve Bank of India, *Study on State Finances* (various issues).

D₂.fra = 0; before FRA
= 1 after FRA.

My analysis shows that the lag of per capita capital outlay, per capita transfer (igft), and per capita GSDP (gpc) have a positive and significant impact on increase in per capita capital outlay. The VAT dummy also has a positive and significant effect on per capita capital outlay (see Table 3.2). However, this study observed a negative relationship between the FRA dummy and capital outlay at the state level.

3.8 SPENDING INERTIA

This result is not surprising. It should be emphasized that states in the post-FRBMA period are extremely cautious in spending and in general there is a spending inertia among the states reflected in an overcorrection of deficits. This has in turn depressed capital spending in states. This

spending inertia has also contributed to the large accumulation of cash surplus holdings by the states. The Reserve Bank of India Study on State Finances 2011–12 observed that:

The surplus cash balances of the States stood at Rs.852 billion as at March 11, 2012. These cash balances get automatically invested in the central government's 14-day intermediate treasury bills as well as in auction treasury bills (ATBs) where States are non-competitive bidders, without any ceilings/limits. Consequently, there is a spillover of the surplus position of the States to the liquidity position of the Centre. The build-up (and volatility) of the central government's cash surplus, in turn, reflects the unintended absorption of liquidity from the banking system which poses a challenge to the Reserve Bank's monetary management. (Reserve Bank of India, 2012: 70–71)

The same study also pointed out that the Thirteenth Finance Commission in its report submitted in the FY 2009–10, 'therefore, advised the State governments to first utilize their cash balances before taking recourse to fresh borrowings, to finance their deficits so as to reduce the interest burden'. This in practice, however, did not happen.

3.9 CONCLUSIONS

Although during the post-FRA period there was a reduction in the states' fiscal and revenue deficits, the econometric estimates in this study show that public investment spending was negatively related with the FRA dummy. It needs to be highlighted that the 'one size fits all' uniform rule across states came under criticism. Since different states operated at different levels of sustainable deficits, imposing a uniform rule implied constraining capital spending unless large revenue surpluses are generated. My expenditure model shows that the states have contained their public investment spending to comply with the fiscal rules when controlled for the growth of intergovernmental transfers and other state-specific factors. However, most states have over-adjusted their fiscal deficits resulting in an accumulation of cash surpluses. The impact of the decline in investment spending on growth is an area of further research.

To conclude, the Fourteenth Finance Commission addressed this phenomenon of spending inertia during the rules-based fiscal regime at the subnational level by changing the design of the fiscal rules. The Fourteenth Finance Commission has proposed that for the central government, the fiscal deficit ceiling will be 3 percent of GDP from 2016–17 onward. However for the states, flexibilities of 0.25 percent over and above 3 percent of GSDP for a given year is allowed if the debt to GSDP ratio is below 25

percent. Also, if the states limit their interest outgoings as a percentage of revenue receipts below 10 percent, an additional 0.25 percent of GSDP is allowed as an extra fiscal space for capital spending. It needs to be seen how far the Fourteenth Finance Commission's award is going to change state-level fiscal behavior and the utilization of borrowed resources for capital spending within the existing federal fiscal framework of transfers (Finance Commission, 2015).

NOTES

1. The Finance Commission is a statutory constitutional body appointed quinquennially by the President of India.
2. Prior to the recommendations of the Finance Commission in 2004, some states introduced their own Fiscal Responsibility Acts (FRA). A few of them did it as a part of the subnational structural adjustment lending programs support provided by the Asian Development Bank and the World Bank. A review of the subnational adjustment lending programs and its impact of state-level fiscal balance is available in Rao and Chakraborty (2007).
3. Although, state-specific FRAs have other commitments such as reductions in the guarantees given by the state governments, the level of contingent liabilities, and in some cases the level of debt, the incentive structure was linked to the reduction in revenue and fiscal deficits. Thus, this study primarily focuses on these two indicators.
4. Cited in World Bank (2005).
5. Indian FY is from 1 April to 31 March. For example, FY 2005–06 means 1 April 2005 to 31 March 2006.
6. The Twelfth Finance Commission's report was submitted in November 2004 and recommendations became operational from the FY 2005–06.
7. 'At the same time, we recognize the adjustment period required for exit from the fiscal loosening permitted to states in 2008–09 and 2009–10, as part of the national fiscal stimulus to contain the adverse impact of the international growth breakdown. Accordingly, we allow 2010–11 as a year of adjustment and begin the fiscal consolidation path only from 2011–12' (Finance Commission, 2010: 25, para. 3.24).
8. Currently India has one of the lowest income tax rates in the world.
9. It is observed that the decline in interest burden in the last couple of years is due to the softening of interest rates on government securities. It is also argued that measures like debt swap schemes in a low interest regime have benefited the states in reducing the interest burden.
10. These states are Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal. This study ignores the small and/or special category as they are over-reliant on central government assistance. Over-dependence on central government transfers severely constrains the fiscal autonomy of such states, and hence, affects their public finance management ability.
11. Arellano and Bond (1991) suggested that if one is considering the orthogonality condition that exists between lagged values of dependent variable and the disturbance variable, then the additional instrument can be obtained in the dynamic panel data model.

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APPENDIX

Table 3A.1 Instruments and nature of fiscal rules: a cross-country comparison

| Country | Year | Name and nature of Act | Numerical targets | Description |
|---------------|------|-------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| United States | 1986 | Gramm–Rudman–Hollings Act (GRH) | Yes | Specified a series of annual deficit targets with a balanced budget to be achieved in 1991 and subsequently moved to 1993. |
| | 1990 | Budget Enforcement Act – Expenditure Rule | Yes | Annual appropriations limit adopted for discretionary spending. |
| | 2010 | Pay-As-You-Go (PAYGO Act) | No | Deficit-raising policies must be financed by other measures over a specified time period. Exempt programs included legislation with an ‘emergency’ designation, social security, and the Bush tax cuts for the middle class. |
| | 2011 | Balanced Budget Rule – Expenditure Based | No | Discretionary spending caps were introduced. Additional spending cuts came into effect in March 2013. These additional cuts are expected to reduce \$1.2 trillion over a decade with one half coming from defense spending and the other half from domestic programs, excluding social security, Medicaid, parts of Medicare, and certain other entitlement programs. |
| Japan | 1947 | Balanced Budget Rule | No | Current expenditure should not exceed domestic revenues. |
| | 1997 | Fiscal Structure Reform Act | Yes | Revised balance budget rule: Reduce overall government deficit to 3 percent of GDP. |
| | 2006 | Expenditure Rule | Yes | Numerical targets by spending category (public investment, social security). |
| | 2010 | Fiscal Management Strategy | No | Any major increases in expenditure or decreases in revenue need to be accompanied by permanent expenditure reductions/revenue-raising measures. |

| | | | | |
|----------------|------|-----------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Canada | 1991 | Federal Spending Control Act | Yes | C\$3 billion debt reduction and limitation in program spending except self-financing programs. |
| | 1998 | Debt Repayment Plan | No | |
| | 2006 | Target-based Plans | No | Eliminating net general government debt by 2021 and federal debt by 2013–14. |
| European Union | 1992 | Maastricht Treaty | Yes | Debt and deficit ceiling: 60 percent and 3 percent of GDP, respectively. |
| | 2005 | Stability and Growth Pact | No | Country specific medium-term objectives are set for structural budget balance. |
| | 2012 | Golden Rule | Yes | Numerical Targets Annual pace of debt reduction (no less than 1/20th of the distance between the actual debt ratio and the 60 percent threshold) starting 3 years after a country has left the current excessive debt procedure (EDP). |
| Argentina | 2000 | Fiscal Responsibility Law (FRL) | Yes | Balanced Budget Rule: balance revenue and expenditure excluding social and infrastructure expenditure. Additionally, for provinces debt-servicing costs cannot exceed 15 percent of current revenues after transfers' deduction. |
| | 2004 | Implementation of Revised FRL law | No | Expenditure Rule: Primary expenditure cannot grow more than nominal GDP. |
| | | | | Federal Fiscal Responsibility Council was created in 2000. However, its activities were suspended in 2009. |
| Peru | 2000 | Balanced Budget Rule | Yes | Deficit ceiling for the nonfinancial public sector. The ceiling was set at 2.0 percent of GDP for 2000 and 2003, 1.5 percent of GDP for 2001, 2002, and from 2004–08. Real growth current expenditure ceiling of 2 percent for 2000–02 and 3 percent for 2003–08. |
| | 2009 | Balanced Budget Rule | Yes | New limit of 2 percent for balanced budget was set. Real growth of current expenditure limit was at 4 percent, structural deficit limit at 1 percent of GDP. |

Table 3 A.1 (continued)

| Country | Year | Name and nature of Act | Numerical targets | Description |
|-----------|------|-----------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 2013 | Law 30099 | No | Expenditure on maintenance of infrastructure, goods and services of social programs covered by the performance-based budgeting scheme and equipment intended for public order and security were excluded from current expenditure and were out of the ambit of the stipulated limits. |
| Mexico | 2006 | Balanced Budget Rule – Cash Basis | No | Rule applies to the federal public sector, which includes the central government, social security, and key public enterprises. |
| | 2009 | Balanced Budget Rule | Yes | Status quo with exclusion of investment outlays of the state-owned oil company Pemex from the balanced-budget rule. Although sanctions were also thought of, escape clauses also existed. |
| | 2013 | Expenditure Rule | Yes | Cap on structural current spending (SCS) defined as current primary expenditure including transfers to state and local governments for capital but excluding those outlays governed by automatic rules (pensions, subsidies for electricity, and tax devolution). SCS cannot grow faster than 2 percent in real terms through 2017. |
| Australia | 1985 | Expenditure Rule | Yes | Expenditure Rule, Balanced Budget Rule, Revenue Rule |
| | 1998 | Charter of Budget Honesty Act | Yes | Achieve budget surpluses over the medium term. Keep taxation as a share of GDP below the level of 2007–08. Improve the government's net financial worth over the medium term. Commitment to restrain real growth in spending to 2 percent per year since 2009. |
| Brazil | 2000 | Fiscal Responsibility Law | Yes | Expenditure Rule: Personnel expenditure is limited to 50 percent of net current revenue for the federal government, and 60 percent for states and municipalities. Debt Rule: New borrowing must be at most equal to public investment. |

| | | | | |
|-------------|------|------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cameroon | 2002 | Balanced Budget Rule | No | The Central African Economic and Monetary Community (CEMAC) sets the fiscal rules. |
| | 2008 | Revised Balanced Budget Rule | No | Structural fiscal balance and non-oil basic fiscal balance respectively as a percentage of nominal GDP should be in balance/surplus. |
| Indonesia | 1967 | Balance Budget Rule | | The consolidated national and local government budget deficit is limited to 3 percent of GDP in any given year as per State Finance Law and Government Regulation 23/2003. |
| | 2004 | Debt Rule | Yes | Central and local government debt should not exceed 60 percent of GDP. |
| India | 2004 | Budget Balance Rule | Yes | Fiscal Responsibility and Budget Management Act. Reduce the fiscal deficit to 3 percent of GDP by 2008. |
| | 2009 | Revised Budget Balance Rule | No | FRBMA was suspended in 2009. All states barring three had met the targets. However, the Central Government had not achieved the stipulated targets. |
| Kenya | 1997 | Debt Based Rule | Yes | The debt-to-GDP ratio in net present value terms should be below 40 percent and/or total nominal debt to be below 45 percent of GDP (a goal of their medium-term debt-management strategy). Government overdraft at the central bank is limited to 5 percent of previous year revenue. |
| New Zealand | 1994 | Fiscal Responsibility Act | | Revenue should be 21–22 percent of GDP. The government needs to run operating surpluses annually until 'prudent' debt levels are achieved. Once these are achieved on average total operating balances should not exceed total operating revenues. In case of deviations from the principles, the government needs to specify the reasons. Specific fiscal targets should be set by the government for 3-year and 10-year objectives, typically in percent of GDP. |

Table 3A.1 (continued)

| Country | Year | Name and nature of Act | Numerical targets | Description |
|--------------------|------|------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Russian Federation | 2007 | Balanced Budget Rule | | The Russia's Federation's legal fiscal framework relied on the non-oil balance as a key fiscal indicator. The budget included a long-term non-oil deficit target of 4.7 percent of GDP. This was suspended in April 2009 as a result of the global financial crisis, and formally abolished in 2012. |
| | 2009 | | | |
| | 2012 | Oil Price Based Fiscal Rules | | The rule sets a ceiling on expenditures (oil revenue at the 'base' oil price, plus all nonoil revenues, plus a net borrowing limit of 1 percent of GDP). Once the Reserve Fund reaches this threshold, at least half of excess oil revenues should go to the National Wealth Fund, while the remaining resources would be channeled to the budget to finance infrastructure and other priority projects. |
| Singapore | 1991 | Debt Rule | | Spending to not exceed 50 percent of net investment returns on reserves held by the Monetary Authority of Singapore and the Government of Singapore Investment Corporation. |
| | 1995 | Balanced Budget Rule (BBR) | | Budget to be balanced across government term of office (usually 5 years). |
| | 2008 | Amendment to BBR | | The rule was amended in 2008 to change the benchmark to 'expected long-term net real investment returns'. |

Source: Compiled by author from various sources.

Table 3A.2 Date of FRBMA and period for calculating average

| State | Month of FRBMA | Period before FRBMA | Period after FRBMA |
|------------------|----------------|---------------------|--------------------|
| Karnataka | Sep 2002 | 1992–93 to 2001–02 | 2003–04 to 2012–13 |
| Tamil Nadu | May 2003 | 1994–95 to 2002–03 | 2004–05 to 2012–13 |
| Kerala | Aug 2003 | 1994–95 to 2002–03 | 2004–05 to 2012–13 |
| Punjab | Oct 2003 | 1994–95 to 2002–03 | 2004–05 to 2012–13 |
| Uttar Pradesh | Feb 2004 | 1994–95 to 2002–03 | 2004–05 to 2012–13 |
| Gujarat | Mar 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Maharashtra | Apr 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Himachal Pradesh | Apr 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Rajasthan | May 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Madhya Pradesh | May 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Andhra Pradesh | Jun 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Odisha | Jun 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Tripura | Jun 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Haryana | Jul 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Manipur | Aug 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Chhattisgarh | Sep 2005 | 2000–01 to 2004–05 | 2006–07 to 2012–13 |
| Assam | Sep 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Uttarakhand | Oct 2005 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Meghalaya | Mar 2006 | 1998–99 to 2004–05 | 2006–07 to 2012–13 |
| Bihar | Apr 2006 | 2001–02 to 2005–06 | 2007–08 to 2012–13 |
| Goa | May 2006 | 2001–02 to 2005–06 | 2007–08 to 2012–13 |
| Mizoram | Oct 2006 | 2001–02 to 2005–06 | 2007–08 to 2012–13 |
| Jharkhand | May 2007 | 2002–03 to 2006–07 | 2008–09 to 2012–13 |
| Nagaland | Jan 2010 | 2006–07 to 2008–09 | 2010–11 to 2012–13 |
| West Bengal | Jul 2010 | 2008–09 to 2009–10 | 2011–12 to 2012–13 |
| Sikkim | Sep 2010 | 2008–09 to 2009–10 | 2011–12 to 2012–13 |

Note: FRBMA = Fiscal Responsibility and Budget Management Act.

Source: Reserve Bank of India (2015).

4. Fiscal equalization schemes and subcentral government borrowing

Salvador Barrios and Diego Martínez-López

4.1 INTRODUCTION

Subcentral government public finances have deteriorated sharply in several developed economies since the global financial crisis, contributing significantly to the deterioration of general government fiscal balances in countries with highly decentralized fiscal policies (Ter-Minassian and Fedelino, 2010). In some cases, subcentral governments' public finances have experienced diverging evolutions, casting doubts on the achievement of national fiscal objectives (European Commission, 2012; Foremny and von Hagen, 2012). Existing subnational borrowing rules and other fiscal restraints may play a role in ensuring greater homogeneity in regional borrowing, but the heterogeneity in regional fiscal constraints may be difficult to diminish when regions face different fiscal needs and fiscal capacities. This chapter investigates the way that differences in fiscal capacities, which are primarily determined by regional differences in gross domestic product (GDP) per capita, influence regional public borrowing depending on the existing fiscal equalization scheme.

The effective contribution of subcentral governments to national fiscal consolidation objectives may be severely constrained for two reasons. First, regions usually face long-lasting income differentials, which make some largely dependent on intergovernmental grants to ensure sufficient access to public goods and services according to nationally set standards. This regional heterogeneity in fiscal capacities can be directly linked to differences in productivity and competitiveness levels, which are unlikely to vanish in the medium term and, in many instances, the long term (Barrios and Strobl, 2009). Second, the decentralization of fiscal policy also leads to an imperfect transfer of fiscal responsibilities, as incentives for regional governments to keep their public finances in order may be lower than those for central governments, leading to different borrowing behaviors. Indeed, when national resources are available for regional redistribution, regional governments may be less concerned about the impact of their

individual fiscal decisions on the total amount of financial resources for other regions. This is known as ‘common-pool’ problems in fiscal federalism (Velasco, 2000; Rodden et al., 2003).

Likewise, cross-regional income differences can have a protracted effect on public debt and deficit given that incentives to undertake structural reforms and/or to avoid budgetary slippages are notoriously poor in the presence of permanent fiscal transfers (Duval and Elmeskov, 2006). Evidence suggests that this is more likely if similar levels of public services are expected across constituencies with large differences in GDP per capita and if the fiscal equalization scheme does not provide appropriate mechanisms to deter and/or to reduce excessive regional fiscal imbalances (Rodden, 2006). The extent to which these permanent redistribution schemes may face the opposition of richer (i.e., net creditor) regions and/or may compromise the conduct of national fiscal policies remains a source of discussion.

Generally, the possibility for subnational entities (i.e., states, regions, or cities) to benefit from financial rescue either through bailouts or vertical grants modifies their intertemporal budget constraint. Regional fiscal policy decisions may thus be more distorted than, for example, country-level fiscal policy decisions, since regions naturally set their fiscal policy objectives by anticipating the resources from the central government.¹ Recent cross-country evidence suggests that in countries where vertical fiscal imbalances are high, national public deficits also tend to be large (Eyraud and Lusinyan, 2013).

Several factors have been put forward in the literature explaining how fiscal decentralization can influence regional borrowing and affect country-level fiscal policy. These elements range from soft-budget constraints and misperception of the cost of public services, the size and age structure of the population, to the degree of political fragmentation (Buettner and Wildasin, 2006; Velasco, 2000; Alt and Lowry, 1994; Egger et al., 2010).

This chapter argues that the design of fiscal equalization schemes may also matter. The design refers to the main components of equalization grants used for interregional solidarity, that is, fiscal capacity (i.e., the economic capacity of regions to finance their own public spending through taxes) and normative fiscal effort (i.e., the benchmark tax rate set at the national level) determining the extent of transfers in favor of relatively poor regions (Boadway and Shah, 2007). Regions with differing fiscal capacities may incur higher or lower indebtedness depending on expected tax revenues redistributed through central government grants and the degree of public revenue smoothing within the country. However, depending on the design of the fiscal equalization scheme and national policy objectives, either rich or poor regions may incur higher deficits. Empirical findings concerning Germany and Spain support these hypotheses, while

the evidence from Canada remains mixed. In Germany, the poorer *Länder* (states) are more prone to borrow (after controlling for other factors), while the opposite occurs in Spain.

In this chapter, a fiscal reaction function was estimated for regions of Canada, Germany, and Spain, explaining subnational borrowing as a function of standard regressors used in the literature (i.e., business cycle, lagged public debt, and others) together with the GDP per capita. These econometric estimates provide country-specific results with different patterns in regional public borrowing according to whether rich or poor territories were considered. The extent to which the particular design of the equalization grants condition the relationship between regional borrowing and GDP per capita was then investigated to explain the different patterns observed across countries according to their regional fiscal redistribution scheme. To do so, a simple theoretical model was used with a stylized equalization formula that illustrates basic intuitions determining the different fiscal behavior of subnational governments.

4.2 FISCAL EQUALIZATION SCHEMES AND SUBCENTRAL GOVERNMENT BORROWING: CANADA, GERMANY, AND SPAIN

4.2.1 Fiscal Decentralization and Intergovernmental Transfers

Canada, Germany, and Spain are three countries with notoriously decentralized fiscal policies. All have experienced substantial decentralization of their public finances either on the spending side, tax revenue side, or both. They differ notably, however, in the fiscal equalization schemes used and regarding the evolution of regional indebtedness over the past two decades. Table 4.1 shows the different elements that, given the focus of this chapter, are likely to influence the relationship between public borrowing and regional income differences.

The first difference concerns the degree of tax revenue decentralization. Considering 2010 figures, Canada stands out, as regions there have the highest level of own-tax revenues in relation to the total revenues of the central government. The degree of tax autonomy is also the most advanced. German and Spanish regions have a significantly lower degree of tax autonomy and tax revenues in relation to the central government total tax revenues. Spanish and German regions have also less leeway in determining their own tax rates or tax bases. Regional government revenues and expenditure are more unbalanced in Spain than in Canada and Germany, although this gap has been reduced since 1995. In Canada and

Table 4.1 Fiscal frameworks of Canada, Germany, and Spain

| | Public expenditure (% of general government expenditure) | | Tax revenues (% of general government tax revenue) | | Intergovernmental transfer revenues (% total regional revenues) | | Tax autonomy (% total regional revenues) | |
|---------|-------------------------------------------------------------|-------|-------------------------------------------------------|-------|--------------------------------------------------------------------|-------|---------------------------------------------|-------|
| | 1995 | 2010 | 1995 | 2010 | 1995 | 2010 | 1995 | 2010 |
| Canada | 40.44 | 46.88 | 37.06 | 39.52 | 18.37 | 21.19 | 37.10 | 38.90 |
| Germany | 18.74 | 21.41 | 21.64 | 21.16 | 17.20 | 18.05 | 21.60 | 22.90 |
| Spain | 21.60 | 34.42 | 4.80 | 18.24 | 73.30 | 49.00 | 4.80 | 22.30 |

Note: See OECD (2013) for a definition of the tax autonomy indicator.

Sources: OECD and authors' calculations.

Germany, the share of regional revenues stemming from federal grants ranged between 17 percent and 21 percent of total revenues over the period and remained around that level for most of the period. In Spain, however, the share of total revenues stemming from central government grants was largely dominant in 1995, representing 73.3 percent of total regional revenues, and still substantial in 2010 at 49.0 percent.

These figures reflect important differences across the countries in terms of design and implementation of intergovernmental transfers. In Canada, these transfers are formula-based grants from the central government, which are set according to the differences in fiscal capacities (Bird and Tassonyi, 2003). It also means that Canadian provinces have little leeway to conduct discretionary fiscal policy. In addition to these vertical transfers, Canadian provinces receive substantial funds to ensure the provision of health care and social services, which together represent around 65 percent of total transfers to the provinces (Dahlby, 2008).

In Germany, fiscal equalization is enshrined in the Constitution, and it takes place after splitting revenues from shared taxes between the federal and *Länder* level in three successive stages. The redistribution criteria depend on the tax capacities and financial needs of each *Länder*. Horizontal redistribution is topped up by vertical redistribution from the federal government to further smooth per capita tax revenues among regions. These vertical grants became especially relevant as of 1995, when former East German *Länder* (as well as for some small former West German *Länder*) entered this scheme.²

In Spain, regional financing is essentially vertical through central government grants.³ The Constitution recognizes equal access to public

services across the national territory; from the early 1990s, this criterion has evolved into providing similar per capita financing across regions through a myriad of funds. Overall, the Spanish regional financing system has moved to more financial autonomy through a greater regional share of tax revenues and spending competencies, most notably in the area of education and health, which has also translated into a greater dependence of some communities on vertically redistributed funds. The regional financing system in Spain has been characterized by a high degree of arbitrariness in intergovernmental transfers, evolving into a strategic game among the different administrative levels. As a result, the imbalance between the regional expenditure attributions and the financial means allocated for this purpose has tended to increase (Vallés and Zárata, 2004).

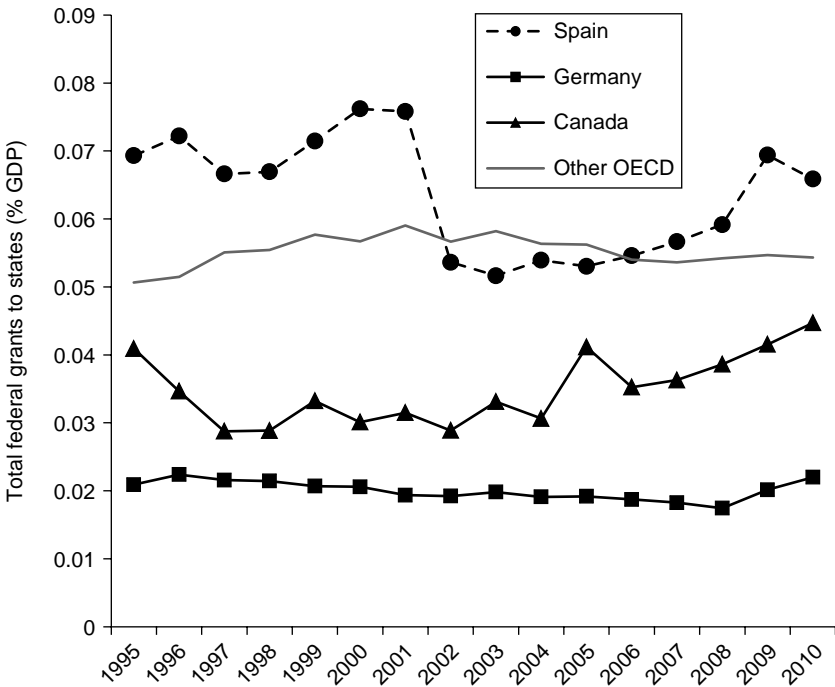
Given the above evidence, one would expect that potential changes to intergovernmental transfers would have a substantial impact in Spain compared to in Canada and Germany. Indeed, Figure 4.1 suggests that both the size and variability of financial transfers to the regions have been higher in Spain compared to Canada and Germany.

In all of these countries, the global financial crisis has also had a significant impact on regional borrowing, especially in Canada and Spain (see Figure 4.2). Spain illustrates the successive periods of tax revenue windfalls and shortfalls linked to the housing boom that impacted Spanish regions' public finances (Barrios and Rizza, 2010). In Canada, this was mainly due to increased financing of current expenditures through regional borrowing (Guillemette, 2010).⁴

4.2.2 Fiscal Equalization Schemes

Fiscal equalization schemes have led to similar patterns of income redistribution across the three countries (see Figure 4.3). Barring national differences in GDP per capita levels, the relationship between the degree of regional income redistribution and the regional level of GDP per capita is similar.⁵ Simple ordinary least squares (OLS) regressions between the (log) level of grant per capita and the (log) GDP per capita indicate that the redistributive effect of intergovernmental grants tends to be similar in Germany and Spain. For instance, a decrease in the level of GDP per capita of 10 percent entails an increase of 40 percent and 38 percent of the intergovernmental grants per capita in Germany and Spain, respectively.⁶ In Canada, this increase is about half of these figures (22 percent). In this context, the existence of fiscal equalization grants in the presence of large differences in regional income per capita are likely to increase regional public borrowing in poor regions and, in some cases, rich regions.

Figure 4.4 considers the link between GDP per capita and the change in

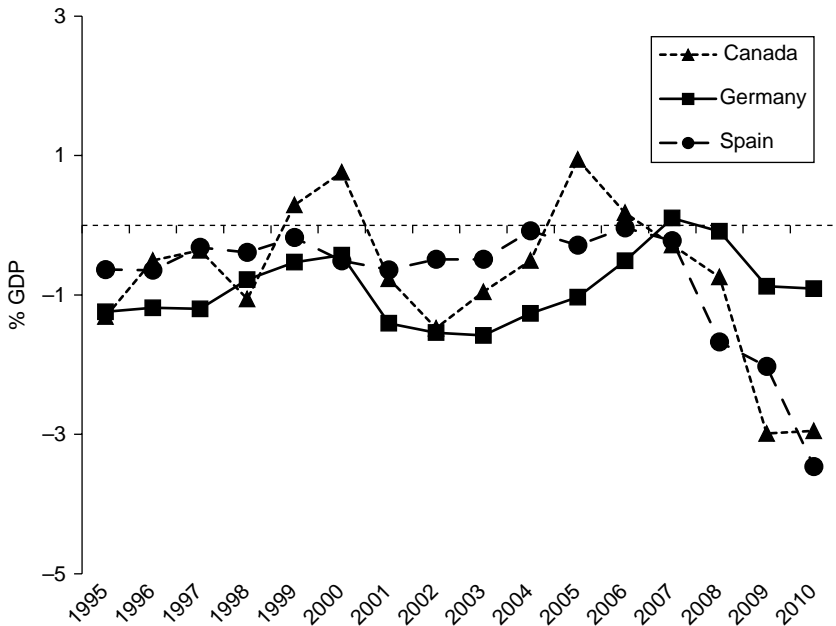


Notes:
 GDP = gross domestic product; OECD = Organisation for Economic Co-operation and Development.
 'Other OECD' is the simple average figure for Austria, Belgium, Switzerland, and the United States.

Sources: OECD and authors' calculations.

Figure 4.1 Financial transfers from federal to regional governments (% of national GDP)

public debt over the period 1995–2010 for Canada, Germany, and Spain. In Canada and Spain, the relationship appears positive (i.e., suggesting that richer regions tend to have experienced a higher increase in public borrowing during this period). On the contrary, in Germany, the opposite seems to hold. It is, of course, premature to draw conclusions from this evidence, given the influence of a number of factors not accounted for, such as the starting level of debt or influence of the business cycle, which may condition the relationship between indebtedness and regional income per capita differences.



Note: GDP = gross domestic product.

Sources: OECD and authors' calculations.

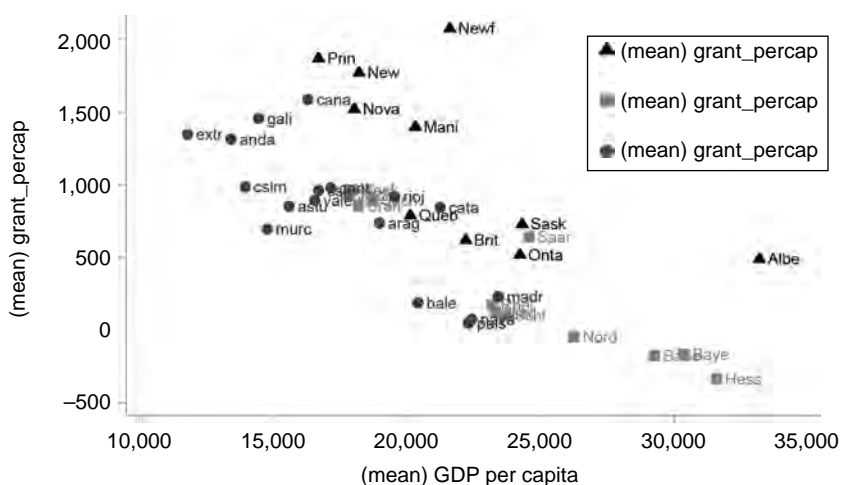
Figure 4.2 The evolution of net lending and net borrowing in Canada, Germany, and Spain, 1995–2010

4.2.3 Econometric Analysis of the Determinants of Regional Government Borrowing with Fiscal Equalization

To analyze the link between differences in income per capita and regional borrowing, the fiscal reaction function approach was adopted, now widely used in public financial literature (Bohn, 1998). An econometric model was specified where regional borrowing, represented by the primary balance (i.e., net lending minus interest payment expressed in percentage of GDP), is a function of past borrowing, debt level, and business-cycle factors. The equation was written as:

$$pb_{i,t} = \beta_1 + \beta_2 pb_{i,t-1} + \beta_3 D_{i,t-1} + \beta_4 OG_{i,t} + \beta_5 Ycap_{i,t} + \beta_6 X_{i,t} + \varepsilon_{i,t} \quad (4.1)$$

where:



Notes:
 GDP = gross domestic product.
 Average figures for 1995–2009 in current euros.

Sources: Statistics Canada, Destatis, Ministerio de Economía y Finanzas, and authors' calculations.

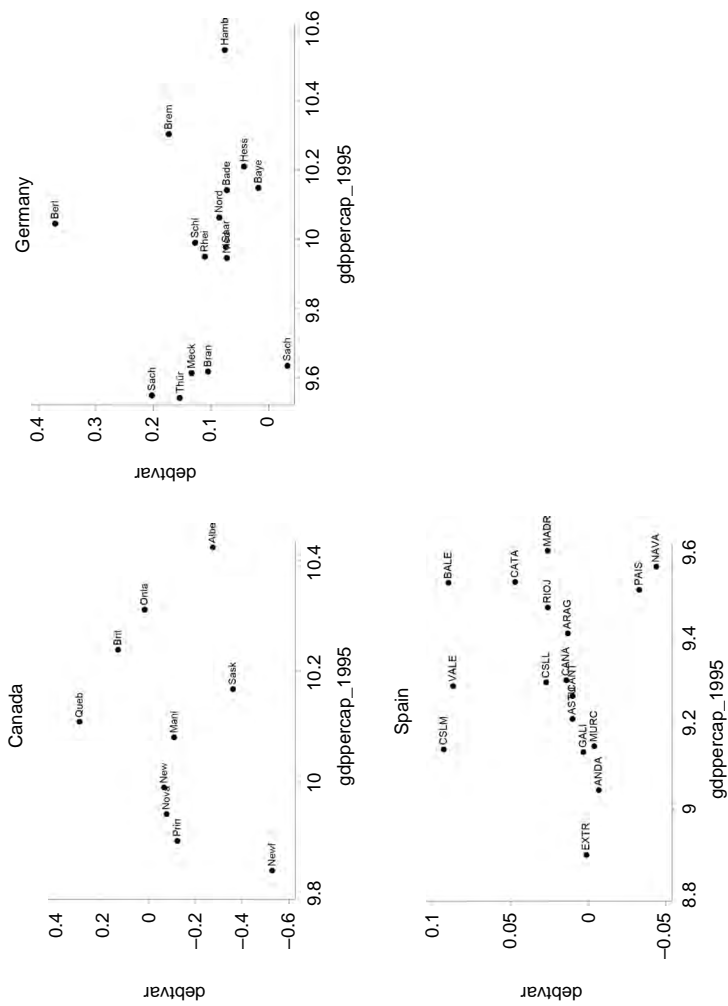
Figure 4.3 Federal grants versus gross domestic product per capita in Canada, Germany, and Spain

the indexes indicate the region (*i*) and the year (*t*);
 the dependent variable is the primary balance, which is regressed on its past level (at $t - 1$);
D is the debt level;
OG is the output gap;
Ycap is the regional GDP per capita;
 while **X** is a vector of control variables and ϵ is a time- and region-specific error component.

Usually, the main parameter of interest in such a fiscal reaction function is the coefficient β_3 whereby a positive coefficient indicates that fiscal policy is sustainable.

The output gap captured the impact of the business cycle on fiscal policy and was indirectly intended to reflect the size of automatic stabilizers; they are especially relevant in the Spanish case as long as a significant part of regional revenues were linked to the housing boom.

The output gap was obtained for each region using the Hodrick and Prescott (1997) filter with a smoothing parameter, $\lambda = 6.25$, as suggested



Sources: Statistics Canada, Destatis, Ministerio de Economía y Finanzas, and authors' calculations.

Figure 4.4 Regional debt variation, 1995–2011 versus level of gross domestic product per capita, 1995

by Ravn and Uhlig (2002) for annual data. The nominal GDP was used to build this indicator, such that the output gap also included the effect of inflation (and therefore of seigniorage revenues).⁷ The main coefficient of interest was β_5 , which was expected to be either positive or negative, depending on whether poor or rich regions (i.e., regions with a low or high value of Y_{cap} , respectively) tend to incur higher net borrowing. By estimating equation 4.1 for each country, whether cross-country institutional differences influence the sign of the estimated coefficient β_5 was examined. The primary balance was measured net of the grants received through regional equalization.

In practice, however, it is difficult to know whether these grants influence regional fiscal policy by modifying the intertemporal budget constraint. A clear identification problem was thus faced when attempting to interpret the coefficient β_5 of the GDP per capita variable. To deal with this issue, a number of control variables (represented by \mathbf{X} in equation 4.1) were included to reflect structural differences in financing capacity and regional public services needs following the literature on regional fiscal policy (Buettner, 2006).

The first control variable was the share of each region in the total population of the country reflecting the fact that regions with larger populations tend to face higher public spending needs. In addition, political factors may also influence fiscal policy decisions (Fatás and Mihov, 2003). Another control, a dummy variable indicating whether in a given year regional elections took place, was thus included. One could also consider that the influence of a regional election process on regional fiscal behavior may differ when it coincides with general elections, as it may condition national fiscal policy and impact regional public finances. Consequently, another control variable was added, taking a value equal to 1 when the regional election year coincides with a general election year, and zero otherwise. For both election variables, data provided by Schakel (2013) were used. Finally, the amount of grants received during the period $(t - 1)$ was also controlled for, which may affect the amount of revenues expected by the region in period (t) .

The time period available for each of the variables listed above differed across countries. To be able to compare results across countries more accurately, the post-1994 period was the focus (see Table 4.2).

Results of equation 4.1 are presented by country, pooling all regions and years together. When dealing with such pooled data, it is natural to pay specific attention to the error in term $\varepsilon_{i,t}$ of equation 4.1. In a panel data context, this term can be considered two components, an i.i.d. term $\varphi_{i,t}$ with the classical statistical properties ensuring that equation 4.1 was correctly estimated, and a panel-specific (or fixed) effect such as μ_i , assumed to be region-specific and invariant such that $\varepsilon_{i,t} = \varphi_{i,t} + \mu_i$.

Table 4.2 Summary statistics of variables used for estimation of the regional fiscal reaction functions, 1995–2010: average value and standard errors

| | Primary balance (net of government grants, % GDP) | GDP per capita | Output gap | Public debt (gross, % GDP) | Intergovernmental grants (% GDP) |
|---------|---------------------------------------------------|-----------------------|----------------------|----------------------------|----------------------------------|
| Canada | –0.03240 (0.03500) | 10.35030 (0.27100) | 0.00005 (0.00200) | 0.58620 (0.19270) | 0.06110 (0.04050) |
| Germany | –0.04110 (0.03250) | 10.02790 (0.23950) | 0.00002 (0.00154) | 0.21280 (0.09210) | 0.01980 (0.02510) |
| Spain | –0.05330 (0.04270) | 9.70580 (0.31440) | 0.00020 (0.00070) | 0.05290 (0.02340) | 0.04780 (0.03770) |

Notes:

GDP = gross domestic product.

Standard errors in parentheses.

Sources: OECD and authors' calculations.

The parameter μ_i included region-specific effects, which, when not properly accounted for, can lead to biased estimates. This region-specific parameter thus played a specific role, as it represented the potential elements specific to a given region i that do not vary across time but that could bias the estimated relationship between regional borrowing and GDP per capita. This could also occur for regions with special status, such as city-states in Germany, or overseas regions entitled to specific grants, such as the Canary Islands in Spain. Therefore, equation 4.1 was estimated by controlling for region-specific effects with a panel fixed-effect estimation, removing the potential influence of region-specific unobserved parameters μ_i .

The potential endogeneity bias resulting from the estimation of equation 4.1 (e.g., between the dependent variable and its lagged value and the level of debt) required the use of instrumental variables. For this reason, a bias-corrected least-square dummy variable dynamic panel data estimator was used based on the Blundell and Bond (1998) system estimator, which allowed accounting for both endogeneity and region-specific fixed effects, while correcting the standard errors based on the Kiviet (1995) methodology (i.e., the generalized method of moments (GMM) system estimator).⁸ Standard OLS estimations are also reported for information purposes only.

The main results are reported in Tables 4.3–4.5.

Table 4.3 *Econometric results for Canada (dependent variable = provincial primary balance net of federal grants, 1994–2008)*

| | (1) Fixed-effects | (2) Fixed-effects | (3) Fixed-effects | (4) GMM-system | (5) GMM-system | (6) GMM-system | (7) OLS |
|-----------------------------------------------|-----------------------|-----------------------|------------------------|-----------------------|----------------------|------------------------|-----------------------|
| Primary balance (t – 1) | 0.800*** (0.0822) | 0.668*** (0.0974) | 0.671*** (0.0966) | 0.967*** (0.0455) | 0.852*** (0.0600) | 0.851*** (0.0461) | 0.812*** (0.0818) |
| GDP per capita (t – 1) | -0.00493 (0.00664) | -0.00751 (0.00660) | -0.00739 (0.00667) | -0.00860 (0.00634) | -0.0113 (0.00802) | -0.0111 (0.00891) | 0.00121 (0.00561) |
| Output gap (t – 1) | -1.263** (0.561) | -1.185** (0.551) | -1.133** (0.547) | -1.350** (0.562) | -1.189** (0.588) | -1.125* (0.594) | -1.343** (0.532) |
| Public debt (t – 1) | -0.0258 (0.0162) | -0.0170 (0.0163) | -0.0204 (0.0166) | -0.0234 (0.0241) | -0.0199 (0.0280) | -0.0228 (0.0281) | 0.00128 (0.00817) |
| Grants (t – 1) | | -0.246** (0.101) | -0.216** (0.102) | | -0.178 (0.120) | -0.150 (0.115) | -0.126* (0.0755) |
| Regional elections year (t) | | | -0.00393 (0.00239) | | | -0.00434 (0.00277) | -0.00366 (0.00246) |
| Congruence regional/ general elections (t) | | | -0.000746 (0.00522) | | | -0.000649 (0.00665) | -0.00236 (0.00520) |
| Population share (t – 1) | | | -0.516 (0.366) | | | -0.479 (0.361) | 0.000837 (0.0112) |

Table 4.3 (continued)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|------------------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------|
| | Fixed-effects | Fixed-effects | Fixed-effects | GMM-system | GMM-system | GMM-system | OLS |
| Observations | 140 | 140 | 140 | 130 | 130 | 130 | 140 |
| R-squared | 0.486 | 0.510 | 0.530 | – | – | – | 0.887 |
| F-test for no fixed-effects ($\mu_i = 0$) | 1.60 [0.1211] | 1.91 [0.0561] | 2.11 [0.0333] | – | – | – | – |
| Difference-in-Sargan statistic (level IV) | – | – | – | 19.29 [0.056] | 18.76 [0.066] | 23.17 [0.017] | – |
| Difference-in-Sargan statistic (difference IV) | – | – | – | 3.57 [0.312] | 3.53 [0.474] | 8.07 [0.327] | – |
| Number of regions | 10 | 10 | 10 | 10 | 10 | 10 | – |

Notes:

GMM = generalized method of moments; OLS = ordinary least squares; GDP = gross domestic product. Bootstrap standard errors in parentheses for the Least Square Dummy Variable (LSDV) estimations; *** p < 0.01, ** p < 0.05, * p < 0.1. P-values for t F and Sargan test in square brackets.

Table 4.4 *Econometric results for Germany (dependent variable = Länder primary balance net of federal grants, 1994–2011)*

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|-----------------------------------------------|------------------------|------------------------|--------------------------|------------------------|-----------------------|-------------------------|--------------------------|
| | Fixed-effects | Fixed-effects | Fixed-effects | GMM-system | GMM-system | GMM-system | OLS |
| Primary balance (t-1) | 0.424*** (0.0622) | 0.535*** (0.0663) | 0.491*** (0.0660) | 0.572*** (0.0641) | 0.677*** (0.0534) | 0.633*** (0.0508) | 0.755*** (0.0609) |
| GDP per capita (t-1) | 0.0361*** (0.00705) | 0.0325*** (0.00687) | 0.0359*** (0.00663) | 0.0283*** (0.00925) | 0.0273*** (0.0104) | 0.0302*** (0.00994) | 0.0308*** (0.00489) |
| Output gap (t-1) | -1.508*** (0.389) | -1.237*** (0.381) | -1.086*** (0.369) | -1.463*** (0.315) | -1.175*** (0.326) | -1.065*** (0.313) | -2.149*** (0.368) |
| Public debt (t-1) | -0.00591 (0.0193) | -0.0129 (0.0187) | -0.0214 (0.0180) | -0.00923 (0.0228) | -0.0182 (0.0245) | -0.0237 (0.0234) | -0.0178** (0.00881) |
| Grants (t-1) | | 0.255*** (0.0643) | 0.215*** (0.0635) | | 0.253*** (0.0902) | 0.212*** (0.0787) | 0.0716 (0.0520) |
| Regional elections year (t) | | | -0.000102 (0.00143) | | | -0.000393 (0.00224) | 0.000399 (0.00160) |
| Congruence regional/ general elections (t) | | | -0.00695*** (0.00233) | | | -0.00682** (0.00286) | -0.00769*** (0.00258) |
| Population share (t-1) | | | -1.279*** (0.421) | | | -0.998** (0.400) | 0.0192 (0.0125) |

Table 4.4 (continued)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|------------------------------------------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-------|
| | Fixed-effects | Fixed-effects | Fixed-effects | GMM-system | GMM-system | GMM-system | OLS |
| Observations | 221 | 221 | 221 | 208 | 208 | 208 | 221 |
| R-squared | 0.497 | 0.533 | 0.578 | – | – | – | 0.945 |
| F-test for no fixed-effects ($\mu_i = 0$) | 3.56 [0.000] | 5.02 [0.000] | 5.77 [0.000] | – | – | – | – |
| Difference-in-Sargan statistic (level IV) | – | – | – | 3.24 [0.999] | 3.81 [0.997] | 4.20 [0.997] | – |
| Difference-in-Sargan statistic (difference IV) | – | – | – | 0.75 [0.861] | 1.46 [0.8333] | 8.63 [0.280] | – |
| Number of regions | 13 | 13 | 13 | 13 | 13 | 13 | 13 |

Notes:

GMM = generalized method of moments; OLS = ordinary least squares; GDP = gross domestic product. Bootstrap standard errors in parentheses for the Least Square Dummy Variable (LSDV) estimations; *** p < 0.01, ** p < 0.05, * p < 0.1. P-values for t F and Sargan test in square brackets.

Table 4.5 *Econometric results for Spain (dependent variable = region primary balance net of central government grants, 1994–2009)*

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|----------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-----------------------|
| | Fixed-effects | Fixed-effects | Fixed-effects | GMM-system | GMM-system | GMM-system | OLS |
| Primary balance (t – 1) | 0.756*** (0.0633) | 0.943*** (0.139) | 0.933*** (0.141) | 0.921*** (0.0375) | 1.019*** (0.0348) | 1.044*** (0.0280) | 0.951*** (0.138) |
| GDP per capita (t – 1) | -0.0245*** (0.00604) | -0.0255*** (0.00606) | -0.0258*** (0.00614) | -0.0180*** (0.00771) | -0.0177*** (0.00624) | -0.0176*** (0.00673) | -0.00622 (0.00517) |
| Output gap (t – 1) | -7.646*** (2.038) | -7.075*** (2.067) | -7.053*** (2.088) | -7.219*** (2.466) | -6.478*** (2.218) | -6.570*** (2.238) | -9.342*** (2.098) |
| Public debt (t – 1) | -0.247** (0.106) | -0.219** (0.107) | -0.238* (0.124) | -0.169 (0.150) | -0.152 (0.126) | -0.177 (0.139) | -0.0125 (0.0711) |
| Grants (t – 1) | | 0.236 (0.157) | 0.233 (0.159) | | 0.271*** (0.0758) | 0.286*** (0.0649) | -0.0268 (0.139) |
| Regional elections year (t) | | | | | | 0.00140 (0.00414) | 0.000776 (0.00326) |
| Congruence regions/ general elections (t) | | | | | | 0.00462 (0.0146) | 0.00260 (0.0113) |
| Population share (t – 1) | | | | | | 0.377 (0.734) | 0.0340 (0.0327) |

Table 4.5 (continued)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|------------------------------------------------|------------------|-----------------|-----------------|------------------|------------------|------------------|-------|
| | Fixed-effects | Fixed-effects | Fixed-effects | GMM-system | GMM-system | GMM-system | OLS |
| Observations | 238 | 238 | 238 | 238 | 238 | 238 | 238 |
| R-squared | 0.540 | 0.545 | 0.546 | – | – | – | 0.786 |
| F-test for no fixed-effects ($\mu_i = 0$) | 2.03 [0.0125] | 2.18 [0.006] | 2.09 [0.009] | – | – | – | – |
| Difference-in-Sargan statistic (level IV) | – | – | – | 24.74 [0.025] | 11.02 [0.609] | 11.55 [0.565] | – |
| Difference-in-Sargan statistic (difference IV) | – | – | – | 4.55 [0.208] | 5.43 [0.246] | 11.40 [0.122] | – |
| Number of regions | 17 | 17 | 17 | 17 | 17 | 17 | 17 |

Notes:

GMM = generalized method of moments; OLS = ordinary least squares; GDP = gross domestic product. Bootstrap standard errors in parentheses for the Least Square Dummy Variable (LSDV) estimations; *** p < 0.01, ** p < 0.05, * p < 0.1. P-values for t F and Sargan test in square brackets.

The relationship between the regional GDP per capita and primary balance (i.e., primary surplus in the econometric analysis) displays different signs across countries when using the panel fixed-effect model according to Column 1. The results indicate that in Spain and Canada, rich regions tend to have lower primary surpluses (i.e., higher primary deficits). The results for Germany go in the opposite direction: relatively poor *Länder* tend to have higher deficits. In both the German and Spanish cases, the coefficients obtained for the GDP per capita variable are highly significant at the 1 percent level. The same coefficient is statistically insignificant in the Canadian case.

In the German case, the results indicate that a *Land* with a GDP per capita of 10 percent more than the average will have a primary budget balance 0.361 percentage point higher per year, an arguably economically significant figure. In the Spanish case, the result suggests that richer regions incur higher borrowing in the absence of intergovernmental transfers. The coefficient is also economically significant, since Spanish regions with an average GDP per capita of 10 percent more than the average will also have a -0.245 percentage point lower primary surplus.

These findings are consistent with previous works. Lago (2005) obtained a similar result for Spanish regions over 1984–1999.⁹ For Germany, Schuknecht et al. (2009) showed that poorer *Länder* (also net recipients of intergovernmental transfers) experience softer budget discipline from financial markets and tend to run higher budget deficits than richer regions. This study also looked at Canadian provinces, and showed a similar pattern. The federal government in Canada is, in principle, not allowed to bail out provinces, but in Germany, bailouts can happen, as in the cases of Bremen and Saarland.¹⁰ The evidence reported by Heppke-Falk and Wolff (2008) indeed suggested that after the Federal Constitutional Court decisions favoring the bailouts of Bremen and Saarland, *Länder* with high interest debt burdens tended to have lower risk premiums.

The estimation of the fiscal reaction function checked whether regional fiscal policy was sustainable during the period considered. A positive coefficient on the (lagged) debt variable would indicate, for instance, that a given region reacts to an increase in debt by increasing its primary surplus. Yet a negative coefficient on the debt variable would indicate that a given regional government runs a larger deficit (or lower surplus) as a consequence of a rise in public debt.

In all three countries, regional governments tend to run unsustainable fiscal policies, although this characteristic is especially pronounced in Spain, where the coefficient estimate on the public debt variable is both large and significant.¹¹ Another common result is that regional fiscal policy appears to be largely pro-cyclical (i.e., a deterioration of the output

gap leading to an increase in the primary surplus and vice versa), with Spain again showing an especially large coefficient in absolute terms.

Column 2 in Tables 4.3–4.5 deals with impact equalization transfers on the regional primary balance. To do so, the regressions reported in Column 1 were re-estimated by including federal grants (lagged one period to avoid a potential endogeneity bias) as the explanatory variable. The sign and size of the coefficient on the GDP per capita variable obtained previously still holds. The coefficient estimated on the lagged grant variable is only significant in Germany and Canada, although with opposite signs. In Canada, the level of federal grants received in the previous period tends to lower the primary surplus in the subsequent period, while the opposite is true in the German case. In all cases, however, the inclusion of federal government grants received as an additional control variable does not significantly change the results reported in Column 1.

In Column 3 of Tables 4.3–4.5, the fiscal reaction function was further re-estimated, including the additional control variables represented by the share of each region in the national population with the two electoral dummy variables. Including these variables did not alter the main result regarding the sign and size of the coefficient estimate for the GDP per capita variable. These additional control variables are not significant; in Germany, the congruence of regional and general elections tends to deteriorate regional primary balances.

Columns 4–6 report results on the same specification tested in Columns 1–3 but using the GMM system estimator correcting for potential endogeneity. The coefficient estimated for the GDP per capita variable remains similar and is only significant in the German and Spanish cases, although the size of this coefficient is slightly lower for Spain. A similar conclusion regarding the sustainability of fiscal policy also holds.

Several robustness checks of the results presented in Tables 4.3–4.5 were also conducted. In the Spanish case, the two regions with special status, the Basque Country and Navarre, were excluded. Results remain broadly similar. In the German case, the impact of the Federal Constitutional Court judgment of 1992 in favor of indebted *Länder* was considered, using a dummy variable. A positive, although nonsignificant coefficient, was obtained. This result can be explained by the fact that the decision concerned two regions with relatively high (Bremen) and medium (Saarland) GDP per capita. Separately, West German *Länder* during 1986–2011 were considered. In this case, the GDP per capita remains positive, albeit insignificant, suggesting that the inclusion of significantly poorer East German regions into the regional equalization scheme may explain the divergence in regional borrowing. In Canada, resources-rich provinces were dropped, as well, but results remain qualitatively similar.

4.3 DISCUSSION OF RESULTS

There are two main econometric results: in the German case, the poor regions borrow more than the rich ones, but in the Spanish case, the opposite happens. Why are these econometric estimates country-specific? Can these results be explained by country-specific features regarding the equalization system? In the following section, a simple, albeit general, theoretical model is used linking the institutional design and implementation of equalization grants to regional decisions on public borrowing.

Next, the main conclusions are derived from the theoretical model developed in detail in the technical appendix of the working paper version of this chapter.¹² The main difference between regional and national fiscal policy – that regional governments are usually net receiver (or net payer) of permanent or quasi-permanent fiscal equalization transfers – is emphasized. In such a framework, fiscal equalization is likely to affect the regional intertemporal budget constraint and borrowing behavior of the regions.

For the theoretical model, a federal country is assumed, consisting of two regions with different income per capita. The federal government redistributes funds across the two regions using financial resources from taxing labor and capital incomes. Each regional government provides a local public good aimed at maximizing the utility of a representative household over two periods of time.

A simple assumption regarding the distribution of regional public revenues over time is used to explain regional borrowing versus savings behavior. The regions ineligible to obtain resources from the equalization system can only finance their public expenditures in period 2 on the basis of previous savings in period 1. This simple assumption allows analysis of the link between equalization and regional decisions on deficit.¹³

The simple assumption allows separation, albeit theoretically, of the determination of regional public deficit from that of vertical redistributive grants. The financial resources available at the regional level come from income taxes (shared with the federal government) and borrowing in period 1; for the next period, an equalization grant can be provided and, in this case, savings from period 1 are appropriately capitalized. During the second period, the regional government must pay back the borrowing (if any) used in the first period at a given interest rate.

The formula for equalization grants is central. A standard expression for equalization is used below. This formula is rooted on the institutional design usually followed in existing federations and has been extensively studied in the literature.¹⁴

$$Z^j = N^j \alpha ((\bar{w} - w^j) \bar{\tau}_j l), \quad (4.2)$$

where:

N^j is the population in region j ,

α is the degree (if partial or total) of fiscal equalization,

$\bar{\tau}_j$ the normative income tax rate at regional level ($0 < \bar{\tau}_j < 1$),

\bar{w} the normative wage rate at regional level, and

L the labor supply.

Both $\bar{\tau}_j$ and \bar{w} can be thought as representing the level of fiscal effort and fiscal capacity, respectively, which the central government sets as the benchmark.

The interpretation behind equation 4.2 is straightforward. The equalization transfer is a proportion α of the difference between the tax revenues raised by the regional government and a given (normative) level of fiscal capacity. The degree of fiscal equalization α will thus depend on the extent to which the central government is seeking to equalize the level of public goods available in each region, given the size of the population and the existing difference in income per capita, which determine ex ante the fiscal capacity of each region.

The crucial points are the assignment of financial resources available for the regional governments in each period and the performance of the equalization formula with respect to changes in its basic parameters. Accordingly, any region, regardless of its relative income per capita, will borrow in period 1 when the equalization system guarantees it enough resources in period 2 for providing the public good and paying back past borrowings. The intuition of the reasoning is unchanged when rich regions transferring money to poorer regions via the equalization system see how their payments fall; they, too, will decrease the savings generated in the first period.

Consequently, when the value of \bar{w} increases, poor (or rich) regions will receive (or make) more resources (less payments for redistribution) as equalization grants, and that will lead to higher deficits (i.e., lower surplus) in regional public accounts.

Interestingly, the equalization formula may result in positive federal transfers for rich regions as well as when \bar{w} reaches high enough values or when rich regions' contributions to the equalization scheme decreases. In this context, rich regions receiving positive transfers (or paying less) in the second period may behave as poor regions; they smooth their consumption over time by increasing their borrowing in the first period to match the higher level of consumption obtained, thanks to the intergovernmental transfer in the second period.

Results become more intricate when the impact of the degree of equalization α and the normative fiscal effort $\bar{\tau}_j$ on the regional public borrowing are considered. The difference in GDP per capita ($\bar{w} - w^j$) plays a key

role in the determination of regional public borrowing.¹⁵ It follows that changes in the parameters determining the degree of fiscal redistribution and normative fiscal effort entering the fiscal equalization scheme, as in equation 4.2, have a different impact on regional borrowing, depending on whether a given region is relatively poor or relatively rich. When the normative fiscal effort rises ($\bar{\tau}_j$), the poor region increases its borrowing. The poor region thus has an incentive to increase its public spending in the first period thanks to higher borrowing, given that it will benefit from larger revenues in the second period, allowing a higher level of public good in both periods. The opposite situation holds for the rich region. However, the impact of changes in the degree of equalization α on regional public borrowing is not analytically unambiguous and will also depend on the relative fiscal capacity of the region and with the same dichotomy as in the case of $\bar{\tau}_j$.

Next, the theoretical model can be used to understand the Spanish and German experiences, where alternatively rich and poor regions tend to display higher primary deficits. There are two particular features of the Spanish case that are relevant. First, the Spanish equalization scheme is focused on spending needs, that is, on the regional population (Blöchliger and Charbit, 2008); equalization of fiscal capacities (parameter α) plays a negligible role. Secondly, the normative fiscal effort ($\bar{\tau}_j$) used in the Spanish system tends to be very low with respect to the actual tax bases in all regions (Ruiz-Huerta and Herrero, 2008). According to our theoretical model, low values of α and $\bar{\tau}_j$ lead to relatively low public borrowing of poor regions and relatively high public borrowing in rich regions. This result also corresponds to the empirical evidence provided by the econometric findings for the Spanish case.

A similar exercise can be conducted for the German case. As discussed previously, the German federal system has the explicit aim of providing sufficient resources to ensure equal access to public services by all *Länder*. Although fiscal equalization is topped up, the German territorial financing system is based on strong horizontal redistribution of tax revenues, especially through the redistribution of value added tax revenues so that no single regional government has less than 95 percent of the average per capita budgetary resources. Therefore, the parameter α can be thought as being relatively high. There is no explicit benchmark tax rate for the equalization, as *Länder* enjoy very little tax autonomy. Consequently, the value of $\bar{\tau}_j$ is close to that of the federal government tax rate; that is, it is relatively high compared to the Spanish one. The German fiscal equalization system is also focused on fiscal capacities (Government of Germany, Federal Ministry of Finance, 2009). This suggests that the gap between w and \bar{w} (which is a proxy of the differences in fiscal capacities) plays an

important role in Germany, and that \bar{w} is set at relatively high level, which is unsurprising given the high level of regional inequalities in this country, especially since reunification in 1991. As in the Spanish case, the theoretical model again is aligned with the econometric results. Relatively high values of α and $\bar{\tau}_j$ lead poor regions to borrow relatively more than rich regions.

Results become more complex when considering the econometric results for Canada. The Canadian equalization system is, in principle, focused on equalization of fiscal capacities (i.e., α in the model) without assigning much importance to differences in spending needs across provinces. However, a large share of intergovernmental transfers is represented by the two programs devoted to health care and education spending, and these have a clear link to fiscal needs. In addition, the scope of the intergovernmental grants is not as general as in Germany and Spain, given that only one-third of the Canadian population lives in net recipient provinces and that many provinces do not benefit from these grants.¹⁶ As evidenced earlier (see Figure 4.3), the intensity of redistribution is also not high given that the richer regions are not equalized down (Dahlby, 2008). Concerning the normative fiscal effort (i.e., the $\bar{\tau}_j$ variable), tax policy in Canada is highly decentralized, and provinces have much tax autonomy while regional redistribution is encapsulated into a formula-based approach.

Finally, the role played by the difference between the fiscal capacity and its benchmark level (i.e., the difference between w and \bar{w}) remains unclear given the characteristics of the Canadian fiscal equalization system combining generic and program-oriented grants. Since the mid-1990s, the standard parameter of fiscal capacity is not computed over all provinces but excludes the richest province and the five poorest ones. In such a context, the econometric analysis suggests that richer provinces tend to borrow relatively more, although this relationship is not statistically significant, as shown by the econometric results. Overall, given the institutional characteristics of the Canadian equalization system, from a theoretical viewpoint, no clear distinction emerges between rich and poor regions in terms of fiscal policy making.

4.4 POLICY IMPLICATIONS

Several policy implications can be drawn from the analysis. Both the evidence and discussion presented indicate that the design and implementation of territorial financing systems matter for public borrowing at the subnational level.¹⁷ The design of territorial financing systems may provide strong incentives for excessive regional deficits, which should be considered as additional efficiency costs, especially in times of fiscal

hardship. Equalization grants depend on cross-regional differences in fiscal capacities, which are strongly correlated with differences in GDP per capita. The analysis of the Canadian, German, and Spanish cases suggests that this is indeed the case, implying that reforms of territorial financing systems may alter this relationship and thus prove appropriate to reduce incentives to regional over-borrowing.

First, it is interesting to note that one of the most influential parameters driving equalization is the standard fiscal capacity \bar{w} , which appears to have a positive impact on the variation of regional public borrowing, more so when cross-regional differences in this parameter are large. The government should therefore reduce the standard fiscal capacity offered by equalization grants when territorial financing systems lead to excessive regional borrowing.

The reduction of \bar{w} can be obtained in different ways: by computing \bar{w} using the regions with the lowest GDP per capita levels, applying an evolution index for updating \bar{w} evolving below the actual (and average) \bar{w} of the federation, or diminishing the average \bar{w} by a given percentage before setting up as benchmark value.

The implicit political assumption behind using a relatively low value for \bar{w} is that the equalization system must take as a reference a minimum threshold in relation to the average fiscal capacity, which is also considered politically acceptable. Moreover, the use of high values for fiscal capacity in the equalization formula may result in higher outlays by the federal government. Reform of the equalization system in 2007 in Canada provides a good example. The deterioration of the fiscal balances during the global financial crisis, fueled by equalization payments in favor of the recipient provinces after including all the regions for the computation of \bar{w} instead of the five provinces considered in the old standard fiscal capacity, was corrected by the federal government imposing a cap on equalization payments from 2009. This cap consisted of a reduction de facto in \bar{w} .

Generally, regional governments willing to raise additional financial resources should also be able to do so by changing their own taxes rather than counting on additional resources stemming from the equalization system. However, it is widely accepted that many regional governments have little discretionary power over their own taxes. Reforms of fiscal equalization systems should thus be accompanied by reforms on the regional tax policy side to rebalance the efficiency versus equity trade-off by making regional governments more accountable for their own fiscal policy choices on both the expenditure and revenue sides.

Second, changes in the normative fiscal effort $\bar{\tau}_i$ add a layer of complexity in regional fiscal policy making, explaining why regional borrowing behaviors diverge. The analysis shows that the effect of this parameter on

regional public borrowing is sensitive to whether the region considered is poor or rich; there exists a positive relationship between regional public debt and $\bar{\tau}_j$ when poor regions are involved, while the opposite occurs when rich regions are considered. Consequently, provided that the normative fiscal effort is set up at a relatively high value, poor regions will increase their public borrowing much more than rich regions. In contrast, when the parameter $\bar{\tau}_j$ is reduced, the incentives for borrowing are more intense in the richest regions.

In this context, a benchmark value should be fixed for the standard tax rate as close as possible to its average value, exempting extreme values for its computation (i.e., regions that can be classified as outliers) to promote more homogenous public borrowing across regions according to their fiscal capacity. A possible strategy could consist of fixing the normative fiscal effort equal to the national tax rate set up by the central government. This would prove feasible as long as most of the taxes used in the equalization system are shared between different levels of government.

It should be noted, however, that reforms affecting $\bar{\tau}_j$ are likely to be negligible when the real impact on equalization payments is low, as in the Spanish case.¹⁸ This, in turn, blurs the overall fiscal equalization scheme, so policy bargaining becomes dominant. Therefore, while increasing the tax autonomy of subnational governments appears to improve the efficiency of territorial redistribution systems (e.g., by improving regional fiscal accountability), such reforms should also be combined with a reinforced role for the normative fiscal effort $\bar{\tau}_j$ in the equalization formula to avoid undesirable effects on fiscal performance. Such an effect is illustrated in the German case, in which the incentives for *Länder* to reduce their own-tax revenues are significant given the substantial compensation received in the form of federal grants (Buettner, 2009).¹⁹ In this case, the political benefits of cutting taxes may be strong enough to compensate the revenue loss (Baretti et al., 2002).

Third, the degree of fiscal equalization α is also likely to play an important role in regional borrowing. Recall that this parameter indicates the percentage of the difference between the relative (and normative) fiscal capacities of regions covered by the equalization system. This parameter is related to both the degree of redistribution chosen and to the tax power assigned to regional governments. The greater the tax power, the lower the degree of equalization, given a determined inequality aversion in the federation.

The definition of a value for α above 100 percent involves over-equalizing the fiscal capacity of regions and reducing their incentive to use tax revenues efficiently. Providing that a 100 percent guarantee of the equalization system closes the gap between fiscal capacities, regions would be immersed

in a poverty-trap problem, given the political cost of raising revenue with taxes. Despite this consequence, existing vertical grant systems may sometimes result in over-equalization. This effect usually does not come from the equalization system per se, but from the confluence of a set of vertical grants (including equalization transfers) in favor of some regions, altering the ranking of regions according to the criterion of financing per capita.

For instance, Hierro et al. (2010) highlighted how the territorial distribution of fiscal resources after vertical grants turns out to be progressive, especially in Germany but also in Spain and Canada, with significant changes in the relative position of regions when ranked according to their total revenues per capita. The 2007 Canadian reform of its equalization scheme introduced a regulation that the total fiscal capacity of any equalization-receiving region (including all revenue sources and the equalization payment) could not exceed the fiscal capacity of the poorest nonequalization-receiving region.

An additional source of complexity stems from nonformula-based inter-governmental transfers, that is, resources coming from the central government that are not derived from an explicit scheme of equalization. While the influence of these nonformula-based transfers has not been examined here, these must be mentioned when coming to policy conclusions. The political bias in the territorial allocation of grants across regions is particularly strong as equalization systems become weaker and less transparent (Pitlik et al., 2006; Simon-Cosano et al., 2013). Therefore, recent policy recommendations made by the Organisation for Economic Co-operation and Development suggest electoral and political factors, by becoming less influential, should contribute to simpler, more transparent regional equalization systems (OECD, 2013).

Finally, inefficient vertical and horizontal strategic interactions can result in unsound fiscal policies (Goodspeed, 2002; Boadway and Shah, 2007). Baskaran (2012) disregarded this possibility for Germany by showing that *Länder* have been more concerned with their chances of receiving extraordinary resources than with their amounts; hence, the extent of federal resources for territorial redistribution does not seem to matter. By contrast, Molina-Parra and Martínez-López (2016) found some evidence that a kind of vertical interaction is present in Spain, as the higher the central deficit, the bigger fiscal imbalances at the state level. The over-borrowing of Spanish regions is interpreted in terms of yardstick competition models.

4.5 CONCLUSIONS

The determinants of regional public borrowing were analyzed under alternative fiscal equalization schemes. The link between the fiscal capacity (measured by the level of GDP per capita)²⁰ and the public budget balances in Canada, Germany, and Spain were tested econometrically at regional level. The analysis suggests that the relationship between these two variables can be either positive (as in the German case) or negative (as in the Canadian and Spanish cases), signifying that either poor or rich regions tend to have on average higher primary deficits. This relationship was found to be significant only in the German and Spanish cases, however.

In the German case, poorer regions tend to run significantly lower primary surpluses, because the German fiscal equalization scheme is largely focused on smoothing fiscal capacities. Hence, poorer regions tend to run larger deficits, as they expect the federal government to fill their budgetary gaps. In the Spanish case, however, the fiscal equalization scheme is more focused on spending needs and less so on fiscal capacities, since regions have relatively little tax power. As a result, richer regions tend to run larger deficits. In the Canadian case, a significant difference was not found between poor and rich regions' fiscal policies, because interregional transfers are formula-based grants from the federal government, leaving less scope for strategic behaviors that exist in Germany and Spain.

However, the link between the borrowing level and regional differences in income per capita is more complex than the situations described in the simple model. Normative parameters setting regional financial transfers are either not clearly stated, left open to political discretionary choices, or both. The nature of the relationship between fiscal capacity and regional public borrowing depends on the country considered, and can move in both directions depending on the specific fiscal equalization scheme in place. Reforms of a territorial financing system can therefore prove instrumental to reducing cross-regional heterogeneity in public borrowing, thus enhancing national fiscal policy making in countries with highly decentralized public finances.

NOTES

1. See, for instance, Padovano (2014) for a recent analysis of regions in Italy.
2. For former East German *Länder*, this financial support followed transitory post-reunification-specific funds (Zipfel, 2011; Government of Germany, Federal Ministry of Finance, 2009).
3. The exceptions to this system are the Basque Country and Navarre, which have a chartered regime. These regions have autonomy in terms of tax collection (except for customs)

and send the central government a pre-arranged amount (*cupo* and *aportacion*) in proportion to their income and population. As a consequence, these two regions do not participate in the Spanish fiscal equalization scheme (Ruiz-Huerta and Herrero, 2008).

4. Other important aspects are not considered here, such as the degree of regional government budgetary monitoring, existence of fiscal rules, and access to financial markets and private bank credits. As there are three different case studies (i.e., not a pool), specific institutional features existing in each country do not play a crucial role in explaining individual behavior. However, ongoing research is examining links between fiscal rules and borrowing; see, for instance, Sutherland et al. (2005); Guillemette (2010); Zipfel (2011); Balassone and Zotteri (2002); and Argimon and Hernández de Cos (2012).
5. Some regions can be considered specific cases, such as Newfoundland and Labrador, and Alberta in Canada, which benefit from large tax revenues thanks to abundant natural resources, mainly oil and gas. The Basque Country and Navarre in Spain or the city-states of Berlin, Bremen, and Hamburg in Germany could also be considered specific cases.
6. The result for Germany was obtained including the city states of Berlin, Bremen, and Hamburg. When excluding these city-states, the redistributive nature of the system appears slightly more pronounced, going from 40 percent to 54 percent.
7. The sources for Spain are the National Statistics Institute for statistics and the Ministry of Finance and Public Administration for fiscal data. For Germany, data are from the Federal Ministry of Finance for fiscal variables and from Destatis for other variables. For Canada, data are from Statistics Canada, the Department of Finance, and the Royal Bank of Canada for the fiscal variables.
8. See Celasun and Kang (2006) for a discussion of the advantages of the GMM system estimators over other panel estimators when estimating a fiscal reaction function.
9. Lago (2005) also considered a variable measuring the spending responsibilities of Spanish regions, which differed across regions during the period covered by this author.
10. Saskatchewan and Alberta were bailed out, although that took place in the 1930s and 1940s, respectively (Bird and Tassonyi, 2003).
11. See Potrafke and Reischmann (2012) for further research of the German case.
12. Published at <http://info.gen.webs.uvigo.es/WP/WP1401.pdf>.
13. An alternative approach is to consider that borrowing and equalization grants are determined simultaneously, but it would then be impossible to identify the nature of the causality between regional income differences and borrowing behavior.
14. See Boadway and Flatters (1982); Zabalza (2003); and Ahmad and Searle (2005) for properties of this type of intergovernmental grant.
15. The technical appendix available in the working paper version showed that the sign of the partial derivatives of public borrowing with respect to α and τ_i is indeterminate and depends on $(\bar{w} - w^j)$; see expressions (A.29) and (A.30) reported therein.
16. See Dahlby (2008).
17. The results are also in line with the standard dilemma between efficiency and equity when public policies are designed. A particular territorial financing system admits different degrees of redistribution, with its corresponding trade-off in terms of efficiency. The typical approach to the efficiency implications derived from equalization began with the canonical contribution by Smart (1998) and continued with subsequent papers such as Martínez-López (2005); Buettner (2006); and López-Laborda and Zabalza (2015).
18. Recall that the tax effort required by the Spanish equalization system is very low in relation to the actual tax rates usually chosen by Spanish regions (Ruiz-Huerta and Herrero, 2008).
19. Buettner (2009) estimated that an own-tax revenue decline of 1 euro is compensated by an equalization transfer of about 34 euro cents in the German case.
20. A note of caution is necessary. Since the seminal contribution by Buchanan (1950), the appropriate measure of fiscal capacity is still an open question. This approach has simplified this issue by taking income per capita as a proxy.

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5. How well do subnational borrowing regulations work?

Jorge Martinez-Vazquez and Violeta Vulovic

5.1 INTRODUCTION¹

Existing literature widely acknowledges the importance of infrastructure for economic growth, quality of life, and poverty reduction.² With deep decentralization trends throughout all regions of the world, as well as subnational governments in charge of about two-thirds of total public infrastructure spending, there has been a natural increase in the importance of subnational borrowing for financing this infrastructure (Martinez-Vazquez and Timofeev, 2015).

Although some countries prohibit borrowing by subnational governments,³ others allow it, as they believe the efficiency and equity benefits of borrowing outweigh the associated macroeconomic risks.⁴ Factors, such as a lack of institutional capacity and history of subnational government defaults in other decentralized systems, give central governments reasons to regulate subnational government autonomy by introducing effective borrowing controls. The challenge is to achieve borrowing autonomy while preserving fiscal discipline by preventing the insolvency of subnational governments and assuring national fiscal sustainability.⁵

Subnational governments have fewer incentives than central governments to be concerned with the macroeconomic impact of their policies. Subnational governments do not bear – or at least they perceive so – the full cost of their actions; they are not concerned with national fiscal sustainability as central governments are.⁶ While well-designed fiscal decentralization systems, especially on the side of subnational revenue autonomy, can enhance or at least not harm fiscal sustainability (Fukasaku and De Mello, 1998), decentralization can pose significant risks to fiscal sustainability. A disciplined subnational borrowing process is thus needed (Ter-Minassian, 1997b).⁷

Due to the potential long-term consequences of subnational borrowing on fiscal sustainability and macroeconomic stability, most countries manage subnational borrowing and debt by implementing *ex ante* and/or

ex post regulations. Ex ante regulations can consist of direct control by the central government, fiscal rules predetermined in constitutions or organic laws, or a reliance on financial markets and their mechanisms to control borrowing. Ex post regulations comprise sanctions for noncompliance of rules and imprudent behavior. There is consensus that both ex ante and ex post regulations should be used simultaneously, and should consider both borrowers and lenders (Webb, 2004). Reliance on only ex ante controls gives both the borrowers and lenders incentives for irresponsible behavior, since it bears no consequences. Reliance on only ex post regulations may give space to large subnational governments to over borrow and build up debts so large that the central government cannot enforce them to bear the consequences, given their importance in the national economy.

One view is that in regulating subnational borrowing, financial markets impose enough rules on debtors and creditors. Other legal rules are unnecessary, as market conditions already impose effective sanctions through higher interest rates and denial of lending. However, the history of subnational borrowing in some countries undergoing decentralization suggests that exclusive reliance on financial markets in maintaining subnational fiscal discipline may not be enough (Ter-Minassian and Craig, 1997). The necessary conditions of developed financial markets, availability of financial information, and no bailouts by the central government are generally not met, and defaults can have long-term consequences.⁸

A commonly accepted definition of fiscal sustainability states that the fiscal balance and underlying trends are such that in a steady state, the ratio of outstanding debt and debt servicing to gross domestic product (GDP) does not increase over time (Ishihara, 2010). Similarly, the International Monetary Fund (2001) defined a set of fiscal policies as sustainable if a borrower is able to continue servicing its debt without an unrealistically large future correction to its income and expenditure. For the purpose of this chapter, fiscal policy is defined as sustainable if the present value of future primary surpluses equals the current level of debt.

This chapter examines the factors that are important in choosing particular types of subnational borrowing regulations. It then looks at the impact of regulated subnational borrowing on fiscal sustainability, and whether this impact differs when subnational governments have adequate revenue autonomy. Finally, it assesses if any borrowing regulatory framework performs in a superior manner in maintaining fiscal sustainability.

Despite the importance of these issues, little systematic empirical work has been done on the effect of subnational borrowing on fiscal sustainability. The existing literature does not offer a definitive answer on whether borrowing at the subnational level should be allowed, and if so, how it should be regulated. The few cross-country empirical studies that have

evaluated these effects used either some aggregate measure of borrowing autonomy that did not take into account different types of regulations, monitoring, and enforcement, or focused only on the effect of fiscal rules. Most of these studies also suffered from econometric issues, including not addressing the potential reverse causality between fiscal sustainability and types of borrowing regulations, not modeling a dynamic process in fiscal sustainability, or solely focusing on the subnational rather than general government fiscal performance.

For this chapter, unbalanced panel data between 1990 and 2008 for 57 industrialized, developing, and transitioning countries are used. Two alternative dependent variables are employed: the primary balance (i.e., Revenues – [Expenditures – Interest Payments]) at the general government level (i.e., entities that fulfill the functions of government as their primary activity and can be divided into central, state, and local government sub-sectors, depending on a country (International Monetary Fund, 2001) and subnational level (i.e., all levels of government below the central government level)). The main variables of interest are four broad types of subnational borrowing regulations first categorized by Ter-Minassian and Craig (1997): market discipline, fiscal rules (with a distinction made between centrally imposed and self-imposed rules), administrative regulation, and cooperation regulation. The results obtained from using these types of subnational borrowing regulations are compared with those obtained from prohibiting borrowing at the subnational level.

Section 5.2 reviews the literature on the effect of subnational borrowing and regulations on fiscal sustainability. Section 5.3 reviews the spectrum of *ex ante* and *ex post* subnational borrowing regulations, and section 5.4 presents the empirical methodology and discusses the results. Section 5.5 concludes.

5.2 LITERATURE REVIEW

5.2.1 Fiscal Decentralization, Fiscal Sustainability, and Macroeconomic Stability

In the 1990s, researchers began focusing on macroeconomic problems that can arise as governments give greater responsibility to subnational governments (Hunter and Shah, 1996; Prud'homme, 1995; Ter-Minassian, 1997a; 1997b; Fornasari et al., 2000). However, the effects of fiscal decentralization on macroeconomic stability have never been settled in empirical literature. Recently, several studies have found either no effect or a positive effect of decentralization on fiscal performance and macroeconomic stability

(Schaltegger and Feld, 2009; Freitag and Vatter, 2008; Shah, 2005; Shome, 2002; Stein, 1999). There is also evidence that the effects of decentralization on macroeconomic stability depend on the level of economic development and what that may represent in terms of institutions. For example, some studies found that fiscal decentralization is more likely to generate instability in developing countries (Fukasaku and De Mello, 1998; De Mello, 2000), while other papers discovered more stable outcomes for developed countries (Neyapti, 2010; Baskaran, 2009; Martinez-Vazquez and McNab, 2006).

5.2.2 Moral Hazard

Conceptually, the need for subnational borrowing controls results from the presence of a common pool problem and implied soft budget constraints. The common pool problem arises from the separation of costs and benefits of public spending. If a certain capital investment mostly benefits one jurisdiction but is financed through a common pool, the said jurisdiction pays only a small fraction of the cost while enjoying a large fraction of the benefits. This sets incentives for excessive spending, with all jurisdictions competing for federal funds or otherwise behaving in fiscally irresponsible ways to finance investments (Rodden, 2002; Purfield, 2004; Ahmad et al., 2005; Hillman, 2009). Such actions raise the presence of moral hazard with subnational borrowing activities.⁹

The moral hazard problem would not exist if central governments could credibly commit to no ex post changes in the allocation of transfers, that is, to a no-bailout policy (Hernández-Trillo et al., 2002; Goodspeed, 2002). However, it is difficult to achieve such a commitment (Wildasin, 1997; Persson and Tabellini, 1996; Noel, 2000; Bordignon et al., 2001).

5.2.3 Supply and Demand for Borrowing

Financial institutions represent the supply side of subnational borrowing. This borrowing takes place through loans from financial and other credit institutions, or through the capital market with the issuance of securities and bonds. Both loans and bonds have different strengths and weaknesses involving costs, maturities, and transparency, but the two sources ideally can operate side by side (Peterson, 2003; Peterson and Hammam, 1998).

Regardless of whether loans or bonds are chosen, a borrower's creditworthiness is likely to be an important criterion for lenders in making investment decisions. The creditworthiness of subnational governments is the main demand-side requirement for subnational borrowing. Creditworthiness refers to the borrower's ability and willingness to repay

debt, and can be influenced by economic and financial as well as political and institutional factors (Peterson, 1998; Spahn, 1999).¹⁰

One form of signaling that reduces borrowing costs is reputation. A good reputation earned by full and timely repayment of debt may lower the cost of borrowing by reducing information asymmetries (Diamond, 1989; Thakor, 1991). For borrowers who do not yet have established reputations, another form of signaling is collateral (Diamond 1989). However, collateral cannot always be used in subnational borrowing transactions.

5.2.4 Regulation of Subnational Borrowing and its Effects

Imposing borrowing controls at the subnational level may be needed to preserve macroeconomic stability as well as to safeguard subnational public finances. There are different ways in which central governments can contribute to prudent borrowing, which have been much debated (Peterson and Hammam, 1998). The literature on subnational borrowing has emphasized the ability of higher levels of government to provide implicit guarantees on subnational government debt as one of the main problems with subnational borrowing, as this leads to a classic moral hazard situation. Therefore, when devolving borrowing responsibility to lower levels of government, the question is whether such a risk can be successfully controlled by some kind of rule, or if the credit market alone is sufficient. The central government must also decide whether to provide a sovereign guarantee.

Much recent literature was based on the initial classification of types of subnational borrowing regulations into four broad categories by Ter-Minassian and Craig (1997). They concluded that sole reliance on market-based regulations is unlikely to be effective, and that a rule-based approach is generally preferable to administrative control. Yet as Balassone et al. (2002) found from the experiences of Austria, Belgium, Germany, Italy, and Spain, the effectiveness of fiscal rules can be compromised if only central governments are held accountable.

There has not been an a priori agreement on what type of regulation is most effective, however. For example, Rodden and Eskeland (2003) concluded that effective control of subnational borrowing requires either strong hierarchical oversight or strong market mechanisms. Based on the experience of European countries, Rattsø (2002) observed that no particular type of regulation has worked better than others. A similar conclusion was reached by Kennedy and Robbins (2003) from several case studies from the industrial world.

There is no conclusive empirical evidence on whether institutional constraints and rules discipline government budget outcomes and promote macroeconomic stability. Final outcomes depend not only on the type

of control being used but also on country idiosyncrasies (Plekhanov and Singh, 2007).

5.2.5 Evidence from Single Country Studies

Looking at individual states in the United States, Abrams and Dougan (1986) concluded that restrictions on borrowing and spending have not been significant in explaining budget outcomes at the state level. Several other empirical studies reached much less definite conclusions, however. Alt and Lowry (1994) emphasized the key importance of balanced budget state laws, which was also confirmed by Poterba (1994; 1995), who also emphasized the role of constitutional limitations on borrowing and indebtedness. For the United States, most concluded that states with stronger rules run smaller deficits, receive higher bond ratings, pay lower premiums, and adjust to shocks more quickly (Alesina and Bayoumi, 1996; Poterba, 1994; Poterba and Rueben, 1999; Poterba and von Hagen, 1999). Less conclusive results were obtained by Kenyon (1991) on the effects of caps on federal and local tax-exempt bond issues. Also, Clingermyer and Wood (1995) provided weak evidence that tax and expenditure limitations may increase state indebtedness.

The empirical results from European countries were even less conclusive. Derycke and Gilbert (1985) supported the hypothesis that central government macroeconomic policies do affect local government borrowing decisions in France. However, Dufrénot et al. (2010) found that the golden rule (i.e., that governments will only borrow to invest) is not effective in regulating regions' borrowing in France. On the other hand, Cabasés et al. (2007) provided support to the effectiveness of institutional borrowing restrictions in introducing financial discipline in the borrowing policies adopted by local governments in Spain. Furthermore, Claeys et al. (2008) concluded that, in Germany, the application of fiscal rules is not strict because the central government cannot make the lower tiers of government stabilize debt.

In Brazil, Martell (2008) found that the constraints imposed by fiscal arrangements have been effective in controlling expenditures and that long-term discipline is maintained through rule-based, not market-based, control. Braun (2006) discovered that in Argentina, fiscal rules have not worked because the federal fiscal institutions lead to a serious common pool problem that, in turn, causes a deficit bias.

5.2.6 Evidence from Cross-Country Studies

Using cross-country data between 1985 and 1987, von Hagen and Eichengreen (1996) found that the introduction of subnational borrowing constraints in the European Union increases subnational indebtedness.¹¹ Fornasari et al. (2000), based on a panel of 31 developed and developing countries, found that constraining subnational borrowing¹² does not seem to have any consistent effect on subnational fiscal deficits. Alesina et al. (1999) found a negative correlation between fiscal rules limiting debt levels and fiscal deficits in Latin America.

Rodden (2002), using panel data on 33 countries, concluded that the largest deficits are run by subnational governments that rely heavily on federal transfers and are free to borrow. Hence, the study provided support to the conjecture that subnational borrowing should be controlled, at least in countries with high vertical fiscal imbalances. Moreover, based on a sample of 15 federations, Rodden and Wibbels (2002) found that higher expenditure decentralization is associated with smaller overall deficits, especially when states have wide-ranging autonomy over taxation.

In contrast, in a more recent study, Rodden and Wibbels (2010) found that when subnational governments have more borrowing autonomy, expenditures are less income-elastic than when borrowing is more tightly regulated. In most federations, the more restricted the access to credit markets, the more pro-cyclical fiscal policy is. Plekhanov and Singh (2007) analyzed effects on subnational fiscal balance by observing separately the four broad regulations defined by Ter-Minassian and Craig (1997). They discovered that no single framework seems superior under all circumstances, and that appropriateness of any given regulation depends on the vertical fiscal imbalance, bailout expectations, and quality of reporting.¹³ In a similar vein, using a sample of 17 Organisation for Economic Co-operation and Development (OECD) countries, Thornton and Mati (2008) found that changes in fiscal balances of subnational and central governments are highly positively correlated, especially when fiscal relations are managed by rules.¹⁴

In the European Union, Afonso and Hauptmeier (2009) found that the existence of general and central government fiscal rules positively contribute to higher responsiveness of primary surpluses to government indebtedness. Interestingly, this effect does not exist in the case of subnational fiscal rules. Similarly, Ayuso-i-Casals et al. (2007) found a positive relationship between numerical fiscal rules and lower deficits, and Debrun and Kumar (2007) and Debrun et al. (2008) reported that stricter and broader fiscal rules are associated with higher cyclically adjusted primary balances.

Overall, the literature does not offer a definite answer on whether

borrowing at the subnational level should be allowed, and if so, how it should be regulated. One issue, however, is the importance of distinguishing between borrowing only for financing long-term capital investments and for covering operating expenses. Thus, there is consensus that the primary objective of subnational borrowing should be to increase infrastructure services delivery (Freire and Petersen, 2004; Leigland, 1997; Peterson and Hammam, 1998). Subnational borrowing is argued to contribute to more efficient infrastructure services delivery and improved local governance, in terms of transparency, accountability, and financial management (Freire and Petersen, 2004).

5.3 SUBNATIONAL BORROWING REGULATIONS IN THE INTERNATIONAL EXPERIENCE

As Figure 5.1 presents, most countries that introduced borrowing at the subnational level after 1990 prefer centrally imposed rules or direct control by the central government as the dominant type of regulation. There has been a relative decrease in sole reliance on financial markets in regulating subnational borrowing, which may be explained by experience gained from recent crises in which subnational borrowing played a major role.

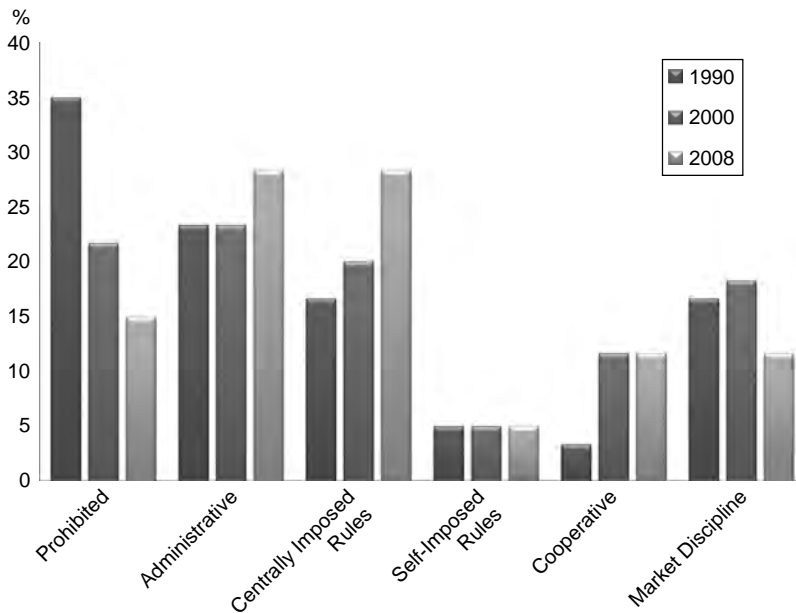
In the last two decades, there has also been an increased trend of imposing legal sanctions for noncompliance, mostly when subnational borrowing is dominantly regulated by centrally imposed rules (see Figure 5.2).

This trend of imposing legal sanctions for noncompliance is mostly due to countries that have introduced borrowing at the subnational level during this period, rather than changing those that have already been present in the subnational capital market (see Figure 5.3).

In this section, the four main institutional settings that are used to regulate the operations of subnational credit markets are reviewed. They represent ex ante regulations, and sanctions for noncompliance as an ex post regulation of subnational borrowing. The ex ante regulations reviewed comprise the four broad types defined by Ter-Minassian and Craig (1997): market discipline, fiscal rules, administrative regulation, and cooperative regulation.

5.3.1 Ex Ante Regulations

Ex ante regulations consist of ex ante control and monitoring of subnational borrowing and fiscal performance. These regulations specify the purpose, types, and procedures of subnational borrowing. Liu and Waibel (2006) summarized the key elements of ex ante regulations commonly



Note: Sample consists of 60 industrialized, developed, and transitioning countries.

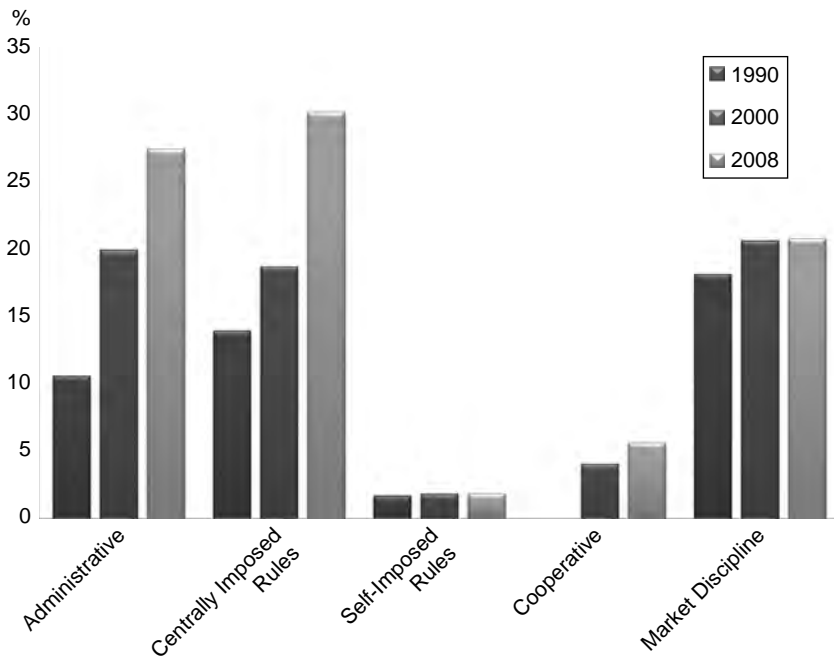
Source: Authors' calculations.

Figure 5.1 Broad types of ex ante subnational borrowing regulations (relative frequency in the sample) (%)

used: (i) allowing borrowing only for financing long-term capital investments (i.e., the golden rule); (ii) setting limits on key fiscal variables, such as the primary and/or fiscal deficit and debt service ratio; and (iii) requiring subnational governments to establish medium-term fiscal frameworks and transparent budgetary processes. To improve fiscal transparency, more countries are introducing credit-rating systems for subnational governments as part of regulatory frameworks for subnational borrowing.

Market discipline

In some countries, the government relies solely on capital markets to regulate subnational borrowing. Market discipline means that the financial markets are capable of sending appropriate signals to prevent a borrower from entering 'unsustainable areas', and borrowing is limited by lenders' willingness to invest. Credit agencies, such as Standard and Poor's, Moody's, and Fitch, provide lenders and borrowers with information about



Note: Subsample consists of 39 countries in 1990, 47 in 2000, and 51 in 2008 that allow subnational borrowing.

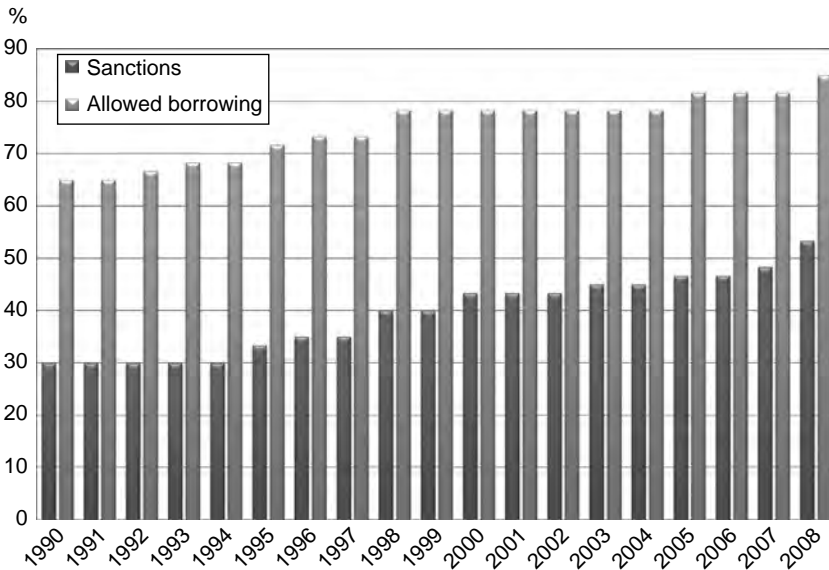
Source: Authors' calculations.

Figure 5.2 Sanctions for noncompliance by type of ex post subnational borrowing regulations (relative frequency in the subsample) (%)

the risk of default. Subnational governments generally have direct access to financial markets to meet their borrowing requirements. Restricted access to foreign capital markets limits the available options and creates a suboptimal financial sector portfolio (Giugale et al., 2000).

There are certain conditions that need to be satisfied for private financial markets to be an effective control instrument for subnational borrowing: (i) capital markets must be free and open; (ii) potential lenders must have available information about the borrower's outstanding debt and repayment capacity; (iii) there should be no possibility of a bailout of lenders by the central government; and (iv) borrowers must have the ability to respond with adequate policies to the signals sent by the market (Lane, 1993).

Market-based subnational borrowing regulations can also take different



Note: Sample consists of 60 industrialized, developed, and transitioning countries.

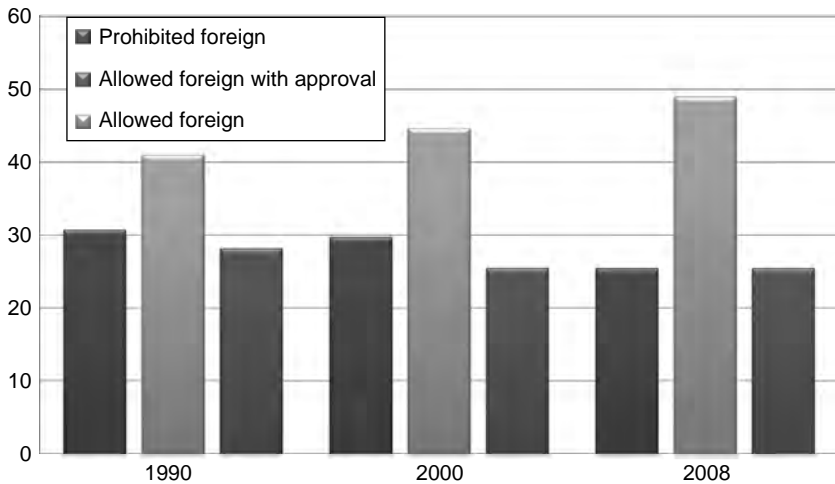
Source: Authors' calculations.

Figure 5.3 Allowing borrowing at the subnational level and imposing legal sanctions for noncompliance (relative frequency in the sample) (%)

forms. Dillinger (2003) compared the United States and European models for market-based mechanisms, and concluded that while the United States relies primarily on municipal bonds, Europe relies on specialized banks to finance subnational borrowing, with municipal bonds becoming more popular. Some specialized banks in Europe are owned by municipalities (e.g., in Finland and Sweden), while others were founded by national governments and later privatized (e.g., Dexia in France). The largest owners of municipal bonds in the United States are individual investors, mutual and money market funds, and commercial banks. There, after being issued, municipal bonds can be sold in the secondary market, and are considered relatively safe from default, despite some recent examples.

There has been an increasing trend of allowing subnational borrowing in foreign capital markets over the last two decades, but mostly only with an approval by the central government authority (see Figure 5.4).

As previously mentioned, the availability of information and full transparency on outstanding debt and capacity to pay are essential to market



Note: Subsample consists of 39 countries in 1990, 47 in 2000, and 51 in 2008 that allow subnational borrowing.

Source: Authors' calculations.

Figure 5.4 Allowing subnational borrowing in foreign capital markets (relative frequency in the subsample) (%)

discipline. However, obtaining reliable financial information, especially from subnational governments, often requires significant effort. Not all subnational governments follow a standardized accounting plan, hold uniform registers of their assets and liabilities, or publish information on debt and capacity to pay. Hidden extra budgetary funds weaken transparency. Moral hazard also undermines the effectiveness of market discipline in checking subnational governments' excessive indebtedness. Bailouts encourage the expectation of future rescues and moral hazard behaviors of both borrowers and lenders.

Market signals, such as interest rates, can additionally affect borrowers' financial behavior in choosing more solvent fiscal policies. Borrowers must be sensitive to the market signals for market discipline to be effective; decisions on borrowing should change depending on the interest rate.

In many parts of the world, capital markets at the local level are inadequately developed to be able to provide efficient discipline to subnational governments; thus, credit-rating agencies at the subnational level are becoming increasingly important to evaluate the performance of intergovernmental systems. In this same context, some subnational governments have adopted fiscal responsibility rules that are self-imposed, trying to

improve their credit ratings. Examples of these trends are seen in Canada, Switzerland, and the United States. Some countries in Latin America, such as Argentina, Brazil, Colombia, and Peru, have also sought to follow this approach, at least partially, with the introduction of fiscal responsibility laws (Webb, 2004).

Provinces in Canada may borrow for any purpose, whenever, wherever, and however they wish. There are neither internal nor external federal controls over provincial borrowing, and they do not even need to provide any information on their borrowing to the federal government (Bird and Tassonyi, 2001). Unlike provinces, municipalities face a very explicit hard budget constraint, however; local borrowing requires prior provincial approval and is severely limited.¹⁵

However, even Canada's fully developed financial markets have not been fully able to control excessive indebtedness of its subnational governments. In fact, in the mid-1990s, subnational debt reached 23 percent of GDP (Bird and Tassonyi, 2001), prompting the provinces to adopt fiscal adjustment programs. Similarly, Argentina and Brazil, without meeting all necessary market conditions, relied on a market-discipline approach in the 1980s, which had unfortunate consequences. In Brazil, subnational debt jumped from 1 percent of GDP in the early 1970s, to 20 percent in the mid-1990s, with five large federal bailout interventions (three for states and two for municipalities) (Bevilaqua, 2002).

Fiscal rules

Rules-based regulations consist of fiscal rules imposed by the central government and specified in constitutions or organic laws. Such rules introduce constraints on fiscal choices by subnational governments to guarantee that fiscal outcomes remain predictable and robust regardless of the government in charge. Rules may take different forms: ceilings on debt or total borrowing, deficit targets, maximum expenditure rules, the 'golden rule', or rules related to debt repayment capacity.

Borrowing and debt ceilings represent the borrower's upper legal limits of total indebtedness and are generally simple and easy to monitor. A deficit target has the advantage of being easily understood by the public, but it may be unsuccessful in preventing excessive debt accumulation because of off-budget items. The most common deficit target rules are those targeting the overall budget deficit (e.g., Austria, Belgium, Spain, and most states in the United States) or the operating deficit (e.g., Norway). Deficit target rules can also be met at higher levels of revenues and expenditures, which may have macroeconomic implications.

Expenditure rules set the limits on the expenditure level, and are conceptually simple, easy to monitor, and can be most directly controlled.

However, an expenditure limit can be more difficult to implement at the subnational level than a deficit target and may not necessarily be able to prevent debt accumulation, since spending could be pushed below the line.

The golden rule mostly satisfies the intergenerational equity justification for borrowing. However, borrowing for infrastructure does not guarantee by itself macroeconomic and debt stability. Typically, infrastructure investments are required to provide 'adequate' economic and social rates of return to be desirable or be approved. Many countries currently implement some form of the golden rule (e.g., Germany, Spain, the United Kingdom, and most states in the United States).

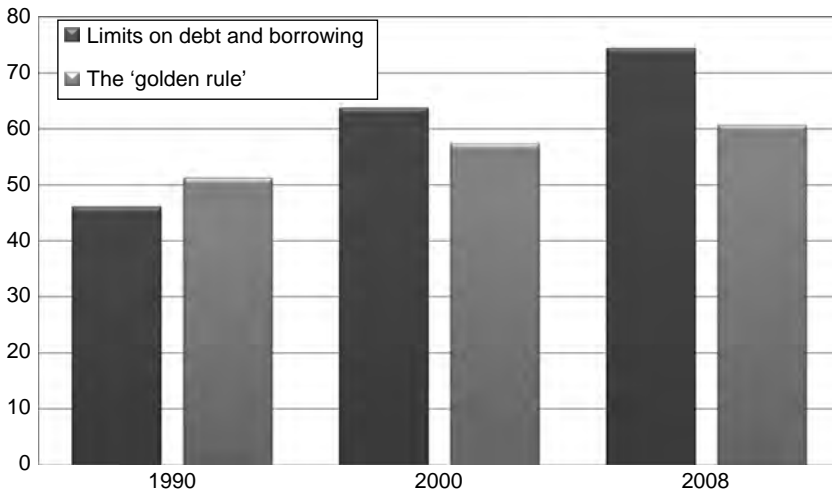
Finally, rules related to the capacity to repay debt attempt to stimulate the workings of the market-discipline approach by relating the limits on indebtedness to expected debt service (e.g., Colombia and Hungary in the 1990s). These rules, however, may not be as effective in controlling debt accumulation if financial conditions are manipulated.

Fiscal rules have the advantage of being generally transparent, more effective in addressing long-term sustainability and intergenerational equity, and relatively easy to monitor. They can, however, be counterproductive if poorly designed or inadequately enforced. Most countries using the rule-based approach use a variety of rules, some of which are redundant. The main disadvantage of the rule-based approach is the trade-off between ensuring compliance and preserving flexibility. Strict fiscal rules leave little room for adjustments in case of unexpected economic downturns, while more flexible fiscal rules lack credibility and may fail to impose sufficient discipline. In practice, the efficacy of fiscal rules for subnational governments primarily depends on the ability to monitor the debt.

There has been an increased trend to impose limits on subnational debt and borrowing during the last two decades (see Figure 5.5). The use of the golden rule has also increased, but not by as much.

All but one state in the United States (i.e., Vermont) has a balanced budget requirement. Budget rules vary significantly across states, mostly applying only to the operating budget (i.e., general fund). In addition, as of 2008, 30 states also operate under tax or expenditure limitations (Waisanen, 2008). Several studies have investigated the effectiveness of subnational government rules in the context of states, with most authors concluding that rules do enforce some budget discipline, in terms of lower deficits and quicker reaction to negative fiscal shocks (Poterba, 1994; Alesina and Bayoumi, 1996; Poterba and von Hagen, 1999; Poterba and Rueben, 1999).

In the European Union, within the Stability and Growth Pact that limits the overall level of public debt as well as annual total budget deficits, it has been questioned whether the debt limit should be shared among



Note: Subsample consists of 39 countries in 1990, 47 in 2000, and 51 in 2008 that allow subnational borrowing.

Source: Authors' calculations.

Figure 5.5 Imposing limits on borrowing and debt and the 'golden rule' (relative frequency in the subsample) (%)

levels of government. In most countries, it is assumed that the central government is responsible for the overall limit of public debt. Indeed, public debt is much lower at the subnational compared to the central government level, being just above 8 percent of total debt in Germany to around 19 percent in Switzerland (Swianiewicz, 2004). In most European Union countries, the ratio of the subnational debt to GDP is low, on average around 5 percent. The only outliers are the Netherlands and Spain, with over 8 percent. In Belgium, only the central government is responsible for complying with the European Union fiscal rules, but it does have agreements set between the central and subcentral levels of government, so commitments to complying with these constraints is shared among all levels of government.

Switzerland's approach to subnational borrowing regulations is an example of self-imposed fiscal rules. Twenty-six cantons in Switzerland apply different regulations, which are set in each canton's law. In many cantons, borrowing is allowed only for financing capital expenditures and if the local and/or cantonal government has the financial capacity to pay the interest on debt, as well as the amortization, out of the current budget.

Dafflon (2002a) discussed the subnational borrowing regulation practices in Fribourg Canton, where for each project that cannot be financed from current revenues, borrowing requires canton approval.

Administrative regulation

The administrative approach is opposite from the market-discipline approach, giving the central government direct control over subnational borrowing. It may take different forms, such as setting an annual or even more frequent limit on overall subnational government debt; prohibiting external borrowing; reviewing individual borrowing operations, including approving terms and conditions; or centralizing all government borrowing with onlending to subnational governments. The approval of each borrowing issuance requires an evaluation of financial terms and conditions under which each operation is contracted. The administrative approach is more frequently used by unitary countries and less by federal countries.

Direct involvement of the central government in micromanaging each credit operation at the subnational government level is a disadvantage of this approach, since it is the opposite of the fiscal decentralization idea. Moreover, this approach may unnecessarily increase bureaucracy, cause undesirable inefficiencies in the financial system, and may even be incompatible with a country's constitution if it allows the subnational government free access to the capital market. Another disadvantage is the moral hazard resulting from the fact that the central government may find it difficult to refuse to financially support the lower levels of the government in cases of impending defaults.

The administrative approach also has advantages. The central government can control both the macroeconomic and external debt policy. Moreover, the central government's control may increase the subnational borrower's credibility, given that foreign lenders often require a central government guarantee, and it may also result in better terms and conditions received in foreign financial markets.

Denmark, Greece, Ireland, Mexico, and the United Kingdom practice the administrative control approach in regulating subnational borrowing. In Mexico, states and municipalities, including their decentralized agencies and public enterprises, can only borrow domestically to finance investment outlays up to the ceilings set by their respective legislatures. Unlike several other countries in Latin America, Mexico does not have a fiscal responsibility law even under consideration. It uses financial sector regulations instead to motivate state-level prudence.

In the United Kingdom, a local authority may not, without the consent of the Treasury, borrow from a lender from abroad or in a currency other than pounds sterling. There, borrowing limits do differ among subnational

governments (Watts, 2002); limits are allocated depending on their specific needs for housing and education. Allocations are increased or decreased based on the efficiency and effectiveness of local governments and can be adjusted for special needs (Dafflon, 2002b).

Denmark provides another interesting example. In general, subnational borrowing there is prohibited, but in some cases, this rule is waived. Permission for borrowing issuance, for which the municipalities apply individually, is granted if the overall borrowing ceiling has not been exceeded and if the municipality's debt does not exceed 30 percent of its expenditures. The borrowing and debt ceilings are negotiated annually with local government associations. Further, the general rule is that, if borrowing is permitted, both current and capital budgets need to be balanced. Nevertheless, during the 1990s, between 40 percent and 80 percent of municipalities' deficits were financed through borrowing, resulting in local debt of 4.5 percent of GDP in 1998 (Jorgen and Pedersen, 2002).

Cooperative regulation

Under this approach, subnational borrowing controls are designed through a negotiation process between the central and lower levels of government. Subnational governments are actively involved in reaching an agreement on overall general government deficit targets, main revenue and expenditure items, as well as limits on financing individual subnational jurisdictions. This approach is in practice in some European countries and Australia.

The cooperative approach combines many individual advantages of the other three approaches, which is both its main strength and weakness. A clear advantage lies in promoting dialogue and the exchange of information across various government levels, as well as in raising awareness of the macroeconomic implications of budgetary choices. To be effective, this approach requires the central government to be strong and able to effectively guide intergovernmental negotiations, which in many emerging markets may not be the case (Joumard and Kongsrud, 2003). Moreover, because it combines components of the other three approaches, when it is poorly implemented, it reproduces the flaws of other approaches, instead of their advantages (Ahmad et al., 2005).

In Austria, a 'consultation mechanism' between different levels of government and the Stability and Growth Pact was implemented in 1999 (Thöni et al., 2002) to ensure lowering and maintaining the overall deficit below 3 percent of GDP. Similar arrangements exist in Spain (Laborda et al., 2006).

During the 1980s, Australia centralized regulation of subnational borrowing through the Loan Council, but this direct control system was ineffective. The functions of the Loan Council were restructured in the

mid-1990s, and excessive indebtedness is now cooperatively controlled (Craig, 1997; Dillinger, 2003; Koutsogeorgopoulou, 2007). Jurisdictions are required to submit their total financial requirements for the upcoming year to the Loan Council, with no requirements for submitting specific project details. Then, the Loan Council evaluates these nominations in regard to the jurisdictions' fiscal position, infrastructure needs, and macroeconomic implications of borrowing. If the Loan Council has concerns about certain nominations, it has the right to request that the jurisdiction justify the nomination, and if needed, it can amend its fiscal strategy. So far, the restructured Loan Council, complemented by financial markets and credit-rating agencies, has been successful in controlling subnational fiscal behavior (Craig, 1997, Koutsogeorgopoulou, 2007; Webb, 2004).

In Belgium, subnational borrowing is supervised by the High Council of Finance, which is composed of members nominated by the federal, regional, and community levels, and the National Bank of Belgium. The committee monitors and analyzes the borrowing requirements of all levels of government at regular intervals, and, based on a concept of sustainability, formulates recommendations about the medium- and long-term budgetary targets for the different government levels. Based on its recommendations, agreements between the central government and regions are formulated, covering 5–6 years and committing the subnational governments to meeting specific annual budgetary targets in terms of their borrowing requirements. To ensure that public finances are consistent with the budgetary targets, municipalities are subject to the golden rule. On the recommendation of the High Council of Finance, the central government can limit the borrowing capacity of a noncompliant region to prevent endangering economic stability or the external balance. So far, however, the council has not considered it necessary to use this sanction (OECD, 2007).

According to Liebig et al. (2008), the subnational borrowing regulation in South Africa is a combination of the cooperative and marked-based approach. The cooperative component originates in the Constitution, where Article 3 requires a cooperative government. Furthermore, different spheres of the government control each other in terms of who borrows how much. Subnational entities can generally borrow as much as they want. The municipal councils authorize borrowing issuances, and there are no countrywide debt limits.

5.3.2 Ex Post Regulations

As already pointed out, the effectiveness of ex ante regulations is limited without ex post mechanisms for dealing with subnational insolvency.

Although *ex ante* regulations are important for minimizing the risk of defaults, they cannot prevent them in all cases. Subnational insolvency may occur because of subnational fiscal and debt mismanagement but also because of external shocks.

Ex post control mechanisms consist of a set of predetermined rules for allocating the default risk. They provide a basis for both borrowers and lenders' expectations that in case of insolvency, they both share the burden. Properly designed *ex post* regulations enforce hard budget constraints on subnational governments.

Countries generally apply two main approaches in *ex post* regulation of subnational borrowing: judicial and administrative approaches. The judicial approach involves the courts, which make key decisions and give guidance on the restructuring process. The advantage of the judicial approach is that it neutralizes political pressure. However, the ability of courts to impose fiscal adjustments on subnational governments is limited. The administrative approach, however, often allows intervention of higher levels of government in resolving the subnational insolvency.

Depending on factors, such as history, political, and economic structure, countries apply various approaches for *ex post* regulation of subnational borrowing. Brazil and Hungary apply the administrative approach, while South Africa and the United States prefer a combination of judicial and administrative approaches. There is also a uniform approach across states in the United States for dealing with municipal distress.

Any *ex post* control mechanism consists of three central elements. The first is the definition of insolvency that acts as a procedural trigger. Different countries define insolvency differently. While Hungary and the United States define insolvency as inability to pay debt, South Africa uses one definition for serious financial problems and another for persistent violation of financial commitments. The second element is the debtor's fiscal adjustment to bring spending in line with revenues, as well as borrowing with capacity to service debt. Even when subnational governments have significant autonomy in controlling expenditures and raising revenues, fiscal adjustment often requires difficult political choices of reducing spending and raising revenues. Finally, negotiations must be included between the debtor and creditor to restructure debt obligations. In case of the administrative approach, a higher government level tends to restructure subnational debt into longer-term debt instruments, which occurred in Brazil in 1997. However, the debt discharge is typically limited to the judicial approach (Liu, 2008).

5.4 EMPIRICAL ANALYSIS AND FINDINGS

5.4.1 Data on Subnational Borrowing Regulations

The empirical analysis is based on data for 57 developed, developing, and transitioning countries, between 1990 and 2008. Data on the main variables of interest, subnational borrowing regulations, are based on information collected from various sources, such as laws, country reports, and individual country or regional studies.¹⁶ This information considers whether borrowing is allowed at the subnational level, and if so, how it is regulated and controlled. Countries usually implement a combination of different types of regulations in an attempt to control subnational borrowing and to improve subnational creditworthiness. For the purpose of this chapter, information about subnational borrowing regulations refers to the dominant regulation in a particular country and year. Based on this information, countries are classified into the following six broad categories, with the following basic criteria:

- (i) *Prohibited*. Subnational governments are not allowed to borrow in private capital markets.
- (ii) *Administrative*. Each borrowing issuance requires approval from the central government authority.
- (iii) *Cooperative*. A decision on each borrowing issuance is cooperatively made by members of a body (e.g., a council or committee) that consists of representatives of all government units.
- (iv) *Centrally imposed rules*. Regulation is based on fiscal rules (e.g., deficit targets, maximum expenditure rules, or rules related to debt payment capacity) imposed by the central government that are clearly specified in the constitution or organic laws.
- (v) *Self-imposed rules*. Subnational borrowing is regulated by fiscal rules that subnational governments imposed on themselves to improve their creditworthiness.
- (vi) *Market-based*. Only financial markets regulate borrowing at the subnational level.

Besides the six categories described above, the following three qualitative indicators of subnational borrowing regulations are observed separately:

- (i) restricting subnational borrowing for solely financing capital investments (i.e., the golden rule);
- (ii) imposing ceilings on debt or total borrowing; and

Table 5.1 Subnational borrowing regulations, sample structure, 1990–2008

| Regulation | Number of observations | % of total | Number of countries |
|----------------------------|------------------------|------------|---------------------|
| Prohibited | 143 | 18 | 16 |
| Administrative | 154 | 19 | 17 |
| Cooperative | 116 | 14 | 7 |
| Centrally imposed rules | 190 | 23 | 19 |
| Self-imposed rules | 45 | 6 | 3 |
| Market-based | 159 | 20 | 11 |
| Total | 807 | 100 | 73 ^a |
| Golden rule | 356 | 44 | 28 |
| Limit on debt or borrowing | 427 | 53 | 37 |
| Foreign: allowed | 219 | 27 | 13 |
| Foreign: with approval | 257 | 32 | 23 |

Notes:

^a Does not add up to 57, because some countries changed dominant borrowing regulations during the sample period.

57 countries, data based on an unbalanced panel.

Source: Authors.

- (iii) allowing borrowing in foreign capital markets, which consists of (a) not allowed to borrow in the foreign market, and (b) allowed to borrow with or without approval from the central government authority.

Therefore, if ceilings on debt or total borrowing and/or the golden rule are the only fiscal rules that regulate subnational borrowing, then regulation is classified as market-based. Moreover, because the effectiveness of fiscal rules significantly depends on legal sanctions for noncompliance, this indicator is observed as well.

Countries implement three types of legal sanctions for noncompliance: administrative, political, and financial sanctions. However, for the purpose of this study, these types of sanctions are not separately identified.

Table 5.1 presents the sample structure in terms of subnational borrowing regulations. There were 16 changes of dominant subnational borrowing regulations during the observation period.¹⁷ Furthermore, 28 countries in the sample restricted borrowing for financing only capital investments at some point during the observation period, while 37 countries imposed limits on debt and borrowing.

5.4.2 Empirical Methodology

To estimate the effects of subnational borrowing and regulations on fiscal sustainability, the relationship between subnational outstanding debt and borrowing regulations is reviewed, as well as the primary fiscal balance. The primary balance is observed at both the general and subnational government levels. Regardless of whether the general or subnational government primary balance is observed, it is almost certain that the current period primary balance depends on its levels in previous years and a set of variables representing the supply and demand for borrowing, as well as the institutional setup in the country. Therefore, the objective model to be tested is:

$$y_{it} = \alpha y_{it-1} + \beta B_{it} + \gamma R_{m,it} + \theta R_{f,it} + \phi F_{it} + \delta X_{it} + v_i + \varepsilon_{it} \quad (5.1)$$

In equation 5.1, y_{it} represents the ratio of the primary fiscal balance to GDP in country i in year t , $i = 1, \dots, n$, $t = 1, \dots, T$, while y_{it-1} represents its value in year $t - 1$. Next, B_{it} represents the level of outstanding debt at the subnational level in country i in year t . $R_{m,it}$ is a vector of dummy variables representing six broad types of regulation of subnational borrowing in country i in year t , ($m = 1, \dots, 6$). Vector $R_{f,it}$ includes dummy variables representing the presence of the golden rule, limits on subnational borrowing, allowing borrowing in the foreign market, and existence of sanctions for noncompliance, ($f = 1, \dots, 4$). Furthermore, F_{it} represents a vector of measures of fiscal decentralization, including the share of intergovernment transfers in total subnational revenues, a dummy variable that takes the value 1 if the transfer allocation is based on a stable formula; the share of subnational expenditures in total general government expenditures; and a dummy that takes a value of 1 if the subnational authority is able to set and/or change rates for income, business, or consumption taxes.

Next, X_{it} represents a vector of other control variables generally thought to affect primary fiscal balances, including urbanization, population growth, age dependency, government stability, government fractionalization, corruption index, central bank independence, bailout history, GDP per capita, inflation rate, and central government budget balance (for the subnational government regressions). Finally, v_i stands for unobserved country fixed effects.

Before proceeding with the estimation, several econometric problems need to be addressed that may arise when estimating equation 5.1:

- (i) The borrowing regulation variables in $R_{m,it}$ are assumed to be endogenous. This is because causality may run in both directions, from the primary balance to the decision how to regulate borrowing and vice versa, and these regressors may be correlated with the error term.

- (ii) Time-invariant country characteristics (i.e., fixed effects), such as geography and demographics, may be correlated with the explanatory variables. The fixed effects are contained in the error term u_{it} in equation 5.1, which consists of the unobserved country-specific effects, v_i , and the observation-specific errors, e_{it} , $u_{it} = v_i + e_{it}$.
- (iii) The presence of the lagged dependent variable y_{it-1} is likely to give rise to autocorrelation.

To address the first issue, one would usually choose an instrumental variables approach. However, because the potentially endogenous variables in $R_{m,it}$ are a set of mutually exclusive dummy variables, the first stage in the instrumental variable regression is modified to incorporate a multinomial logit model instead of the usual linear regression. The multinomial logit methodology, which allows estimating probabilities with which a country chooses a particular type of regulation, is discussed below.

To address the second and third problems, the generalized method of moments (GMM) estimator is used (Arellano and Bond, 1991), which was first proposed by Holtz-Eakin et al. (1988). The difference GMM estimator uses first differences to transform equation 5.1 into:

$$\Delta y_{it} = \alpha \Delta y_{it-1} + \beta \Delta B_{it} + \gamma \Delta R_{m,it} + \theta \Delta R_{f,it} + \varphi \Delta F_{it} + \delta \Delta X_{it} + \Delta v_i + \Delta \varepsilon_{it} \quad (5.2)$$

Because fixed country-specific effects do not vary over time, they disappear by this transformation, solving the second problem. That is:

$$\Delta u_{it} = \Delta v_i + \Delta \varepsilon_{it} \quad (5.3)$$

Or

$$u_{it} - u_{it-1} = v_i - v_i + \varepsilon_{it} - \varepsilon_{it-1}$$

$$u_{it} - u_{it-1} = \varepsilon_{it} - \varepsilon_{it-1}$$

Next, the autocorrelation (i.e., the third problem) is addressed by instrumenting the first-differenced lagged dependent variable with its past levels. The Blundell and Bond (1998) methodology is applied, and equation 5.1 is estimated using the system GMM estimator. To satisfy the assumption of no correlation across individuals in the idiosyncratic disturbances, it is important to include time dummies into the regression, which makes this assumption more likely to hold (Roodman, 2006).

5.4.3 Determinants of Subnational Borrowing Regulations

To evaluate the determinants of choosing a particular type of subnational borrowing regulation, a multinomial logit model is used.

As already mentioned, vector $R_{m,it}$ consists of $m=1,2,\dots,6$ borrowing regulation variables. Based on the vector $R_{m,it}$, variable R^*_{it} is designed in the following manner:

$$R^*_{it} = \begin{cases} m_1, \text{ if } R_{1,it} = 1, (\text{prohibited borrowing}) \\ m_2, \text{ if } R_{2,it} = 1, (\text{administrative regulation}) \\ m_3, \text{ if } R_{3,it} = 1, (\text{cooperative regulation}) \\ m_4, \text{ if } R_{4,it} = 1, (\text{centrally imposed rules}) \\ m_5, \text{ if } R_{5,it} = 1, (\text{self-imposed rules}) \\ m_6, \text{ if } R_{6,it} = 1, (\text{market-based regulation}) \end{cases}$$

The probability of choosing any of categories $m=2,3,\dots,6$ is compared to the probability of choosing the reference category (e.g., prohibited borrowing). This requires the calculation of five equations, one for each category relative to the reference category.

Hence, if the first category is the reference one, then, for $m=2,3,\dots,6$,

$$\ln \frac{P(R^*_{it} = m)}{P(R^*_{it} = 1)} = \alpha_m + \sum_{k=1}^K \beta_{mk} W_{ik} = Z_{mi}, \quad m = 2, \dots, 6 \quad (5.4)$$

where W_{ik} is the vector of variables representing potential determinants of subnational borrowing regulations, which are discussed next.

Therefore, for each choice, there will be five predicted log odds, one for each category relative to the reference category.¹⁸

Probabilities for $m=2,3,\dots,6$ are

$$P(R^*_{it} = m) = \frac{\exp(Z_{mi})}{1 + \sum_{m=2}^6 \exp(Z_{mi})}, \quad m = 2, \dots, 6 \quad (5.5)$$

While, for the reference category, $m=1$

$$P(R^*_{it} = 1) = \frac{1}{1 + \sum_{m=2}^6 \exp(Z_{mi})} \quad (5.6)$$

5.4.4 Determinant Variables of Subnational Borrowing Regulations

To resolve the reverse causality issue in equation 5.1, an exogenous instrument must be found, which is correlated with borrowing regulations but not with the fiscal balance. Recalling the nature of all fiscal decentralization variables, it is difficult to find an exogenous instrument that allows obtaining an unbiased estimate of subnational borrowing regulations on fiscal balance. Besides other factors, the ability of subnational governments to access private financial markets significantly depends on the depth of the country's financial markets and development of financial institutions. The depth of financial markets has an effect on how subnational borrowing is regulated, but at the same time is not directly affected by the size of the fiscal deficit, thus representing a potential instrument for subnational borrowing regulations.

The development of financial markets is expected to significantly affect subnational borrowing autonomy. First, the supply of funds in the financial market affects subnational governments' ability to borrow; second, the depth of the financial market is correlated with the development of financial institutions. Hence, it is expected that countries with more developed financial markets are more likely to allow more borrowing autonomy to subnational governments. To measure the depth of financial markets, two variables are used: the liquid liabilities indicator and index of financial freedom.

The liquid liabilities indicator represents the ratio of liquid liabilities to GDP, where liquid liabilities consist of currency held outside of the banking system plus demand- and interest-bearing liabilities of banks and nonbank financial intermediaries. Thus, the liquid liabilities indicator is a typical measure of financial depth.

The index of financial freedom is a measure of banking efficiency as well as of independence from government control and interference in the financial sector. It is created based on five broad areas that are considered to assess an economy's overall level of financial freedom that ensures easy and effective access to financing opportunities for people and businesses in the economy.¹⁹ An overall score from 0 to 100 rates an economy's financial freedom.

The depth of the financial market represents the supply of borrowing. On the demand side, important variables that affect the decision on how to regulate borrowing are the government primary balance, subnational outstanding debt, expenditures and own revenues, subnational tax autonomy, GDP per capita, and population growth. Besides the supply and demand for borrowing, the decision on how to regulate borrowing depends also on political and institutional determinants, such as government stability, government fractionalization, and bailout history.

Subnational governments' ability to borrow in private financial markets depends on their creditworthiness, which in turn, depends on different

factors, including their ability to repay debt. Subnational governments with more own revenue are expected to have a greater ability to repay debt, everything else constant, especially if, at the same time, they have more tax autonomy (i.e., the ability to set and/or change tax rates for important tax instruments). Higher subnational expenditures may indicate larger subnational expenditure needs and higher demand for financing and, therefore, may positively affect the decision to allow subnational governments to borrow in the capital market. GDP per capita and population growth represent indicators of demand for public services, suggesting that with their increase, there may be a higher probability of allowing borrowing at the subnational level.

As discussed previously, GDP per capita is supposed to account for better fiscal performance of developed countries and more developed financial markets. More stable governments are expected to be more likely to impose harder budget constraints on all levels of government, suggesting a higher probability of choosing more decentralized subnational borrowing regulations. Taking into account governments' ability to make decisions cooperatively, one would expect that countries with less fractionalized governments are more likely to have cooperatively regulated subnational borrowing, or borrowing regulated by fiscal rules. Finally, bailout history is likely to be highly correlated with current bailout expectations and can be used as an instrument for bailout expectations. It is expected that countries with a history of bailouts may be more likely to choose more centralized types of subnational borrowing regulations.

5.4.5 Results of the Determinants of Subnational Borrowing Regulations

The probabilities with which countries choose subnational borrowing regulation types are estimated using the multinomial logit regression. Table 5.2 presents the relative risk ratios of choosing particular subnational borrowing regulations for unit increase in independent variables.

Given that both general and subnational government primary balances are observed to be potential determinants of subnational borrowing regulations, Table 5.2 presents the estimated relative risks for both options. As the results show, the liquid liabilities variable seems to be relatively significant in choosing cooperative regulation and regulation based on centrally imposed rules, compared to administrative regulations.

However, as mentioned above, a conclusion cannot be made about the probabilities of choosing among the regulation types presented in the table. Because this study includes comparison among six categories, this way of presenting the relative risk ratios of choosing one category over the other is somewhat confusing. It is more useful for the purpose of

Table 5.2 Factor changes in relative risk ratios of choosing particular subnational borrowing regulation versus prohibiting subnational borrowing (for unit increase in independent variable)

| | Primary balance = General government primary balance | | | | |
|-------------------------------------|------------------------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| | Prohibited | Cooperative | Central Rule | Self-rule | Market |
| Liquid liabilities | 7.593 [*] (6.328) | 0.205 [*] (0.671) | 0.062 ^{***} (0.600) | 0.351 (0.849) | 0.950 (0.611) |
| Financial freedom | 1.228 [*] (0.090) | 0.982 (0.010) | 0.998 (0.008) | 1.019 (0.016) | 0.986 (0.009) |
| Primary balance | 0.000 [*] (1.955) | 0.000 [*] (0.177) | 13.576 (3.383) | 42.452 (7.344) | 0.305 (3.544) |
| Subnational government debt | 0.000 | 6.740 ^{***} (4.255) | 8.110 ^{***} (4.068) | 6.351 ^{***} (4.458) | 7.021 ^{***} (4.080) |
| GDP per capita | 0.761 (1.393) | 2.514 ^{***} (0.163) | 1.847 ^{***} (0.132) | 3.350 ^{***} (0.215) | 1.004 (0.136) |
| Subnational government expenditures | 1.032 (5.309) | 4.923 (2.928) | 0.000 ^{***} (2.910) | 0.000 ^{**} (4.993) | 0.000 ^{**} (2.891) |
| Subnational government own revenues | 5.532 [*] (4.971) | 0.000 ^{***} (1.865) | 0.420 (1.604) | 0.139 (2.531) | 0.002 ^{***} (1.835) |
| Tax autonomy | 0.000 ^{***} (1.663) | 3.137 ^{**} (0.409) | 1.781 (0.385) | 4.729 [*] (0.632) | 7.402 ^{***} (0.386) |
| Government stability | 0.640 (0.473) | 1.082 (0.094) | 0.880 (0.080) | 1.118 (0.150) | 0.891 (0.085) |
| Government fractionalization | 3.153 | 2.338 (0.608) | 6.279 ^{***} (0.509) | 9.751 [*] (0.900) | 0.870 (0.554) |

Table 5.2 (continued)

| Primary balance = General government primary balance | | | | | |
|----------------------------------------------------------|-------------------|---------------------|---------------------|---------------------|---------------------|
| | Prohibited | Cooperative | Central Rule | Self-rule | Market |
| Bailout | 1.156 (3.658) | 0.238*** (0.368) | 0.973 (0.291) | 0.026*** (0.624) | 0.693 (0.316) |
| Population growth | 0.000 (2.209) | 2.212 (2.113) | 0.000*** (1.928) | 2.487*** (3.149) | 0.000** (1.800) |
| Pseudo R-sq. | | | 0.442 | | |
| Chi2 | | | 1,212.833 | | |
| P | | | 0.000 | | |
| Primary balance = Subnational government primary balance | | | | | |
| | Prohibited | Cooperative | Central Rule | Self-rule | Market |
| Liquid liabilities | 0.008 (6.486) | 0.365 (0.675) | 0.096*** (0.586) | 0.753 (0.848) | 1.995 (0.606) |
| Financial freedom | 1.303* (0.121) | 0.981 (0.010) | 0.992 (0.008) | 1.012 (0.017) | 0.982* (0.009) |
| Primary balance | 4.542 (9.424) | 1.401** (1.537) | 2.501** (2.286) | 2.301*** (1.237) | 1.881*** (1.529) |
| Subnational government debt | 0.000 | 4.751*** (2.272) | 4.801*** (2.053) | 1.501*** (1.497) | 1.621*** (1.094) |
| GDP per capita | 26.347 (1.980) | 2.627*** (0.170) | 1.818*** (0.135) | 3.256*** (0.213) | 1.006 (0.142) |
| Subnational government expenditures | 1.012 (5.274) | 1.905 (3.043) | 0.000*** (0.945) | 0.000** (0.309) | 0.000*** (0.967) |

| | | | | | |
|-------------------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| Subnational government own revenues | 1.473* (2.506) | 0.001*** (0.868) | 0.846 (1.536) | 1.679 (2.632) | 0.025* (0.808) |
| Tax autonomy | 0.000*** (1.384) | 3.235*** (0.439) | 2.414* (0.412) | 9.119*** (0.663) | 11.980*** (0.419) |
| Government stability | 0.341* (0.524) | 1.087 (0.094) | 0.930 (0.082) | 1.242 (0.152) | 0.936 (0.088) |
| Government fractionalization | 3.160 | 2.169 (0.612) | 5.500*** (0.516) | 7.292* (0.912) | 0.750 (0.568) |
| Bailout | 0.016 (1.579) | 0.340** (0.368) | 1.197 (0.293) | 0.029*** (0.644) | 0.824 (0.326) |
| Population growth | 7.601 (7.727) | 2.711 (2.602) | 0.000*** (1.055) | 1.246*** (1.988) | 0.000*** (1.397) |
| Pseudo R-sq. | | | 0.445 | | |
| Chi2 | | | 1,222.516 | | |
| P | | | 0.000 | | |

Notes:

GDP = gross domestic product.

Coefficients represent factor changes in relative risk for unit increase in independent variable X = exp(b).

In parentheses: exp(b) * SD(b).

*** p < 0.01; ** p < 0.05; * p < 0.10.

Administrative regulation is the base category.

Source: Authors.

analysis to present the results as in Table 5.3 and Table 5.4, where it is possible to compare the effects of independent variables on the relative risk of choosing one type of regulation over the other.

The results in Table 5.3 and Table 5.4 suggest that the depth of the financial market is particularly important for choosing cooperative regulations and regulations based on centrally and self-imposed rules, over the other types of regulations. Furthermore, countries with a higher general government primary balance are most likely to choose administrative, self-imposed rules, and market-based regulations over the other types. Moreover, countries with a higher subnational primary balance are more likely to choose self-imposed rules and market-based regulations over the others, and are least likely to prohibit borrowing at the subnational level. Finally, countries with higher subnational outstanding debt are more likely to choose self-imposed rules to regulate borrowing. The results also suggest that higher-income countries choose cooperative regulations and self-imposed rules over the others. Next, higher subnational expenditures seem to lead to a higher probability of choosing administrative and cooperative regulations. Finally, countries in which subnational governments have tax autonomy are more likely to choose more decentralized types of regulations, such as self-imposed rules and market-based regulations.

5.4.6 Results for General Government Fiscal Performance

As discussed previously, an important issue with estimating equation 5.1 directly is the possible reverse causality. To address this issue, the first stage in the instrumental variable regression is modified to incorporate a multinomial logit model to estimate the probabilities of choosing different types of borrowing regulations.²⁰ The probabilities of adopting each approach estimated in the first stage are then used instead of their respective dummy variables in the second stage to estimate equation 5.1 using a 2SLS approach.

Table 5.5 presents the results for the effect of subnational borrowing and regulations on the general government primary balance. Columns 1 and 2 in Table 5.5 show the results obtained by applying the dynamic GMM estimator to estimate equation 5.1 when subnational borrowing regulations are assumed to be exogenous. Columns 3–6, on the other hand, show the results obtained when the assumed endogeneity in subnational borrowing regulations is corrected by using the previously predicted values obtained by the multinomial logit estimator. As the results suggest, after correcting for endogeneity, some coefficients change sign and/or statistical significance.

According to the results in columns 3–6 in Table 5.5, allowing borrowing

Table 5.3 Factor change in the odds, specification with general government primary balance

| Category 1 | Category 2 | Liquid liabilities | | Financial freedom | | General government primary balance | |
|--------------|----------------|--------------------|-------|-------------------|-------|------------------------------------|-------|
| | | exp(b) | P> z | exp(b) | P> z | exp(b) | P> z |
| Prohibited | Cooperative | 5.758 | 0.482 | 1.250 | 0.014 | 0.000 | 0.030 |
| Prohibited | Central Rule | 5.984 | 0.371 | 1.231 | 0.022 | 0.000 | 0.011 |
| Prohibited | Self-Rule | 0.171 | 0.538 | 1.205 | 0.042 | 0.000 | 0.012 |
| Prohibited | Market | 8.518 | 0.645 | 1.245 | 0.016 | 0.000 | 0.016 |
| Prohibited | Administrative | 7.593 | 0.650 | 1.228 | 0.023 | 0.000 | 0.014 |
| Cooperative | Prohibited | 0.012 | 0.482 | 0.800 | 0.014 | 1.790 | 0.030 |
| Cooperative | Central Rule | 3.335 | 0.050 | 0.984 | 0.104 | 0.000 | 0.005 |
| Cooperative | Self-Rule | 0.585 | 0.494 | 0.964 | 0.025 | 0.000 | 0.089 |
| Cooperative | Market | 0.216 | 0.010 | 0.996 | 0.686 | 0.000 | 0.062 |
| Cooperative | Administrative | 0.205 | 0.018 | 0.982 | 0.073 | 0.000 | 0.032 |
| Central Rule | Prohibited | 0.004 | 0.371 | 0.813 | 0.022 | 1.930 | 0.011 |
| Central Rule | Cooperative | 0.300 | 0.050 | 1.016 | 0.104 | 1.080 | 0.005 |
| Central Rule | Self-Rule | 0.175 | 0.028 | 0.979 | 0.196 | 0.320 | 0.875 |
| Central Rule | Market | 0.065 | 0.000 | 1.012 | 0.166 | 44.563 | 0.258 |
| Central Rule | Administrative | 0.062 | 0.000 | 0.998 | 0.821 | 13.577 | 0.441 |
| Self-Rule | Prohibited | 0.020 | 0.538 | 0.830 | 0.042 | 6.040 | 0.012 |
| Self-Rule | Cooperative | 1.709 | 0.494 | 1.038 | 0.025 | 3.370 | 0.089 |
| Self-Rule | Central Rule | 5.700 | 0.028 | 1.021 | 0.196 | 3.127 | 0.875 |
| Self-Rule | Market | 0.369 | 0.182 | 1.034 | 0.042 | 13.343 | 0.488 |
| Self-Rule | Administrative | 0.351 | 0.217 | 1.019 | 0.243 | 42.452 | 0.610 |
| Market | Prohibited | 0.054 | 0.645 | 0.803 | 0.016 | 4.340 | 0.016 |
| Market | Cooperative | 4.631 | 0.010 | 1.004 | 0.686 | 2.738 | 0.062 |

Table 5.3 (continued)

| Category 1 | Category 2 | Liquid liabilities | | Financial freedom | | General government primary balance | |
|----------------|----------------|--------------------|-------|-------------------|-------|------------------------------------|-------|
| | | exp(b) | P> z | exp(b) | P> z | exp(b) | P> z |
| Market | Central Rule | 5.444 | 0.000 | 0.988 | 0.166 | 0.022 | 0.258 |
| Market | Self-Rule | 2.709 | 0.182 | 0.968 | 0.042 | 0.007 | 0.488 |
| Market | Administrative | 0.950 | 0.933 | 0.986 | 0.121 | 0.305 | 0.737 |
| Administrative | Prohibited | 0.057 | 0.650 | 0.814 | 0.023 | 1.420 | 0.014 |
| Administrative | Cooperative | 4.874 | 0.018 | 1.018 | 0.073 | 7.739 | 0.032 |
| Administrative | Central Rule | 6.255 | 0.000 | 1.002 | 0.821 | 0.074 | 0.441 |
| Administrative | Self-Rule | 2.852 | 0.217 | 0.981 | 0.243 | 0.024 | 0.610 |
| Administrative | Market | 1.053 | 0.933 | 1.014 | 0.121 | 3.282 | 0.737 |
| Prohibited | Cooperative | 2.782 | 0.003 | 0.000 | 0.000 | 0.592 | 0.271 |
| Prohibited | Central Rule | 1.322 | 0.013 | 0.000 | 0.000 | 0.727 | 0.501 |
| Prohibited | Self-Rule | 3.972 | 0.012 | 0.000 | 0.000 | 0.572 | 0.256 |
| Prohibited | Market | 3.022 | 0.005 | 0.000 | 0.000 | 0.718 | 0.485 |
| Prohibited | Administrative | 5.532 | 0.015 | 0.000 | 0.000 | 0.640 | 0.345 |
| Cooperative | Prohibited | 0.000 | 0.003 | 1.867 | 0.000 | 1.690 | 0.271 |
| Cooperative | Central Rule | 0.001 | 0.000 | 1.761 | 0.087 | 1.229 | 0.024 |
| Cooperative | Self-Rule | 0.001 | 0.006 | 0.663 | 0.479 | 0.968 | 0.822 |
| Cooperative | Market | 0.109 | 0.181 | 0.424 | 0.010 | 1.213 | 0.037 |
| Cooperative | Administrative | 0.000 | 0.000 | 3.137 | 0.005 | 1.082 | 0.403 |
| Central Rule | Prohibited | 0.000 | 0.013 | 1.057 | 0.000 | 1.375 | 0.501 |
| Central Rule | Cooperative | 2.864 | 0.000 | 0.568 | 0.087 | 0.814 | 0.024 |
| Central Rule | Self-Rule | 3.011 | 0.630 | 0.377 | 0.100 | 0.787 | 0.104 |
| Central Rule | Market | 2.303 | 0.000 | 0.241 | 0.000 | 0.987 | 0.871 |
| Central Rule | Administrative | 0.420 | 0.588 | 1.781 | 0.134 | 0.880 | 0.108 |

| | Category 1 | Category 2 | Subnational government debt | | GDP per capita | | Subnational government expenditures | |
|----------------|------------|----------------|-----------------------------|-------|----------------|-------|-------------------------------------|-------|
| | | | exp(b) | P> z | exp(b) | P> z | exp(b) | P> z |
| Self-Rule | | Prohibited | 0.000 | 0.012 | 2.807 | 0.000 | 1.747 | 0.256 |
| Self-Rule | | Cooperative | 7.758 | 0.006 | 1.508 | 0.479 | 1.034 | 0.822 |
| Self-Rule | | Central Rule | 0.332 | 0.630 | 2.656 | 0.100 | 1.271 | 0.104 |
| Self-Rule | | Market | 6.160 | 0.064 | 0.639 | 0.449 | 1.254 | 0.122 |
| Self-Rule | | Administrative | 0.139 | 0.436 | 4.729 | 0.014 | 1.118 | 0.458 |
| Market | | Prohibited | 0.000 | 0.005 | 4.387 | 0.000 | 1.393 | 0.485 |
| Market | | Cooperative | 9.214 | 0.181 | 2.360 | 0.010 | 0.824 | 0.037 |
| Market | | Central Rule | 0.004 | 0.000 | 4.157 | 0.000 | 1.013 | 0.871 |
| Market | | Self-Rule | 0.013 | 0.064 | 1.565 | 0.449 | 0.797 | 0.122 |
| Market | | Administrative | 0.002 | 0.001 | 7.402 | 0.000 | 0.892 | 0.178 |
| Administrative | | Prohibited | 0.000 | 0.015 | 5.927 | 0.000 | 1.563 | 0.345 |
| Administrative | | Cooperative | 6.423 | 0.000 | 0.319 | 0.005 | 0.925 | 0.403 |
| Administrative | | Central Rule | 2.384 | 0.588 | 0.562 | 0.134 | 1.137 | 0.108 |
| Administrative | | Self-Rule | 7.177 | 0.436 | 0.212 | 0.014 | 0.895 | 0.458 |
| Administrative | | Market | 6.588 | 0.001 | 0.135 | 0.000 | 1.122 | 0.178 |
| Category 1 | | Category 2 | Subnational government debt | | GDP per capita | | Subnational government expenditures | |
| | | | exp(b) | P> z | exp(b) | P> z | exp(b) | P> z |
| Prohibited | | Cooperative | 0.000 | 0.000 | 0.303 | 0.392 | 7.081 | 0.591 |
| Prohibited | | Central Rule | 0.000 | 0.000 | 0.412 | 0.524 | 1.382 | 0.390 |
| Prohibited | | Self-Rule | 0.000 | 0.000 | 0.227 | 0.291 | 6.482 | 0.398 |
| Prohibited | | Market | 0.000 | 0.000 | 0.758 | 0.842 | 5.432 | 0.444 |
| Prohibited | | Administrative | 0.000 | 0.000 | 0.761 | 0.844 | 1.032 | 0.534 |
| Cooperative | | Prohibited | 0.083 | 0.275 | 3.304 | 0.392 | 0.000 | 0.591 |
| Cooperative | | Central Rule | 0.000 | 0.001 | 1.361 | 0.044 | 1.951 | 0.000 |
| Cooperative | | Self-Rule | 0.010 | 0.030 | 0.750 | 0.150 | 9.161 | 0.000 |
| Cooperative | | Market | 6.740 | 0.000 | 2.503 | 0.000 | 7.671 | 0.000 |
| Cooperative | | Administrative | 12.043 | 0.275 | 2.514 | 0.000 | 4.923 | 0.089 |
| Central Rule | | Prohibited | | | 2.427 | 0.524 | 0.000 | 0.390 |
| Central Rule | | Cooperative | | | 0.735 | 0.044 | 0.000 | 0.000 |

Table 5.3 (continued)

| Category 1 | Category 2 | Subnational government debt | | GDP per capita | | Subnational government expenditures | |
|----------------|----------------|-----------------------------|-------|----------------|-------|-------------------------------------|-------|
| | | exp(b) | P> z | exp(b) | P> z | exp(b) | P> z |
| Central Rule | Self-Rule | 0.001 | 0.004 | 0.551 | 0.004 | 0.469 | 0.880 |
| Central Rule | Market | 0.116 | 0.149 | 1.839 | 0.000 | 0.004 | 0.044 |
| Central Rule | Administrative | 8.110 | 0.000 | 1.847 | 0.000 | 0.000 | 0.000 |
| Self-Rule | Prohibited | | | 4.403 | 0.291 | 0.000 | 0.398 |
| Self-Rule | Cooperative | 9.843 | 0.001 | 1.333 | 0.150 | 0.000 | 0.000 |
| Self-Rule | Central Rule | 7.326 | 0.004 | 1.814 | 0.004 | 2.131 | 0.880 |
| Self-Rule | Market | 9.397 | 0.037 | 3.336 | 0.000 | 0.008 | 0.333 |
| Self-Rule | Administrative | 6.351 | 0.000 | 3.350 | 0.000 | 0.000 | 0.007 |
| Market | Prohibited | | | 1.320 | 0.842 | 0.000 | 0.444 |
| Market | Cooperative | 4.227 | 0.030 | 0.400 | 0.000 | 0.000 | 0.000 |
| Market | Central Rule | 8.654 | 0.149 | 0.544 | 0.000 | 4.431 | 0.044 |
| Market | Self-Rule | 0.011 | 0.037 | 0.300 | 0.000 | 9.426 | 0.333 |
| Market | Administrative | 7.021 | 0.000 | 1.004 | 0.975 | 0.000 | 0.003 |
| Administrative | Prohibited | | | 1.314 | 0.844 | 0.000 | 0.534 |
| Administrative | Cooperative | 0.000 | 0.000 | 0.398 | 0.000 | 0.007 | 0.089 |
| Administrative | Central Rule | 0.000 | 0.000 | 0.541 | 0.000 | 1.351 | 0.000 |
| Administrative | Self-Rule | 0.000 | 0.000 | 0.299 | 0.000 | 6.321 | 0.007 |
| Administrative | Market | 0.000 | 0.000 | 0.996 | 0.975 | 5.629 | 0.003 |
| Prohibited | Cooperative | 1.153 | 0.000 | 8.544 | 0.064 | 0.000 | 0.338 |
| Prohibited | Central Rule | 4.052 | 0.000 | 7.025 | 0.142 | 1.672 | 0.704 |
| Prohibited | Self-Rule | 2.652 | 0.000 | 6.269 | 0.015 | 0.000 | 0.038 |
| Prohibited | Market | 2.915 | 0.000 | 4.855 | 0.118 | 1.872 | 0.938 |
| Prohibited | Administrative | | | 1.156 | 0.143 | 0.000 | 0.609 |
| Cooperative | Prohibited | 0.000 | 0.000 | 0.001 | 0.064 | 6.484 | 0.338 |
| Cooperative | Central Rule | 0.372 | 0.075 | 0.244 | 0.000 | 1.085 | 0.000 |

| | | | | | | | |
|----------------|----------------|-------|-------|-------|-------|-------|-------|
| Cooperative | Self-Rule | 0.240 | 0.099 | 9.202 | 0.000 | 0.000 | 0.004 |
| Cooperative | Market | 2.688 | 0.082 | 0.343 | 0.004 | 8.434 | 0.000 |
| Cooperative | Administrative | 2.338 | 0.163 | 0.238 | 0.000 | 2.212 | 0.156 |
| Central Rule | Prohibited | 0.000 | 0.000 | 0.005 | 0.142 | 0.000 | 0.704 |
| Central Rule | Cooperative | 2.686 | 0.075 | 4.094 | 0.000 | 0.000 | 0.000 |
| Central Rule | Self-Rule | 0.644 | 0.605 | 7.674 | 0.000 | 0.000 | 0.000 |
| Central Rule | Market | 7.221 | 0.000 | 1.405 | 0.277 | 0.000 | 0.140 |
| Central Rule | Administrative | 6.279 | 0.000 | 0.973 | 0.925 | 0.000 | 0.000 |
| Self-Rule | Prohibited | 0.000 | 0.000 | 0.000 | 0.015 | 7.289 | 0.038 |
| Self-Rule | Cooperative | 4.171 | 0.099 | 0.109 | 0.000 | 1.125 | 0.004 |
| Self-Rule | Central Rule | 1.553 | 0.605 | 0.027 | 0.000 | 1.210 | 0.000 |
| Self-Rule | Market | 9.212 | 0.005 | 0.037 | 0.000 | 9.479 | 0.000 |
| Self-Rule | Administrative | 9.751 | 0.011 | 0.026 | 0.000 | 2.487 | 0.000 |
| Market | Prohibited | 0.000 | 0.000 | 0.003 | 0.118 | 0.001 | 0.938 |
| Market | Cooperative | 0.372 | 0.082 | 2.915 | 0.004 | 0.000 | 0.000 |
| Market | Central Rule | 0.139 | 0.000 | 0.712 | 0.277 | 1.281 | 0.140 |
| Market | Self-Rule | 0.089 | 0.005 | 6.820 | 0.000 | 0.000 | 0.000 |
| Market | Administrative | 0.870 | 0.801 | 0.693 | 0.244 | 0.000 | 0.004 |
| Administrative | Prohibited | | | 0.005 | 0.143 | 2.932 | 0.609 |
| Administrative | Cooperative | 0.428 | 0.163 | 4.208 | 0.000 | 0.000 | 0.056 |
| Administrative | Central Rule | 0.159 | 0.000 | 1.028 | 0.925 | 4.894 | 0.000 |
| Administrative | Self-Rule | 0.103 | 0.011 | 8.722 | 0.000 | 0.000 | 0.000 |
| Administrative | Market | 1.150 | 0.801 | 1.444 | 0.244 | 3.822 | 0.004 |

Notes:

GDP = gross domestic product.
 $\exp(b)$ = factor change in odds (relative risk) for unit increase in x.
 $P > |z|$ = p-value for z-test of $b = 0$.
b = relative risk.

Source: Authors.

Table 5.4 Factor change in the odds, specification with subnational government primary balance

| Category 1 | Category 2 | Liquid liabilities | | Financial freedom | | Subnational government primary balance | |
|--------------|----------------|--------------------|-------|-------------------|-------|----------------------------------------|-------|
| | | exp(b) | P> z | exp(b) | P> z | exp(b) | P> z |
| Prohibited | Cooperative | 0.023 | 0.562 | 1.328 | 0.020 | 3.251 | 0.422 |
| Prohibited | Central Rule | 0.087 | 0.707 | 1.313 | 0.025 | 1.811 | 0.433 |
| Prohibited | Self-Rule | 0.011 | 0.491 | 1.288 | 0.038 | 1.981 | 0.690 |
| Prohibited | Market | 0.004 | 0.400 | 1.327 | 0.020 | 2.411 | 0.626 |
| Prohibited | Administrative | 0.008 | 0.461 | 1.303 | 0.029 | 4.542 | 0.144 |
| Cooperative | Prohibited | 4.316 | 0.562 | 0.753 | 0.020 | 0.000 | 0.422 |
| Cooperative | Central Rule | 3.787 | 0.036 | 0.989 | 0.251 | 0.559 | 0.876 |
| Cooperative | Self-Rule | 0.485 | 0.369 | 0.970 | 0.067 | 0.000 | 0.044 |
| Cooperative | Market | 0.183 | 0.006 | 1.000 | 0.995 | 0.000 | 0.007 |
| Cooperative | Administrative | 0.365 | 0.135 | 0.981 | 0.063 | 1.401 | 0.004 |
| Central Rule | Prohibited | 11.439 | 0.707 | 0.762 | 0.025 | 0.000 | 0.433 |
| Central Rule | Cooperative | 0.264 | 0.036 | 1.011 | 0.251 | 1.789 | 0.876 |
| Central Rule | Self-Rule | 0.128 | 0.010 | 0.981 | 0.234 | 0.000 | 0.062 |
| Central Rule | Market | 0.048 | 0.000 | 1.011 | 0.189 | 0.000 | 0.016 |
| Central Rule | Administrative | 0.096 | 0.000 | 0.992 | 0.355 | 2.501 | 0.002 |
| Self-Rule | Prohibited | 9.347 | 0.491 | 0.777 | 0.038 | 0.000 | 0.690 |
| Self-Rule | Cooperative | 2.063 | 0.369 | 1.031 | 0.067 | 1.641 | 0.044 |
| Self-Rule | Central Rule | 7.811 | 0.010 | 1.020 | 0.234 | 9.180 | 0.062 |
| Self-Rule | Market | 0.377 | 0.197 | 1.031 | 0.062 | 12.202 | 0.674 |
| Self-Rule | Administrative | 0.753 | 0.738 | 1.012 | 0.480 | 2.301 | 0.000 |
| Market | Prohibited | 6.825 | 0.400 | 0.753 | 0.020 | 0.000 | 0.626 |
| Market | Cooperative | 5.467 | 0.006 | 1.000 | 0.995 | 1.350 | 0.007 |

| | | | | | | | |
|----------------|----------------|--------|-------|-------|-------|-------|-------|
| Market | Central Rule | 20.704 | 0.000 | 0.989 | 0.189 | 7.253 | 0.016 |
| Market | Self-Rule | 2.651 | 0.197 | 0.970 | 0.062 | 0.082 | 0.674 |
| Market | Administrative | 1.995 | 0.254 | 0.982 | 0.037 | 1.881 | 0.000 |
| Administrative | Prohibited | 8.691 | 0.461 | 0.768 | 0.029 | 0.000 | 0.144 |
| Administrative | Cooperative | 2.740 | 0.135 | 1.019 | 0.063 | 0.000 | 0.004 |
| Administrative | Central Rule | 10.376 | 0.000 | 1.008 | 0.355 | 0.000 | 0.002 |
| Administrative | Self-Rule | 1.328 | 0.738 | 0.988 | 0.480 | 0.000 | 0.000 |
| Administrative | Market | 0.501 | 0.254 | 1.019 | 0.037 | 0.000 | 0.000 |
| Prohibited | Cooperative | 1.623 | 0.005 | 0.000 | 0.000 | 0.313 | 0.028 |
| Prohibited | Central Rule | 1.733 | 0.011 | 0.000 | 0.000 | 0.366 | 0.056 |
| Prohibited | Self-Rule | 8.733 | 0.012 | 0.000 | 0.000 | 0.274 | 0.017 |
| Prohibited | Market | 5.933 | 0.007 | 0.000 | 0.000 | 0.364 | 0.055 |
| Prohibited | Administrative | 1.473 | 0.011 | 0.000 | 0.000 | 0.341 | 0.040 |
| Cooperative | Prohibited | 0.000 | 0.005 | 2.697 | 0.000 | 3.191 | 0.028 |
| Cooperative | Central Rule | 0.001 | 0.000 | 1.340 | 0.393 | 1.169 | 0.079 |
| Cooperative | Self-Rule | 0.001 | 0.003 | 0.355 | 0.085 | 0.875 | 0.357 |
| Cooperative | Market | 0.037 | 0.057 | 0.270 | 0.000 | 1.161 | 0.097 |
| Cooperative | Administrative | 0.001 | 0.000 | 3.235 | 0.007 | 1.087 | 0.375 |
| Central Rule | Prohibited | 0.000 | 0.011 | 2.017 | 0.000 | 2.730 | 0.056 |
| Central Rule | Cooperative | 9.496 | 0.000 | 0.746 | 0.393 | 0.855 | 0.079 |
| Central Rule | Self-Rule | 0.504 | 0.776 | 0.265 | 0.029 | 0.749 | 0.049 |
| Central Rule | Market | 4.231 | 0.018 | 0.202 | 0.000 | 0.993 | 0.934 |
| Central Rule | Administrative | 0.847 | 0.914 | 2.414 | 0.032 | 0.930 | 0.376 |
| Self-Rule | Prohibited | 0.000 | 0.012 | 7.597 | 0.000 | 3.646 | 0.017 |
| Self-Rule | Cooperative | 11.649 | 0.003 | 2.819 | 0.085 | 1.143 | 0.357 |
| Self-Rule | Central Rule | 1.984 | 0.776 | 3.777 | 0.029 | 1.336 | 0.049 |
| Self-Rule | Market | 7.899 | 0.085 | 0.761 | 0.652 | 1.327 | 0.052 |
| Self-Rule | Administrative | 1.679 | 0.844 | 9.119 | 0.001 | 1.242 | 0.153 |

Table 5.4 (continued)

| Category 1 | Category 2 | Liquid liabilities | | Financial freedom | | Subnational government primary balance | |
|----------------|----------------|-----------------------------|-------|-------------------|-------|----------------------------------------|-------|
| | | exp(b) | P> z | exp(b) | P> z | exp(b) | P> z |
| Market | Prohibited | 0.000 | 0.007 | 9.977 | 0.000 | 2.748 | 0.055 |
| Market | Cooperative | 7.271 | 0.057 | 3.703 | 0.000 | 0.861 | 0.097 |
| Market | Central Rule | 0.029 | 0.018 | 4.963 | 0.000 | 1.007 | 0.934 |
| Market | Self-Rule | 0.015 | 0.085 | 1.314 | 0.652 | 0.754 | 0.052 |
| Market | Administrative | 0.025 | 0.041 | 11.980 | 0.000 | 0.936 | 0.450 |
| Administrative | Prohibited | 0.000 | 0.011 | 8.327 | 0.000 | 2.936 | 0.040 |
| Administrative | Cooperative | 11.797 | 0.000 | 0.309 | 0.007 | 0.920 | 0.375 |
| Administrative | Central Rule | 1.181 | 0.914 | 0.414 | 0.032 | 1.076 | 0.376 |
| Administrative | Self-Rule | 0.596 | 0.844 | 0.110 | 0.001 | 0.805 | 0.153 |
| Administrative | Market | 4.439 | 0.041 | 0.084 | 0.000 | 1.068 | 0.450 |
| Category 1 | Category 2 | Subnational government debt | | GDP per capita | | Subnational government expenditures | |
| | | exp(b) | P> z | exp(b) | P> z | exp(b) | P> z |
| Prohibited | Cooperative | 0.000 | 0.000 | 10.030 | 0.245 | 6.682 | 0.363 |
| Prohibited | Central Rule | 0.000 | 0.000 | 14.489 | 0.177 | 4.823 | 0.216 |
| Prohibited | Self-Rule | 0.000 | 0.000 | 8.091 | 0.293 | 4.803 | 0.203 |
| Prohibited | Market | 0.000 | 0.000 | 26.187 | 0.099 | 3.023 | 0.236 |
| Prohibited | Administrative | 0.000 | 0.000 | 26.347 | 0.098 | 1.012 | 0.317 |
| Cooperative | Prohibited | 0.099 | 0.313 | 0.100 | 0.245 | 0.000 | 0.363 |
| Cooperative | Central Rule | | | 1.445 | 0.019 | 7.231 | 0.000 |

| | | | | | | | |
|----------------|----------------|--------|-------|-------|-------|-------|-------|
| Cooperative | Self-Rule | 0.000 | 0.004 | 0.807 | 0.275 | 7.191 | 0.000 |
| Cooperative | Market | 0.029 | 0.106 | 2.611 | 0.000 | 4.521 | 0.000 |
| Cooperative | Administrative | 4.751 | 0.000 | 2.627 | 0.000 | 1.905 | 0.199 |
| Central Rule | Prohibited | | | 0.069 | 0.177 | 0.000 | 0.216 |
| Central Rule | Cooperative | 10.097 | 0.313 | 0.692 | 0.019 | 0.000 | 0.000 |
| Central Rule | Self-Rule | 0.003 | 0.014 | 0.558 | 0.004 | 9.950 | 0.665 |
| Central Rule | Market | 0.296 | 0.420 | 1.807 | 0.000 | 0.063 | 0.311 |
| Central Rule | Administrative | 4.801 | 0.000 | 1.818 | 0.000 | 0.000 | 0.000 |
| Self-Rule | Prohibited | | | 0.124 | 0.293 | 0.000 | 0.203 |
| Self-Rule | Cooperative | 3.840 | 0.004 | 1.240 | 0.275 | 0.000 | 0.000 |
| Self-Rule | Central Rule | 3.548 | 0.014 | 1.791 | 0.004 | 0.101 | 0.665 |
| Self-Rule | Market | 2.785 | 0.042 | 3.237 | 0.000 | 0.006 | 0.333 |
| Self-Rule | Administrative | 1.501 | 0.000 | 3.256 | 0.000 | 0.000 | 0.004 |
| Market | Prohibited | | | 0.038 | 0.099 | 0.000 | 0.236 |
| Market | Cooperative | 4.120 | 0.106 | 0.383 | 0.000 | 0.000 | 0.000 |
| Market | Central Rule | 3.379 | 0.420 | 0.553 | 0.000 | 5.984 | 0.311 |
| Market | Self-Rule | 0.011 | 0.042 | 0.309 | 0.000 | 9.044 | 0.333 |
| Market | Administrative | 1.621 | 0.000 | 1.006 | 0.966 | 0.000 | 0.001 |
| Administrative | Prohibited | | | 0.038 | 0.098 | 0.000 | 0.317 |
| Administrative | Cooperative | 0.000 | 0.000 | 0.381 | 0.000 | 0.007 | 0.099 |
| Administrative | Central Rule | 0.000 | 0.000 | 0.550 | 0.000 | 4.791 | 0.000 |
| Administrative | Self-Rule | 0.000 | 0.000 | 0.307 | 0.000 | 4.761 | 0.004 |
| Administrative | Market | 0.000 | 0.000 | 0.994 | 0.966 | 3.000 | 0.001 |
| Prohibited | Cooperative | 1.416 | 0.000 | 0.046 | 0.582 | 0.000 | 0.913 |
| Prohibited | Central Rule | 5.416 | 0.000 | 0.013 | 0.438 | 1.564 | 0.468 |
| Prohibited | Self-Rule | 4.116 | 0.000 | 0.541 | 0.913 | 0.000 | 0.381 |
| Prohibited | Market | 4.016 | 0.000 | 0.019 | 0.478 | 4.234 | 0.550 |
| Prohibited | Administrative | | | 0.016 | 0.457 | 7.601 | 0.895 |

Table 5.4 (continued)

| Category 1 | Category 2 | Subnational government debt | | GDP per capita | | Subnational government expenditures | |
|--------------|----------------|-----------------------------|-------|----------------|-------|-------------------------------------|-------|
| | | exp(b) | P> z | exp(b) | P> z | exp(b) | P> z |
| Cooperative | Prohibited | 0.000 | 0.000 | 11.620 | 0.582 | 3.571 | 0.913 |
| Cooperative | Central Rule | 0.394 | 0.089 | 0.284 | 0.000 | 5.575 | 0.000 |
| Cooperative | Self-Rule | 0.297 | 0.162 | 9.691 | 0.000 | 0.000 | 0.006 |
| Cooperative | Market | 2.891 | 0.062 | 0.413 | 0.018 | 1.514 | 0.000 |
| Cooperative | Administrative | 2.169 | 0.206 | 0.340 | 0.003 | 2.711 | 0.141 |
| Central Rule | Prohibited | 0.000 | 0.000 | 6.006 | 0.438 | 0.000 | 0.468 |
| Central Rule | Cooperative | 2.536 | 0.089 | 3.516 | 0.000 | 0.000 | 0.000 |
| Central Rule | Self-Rule | 0.754 | 0.742 | 4.102 | 0.000 | 0.000 | 0.000 |
| Central Rule | Market | 7.331 | 0.000 | 1.453 | 0.236 | 0.000 | 0.344 |
| Central Rule | Administrative | 5.500 | 0.001 | 1.197 | 0.539 | 0.000 | 0.000 |
| Self-Rule | Prohibited | 0.000 | 0.000 | 1.849 | 0.913 | 1.645 | 0.381 |
| Self-Rule | Cooperative | 3.362 | 0.162 | 0.086 | 0.000 | 4.595 | 0.006 |
| Self-Rule | Central Rule | 1.326 | 0.742 | 0.024 | 0.000 | 2.570 | 0.000 |
| Self-Rule | Market | 9.719 | 0.008 | 0.035 | 0.000 | 6.939 | 0.000 |
| Self-Rule | Administrative | 7.292 | 0.029 | 0.029 | 0.000 | 1.246 | 0.000 |
| Market | Prohibited | 0.000 | 0.000 | 5.298 | 0.478 | 0.000 | 0.550 |
| Market | Cooperative | 0.346 | 0.062 | 2.419 | 0.018 | 0.000 | 0.000 |
| Market | Central Rule | 0.136 | 0.000 | 0.688 | 0.236 | 3.691 | 0.344 |

| | | | | | | |
|----------------|----------------|-------|-------|-------|-------|-------|
| Market | Self-Rule | 0.103 | 0.008 | 2.281 | 0.000 | 0.000 |
| Market | Administrative | 0.750 | 0.613 | 0.824 | 0.551 | 0.001 |
| Administrative | Prohibited | | | 6.506 | 0.457 | 0.895 |
| Administrative | Cooperative | 0.461 | 0.206 | 2.937 | 0.003 | 0.141 |
| Administrative | Central Rule | 0.182 | 0.001 | 0.836 | 0.539 | 0.000 |
| Administrative | Self-Rule | 0.137 | 0.029 | 4.342 | 0.000 | 0.000 |
| Administrative | Market | 1.333 | 0.613 | 1.214 | 0.551 | 0.001 |

Notes:

GDP = gross domestic product.

$\exp(b)$ = factor change in odds (relative risk) for unit increase in x .

$P > |z|$ = p-value for z-test of $b = 0$.

b = relative risk.

Source: Authors.

Table 5.5 Effect of subnational borrowing on general government primary

| | GMM (regulations exogenous) | | | GMM (regulations endogenous) | | |
|---------------------------------------------|--------------------------------|----------------------|----------------------|---------------------------------|----------------------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| General government primary balance - 1 | 0.188 (0.149) | 0.205 (0.147) | 0.376*** (0.128) | 0.215 (0.147) | 0.215 (0.134) | 0.204 (0.142) |
| Subnational government debt | 0.048* (0.028) | 0.026 (0.028) | 0.525*** (0.181) | 0.598*** (0.205) | 0.202 (0.192) | 0.493** (0.199) |
| Administrative | 0.013*** (0.005) | 0.017*** (0.006) | 0.078*** (0.024) | 0.188*** (0.038) | 0.135*** (0.027) | 0.171*** (0.034) |
| Cooperative | 0.056*** (0.011) | 0.069*** (0.013) | -0.069** (0.029) | -0.158*** (0.038) | -0.161*** (0.035) | -0.166*** (0.037) |
| Central rules | 0.020*** (0.008) | 0.019** (0.007) | 0.074*** (0.023) | 0.165*** (0.034) | 0.175*** (0.032) | 0.150*** (0.030) |
| Self-rule | 0.042*** (0.012) | 0.035*** (0.011) | 0.058 (0.076) | 0.257** (0.103) | 0.291*** (0.094) | 0.301*** (0.097) |
| Market | 0.025*** (0.009) | 0.022** (0.008) | -0.154*** (0.041) | -0.308*** (0.062) | -0.339*** (0.058) | -0.309*** (0.057) |
| Subnational government debt* administrative | -0.418*** (0.068) | -0.423*** (0.068) | -1.177*** (0.392) | -0.173 (0.412) | 0.196 (0.431) | -0.203 (0.420) |
| Subnational government debt* cooperative | -0.400*** (0.064) | -0.399*** (0.066) | 0.182 (0.274) | 1.068*** (0.365) | 1.251*** (0.362) | 1.068*** (0.357) |
| Subnational government debt* central rules | -0.290*** (0.049) | -0.279*** (0.049) | -0.415** (0.183) | -0.676*** (0.221) | -0.355* (0.198) | -0.511** (0.207) |
| Subnational government debt* self-rule | -0.571*** (0.127) | -0.541*** (0.126) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |

| | | | | | |
|------------------------------|-----------|-----------|-----------|-----------|-----------|
| Subnational government debt* | 0.000 | -0.695*** | -0.482* | 0.151 | -0.404 |
| market | (0.000) | (0.264) | (0.289) | (0.298) | (0.282) |
| Sanctions | -0.006*** | 0.005*** | 0.003** | -0.002 | 0.001 |
| | (0.002) | (0.001) | (0.002) | (0.002) | (0.002) |
| Limit on debt | -0.028*** | -0.024*** | -0.029*** | -0.028*** | -0.025*** |
| | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) |
| Subnational government debt* | 0.296*** | 0.150*** | 0.236*** | 0.216*** | 0.201*** |
| limit on debt | (0.049) | (0.047) | (0.043) | (0.036) | (0.036) |
| Golden rule | -0.009*** | -0.013*** | -0.021*** | -0.014*** | -0.019*** |
| | (0.003) | (0.003) | (0.004) | (0.003) | (0.004) |
| Subnational government debt* | 0.177*** | 0.199*** | 0.192*** | 0.116*** | 0.171*** |
| golden rule | (0.032) | (0.037) | (0.035) | (0.023) | (0.031) |
| Foreign | -0.008*** | -0.010*** | -0.008*** | -0.004** | -0.007*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Subnational government debt* | -0.009 | 0.019 | -0.068** | -0.095*** | -0.065** |
| foreign | (0.026) | (0.026) | (0.031) | (0.032) | (0.031) |
| Intergovernmental transfer | -0.039*** | -0.028*** | 0.021** | -0.010 | 0.011 |
| | (0.009) | (0.008) | (0.009) | (0.007) | (0.008) |
| Intergovernmental transfer* | 0.027*** | 0.010 | -0.179*** | -0.112*** | -0.168*** |
| administrative | (0.010) | (0.010) | (0.038) | (0.028) | (0.035) |
| Intergovernmental transfer* | -0.025 | -0.054*** | 0.055 | 0.125** | 0.104** |
| cooperative | (0.015) | (0.019) | (0.052) | (0.051) | (0.050) |

Table 5.5 (continued)

| | GMM (regulations exogenous) | | | GMM (regulations endogenous) | | |
|-------------------------------------------------|--------------------------------|----------------------|----------------------|---------------------------------|----------------------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Intergovernmental transfer* central rules | 0.026 (0.016) | 0.024 (0.015) | -0.030 (0.036) | -0.118*** (0.044) | -0.068* (0.036) | -0.100** (0.039) |
| Intergovernmental transfer* self-rule | 0.060* (0.032) | 0.048 (0.031) | -0.467*** (0.151) | -1.031*** (0.216) | -0.782*** (0.165) | -1.010*** (0.199) |
| Intergovernmental transfer* market | -0.016 (0.016) | -0.013 (0.016) | 0.265*** (0.075) | 0.454*** (0.094) | 0.414*** (0.080) | 0.464*** (0.089) |
| Transfer formula | -0.032*** (0.006) | -0.033*** (0.007) | -0.022*** (0.005) | -0.027*** (0.005) | -0.018*** (0.004) | -0.021*** (0.005) |
| Intergovernmental transfer* transfer formula | 0.074*** (0.014) | 0.071*** (0.015) | 0.040*** (0.010) | 0.069*** (0.014) | 0.059*** (0.011) | 0.059*** (0.012) |
| Tax autonomy | -0.012** (0.005) | -0.010** (0.005) | 0.009* (0.005) | 0.018*** (0.006) | 0.022*** (0.006) | 0.020*** (0.006) |
| Intergovernmental transfer* tax autonomy | 0.009 (0.011) | 0.009 (0.011) | -0.043*** (0.015) | -0.057*** (0.016) | -0.070*** (0.016) | -0.062*** (0.016) |
| Subnational government expenditures | | | | 0.001 (0.020) | | |
| Urbanization | 0.149 (0.100) | 0.251** (0.104) | 0.239*** (0.066) | 0.448*** (0.093) | 0.208*** (0.071) | 0.305*** (0.081) |
| Population growth | | -0.294*** (0.104) | | | | -0.317*** (0.099) |
| Age dependency | -0.128*** (0.024) | | | | -0.142*** (0.024) | |

| | | | | | | |
|---------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Government stability | -0.001*** (0.001) | -0.000 (0.000) | -0.000 (0.001) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) |
| Government fractionalization | -0.001 (0.002) | 0.001 (0.002) | | | | 0.002 (0.002) |
| Corruption | -0.000 (0.001) | | | | -0.001* (0.001) | |
| CBI | 0.010* (0.006) | 0.014** (0.006) | 0.017*** (0.006) | 0.029*** (0.007) | 0.019*** (0.005) | 0.024*** (0.006) |
| Bailout | 0.006*** (0.002) | 0.003* (0.002) | -0.016*** (0.004) | -0.038*** (0.007) | -0.029*** (0.005) | -0.031*** (0.006) |
| GDP per capita | 0.003** (0.001) | 0.005*** (0.001) | 0.006*** (0.001) | 0.001 (0.002) | 0.000 (0.002) | 0.001 (0.001) |
| Inflation | | 0.000 (0.001) | | | 0.000 (0.001) | 0.000 (0.001) |
| SGP | -0.016*** (0.003) | -0.019*** (0.003) | -0.006** (0.003) | -0.008*** (0.003) | -0.004 (0.003) | -0.007*** (0.003) |
| Corr (Y, Y _{hat}) sq. | 0.649 | 0.644 | 0.798 | 0.799 | 0.801 | 0.801 |
| Sargan test (p-value) | 0.790 | 0.775 | 0.174 | 0.241 | 0.212 | 0.220 |
| AR(2) Test (p-value) | 0.926 | 0.950 | 0.755 | 0.671 | 0.736 | 0.641 |
| Observations | 745 | 745 | 749 | 749 | 745 | 745 |
| Number of id | 57 | 57 | 57 | 57 | 57 | 57 |

Notes:

GDP = gross domestic product, GMM = generalized method of moments.

Standard errors in parentheses.

* Significant at 10%; ** significant at 5%; *** significant at 1%.

Source: Authors.

at the subnational level, *ceteris paribus*, has a significant and positive effect on the general government primary balance. This result is consistent with expectations because it assumes no restrictions on either the amount of borrowing or its purpose. That is, once a subnational government is allowed to borrow from private financial markets, and can borrow as much as it wants and for any purpose, it may as well borrow to finance the current deficit. Once the existence of subnational borrowing regulations is accounted for, different conclusions are obtained for different types of regulations. For example, centrally imposed rules and market-based regulations seem to reduce the positive effect on the primary balance. On the other hand, cooperative types of subnational borrowing regulations seem to have a positive effect on the primary balance.

The negative effect of rule-based regulations is expected because as soon as the rules are imposed, subnational governments may have to reduce the amount of borrowing due to requirements that subnational governments must meet considering revenues, expenditures, and deficit.²¹ Therefore, subnational governments' ability to finance deficits through borrowing is reduced. The negative effect of market-based regulations is also due to similar reasons, except in this case, subnational governments have to improve their creditworthiness to be able to borrow with lower interest rates. Since the level of indebtedness contributes to a higher cost of borrowing, subnational governments may reduce the amount of borrowing, so they may not be able to cover the deficit. Finally, the cooperative type of regulations includes many components of the other three types, and if it is properly implemented, this type of regulations shows the positive characteristics of the other types. The estimated positive effect of cooperative regulations when the subnational debt is increasing provides support for this conjecture.

The results suggest that the golden rule and imposed limits on subnational borrowing and debt are efficient in regulating subnational borrowing and improving the effectiveness of a broad variety of regulations. Moreover, when subnational governments have to face legal sanctions for noncompliance to imposed fiscal rules, they may have better fiscal performance. The coefficient for this variable, however, sometimes shows no effect on the primary balance, which may be explained by the noise in its measurement. In fact, legal sanctions for noncompliance can be administrative, financial, or political, and no distinction was made between them while creating this variable due to basic data limitations. Given that not all types of sanctions are equally efficient, the estimated coefficient on this variable may not be robust. Finally, the results suggest that allowing subnational governments to enter foreign financial markets may deteriorate countries' fiscal performance. A possible reason for this is that access to the foreign financial markets may increase exposure to external shocks.

A greater dependence on financing from the central government negatively affects the effectiveness of regulations based on fiscal rules (especially self-imposed rules) and administrative regulation. This negative effect of intergovernmental transfers may be due to moral hazard, especially in case of the administrative regulation. Moreover, high dependence on intergovernmental transfers may be reducing the effectiveness of self-imposed rules through reduced commitment to the rules. On the other hand, cooperative and market-based regulations seem to have positive effects on the primary fiscal balance in the case of a high dependence on transfers. In the case of cooperative regulations, this effect may be explained by possible higher transparency, given that representatives of all government units cooperatively make decisions on fiscal policy.

The positive effect of market-based regulations on the primary fiscal balance in the case of high financing from the central government budget may be explained in the following manner. High subnational dependence on intergovernmental transfers may make creditors feel more certain that a borrower may be more likely to be bailed out in case of default, and to decide to lend more funds to the borrower. This would increase the indebtedness of the debtor and interest on debt, causing the primary balance to be higher, given that interest payments are not included in the primary balance. The results also suggest that a history of bailouts has a very significant negative effect on the general government primary balance.

In the case of high dependence on intergovernmental transfers, their predictability seems to have a positive effect on the general government primary balance. The effect of predictability of transfers on the primary balance, however, is not straightforward. According to the results, only when the share of intergovernmental transfers in the subnational total revenue is at least 30 percent does their predictability have a positive effect on the primary balance. The results also suggest that subnational tax autonomy positively affects a country's overall fiscal performance, especially when subnational governments rely less on financing from the central government budget and more on own-source revenues.

5.4.7 Results for Subnational Government Fiscal Performance

In the case of subnational government insolvency, a government can react in the following three ways. First, the central government can decide to cover the subnational fiscal imbalances (i.e., a bailout). Second, it can redesign the tax and/or transfer system through which the subnational government receives a larger portion of the overall revenues collected. Third, the central government can ignore the subnational fiscal imbalances. Regardless of which option the central government chooses, the overall

national fiscal balance is likely to deteriorate. However, to obtain a better picture about which of these three scenarios is more likely to happen, equation 5.1 is estimated again, but this time, with the subnational primary balance as the dependent variable.

As the results in Table 5.6 suggest, subnational debt does not seem to affect the subnational primary balance, *ceteris paribus*. Moreover, none of the broad types of subnational borrowing regulations seems to have an effect on subnational primary balances in the case of high subnational debt. However, the golden rule and imposed limits on subnational borrowing and debt seem to have a positive and significant effect on the subnational primary balance.

Furthermore, in the case of a high level of financing from the central government budget, market-based regulation seems to have a positive effect on the subnational primary balance, as opposed to self-imposed fiscal rules. These results are consistent with those obtained for the general government primary balance. Moreover, the negative effect of intergovernmental transfers on fiscal performance is diminished when transfers are predictable, which is also consistent with its effect on the general government primary balance. Finally, at the subnational level, tax autonomy has no effect on fiscal performance when there is high reliance on central government financing, suggesting that, at the margin, subnational tax autonomy does not matter much for the fiscal performance.

5.5 CONCLUSION

First, concerning the selection of regulations for subnational government borrowing, the depth of the financial market is particularly important when choosing cooperative regulations and regulations based on centrally and self-imposed rules. Also, countries with higher primary balances (both at the general and subnational levels of government) are more likely to choose self-imposed rules and market-based regulations over the other types.

The institutional design and history of the fiscal decentralization system has some effects on fiscal sustainability. The presence of subnational tax autonomy contributes to an increase in the general government primary balance, but, at the subnational level, tax autonomy is on the margin not significantly high. In countries with a history of subnational government bailouts, primary balances, on average, are lower at both the subnational and general government levels than in other countries. On the effectiveness of borrowing regulations, the golden rule and limits on debt and borrowing positively affect the primary balance at all levels of government.

However, on the question of which regulations for subnational

Table 5.6 Effect of subnational borrowing on subnational government primary balance

| | GMM (regulations exogenous) | | | GMM (regulations endogenous) | | |
|---------------------------------------------|--------------------------------|---------------------|---------------------|---------------------------------|----------------------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Subnational government primary balance - 1 | 0.651*** (0.171) | 0.717*** (0.173) | 0.552*** (0.176) | 0.604*** (0.174) | 0.503*** (0.177) | 0.588*** (0.166) |
| CB primary balance | -0.028 (0.122) | -0.034 (0.126) | -0.060 (0.107) | -0.025 (0.109) | -0.034 (0.099) | -0.032 (0.105) |
| Subnational government debt | -0.016 (0.039) | -0.038 (0.042) | 0.358 (0.240) | 0.257 (0.264) | 0.170 (0.233) | 0.254 (0.248) |
| Administrative | -0.003 (0.007) | -0.003 (0.007) | 0.041 (0.033) | 0.051 (0.034) | 0.051* (0.030) | 0.047 (0.031) |
| Cooperative | 0.014 (0.012) | 0.014 (0.013) | -0.011 (0.041) | -0.008 (0.043) | -0.043 (0.043) | -0.024 (0.041) |
| Central rules | 0.002 (0.008) | -0.001 (0.008) | 0.058** (0.028) | 0.071** (0.032) | 0.096*** (0.035) | 0.069*** (0.029) |
| Self-rules | 0.015 (0.013) | 0.011 (0.013) | 0.038 (0.093) | 0.128 (0.109) | 0.169 (0.106) | 0.120 (0.109) |
| Market | 0.011 (0.010) | 0.007 (0.009) | -0.126** (0.051) | -0.166*** (0.059) | -0.199*** (0.064) | -0.156*** (0.055) |
| Subnational government debt* administrative | -0.132 (0.086) | -0.109 (0.082) | -0.829 (0.542) | -0.297 (0.539) | -0.232 (0.499) | -0.367 (0.529) |
| Subnational government debt* cooperative | -0.132* (0.073) | -0.108 (0.069) | 0.277 (0.362) | 0.540 (0.386) | 0.645* (0.380) | 0.489 (0.376) |
| Subnational government debt* central rules | -0.083 (0.056) | -0.057 (0.052) | -0.312 (0.235) | -0.257 (0.273) | -0.252 (0.239) | -0.286 (0.251) |

Table 5.6 (continued)

| | GMM (regulations exogenous) | | | GMM (regulations endogenous) | | |
|-----------------------------------------------|--------------------------------|---------------------|----------------------|---------------------------------|----------------------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Subnational government debt* self-rule | -0.176 (0.134) | -0.139 (0.127) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| Subnational government debt* market | 0.000 (0.000) | 0.000 (0.000) | -0.480 (0.350) | -0.243 (0.377) | -0.040 (0.346) | -0.243 (0.359) |
| Sanctions | -0.000 (0.002) | 0.001 (0.002) | 0.004** (0.002) | 0.004* (0.002) | 0.001 (0.002) | 0.003 (0.002) |
| Limit on debt | -0.012** (0.005) | -0.009* (0.005) | -0.018*** (0.006) | -0.013*** (0.005) | -0.016*** (0.005) | -0.012*** (0.004) |
| Subnational government debt* limit on debt | 0.109** (0.053) | 0.086* (0.047) | 0.094** (0.047) | 0.066 (0.041) | 0.086** (0.042) | 0.059* (0.035) |
| Golden rule | -0.005 (0.003) | -0.006* (0.003) | | -0.010*** (0.004) | -0.010*** (0.003) | -0.010*** (0.003) |
| Subnational government debt* golden rule | 0.064* (0.035) | 0.058 (0.036) | | 0.081** (0.032) | 0.073*** (0.024) | 0.082*** (0.028) |
| Foreign | -0.004 (0.003) | -0.004 (0.003) | | -0.004* (0.003) | -0.003 (0.002) | -0.003 (0.002) |
| Subnational government debt* foreign | 0.013 (0.034) | 0.032 (0.036) | | -0.032 (0.034) | -0.057* (0.033) | -0.037 (0.032) |
| Intergovernmental transfer | -0.027*** (0.010) | -0.021** (0.010) | -0.009 (0.009) | -0.006 (0.010) | -0.017** (0.008) | -0.011 (0.009) |
| Intergovernmental transfer* administrative | 0.031*** (0.011) | 0.025** (0.012) | -0.013 (0.050) | -0.009 (0.051) | -0.014 (0.043) | -0.010 (0.047) |

| | | | | | | |
|----------------------------------------------|---------------------|-------------------|----------------------|---------------------|---------------------|---------------------|
| Intergovernmental transfer* cooperative | 0.013 (0.018) | 0.007 (0.020) | -0.049 (0.091) | -0.098 (0.091) | -0.026 (0.091) | -0.077 (0.090) |
| Intergovernmental transfer* central rules | 0.029 (0.018) | 0.028 (0.018) | -0.035 (0.043) | -0.038 (0.046) | -0.029 (0.040) | -0.033 (0.042) |
| Intergovernmental transfer* self-rule | 0.027 (0.036) | 0.020 (0.036) | -0.327* (0.192) | -0.441** (0.224) | -0.455** (0.198) | -0.428** (0.213) |
| Intergovernmental transfer* market | 0.003 (0.019) | 0.004 (0.020) | 0.246*** (0.086) | 0.259*** (0.091) | 0.286*** (0.086) | 0.263*** (0.088) |
| Transfer formula | -0.010 (0.007) | -0.008 (0.007) | -0.018*** (0.006) | -0.012** (0.005) | -0.010** (0.005) | -0.010** (0.005) |
| Intergovernmental transfer* formula | 0.022 (0.015) | 0.016 (0.015) | 0.028** (0.013) | 0.024* (0.013) | 0.028** (0.013) | 0.023* (0.012) |
| Tax autonomy | -0.007 (0.006) | -0.007 (0.006) | 0.001 (0.007) | -0.000 (0.007) | 0.006 (0.007) | 0.000 (0.007) |
| Intergovernmental transfer* tax autonomy | 0.015 (0.015) | 0.017 (0.015) | -0.009 (0.023) | 0.004 (0.021) | -0.016 (0.023) | 0.001 (0.021) |
| Subnational government expenditures | 0.088 (0.117) | 0.100 (0.126) | 0.245*** (0.077) | 0.339*** (0.091) | 0.243*** (0.075) | 0.271*** (0.082) |
| Urbanization | | -0.113 (0.134) | | | | -0.051 (0.124) |
| Population growth | | | | | | |
| Age dependency | -0.052** (0.024) | | | | -0.064** (0.028) | |
| Government stability | -0.000 (0.001) | | 0.000 (0.001) | 0.000 (0.001) | 0.000 (0.001) | |
| Government fractionalization | -0.002 (0.003) | -0.002 (0.003) | | | -0.002 (0.003) | -0.001 (0.003) |

Table 5.6 (continued)

| | GMM (regulations exogenous) | | | GMM (regulations endogenous) | | |
|-----------------------------|--------------------------------|-------------------|---------------------|---------------------------------|----------------------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Corruption | -0.001 (0.001) | | | | -0.001 (0.001) | |
| CBI | 0.001 (0.007) | 0.001 (0.007) | 0.008 (0.008) | 0.004 (0.007) | 0.005 (0.006) | 0.004 (0.007) |
| Bailout | 0.002 (0.002) | 0.000 (0.002) | -0.014** (0.006) | -0.018*** (0.006) | -0.017*** (0.005) | -0.017*** (0.006) |
| GDP per capita | 0.001 (0.002) | 0.001 (0.002) | 0.003 (0.002) | -0.000 (0.002) | 0.001 (0.002) | 0.000 (0.002) |
| Inflation | | -0.000 (0.001) | | | | -0.000 (0.001) |
| SGP | -0.005 (0.004) | -0.005 (0.005) | -0.002 (0.004) | -0.000 (0.004) | -0.000 (0.003) | -0.001 (0.003) |
| Corr (Y, Y _{hat}) | 0.841 | 0.856 | 0.861 | 0.864 | 0.841 | 0.856 |
| Sargan test (p-value) | 0.899 | 0.884 | 0.492 | 0.424 | 0.899 | 0.884 |
| AR(2) Test (p-value) | 0.438 | 0.413 | 0.278 | 0.256 | 0.438 | 0.413 |
| Observations | 745 | 745 | 749 | 749 | 745 | 745 |
| Number of id | 57 | 57 | 57 | 57 | 57 | 57 |

Notes:

GDP = gross domestic product, GMM = generalized method of moments.

Standard errors in parentheses.

* Significant at 10%, ** significant at 5%, *** significant at 1%.

Source: Authors.

government borrowing are most effective, none of the broad types seem to have a significant direct effect on the narrow definition of fiscal sustainability at the subnational level. This is somewhat of a surprising result, given the amount of discussion and effort that has gone into shaping different regulations. This negative result shifts the focus to what the impact may be of the different regulations on the overall fiscal balance of a country to the impact of the different fiscal behaviors of subnational governments. The cooperative type of subnational borrowing regulations seems to have a positive effect on improving general government fiscal performance, even in the case of high levels of subnational debt and high dependence on subnational governments on intergovernmental transfers.

NOTES

1. Several sections of this chapter build on Martinez-Vazquez and Vulovic (2015).
2. See, for example, OECD (2006) and World Bank (1994).
3. This is the case in many developing countries. Among developed countries, Denmark is among the few that have an outright prohibition.
4. The advocates of subnational borrowing typically emphasize four potential benefits: (i) expansion of the subnational fiscal space for infrastructure financing; (ii) efficient and intergenerationally equitable outcomes from infrastructure financing through borrowing; (iii) increased fiscal transparency of subnational governments; and (iv) a deepening of national financial markets. Empirically, a positive effect of the availability of subnational borrowing on the provision of infrastructure service has been found (Freire and Petersen, 2004; Leigland, 1997; Peterson and Hammam, 1998).
5. Fiscal discipline requires imposing constraints on all three fiscal aggregates: total revenues, fiscal balance, and public debt (Fölscher, 2007).
6. Past macroeconomic crises involving public debt, such as those in Argentina, Brazil, East Asia, and the Russian Federation, have brought up fiscal sustainability as an important component of macroeconomic stability. The more recent experience of peripheral European countries during the global financial crisis has made the link between fiscal sustainability and macroeconomic stability much more salient.
7. The empirical literature on this issue is inconclusive, but this is not surprising given that the outcomes are dependent on the decentralization system design and actual operation.
8. As an example, in the 1840s, eight states defaulted on their debts in the United States yet continued paying a premium on their debt into the 1990s (English, 1996).
9. Moral hazard is present when 'one party to a transaction may undertake certain actions that (a) affect the other party's valuation of the transaction but that (b) the second party cannot monitor/enforce perfectly' (Kreps, 1990: 577).
10. In developed countries, signals of subnational creditworthiness include borrower's debt, finances, administration, and economy (Cluff and Farnham, 1984; Fabozzi et al., 1995; Hausker, 1991). However, in developing countries, additional factors may affect a municipality's creditworthiness, including intergovernment transfer structure, history of defaults, legal issues, economic conditions, outstanding debt, and pledged security.
11. This result should be taken with caution, however, given that their analysis controlled only for GDP and was based on a relatively small sample of 36 observations.
12. Measured by a dummy equal to 1 if Ter-Minassian and Craig (1997) indicates that the country either completely prohibits subnational borrowing or imposes a nondiscretionary rule to constrain it *ex ante*.

13. However, two limitations in that study must be emphasized. First, a potential misspecification problem existed due to the lack of an assumption of dynamics of the subnational budget balance, causing the effect of its past values to be included in the error term, potentially resulting in endogeneity and autocorrelation. Second, the study restricted the analysis to the effects of regulations on only subnational fiscal balances when actually central and general government budget balances may be more affected.
14. Similar to Plekhanov and Singh (2007), this study also suffered from various methodological issues. Not only were the dynamics in fiscal balances not taken into account, but endogeneity in subnational borrowing regulations was not addressed.
15. Similar to provinces in Canada, municipalities in Finland and Sweden do not need authorization from higher authorities to raise loans, and can borrow from both domestic and foreign sources without any special conditions (Council of Europe, 1996; 2009).
16. The details on the sources by country are available upon request.
17. Note that 15 countries have changed regime once, and one (Bulgaria) has changed it twice.
18. Note when $m=1$, then $\ln(1)=0=Z_{11}$ and $\exp(0)=1$.
19. The extent of government regulation of financial services, degree of state intervention in banks and other financial firms through direct and indirect ownership, extent of financial and capital market development, government influence on the allocation of credit, and openness to foreign competition (Heritage Foundation, 2011).
20. These results are not reported here but are available upon request.
21. Recall that this variable does not include the golden rule and limit on borrowing and debt.

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PART III

Country Studies of Central–Local Government Relations

6. The fiscal risk of local government revenue in the People's Republic of China

Ziying Fan and Guanghua Wan

6.1 INTRODUCTION

In 1994, the People's Republic of China (PRC) began to reform its tax system. During the 1980s, the PRC had a weak central tax system and strong local tax system, and the 1994 reforms reversed this. The main objective of this reform was recentralization of the central government. The proportion of state revenue increased from 22 percent in 1993 to around 55 percent in 1994 (*China Fiscal Yearbook*¹). However, the reform did not alter the expenditure responsibilities; the majority of public service functions remained the responsibility of local governments. The PRC local governments are not only service-oriented but can also be considered governments of developing states. The fact that most infrastructure investments (including airports, ports, and roads) and urban construction projects are covered by local governments has placed them under considerable fiscal stress. Raising sufficient local fiscal revenues is a serious challenge for every local government. The country's economic structure is likely to be adjusted further in the future, and some older sources of income have become unsustainable. For example, the central government has strict control over local government debts because of systemic fiscal risks associated with them; as a result, local governments have extremely limited options with respect to increasing income from local debts. In this way, it is very important to evaluate the risk of local income streams.

Aside from local tax revenue, the main sources of the PRC's existing local revenue are land finance, local bonds, and fiscal transfers from the central government. The central government has a dominant role in primary distribution of national revenue, with a huge fiscal surplus every year. For example, the central revenue in 2012 was CNY5.6 trillion, among which CNY4.5 trillion was transferred to local governments, where it had a remarkable impact on the regions. Previous studies have paid more

attention to the effect of fiscal transfers on fiscal equalization and local public services (Tsui, 2005). However, the effects of these transfers on local infrastructure and the size of local government have been neglected. The PRC's level of infrastructure seems to exceed its level of economic development. Even some underdeveloped areas are equipped with excellent highways and urban facilities. With more fiscal transfers from the central government to less developed areas, local governments have been allocated with significant resources that enable them to produce infrastructure in advance of the local population's need for that infrastructure. In this way, fiscal transfers have a direct connection to the development of infrastructure.

In this chapter, we use panel data of prefecture-level cities from 1998 to 2007 to evaluate the impact of fiscal transfers on investment of infrastructure by the local government. Results showed that, among the three types of transfers, earmarked transfers significantly promoted investment in local infrastructure investment. Results showed that every 1 percent increase of earmarked transfer was associated with a 5 percent increase in local spending on infrastructure. In contrast, the effect of lump-sum transfers was not significant, because they are mainly used to make up the gap between regular income and regular expenditure in local areas, while the earmarked transfers are for specific development projects. The expansion of the size of local governments is also attributed to the fiscal transfers.

The risk of the three major sources of income was assessed. Land finance, local government bonds, and fiscal transfers are not sustainable over the course of five to ten years. The rate of growth of land finance is limited by downturns in the real estate market, and local bonds are subject to the tightening of central government policy. It is difficult for local financing platforms to refinance because the fiscal transfers are restricted by slowdowns in central government revenue. In this way, future local sustainable income depends on levying of new local taxes.

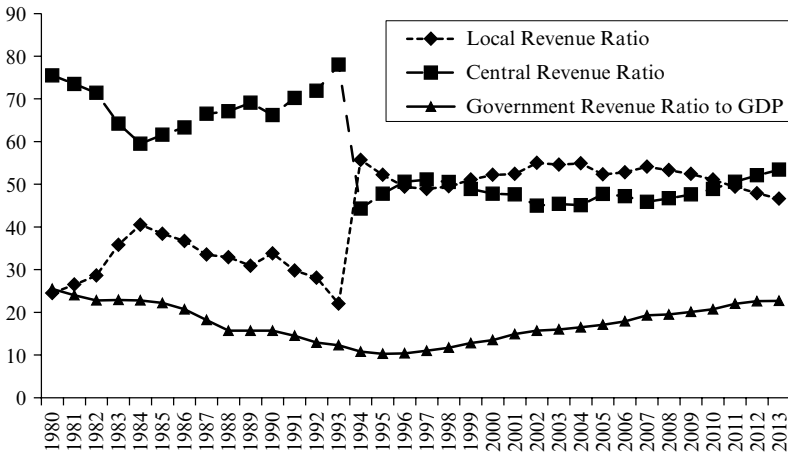
The rest of the chapter is organized as follows: Section 6.2 introduces the background of the central local fiscal and tax reform. Section 6.3 estimates the impact of fiscal transfers on infrastructure investment and the size of government through empirical testing. Section 6.4 assesses the risk of several sources of income, and section 6.5 concludes the chapter and provides political implications.

6.2 TAX REFORM AND EVOLUTION OF THE FISCAL TRANSFER SYSTEM IN THE PEOPLE'S REPUBLIC OF CHINA

The PRC's tax system has undergone frequent changes, with adjustment to the fiscal transfer system followed with each tax system. From 1980 to 1993, a fiscal contracting system was instituted in the country. This was commonly known as 'all-around contract', or 'serving meals to different diners from different pots' (*fen zao chi fan* in Chinese). The key trait of this system is to separate central and local budgets: the local budgets, for the first time in history, became directly linked to the level of local economic growth. The fiscal contracting system provided local governments with incentives to foster economic growth. In order to maximize fiscal revenues, local governments took the initiative to get rid of systematic obstacles by providing a good environment for the development of private enterprises and reducing the aid to the state-owned enterprises. The local government played the beneficial role of a helping hand by implementing the 'preserving market federalism' program (Qian and Weingast, 1997; Shleifer and Vishny, 1998).

In order to reverse the decline in the central fiscal resources, in 1994, the previous fiscal contracting system was replaced with a tax sharing system. The tax sharing system changed the relationship between central and local governments in three ways. First, the unified tax rate and the tax sharing mechanism ensured the credibility of the proportion of central sharing. Second, separate collection of national and local taxes reduced the incentive of local governments to conceal income. Finally, large-scale vertical fiscal transfers allowed the central government to carry out macro regulation and balanced regional economic differences (Ma, 1997).² In 1994, the tax sharing system significantly improved the centralization and fiscal position of the central government, and the two proportions (the ratio of fiscal revenue to gross domestic product (GDP) and centrally controlled proportion of state revenue) rose markedly. The ratio of fiscal revenue to GDP increased from 10.8 percent in 1994 to 22.7 percent in 2013. The proportion of central fiscal revenue leaped in 1994 from 22 percent to 55.7 percent, and it has remained around 50 percent since then (see Figure 6.1).

Since the implementation of the tax sharing system, the strength of the central government has increased greatly. However, this time, reform was not accompanied by any corresponding adjustment in expenditure responsibilities. Taking 2013 as an example (see Table 6.1), local governments bear the majority of the expenditure responsibilities in the areas of education, social security, health, environmental protection, and other obligations. This leaves the central government with a huge surplus after meeting its own corresponding obligations. This may explain the real vertical fiscal



Note: GDP = gross domestic product.

Source: China Fiscal Yearbook.

Figure 6.1 Revenue ratios of central and local governments (%)

Table 6.1 Government expenditure in 2013 (CNY billion)

| Categories | Central | Local |
|--------------------------------|---------|----------|
| General public services | 100.1 | 1,275.4 |
| Diplomacy | 35.4 | 0.1 |
| Defense | 717.7 | 23.3 |
| Public order and security | 129.7 | 649.0 |
| Education | 110.7 | 2,089.5 |
| Science and technology | 236.9 | 271.5 |
| Social security and employment | 64.1 | 1,385.0 |
| Medical and health care | 7.7 | 820.3 |
| Environmental protection | 10.0 | 333.5 |
| Others | 634.8 | 5,126.4 |
| Total | 2,047.1 | 11,974.0 |

Source: China Fiscal Yearbook.

transfer that developed after 1994. Net fiscal transfers from the central to local governments increased from CNY181.9 billion in 1994 to CNY4.802 trillion in 2013 with annual growth over 20 percent, which is higher than the growth of the central fiscal revenue during the same period.

The PRC's fiscal transfers can be divided into three categories: tax rebates, lump-sum transfers, and earmarked transfers. In the early stages of the reform of the tax system, the tax revenue was transferred to local governments mainly through tax rebates. The tax sharing system mainly targeted value added tax (VAT) and consumption tax rebates, commonly known as 'rebate of two taxes'. In the early stage of the reform, tax rebates were the main form of fiscal transfer, accounting for up to 74 percent of the total. Over time, as the economy grew, the proportion of two tax rebates in the central revenue gradually declined, and meanwhile the central fiscal surplus gradually increased.

The second type of fiscal transfer is lump-sum transfers.³ Unlike tax rebates, the distribution of lump-sum transfer is based on local fiscal deficits in inverse proportion to local fiscal capacity. The lump-sum transfer, on the one hand, eased fiscal difficulties in local regions and, on the other, balanced regional fiscal goals and promoted equalization of basic public services. Since 1995, the following formula has been used to calculate general fiscal transfers to balance out regional fiscal disparities:

$$\text{General fiscal transfer amount for certain region} = (\text{standard fiscal expenditure of the region} - \text{standard fiscal revenue of the region}) \times \text{fiscal transfer coefficient of the region}^4 \quad (6.1)$$

In the formula, 'standard fiscal expenditure' refers to the additional tax revenue and other subsidies from the central government, and 'standard fiscal revenue' refers to the total expenditure of various counterparts. Along with the growth of central government revenue, the fiscal transfer coefficient increased from 4.2 percent in 1995 to 47.3 percent in 2005, and subsidies only began to increase substantially in 2002.

The third type of transfer is earmarked transfer. In 2011, as much as 1.7 trillion was moved through earmarked transfers, accounting for 42 percent of the overall fiscal transfers in that year. Unlike tax rebates and lump-sum transfers, earmarked transfers are intended for specified purposes, with each described as 'a fixed fund for fixed purposes only'. Because the earmarked transfer is distributed based on projects, matched funds are expected to be provided by local governments.

As indicated in Table 6.2, almost as much money was moved through lump-sum transfers as through earmarked transfers. Among the lump-sum transfers, the most significant type was general fiscal transfers, followed by fiscal transfers for salary adjustment, which suggested that narrowing the regional per capita fiscal gap had become the major objective of lump-sum transfers. Among the earmarked transfer, the most important targets were for social security and employment, followed by affairs related to

Table 6.2 Transfers in 2007

| Category | | 100 million (CNY) | Share (%) |
|------------------------|---------------------------------------------------|----------------------|-----------|
| Lump-sum transfers | Lump-sum transfer | 2,505 | 35.5 |
| | Transfer to minority areas | 173 | 2.4 |
| | Transfer from the rural tax reform | 759 | 10.7 |
| | Wage transfer | 2,234 | 31.5 |
| | Transfer to counties for administration reform | 339 | 4.8 |
| | Others* | 1,083 | 15.3 |
| Earmarked transfers | Education | 391 | 5.7 |
| | R&D | 75 | 1.1 |
| | Social security | 1,961 | 28.4 |
| | Medical and health | 630 | 9.1 |
| | Environment | 748 | 10.8 |
| | Agriculture and water | 961 | 13.9 |
| | Others** | 2,133 | 30.9 |

Notes:

R&D = research and development.

* Other transfer for gap includes transfer for rural and urban compulsory education, transfer for resource-exhausted cities, the transfer from the old system, etc.

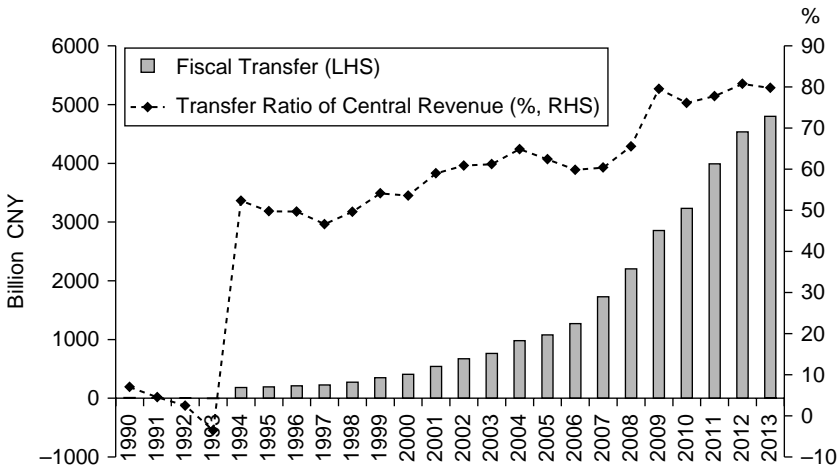
** Other earmarked grants include transfers to public service, defense, public safety, culture, sports, media, transportation, etc.

Source: Ministry of Finance website (www.mof.gov.cn).

agriculture, forestry, water, and environmental protection, which indicated that earmarked transfers were mainly used to encourage local governments to increase the supply of local public goods.

6.3 EVALUATE THE IMPACT OF FISCAL TRANSFER

Since the implementation of the tax sharing reform, the centralization of power has been strengthened and fiscal transfers from the central to local governments also increased (see Figure 6.2). In 2012, for example, among the CNY5.6 trillion in central fiscal revenue, CNY 4.5 trillion were directly transferred to local governments, accounting for up to 74 percent of the total local fiscal revenue. In some less developed regions, the central fiscal transfers far exceeded the local government's revenue itself. Huge fiscal transfers had a significant impact on local fiscal spending and the local



Source: China Fiscal Yearbook.

Figure 6.2 Fiscal transfer and transfer ratio

economy. Considering that local PRC governments paid more attention to the development, with marked enhancement of fiscal strength after receiving lump-sum transfers, the most obvious benefit was for the local infrastructure, which further improved their competitiveness in attracting investment, and finally promoted the rapid growth of the local economy in a short period of time. Meanwhile, fiscal transfers also had a profound impact on local governments by increasing the size of local government, which can be explained by what is called the ‘flypaper effect’ (Hines and Thaler, 1995; Brennan and Pincus, 1996). According to this effect, for regions with the same amount of fiscal revenue, the one with the higher proportion of fiscal transfers tends to have a larger local government, and the local government spending sticks where it hits. This section focuses on assessing the impact of fiscal transfers on local infrastructure investment and the size of local government.

6.3.1 Infrastructure

Multi-panel data were used in this chapter, considering that infrastructure investment is influenced by multiple factors. The following multi-factor two-way fixed effects econometric model was constructed:

$$G_{i,t} = \alpha_i + \beta_1 Tran_{i,t} + \lambda' X_{i,t} + \tau_t + \mu_{i,t} \tag{6.2}$$

Here, i represents prefecture-level cities, t indicates the year, and G stands for infrastructure investment or government size. In later sections, different parameters were used for the measurement. $Tran$ indicates the logarithm of fiscal transfer (the earmarked transfer and lump-sum transfer are distinguished), then what β_1 measures is an elasticity, specifically with every 1 percent increase of transfer, the investment to infrastructure in this province increases by $\beta_1\%$. X represents the control variable, which includes the following items:

- (i) Per capita GDP. The per capita GDP is used to measure the level of economic development in all parts of the country. Areas with better-developed economies requested more infrastructure projects. However, as government public service has a scale economy effect, the size of government does not necessarily increase synchronously.
- (ii) Urbanization. Areas with more urbanization require more supplies from the government for infrastructure and public services, and the spending would increase as well. The proportion of urban residents is used in this chapter to indicate the level of urbanization.
- (iii) Population size. Population size has a positive effect on the demand for infrastructure and cost sharing for infrastructure. For example, a high-cost metro system can be afforded in a large city. The resident population of a prefecture-level city is used here to describe population size (Pop).

Specification method: A two-way fixed effects model was used for all regression analyses performed in this chapter. This method was selected since each city has some characteristics that do not vary over time and must be considered. These include geography, environment, and resources, which would affect the infrastructure and size of the government. This is controlled by fixed effects (FE) of the corresponding province. Some common national macro shocks should also be considered. These would include overall fiscal policy, which was treated using the FE of the corresponding year. Considering that there is a serial correlation among variables of different prefecture-level cities, the standard error was clustered at the prefecture level.

As shown in Table 6.3, the logarithm of infrastructure spending in a prefecture-level city was used to evaluate the level of infrastructure. For the first regression analysis, the impact of overall transfers was investigated and results showed that the overall amount did not significantly impact the local infrastructure investment. Therefore, for the next three regression analyses, the impact of three types of transfers on infrastructure investment was analyzed. Specifically, for the second regression, only the logarithm of earmarked transfers and the two-way fixed effect were included,

Table 6.3 Fiscal transfers and infrastructure investment

| Independent variables | Log capital construction | | | |
|-----------------------|--------------------------|---------------------|--------------------|--------------------|
| | (1) FE | (2) FE | (3) FE | (4) FE |
| Log transfer | 0.253 (0.239) | | | |
| Log lump-sum tran | | | | 0.114 (0.095) |
| Log earmarked tran | | 0.412*** (0.150) | 0.417** (0.163) | |
| Pergdp | | -0.016 (0.027) | 0.019 (0.031) | 0.075 (0.097) |
| Urban | -1.437* (0.737) | | -1.152 (0.735) | -1.925 (1.155) |
| Pop | -10.376* (6.013) | | -7.588 (5.742) | 15.353 (25.789) |
| Year dummy | Yes | Yes | Yes | Yes |
| Cluster | Province | Province | Province | Province |
| Within-R ² | 0.406 | 0.433 | 0.422 | 0.343 |
| City num | 285 | 285 | 285 | 269 |
| Observations | 2,187 | 2,187 | 2,186 | 1,570 |

Notes:

FE = fixed effects.

Standard errors are shown in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.*Source:* Authors.

and results showed that for every 1 percent increase in earmarked transfer funds, the infrastructure investment in that prefecture-level city increased by 0.4 percent. For the third regression, other control variables were added on the basis of the second regression level, and results showed that the coefficient increased in some ways but remained significant at 1 percent. Overall, these two regressions indicated that earmarked transfers from the central government can in some degree alleviate the insufficiency of local fiscal support and promote the development of local infrastructure.

Fiscal transfers of the PRC are allocated by category. Lump-sum transfers, earmarked transfers, and tax rebates are the three main categories. Tax rebates are implemented in accordance with the provisions of the tax sharing system developed in 1994, and few changes have been made since then. Because the tax rebate is fully expected revenue by the local government, lump-sum transfers and earmarked transfers have a much more pronounced impact on local finance. In order to determine which one of

them has a more pronounced impact on infrastructure investment, the effects of lump-sum transfers were analyzed further in a fourth regression analysis. Results showed that only earmarked transfers promoted investment in infrastructure and lump-sum transfers did not have any significant effect. The reason for this difference is that lump-sum transfers are mainly used to address local fiscal gaps and they do so by supporting the local government's everyday spending and public service expenses instead of infrastructure investment. However, the amount of money in earmarked fiscal transfers is huge and some of these earmarked transfers are directly intended for many different kinds of infrastructure.

However, it should be noted that there is a serious endogeneity problem in Table 6.3. Because allocation of earmarked transfers requires a certain percentage match of local funds, regions with relatively abundant fiscal resources usually receive such transfers. Because such areas are usually equipped with better infrastructure than other areas, there is risk of over-estimation in results from Table 6.3 caused by omitted variable bias. The birthplaces of ministers of State Council ministries and commissions were used as instrumental variables, which simultaneously satisfies hypotheses of correlation and the exclusion. First, earmarked transfers are usually for specific projects and their feasibility must be evaluated ahead of time by corresponding professional ministries before channeling funds from the Ministry of Finance. In this way, each ministry holds great discretionary power for deciding which funds to earmark for transfer. Moreover, the power of the PRC government is highly concentrated in the 'first in command', head of ministry of correlated function, and adjusting funding for local politics can significantly impact the amount of earmarked transfer funds received by local governments. This political connection can affect the transfers sent to a minister's birthplace in two ways. Due to his or her feelings for his or her hometown, a minister may tend to take the initiative to take care of the area. In addition, local governments can use the political connections left by the heads of ministry to increase interactions with them during their terms of service, in order to earn more fiscal transfers. Initiative, both on the part of the head of ministry and passive political connections, can help ministers' hometowns draw in more earmarked transfers.

No connection was observed between the appointment of ministers, level of economic development, and the amount of earmarked transfer funds received. The head of a ministry is usually selected from relevant professional fields. For example, the heads of the ministries of education and health are selected from candidates who have worked in education and health departments. Usually, leaders with no professional knowledge and work experience are not hired interdepartmentally, especially in

ministries with strong requirements for technical knowledge, such as the departments of finance, science, technology, education, and agriculture. For local governments, the appointment of a new head of ministry is considered an exogenous shock. Especially in cases of deployment of power sectors, exogenous shocks may have an enormous impact on the amount of funds earmarked for transfer to local governments, even on the local fiscal revenue. In recent years, the central government has expanded its earnings, and earmarked transfers paid to subordinate governments have also increased significantly. Ministers have come to play an increasingly more important role in the delivery of funds to local governments. For this reason, if there is any political connection between the minister and his or her place of birth, then this political connection can be expected to have a significant impact on the allocation of earmarked transfers.

The personal résumés of 29 ministers of the State Council were collected, and they were all assumed to have political connections to their birthplaces. When the minister's birthplace was not included in the résumé, the native place (*ji guan* in Chinese) was considered the birthplace. Some reported their birthplaces at the county level or even named the town, and some only specified it at the level of prefecture-level city. In order to unify the statistical units, political connections were rounded to the nearest prefecture-level city, and then any previous fiscal and economic data were matched to the birthplace. Ministries with no corresponding departments in local governments, such as the Ministry of Foreign Affairs, Ministry of Railways, Ministry of Security, People's Bank, and Auditing Administration, were excluded from statistical analysis. Expenditures in these areas will be paid directly by the central government instead of transferred to local governments, which has no impact on fiscal transfers received by local governments.

The impacts of the earmarked fiscal transfers on infrastructure investment were estimated using two-stage ordinary least squares (OLS), and results are shown in Table 6.4. From the first stage, the amount of money earmarked for transfer was significantly affected by the minister. On average, if the minister came from a certain city, then earmarked transfer funds received by this city would increase by 10.4 percent. Second-stage analysis showed that, for every 1 percent increase in earmarked transfer funds, the investment in infrastructure in this prefecture-level city would increase by 5 percent, which indicated the presence of underestimation in Table 6.3.

Table 6.4 Fiscal transfers and infrastructure investment: IV estimation

| Independent variables | Log capital construction | | |
|-----------------------|--------------------------|-----------------------|----------------------|
| | Second stage | | First stage |
| Log earmarked tran | 5.737** (2.777) | Minister | 0.104** (0.049) |
| Pergdp | 0.145 (0.098) | Pergdp | -0.023* (0.013) |
| Urban | 2.118 (2.008) | Urban | -0.609*** (0.181) |
| Pop | 7.801 (16.257) | Pop | -2.815 (2.418) |
| Year dummy | Yes | Year dummy | Yes |
| Within-R ² | 285 | Within-R ² | 0.674 |
| City num | 2,186 | City Num | 285 |
| Observations | | Observations | 2,186 |

Note: Standard errors are shown in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: Authors.

6.3.2 Government Size

The proportion of fiscal expenditure in GDP was here used to measure the size of the government (Persson and Tabellini, 1999). The results estimated as given in equation 6.2 are listed in Table 6.5. As in the previous part of the study, the effect of the total amount of fiscal transfer in the first regression analysis was estimated and results showed that the total amount of money transferred from central to local governments did not significantly increase expenditure by local governments. The second regression only involved the log transfer of earmarked funds and results showed government size to be significantly increased by earmarked transfer funds. Other control variables were added to the third regression analysis on the basis of the second regression and the coefficient of earmarked transfers remained stable. With every 1 percent increase of earmarked transfers, the government size expanded by 1.4 percent. The fourth regression further analyzed the impact of lump-sum transfer. Lump-sum transfers also increased the size of the government, which indicated that the PRC's fiscal transfers produced a sticky flypaper effect. However, relatively speaking, the coefficient of lump-sum fiscal transfers was far smaller than the earmarked transfers. In addition, results also showed the effect of per capita GDP to

Table 6.5 Fiscal transfers and government size

| Independent variables | Government expenditure/GDP | | | |
|-----------------------|----------------------------|---------------------|----------------------|---------------------|
| | (1) FE | (2) FE | (3) FE | (4) FE |
| Log transfer | 0.007 (0.007) | | | |
| Log lump-sum tran | | | | 0.003** (0.001) |
| Log earmarked tran | | 0.018*** (0.004) | 0.014*** (0.003) | |
| Pergdp | -0.006*** (0.002) | | -0.005*** (0.002) | -0.007** (0.003) |
| Urban | -0.017* (0.009) | | -0.006 (0.011) | -0.015 (0.017) |
| Pop | 0.015 (0.095) | | 0.060 (0.117) | -0.390 (0.627) |
| Year dummy | Yes | Yes | Yes | Yes |
| Cluster | Province | Province | Province | Province |
| Within-R2 | 0.534 | 0.380 | 0.587 | 0.460 |
| City num | 286 | 286 | 286 | 274 |
| Observations | 2,663 | 2,668 | 2,668 | 1,927 |

Notes:

GDP = gross domestic product; FE = fixed effects.

Standard errors are shown in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.*Source:* Authors.

be significantly negative. This is because government spending has a scale effect: regions with more pronounced economic development and more government spending were subject to lower costs after scale allocation.

6.4 FISCAL RISK OF LOCAL REVENUE: LAND FINANCE, LOCAL GOVERNMENT DEBT, AND FISCAL TRANSFER

The results of a previous study showed that central fiscal transfers breathed new life into local development, starting with economic development, especially through improvements in local infrastructure. In addition to fiscal transfers, two other major sources of revenue for local PRC local governments were land finance and local government debt. The

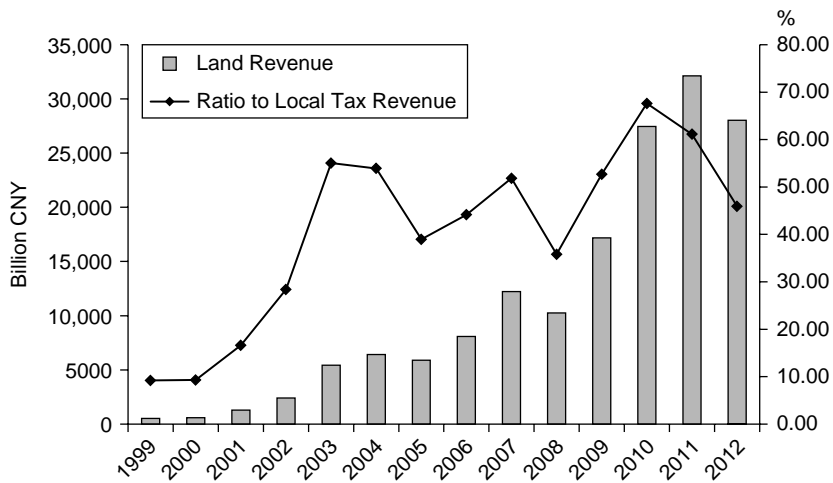
PRC's local governments, rather than the central government, hold most of the responsibility for public services, including pensions, education, health care, security, and environmental protection, which contribute to the welfare of every resident. Most local governments also shoulder the burden of economic development, which requires them to provide satisfactory infrastructure, such as roads, electricity, and communications. In this way, the sustainability of local fiscal revenue is a problem that every local government must consider. In 2012, for example, the sum of local government general budgetary revenue and total funding was CNY14.065671 trillion, among which land finance was CNY2.804228 trillion, accounting for 20 percent of the total local fiscal revenue, and lump-sum transfers were CNY4.536168 trillion, accounting for 32 percent of the total local revenue. In this section, the risk of local governments' three major sources of income is discussed.

6.4.1 Fiscal Risk of Land Finance

The term 'land finance' has a narrow and a broad sense. Narrowly, land finance refers to income generated from leasing land-use rights. In government budgetary revenue and expenditure, the government revenue comprises budgetary revenue and funds sent from other parts of the government. Land finance income is part of the government fund revenue, and it does not belong to the public budget. The proportion of land finance income in budgetary revenue is especially high in some large cities, such as Shanghai and Beijing, where the land finance revenue is almost equal to the local budgetary revenue. In Hangzhou, the land finance revenue is even higher than local budgetary revenue. In this way, the land leasehold revenue is here considered the second largest source of funding after budgetary revenue.

The PRC completed reforms to its welfare housing system around 2000 and established a market-based housing system, which promoted the development of the real estate market, and also caused the increase in housing prices. The rising housing prices allowed local governments to collect a certain percentage of rent from the ever-increasing housing prices. Although it is limited by the tenure of local officials, there is opportunistic behavior at every level of local government. Incumbent government workers tend to generate revenue from one-off land leasing instead of other sustained methods, such as property taxes. Meanwhile, in 2003, the auctioning of land was conducted by introducing trading modes of market competition, which increased land prices and generated income from land leases.

As shown in Figure 6.3, before 2000, land leasehold revenue accounted for less than 10 percent of local fiscal revenue, so it had not yet become



Sources: *China Fiscal Yearbook*; *China Land and Resources Statistical Yearbook*.

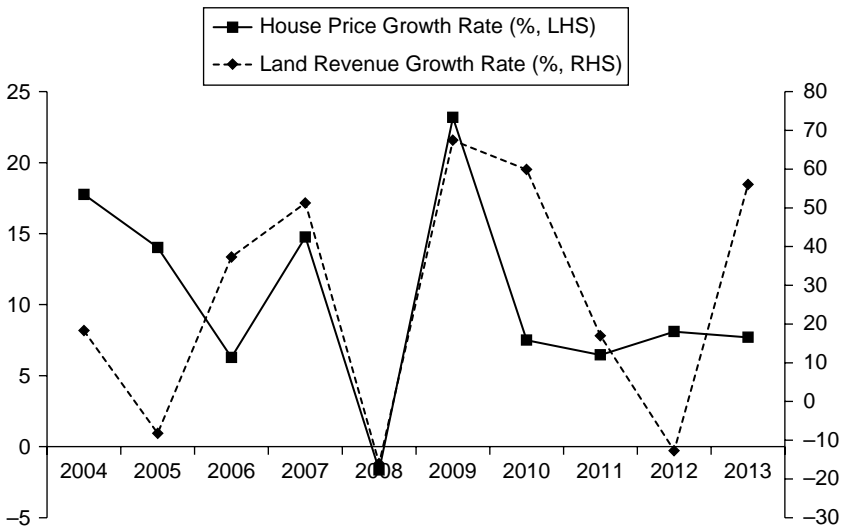
Figure 6.3 Land revenue and ratio to local tax revenue

the major revenue source of local funding and had not been raised to the level of finance. The real increase in land leasehold income took place after 2002. During 2002, land leasehold income nearly doubled from 2001 levels, and the revenue doubled again and reached CNY542.1 billion in 2003. The proportion of land leasehold income in local fiscal revenue reached 55 percent, a record high. The significant increase in land leasehold revenue is related to the auction system, the promotion of which reduced land leasing through private contracts. Leasing of any industrial land or commercial land was required to follow the open auction system, which caused the amount of land leasehold income to increase.

From 1999 to 2009, land leasehold revenue saw a 3-year decline. In 2008, affected by the global financial crisis, the PRC's domestic real estate market demand shrank and prices fell sharply, leading to a decline in land leasehold prices and the amount of land transferred decreased by more than 16 percent. The proportion of land leasehold income in local finance decreased from 52 percent to 36 percent. A quick rebound was seen in the land market in 2009, when land leasehold revenue increased from CNY1 trillion in 2008 to CNY1.7 trillion in 2009, the rate of increase reached 70 percent within 1 year, and its proportion in local finance returned to around 50 percent. The latest decline in land leasehold income occurred in 2012. The main contributing factor was the strict housing market regulation implemented in 2011, including property-purchasing limits, bank

lending limitations, and trail property taxes implemented in some cities. This policy had a profound impact on the property market and directly affected the land leasehold market. The proportion of land leasehold revenue in local funding decreased continuously from 68 percent in 2010 to 44 percent in 2012.

Over the past decade, land finance constituted an important source of revenue for the local governments in the PRC. However, in the next five to ten years, the contribution of land finance to local finance is expected to decline gradually, and land finance may not be a sustainable source of income for local governments. The main reasons for this view can be summarized in two ways. First, land finance has brought solutions both to insufficiency of local finance as well as social and economic problems. These have inspired the central government to reform the system. These negative issues include land disputes, increasing house prices, breaking the law and corruption related to land use, exacerbation of macroeconomic fluctuations, and other problems. However, as indicated in Figure 6.4, the PRC's land finance is strictly and positively related to housing prices. Land leasehold price increased with increasing house prices and vice versa. The main reason for these correlations is that the land leasehold market depends on the property market, and lump-sum land leasehold revenue is equivalent to the discount value of 70 years of value-added benefits. When



Sources: *China Yearbook*; *China Land and Resources Statistical Yearbook*.

Figure 6.4 Growth rates of house prices and land revenue

housing prices fall, the will of real estate companies to buy land weakens, and when the land supply is established, land prices will fall. For the next five to ten years, the PRC's housing prices do not increase significantly. From the perspective of demand, the PRC's economic growth rate is declining, and the demands of the housing market are difficult to reverse in the short term; from a policy perspective, restrictive policies in the past three years are difficult to replace with incentive policies in the short term. Even now, when the real estate inventory is relatively large, policies restricting house purchases remain in some cities. Although the decision makers do not want the housing market to slump, they worry more about runaway housing prices. For this reason, a limited open housing policy will probably remain in place for a long period of time.

6.4.2 Fiscal Risk of Local Government Debt

In order to produce funds from land finance, local governments need to first acquire land, invest in public works such as infrastructure, and establish industrial parks in order to attract businesses as tenants. Not all of these can be fully covered by local financing, so the local government must seek out other sources of financing. The most common channel is loans, which produce large debts. According to the 2013 annual report from the National Audit Office of the PRC, by the end of June 2013, the total amount of local government debt was CNY17.89 trillion, accounting for around 30.4 percent of the national GDP in 2013.

According to the PRC's budget laws, 'the budgets of local governments should follow the principle of keeping expenses within income and keeping the budget balanced to avoid deficits. Except as otherwise regulated by law and the State Council, local governments shall not issue local government bonds.' This means that local governments cannot directly borrow from financial institutions, but must rather obtain loans from banks using land reserve organizations, government corporations, or management committees of economic development zones financing platforms, and fiscal revenue and land leasehold revenue as collateral. The use of the local financing platform was very strictly controlled and audited by the central government before 2008, which kept the local debt within limited scale. However, in order to manage the global fiscal crisis in 2008, a fiscal stimulus program of CNY4 trillion was issued, of which CNY1.28 trillion was fiscal funding from the central government and the remaining CNY2.72 trillion required local funds. In order to ease the difficulty of obtaining local counterpart funds, the central government lowered the restrictions on financing platforms and encouraged local governments to borrow from the fiscal sector through the financing

platform. This has become a channel for local governments to borrow with a large amount of credit flowing in to the local government with land serving as the main form of collateral. Until the end of 2010, a total of 129,400 parcels of land were in mortgage in 84 key cities, and the mortgage area was 258,200 hectares. The total mortgage amount was CNY3.53 trillion. The mortgage area and mortgage loans grew by 19 percent and 36.3 percent year-on-year growth rate, respectively. The amount of land mortgaged increased by 37,400 hectares, and mortgage loans increased by CNY920.6 billion, a year-on-year increase of 18.8 percent. The specific mechanism by which local governments obtained bank loans can be described as follows: Land reserve centers issue land-use permits to local investment platforms. This land is then used as collateral by local investment platforms to obtain bank loans; the loan obtained in this way is invested in infrastructure, industrial parks, real estate, and other matters. These investments can attract tenants whose revenues can be used to pay back the bank loan. The increase in land price will provide local governments with more loans, which will further be used in infrastructure to keep such a cycle running. According to the China Banking Regulatory Commission statistics, by the end of 2010, the national local financing platform cooperation reached about 9,800. As indicated in a Goldman Sachs analysis report on the financing platform, the amount of money transferred in the form of local financing platform loans in 2010 was around CNY9.1 trillion, accounting for 17.8 percent in the balance of loans in renminbi in that year.

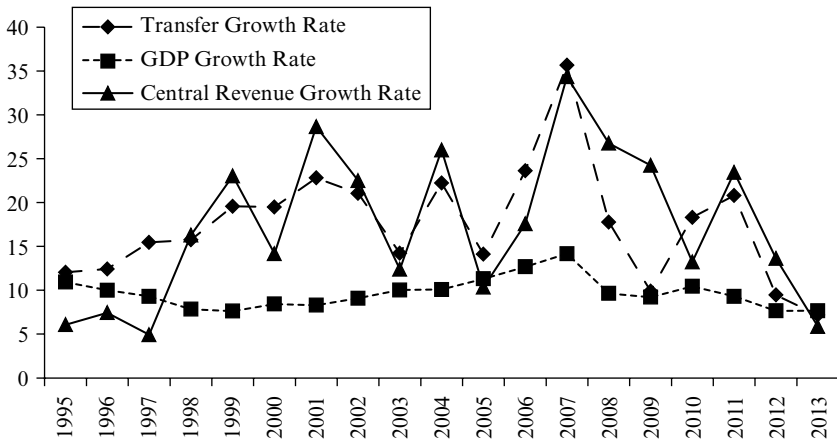
After land financing, local government debt is the main source of financing for local governments. This was the case from 2008 to 2013, when rapid growth in government debt was observed. However, with the enlargement of the systematic risk and the tightening of policy, there will be fiscal risk of local government debt income. First, the local government debt risk is likely to induce systemic fiscal risks. In a normal year, due to the expected increase in house prices, land leasehold revenue may rise accordingly. Money borrowed by local governments, if any, may be repaid using expected land leasehold revenue. However, after 2010, the state began to regulate the real estate market by introducing a number of very strict restrictions on credit policy. These policies have weighed on the increase in housing prices in some cities, causing the real land leasehold revenue to decline in 2011 and 2012, which increased the pressure shouldered by local financing platforms. In order to respond to the need for regulation, commercial banks created shadow banks through extra-balance sheet business by adding income from fiscal services to financing platforms, rendering the fiscal system difficult to regulate. If the local government defaults on its debt, the consequences can permeate the entire fiscal sector.

Second, the central government has a strong ability to supervise and clean up after problems caused by local government debt. The China Banking Regulatory Commission banned commercial banks from acting as the local financing platforms and increased supervision of other business, such as trusts and peer-to-peer (P2P), which made local financing platforms difficult to finance from the fiscal sector.

The PRC's Ministry of Finance is also gradually pushing the local government to issue bonds directly to the capital market instead of allowing banks to manage all the mortgages. However, at the current stage, the local governments do not have the resources necessary to issue bonds. One of the biggest limitations is that the PRC's local governments have not established a sound balance sheet and the capital market cannot determine the solvency of local governments. Because the establishment of balance sheets takes a long time and there is need for a clear definition for government assets, local governments may not raise enough revenue in the near future through local government debts.

6.4.3 Fiscal Risk of Intergovernmental Transfers

Since the reform of the tax sharing system reform in 1994, the PRC's central government has transferred a large amount of revenue to local budgets every year. From 1998 to 2012, the average annual growth rate of fiscal transfers exceeded 10 percent and the proportion of local fiscal transfers accounted for over half of local fiscal revenue, which constituted a stable source of local fiscal revenue, and, to a certain extent, solved the problem of vertical imbalance in the fiscal revenue and expenditure. However, as indicated in Figure 6.5, there is a serious dependency correlation among the transfers, central fiscal revenue, and GDP. First, the rate of growth of fiscal transfers and of central fiscal revenue are entirely consistent with each other, which indicates that the expenditures by the central government decreased as the central government revenues increased, and some of the additional revenue was transferred to local governments. For this reason, the lump-sum transfers received by local governments depend on the central fiscal surplus of that year. Second, the central fiscal growth rate is very sensitive to GDP growth. During rapid economic growth, the central fiscal revenue also grows. During economic recessions, the central finance revenue is one of the first things affected. This is because the central government's revenue comes mainly from the indirect tax income, such as VAT, consumption tax, tariffs, and other taxes. These taxes depend on the production activities of businesses, which decrease rapidly during economic recessions. For example, in 2013, the GDP growth rate was only 7.7 percent, and



Note: GDP = gross domestic product.

Sources: *China Yearbook*; *China Fiscal Yearbook*.

Figure 6.5 Growth rates of central revenue, transfer, and GDP (%)

the central government revenue fell to 5.9 percent, the lowest level since 1998.

In the next three to five years, fiscal transfers will not be able to provide a sustainable source of income for local budgets, mainly because the PRC's economy is facing huge downward pressure and the growth rate of GDP in the first and second quarters in 2015 was only 7 percent, which was 0.4 and 0.5 percentage points lower, respectively, than in the same period in 2014. As shown in Figure 6.5, along with the economic decline in 2012 and 2013, the fiscal transfer growth rate decreased to below 10 percent and back to 7.2 percent in 2013. During the next period of time, as the PRC's economy recedes or is consolidated further, it will become difficult for the central government to foster a growth rate over 20 percent. Accordingly, central-to-local fiscal transfers can only sustain a small margin of growth.

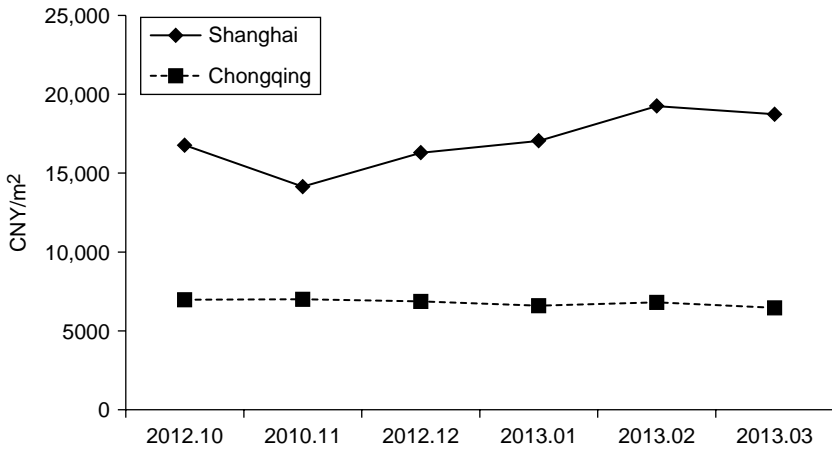
In the next five to ten years, with the gradual stabilization of the PRC's economy, the central government's fiscal transfers will increase, but the growth rate may not be as high as during 1998–2008. For the next five years, further adjustment of the PRC's economic structures may bring economic growth back into the 7–8 percent range. The Business Tax Replaced with VAT program may further enhance the centralization of government, which increases the proportion of central finance revenue and keeps the annual growth rate of lump-sum transfers around 10 percent.

The lump-sum transfers can in some degree increase the local fiscal capacity. However, this may not satisfy the overall needs of local development.

6.4.4 Potential Source of Local Revenue: Property Tax

The PRC's current real estate tax law is mainly for commercial purposes, while personal property is exempt from the use of property taxes. Around 2010, the PRC's real estate prices have been significantly increased. In order to curb the trend of rising house prices, the government plans to collect sales tax on housing. By increasing the cost of housing, the government intends to fight against speculation by means of policy to foster rational housing consumption of residents. On the other hand, stable sources of revenue obtained from tax collection can be used to ensure housing construction, and thus adjust the housing supply structure. In January 2011, the State Council began to collect property tax in pilot cities such as Chongqing and Shanghai and the practice has continued to the present. However, due to the low efficiency of collection and lenient tax terms in two cities, the amount of real estate tax income actually obtained was very low.

The value of two key variables, tax rates, and housing price had to be determined to estimate the potential of real estate tax revenue. A broad tax basis was used, which means that all property owners needed to pay property taxes. The tax rate varied across places with different levels of economic development, but the coverage of property taxes was set to be the same in all areas. For low-income families, a variety of return policies were implemented to prevent uneven distribution of housing. The next question was the value of housing. Because there is no theory in place to provide an appraisal process for all types of housing, the average transaction price in the housing market was considered each building's value. The reasons for this treatment are as follows: First, the average transaction price of second-hand housing was used. Because real estate taxes are levied for the present value of housing, the transaction price of second-hand housing can be considered indicative of housing shortages, which is even more realistic than the assessment value of housing. Second, the total residential area included houses in different regions and of different prices. The average transaction price is also related to the different sizes and prices of housing, so both could be matched more effectively. It should be acknowledged that, due to differences between the structure of second-hand housing transactions and existing housing structures, the average price of second-hand housing was not completely consistent with the existing housing. However, data indicated that this was the most accurate method available for this study.



Notes: CNY = yuan; m² = square meter.

Source: China Index Academy.

Figure 6.6 Housing prices in Shanghai and Chongqing (CNY/m²)

The house property tax pilot program has only been implemented in Shanghai and Chongqing. The expected property revenue in Shanghai and in Chongqing were estimated and compared to actual property revenue. The average price of residential transactions in Shanghai and Chongqing, which was a comprehensive price including both newly built dwellings and second-hand property, was provided by the China Index Academy for the period from October 2012 to March 2013. As shown in Figure 6.6, the average residential price at the end of 2012 in Shanghai was generally around CNY16,000 per square meter and an increase in price was recorded at the beginning of 2013. The average residential price in Chongqing was more stable, and it remained around CNY6,500 to 7,000 per square meter.

According to online statistics regarding second-hand housing transactions in Shanghai, the total turnover of second-hand housing units in Shanghai in 2012 was around 200,000, a yearly increase of 42.5 percent. The total amount of money exchanged in second-hand transactions was 256.9 billion, an increase of 49 percent over 2011. The average price was CNY16,357 per square meter, which was 1.63 percent higher than in 2011. According to the statistics of the China Index Academy, the average housing price in Chongqing in December 2012 was CNY7,202 per square meter. The second-hand prices in Shanghai and Chongqing were near

Table 6.6 Simulation of property tax revenue in Shanghai and Chongqing

| | Shanghai | Chongqing |
|-------------------------------|-------------------------------|-------------------------------|
| Price | CNY16,357/m ² | CNY 7,202/m ² |
| Total built-up area | 494.88 million m ² | 416.82 million m ² |
| Total value | CNY8,094.8 billion | CNY 3,001.9 billion |
| Property tax revenue: | | |
| tax rate = 0.5% | CNY40.47 billion | CNY15 billion |
| tax rate = 1.2% | CNY97.14 billion | CNY36.02 billion |
| Local revenue | CNY432.8 billion | CNY170.35 billion |
| Share of property tax revenue | 9.3% vs. 22.4% | 8.8% vs. 21.1% |
| Land finance | CNY87.5 billion | CNY89.75 billion |
| Share of property tax revenue | 46.3% vs 111% | 16.7% vs 40.1% |

Notes: CNY = yuan; m² = square meter.

Source: Authors.

the level indicated in Figure 6.6, which served as a basis value for the following calculations: The total value of residential housing was estimated using the average price of residential area and residential area. Then, the corresponding real estate tax revenue was calculated according to the low rate (0.5 percent) and high rate (1.2 percent). Finally, the proportion of property taxes was calculated according to the local budgetary revenue and land leasing revenue. As shown in Table 6.6, the total estimated housing value in Shanghai was CNY8,094.8 trillion. According to the low and high rates, CNY40.47 billion and CNY97.14 billion in property taxes, respectively, can be levied. The local budgetary revenue in Shanghai in 2011 was CNY432.8 billion. The proportion of expected property tax in the budgetary revenue was 9.3 percent and 22.4 percent, respectively. The high proportion indicated that the fiscal sustainability problem in Shanghai can be solved by property taxes. As the most developed city in the eastern PRC, Shanghai has rich local fiscal revenue. Even if there is fiscal pressure, the gap is very small. Therefore, if there is real estate tax revenue of CNY40 billion to CNY100 billion, the fiscal pressure is basically negligible. More importantly, the land leasehold revenue in Shanghai in 2011 was CNY87.5 billion, the value of which was between the low and high calculated results. In accordance with these simple statistics, if property taxes are levied based on a wide tax board in Shanghai, its tax revenue can partially or even completely replace land finance revenue.

The property tax revenue in Chongqing was calculated using the same method. The expected property revenue in Chongqing ranged between

CNY15 billion and CNY36 billion, accounting for 8.8–21.1 percent of the local finance revenue (CNY170.35 billion). Since Chongqing is an important urban city in the western PRC, tens of thousands of lump-sum transfers can be performed every year. For this reason, an additional CNY30 billion in property taxes would greatly ease the local fiscal revenue problem. The land leasehold revenue in Chongqing in 2012 was CNY89.75 billion, of which 16.7–40.1 percent was property tax. It seems that there is a certain distance between property tax revenue and land leasehold revenue in Chongqing. It should be noted that the land leasehold revenue increased significantly only after 2011, which continued to increase when the land leasehold revenue in most PRC cities decreased by different degrees. In 2009 and 2010, the land leasehold revenues in Chongqing were CNY38.9 billion and CNY40.5 billion, respectively. For this reason, if a longer time span is considered, there is almost no difference between property tax income and land leasehold income in Chongqing.

6.5 CONCLUSIONS AND POLICY IMPLICATIONS

In this chapter, we evaluated the fiscal risk of local government revenue in the PRC and empirically tested the role of fiscal transfers. The two main conclusions are as follows:

- (i) The PRC's huge fiscal transfers to local governments, to a certain extent, promote local investment in infrastructure and ease the plight of local governments in the financing of infrastructure projects. The impact of earmarked transfers was found to be especially significant, and the effect of lump-sum transfers was insignificant. Fiscal transfers also had a negative effect, especially by inducing local government expansion and increasing the size of government spending.
- (ii) Several major sources of local revenue in the PRC are risky. In recent years, a visible slowdown in land revenue has become visible, and the development of the real estate market is clearly defined. The local government debt revenue increased rapidly from 2008 to 2013. However, because local government debts may induce systemic fiscal risk, its development could be considerably suppressed in the future. Subject to the growth rate of the central fiscal revenue, the growth rate of fiscal transfers in the past two years has declined significantly. With the decline in economic growth in the PRC in the future, the contribution of fiscal transfers to local finance will also decline.

The policy implications of these findings are as follows:

- (i) Central government to increase the intensity of reform and promote the rapid and reasonable adjustment of economic structure to ensure that the rate of economic growth exceeds 8 percent. Central government revenue growth is more sensitive to the real economy, especially the main taxes, such as VAT and consumption tax revenue, so the robust rate of economic growth is conducive to the growth of central government revenue and can ensure that the central government has sufficient surplus to implement the fiscal transfers. Local fiscal revenue is also sustainable to further development.
- (ii) Accelerate the construction of the local government balance sheets to lay the foundation for the issuing of local government bonds. The bonds issued by local governments to the capital markets can finance projects by providing funds, but it should be noted that the premise is that local governments need to have perfect balance tables. In this way, it is necessary to accelerate the construction of balance sheets at all levels of government in the PRC. Because government assets should be defined clearly ahead of time, some counties can be selected as pilot areas for the building of successful models for further national promotion.
- (iii) Restart the land supply system reform and establish a healthy real estate market. The development of the real estate market is closely related to local government revenue, and a healthy real estate market can raise enough land revenue for local governments. However, it can also contribute to the local budgets. It is suggested here that the land supply system reform should be re-initiated to increase the number of urban construction land targets, promote the construction of trading systems for cross-regional construction land transactions, and change the cultivated land protection index from classified protection to total quantity control.
- (iv) Reform the land leasehold system to gradually reduce land leasehold payments and dependence of local budgets on land finance. Land finance can raise revenues for local governments. However, its twisting and negative effects can cause short-term problems for local governments. The land leasehold system can be gradually phased out. The land leasehold revenue will be included in general budget management in the short term, while the system itself should be gradually eliminated in the long run.
- (v) Redivide the rights distribution between central and local governments by increasing the expenditure of central government and reducing the spending pressure of local governments. The sustainability of local fiscal revenue depends on its responsibility for expenditures. The sustainability of local revenue is not the only thing that

the reforms should improve. The local responsibility for expenditure must also be reduced. The key point for reform is focused on areas that have not yet enacted tax sharing systems by uplifting office authority and expenditure responsibility. More local affairs, such as pensions, medical care, and cross-regional environmental protection, should be handled by central governments.

- (vi) Promote the construction of public finance of local governments and change toward service-oriented governments. The existing local finance is too biased in favor of production and social spending is insufficient, which increases the payment pressure of pension, health care, and education. Local finance will need to increase spending on people's welfare by changing the development-based finance to service-based finance. The local government should proactively respond to the service needs of residents. More weight should be placed by the central government on local public service in assessment indicators for local officials.
- (vii) Actively innovate more channels of financing and solve the problem of infrastructure financing by introducing social funds. First, cash flow of regular payments for infrastructure should be classified, and the items paid using future charges can be constructed using market financing. For the profitable projects, the cooperation between governments and social capitals can be conducted in an innovative way. For example, the public-private partnership model can be used to solve the financing problems of infrastructure. It has multiple channels and methods.
- (viii) Improve the fiscal transfer system, since certain negative effects can be caused when constructing local infrastructure. The focus of the reform should be changed from pre-allocation to post-assessment. Third-party assessment institutions or systems should be constructed for a comprehensive evaluation of the effect of fiscal transfer. A relevant reward and punishment system should also be established.
- (ix) Construct an early warning mechanism to comprehensively assess the possibility of a decline in local financing. Considering that the growth rate of the PRC's economy may decline further in the future, the growth of local government revenue can be affected in many ways, and an early warning mechanism should be constructed and appropriate solutions should also be considered.

NOTES

1. All fiscal data used in this chapter came from the *China Fiscal Yearbook* and City and County Fiscal Statistics of the corresponding year. Otherwise, data were taken from the *China City Statistical Yearbook*. The data period covered in this chapter is from 1998 to 2007. Additionally, as the statistical coverage (scope) for fiscal revenue and expenditure was changed in 2007, the end date for some data samples for the regression estimation was set as 2006. (The statistical coverage (scope) of fiscal revenue and expenditure was changed in 2007. Spending on infrastructure was no longer disclosed. Rather, only transportation expenses were listed, which rendered the data before and after 2007 incomparable.)
2. One objective of tax sharing is to balance regional fiscal resources and so support the development of less developed areas and reconstruction of old industrial bases through fiscal transfer. Refer to 'The decision of the State Council on the implementation of the tax sharing for fiscal management' released by the State Council (1993) No. 85.
3. In 2009, the lump-sum transfers were renamed 'general fiscal transfers', and the earlier general fiscal transfers were renamed 'equalization fiscal transfers'. The meaning of these concepts remains unchanged.
4. The fiscal transfer coefficient depends on the fiscal surplus of that year. Usually, the coefficients of eastern, middle, and western areas are different, but coefficients for all regions are positive.

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7. Key issues of central and local government finance in the People's Republic of China

Qichun Zhang and Shufang Li

7.1 INTRODUCTION

7.1.1 Background of Fiscal Relations between the Central Government and Local Governments

Tax-sharing reform in 1994 established a standardized framework of fiscal decentralization. Since its founding, the People's Republic of China (PRC) has undergone continuous financial reform, moving from a fiscal system of highly centralized control over revenue and expenditure to a system of unified leadership and level-by-level administration, then to a system that divides revenue and expenditure between the central and local governments according to rules decided every five years, and finally to the current tax-sharing system. Tax-sharing reform has resulted in increases of the ratio of tax revenue to gross domestic product (GDP) and the ratio of central financial income to overall fiscal income. It has also strengthened central government's ability to exercise macro-control. Therefore, the tax-sharing reform set up a preliminary system of standardized fiscal decentralization.

However, some fundamental problems in the tax-sharing system emerged with the change of the PRC's economy. After the reform, the unbalanced division of government power and unstandardized expenditure liabilities led to financial centralization and the decentralization of administrative power. In 2014, central government revenue accounted for 45.95 percent of total general financial revenue while central government spending was 14.87 percent of national overall public spending. Many local governments, however, were financially strapped. By 2004, only 58.76 percent of local governments had managed to become financially independent. Local government spending relied heavily on transfer payments, government debt, and land finance. In 2014, transfer payments from central

government constituted 40.47 percent of local public budget revenue and government debt accounted for 7.68 percent of local expenditure.

7.1.2 Major Recent Reforms

As the unbalanced division of government power and unstandardized expenditure liability caused the co-existence of both an excess and lack of governmental responsibility, the PRC government is committed to making certain adjustments. The imbalance in the division of government power and the unclear division of expenditure liabilities are mainly reflected in the following three aspects. First, local government assumes responsibilities that should be held by central government, such as for national security, frontier defense roads, the maintenance of international boundary rivers, inter-basin river management, the prevention and treatment of interregional pollution, and water and ocean usage management. The expenditure of 'basic public education service' is divided among prefectures, provincial governments, and central governments in terms of staff pay and public spending, which goes against the general finance-sharing principle that administrative power accords with expenditure liability. The pure public goods 'public health service' and mixed public goods 'public medical care' can hardly be distinguished, with both being mainly undertaken by local government; municipal governments bear responsibility for 'social insurance', which should be under central government's control, resulting in an overall low level of social insurance; local government has partial judicial powers, which easily causes distortions of justice. Second, instead of delegating administrative power – for example, for managing preschools, water and toilet renovation programs in villages, and village image projects – to lower levels, the central government interferes unconditionally (Lou, 2015). Third, central government and local governments always deviate from their established policies when governing. To solve these issues, the PRC government has issued a series of policies. The 2012 Twelfth Five-Year Plan of the national basic public service system clearly divides expenditure responsibilities between central and provincial governments regarding basic public services, but it hardly explains the expenditure liability of local government below the province level. However, it is expected that administrative power and expenditure liability will be further subdivided for all government levels below the province level. The Decision of the Central Committee of the Communist Party of China (CCCPC) on Some Major Issues Concerning Comprehensively Deepening the Reform, made at the Third Plenary Session of the Eighteenth CCCPC, states a system that balances administrative power and expenditure liability must be established and that appropriate centralization of power and

expenditure liability is needed. The decision also implies adjustment of the right of jurisdiction for local government and a proper separation of the fund management system and administration division (Jia, 2014). The Decision of the CCCPC on Major Issues Pertaining to Comprehensively Promoting the Rule of Law, adopted by the fourth plenary session of the Eighteenth CCCPC, states that the standardization and legalization of governance must be achieved, and the legal system of administrative power at all levels of government, especially between central and local offices, must be improved. These suggestions by the CCCPC demonstrate that the separation of power and expenditure liability between central and local governments is in the process of being standardized and legalized.

Regarding tax reform, importance has been attached to individual income tax, environment protection tax, resource tax, building tax, and business tax. In 2002, the PRC started income tax distribution reform, which involved moving from a tax system where central and local government distribute income tax by administrative subordination to one where central and local government distribute income tax using fixed percentages (central government at 60 percent, local government at 40 percent). The Individual Income Tax Law of the People's Republic of China, revised in 2011, merely made some adjustments to the tax rate and tax threshold. Therefore, individual income tax reform remains the key issue of the current tax reform. As early as 2007, 'a comprehensive scheme on energy conservation and emissions reduction' issued by the State Council explicitly stated that an environment tax must be levied. The Third Plenary Session of the Eighteenth CCCPC further strengthened tax-for-fees for environmental reform. A draft environment protection tax law was published in 2015. Environment tax, as an important policy instrument of environmental management, can have a positive effect on curbing pollution and can also be a main source of income for local government. In a new round of resource tax reform, Xinjiang was the first local authority to introduce resource tax on petrol and gas, which was subsequently implemented across the PRC in 2011. The 2013 Decision of the CCCPC on Some Major Issues Concerning Comprehensively Deepening the Reform again urged resource tax reform. In 2015, provisional regulations on resource tax became one of the legislative programs requiring urgent implementation for deepening overall reform in the PRC and firmly establishing the rule of law. The resource tax reform will increase the income of local governments. In 2011, Shanghai and Chongqing began pilot reforms of levying building tax on residential housing. Although enlarging the scope of the pilot program on individual housing tax was proposed many times, it made little substantial progress, with building tax being merely listed in the legislation working plan drawn up by the Standing Committee

of the National People's Congress. Since implementing business tax, more and more areas and industries have adopted it. But business tax will disappear altogether and is to be replaced by a value added tax (VAT), which will result in a structural tax reduction and the disappearance of the main local tax category – business tax.

As transfer payment systems become increasingly standardized, transfer payments from central government will provide much stronger financial support for local governments' income. Owing to the problems left over from the reform of the tax-sharing system, local offices have become over-dependent on central transfer payments. Many other problems have emerged in recent years, such as too many rules for special transfer payments, too much pressure from supporting funds, and payment delays. To further regulate and perfect transfer payments, the new budget law clearly states that general transfer payment has a dominant role in transfer payments, that a sound assessment and quitting mechanism must be established for special transfer payment, and that matching requirements must be abolished. All these measures contribute to restructuring the transfer payment system and reducing the phenomenon of 'running to the ministries for money', which can help local governments in making a budget plan and provide them with a more stable and predictable financial income (Lou, 2015).

The Ministry of Finance has reformed and regulated the financial management system for local governments below the province level multiple times. The reform of 'the country directly under the provincial government' and 'the villages directly under the country-level government' financial management structure gives country-level government more financial power. Under the financial management structure of 'the country directly under the province', some of the financial powers of the municipal governments are delegated to the country-level government, and provincial financial bureaus can directly contact financial departments in countries and towns.

Such a financial management structure can help provincial financial bureaus play a more effective role in controlling the financial gap in their jurisdictions, so as to help ease fiscal difficulties of country-level government. The 'town directly under country government' system, with towns as independent accounting subjects and with country-level financial departments directly managing and supervising towns' financial revenue and expenditure, plays a significant role in reducing the size of township debts.

The 2014 Budget Law added that local government is allowed to borrow and go into debt. The new law addressed such problems as how to borrow, how to manage, and how to pay back local governments' debt (Ministry of Finance of the People's Republic of China, 2015), and it standardized the management of local government debts.

Moreover, the new budget law laid the legal foundation for nationwide implementation of comprehensive budget management. It regulates the functional orientation, compilation principles, and interrelationship between the following budgets: general public budget, government fund budget, state-owned capital management budget, and social insurance fund budget. It also incorporates land-leasing revenue and stated-owned capital operating revenue in the total revenue of local governments. All these measures provide effective and thorough checks on government fiscal revenue and expenditure, increase local governments' total income, diminish the negative effects of tax-reducing policies (such as VAT revenue in place of business tax) on local governments, and effectively combat corruption (Wang and Wang, 2015).

7.1.3 Current Situation and Problems that Need to Be Addressed

Although the framework of fiscal decentralization in the PRC has been basically established, the system of tax distribution is still to be improved. The 'new normal' of the PRC economy gives rise to unprecedented financial stress on the tax-distribution system. In terms of outlay responsibility, the combination of 'centralization of financial power and decentralization of administrative power', together with a lack of explanation of outlay responsibilities for governments below the province level in the tax-distribution system, put huge financial stresses on local governments, especially the country-level governments. In spite of the fact that the reform of the layout responsibility system has been put on the agenda, no detailed scheme came into being, restricted by the advancement of government administrative system reform. The general plan on deepening fiscal and taxation system proposed the reform of layout responsibility rather than the reform of administrative power and financial power. Therefore, it will be a significant future task to further specify administrative power and expenditure liability of governments at all levels, especially local governments, so that administrative power and financial power are matched for all levels of government. In terms of tax reform, 1994 saw the most significant reform and restructuring of the industrial and commercial tax system. But as reforms in real estate tax, resources tax, environmental tax, and the replacement of VAT for business tax are beginning to take effect, the local taxation system faces major challenges and taxation categories may need to be rethought. Local financial problems have, to a large extent, been resolved, but local governments continue to struggle because of a lack of financial resources. In addition, turnover tax still has a very important role, with the ratio between direct tax and turnover tax at 70:30, and with the ratio of tax revenue from all types of enterprises and natural persons

roughly at 90:10 (Jia and Long, 2015). Therefore, there are large differences between the current situation in the PRC and the structural features required in a modern taxation system. Hence, adjusting the proportion of direct and indirect taxation and legalization of the tax system is needed to establish a modern tax system.

Transfer payments play an essential role in maintaining stability in local finance. Although numerous improvements still need to be made, it is becoming more standardized. As the formula for balanced transfer payments has been established, the future reform focus ought to be on the further adjustment and perfection of factors, the selection of weight coefficients, better equalization of general transfer payments, the clearance and merging of special transfer payments, as well as higher efficiency of fund use. Local government debts are a cause of great concern. The general mapping and assessment of local debts was basically completed in 2015. The new budget act standardizes the management of local government debt in accordance with the reform thinking of 'opening the front door, blocking back doors and building walls', but it remains necessary to find a better mechanism for local government to borrow money and manage debt. To achieve a system of comprehensive budget management, the government fund budget, the state-owned capital operating budget, and the social insurance fund budget have been included in the budget management. However, local government budgets, in practice, are far from comprehensive and transparent, with a lack of standardization in financial revenue and expenditure (Chen, 2015). Therefore, to put in place a comprehensive budget system, greater efforts should be made to clearly define the management scope of various non-tax revenues and strictly differentiate diverse programs and funds by their nature by categorizing them into the following four kinds of budget: public budget, government fund budget, state-owned capital operating budget, and social insurance fund budget.

The PRC's imperfect tax-distribution system, in conjunction with the new normal of the PRC economy, results in instability and low sustainability of both financial income growth and local government financing mechanisms, which have been made worse by the replacement of business tax by VAT. It has become extremely urgent, therefore, to explore new ways of capital growth and new capital-raising models, and come up with a mechanism for maintaining the stability and sustainability of local government finance.

7.2 EVALUATION OF THE INNOVATIVE INITIATIVES TO INCREASE LOCAL GOVERNMENT REVENUE

7.2.1 Local Governments' Financial Distress under the Tax-Sharing Fiscal System

The tax-sharing fiscal management system reform of 1994 primarily established a framework for financial distribution between central and local governments. However, the leftover problems of the tax-sharing fiscal management system, as well as the impact of replacing business tax with VAT, gave rise to financial difficulties for local governments on a large scale. Therefore, the PRC's tax system needs restructuring.

On the one hand, the incomplete tax-sharing system reform of 1994 led to financial difficulties for local governments. First, the laws and regulations meant to clearly divide administrative power and financial power between central and local governments are inadequate. The existing rules are rather vague and too general. Second, central and local governments share too many categories of taxes, which goes against the original intention of the tax-sharing system. Moreover, reform of transfer payments has involved some irrational measures. Lastly, the financial system below the province level remains in a chaotic state (Zhang and Li, 2014). These factors have resulted in the centralization of financial power and the decentralization of administrative power, as well as severe financial difficulties for local governments and particularly grassroots local government bodies.

On the other hand, local governments are strongly affected by the replacement of business tax by VAT. This brought about the disappearance of a main local tax, as business tax was the biggest tax revenue income of local governments. To diminish the impact on local governments, they are entitled to share VAT revenues with the central government by collecting 25 percent of VAT income. Although this method temporarily solved the problems caused by the revenue losses suffered by local governments, it also has drawbacks. The replacement of business tax by VAT may result in competition for tax resources and greater investment by local governments (Jia and Liang, 2014).

7.2.2 Innovative Initiatives Taken by the Central Government to Increase the Fiscal Revenue of Local Governments

All local governments attach great importance to economic growth, as it increases fiscal revenue. The growth of local government revenue goes hand in hand with local economic development. On the one hand, economic

growth enlarges the tax base, thus increasing tax revenue. On the other hand, economic prosperity can expand demand for land, which increases land prices and thus land transfer income. Therefore, local governments at all levels regard local economic growth and GDP growth as indicators to evaluate their governing capacity.

Apart from developing the regional economy, the PRC government and academia consider tax reform to be an important measure to increase local government revenue. The PRC government is committed to establishing a local taxation system through reforming and perfecting the systems of environmental tax, VAT, and consumption tax. Six taxation laws have been included in urgent legislative projects: 2015 Legislative Work Plan of the State Council, Regulations on Environmental Protection Tax, Regulations on Tax Collection and Management (Amendment), Provisional Regulations on Value added Tax (Amendment), Provisional Regulations on Consumption Tax (Amendment), and Regulations on Resources Tax (Amendment). Although regulations on real estate tax are not in the 2015 Legislative Work Plan of the State Council, they have been included in the 2015 legislative work plan of the committee of the National People's Congress and preparatory legislative project (Xinhua News Agency, 2013).

To increase the proportion of VAT that local governments are allowed to collect is not a credible plan for solving their financial difficulties. Before the implementation of VAT, central and local government shared VAT revenue at the ratio of 75:25. After the implementation, some scholars suggested that the most direct way to make up for local financial losses would be to raise the proportion of VAT for local governments. Although there was no consensus among scholars on the ideal VAT-sharing proportion, those who advocate sharing VAT revenue hold that a ratio of about 50:50 comes close to compensating the financial losses of local government. But such an increase would also result in fiercer competition for tax revenue. Moreover, that too many taxes are shared by central and local governments goes against the principle of a tax-sharing fiscal system, so it should be avoided as much as possible.

The most popular suggestion for solving the financial difficulties of local governments is to define consumption tax as a tax shared by central and local government to compensate for local financial losses caused by the replacement of business tax with VAT. According to the principles of tax distribution, it is preferable to classify a tax attached to the place of residence as a local tax, such as sales tax and consumption tax. At present, consumption tax is collected by central government, which contradicts this principle. Transforming consumption tax into a sharing tax is not only reasonable, but would also increase local government revenue. Consumption

tax is imposed in different links of a transaction. Consumption tax collected in the production and wholesale link is a capital levy. Therefore, distributing consumption tax over different links increases local financial revenue without stimulating competition for tax revenue. If we move the links forward to the retail stage and make consumption tax (a central tax) a local tax, we can largely offset the shortfall in local tax revenue brought about by replacing business tax with VAT (Gao, 2014).

Another feasible option would be to make individual income tax a major tax of the local tax system. At present, central government and local government share the revenue at a ratio of 60:40. Corporate income tax is a kind of capital tax. Local governments can easily attract corporations to come to the area by changing the investment environment and conditions for corporations. Therefore, if only local governments were to collect corporate income tax, it would result in tax competition among them. However, as individual income tax is a low-liquidity labor levy, it would not give rise to fierce tax competition if collected by local governments only (Zhu, 2014). In 2014, personal income revenue collected by central government was 1.5 times higher than that collected by local governments. If personal income tax is collected exclusively by local government, with the improvement of the tax system it will become one of the most important sources of revenue for local governments.

At present, it is impossible for real estate tax to become a main local tax. But in the long run, it is suitable for cultivation as a main local tax. Although real estate belongs to the local tax system, individual housing, in 2011, did not constitute a real estate tax base. In January 2011, Shanghai and Chongqing started pilot programs of imposing tax on individual housing. Chongqing aimed at high-end apartments and villas, whereas Shanghai put emphasis on new housing with floor area per capita as the threshold. But the proportion of real estate tax revenue in total revenue did not change much – in 2013, for Shanghai it had risen from 2.3 percent to 2.45 percent, and for Chongqing from 2.25 percent to 2.82 percent. Moreover, real estate tax reform may also affect the people who benefit from the existing tax system. Therefore, real estate tax cannot be a main local tax in the short term, but in the long term it could be cultivated as such.

For resource tax, the change from a volume-based tax mechanism to a price-based mechanism will increase local fiscal revenue, but it is only suitable as a main taxation for resource-rich provinces. Although, at present, resource tax is a sharing tax, all kinds of resource tax, except offshore petrol tax, are local taxes. The 2011 Revised Provisional Regulations of the People's Republic of China on Resource Tax specifies that oil and gas resources should be taxed according to price, which tends to improve the

efficiency of resource use and reduce the waste of resources, as well as increase local government revenue. The proportion of resource tax revenue in total revenue increased from 1.28 percent in 2010 to 1.76 percent in 2014. As resource tax revenue in total local revenue remains low, it is difficult for it to become the main local tax. Unlike crude oil, natural gas and other resources are taxed according to quantity. With the improvement brought about by resource tax reform, resource taxes will gradually become a significant local financial revenue. For resource-rich provinces in the central and western regions, resource tax revenue is a significant revenue source. For example, resource tax revenue in Xinjiang accounted for 8.7 percent of total revenue in 2013 (National Bureau of Statistics, 2015), up from 7.8 percent in 2010 (National Bureau of Statistics, 2012), and in Heilongjiang it was 8.3 percent in 2013, down from 8.7 percent in 2010. Such resource-rich provinces can cultivate resource tax as a main local tax.

Environmental protection tax placed under local government's administration can increase local financial resources. But because of its small scale, it cannot become a main local tax in the short term. 'Regulations of People's Republic of China on Environmental Protection Tax' (Exposure Draft) establish the legal basis for imposing environmental protection taxes, but say nothing about the attribution (State Council of the People's Republic of China, 2015). Environmental protection tax is, in fact, transforming administrative fees into taxes. The pollution tax is levied by local governments that mainly bear the responsibility for environmental protection. According to the principle that power and authority must match, it is reasonable for local governments to take charge of environmental protection tax. Although 'fee-to-tax' will not enlarge local governments' tax income, with the standardization of environmental tax and the expansion of the tax base, it may become a significant source of revenue for local government. However, it is unlikely to become a main local tax due to its small scale. Resource tax levied on the basis of price rather than volume can increase local fiscal revenue, but it is only suitable as a main local tax for resource-rich provinces.

7.3 INNOVATIVE FINANCING MODELS OF LOCAL GOVERNMENT

With the gradual emergence of the disadvantages and risks of traditional financing modes, local governments have been paying more attention to innovative financing models. Financial difficulties have forced local governments to rely on such financing modes as land-leasing and government-invested companies. But the features of these financing channels are

low stability, high risk, and low sustainability. As a result, in addition to resorting to innovative revenue channels, the PRC's local governments are taking creative measures to be able to provide public services, for instance, through issuing local government bonds, establishing public–private partnerships (PPP), and transfer payments from the central government.

7.3.1 Bonds Issued by Local Government

Local government bond issuing has made steady progress and the prospects for its further development are promising. To stimulate the economy, the central government allowed local governments to issue bonds with a yearly quota of CNY200 billion in 2009, 2010, and 2011. In 2011, Shanghai, Zhejiang province, Shenzhen province, and Guangdong province, were the first pilot areas to issue local government bonds (Ministry of Finance of the People's Republic of China, 2011). In 2014, 10 pilot provinces and cities managed to pay back the local government bonds themselves (Ministry of Finance of the People's Republic of China, 2014a). From 2009 until 2013, local government bonds accounted for 6.1 percent, 4.9 percent, 3.8 percent, 4.1 percent, and 5.1 percent of local government revenue, respectively, showing a V-shaped development trend (see Table 7.1). The reason is that the central government had encouraged local governments to establish 'borrowing platforms' to expand their investment financing, resulting in local governments borrowing as much as they could, which from 2009 to 2011 caused a local government credit crisis, and hence poor performances of local government bonds in the trading market (Su, 2011). But in 2011, the central government started pilot implementation of local-government-issued bonds, thus gradually expanding the financial autonomy of local governments and enlarging the size of the local government bond market.

Table 7.1 Local government bonds (2009–2013) (CNY billion, ratio [%])

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|
| Local government bond revenue | 2,000 | 2,000 | 2,000 | 2,500 | 3,500 |
| Local government total revenue | 32,602.59 | 40,613.04 | 52,547.11 | 61,078.29 | 69,011.16 |
| Ratio | 6.1 | 4.9 | 3.8 | 4.1 | 5.1 |

Note: CNY = yuan.

Source: China Statistical Yearbook (2010–2014).

The Budget Law of 2014 specifies the rules under which local governments can issue bonds. In 2015, the central government launched a program of debt-to-bond and initiated a special bond. All these measures have played an essential role in easing the payback pressure on local governments, regulating local government borrowing, as well as controlling and resolving the debt risk of local governments. At the same time, the central government provides solid support for local governments to develop the innovative financing channel of issuing local government bonds.

7.3.2 Pilot Program of Public–Private Partnership Project

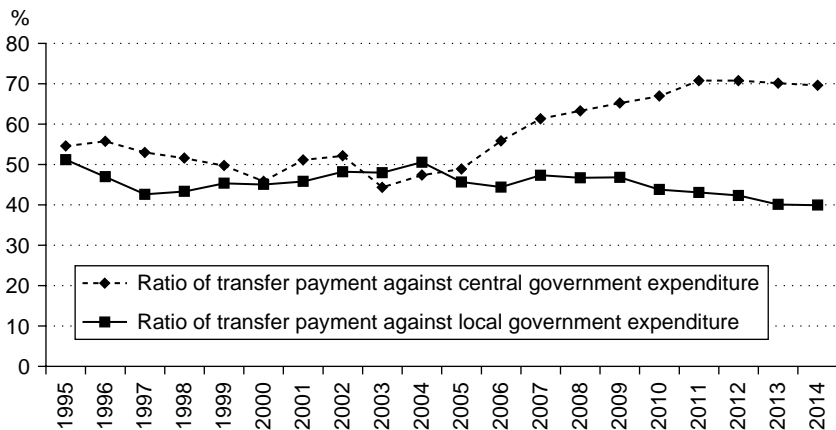
PPP financing models have become a popular financing option for local governments. In 2015, the central government issued 19 PPP-related policies, which will regulate PPP development and facilitate various investment and financing activities. The National Development and Reform Commission has a special PPP project column on its official website, publishing a total of 1,041 projects to be promoted, with the total amount invested reaching CNY1.97 trillion. Encouraged by a series of policies of the central government, local government has been active in introducing social capital and a number of PPP programs have emerged (China Financial News, 2015).

PPP financing models can make up for the shortcomings of traditional financing methods and ease fiscal and financial stress (Government Procurement News Network, 2015). But the uncertainty in cooperative relations with government remains a factor restricting the development of PPP patterns. The PPP financing mode in the PRC has experienced three stages of development. In the first stage, PPP was mainly in a build–operate–transfer (BOT) mode. At this stage, the PPP mode was in its introduction phase, mainly led by the State Planning Commission and with the foreign investment fund as its main financial source for project development. Some BOT pilot programs are the Guangxi Laibin Power Plant built in 1995, the sixth Waterworks of Chengdu, and Changsha Power Plant. Although the above pilot programs did not work well, they had far-reaching effects, and provided a good foundation for the future development of the PPP mode in the PRC. In the second stage, PPP mainly took the transfer–operate–transfer (TOT) mode and BOT mode. At this stage, project participants and the factors affecting project development were diversified. The PPP project gradually brought in social capital as the authorities in various industries and local governments became increasingly involved. Examples of projects in this stage were the Beijing Metro Line 4 and the National Stadium. The PPP mode in the third stage is the standardization stage. Due to the uncertainty of cooperative relations with

government, social capital has concerns over the development of the PPP mode. In 2014, the treasury department began to design and improve PPP pilot programs, perfect the legislation mechanism, and set up a risk-sharing system and an appropriate withdrawal mechanism, aimed at balancing the interests of public departments and private companies so they can engage in fair competition for new projects.

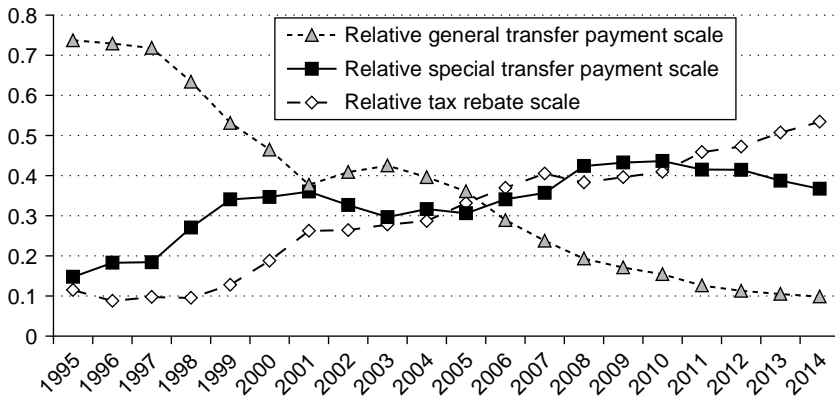
7.3.3 Transfer Payments from Central Government

The PRC's massive transfer payment system provides the financial basis for the equalization of basic public services, which is also indicative of local governments' over-reliance on transfer payments. The amount of transfer payments increased from CNY253.4 billion in 1995 to CNY5.17 trillion in 2014 and has continued to increase along with the growth of per capita GDP since 2014. In 2014, about 70 percent of total central government expenditure was spent as transfer payments. This shows that the PRC government is already equipped with an extensive transfer payment system, which provides local governments with a solid financial foundation for equalizing basic public services. However, 40 percent of local government expenditure is from the central government transfer payment (see Figure 7.1). Such a large amount of transfer payments also shows that local governments, over-dependent on transfer payments, face severe financial difficulties.



Source: Ministry of Finance of the People's Republic of China website (<http://yss.mof.gov.cn/>).

Figure 7.1 Relative central government transfer payments, 1995–2014 (%)



Sources: *China Finance Yearbook* (1996–2014); Ministry of Finance of the People's Republic of China website (<http://yss.mof.gov.cn/>).

Figure 7.2 Relative transfer payment scale, 1995–2014 (%)

Further optimization of the structure of transfer payments has reduced the uncertainty about local government funding sources, but the general transfer payments and the internal structure of special transfer payments needs to be further optimized. The early stage of tax-sharing reform saw the highest ratio of tax rebates to transfers. In 1995, it reached 74 percent. After this, the share began to decline while general transfer payments and special transfer payments rose. By 2006, the relative size of general transfer payments had reached 37 percent, exceeding the tax rebate for the first time, thus general transfer payment became the largest transitional payment program. However, with the expansion of special transfer payments, in 2010 they exceeded general transfer payments. Yet in 2014, general transfer payments took the largest share (see Figure 7.2). The 2014 Budget Act specifies that the aim of transfer payment reform is making the general transfer payment the major transfer payment and establishing and improving the withdrawal mechanism and regular assessment mechanism for special transfer payments (Ministry of Finance of the People's Republic of China, 2014b). It is expected that the proportion of general transfer payments will continue to increase year by year, whereas the proportion of special transfer payments will decline. This will provide local governments with more stable financial resources, promoting equalization of basic public services and coordination of regional development. At present, general transfer payments in the PRC are made up of 28 projects. However, only balance transfer payments are subject to a transfer payment formula. To further improve the internal structure of general transfer

payments and special transfer payments therefore remains an important task.

7.4 MECHANISMS TO MONITOR AND ENSURE FISCAL STABILITY AND SUSTAINABILITY AT LOCAL GOVERNMENT LEVEL

7.4.1 Major Factors Influencing Fiscal Stability and Sustainability

With the ‘new normal’ of the PRC’s economic development, the growth of local governments’ fiscal revenues has slowed. In 2014, the growth of revenue from main taxes slowed, the real estate market made a series of policy shifts, and more sectors began to implement the pilot program of replacing the business tax with a VAT. Affected by these factors, national general fiscal revenue in 2014 increased by 8.6 percent, which was 4.3 percent lower than in 2012 and 1.6 percent lower than in 2013. In 2014, local governments’ fiscal revenues rose by 9.9 percent – the first time growth of local governments’ fiscal revenues had dropped to a single-digit level since 2003. It will be a new normal for fiscal revenue growth to stay at the single-digit level, rather than grow rapidly as in the past (Li, 2015).

Extensive growth will not ensure sustainable rapid growth of local governments’ fiscal revenues. Since the 1994 tax allocation reform, many local governments have maintained rapid economic development at a cost to the environment. But extensive growth, which sacrifices the environment to develop the economy and increase fiscal revenue, is no longer sustainable; the growth mode has been changing from extensive growth to intensive growth.

That total disposable local revenue and outlay responsibility do not match led to unsustainable fiscal revenues of local governments. Statistics show that from 2005 to 2014, total fiscal expenditure of local governments grew by 5.1 times, and local tax revenues only by 4.6 times. In times of financial difficulties, fiscal revenue cannot be sustained at high levels, resulting in low levels of fiscal expenditure and a negative impact on the economy. Mechanisms to manage and monitor local governments’ fiscal revenues are backward and decisions are mainly made by superiors through administrative orders. It is harmful for other supervision subjects to monitor financial management and it often leads to a waste of financial resources.

Unsteady fiscal revenues of local government have resulted from an irrational revenue structure. First, the tax structure is irrational. Except business tax, local taxes involve high cost, provide unsteady income,

have dispersed tax sources, and collection and management is difficult. Replacing the business tax with a VAT caused many problems for the PRC's local governments, including a lack of main taxes and instable tax sources (Guo, 2013). Second, the transfer payment structure is irrational. As for general transfer payments, it has too many categories and multiple targets, and its equalization function is weakened. As for special transfer payments, it involves too many fields and it is not distributed based on objective formula-based calculations (State Council of the People's Republic of China, 2014a).

Unsustainable government debt aggravated the instability of local government finance. By the end of June 2013, local government debt which needs to be paid back by local governments amounted to CNY10.9 trillion, debts for which local governments have guaranty responsibility amounted to CNY2.7 trillion, and debts for which local governments bear some responsibility amounted to CNY4.4 trillion. Therefore, the total local governmental debts amounted to CNY17.9 trillion (National Audit Office of the People's Republic of China, 2013). According to the latest assessment report of the PRC economy issued by the International Monetary Fund, local government debt in the PRC will account for 45 percent of GDP at the end of 2015 (Xinhua News Agency, 2013). Debt is a double-edged sword – managed and used well, it produces favorable results; if not, local governments will be heavily indebted. Or worse, a financial crisis and a fiscal crisis would result and the sustainable development of local finance would be hindered.

7.4.2 Mechanisms to Monitor and Ensure Fiscal Stability and Sustainability

Since the 'new normal' of the economy and the intensive development mode are irreversible, the best way to ensure stable and sustainable government finances is to maintain the stability of the general public budget and the government fund budget. Generally speaking, PRC local government finance has been fairly sustainable and stable. But the steadiness of local government finance was affected by the remaining problems of the fiscal administration system of tax allocation and the impact of replacing business tax with a VAT. Moreover, the imperfections of the government fund budget revealed the unsteadiness of local government finance.

Establishing a mechanism to standardize outlay responsibilities at all government levels is the basis for maintaining the stability and sustainability of government finance. Poorly defined outlay responsibilities between central and local governments resulted in uncertainty surrounding the fiscal expenditure of local governments. Therefore, the basis for

maintaining the stability and sustainability of government finance is to standardize and legalize the outlay responsibilities at all government levels.

To maintain the stability of local government finance, there are three important paths – establishing a long-term development mechanism of the general public budget, drawing up an annexed budget plan for governmental debts, and improving the performance assessment mechanism of budget and expenditure. The major sources of local governments' fiscal revenues are taxes, transfer payment revenues, and debt revenues. *Regarding tax capability*, tax revenues are total disposable local revenues for general budgetary expenditures and the financial safeguard for local governments to provide necessary basic public services for people. Therefore, the core function of tax revenues is to provide stability to local government finance. To maintain the stability of local government finance despite the remaining problems of the fiscal administration system of tax allocation and the impact of replacing the business tax with a VAT, improving the taxation system and setting up a stable growth mechanism of tax revenues should be a priority. *Regarding transfer payment capability*, an objective formula-based calculation and a better management of general transfer payment is required to fully allow equalization of general transfer payments and to set norms for special transfer payment management. *Regarding debt revenues*, there are three methods for moving government debts onto the budget – according to the public budget pattern, the annexed budget pattern, and the double-entry budget pattern. In the PRC, local government debts, including revenues of local government bonds issued by the Ministry of Finance as an agent, bond-lending revenues, and surplus funds of bond-lending revenues of the last year are usually counted as parts of the general public budget. More specifically, they are counted as parts of total annual revenue on the income and expenditure sheet of the public financial budget. However, the debt budgeting method is too simple to reveal the scale, structure, and usages of local government debts. According to the new Budget Law, it is not realistic to move government debts onto the double-entry budget in the short term. Therefore, establishing a debt-annexed budget would be a plausible way to maintain the stability and sustainability of the debt revenues of local governments. *Regarding budgetary expenditure*, four approaches can be adopted to effectively enhance the steadiness of local government finances. First, the expenditure structure should be optimized. Second, the performance assessment mechanism of the budgetary fund should be improved. Third, the usage efficiency of budgetary funds should be increased, especially of budgetary funds for major infrastructure programs. And fourth, the multiplier effect of public expenditure should be maximized.

Establishing a mechanism to balance and monitor the governmental

fund budget can also effectively maintain the steadiness and sustainability of local government finance. According to the new Budget Law, the governmental fund budget is to be specially used for specific public affairs and will be counted in the fund category according to the income and expenditure needs of fund programs. Moreover, local governments are to adopt the principle that expenditure is determined by revenues. The most important task to improve the governmental fund budget system is to monitor the budget and maintain budget balance. Therefore, establishing a mechanism to balance and monitor the governmental fund budget will be an important approach to maintaining the steadiness and sustainability of local government finances.

7.5 INFLUENCE OF INNOVATIVE APPROACHES OF THE CENTRAL GOVERNMENT ON INFRASTRUCTURE INVESTMENT SPENDING CAPABILITY OF LOCAL GOVERNMENTS

The PRC government has adopted a series of innovative approaches to increase fiscal revenue and expand financing channels. By improving the local taxation system step by step, a normal growth mechanism for tax revenue is to be set up to guarantee general public budgetary spending capability. The financing and investment channels of local governments are to be kept expanding through innovative financing measures, including the issuing of local government bonds, operating a PPP model, and improving the transfer payment mechanism. These measures, by enhancing the stability and sustainability of local governments, could safeguard local governments financially to allow them to improve infrastructure development, basic public services, and ecological construction.

7.5.1 Influence of Tax Allocation Reform

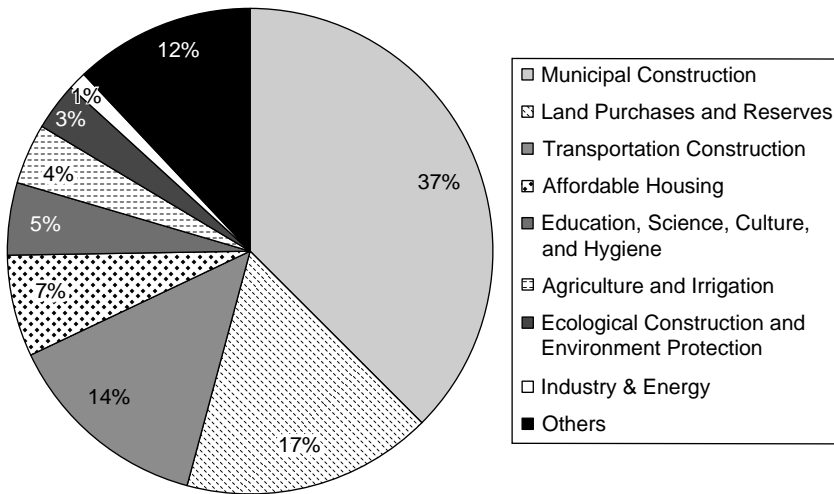
Growth of tax revenue laid the financial foundation for local governments to offer basic public services. The equalization of basic public services by 2020 is an arduous task. Under the imperfect tax allocation system, the PRC's economic development entered a new normal and economic growth slowed. To guarantee the consistent and sound development of the economy, it is necessary to operate structural tax-reducing policies, including replacing business tax with VAT. The economic downturn and replacing business tax with VAT will definitely reduce the fiscal revenues of PRC local governments and disclose more traits of unsteady and unsustainable fiscal revenues of local governments. Thus, basic public services provided

by local governments will be adversely affected. The PRC government is currently promoting structural tax reduction reform, the major goals of which are to reduce turnover tax, increase property tax, and maintain income tax (Cha and Liang, 2015). Although the reform of replacing business taxes with VAT decreases the fiscal revenues of local governments, reform of income tax, consumption tax, resource tax, and real estate tax could establish a taxation growth mechanism and ensure the growth and improvement of local government fiscal revenues so that a greater part of fiscal revenues could be used for ecological construction and expenses like education, hygiene, and social insurance. However, it is worth noting that the essence of environment protection tax is fee-to-tax. Therefore, the environment protection tax will not increase the tax base of local governments in the short term. Once managed by the taxation system, it will be managed according to the overall plan rather than being specially used for protection of the environment. Governments should take this into account when devising expenditure policies because it may reduce fiscal revenues that can be used for environmental protection.

7.5.2 Influence of Innovative Financing Channels

Innovative financing channels will lead to the upgrading of local government infrastructure construction and public service capability.

First, issuing local bonds profoundly upgraded local government's investment capability for infrastructure construction. Statistics published by the National Audit Office of the People's Republic of China showed how local governments' debt funds were used in June 2013. The debt funds were mainly used for expenditure on municipal construction, land purchases and reserves, and transportation construction, which together accounted for 68 percent of debt funds. Spending on affordable housing, education, science, culture and hygiene, ecological construction, and environmental protection accounted for a further 15 percent (see Figure 7.3). Although local governments could raise funds for infrastructure construction and basic public serving programs through Local Government Financing Platforms, the risks related to raising money through Local Government Financing Platforms are extremely high. The new Budget Law has granted local governments the right to issue bonds under specific circumstances, which will make a big difference in local governments' financing approaches to infrastructure construction. The new Budget Law sets clear requirements for the budgets of provinces, autonomous regions, and municipalities approved by the State Council. According to these requirements, funds necessary for construction investment can be raised by issuing local government bonds and the amounts will have to be within the limits

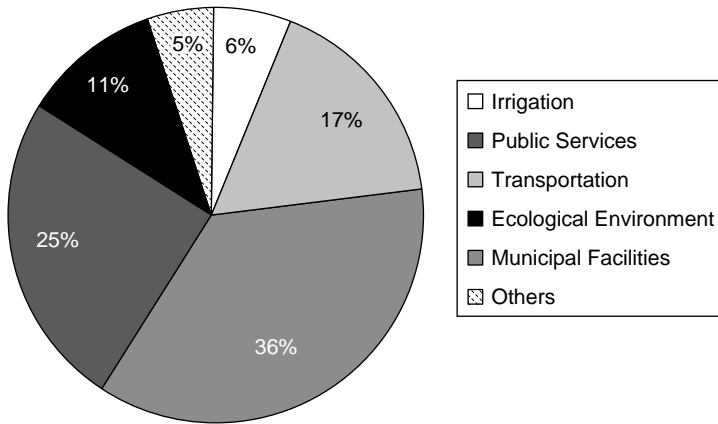


Source: National Audit Office of the People's Republic of China (<http://www.audit.gov.cn/n1992130/n1992150/n1992379/3432165.html>).

Figure 7.3 Investment directions of local government debts due in June 2013 (%)

set by the State Council. As for public welfare projects with or without profits, local governments can raise funds through special bond financing approaches and general bond financing approaches. Therefore, local government bonds are mainly to be used for infrastructure construction. If financing risks are well controlled, local government bonds could offer financial safeguards for local governments' infrastructure construction.

Second, PPP models could provide a stable and sustainable source of income for local governments to undertake municipal construction and provide public services, transportation, and ecological environmental protection. The Third Plenary Session of the Eighteenth CPCCC proposed that private capital be allowed to participate in urban infrastructure investment and operation by franchise and other means. Seven key areas would be opened up in the future: ecological environmental protection, agriculture and irrigation, municipal construction, transportation, energy sources, information and facilities for civil space, and social undertakings (State Council of the People's Republic of China, 2014b). The PPP model binds infrastructure construction to its operation to provide more infrastructures at lower cost and higher quality. Multiform public-private partnerships would be explored in the areas of local governments' infrastructure construction to arouse the enthusiasm of people from all walks



Note: PPP = public-private partnership.

Source: National Development and Reform Commission (http://www.ndrc.gov.cn/gzdt/201608/t20160823_815427.html).

Figure 7.4 National PPP programs released by the National Development and Reform Committee in May 2015 (%)

of life. This would enhance local government's capacity to invest in infrastructure construction. Among the 1,043 PPP promotion programs released by the National Development and Reform Committee, municipal facilities, public services, and transportation projects take the largest shares, accounting for 36.15 percent, 25.41 percent, and 16.87 percent, respectively (see Figure 7.4). Moreover, 10.74 percent of projects are used for ecological environmental construction (see Figure 7.4). It shows that the PPP model is a cooperative model that shares benefits as well as risks and requires full cooperation between local government and business. The model will offer local governments more financing channels for infrastructure construction, improve their public services capabilities, and to some extent enhance their spending capabilities on ecological environmental protection.

Third, central government transfer payments to local governments can improve basic public services capabilities and promote equitable access to them. Since the beginning of the reform and the opening-up policies in 1978, the government has been offering people more and more basic public services, including general public services, basic education, public health and basic medical care, basic scientific research, ecological environment protection, and public welfare infrastructure. Since the 1994 tax allocation

reform, with the expansion of central government transfer payments to local governments, the gap in basic public services capabilities between districts has been expanding, in part because special transfer payments and tax rebates with adverse equalization effect were relatively large before 2006. Since 2006, with the expansion of general transfer payments, equitable access to basic public services across districts has improved further. The new Budget Law requires that general transfer payments are the main part of all transfer payments and that a regular assessment of and withdrawal mechanism for special transfer payments will be established and further developed. The requirements would not only improve the basic public services capabilities of local governments, but also promote equitable access to basic public services. As the transfer payment system becomes more and more transparent and well regulated, central government transfer payments to local governments become a steadier financial source for local governments to develop basic public services.

7.6 POLICY IMPLICATIONS AND SUGGESTIONS

To solve the remaining problems of the fiscal administration system of tax allocation, recover from the shock of the new normal and the reform of replacing the business tax with a VAT, and maintain fiscal stability and sustainability at the local government level, it is advisable to establish a standardized, decentralized fiscal administration system and a modern financial system in conformity with the overall spirit and requirements of the new Budget Law and the spirit of the overall plan for deepening structural tax reforms.

The first suggestion is the standardization and legalization of the outlay responsibility of governments at all levels to reduce the fiscal burden of local governments and safeguard their financial stability from the very beginning. It is suggested that the classification of the outlay responsibility of governments at all levels should be standardized in every basic public service field according to the principle of the Budget Law. It should be made possible to adjust the classification according to economic and social developments and it should also be standardized and defined in the form of laws or regulations. Such arrangements could transfer outlay responsibilities from local governments to central and provincial governments. As the outlay responsibilities of county and township governments are reduced and provincial governments play a more important role in offering public services (Institute of Fiscal Science, Ministry of Finance, 2010), the financial stability of local governments could be ensured.

The second suggestion is to form a long-term fiscal growth mechanism

by establishing a modern taxation system. There are three ways to form a long-term fiscal growth mechanism. The first method is to develop new main taxes. Against the backdrop of replacing the business tax with a VAT, local governments at all levels should establish one to three main taxes based on objective formula-based calculations. These main taxes should have broad tax bases, high tax stability, and growth potential. Moreover, they should be easy to collect by local governments, they should be related to local industrial development, and they should have a visible impact on government revenue and the industrial structure of the region. In the short term, it would be beneficial to promote the reform of consumption tax and individual income tax and make them main taxes of the local taxation system. In the long run, reform of real estate tax, resource tax, and environmental protection tax should be promoted so that these taxes could function as supplementary taxes. The second method is to integrate and optimize current taxes. The current tax for maintaining and building cities, contract tax, tax on the occupancy of cultivated land, and real estate tax could be integrated into the real estate tax to improve the property tax system. The resource tax rate should be increased and the levying scope of resource tax should be expanded so as to improve the resource tax system and increase the utilization rate of resources. The third method is to introduce new taxes. By speeding up the pace of tax-for-fees reform, new categories of tax, such as real estate tax, inheritance tax, gift tax, and social security taxes could be levied to cultivate supplementary local taxes.

The third suggestion is to establish a standardized and predictable transfer payment system by introducing block transfer payments and prioritized transfer payments as a basis for a stable growth mechanism for general transfer payments. To maximize the equalization effect of general transfer payments, our suggestions include: improving the internal structure of general transfer payments; highlighting key objective factors like population density and natural endowments, as well as factors related to social stability and national unity in ethnic minority areas, border areas, and old revolutionary base areas to make the general transfer payment equalization formula more reasonable; incorporating factors related to agriculture, rural areas, and farmers, agricultural population urbanization, and aid for major regions into the transfer payment equalization formula; and establishing a growth mechanism for general transfer payments based on objective formula-based calculations and estimation. Regarding general transfer payments, apart from equilibrium transfer payments, original system subsidies, and transfer payments in ethnic minority areas, most transfer payments have specific purposes, which is the main feature of special transfer payments (Jia et al., 2015). Thus, suggestions for reform of the special transfer payment system include: eliminating some special

funds; merging some special funds; and introducing block transfer payments so that transfer payments can be flexible and in conformity with policies. Local government transfer payment revenues can be made more transparent and stable by establishing a more standardized and predictable transfer payment system.

The fourth suggestion is to promote PPP legislation, encourage participation of social capital, and maximize the multiplier effect of public expenditure. Though developing rapidly, the PPP model is still not widely recognized due to the uncertainty of cooperation with governments. Therefore, relevant laws or policies need to be established in the PRC. By protecting the interests of social capital with legislative guarantees and encouraging social capital to participate in infrastructure construction, the multiplier effect of public expenditure could be magnified.

The final suggestion is to improve the mid-term budget and debt-annexed budget and establish a government planning mechanism for investment and debt financing of major infrastructure construction. The local government planning mechanism for investment and financing of major infrastructure construction is an important factor of local fiscal sustainability. Therefore, regarding project initiation, the project library for major infrastructure construction should be improved. A mid-term budget system for major projects should be established and the mid-term budget and feasibility report should be examined by the Standing Committee of the National People's Congress before implementation (Wuhan People's Congress, 2014). Regarding project financing, it is recommended that the local government debt management system be standardized, a debt-annexed budget and a dynamic risk detection mechanism set up, and a debt risk mechanism to control and dissolve risks of local governments established (Ministry of Finance of the People's Republic of China, 2014c). Regarding project implementation, it is suggested that the diversified supervision system for major investment projects should be strengthened. All the above measures contribute to guaranteeing the financial stability and sustainability of major infrastructure construction of local governments.

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8. The government decentralization program in Indonesia

Anwar Nasution

8.1 INTRODUCTION

Indonesia adopted a wide range of social reforms (*reformasi*) after the fall in February 1998 of President Suharto, who had been in power for 32 years from 1966 to 1998. First, the reform ended the authoritarian military-led political system and replaced it with an expensive democratic multiparty system. The political role of the military ended with the abolishment of its dual function or direct role in politics. Second, the reform ended the dominant role of the government in the economy and started a move toward a market-based economic system and a globalized open economy. A third aspect of the reform was a ‘big bang’ approach to wide-ranging decentralization by giving both greater political power and budgets to local governments. It is a uniform system under which all subnational governments in Indonesia operate. This democratic and autonomous system replaced the previous system of centralized government and development planning. Fourth, the government in 2003–2004 introduced a package of three modern laws on state finance covering state treasury and auditing management and accountability. The new system replaced the antiquated cash-based, single-entry system with a modern double-entry accounting system and uses a single treasury account, transparent management of the public treasury, expenditure and financial control with performance indicators and computerized reporting, and a tightly scheduled auditing system.

Without much preparation, through Law No. 22 of 1999 on local government and Law No. 25 of 1999 on intergovernmental fiscal relationship, the central government abruptly transferred political authorities and financial resources to the third level of the government of Indonesia (Republic of Indonesia, 1999a; 1999b). These two laws decentralized political and economic powers away from the central government after decades of highly centralized and autocratic rule. Bypassing the provincial government, the laws provide districts (*kabupaten*) and municipalities (*kota*) at the

sub-provincial level, with greater involvement in the management of their day-to-day affairs and in the provision of public goods to satisfy regional interests, and it was hoped this would result in better local service delivery. Laws No. 22 of 1999 and No. 32 of 2004 on subnational government give authority to local governments to execute a wide range of responsibilities in areas such as health, education, public works, environment, communication, transport, agriculture, manufacturing industry and trade, capital investment, land, cooperatives, labor force, and infrastructure services (Republic of Indonesia, 1999a; 2004c). Law No. 23 of 2014 on local government and revised Law No. 32 of 2004 itemize the responsibilities of the subnational governments (Republic of Indonesia, 2004c; 2014).

The decentralization of government functions, however, was not followed up with equipping subnational governments with the capacity to produce public goods, increase productivity and employment, and promote economic growth in their jurisdictions. Before the reform, subnational governments had mainly functioned as implementing agencies of national policies and programs. The number of good financial managers, as required by the new laws of public treasury and auditing, was also limited. Because of long periods of centralization, local governments never built the necessary capacity for economic planning or to take initiatives to promote economic growth in their jurisdictions. The rising revenues of local governments do not follow their increasing government functions to promote economic development that could potentially cause fiscal imbalances. On the other hand, the central government lacks the capability to monitor the implementation of the government functions transferred to the subnational level, to monitor subnational governments' spending patterns and efforts.

Unlike in many developing and transitioning countries, the decentralization program in Indonesia did not cause major political or economic problems. Only the former Province of East Timor seceded to establish the Democratic Republic of Timor-Leste in 1989. Supported by the West during the Cold War, Indonesia had absorbed Timor-Leste in 1976 after a coup d'état led by the communist-leaning military in Portugal. The region was not part of the original Indonesia as it had been a colony of Portugal until 1976.

To preserve the unity of the country and end the sporadic rebellious independent movements, Aceh and Papua were granted more autonomous powers in local decision making in four areas: (i) religious affairs, (ii) local customs and institutions, (iii) education, and (iv) local development policy. Law No. 4 of 2001 splits Papua into two provinces: Papua and West Papua. Under the Helsinki Accord, a peace agreement was signed with the Aceh Free Movement (*Gerakan Aceh Merdeka* (GAM)) on 15 August 2015. Law

No. 11 of 2006 establishes the province *Aceh Nangru Darussalam* (NAD) that uses Islamic shariah law.

The rest of this chapter is divided into three parts. Section 8.2 describes the institutional setting; division of responsibilities between the central and local governments, government financing, and administration of public funds and state-owned enterprises. Section 8.3 discusses revenues of local governments and fiscal transfer from the central government to address horizontal imbalances of local government. Section 8.4 summarizes the findings.

8.2 INSTITUTIONAL SETTING

8.2.1 Division of Responsibilities between Levels of Government

Indonesia is a unitary republic and is divided into five layers of government: central, provinces, *kabupaten* (districts) and *kota* (municipalities), *kecamatan* (subdistricts), and *kelurahan/desa* (villages). Prior to the present reform, there had only been very little implementation of effective devolution of authority and financial resources to lower tiers of government. The central government appointed local officials, carried out central planning, and directly provided financing to local governments for the production of public goods and the financing of the general administration. To assure political loyalty to the regime, most of the appointed heads of local governments, from the provinces down to *kelurahan*, were from the military services (mainly the army) and police force. The regional heads were also assigned to eradicate communism from the village level and the rural sector.

The rapid proliferation of local governments since 1998 has increased fragmentation and instability because of local interracial, interethnic, and interreligious conflicts and violence as well as the unstable presidential and multiparty system. The present decentralization and political democracy makes the decision-making process more difficult as the decision makers must accommodate the interests of conflicting political parties and districts. As noted earlier, Aceh and Papua were granted special authority in dealing with local customs, education, religion, and local development policy. In theory, the accountability system should have been improved as it is now basically organized around a triangular relationship between the heads of districts/mayors, the local parliaments, and the community (voters). The heads of the local governments and the members of local parliaments are supposed to be accountable to the community through regular elections. In reality, they are mainly accountable to the parties and

not to the public. A potential candidate has to pay the political parties to get nominated in the local election. The positions of heads of *kabupaten* and *kota* are often handed down to their wives and family members.

During the past authoritarian military regime, the governors, and mayors and heads of districts were appointed by the central government. Most of the heads of local governments, from governors of provinces to village heads, were active or retired military or police officers. As they were appointed by the central government, the appointed officers faced strong political and fiscal incentives to be accountable to superiors at higher levels of government rather than to local communities. The highly centralized fiscal structure further reduced accountability, adversely affected the rates of return on public sector projects, and constrained development of local institutions. At that time, Golkar was the dominant party, supported by both the military and the civil servants. Under the dual function system, the military was directly involved in politics. Under this system, 10 percent of the seats in the central and local parliaments were reserved for the military and police, and party candidates received the rest based on their rank on the party list.

At present, the technical capabilities of the local bureaucracies, Parliament, and political parties at the regional level are insufficient to meet the rising demand for business planning, managing state funds, and implementing development programs. Prior to 1999, provincial government had a small office, the Provincial Development Board or BAPPEDA (*Badan Perencanaan Pembangunan Daerah*), responsible for planning how to use the small provincial budget. Local capability was limited to encouraging economic growth and creating jobs by promoting private investment and exports. Decentralization has created new oligarchs at the local levels. Corruption, collusion, and nepotism are now widespread in local governments. Most of the districts did not have the technical staff to implement the newly obtained powers. Because of these institutional weaknesses, the decentralization program has not been very successful at bringing local policies and local public goods closer to the people.

With the reforms, the number of provinces increased by seven, from 27 in 1980 to 34 in 2013 (see Table 8.1). Timor-Leste seceded from Indonesia to become an independent country in 1999. As it was not part of the Dutch colony, Timor-Leste was not part of the original Republic of Indonesia. Afraid of communist revolution in Portugal, Indonesia absorbed the region in 1975 with the approval of the Western countries. During the same period, the number of districts (*kabupaten*) increased from 246 to 413 and the number of municipalities (*kota*) from 54 to 98. At the same time, the number of subdistricts (*kecamatan*) increased from 3,349 to 9,982 and the number of villages (*desa*) rose from 65,372 to 80,414. The top five

Table 8.1 Units of administrative government in Indonesia, 1980–2013

| Administrative level | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2013 |
|----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Province (<i>provinsi</i>) | 27 | 27 | 27 | 27 | 26 | 33 | 33 | 34 |
| District (<i>kabupaten</i>) | 246 | 246 | 241 | 243 | 268 | 349 | 399 | 413 |
| Municipality (<i>kota</i>) | 54 | 55 | 55 | 62 | 73 | 91 | 98 | 98 |
| Subdistrict (<i>kecamatan</i>) | 3,349 | 3,539 | 3,625 | 3,844 | 4,049 | 5,277 | 6,699 | 9,982 |
| Village (<i>desa</i>) | 65,372 | 67,534 | 67,033 | 65,852 | 69,050 | 69,868 | 77,548 | 80,414 |

Sources: Biro Pusat Statistik (Statistical Bureau), *Sixty Years of Indonesian Independence* (Statistik 60 Tahun Indonesia Merdeka, Statistics to celebrate 60 years of independence of the Republic of Indonesia); *Statistical Yearbook of Indonesia 2014*.

provinces with the highest populations in 2013 were West Java, East Java, Central Java, North Sumatra, and Banten. All the populous provinces, except North Sumatra, are on Java Island. The top five provinces with the largest areas are Papua and West Papua on Papua Island; and North Kalimantan, East Kalimantan, and Central Kalimantan on Kalimantan Island. The capital city of Jakarta is the smallest province in terms of area, and North Kalimantan has the smallest population.

The number of villages grew faster as the requirements to establish independent villages were relaxed in Law No. 32 of 2004 on Village Governance that was later amended by Law No. 6 of 2014. The laws recognize the unit of village based on local culture. Because of this, the number of villages in less populated Aceh (6,474) in 2016 is greater than in the neighboring province of North Sumatra (5,389). The numbers of villages in sparsely populated provinces of West Papua (1,628) and Papua (5,090) are higher than in the densely populated provinces of Banten (1,238) and Bali (634). The province of Kepri (Riau Islands) has the smallest number of villages at 275. Five districts (*kabupaten*) and cities (*kota*) can form a province and five subdistricts (*kecamatan*) can form a district (*kabupaten*). A city or *kota* can be formed by four subdistricts (*kecamatan*).

The proliferation of local governments is part of the strategy to maximize transfer of funds from the central government. As will be discussed further in section 8.2.3 provincial and district governments receive three types of transfers from the central budget: (i) the General Allocation Fund (*Dana Alokasi Umum* (DAU)); (ii) Equalization Grant (*Dana Bagi Hasil* (DBH)); and (iii) the Special Allocation Fund (*Dana Alokasi Khusus* (DAK)). Apart from these funds, there is a fund allocated from the central government budget directly to villages amounting to 10 percent of the total transfer of DAU, DBH, and DAK.

The central government retains five functions that affect the nation and devolved 11 obligatory functions to local governments, districts, and municipalities. At present, the power of central government is limited to six broad areas – finance, foreign affairs, defense, security, religion, and state administration and justice. These functions include international policies and implementation of treaties with foreign countries, citizenship and immigration, judicature, external trade, national monetary and fiscal policy, national planning, macroeconomic national development control, currency, banking and insurance, financial balance fund, state administration and state economic institutional systems, human resources development, natural resources utilization, strategic high technology, conservation, and national standardization.

To pacify sporadic armed secessionist movements in Aceh and Papua, the central government granted these two regions greater autonomy to deal with

local affairs and more revenue sharing in 2000. Aceh was allowed to adopt an Islamic Syariah legal system in parallel to the national one. A Syariah council was established to ensure that the local governor and Parliament are in line with Islamic teachings. Each province in Papua has a Papua Council to give advice to local governors and the House of Representatives. The two provinces also have their own provincial flag and anthem.

In contrast to most of the countries that give autonomy to provincial and state levels of government, Laws No. 22 of 1999 and No. 25 of 1999 of Indonesia give autonomy directly to the regencies and municipalities at the sub-provincial level. The laws give local governments responsibilities and authority to determine the size and structure of budget expenditure. Compared with local governments, provinces have only limited responsibilities. The provincial governments have double roles as autonomous regional governments and as regional representatives of the national government. They are responsible for supervisory functions and are supposed to intervene in matters that require cross-jurisdictional cooperation. As the regional representatives of the central government, the provincial governments are expected to oversee and closely supervise, making decentralization work more effectively.

The present structure of the government administration in Indonesia was designed to unleash centrifugal tendencies and prevent secessionist movements by allowing central government to mediate differences between districts, municipalities, and provinces. During the colonial era, the Dutch deliberately made the provinces weak to make it easier to colonize the country. Strong centralized government policies were continuously adopted to safeguard the unitary state against secessionist movements and rebellions after independence. The provinces have no hierarchical authority over subordinate governments and perform largely coordinating tasks. In the transition period, provinces may undertake tasks that specific districts may not be in a position to perform except in education, health, and infrastructure.

8.2.2 Government Finance

At present, local governments are given significant control over expenditure, which reduces the control exerted by the central government. On the other hand, the power of local governments to collect tax and borrow remains very limited. The central government collects major taxes and can borrow from domestic and international financial markets. To keep inflation low, the central government stopped inflationary financing in 1996 to finance the budget deficit through borrowing directly from Bank Indonesia, the central bank.

Under the administration of President Suharto, nearly all of government revenue from natural resources; tax and nontax, including land and property taxes; foreign aid; and loans were collected and received by the central government. The central government also tightly controlled both the size and structure of budget expenditure of local governments. Only minor taxes were assigned to the local governments. The rates of these taxes were set by the central government within ranges specified in the law. Major taxes were collected by the Directorate General of Taxation at the Ministry of Finance. Until recently, the central government had collected tax on land and buildings. After the reform, the originating provinces and districts received part of the tax revenue generated from natural resources.

Prior to the introduction of Law No. 17 of 2003, only the central government was allowed to borrow from both domestic and foreign financial markets. As soon as it consolidated its power in 1966, the New Order Government of President Suharto ended inflationary financing to finance the budget deficit. Prior to that, the government had financed its budget deficit through printing money and by selling government bonds in the primary market, directly to Bank Indonesia. The end of monetary financing rapidly reduced inflation, from over 650 percent in 1966 to slightly below 10 percent in 1969. This allowed the New Order government to start the first Five Year Plan on 1 April 1969. After that, the strategy for financing the budget deficit was shifted to financing of the central government budget deficit through foreign aid and loans from official sources (official development assistance (ODA)) with long-term maturity and concessionary rates. A consortium of Western creditors, the Inter-Government Group on Indonesia/Consultative Group on Indonesia, was established in 1966 to finance the entire budget deficit of President Suharto's administration for 32 years. Over that long period, both the governments and the parliaments of the donor countries approved their budget allocations to help finance the budget deficits of Indonesia. At that time, Indonesia met the conditionality requirements imposed by its diverse foreign creditors.

The ODA financing of the public debt ended after the fall of President Suharto in May 1998. Since then, Indonesia has issued sovereign bonds floated both in domestic and international markets to finance the budget deficits and has recapitalized its financially ailing banks. Law No. 23 of 1999 on Bank Indonesia continues the policy of prohibiting money printing for financing the budget deficit. At present, local governments neither issue government debt nor use public-private partnership to finance their long-term expenditure, such as for building infrastructure. To solve their short-term liquidity problems, local governments usually borrow from commercial banks, particularly from their own RDBs (*bank pembangunan daerah* (BPD)), while waiting for disbursements of transfers from the

central government. Every province, and sub-provincial government, has a BPD that acts as a cashier for its owners.

During the era of President Suharto, central government re-lent some of its foreign aid, and loans were distributed to subnational governments. In 1988, the central government established a Regional Development Account (RDA) as the main source of domestic loans to finance both local governments and local enterprises. Foreign and domestic loans were used by subnational governments for local investment projects such as village improvement projects, urban drinking water supply projects, and market facilities/small shopping centers. Central government injected sovereign bonds to recapitalize the financially distressed RDBs during the 1997–98 Asian financial crisis.

The authority of the central government under the administration of President Suharto was strengthened as it centralized development planning and distributed development projects and funds to the lower levels of government through a plethora of Presidential Instructions (*Instruksi Presiden* (Inpres)). International donors, including the World Bank, the Asian Development Bank, and the United States Agency for International Development, funded some of the Inpres programs such as urban and rural development projects, reforestation, and greening. The Central Planning Agency (*Badan Perencanaan dan Pembangunan Nasional* (BAPPENAS)) mainly determined the total size and allocation of the general and specific Inpres programs. Aside from setting designs and standards for public services, the line ministries or technical departments also played a role in the cases of specific grants.

There were eight Inpres programs – Village Development Grant (*Inpres Desa*), District Development Grant (*Inpres Dati II*), Provincial Development Grant (*Inpres Dati I*), Primary School Grant (*Inpres Sekolah Dasar*), Health Grant (*Inpres Kesehatan*), Regreening/Reforestation Grant (*Inpres Penghijauan/Reboisasi*), Road Grant for Municipalities and Districts (*Inpres Jalan Dati II*), and Road Grant for Provinces (*Inpres Jalan Provinsi*). The Village Development Grant was given as a subsidy for villages, where the District Development Grant was awarded based on population size. The Primary School Grant was used for operational costs, rehabilitation, new construction, additional classrooms, and books. The Health Grant was provided to cover medicine, health centers, health sub-centers, mobile health centers, and to pay for salaries of doctors and paramedics, rehabilitation of health centers, and basic medicines as well as clean water. Regreening and reforestation grants were used to cover expenses for regreening, reforestation, and field staff. Road Grants for *Dati I* and *Dati II* were awarded based on the length, condition, or density of roads, and the per unit price of their maintenance.

The central government also tightly supervises the regions through unified auditing of all public sector finances, including state-owned enterprises and enterprises owned by regional governments, centralized at the Supreme Audit Board (*Badan Pemeriksa Keuangan* (BPK)). The BPK is the external auditor of the government that annually audits financial reports of the entire public sector from the central to the *kabupaten* and *kota* levels. During the authoritarian regime of Orde Baru, the BPK was practically controlled by the government as it controlled its staff, budget, and auditing methods. To assure the transparency and accountability of government finances, Law No. 15 of 2004 on Auditing Management and Accountability of State Finance restored the independence and autonomy of the BPK (Republic of Indonesia, 2004b). The new law expands the type of audit from financial audit to include compliance and performance audit. To carry out its audit function, the BPK established its representative offices in all capital cities of the provinces. The audit reports of the BPK are presented to the Parliament of central government and to the parliaments of both provincial and *kabupaten* and *kota* governments, and the reports are made available to the general public through the BPK website.

In addition to the BPK, the government has three layers of internal control (*Badan Pemeriksa Keuangan Pemerintah* (BPKP)), and Inspector Generals of the line ministries and provincial governments. Originally, BPKP was under the Ministry of Finance, but it moved to the office of the Vice President and subsequently shifted to The Ministry for Supervision of the State Apparatus (*Kementerian Pengawasan Aparatur Negara* (Menpan)). Both the external and internal auditors review the sizes of the budget of regional governments, the sources of the revenue, and their expenditure.

8.2.3 Fiscal Reforms

The allocation of financial resources to each level of government is important for two main reasons. First, it would enable each level of government to exercise constitutionally assigned legislative and executive responsibilities. Second, taxing powers and expenditure are important policy instruments for the three objectives of macroeconomic policy – maintaining economic stability, pursuing high economic growth, and equity. The stabilization function is normally assigned to the central government to maintain internal and external economic stability.

The budget constraint of the subnational governments, both at the provincial and *kabupaten* and *kota* levels, can be written as:

$$G - (T + P) = A + \Delta D + TRA \quad (8.1)$$

where:

G is government expenditure;

T is own-source revenue or government tax and nontax revenue;

P is profit from enterprises owned by local government, privatization, and rent from leasing of assets of the local government;

A is revenue from sale of assets, including privatization of state-owned enterprises and rent from leasing of state assets;

D is government debt. At present, the subnational governments can only borrow from domestic sources: (i) central government, (ii) other subnational governments, and (iii) domestic banks and non-bank financial institutions. Floating bonds in the domestic market requires permission from the Ministry of Finance. Subnational governments cannot directly receive grants or borrow from overseas;

TRA is the central government transfer to local governments, provinces, *kabupaten*, and *kota* – also known as Equalization Funds or Transfer (*Dana Perimbangan*); and Δ is change or difference operator.

Decentralization in Indonesia only gives autonomy to the local government to determine the size and structure of their budget expenditure. Taxing power remains with the central government, while local governments are only given the right to collect minor taxes such as taxes on land and building, motor vehicles, hotels, restaurants, entertainment, base metal and mineral extraction, and water. Local governments do not have the power to impose and collect customs and excise, corporate tax, personal income tax, and sales tax. Until recently, collecting land and property taxes had been in the hands of the central authorities even though the country was rapidly urbanizing, with 49.4 percent of its population in 2011 living in big cities. This means that wealth is increasingly vested and locked up in land and property. The low municipal revenue-to-gross domestic product (GDP) ratio, at 1 percent, indicates that urban and property taxes are still untapped. Local governments also have no right to modify tax rates according to their needs. Both assessment and tax rates are uniform for the whole country, and local governments do not have control over the rate structure for their major sources of revenue.

Many affluent local governments, particularly in the urban sectors, sell or lease their land to private developers for commercial uses. Some public parks, playgrounds, and sport fields have been converted into shopping malls and hotels, and other commercial buildings. Those in rural areas can raise funds from issuing licenses for opening up virgin forest for small operators of commercial logging, plantation, and mining that could damage the environment.

Since the introduction of Law No. 17 of 2003 on public finance, local governments have been allowed to borrow from both domestic and foreign

markets (Republic of Indonesia, 2003). Local governments, however, require permission from the Ministry of Finance for issuing local debts. The law adopts the fiscal and debt rules of the European Union by limiting the budget deficits of central and local governments to 3 percent of their respective annual GDP or regional GDP. The ratio of debt to GDP or regional GDP is set at a maximum of 60 percent.

So far, nearly 40 percent of central government expenditure has been transferred to the regional governments. The high transfer to subnational governments does not cause fiscal strain in the national public sector or deficits that pose a major threat to macroeconomic stability. At present, the budget deficit of the central government is below the limit of 3 percent of annual GDP and the ratio of public debt is about 27 percent, much lower than the maximum limit of 60 percent.

There are three main sources of revenue for local governments:

- (i) local governments' own source of revenue (*Pendapatan Asli Daerah*), which includes local retribution and small amounts of revenue from profits of public enterprises owned by local governments, and revenue from their privatization and lease;
- (ii) tax and revenue sharing from income, corporate tax, and tax on natural resources; and
- (iii) transfers from the central government.

As noted earlier, the grant from the central government to the local governments has two components. The first component is a minimum allocation known as the General Allocation Fund (DAU). DAU is a lump sum given to all local governments regardless of their fiscal gap and is mainly intended to cover the salaries of civil servants. The second portion of DAU is a fiscal gap component, which is the difference between own fiscal capacity and fiscal needs. Most local government financing comes from DAU, which accounted for more than 60 percent of their total revenue. This indicates the high dependency of local government budgets on grants from the central government to finance local service provision. Law No. 22 of 1999 establishes a floor of 25.5 percent of domestic revenue (including oil and gas revenue) for transfer to subnational levels through DAU or a general block grant that equalizes regional needs and revenue capacities.

The Equalization Grant (DBH) is the second transfer from central to subnational governments. This DBH is the revenue sharing or tax sharing from the general tax revenue and revenue from the exploitation of natural resources, including mining, oil, and gas revenue. This exacerbates horizontal imbalances between provinces and districts. Some areas receive revenue sharing for reforestation.

The third transfer is the Special Allocation Fund (DAK) provided to finance central government initiatives implemented by the region, particularly in remote and less developed areas. This is a special purpose grant similar to a capital-financing program. As it is given to all local governments, there is competition between the recipients for effective implementation of the programs. Also, there is neither a bonus scheme nor an incentive scheme to encourage local governments to compete for improvements in the implementation of the programs. At the provincial level, the DAK grants are used for provincial road improvements, development of regional art and culture, and rural extension services. At the district level, the DAK grants are used for basic education and preventive health care, district road development, basic infrastructure, district markets, and small-scale industry development. The block grant can only be used for development purposes, primarily infrastructure.

On top of these, the central government provides emergency financing to cover budget deficits of subnational governments due to natural disasters, and to restore their solvability.

8.2.4 Debt Financing

At present, none of the subnational governments in Indonesia has floated local currency bonds to diversify funding and attract the financing required for investment in infrastructure. In general, debt financing is only available for wealthy subnational governments in countries with mature financial markets with good rules of law that provide transparent information, protect property rights, and enforce contracts. In the case of Indonesia, accounting standard or practices, disclosure requirements and corporate governance of the issuers, and bankruptcy law and procedures need to be improved. Debts are to be repaid from the revenue generated by investment in production activities. Indonesia does not have cash-rich domestic institutional investors such as insurance companies, pension and mutual funds, or a shadow banking system to absorb the bonds. Unlike in some European countries and Japan, Indonesia does not have a rich Postal Savings Bank (Cargill and Yoshino, 2003).

Until now, in terms of assets and branch networks, the commercial banking industry has been the core of the financial system in Indonesia. Financial intermediation primarily takes the form of bank lending rather than the issuing of bonds or equity in the capital market. Much of the credit is collateralized against land. Bank operations are mainly concentrated on traditional deposit taking and lending, and less focused on the capital and bond market. This is because of the long period of financial repression during President Suharto's administration from 1966 to 1998.

The availability of low-cost and low-risk credit from state-owned banks reduces the needs of the business sector to float bonds or issue equity shares.

8.2.5 State-Owned Enterprises

Indonesia has a mixed economy. In addition to the provision of public goods, the public sector at all levels has state-owned enterprises (SOEs) producing private goods that operate in many sectors of the economy, including oil and mining; plantations; electricity; sea, air, and land transport; hotels; and shops. The government also has land and productive forest. Some of the SOEs originated from the former Dutch companies nationalized during the conflict over the present Papua in the mid-1950s. Some former British companies were nationalized during the military confrontation when Malaysia and Singapore gained independence from England. Companies owned by communist suspects and those that were regarded as being close to President Sukarno and PKI (*Partai Komunis Indonesia*) or the Indonesian Communist Party were taken over after the collapse of the communist rebellion in 1965. At present, there are 414 enterprises which are owned by the government under the management of the Ministry of State-Owned Enterprises. There are 650 enterprises, including drinking water companies and marketplaces, owned and managed by local governments (see Table 8.2). Through owning golden shares, the government retains exclusive rights to make appointments to the Boards of Commissioners and the Boards of Directors as well as appoint key officers of SOEs, and to intervene in their day-to-day operations.

Some losses of the SOEs during the era of President Suharto, including subsidized lending and directed credit of the state banks, are

Table 8.2 *Number of local state-owned enterprises: provinces and local governments*

| Year | Provinces | Local governments |
|------|-----------|-------------------|
| 2005 | 90 | 518 |
| 2009 | 91 | 595 |
| 2010 | 92 | 603 |
| 2011 | 95 | 619 |
| 2012 | 100 | 626 |
| 2013 | 108 | 650 |

Source: *Statistical Yearbook of Indonesia 2014*.

quasi-fiscal activities by the public banks. At that time, the subsidized loans were primarily received by politically well-connected groups. These contingent liabilities of the government became future budget commitments of the government that were not recognized until cash payments had been made.

All provinces have regional development banks (RDBs) as a legacy of the past to mobilize long-term savings for financing long-term investment projects in their respective provinces. In reality, they operate as cashiers for their owners – the provincial and *kabupaten* and *kota* governments. In practice, the RDBs save the funds transferred from the central government to the local governments and recycle them back to Jakarta to be invested in SBI (*Sertifikat Bank Indonesia*) or Bank Indonesia Certificates and government bonds. Most of their credits are given to buy vehicles and housing for local *civil servants*.

8.2.6 Administration of Public Sector's Funds

To reform the fiscal system and bring it into line with international practices, the national Parliament passed three laws on state finance in 2003 and 2004: Law No. 17 of 2003 on State Finance, Law No. 1 of 2004 Concerning State Treasury, and Law No. 15 of 2004 on Auditing Management and Accountability of State Finance (Republic of Indonesia, 2003; 2004a; 2004b). The laws impose a uniform system of financial accounts, audit rules, and disclosure requirements for borrowing by all levels of government. Six distinct reforms were introduced to address the weaknesses of the past fiscal system:

- (i) End the separation between routine and development budget. During the administration of the New Order, all routine expenditure was financed by the government's own revenue. The financing of the development budget came from foreign aid and loans and surplus of government revenue over routine expenditure. The development expenditure, however, did not only cover capital expenditure, as it also included routine and operational expenditure such as travel expenses and honorarium received by those directly involved in development activities.
- (ii) Replace the antiquated cash-based, single-entry bookkeeping of the Indonesian Treasury Law (*Indische Comptabiliteitwet*), Statute Book No. 443 of 1925, inherited from the colonial past with a double-entry, accrual accounting system, and performance-related multiyear budgets.
- (iii) Apply an integrated and computerized accounting system.

- (iv) Decentralize the accounting implementation in a hierarchical manner to each accounting unit both at the central and regional levels.
- (v) Gradually adopt a single treasury account. In the past, accounts were divided into many accounts, including the personal accounts of government officials.
- (vi) Use a tight time framework for the accountability report. The new system is therefore required to establish standard budgeting, auditing, and reporting procedures for all local budgets; and mechanisms to monitor the sharing of natural resources revenue and transfers. The new system demands the establishment of an independent treasury and payment systems. The old system, by contrast, did not need an independent treasury as most financing was done through special purpose grants administered by centrally appointed officials. As mentioned earlier, in addition to the financial audit, the BPK will also carry out a performance and compliance audit.

As noted above, the new audit law expanded the traditional financial audit to include a performance and compliance audit. The financial audit includes financial statements, accounting, receipts, and related financial matters. The objective of this audit is to assess the internal control system to ensure the quality of accounting information and financial reporting. The compliance audit evaluates how well the organization complies with and adheres to relevant policies, laws, directions, plans, and procedures. The objective of a performance audit is to evaluate and review the effectiveness, efficiency, and economic results of the government activities (Baltaci and Yilmaz, 2007).

For various reasons, the shift toward the new fiscal system occurred very slowly. The first reason is because the standardized types, format, and structure of the government finance and state financial reports are still in the making. Second, measurable standard performance indicators for government applicable to the whole country need to be set up by the central government. With this data, the central government is able to monitor the financial transactions of subnational governments. Third, it takes time to adopt the single treasury account. Fourth, implementation of a double-entry accounting, accrual, and performance-based system and a multiyear budget is very slow. This is because the single accounting system for all local government and public entities is not yet available. Moreover, these new changes demand highly educated and well-trained accounting personnel, which are not yet available at government agencies and public entities. Fifth, non-budgetary funds and quasi-fiscal activities have not yet been incorporated into the state budget. Many government agencies have their own business entities and extra budgetary funds, which they inherited

from the past. Sixth, the roles and responsibilities of state institutions have not yet been clarified at all levels. Seventh, the legal status of many of the state assets is not clear yet. Until now, there have been no comprehensive centralized accounting records of the government's physical assets such as land holdings, infrastructure, buildings, plants and equipment, and capital stocks and stores.

8.3 FINANCING SUBNATIONAL GOVERNMENTS

The districts and municipalities are given more financial resources to carry out their greater responsibilities. This is because the main thrust of the decentralization program has been to devolve expenditure responsibilities. The subnational governments have limited freedom to set tax rates such as land and building tax and motor vehicle tax and their transfer tax. Borrowing powers of subnational governments are strictly controlled. Central government controls wage and salary rates for local government employees.

8.3.1 Revenues of Local Governments

As pointed above, at present, tax capacity and the effort of subnational governments to collect tax revenue is irrelevant as they are only given a very low tax base and no power to collect major taxes. At present, tax bases of regional governments are limited to minor taxes (see Table 8.3). Effective from 1 January 2010, Law No. 28 of 1999 transferred the authority to collect land and building taxes from the central government to subnational governments. Prior to that, taxes were collected by the central government and returned mostly to district governments and municipalities after deducting collection costs. Most of the tax bases, such as motor vehicles and high value residential and office buildings, are located in big cities, but not much in the rural areas with sparse populations and less commercial activity. Hotel, restaurant, entertainment, and street lighting taxes are also more relevant to big cities and tourist areas such as Yogyakarta and Bali. Annual assessment of the tax bases, particularly land and building taxes in a big and diverse country such as Indonesia, is costly. The Directorate General of Taxation of the Ministry of Finance provides benchmarks for each province. The standard tax rate for a given base is also difficult to calculate for each region given their great diversity.

The motor vehicle tax is an annual tax on the value of the vehicle. Motor vehicle transfer tax, the largest source of provincial tax revenue in major provinces such as Jakarta and other big cities on Java, Medan, and Makassar, is levied at the time of resale of a motor vehicle. At present, the

Table 8.3 Regional taxes

| Type of tax | Assignment | Tax base | Tax rate (%) | Sharing |
|----------------------------------|------------|-------------------------------------------------------|--------------|--------------------------|
| Motor vehicles | Province | Vehicle value (annual) | 5 | 30% to local governments |
| Motor vehicle transfer tax | Province | Vehicle resale price (annual) | 10 | 30% to local governments |
| Fuel excise tax | Province | Fuel consumption (retail price, excluding VAT) | 5 | 70% to local governments |
| Utilization of water | Province | Water consumption | 20 | 70% to local governments |
| Hotel tax | Local | Turnover | 10 | |
| Restaurant tax | Local | Turnover | 10 | |
| Entertainment tax | Local | Turnover (admission price) | 35 | |
| Street lighting tax | Local | Electricity consumption (retail price, excluding VAT) | 10 | |
| Mining tax for Class C minerals* | Local | Market value of extracted minerals | 20 | |
| Parking tax | Local | Parking fees | 20 | |

Notes:

VAT = value-added tax.

* Class C minerals include asbestos, slate, semiprecious stone, limestone, pumice, precious stone, bentonite, dolomite, feldspars, halites, graphite, granite and andesite, gypsum, calcite, kaolin, leucite, magnesium, mica, marble, nitrate, obsidian, ocher, sand and gravel, quartz sand, perlite, phosphate, talc, fuller's earth, diatom soil, clay, alum, trass, yarosite, zeolite, basalt, and trachite.

Source: Law No. 34 of 2000.

tax rate is 1.5 percent. For both taxes, the determination of the value is set periodically by the Ministry of Home Affairs (MOHA) and made available to provincial governments who then collect the tax. The provincial government collects fuel tax at 5 percent, and the revenue is shared with district governments.

Law No. 34 of 2000 gives rights to local governments to impose local taxes as long as those taxes do not impose high costs on the economy or restrict mobility of factors of production as well as goods and services across regions and constrain international trade. Specifically, the new taxes should meet the following eight criteria: (i) they are taxes and not user charges; (ii) the tax base is located locally in the region and is immobile;

(iii) the taxes do not conflict with public interest; (iv) the tax base is not subject to provincial and national taxation; (v) the revenue potential is adequate; (vi) the taxes do not exert economic distortions; (vii) equity concerns are taken into account; and (viii) environmental sustainability is taken into account. The local governments also raise revenue from license fees from small operators of mines and plantations operating in their jurisdictions. The laws on mining and plantation give the districts power to issue such licenses. Licenses for big operators are issued by the central government, and the subnational governments receive royalties from them.

Fiscal Balance Law No. 25 of 1999 introduced special revenue sharing for oil and gas (Republic of Indonesia, 1999b). This law creates further imbalances between regions due to concentration of the production of oil and gas in a few producing provinces and *kabupaten*. The main oil-producing provinces are Riau, East Kalimantan, Ambon, West Papua, Aceh, and East Java. The law assigns 15 percent of nontax revenue from onshore oil to local governments, 3 percent of which goes to the producing province, 6 percent to the producing district, and 6 percent is to be shared by nonproducing districts in the producing region. For onshore gas, 30 percent of the nontax revenue is to be shared, 6 percent goes to the producing province, 12 percent to the producing district, and 12 percent to nonproducing districts in the producing province.¹ This formulation is quite opaque, further complicated by the inclusion of offshore oil within 12 miles. The nonproducing provinces may also need to be compensated by an 'equalization' transfer system that reduces the interregional disparities created by the oil- and gas-sharing formula. The revenue-sharing arrangement has become more complicated with the volatility in international prices of oil and gas that rapidly changed the realized revenue or the tax base for oil sharing.

To redress the grievances of the resource-rich regions, Law No. 33 of 2004 on fiscal balance between central government and regional government gives some portions of the personal income taxes and taxes on natural resources to the originating provinces and districts (Republic of Indonesia, 2004d) (see Table 8.4). The DBH or revenue or tax sharing from the general tax resources and revenue from extraction of natural endowments include mining, oil and gas, forestry, fishery, and geothermal.

To end the secessionist armed rebellions in the provinces of Aceh and Papua, the government gave them more political autonomy, special local treatment, special intergovernmental transfer treatment, and higher rates of revenue sharing from natural resources (see Table 8.5). They are allowed to establish local political parties. Aceh has been allowed to adopt Islamic Syariah law, a council of Moslem scholars, and Islamic courts. Papua receives special additional allocations of funds amounting to 2 percent of DAU for producing public services.

Table 8.4 Arrangements for tax and revenue sharing

| Revenue source | Central government | Originating provincial government | Originating local government | All local governments in originating province | All local governments (equal share) |
|------------------------------|--------------------|-----------------------------------|------------------------------|-----------------------------------------------|-------------------------------------|
| Personal income tax | 80.0 | 8.0 | 12.0 | NA | NA |
| Property tax | 9.0 | 16.2 | 64.8 | NA | 10.0 |
| Property transfer tax | NA | 16.0 | 64.0 | NA | 20.0 |
| Mining land rent | 20.0 | 16.0 | 64.0 | NA | NA |
| Mining royalty | 20.0 | 16.0 | 32.0 | 32.0 | NA |
| Forestry license | 20.0 | 16.0 | 64.0 | NA | NA |
| Forestry royalty | 20.0 | 16.0 | 32.0 | 32.0 | NA |
| Fishery royalty | 20.0 | NA | NA | NA | 80.0 |
| Geothermal mining | 20.0 | 16.0 | 32.0 | 32.0 | NA |
| Oil | | | | | |
| Base rate | 84.5 | 3.0 | 6.0 | 6.0 | NA |
| Conditional rate (education) | | 0.1 | 0.2 | 0.2 | NA |
| Natural gas | | | | | |
| Base rate | 69.5 | 6.0 | 12.0 | 12.0 | NA |
| Conditional rate (education) | NA | 0.1 | 0.2 | 0.2 | NA |

Note: NA = not applicable.

Sources: World Bank (2003); Republic of Indonesia, Law No. 22 of 1999 (Article 6); Law No. 17 of 2000 (Article 31); Law No. 33 of 2004.

8.3.2 Expenditure Needs of Local Governments

The expenditure needs of local governments are estimated by using the most important needs of a regional government. Each regional government has five main categories of expenditure needs: (i) education; (ii) health and social welfare; (iii) government administration; (iv) infrastructure and public works; and (v) economic development, including transport, agriculture, industry and trade, capital investment, land, cooperatives, labor force, and environment. The expenditure needs for education are estimated by the number of school-age children and average years of education. At present, it is compulsory for children to finish nine years of schooling.

Table 8.5 Proportion of revenue sharing for Aceh and Papua

| Revenue type | Special autonomy laws (%) | |
|---------------------------------------|---------------------------|-------|
| | Aceh | Papua |
| Oil | 70 | 70 |
| Gas | 70 | 70 |
| Land rent | 80 | 80 |
| Royalty | 80 | 80 |
| Fishery | 80 | 80 |
| Forestry Right to Operate Levy (IHPH) | 80 | 80 |
| Forestry Resources Commission (PSDH) | 80 | 80 |
| Reforestation Fund | 40 | 40 |

Note: IHPH = Iuran Hak Pengusahaan Hutan; PSDH = Provisi Sumber Daya Hutan.

Source: Directorate General for Fiscal Balance, Ministry of Finance.

Expenditure for health and social welfare is calculated by using information on population numbers, the proportion of the old-age population, average life expectancy, and infant mortality. The government provides free medical services and contraception for its birth control program to control population growth. The needs of the general government administration are estimated from population numbers and the percentage of urban population. The expenses for infrastructure are estimated using the length of local roads, the share of poor roads in the total length of local roads, and population density. The expenditure needs for economic development, including for agriculture, trade, industry, and telecommunications are calculated based on population numbers, per capita GDP, and a poverty head count ratio.

Under the centralized system of the past, the minimum standards for the public services were set by the central government. Local government workers, such as teachers, medical workers, workers building and maintaining infrastructure, and agriculture extension services workers, were assigned by the central government to the region. In a large and diverse country like Indonesia, the cost of producing public services greatly varies from one region to another. Because of the transfer of civil servants to the jurisdiction of local governments, local budgets are heavily skewed toward operating expenditure, particularly to cover personnel expenses including salaries of teachers, and personnel in health care and public works. This reduces the budget for maintenance and rehabilitation of infrastructure, school buildings, and medical equipment.

Under the local autonomy program, public services must be provided

by staff employed by local governments. It is not easy to transfer the civil servants of the central government to lower-level administrations. There are many reasons for this, including the reluctance of civil servants to move to other districts with different ethnic backgrounds, with which they have few ties, and with fewer amenities. Because of these problems, the central government continues to finance all civil servants' expenditure even if they work for local governments. The quality of spending is limited by the inadequacy of qualified teachers, health workers, and technicians to produce the public goods and financial managers to manage the state funds.

8.3.3 Horizontal Imbalances of Regional Government

As noted above, there are vast differences in the geographic and socio-economic characteristics of local governments. About two-thirds of the population of Indonesia lives on Java, one of the most populous islands on earth. Provinces with big populations (West Java, East Java, Central Java, and Banten) are located on Java. Java was strongly controlled by the Dutch and British colonialists. They built vast transportation networks for military and trading purposes. They developed modern commercial agricultural plantations and mining on Java. Sumatra has the second biggest population, and most modern commercial plantations are located in North Sumatra. Oil and gas are extracted in Aceh, Riau, and South Sumatra. Tin bauxite mines are developed in Bangka Belitung along the strategic Malacca Straits. Makassar, at the southern tip of Sulawesi, is strategically located to control the spice trade from the Eastern part of Indonesia and strategic Sulawesi Straits to East Asia. West Papua is the biggest island in Indonesia, followed by Kalimantan, but they are sparsely populated and relatively less developed in terms of transportation. These two islands are rich in natural resources: minerals and metals, as well as forest products.

Indonesia also has widely diverging levels of Regional Gross Development Product (RGDP), and diverse economic structure, natural resource endowment, and stages of industrialization. The regions have diverse capacities to raise revenues from their own sources and revenue-sharing arrangements. The regional GDP per capita of the richest oil- and gas-producing region among the districts is \$334,759 (in Bontang), which is more than 16,230 times higher than that of the poorest in district Nusa Tenggara Timur (\$208) with poor natural resources. The provinces on Java are the centers for the manufacturing industries as well as labor-intensive handicrafts and small and medium-sized enterprises with very low marginal productivity of labor. Java and South Sulawesi are rice-producing areas.

Papua, Kalimantan, Sulawesi, and Sumatra are the centers of mining, forestry, and agricultural industries dominated by large companies and

subject to cyclical shocks. PT Freeport Indonesia, which has mined copper and gold in the rugged Estberg area since 1966, contributed over 50 percent of Papua's economy and 90 percent of its total exports. Over 42 percent of West Papua's GDP is contributed by the LPG project in Bintuni area operated by BP Indonesia. East Kalimantan's economy is dependent on the LNG Project in Bontang, coal mining, and forestry. Meanwhile, Sumatra, Java and Kalimantan are home to modern commercial plantations. The benefits of mining and plantation businesses for local communities in terms of value-added are, however, relatively small as they are either capital-intensive or knowledge-based industries that directly export unprocessed raw materials. Skilled technical workers are imported from either Java or overseas.

There are also large disparities in living conditions. Indonesia's economy, particularly on Java, Madura, and Bali Island, is a labor surplus economy with very low marginal productivity because of low levels of education and minimal skills. The poverty rate ranges from about 7 percent in the industrial district of Bekasi, close to Jakarta the capital city, to more than 40 percent in West Sumba in West Nusa Tenggara. The illiteracy rate in Sampang, Madura Island in East Java is more than 21 percent though it has fallen to 9 percent for Indonesia as a whole. Being devout Moslems, the Maduranese are well versed in the Arabic alphabet. Secondary school gross enrollment in the poorest districts is only nine students as compared with 125 students in richer areas. Life expectancy in the poorest district is 57.5 years, which is far below the national average of 66.3 years, and 73.7 years for the richest areas. About 98 percent of people in Tanjung Jabung, Jambi, have access to primary health care, but only about 21 percent do in Sintang, West Kalimantan. In 2013, the highest unemployment rate was registered in Aceh (10.30 percent), followed by Banten (9.90 percent), the Moluccas (9.75 percent), West Java (9.22 percent), and Jakarta (9.02 percent). The lowest unemployment rates during that year were registered in Bali (1.79 percent), West Sulawesi (2.33 percent), and Yogyakarta (3.34 percent).

The disparity in public service also indicates disparity in both the cost of tax collection and the cost of public sector service delivery. Some cities and districts in big provinces have large jurisdictions but sparse populations, such as the City of Sabang at the northern tip of Sumatra with a population of almost 4 million. For this reason, it cannot meet the threshold for economies of scale to deliver services efficiently. But some local governments are too large in relation to their populations, such as the cities of Jakarta, Bandung, and Surabaya.

8.3.4 Equalization Transfer

In principle, the equalization transfer (*Dana Perimbangan* (TRA)) is made available to supplement own revenue and to finance local service provision (as defined by the central government) that does not affect neighboring jurisdictions. At present, there are three grant arrangements for subnational governments in Indonesia that replace the Inpres programs of the past: General Revenue Grants (DAU), Equalization Grants (DBH), and Special Purpose Grants (DAK). The general grants should be made available to cover the recurrent needs of the subnational governments and their working capital requirements. At present, there are no transfers to address regional inequalities or economic growth in less developed regions.

Eckardt and Shah (2006) identified five main reasons for grants from the central government to lower levels of government:

- (i) correct for inefficiencies arising from inter-jurisdictional spillovers;²
- (ii) address fiscal gaps or imbalances arising from a mismatch between the revenue and expenditure of local governments;
- (iii) ensure common minimum service standards for all regions;
- (iv) narrow the difference in tax base as well as the cost of delivery of public service between regions; and
- (v) stabilize the economy by increasing grants in periods of slack economic activity and contain expenditure during upswings in the economic cycle.

For a number of reasons, the real allocation of grants can deviate from the Equalization Transfer formula. The reasons include political considerations and lobbying by local government associations. The provinces of Aceh and Papua are given special treatment because of the combination of strong secessionist movements and their backwardness, and higher costs of service delivery. In addition, the Transfer Equalization formula has not been fully implemented partly because the central government continues to finance all civil service expenditures that should be totally transferred to the subnational governments. The distribution of teachers, health workers, and public sector workers, who build and maintain infrastructure and other publicly produced goods, is uneven between regions. The production cost of public services also varies greatly between regions.

8.3.5 Village Funds (*Dana Desa*)

As noted earlier, on top of the three types of transfer of funds, the central budget provides village funds (*dana desa*) directly to the villages. The

amount of the funds is a maximum of 10 percent of the transfer funds. The funds are distributed according to four criteria: (i) population size (25 percent); (ii) area size of the village (10 percent); (iii) poverty index (35 percent); and (iv) geographical accessibility index (30 percent). This index is calculated based on the availability of basic infrastructure, condition of the infrastructure, and accessibility (Ministry of Finance, 2014).

8.3.6 Budget Realization

Table 8.6 shows the realization of budgets of provincial and local governments between 2001 and 2013. In 2013, 74.44 percent of the budget of local governments belonged to districts and municipalities and only 25.56 percent was owned by the provinces. Transfers from the central government are the main source of revenue for provinces as well as districts and municipalities. Extraction of financial transfers from the central government is one of the motives for the creation of new government units by provinces, districts, municipalities, subdistricts, or villages. In 2001, transfers from the central government accounted for 57 percent of revenue of provincial governments and 90 percent of revenue of districts and municipalities. The share of own revenue in total revenue for provincial governments, as well as districts and municipalities, rose significantly after the introduction of tax and revenue sharing in 2004. The devolution of property and land tax to local governments in 2011 sharply increased their revenue. The local governments intensify the collection of land and property and raise the tax base to their commercial value.

Table 8.7 shows the breakdown of own source of revenue for provinces and districts and municipalities. User charges, profits of government-owned enterprises, and other revenue are more relevant for districts and municipalities than for provinces.

On the expenditure side, Table 8.6 shows that the share of routine expenditure in the budgets of both provincial governments, and districts and municipalities rose rapidly between 2001 and 2010 and beyond. This is mainly due to the transfer of civil servants to local governments to implement the decentralization program. At present, over 70 percent of the budget of local governments is allocated to pay for the salaries of civil servants. The largest share of capital expenditure of the local governments has been for purchasing goods and services.

The number of provinces with budget deficits decreased from 22 in 2009 to 11 in 2011, but increased to 15 in 2013. The number of provinces with budget surpluses was 11 in 2009, 22 in 2011, and 18 in 2013. The number of districts and municipalities with budget deficits fell from 281 in 2009 to 87 in 2011, but increased to 139 in 2013. The number of district

Table 8.6 Sources of revenue and expenditure of provincial government and district/municipality, 2001–2013

| | Year | Provinces (%) | Local governments (%) |
|--------------------------------------------------|------|---------------|-----------------------|
| <i>% of total revenue</i> | | | |
| Own-source revenue | 2001 | 39 | 7 |
| Intergovernmental transfer (Dana Perimbangan) | 2001 | 57 | 90 |
| Adjustment and special autonomy fund | 2001 | 1 | 0 |
| Other revenue | 2001 | 3 | 3 |
| <i>% of total expenditure</i> | | | |
| Routine expenditure | 2001 | 64 | 69 |
| Capital expenditure | 2001 | 36 | 31 |
| <i>% of total revenue</i> | | | |
| Own-source revenue | 2010 | 49 | 7 |
| Intergovernmental transfer (Dana Perimbangan) | 2010 | 42 | 77 |
| Adjustment and special autonomy fund | 2010 | 9 | 7 |
| Other revenue | 2010 | 1 | 8 |
| <i>% of total expenditure</i> | | | |
| Routine expenditure | 2010 | 73 | 79 |
| Capital expenditure | 2010 | 27 | 21 |
| <i>% of total revenue</i> | | | |
| Own-source revenue | 2013 | 50 | 11 |
| Intergovernmental transfer (Dana Perimbangan) | 2013 | 31 | 72 |
| Adjustment and special autonomy fund | 2013 | 18 | 9 |
| Other revenue | 2013 | 1 | 8 |
| <i>% of total expenditure</i> | | | |
| Routine expenditure | 2013 | 79 | 72 |
| Capital expenditure | 2013 | 20 | 28 |

Source: Ministry of Finance, Directorate General for Fiscal Balances, Reports on Subnational Budgets (Laporan Analisis Realisasi APBD), various issues.

and municipalities with budget surpluses rose from 196 in 2009 to 404 in 2011, and fell to 352 in 2013. To restore the solvency of some local governments, their budget deficits were financed by emergency funds from the central government. The high number of subnational governments with budget deficits shows the presence of the soft budget constraint, which allows them to increase expenditure without eventually having to

Table 8.7 Breakdown of own-source revenue of local governments, 2001–2013

| Components of own-source revenue | Year | Provinces (%) | Local governments (%) |
|--------------------------------------|------|---------------|-----------------------|
| Provinces or local taxes | 2001 | 85 | 43 |
| User charges | 2001 | 5 | 33 |
| Profit of government-owned companies | 2001 | 1 | 2 |
| Other revenue | 2001 | 8 | 21 |
| Provinces or local taxes | 2010 | 84 | 35 |
| User charges | 2010 | 3 | 26 |
| Profit of government-owned companies | 2010 | 3 | 8 |
| Other revenue | 2010 | 10 | 31 |
| Provinces or local taxes | 2013 | 86 | 51 |
| User charges | 2013 | 1 | 15 |
| Profit of government-owned companies | 2013 | 3 | 5 |
| Other revenue | 2013 | 10 | 29 |

Source: Ministry of Finance, Directorate General for Fiscal Affairs, Reports on Analysis of Implementation of Subnational Budgets (Direktorat Jenderal Perimbangan Keuangan, Kementerian Keuangan R. I. Laporan Analisis Realisasi APBD), various years.

bear the full costs, as ultimately budget deficits were cleared by the central government.

8.4 CONCLUSIONS

Without much preparation, Laws No. 22 of 1999 and No. 25 of 1999 abruptly transferred responsibilities for the delivery of 11 obligatory functions from the central government to districts and municipalities, bypassing the provincial governments (Republic of Indonesia, 1999a; 1999b). Unlike in many emerging and transitioning countries, the decentralization program in Indonesia was implemented quickly without any major political or economic problems. Only the former Province of East Timor seceded to establish the Republic of Timor-Leste in 1989. To end the sporadic armed rebellious independent movements, Aceh and Papua were granted with special autonomy in dealing with local customs, education, religion, and local development policy.

The rapid rise in the expenditure of subnational governments that came with decentralization did not carry serious fiscal risks at the national level nor a breakdown in public sector delivery. Neither has the growth of subnational spending on public services and capital investments (in health, education, basic infrastructure, and other obligatory functions) so far posed a major threat to macroeconomic stability. At present, no subnational government has floated bonds to diversify their funding needs or to attract the financing required for investment in infrastructure. However, after over 15 years of reform, institutions have yet to be built to allow both the provincial and sub-provincial governments to implement the newly acquired responsibilities.

Subnational governments have different capabilities to deliver public services in education, health care, infrastructure, and other areas. They also have different capabilities in managing their finances and raising revenue, and different tax bases. The central government can supervise the subnational governments through setting national standards for public services applicable throughout the country. The central government can also supervise the subnational governments through a unified system of financial accounts, audit rules, disclosure requirements, and financial auditing. The combination of the absence of unified public service standards and the lack of knowledge in the new administration of public funds has led to corruption and delays in the disbursement of government budget expenditure. The political system needs to be improved to make the elected governors, mayors, and heads of districts accountable to the community through regular elections, and not to their political parties.

The central government remains substantially in control of local governments through controlling their budgets, through auditing local governments (compliance, financial, and performance audit), and rotation of civil servants and senior officials between provinces and sub-provinces.

Taxing capacities and expenditure decisions of local governments also remain very weak. At present, none of the subnational governments has floated local currency bonds to diversify funding and attract the financing required for long-term investment in infrastructure. The responsibility for taxing and expenditure decisions should lie with the authority that is in the best position to evaluate the alternatives available. Subnational governments should have the information that will enable them to balance needs as reflected in expenditure proposals against the sacrifices that must be made to satisfy those needs. The capabilities of local governments also need to be upgraded in the planning of economic development to promote economic growth and to address regional inequalities by promoting private sector investment and exports.

The reform has given larger financial resources to subnational governments and greater freedom on budget expenditure. So far, over 40 percent of government expenditure of the central government has been transferred to subnational governments. However, the basic issues in fiscal federalism have not been answered. Who should do what to make expenditure assignment more specific? The revenue assignment should answer the question of who should levy tax. How to resolve vertical imbalance to resolve the imbalance between revenue and expenditure of districts and municipalities? How to address the horizontal imbalance or equalization due to the difference in needs as well as the capacity of districts and municipalities to raise revenue and produce the same standards of service? How to maintain fiscal discipline to avoid overspending by the subnational governments? How to regulate internal and external borrowing of subnational governments for financing their budgets?

NOTES

1. The law does not specify the method for distributing the 6 percent oil revenue and 12 percent gas revenue to nonproducing districts.
2. Spillovers occur because benefits of locally provided goods or services (such as pollution control) spill beyond the local jurisdiction to benefit those not contributing to the costs.

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9. A case study of central and local government finance in Japan

Shun-ichiro Bessho

9.1 INTRODUCTION

Japan's balanced growth has been one of the main policy goals of the Government of Japan since the country's period of rapid economic growth in the 1960s. Japan's local public finance system has developed to support this goal as well. Facing low economic growth and regional disparities in economic situation, a number of decentralization reforms has been implemented.

One method of evaluating how the local public finance system works is to examine how local governments cope with various fiscal shocks such as economic downturns, national fiscal reforms, and reductions in tax bases owing to natural disasters. Buettner and Wildasin (2002; 2006) proposed a method of quantifying the dynamics of regional fiscal adjustments, based on a vector error-correction model (VECM). The current study adopts the same VECM approach to estimate municipal fiscal adjustments in Japan, in line with Bessho and Ogawa (2015). The sample used in the current study is all 3,210 municipalities in Japan, over the 1977–2010 period – more than one-quarter of a century.

Before investigating municipal fiscal adjustments in Japan through the use of VECM, this study provides an overview of the basics of Japan's local public administration and finance system, and focuses on the close relationship between central and local governments. The first half of this chapter demonstrates that a combination of regional disparity in tax capacity, an inflexible local tax system, and the important role of local governments in redistribution necessitates large fiscal transfers from the central to local governments, if public services are to be provided uniformly countrywide and according to national standards.

The second half of this chapter analyzes municipal fiscal adjustments in Japan, as in Bessho and Ogawa (2015). The main findings are as follows. First, government investment plays the most important role in the adjustment process, with 39–55 percent of the budget shocks affecting own-source

revenue; grants are adjusted through government investment in the following year. The figures explain 63–95 percent of adjustments in permanent unit innovations in grants and own-source revenue. This contrasts starkly with government current expenditure, which shows no statistically significant response to adjust fiscal imbalances. Second, government investment is highly volatile. A ¥1 increase in government investment accompanies a ¥0.957 reduction in government investment in the following year – a figure that is quite high, compared with the figures of other countries. In contrast, the magnitude of the volatility in own-source revenue and grants is small; this implies that municipalities face restrictions in adjusting their fiscal balance through the use of their own-source revenue, and that higher-level government is rigid in providing grants. Third, in contrast to the role played by the expenditure side, the municipalities' own-source revenue plays a limited role in balancing the local budget. Own-source revenue offsets only 0.1–2.3 percent of the shocks – a figure that is not even statistically significant. This number is quite small, compared with those of other countries: in the United States, for example, own-source revenue offsets 14.4–16.2 percent of the fiscal shocks. Fourth, grants from the central government play a certain role in restoring the fiscal balance in Japan's municipalities. The results also reveal that 40 percent of the increase in own-source revenue is offset by a reduction in grants, and this suggests that the current grants system discourages municipalities from increasing their own-source revenue. Finally, Japan's municipalities can induce grants by expanding the government's current expenditure, as a ¥1 increase in current expenditure is followed by a ¥0.65 increase in grants in subsequent years.

The remainder of this chapter is organized as follows. Section 9.2 provides an overview of the basics of Japan's local public finance system, including those pertaining to taxation, expenditure, transfers, and borrowing. In section 9.3, the framework and data used in the VECM analysis, as well as the results thereof, are presented. Section 9.4 concludes with some policy implications.

9.2 JAPAN'S LOCAL PUBLIC FINANCE SYSTEM

9.2.1 Administrative System

Japan is a unitary country and has a constitution that defines the basic organizations and authorities of its governments. The Constitution places local governments within the national government structure and guarantees 'local autonomy'. Thus, the central government cannot abolish and create local governments at will.

Several national laws were enacted based on Article 92, Chapter 8 of the Constitution, which states that ‘regulations concerning the organization and operation of local public entities shall be fixed by law in accordance with the principle of local autonomy’. One of the most important laws is the Local Autonomy (*chiho jichi*) Law, which stipulates the basic framework for the organization and operation of local governments. It also specifies the relationship between central and local governments, as well as those among local governments. Other important laws include the Local Finance (*chiho zaisei*) Law, Local Tax (*chiho ze*) Law, Local Public Service (*chiho komuin*) Law, and Public Offices Election (*koshoku senkyo*) Law.

There are two types of local government: one is ordinary local governments, and the other is special local governments. Ordinary local governments are prefectures and municipalities, as explained in detail below. Special local governments include special wards, municipal cooperatives, and property wards.¹ Special wards are similar to municipalities and are currently positioned only under Tokyo. Municipal cooperatives are set up for prefectures, municipalities, and special wards to jointly administer projects such as firefighting, water and sewerage, and waste disposal. Property wards are set up after municipal mergers to control the lands and properties of premerger municipalities. This study focuses mainly on ordinary local governments and special wards.

Ordinary local governments – that is, prefectures and municipalities – are democratic governing bodies, and not just administrative units or agents of the central government. Japan employs a dual representation system for local governments, where each level of government has an executive head (mayor for municipalities or governor for prefectures) and a council. The head of each local government is directly elected by the constituency (i.e., local residents); the same applies to council members.

Japan’s local administration system is based on comprehensive authorization, not restrictive enumeration; therefore, prefectures and municipalities are given the authority to exert their powers to perform a wide range of tasks that they consider essential to their residents. The administrative works and projects of prefectures and municipalities are categorized into two types. One is statutory entrusted functions (*hotei jutaku jimū*), which are originally supposed to be conducted under the responsibility of the central government, but are delegated to the local governments. The statutory entrusted affairs are listed in the Appendix Tables of the Local Autonomy Law. The central government is allowed to participate in the implementation of these affairs in the form of advice, agreements, directives, and even executions by proxy. The other type is local government functions (*jichi jimū*), which are defined as the administrative works and

projects other than the statutory entrusted functions. Despite this definition, some local government functions are stipulated to be performed by prefectures and/or municipalities. Regarding these local government functions, the central government can give advice and request rectification, but, in principle, cannot execute by proxy.

Setting aside special local governments, Japan's local governments are two-tiered. The first (lowest) tier is the municipality. There are currently 1,718 municipalities in Japan, which are divided into 790 cities (*shi*), 745 towns (*machi*), and 183 villages (*mura*). The second tier is the prefecture. Of the current 47 prefectures, 1 is *to* (metropolis), 1 is *do* (district), 2 are *fu* (urban prefecture), and 43 are *ken* (rural prefecture). Despite historical differences, there is virtually no institutional difference among *to-do-fu-ken*. All municipalities and special wards are spatially covered by prefectures; there is no 'special' city that is not placed under upper local government, like Washington, DC, in the United States or Beijing in the People's Republic of China.

Municipalities – which constitute the first tier of local government – provide a wide range of public and personal services that are relevant to everyday life. Their services include education, especially compulsory (elementary and junior high) schools; public health; city planning; fire protection; water; and sewerage. Additionally, they provide social services and assistance. Some cities have more authorities transferred from the central government. There are three types of such cities: designated cities (*seirei shitei toshi*; 20 cities in 2015), core cities (*chukaku shi*; 45 cities), and special cities (*tokurei shi*; 39 cities). The designated cities are selected from those with more than 500,000 inhabitants, and the core and special cities have basically more than 200,000 inhabitants.

Prefectures, as the second tier of local governments, function as a liaison between municipalities and the central government. These upper governments provide services with benefits that spill over municipal boundaries, and they execute projects too large for municipalities. They often offer assistance to municipalities and define standards for municipalities to follow.

Although municipalities vary in terms of population and size (see Table 9.1), they are basically given the same authority and assigned the same tasks. This is also the case for prefectures. In addition, partially for historical reasons, local governments share the same organizational structures to some degree; they are fairly uniform in terms of operations, because relevant national laws specify many aspects of their tasks. This uniformity is financially supported by the system of intergovernmental transfers, as explained in section 9.2.4.

Table 9.1 Distribution of population (1 January 2015)

| Towns and villages | | (%) | Cities | | (%) |
|--------------------|-----|-------|--------------------|-----|-------|
| Total | 928 | 100.0 | Total | 813 | 100.0 |
| Under 5,000 | 246 | 26.5 | Under 30,000 | 82 | 10.1 |
| 5,000–9,999 | 241 | 26.0 | 30,000–49,999 | 177 | 21.8 |
| 10,000–19,999 | 278 | 30.0 | 50,000–99,999 | 266 | 32.7 |
| 20,000–29,999 | 95 | 10.2 | 100,000–199,999 | 154 | 18.9 |
| 30,000–39,999 | 48 | 5.2 | 200,000–299,999 | 50 | 6.2 |
| 40,000–49,999 | 16 | 1.7 | 300,000–499,999 | 50 | 6.2 |
| 50,000 and over | 4 | 0.4 | 500,000–999,999 | 23 | 2.8 |
| | | | 1,000,000 and over | 11 | 1.4 |

Source: Ministry of Internal Affairs and Communications, Population Based on Basic Resident Register (1 January 2015).

9.2.2 Taxes

The Local Tax (*chiho zei*) Law, a national law, stipulates the taxation rights of local governments and lists standard tax items. It also stipulates the standard tax rates and/or upper limit rates for some local taxes, like those on personal income, firms, fixed assets, tobacco, and consumption. Local governments need not set rates identical to the standard rates. Many prefectures and municipalities raise the corporate inhabitant tax rates – one of the corporate income taxes – to levels higher than the standard rates (excess taxation). Local governments have the authority to set up new taxes not listed in the Local Tax Law (i.e., discretionary taxes) if they successfully obtain agreement from the Ministry of Internal Affairs and Communications. The tax revenues from excess taxation (¥526 billion in the 2013 fiscal year (FY2013)) and discretionary taxes (¥36 billion) were small compared with local tax revenues (¥35 trillion); they represented only 1.5 percent of all tax revenues. As expected from this figure, differences between local tax rates and standard rates are small, and local governments do not consider local tax rates a plausible choice variable (Mochida, 2001; Tajika and Yui, 1996). One reason for these small differences is that, as described below, local governments need to obtain ‘permission’ from their upper government to issue local bonds if their tax rate is below the standard rate.

Table 9.2 shows the composition of tax revenues of Japan’s central and local governments. Prefectures depend on personal and corporate income tax; they also gather revenues from a value-added tax (or consumption tax) under tax-sharing arrangements between the central and prefectural

Table 9.2 Composition of tax revenues (FY2013)

| (¥ trillion) | PIT | CIT | VAT | Automobile tax | Light oil tax | Property tax | City planning tax | Others |
|----------------|------|------|------|-------------------|------------------|-----------------|-------------------------|--------|
| Central | 15.5 | 10.5 | 10.8 | | | | | 14.4 |
| Prefectures | 5.1 | 3.5 | 2.6 | 1.6 | 0.9 | | | 1.0 |
| Municipalities | 7.0 | 2.2 | | | | 8.6 | 1.2 | 1.6 |

Notes: CIT = corporate income tax; FY = fiscal year; PIT = personal income tax; VAT = value added tax.

Source: Ministry of Internal Affairs and Communications.

governments. Large proportions of municipal tax revenues come from personal income tax and property tax, which are levied on land, buildings, and tangible depreciable assets. Additionally, a city planning tax is levied on lands and buildings, but not on tangible depreciable assets.

The local share of local tax revenues is not very small, at least relative to comparable figures from other countries. Table 9.3 shows the local share of tax revenues of the general government in selected countries. Japan's share was among the highest of unitary countries, and it was comparable to the sum of the shares of state and local governments in many federal countries. However, Japan's local tax revenues are not large compared with local expenditures, as explained below.

9.2.3 Expenditures

Japan's local governments are responsible for a wide range of tasks. Figure 9.1 shows the history of composition of local expenditures, categorized by function. Based on settlements for FY2013, public welfare expenses constituted about a quarter (24.1 percent) of expenditures of local governments (i.e., net total of prefectures and municipalities). This is because local governments bear the responsibility for a large proportion of welfare implementation for children, the elderly, and the disabled, as well as a public assistance (income maintenance) program. Education expenses are next, as municipalities operate compulsory education – that is, elementary and junior high school – and prefectures operate high schools (and universities, in some cases). Debt services constituted the third-largest share. The sum of these three components exceeded 50 percent of expenditures. Other items include expenses for civil engineering work, general administration, and sanitation (i.e., public health, water, and sewerage).

Figure 9.2 shows the history of composition of local expenditures

Table 9.3 Local share of tax revenues (2013) (%)

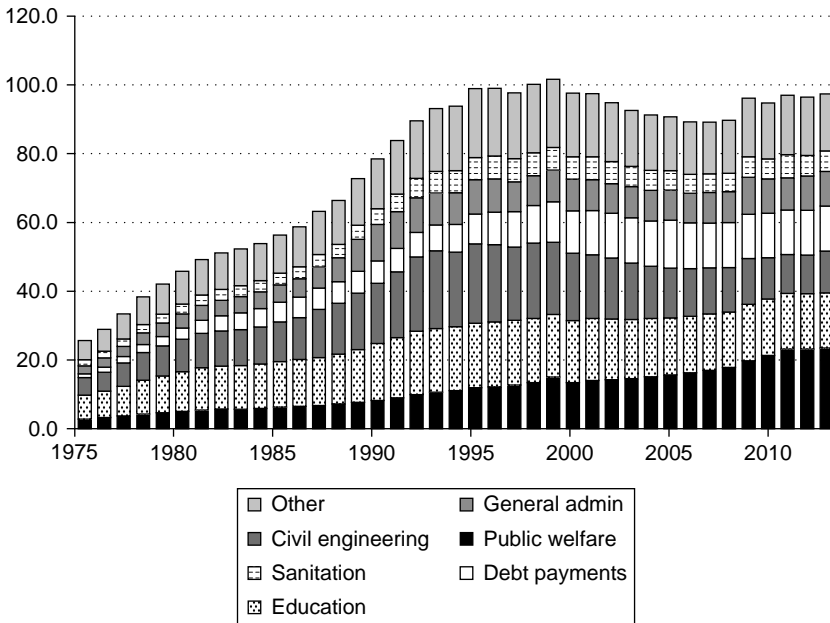
| Country | State | Local |
|--------------------|-------|-------|
| Canada | 44.2 | 11.0 |
| Germany | 36.1 | 13.2 |
| Switzerland* | 32.8 | 20.2 |
| Spain | 21.0 | 14.8 |
| Australia | 15.3 | 3.4 |
| Japan | | 40.6 |
| Sweden | | 34.3 |
| Finland | | 33.0 |
| Iceland | | 29.4 |
| Denmark | | 26.2 |
| Italy | | 21.7 |
| Korea, Republic of | | 21.4 |
| France | | 19.1 |
| Norway | | 17.3 |
| Portugal | | 9.5 |
| New Zealand | | 7.2 |
| Netherlands | | 6.5 |
| United Kingdom | | 5.9 |
| Luxembourg* | | 5.7 |
| Greece | | 3.8 |
| Ireland | | 3.7 |

Note: * As of 2012.

Source: International Monetary Fund, Government Financial Statistics.

by type. According to the FY2013 settlement, more than 20 percent of expenditures relate to personnel, including salaries for teachers in public elementary, junior high, and high schools; police officers; and general public workers. Social assistance expenses account for 12.5 percent of expenditures while debt services make up 13.4 percent. These three sets of expenses are often classified as ‘mandatory expenses’, because it is difficult for local governments to reduce these expenditures at their own discretion. Investment expenses also represented a large share of expenditures (15.5 percent), but that share has been in decline since the late 1990s.

As described, Japan’s local governments implement many redistribution programs such as social assistance and compulsory education (Joumard and Kongsrud, 2003; Hayashi, 2010). Exceptions are public pension and work-related insurance. From the international perspective, local governments in Japan do much more than those in most other Organisation for



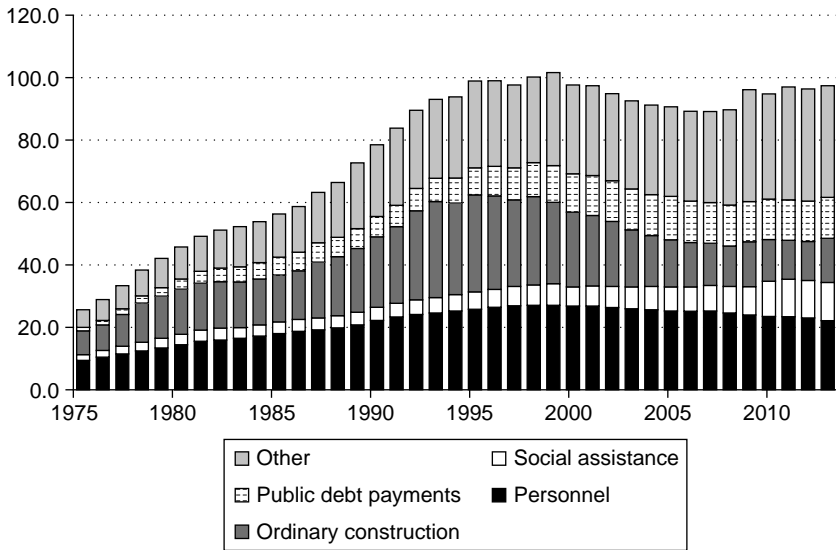
Source: Ministry of Internal Affairs and Communications, Annual Statistics on Local Public Finance, various years.

Figure 9.1 Composition of local expenditures by function (¥ trillion)

Economic Co-operation and Development countries. The share of local expenditures within public expenditures is one of the highest among the unitary countries, and is comparable even to that seen in federal states, where provincial or state governments have constitutionally stronger powers and functions.

The local governments' shares of revenues and expenditures, based on national account statistics, are shown in Table 9.4. The local shares were larger than central shares for collective consumption, gross capital formation, and other social benefits. Other social benefits include social benefits in kind, transfers of individual nonmarket goods and services, and social assistance. Pension benefits are paid from social security funds – which, in this case, are part of the central government – but some medical and long-term care benefits are paid by the local government. Thus, especially in the area of redistribution programs, the local shares are larger than the central shares.

Note that although local governments in Japan implement many redistribution programs, the central government typically schematizes these



Source: Ministry of Internal Affairs and Communications, Annual Statistics on Local Public Finance, various years.

Figure 9.2 Composition of local expenditures by type (¥ trillion)

programs, including social insurance (pension, health, long-term care, and work-related), the management of medical service delivery, public health (epidemic prevention), welfare programs for the disadvantaged (the elderly, the disabled, children, and single mothers), and income maintenance (poverty relief). The Ministry of Health, Labour and Welfare is the central ministry responsible for overseeing and carrying out these schemes.

As seen in Figure 9.3, more than one-half of expenditures are incurred at the local level; however, this is not the case for revenue. This means that the expenditures of local governments exceed their tax revenues. On the other side of the proverbial coin, the goods and services expenditures incurred at the central level exceed its tax revenues. Thus, there is a large vertical fiscal gap, and intergovernmental transfers are used to fill it.

9.2.4 Intergovernmental Transfers

Three interrelated factors

Figure 9.4 shows the revenue composition of local governments. According to the settlement of FY2013 ordinary accounts of the net total of prefectures and municipalities, the share of local tax revenues was 35 percent.

Table 9.4 Local share of revenues and expenditures (2011) (¥ trillion)

| Revenue/expenditure type | Central government | Local government | Social security fund |
|-----------------------------|--------------------|------------------|----------------------|
| Receipts | 31.9 | 31.5 | 56.3 |
| Tax | 44.5 | 34.5 | 0 |
| Social contribution | 0 | 0 | 56.3 |
| Capital transfer | -5.4 | 4.9 | 0 |
| Outlays | 82.5 | 49.6 | 52.5 |
| Collective consumption | 13.3 | 26.7 | 0 |
| Gross capital formation | 3.7 | 11.3 | 0 |
| Pension benefits | 0 | 0 | 49.0 |
| Medical/long-term benefits | 0 | 0 | 33.1 |
| Other social benefits | 4.2 | 23.2 | 5.6 |
| Land purchase, etc. | 3.4 | 7.2 | |
| Net property income | 5.3 | 1.7 | -3.1 |
| Intergovernmental transfers | 52.6 | -20.5 | -32.1 |
| Fiscal deficit | 43.3 | 10.3 | -3.9 |

Note: Figures may not add due to rounding.

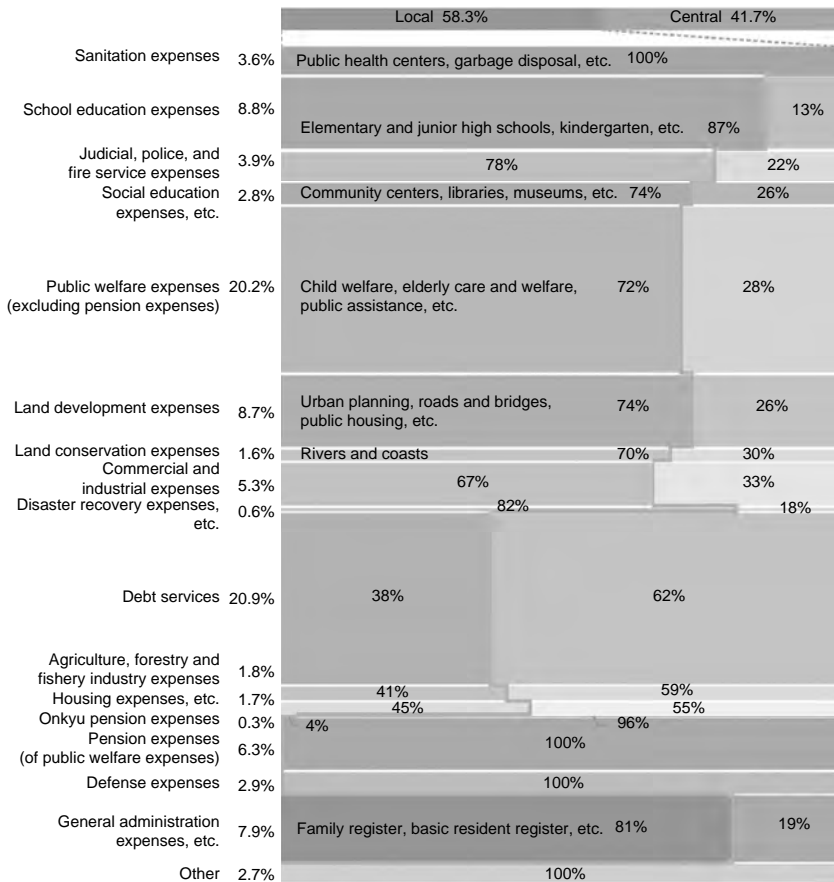
Sources: Japan Cabinet Office (2013), National Accounts for 2011.

This figure has been stable since the late 1990s, giving rise to the commonly used term ‘30 percent autonomy’. The share of local borrowing was 12 percent; other revenues (e.g., fees, charges, donations, and the like), 17 percent; and revenue from the central government, one-third of total revenues.

The purposes of intergovernmental transfers from central to local governments are threefold. First, as described above, there is a vertical fiscal gap between the central and local governments. This gap derives from the fact that the central government assigns to the local governments a number of functions that require more funds than the local governments can collect as local taxes under the inflexible local tax system.

Second, the central government expects national uniformity in the provision of public services. A large portion of public services are provided by local governments but national laws often require that local governments supply such services in a way that meets uniform national standards.

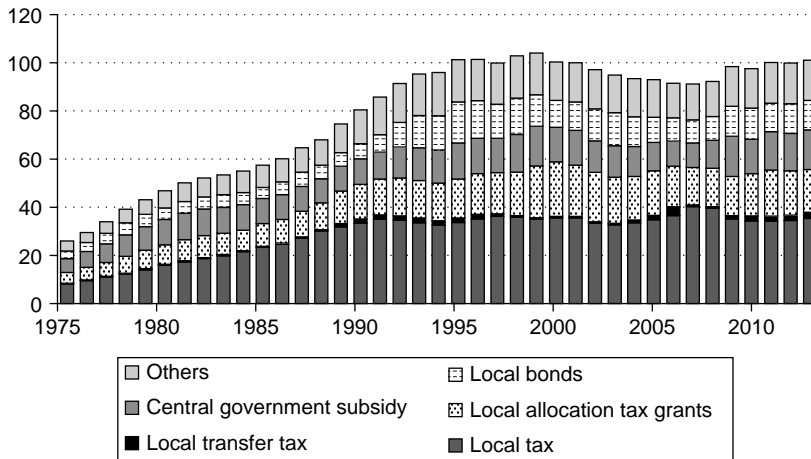
Third, although the central government demands uniformity in terms of various kinds of public services, tax capacities vary seriously among local governments. Thus, the central government needs to compensate for differences between expenditures and revenues for those local governments that lack sufficient tax capacity.



Source: Ministry of Internal Affairs and Communications (2015), White Paper on Local Public Finance.

Figure 9.3 Share of expenditures by purpose of central and local governments

Three types of funds are transferred to local governments: the central government subsidy (CGS), local allocation tax (LAT) grants, and local transfer tax grants. The local transfer tax grants are general-purpose and based on a tax-sharing scheme, wherein some tax revenues collected as national taxes are transferred to local governments in line with some specific rules. The total amount of these grants is relatively small, as shown in Figure 9.4; thus, I focus here on the CGS and the LAT grants.



Source: Ministry of Internal Affairs and Communications, Annual Statistics on Local Public Finance, various years.

Figure 9.4 Composition of local revenues (¥ trillion)

Central government subsidy

The CGS, also known as National Treasury Disbursements, comprise categorical grants that are disbursed directly from the budgets of central ministries – that is, from the general account of the central government. Since the CGS is purpose-specific, the project ‘price’ subsidized by the CGS will be low, and thus acts as an incentive for local governments to implement such projects.

The purpose of the CGS is twofold. First, this grant helps local governments maintain uniform services required by national laws. For example, the CGS is set for public assistance and other social programs, as well as compulsory education. Second, this grant functions as an incentive for local governments to adopt projects that contribute to national objectives; such projects often have positive (technological) externalities, and so the CGS can be considered a Pigovian subsidy. Examples include epidemic prevention (vaccination) and road construction, both of which would have network externality. Since one of the national objectives is economic stimulus, public works and infrastructure formation are often financially supported by the CGS.

Local allocation tax grants

The LAT grants are general-purpose grants disbursed through a special account of the central government. The purpose of LAT grants is,

according to the Ministry of Internal Affairs and Communications, to 'adjust imbalances in tax revenue among local governments' and to 'guarantee revenue sources so that local governments in whatever region can provide a certain level of administrative services'.

The LAT grants are divided into two parts: the Ordinary LAT grants (94 percent) and the Special LAT grants (6 percent). The Special LAT grants are distributed in the case of unexpected fiscal shocks, such as natural disasters.

The amount of Ordinary LAT grants that each prefecture and municipality receives is determined after the total amount of LAT grants is set through negotiations among central government ministries. On the one hand, the total amount of LAT grants is, on the whole, set as the difference between expenditures and the sum of local tax revenues, the CGS, and local borrowing. All of these components are estimated by the central government. On the other hand, the LAT Law allocates a specific portion of national tax revenues to the LAT grants – 33.1 percent of personal income tax and corporate income tax, 50 percent of liquor tax, 22.3 percent of consumption tax, and 100 percent of local corporate income tax (a national tax). For years, the amount that the LAT Law has allocated has fallen far short of the amount needed to fill the gap between the expenditures and sum of local tax revenues, the CGS, and local borrowing; thus, each fiscal year, the central ministries negotiate by how much LAT grants will be increased. This procedure is referred to as 'local fiscal measures'.

The amount of Ordinary LAT grants that each prefecture and municipality receives is defined as the difference between the standard fiscal demand (SFD) and the standard fiscal revenue (SFR). If the SFR exceeds the SFD, the local government cannot receive LAT grants, and need not pay back funds to the central government. The SFD is supposed to represent the 'standard' amount of expenditures of local governments, and the SFR the standard amount of revenues.

The SFD for a local government is determined through the use of a complicated formula, but it is basically calculated by determining the product of the measuring unit, unit cost, and adjustment coefficients for each service, and then summing all such products. Take the expenditures for elementary schools as an example. One of the measuring units is the number of students in elementary schools. The corresponding unit cost is the necessary expenditure per student in a standard local government. (This 'standard local government' is an imaginary locality, with populations of 1.7 million for prefectures and 100,000 for municipalities.) The adjustment coefficients are set to account for unit cost differences among local governments due to, for example, economies of scale and the effects of socioeconomic characteristics. The product of the measuring unit,

unit cost, and adjustment coefficients is calculated for each expenditure item.

The SFR for a local government is calculated as 75 percent of standard tax revenues plus the Local Transfer Tax. One reason why the SFR does not reflect 100 percent of the standard tax revenues is that it alleviates the incentive problem that the LAT grants might cause in ‘cultivating local tax revenues’. Another reason is that the SFD may not capture all of the fiscal needs of local governments. These standard tax revenues do not include all local taxes; it excludes, for example, taxes not listed in the Local Tax Law (e.g., the City Planning Tax). In addition, the tax rates used to calculate the SFR are the standard rates listed in the Local Tax Law, and so they may differ from actual tax rates.

The sum of the LAT grants that prefectures and municipalities receive must be equal to the predetermined total amount. This requirement necessitates a readjustment of the parameters in the SFD formula, including the unit cost.

Since LAT Grant amounts depend on formula outcomes, revising the formula can affect LAT Grant allocations. Thus, LAT grants are used also to mobilize local governments and, as a result, LAT grants are often seen as matching grants.

9.2.5 Borrowing

As seen in Figure 9.4, in recent years, more than 10 percent of local government revenues have been contingent on borrowing, on average. Japan’s local governments can issue local bonds in the name of local autonomy, but their issuance is controlled by the central government to some extent.

If a local government wants to issue a local bond, it in principle needs to ‘consult’ with an upper level of government: municipalities need to consult with their prefecture, and prefectures with the central government. If the local government successfully obtains consent from its upper government, the funds will be forwarded through the Local Bond Program by the central government, which is an integral part of the Local Public Finance Program. If a local government’s fiscal situation is not sufficiently healthy, it needs to obtain ‘approval’ from its upper government; if its tax rate is below the standard rate, it needs ‘permission’. Before 2006, it was permission from its upper government that each local government required, before it could issue local bonds.

The Local Bond Program is an annual program by which the Ministry of Internal Affairs and Communications allocates funds for a local bond that has approval or permission from the relevant upper government. There are two funds sources – private funds and public funds. Private funds are

public market issue funds or bank acceptance funds, which are not directly controllable by the Ministry. Issuance on the open market is permitted to large localities. Public funds are fiscal loan funds or Japan Finance Organization for Municipalities (JFM) funds, both of which are part of the Fiscal Investment and Loan Program. The major source of revenue for the JFM is its own bonds, and the JFM raises funds mainly in debt capital markets. In general, public funds are provided on favorable terms, with lower interest rates and longer maturity periods than those for private funds. Thus, most local governments manage to obtain the approval or permission from their upper government to issue bonds.

Local bonds are purpose-specific, and a local government must clarify how it will use the funds thus obtained. The eligible types of projects for which a local government can issue bonds are listed in the Local Public Finance Law. A local government basically can borrow money only to finance capital expenditures (infrastructure investment) and disaster recovery. In addition, there is a bond issuance cap set for each project, as a percentage of expenditures.

The local bond system is intertwined with the intergovernmental transfer system, especially LAT grants. The amount of LAT grants that each local government receives is calculated as the difference between the SFD and the SFR, as explained above. The SFD covers some debt services, and this arrangement virtually reduces the interest rate of local bonds and provides an incentive to issue bonds and invest in infrastructure. Take as an example a seismic-strengthening project for public school buildings. Two-thirds of the project's expenditures are subsidized through the CGS, and so the local government is responsible for preparing the remaining one-third. Since the bond issuance cap for this project is 90 percent, the percentage that the local government needs in the first year is only 3 percent ($= 1/3 \times 10$ percent). This 3 percent can be financed through local taxes or LAT grants. The local government can issue bonds for the remaining 30 percent ($= 1/3 \times 90$ percent) of the project's expenditure. When the local government pays back this local bond in the future, some portion of the corresponding debt service will be included in the SFD. In this case, two-thirds of the debt service will be booked in the SFD, and so the local government will need to pay 10 percent ($= 1/3 \times 90$ percent $\times 1/3$) of the project's expenditure in the future. Adding the payment in the first year, the ratio of the local tax revenues to the full expenditure will be less than 13 percent.

The local bond system, combined with the intergovernmental transfer system, functions as a device by which the central government can control or guide local governments. As Bessho (2010) pointed out, such fiscal incentives are not the single tool of the central government. Japan's central government compels local governments involved in drawing up

development plans or preparing budgets to offer voluntary cooperation and coordinate multiple objects and instruments. In the background of such planning and budget preparation are frequent and institutional contact, exchanges among personnel, and high levels of integration between the central and local governments (e.g., Muramatsu et al., 2001).² However, precisely because local governments are independent decision makers in the name of local autonomy, it is possible for them not to follow the plan or guidance provided by the central government. In the following, I introduce the results of Bessho and Ogawa (2015), who examined how Japan's local governments react to fiscal shocks as independent decision makers.

9.3 FISCAL ADJUSTMENT OF MUNICIPALITIES

9.3.1 Framework

Policy reactions to cope with various fiscal shocks, such as economic downturns, national fiscal reforms, and tax-base reductions owing to natural disasters, are called fiscal adjustments. Buettner and Wildasin (2002; 2006) attempted to quantify the dynamics of fiscal adjustments of United States' cities using a balanced panel dataset compiled from 1,270 cities in the United States between 1972 and 1997, and a VECM, which was originally developed to describe the dynamic interrelationships among stationary variables in macroeconomic fields. Several subsequent studies applied the Buettner–Wildasin approach to other countries, including Norway (Rattsø, 2004), Israel (Navon, 2006), Germany (Buettner, 2009), and Spain (Solé-Ollé and Sorribas-Navarro, 2012). Bessho and Ogawa (2015) also adopted the VECM approach to estimate municipal fiscal adjustments in Japan.³

The analytical framework is the VECM. Denoting own-source revenue (mainly tax revenue) as R_{it} , government investment (capital expenditure) as G_{it}^I , expenditure excluding government investment and debt services (hereafter, government current expenditure) as G_{it}^C , net intergovernmental transfers as Z_{it} , debt services as S_{it} , and the fiscal deficit as D_{it} , the government's budget constraint is represented as:

$$D_{it} = G_{it}^I + G_{it}^C + S_{it} - R_{it} - Z_{it} \quad (9.1)$$

If the fiscal deficit, D_{it} , is stationary, and if the variables on the right-hand side of equation 9.1 are all difference-stationary, then the five variables (G_{it}^I , G_{it}^C , S_{it} , R_{it} , and Z_{it}) are cointegrated with the cointegration vector

[1, 1, 1, -1, -1]. In this case, the VECM (p) of the five variables is expressed as follows:

$$\Delta Y_{it} = \gamma D_{i,t-1} + \sum_{j=1}^p \Gamma_j \Delta Y_{i,t-j} + u_{it}, \quad (9.2)$$

where $Y_{it} = (G_{it}^I, G_{it}^C, S_{it}, R_{it}, Z_{it})$. Here, γ and Γ are the parameter matrices to be estimated. The reaction of Y_{it} to innovations in fiscal shocks, u_{it} , describes the process of fiscal adjustment.⁴

The data are based on the settlement of municipalities' ordinary accounts from 1977 to 2001. All types of intergovernmental grants are grouped into one component, Z_{it} , including the CGS, purpose-specific grants, LAT grants, and general grants. This is because Japan's central and local governments are highly integrated (e.g., Muramatsu et al., 2001), and LAT grants, as well as the CGS, are used to mobilize local governments through revisions of the LAT grants formula.

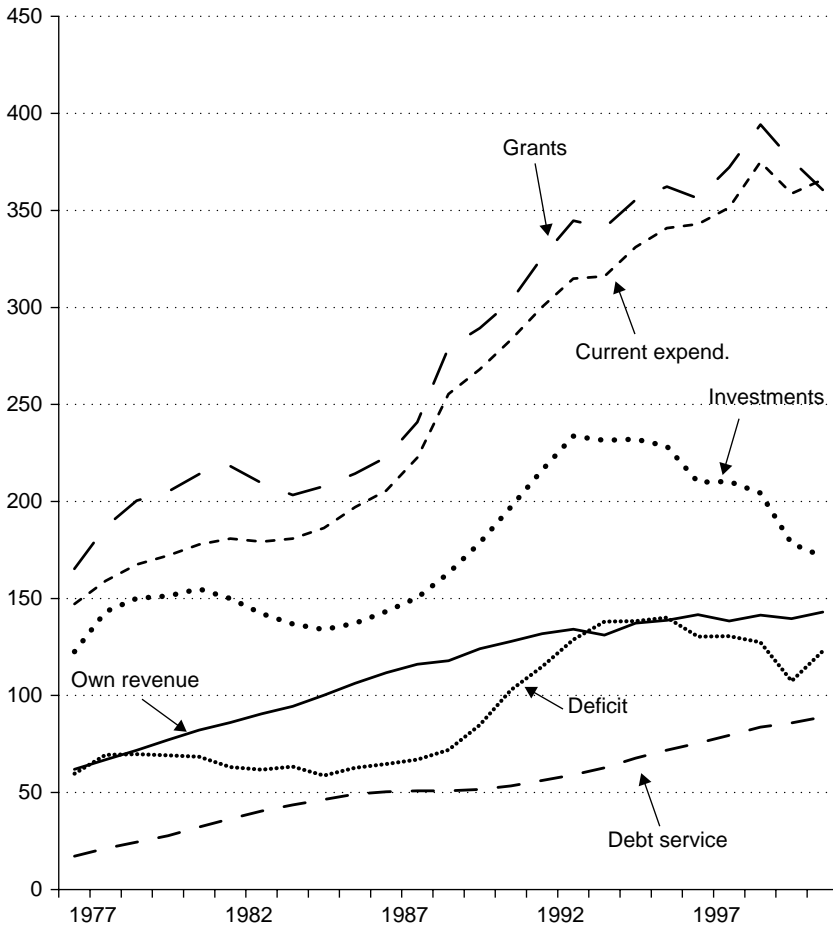
Figure 9.5 shows the level of each policy variable in per-capita terms during the sample period. Values of all items doubled or tripled during this period, and grants were two or three times larger than own-source revenue. Government investment was stable until the mid-1980s, but then increased sharply, due to large fiscal stimulus packages implemented by the central government. However, since 1997, government investment has fallen, while current expenditures have continued to rise. As a result, by the late 1990s, current expenditures were twice as large as government investment. Figure 9.5 shows a very high correlation between current expenditure and grants from higher-level government.

Own-source revenue and debt services showed a stable increasing trend during this period. Therefore, trends of the fiscal deficit tend to parallel those of investment.

9.3.2 Main Results

To interpret the estimation results, the present values of the impulse response for each variable with respect to fiscal shock are calculated based on the VECM coefficients as in the literature,⁵ with a 3 percent discount rate. The results are shown in Table 9.5.

The columns in Table 9.5 show how innovations in one variable can affect subsequent adjustments in both itself and other variables. For example, the first column reveals how a ¥1 change in own-source revenue in one period affects the subsequent evolution of own-source revenue, government investment, government current expenditure, grants, and debt services. The data in the table show that a ¥1 decrease in own-source revenue leads to a ¥0.384 increase in future own-source revenue, a ¥0.387



Note: All values are in units of thousand yen. They are converted to per capita basis and deflated to FY2010 price.

Source: Author.

Figure 9.5 Trends of fiscal variables

decrease in government investment, a ¥0.398 increase in grants, and a ¥0.162 increase in current expenditure. However, the change in current expenditure is not statistically significant.

Innovations in each budget component tend to be partially offset by future changes in the same component (Table 9.5). For example, ¥0.629 of the balancing adjustment to a permanent ¥1 change in own-source revenue

Table 9.5 Present value responses

| Response of | Innovation to | | | | |
|---------------------|-----------------------|-------------------|-------------------|-------------------|-------------------|
| | Revenue | Investment | Current | Grants | Debt service |
| Own revenue | -0.384 (0.039) | 0.023 (0.013) | 0.001 (0.024) | -0.012 (0.012) | 0.008 (0.026) |
| Investments | 0.387 (0.074) | -0.957 (0.070) | -0.259 (0.092) | 0.546 (0.065) | -0.460 (0.133) |
| Current expenditure | -0.162 (0.084) | 0.115 (0.047) | -0.112 (0.075) | 0.033 (0.043) | 0.053 (0.088) |
| Grants | -0.398 (0.096) | 0.160 (0.085) | 0.645 (0.109) | -0.418 (0.079) | 0.163 (0.161) |
| Debt service | -0.221 (0.060) | 0.234 (0.051) | 0.330 (0.064) | -0.154 (0.048) | -0.354 (0.099) |
| Response of | Permanent increase in | | | | |
| | Revenue | Investment | Current | Grants | Debt service |
| Own revenue | | 0.508 (8.355) | 0.002 (0.028) | -0.021 (0.021) | 0.013 (0.040) |
| Investments | 0.629 (0.122) | | -0.292 (0.102) | 0.945 (0.087) | -0.712 (0.168) |
| Current expenditure | -0.263 (0.136) | 1.119 (30.848) | | 0.052 (0.075) | 0.071 (0.125) |
| Grants | -0.645 (0.146) | 1.734 (27.853) | 0.726 (0.101) | | 0.254 (0.234) |
| Debt service | -0.360 (0.097) | 1.767 (60.936) | 0.371 (0.056) | -0.273 (0.107) | |

Note: Standard errors are in parentheses.

Source: Author.

comes from a change in government investment (Table 9.5, second row, bottom part).

Responsiveness

The rows in Table 9.5 show how responsive a variable is to changes to itself and other variables. The second row implies that government investment is most responsive, with changes of between ¥0.259 and ¥0.546 for ¥1 innovations in other fiscal variables.

A municipality's own-source revenue is less responsive. The first row of Table 9.5 shows that it does not tend to adjust to fiscal imbalances caused by exogenous innovations in other variables. The absolute values range

from ¥0.001 to ¥0.023, which are much smaller than the corresponding estimates for the United States, Germany, or Spain. This unresponsiveness of own-source revenue in Japan's municipalities arises from the inflexibility of the municipal tax system, as explained in section 9.2.

The fourth row shows that grants tend to adjust the budget to innovations in own-source revenue, grants, and current expenditure. However, they do not show a significant reaction to shocks in investment and debt services.

The intergovernmental grants formula explains why grants work to adjust an innovation in current expenditure; this is especially true for LAT grants. LAT grants are provided to municipalities to 'fill the gap' between the SFD and the SFR, as described in section 9.2. When municipalities must raise their current expenditure due to exogenous shocks – such as rapid population growth – it results in an increase in the SFD, leading to increases in grants from the central government or most municipalities. Grants also tend to adjust to an innovation in own-source revenue because of the intergovernmental grants formula, as the SFR in the LAT Grant system is based on standard local tax revenue.

The 'flypaper effect'

The data in the fourth column of Table 9.5 relate to the so-called flypaper effect in terms of local public finance. The flypaper effect refers to the phenomenon that, when municipalities receive grants from a higher government, they do not reduce the tax burden (own-source revenue) but rather maintain the level of public expenditure.

Data for Japan show strong evidence of the flypaper effect.⁶ According to the figures in the fourth column of Table 9.5, the response of own-source revenue to a ¥1 innovation in central grants is small and negative – just – ¥0.012. These figures are only about one-tenth the size of those for the United States, but similar to those of Spain and Germany. Since the response of current expenditure is fairly low (¥0.033), an increase in grants-in-aid mainly affects government investment (¥0.546). This difference arises partly because 'mandatory' expenses, such as personnel and social assistance, make up a large share of current expenditure, while government investment can be adjusted more flexibly to circumstances.

Ex post extraction of grants

The fourth row in Table 9.5 can shed light on the question of whether municipalities engage in opportunistic behavior to extract ex post larger grants from higher-level government by changing their behavior ex ante. Currently, there is much debate about the extent of opportunistic behavior

among local governments in Japan. Some studies find evidence of such behavior (e.g., Akai et al., 2003; Doi and Ihori, 2006), but others do not (e.g., Nishikawa and Yokoyama, 2004). Such opportunistic behavior is consistent with the observation of a future increase in grants following current fiscal innovations in expenditure.

In the case of Japan, a ¥1 increase in government current expenditure induces a ¥0.645 increase in grants. This implies that municipalities can induce grants by raising their current expenditures. On the other hand, a ¥1 increase in government investment also leads to a ¥0.160 increase in grants, but this impact is much smaller and not statistically significant. These results imply that municipalities can induce an increase in grants by expanding current expenditures, but not by increasing government investment.

This difference probably arises because government investment tends to occur on a one-off basis, whereas current expenditure shocks tend to be long-lasting, because they are made up mostly of mandatory expenses such as personnel and welfare. Taking this difference into account, the central government probably has a greater tendency to support municipalities hit by current expenditure shocks.

Combined with the unresponsiveness of own-source revenue as explained earlier in this section, this may suggest that municipalities engage in opportunistic behavior. Consider a simplified story where a municipality wants to increase government current expenditure by ¥1. If this increase is successfully reflected in the SFD formula, the municipality will receive more LAT grants, which is defined as the difference between SFD and SFR. If the municipality does not depend on LAT grants, it must increase own-source revenues by ¥4. This is because SFR is calculated as 75 percent of standard tax revenue, and an increase in standard tax revenue by ¥1 means an increase in the sum of tax and LAT grants by ¥0.25 if SFD is constant. In this situation, the municipality may well choose to depend on the central government, rather than mobilize more own-source revenues. Although it is not clear whether this story is valid and quantitatively significant as mentioned above, the system of taxes and grants can jointly affect decision making on both the expenditure and revenue sides.

Volatility

Government investment is the most volatile among expenditure components; moreover, the extent of such volatility in Japan is much greater than that seen in all other countries.

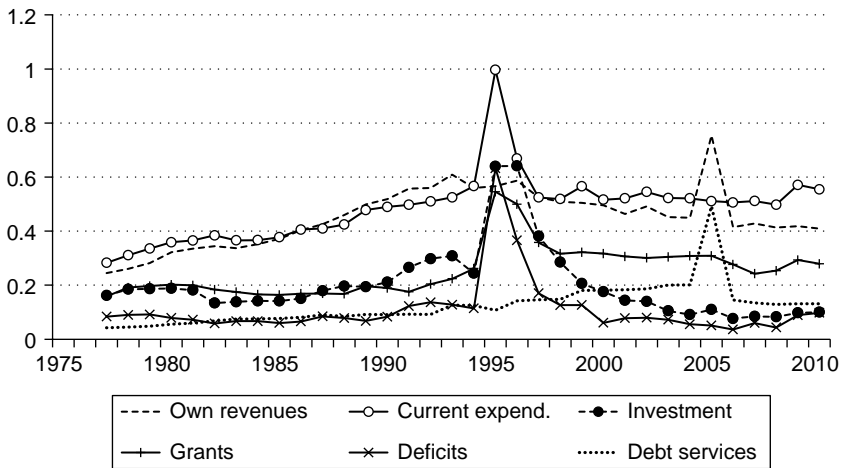
This higher volatility of government investment in Japan could be attributed to the fact that Japan's central government has introduced numerous

fiscal stimulus packages and mobilized municipalities to expand public investment as a policy tool. For example, in the late 1990s and 2000s, after the burst of the real estate bubble, ‘public investment by lower-level governments has played a role in boosting the economy, as well as in supporting rural areas through income redistribution’ (Tajika and Yui, 1996: 123).

Two examples from Japan

We provide two typical examples, to examine fiscal adjustments in own-source revenue, government investment, government current expenditure, and grants. The two are Kobe city in Hyogo prefecture, and Onagawa town in Miyagi prefecture.

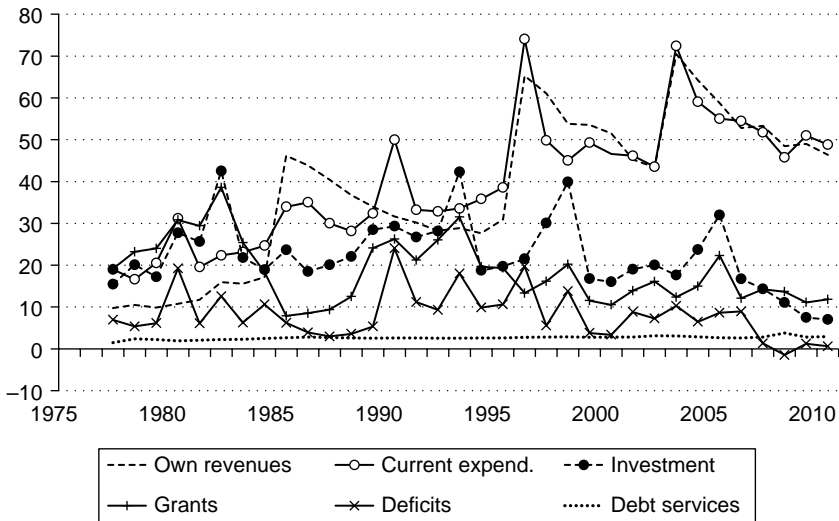
Kobe’s history with regard to six fiscal variables is shown in Figure 9.6. Kobe was hit by the Hanshin–Awaji earthquake in January 1995 (FY1994), and this created a shock on the expenditure side. The city needed large funds to finance disaster relief and reconstruction, a large part of which was financed by grants and borrowing. Spikes are seen in FY1995 in investments, current expenditures, grants, and deficits. Current expenditures reverted to the previous trend more quickly than investments did, followed by grants and deficits. Investments and deficits recovered to the trend seen in the five previous years. Grants shifted upward – mainly



Note: All values are in units of thousand yen. They are converted to per capita basis and deflated to FY2010 prices.

Source: Author.

Figure 9.6 The case of Kobe City, Hyogo Prefecture



Note: All values are in units of thousand yen. They are converted to per capita basis and deflated to FY2010 prices.

Source: Author.

Figure 9.7 The case of Onagawa Town, Miyagi Prefecture

to finance debt service, even after five years had passed. On the other hand, own-source revenue did not show such a spike in 1995, and no shift has been observed since 1995. (The spike in 2005 was a technical one that reflected transfers from the city's special account.) The example of Kobe clearly demonstrates that municipal fiscal adjustments are achieved mainly through deficits and grants, and not through own-source revenue.

The other example is Onagawa; its history is detailed in Figure 9.7. There, nuclear power plants generate huge property tax revenues, since the tax base of Japan's property tax includes depreciable assets. Thus, there were fiscal shocks to the revenue side. Unit 1 of Onagawa Nuclear Power Plant started operations in 1984, Unit 2 in 1995, and Unit 3 in 2002. There were own-source revenue hikes in these years, but they decreased gradually as the value of the plants depreciated. Current expenditures increased along with own-source revenue. Investments seemed to respond to hikes of own-source revenue, with lags of several years. At the same time, grants decreased in the corresponding years, to some degree. Deficits did not seem to respond to movements in own-source revenue. Onagawa's case in Figure 9.7 demonstrates, especially for the period after the mid-1990s, that

municipal fiscal adjustments to a shock on the revenue side are achieved mainly through expenditures.

9.4 CONCLUDING REMARKS

This study sought to provide an overview of the basics of Japan's local public administration and finance system, and to analyze how Japan's municipalities restore their fiscal balance after a fiscal shock.

The features of Japan's system are summarized as follows. First, Japan's local governments disburse more money than the central government, and thus play a major role in redistribution. Second, local tax systems are inflexible, and differences between local tax rates and those dictated by the system are very small; this leads local governments not to consider local tax rates a plausible choice variable. Third, a large vertical fiscal gap exists between the central and local governments, and so intergovernmental transfers from central to local governments are necessary. Intergovernmental transfers also contribute to uniform public service provision (in line with national standards) and to closing serious gaps in tax capacities among local governments. Fourth, the local borrowing system is also intertwined with the local tax and intergovernmental system.

Analysis of fiscal adjustments in Japan's municipalities, based on the VECM, provides the following results. First, Japan's municipalities respond to fiscal shocks mainly by adjusting their expenditures, especially through government investments. Second, the municipalities' own-source revenue plays a limited role in balancing the local budget, while grants from the central government play a significant role. Third, the magnitude of volatility in own-source revenue and grants is relatively small, whereas government investment in Japan is highly volatile compared with that seen in other countries. Fourth, international comparisons show that municipalities are likely to induce grants from higher-level government, but that this is also the case with current expenditures in Japan. Fifth, the responses of government investments explain almost everything about permanent unit increases in grants, providing possible evidence of the flypaper effect.

This study places emphasis on the close link between the central and local governments. The central government supervises and supports local governments by making fiscal transfers, and through local bond system settings under the inflexible local tax system. On account of these supports, local bond 'defaults' are very rare in Japan: only 17 municipalities have defaulted since 1975, with the two most recent examples being Akaike town in Fukuoka prefecture in 1992, and Yubari city in Hokkaido in 2007. These circumstances contrast with other developed economies; in the

United States, for example, there were 2,521 defaults during the 1970–2011 period – that is, an average of more than 60 defaults per year (Appleson et al., 2012). Note that a local bond ‘default’ is often defined in Japan by the filing of a case for fiscal reconstruction. Under the Fiscal Reconstruction Law, all local borrowings are assumed to be paid back following the approval of a fiscal reconstruction plan that the central government advises and supervises. This system can create a ‘soft budget’ problem, as suggested in section 9.3, and may induce moral hazard behavior among local governments.

One policy option by which to constrain such behavior is the introduction of a bankruptcy system for local governments; this topic has led to heated debate in the course of enacting a series of local decentralization reforms in Japan. The new Fiscal Reconstruction Law, established in 2009, did not introduce a bankruptcy system, but rather an ‘early warning system’ based on a combination of fiscal indicators; this system requires a local government to create a fiscal reconstruction plan, if it sets off a proverbial alarm. One of the advantages of a bankruptcy system is that, under the pressure of financial markets, it deters moral hazard behavior among local governments, including investments in risky projects and irresponsible expenditures. One disadvantage is that it creates concern among local residents with regard to government shutdowns. In Japan, where there are serious disparities in local tax capacity and local governments play a major role in redistribution, these advantages and disadvantages should be carefully evaluated in the course of undertaking decentralization reforms.

NOTES

1. There have been other types of special local governments – that is, special city and local development corporations – but these were abolished.
2. The tendency for high levels of integration between local and central governments in Japan is captured by the integrated model of Muramatsu et al. (2001), in which local governments are assigned a large range of tasks, the competencies of the central and local governments are intertwined, and the central government steers local governments through partnerships. Typical examples of highly integrated or closed partnerships between the local and central governments are various public works projects implemented under the initiative of the local authorities, but with the central government monitoring day-to-day operations.
3. Sections 9.3.1–9.3.2 are based on Bessho and Ogawa (2015). The reader may consult that paper for further details.
4. In equation 9.2, p denotes the lag length. Bessho and Ogawa (2015) chose a model with four lags, based on the results of likelihood-ratio tests. The stationarity of the variables is tested by using the panel unit root test developed by Pesaran (2007). They chose to conduct equation-by-equation estimations using an ordinary least squares estimation without fixed effects, to compare the results with the previous studies.

5. See Appendix C in Buettner (2009) for more information.
6. The flypaper effect has been observed in Japan's municipalities, through the use of various methods. For example, see Nagamine (1995) and Doi (1996; 2000).

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10. Fiscal decentralization and local budget deficits in Viet Nam: an empirical analysis

Peter J. Morgan and Long Q. Trinh

10.1 INTRODUCTION

Since 1975, Viet Nam has gradually decentralized more fiscal responsibilities to local authorities. In 1996, the first State Budget Law was promulgated, and fiscal decentralization was formally mandated. This law was then revised in 2002 and put into operation in 2004, giving more autonomy to local governments, especially at the provincial level, to promote sustainable development underpinned by local preferences and economic stability, equity across provinces, efficient services delivery, and enhanced transparency and accountability in public finances.

Today, local spending accounts for just over one-half of general government spending, while local revenue accounts for over one-third of general government revenue, and just over one-half when extra-budgetary sources are included. These are significant shares when compared to other countries, particularly those at a similar level of development to Viet Nam (World Bank, 2014).

This study has two objectives: (i) to take stock of the current institutional framework for intergovernmental fiscal relations, and (ii) to empirically assess the deficit sustainability of local governments in Viet Nam.

10.2 LOCAL GOVERNMENT SYSTEM AND FISCAL DECENTRALIZATION IN VIET NAM SINCE 1975

10.2.1 Local Government System

Viet Nam's local government system was established in 1945, at the same time as the Democratic Republic of Viet Nam, operating under the

principle of democratic centralism. This principle created a hierarchical top-down administrative system, meaning that subordinates obey superiors, and local governments obey the central government. Today, Viet Nam has four tiers of government: (i) central; (ii) 63 provinces, including five major cities; (iii) 710 district-level cities, towns (in urban areas), and districts (in rural areas); and (iv) 11,145 wards and townships (in urban areas) and communes (in rural areas). Each tier of government has both legislative and executive authorities. At the central level, legislative authority rests with the National Assembly, and executive authority rests with line ministries and agencies. At the local level, each tier of government has a people's council to exercise legislative authority and a people's committee and line departments to exercise executive authority.

10.2.2 Fiscal Decentralization since 1975

From 1975 to 1989, Viet Nam remained a centralized fiscal and economic system. Local governments acted as an agency for the central government, and they also were assigned some limited own-source revenue including fees, charges, asset depreciation, some shared revenue including revenue from the profit of state-owned enterprises (SOEs), and taxes on agriculture and industrial activities. In 1983, the government issued a resolution to further clarify local government own-source revenue and revenue shared by local governments with the central government. Sharing rates were still determined by the central government. The central government also designed a subsidy scheme for provinces that were unable to cover their local expenditures with own-source and shared revenues.

During this period, the role played by local governments in the budget-making process grew, and the central government began considering local governments to be an integral component of the state budget. In 1989, the government implemented a resolution that regulated the spending responsibilities of and revenue sources for local governments. Under this resolution, local government revenue came from three different sources: (i) 100 percent of locally collected revenue (e.g., collections to cover depreciation, taxes on the slaughter of livestock, and various fees and charges); (ii) shared tax revenue with the central government (e.g., revenue from profits of central and local SOEs and industrial activities); and (iii) conditional transfers to balance local governments' budgets. Under this new arrangement, shared revenue could not be retained by local governments; thus, of 44 provinces, 14 returned additional revenue to the central government from shared revenue because their local budgets were balanced.

In 1996, to further reform the central–local government relationship, the first budget law was promulgated, coming into effect in 1997. This law

outlined the spending responsibility and revenue allocations for central and local governments, and regulated the borrowing of local governments and intragovernmental fiscal transfers. This law was then revised in 1998, coming into effect in 1999. Under the revised law, the lower tiers of local government (i.e., district and commune levels) were assured greater revenue and expenditure responsibilities. For example, they were to secure at least 70 percent of their revenue from taxes on the rights of land transfers, land and housing taxes, licensing taxes from small businesses, and agriculture taxes. This law also defined the roles of different agencies engaged in the preparation of the central budget as well as the roles of line ministries and local governments in implementation.

To give more fiscal responsibility to local governments, especially at the provincial level, the new budget law was promulgated in 2002, taking effect in 2004.¹ This law has several distinguishing features:

- (i) The central government has given local governments more autonomy. While the 1997 law established intergovernmental fiscal relationships among all tiers of government, the new law only regulates the fiscal relations between the central and provincial levels. Local governments now have autonomy in deciding the fiscal relationship among government levels within their jurisdictions.
- (ii) The fiscal capacity of local governments has been strengthened. The central government now shares some types of revenues that used to be solely central government revenue sources (e.g., special consumption taxes, and gasoline and oil taxes) with local governments.
- (iii) The central government also has designed some incentives for revenue efforts made by local governments.
- (iv) The central government has also established a legal foundation for the adoption of formula-based intergovernmental fiscal transfers.
- (v) It established budget stabilization periods of three to five years as determined by the National Assembly. Since 2004, there have been three stability periods: 2004–2006, 2007–2010, and 2011–2016.

The new budget law specifies that there is a single, unified public sector budget that must ultimately be ratified by the National Assembly, implying that the National Assembly is given more power in the fiscal decentralization process. The transfer norm decision was also moved from the Ministry of Finance to the National Assembly, and is made public to sector ministries and provinces, thus improving the transparency and budget process. Moreover, the National Assembly approves not only estimates of total revenues and expenditures but also their composition.

Different from other countries, the hierarchical nature of the Viet Nam

fiscal system complicates the budget-making process (see Figure 10.1). Although each local government has some autonomy in estimating its budget, budgets of lower-level governments are examined and approved by the higher level of government. Eventually, the outcomes of the entire process must be integrated into the single state budget. This hierarchical nature also undermines the autonomy of the lower level of governments, as their budgets are highly subject to changes and revision requests by higher levels of governments.

10.2.3 Modern Fiscal Decentralization in Viet Nam

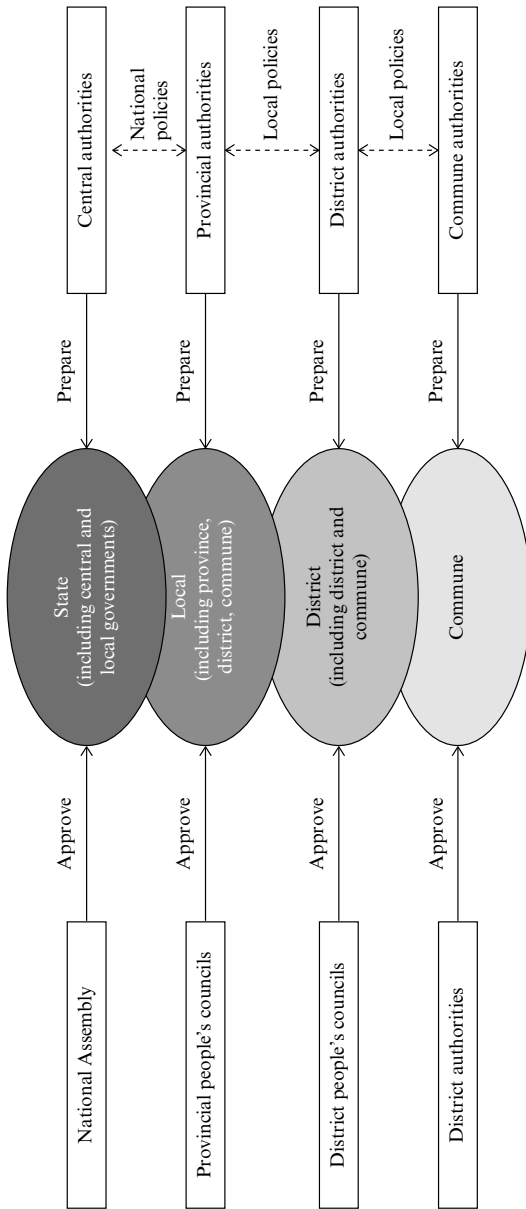
Expenditure decentralization

Since the new budget law, local authorities have been given more power in making decisions relating to resources allocation within their provinces, as the law defines spending functions for the central government and local governments. The central government still has the exclusive responsibility for external relations, foreign trade and foreign assistance, food safety, and drug regulation. Responsibility for all other public services is shared among the various tiers of governments.

Expenditure assignments also take into account the special character of provinces and are asymmetric across provinces. Fiscally advantaged provinces enjoy greater fiscal and administrative autonomy, while central government agencies have a more expansive role in fiscally disadvantaged provinces.

Local government spending makes up an important share of total government expenditure in Viet Nam (see Table 10.1). The share of local government spending increased from 47 percent in 2007 to about 53 percent in 2013. In 2013, local governments made up about 70 percent of total capital spending, since the central government's responsibility was limited to large national projects. Their share in recurrent expenditure also increased to about 54 percent in 2013. Except for social security functions, which still accounts for a large share of central government spending (about 75 percent), local governments' share of total recurrent spending in other government functions was high. For example, in 2013, local governments were responsible for 91 percent of total recurrent expenditure in the education sector and 84 percent in the health sector.²

At the lower levels of local government, the degree of decentralization is rather high. In many provinces, district spending constituted more than 45 percent of total local spending (World Bank, 2014). Lower-level local governments were responsible for most of the recurrent expenditure in the education sector (75 percent in 2012) and health sector (60 percent in 2012). Uchimura and Kono (2012) and the World Bank (2014) found that



Source: World Bank (2014).

Figure 10.1 Fiscal process in Viet Nam

Table 10.1 Ratio of decentralized revenue to total expenditure (%)

| Expenditure | 2007 | 2010 | 2013 |
|------------------------------------------------------------------------|------|------|------|
| Total expenditure | 46.6 | 53.1 | 52.6 |
| Development investment expenditures (including capital expenditure) | 62.7 | 73.4 | 68.9 |
| Debt services and overseas aid | 15.2 | 9.7 | 6.3 |
| Recurrent expenditure | 50.3 | 53.5 | 53.7 |
| Education | 86.2 | 89.6 | 90.9 |
| Health | 79.0 | 80.8 | 84.4 |
| Social welfare | 14.0 | 17.9 | 24.5 |

Source: Authors' calculations using Ministry of Finance data.

the shares of rural population and the level of local capacity in provinces are important factors in explaining the level of district expenditure in local expenditure. However, the degree of capital expenditure decentralization between the provincial level and lower levels is rather limited. Only 30 percent of provincial total capital expenditure was implemented by the lower levels of government. This could be attributed to some concerns over efficiencies regarding capital spending at the lower levels.

Although Viet Nam has accelerated its fiscal decentralization process, there are some institutional factors that may have negative effects on the effectiveness of such decisions. First, the spending responsibilities for each level of government are still not clearly defined, thus creating unnecessary overlaps. Except for some exclusive responsibilities as previously mentioned, responsibility for all other public services is shared between the central and provincial governments, including national defense and social insurance and protection. While the local contributions for these areas are typically small, they disproportionately affect poorer provinces, and sometimes these expenses cannot be anticipated and therefore require diverting local resources from other services (World Bank, 2014).

Moreover, if coordination among tiers of government is not smooth, ambiguous expenditure assignments may cause overlaps and inefficiency. The most visible overlaps are seen in the education and health sectors. For example, in the education sector, the central government and local governments co-share administering, financing, managing, and delivering almost all levels of education, from pre-kindergarten to university. Such overlaps in expenditure responsibilities create a number of burdens for local government, including time and efforts to clarify respective functions for each level (World Bank, 2014).

Second, although the new budget law lists spending functions for both

the central and local governments, the lists are both overdetailed and vague, impacting the autonomy and flexibility of local governments. For example, they list some ambiguous functions like investment in SOEs, state economic organizations, and state financial institutions, but spending functions in certain areas may be different among provinces due to socio-economic development conditions.

Third, the new budget law gives provinces autonomy to assign expenditure responsibilities to lower tiers of governments, which leads to substantial heterogeneity in provinces' expenditure assignments. In the first stability period, all three subnational governments were responsible for health care in 25 provinces, provincial and communal governments shared the responsibility in eight provinces, provincial and district governments shared the service responsibility in 14, and the service was the exclusive responsibility of the provincial government in 17 provinces (Le, 2006).

Revenue decentralization

Revenue collected in Viet Nam can be grouped into three categories: (i) central government revenue; (ii) revenue entirely retained by local governments; and (iii) revenue shared between the central government and local governments. Accordingly, shared taxes include value added tax (VAT) (except the VAT on imported goods), corporate income tax (except some special cases), personal income taxes, taxes on profits remitted abroad (except for the petroleum industry), special consumption taxes, and gasoline and oil fees. Note that the sharing of these taxes is based on the domicile of the taxpayer, and tax rates and bases are set by the central government and are uniform throughout the country.

The sharing rate has some special features, including a new rate introduced at the beginning of each stabilization period, a uniform rate for all shared taxes, a fixed rate during a stability period, and different rates applied in different provinces. The sharing rates are established at the beginning of each stabilization period and are based upon provincial fiscal capacity. Table 10.2 presents the sharing rates of provinces that had rates of less than 100 percent.

Taxes and fees fully dedicated to provinces include taxes on land and housing, natural resources (excluding petroleum), license taxes, taxes on transfer of land-use rights, taxes on the use of agriculture land, fees on land use, land rent, revenue from leasing and sale of houses owned by the state, registration fees, and revenue from state-run lotteries, as well as various fees and charges. Of all of the revenue sources, this type of revenue is the most suitable type of own-source revenue in the standard language of fiscal decentralization. This revenue source, together with shared revenues

Table 10.2 Portion of shared provincial and central government revenues retained by provinces (%)

| Province | 2004–06 | 2007–10 | 2011–15 |
|------------------|---------|---------|---------|
| Ha Noi | 32 | 31 | 42 |
| Quang Ninh | 98 | 76 | 70 |
| Hai Phong | 95 | 90 | 88 |
| Vinh Phuc | 86 | 67 | 60 |
| Bac Ninh | 100 | 100 | 93 |
| Khanh Hoa | 52 | 53 | 77 |
| Ho Chi Minh City | 29 | 26 | 23 |
| Dong Nai | 49 | 45 | 51 |
| Binh Duong | 44 | 40 | 44 |
| Ba Ria–Vung Tau | 42 | 46 | 44 |
| Long An | 99 | 100 | 100 |
| Tien Giang | 99 | 100 | 100 |
| Vinh Long | 90 | 100 | 100 |
| Can Tho | 95 | 95 | 91 |
| Others | 100 | 100 | 100 |

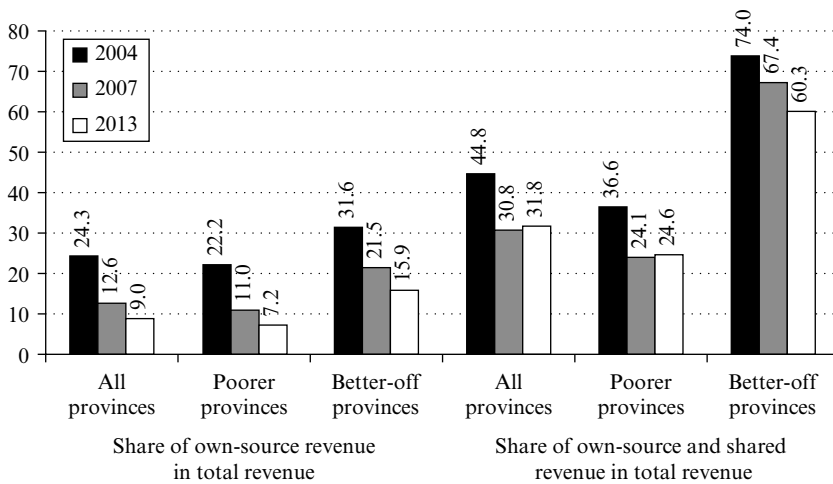
Source: Authors' compilation from Ministry of Finance data.

that can be viewed as fiscal transfers, makes up decentralized revenue. They represent the core of the locally collected revenue.

The new budget law also allows provincial governments to design their own revenue assignments to districts and communes within their jurisdictions, although there are still some general principles and minimum standards that the provinces must follow. However, more autonomy in assigning expenditure responsibilities enables provinces to delineate expenditure responsibilities based upon the fiscal capacity and rural and urban characteristics of local governments.

The law also includes an incentive for revenue collection at the local government level. A local government can retain up to 30 percent of all shared revenue actually collected in excess of the estimated amount. Further, to avoid the temptation to underestimate future shared tax revenues, the law stipulates that the excess amount retained must not exceed the difference between this year's actual revenue in shared taxes and last year's.

During 2006–12, decentralized revenue in Viet Nam constituted about 9.6 percent of gross domestic product (GDP). Decentralized revenue, however, did not account for a large share of local economies in Viet Nam. In most of the provinces, decentralized revenue was equal to about



Source: Authors' calculations using Ministry of Finance data.

Figure 10.2 Share of decentralized revenue in total local government revenue (%)

7.0 percent of local GDP; these provinces also retained 100 percent of the shared revenue that they collect. This is because some of the potentially largest sources of revenue, such as trade-related revenue, petroleum-related revenue, and corporate income taxes from large SOEs, accrue to the central government and not to local governments.³

Figure 10.2 presents the contribution of decentralized revenue to total revenue at the local government level. The share of revenue that is fully dedicated to provinces (i.e., own-source revenue) declined from 24.3 percent in 2004 to 12.6 percent in 2007 and further to 9.0 percent in 2013.⁴ The share of own-source revenue and shared tax revenue also declined from 44.8 percent in 2004 to 30.8 percent in 2007, yet the share of these two sources of revenue was stable at about 30.0 percent of total revenue during 2007–12. This implies a declining role of decentralized revenue in total local government revenues. Figure 10.2 also indicates a huge gap in the importance of these two sources between provinces with a sharing rate of 100 percent and provinces with a sharing rate of less than 100 percent. In 2013, about 60 percent of total revenue of better-off provinces was from these two sources, while this figure was about 25 percent in poorer ones.

Despite efforts to give more power to local governments to raise their revenue, several obstacles continue to limit the size of local government own-source revenue. First, there are two concerns about the shared

revenues. On one hand, the sharing rate is set to take into account differences in fiscal capacity. However, in reality, sharing rates are determined through negotiations between central and local government authorities, and thus could lead to suboptimal outcomes due to poor revenue forecasts and differing negotiating capacity (World Bank, 2014). The other concern relates to the fairness of the system. The shared revenues in Viet Nam are split, based on where revenues are actually collected rather than where the tax is incurred. This raises questions concerning the fairness of the system, especially for VAT and corporate income tax (e.g., if a firm operates in one province, and its headquarters are in another province).

Second, some regulations hinder the autonomy that the central government gives to provincial authorities. For example, with regard to fees and user charges, provincial authorities can only set the charges and fees for 19 of 63 items, while the Ministry of Finance has the authority to set the fees and user charges of the remaining items. This partly explains why only about 11 percent of own-source revenues were collected from fees and charges (World Bank, 2014). Another regulation is related to the share of resources allocated to the commune level: (i) communes and townships receive at least 70 percent of revenues from a tax on transfer of land-use rights, land and housing taxes, the license tax on individuals and individual households, and registration fees for land and housing; and (ii) townships and cities receive at least 50 percent of revenues from registration fees, excluding registration fees for land and housing. Such sources of revenue cannot be reallocated among communes, which has caused vertical imbalances among communes. While many communes and townships cannot absorb the minimum stated shares of resources, other communes cannot raise adequate resources to meet their spending needs. This can lead to inefficient spending or regular carryovers in surplus jurisdictions, and poorer services delivery in deficit jurisdictions (World Bank, 2014).

Third, the lack of minimum standard guidelines for services provision leads to heterogeneity in responsibility sharing across provinces. For example, some provincial governments retain all revenue from taxes on natural resources, while subprovincial governments (i.e., districts and communes) in other provinces are fully or partly entitled to this tax, depending on business ownership. Sharing rates of a revenue source may even vary among districts within a province. For example, in 2008, the sharing rates for land and house registration fees ranged from 13 percent to 38 percent among 24 districts in Ho Chi Minh City.

10.2.4 Intergovernmental Fiscal Transfers

While revenue-sharing arrangements help reduce vertical fiscal imbalances, intergovernmental fiscal transfers aim to reduce horizontal fiscal imbalances and to achieve national targets and objectives. At the lower levels of government, revenue sharing and transfers are also used to address vertical and horizontal imbalances across districts. There are two types of transfer program in Viet Nam: unconditional balancing transfers and targeted transfers.

Viet Nam currently adopts two formulas to calculate balancing transfers, one to calculate recurrent spending needs and one to estimate capital spending needs. The formulas are based on transfer norms, which are assigned based on particular criteria, including population, development, geographic area, and number of district administrative units. After subtracting the decentralized revenues (including shared revenues), the remaining amount is covered by the balancing transfer. Because such formulas are determined before each stability period,⁵ balancing transfers are highly predictable, as they are fixed in nominal terms over each stability period.

At the provincial level, there are allocation norms for spending estimates for districts across 19 categories of expenditure, mostly various functional areas of spending such as education, health, and economic services. For each functional area, a per capita allocation norm is based on geographic location (e.g., urban, plain areas, mountainous areas, and highlands and islands).⁶

Table 10.3 presents the share of each revenue source in total expenditure. On average, there has been no significant change in the role of each source of revenue in total expenditure, except for the other sources (including local government borrowing). Decentralized revenue (including own-source revenue and share revenue) still accounts for 65 percent of total expenditure, while total transfers (including balancing transfers and targeted transfers) account for about 40 percent of total expenditure, implying the increasing importance of shared revenues in local government revenue given the decline in the share of own-source revenue in total local government revenue.

There is a wide gap in the role of each revenue source in expenditure between better-off provinces and poorer ones. In poorer provinces, total transfers still account for about 50 percent of total expenditure, while decentralized revenue makes up only 30 percent. Figure 10.3 shows that while better-off provinces have a large fiscal surplus (i.e., their revenue is always much higher than their expenditure), poorer provinces do not have enough resources for their spending, even after receiving intergovernmental

Table 10.3 Source of revenue for expenditure (%)

| | Decentralized revenue/total expenditure | Balancing/total expenditure | Transfer/total expenditure | Other sources |
|-------------------------|-----------------------------------------------|--------------------------------|-------------------------------|---------------|
| <i>All provinces</i> | | | | |
| 2007 | 65 | 22 | 21 | 27 |
| 2010 | 64 | 15 | 24 | 44 |
| 2013 | 66 | 23 | 18 | 37 |
| <i>Poorer provinces</i> | | | | |
| 2010 | 31 | 19 | 28 | 7 |
| 2013 | 29 | 29 | 20 | 2 |

Note: Decentralized revenue includes the own-source revenues and shared revenue.

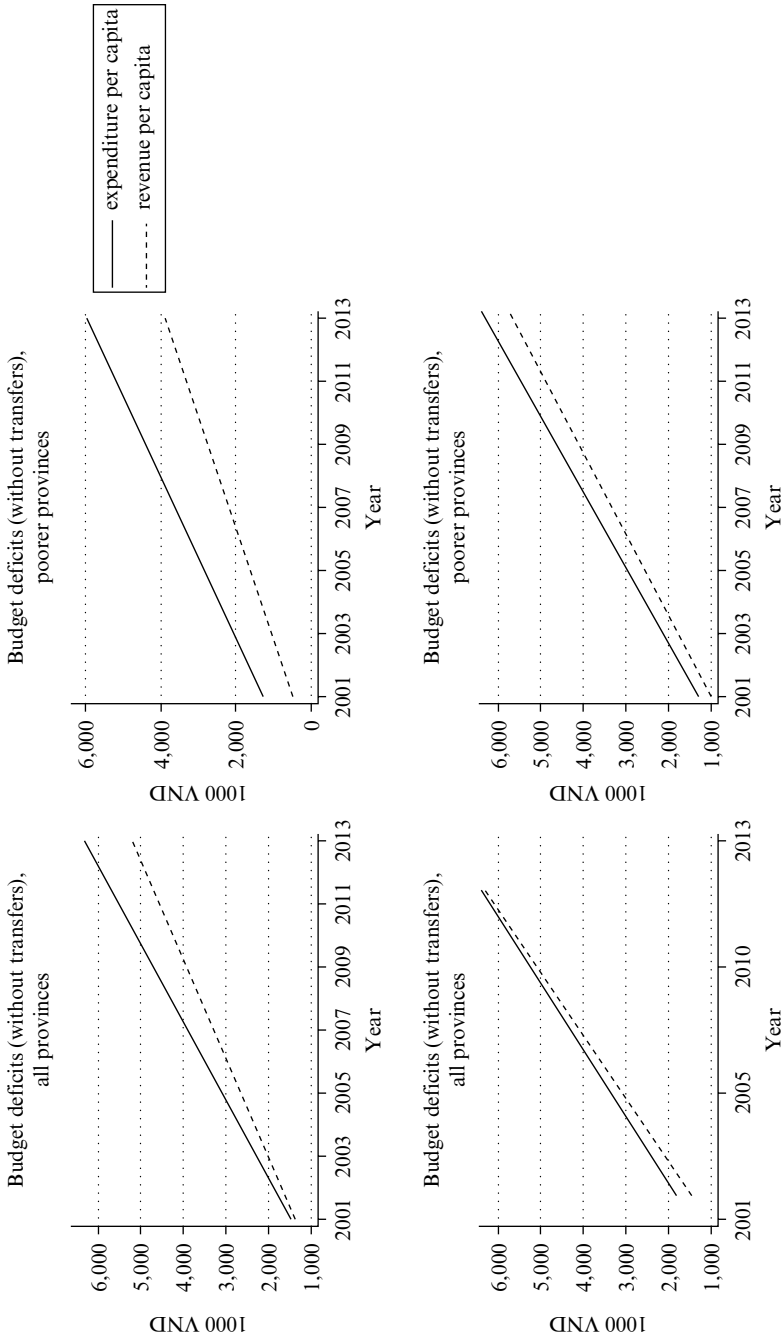
Source: Authors' calculation using Ministry of Finance data.

transfers. This greatly increases the pressure on these provinces to run budget deficits.

Figure 10.3 presents fiscal gaps among provinces. Before transfers, budget deficits seem to widen over time. Deficits seem, however, to be driven by budget deficits in poorer provinces where the revenue per capita is much lower than the expenditure per capita and the growth of expenditure per capita is higher than that of revenue per capita. After transfers, on average, there is a slight fiscal surplus. In poorer provinces, fiscal deficits, however, are still observed, indicating a growing vertical imbalance across provinces. In 2012, more than 58 percent of provinces that had 100 percent retained revenue could only finance less than 20 percent of decentralized expenditure, while the corresponding figure for 2007 was about 46 percent. This is due in part to the rise in spending responsibilities assigned to local authorities and inelasticity of 100 percent retained revenue with respect to nominal GDP (World Bank, 2014).

At the lower levels of government, imbalances are more severe within provinces than across provinces. In many provinces, by the end of 2011, more than 75 percent of district expenditure was covered by other sources of finance rather than 100 percent retained revenue. Similarly, in many districts, less than 12 percent of district core spending was covered by 100 percent retained revenue in 2011, while this figure was around 20 percent in 2006. This is partly due to an increase in spending responsibility decentralization (World Bank, 2014).

The system of centrally targeted transfers to local authorities is conditional grants through which the central government aims to



Source: Authors' calculations using Ministry of Finance data.

Figure 10.3 Budget deficits over time and the role of fiscal transfers

achieve socioeconomic development targets. There are two types of target programs: national target programs (NTPs) and other target transfers (i.e., conditional transfers).

NTPs aim to accelerate progress toward national sociodevelopment objectives, covering a wide range of objectives aimed at poverty, education, health, livelihoods, rural development, culture, energy use, and climate change. The Ministry of Finance and Ministry of Planning and Investment have overall responsibility for financing decisions and monitoring across all NTPs. Line ministries, which are assigned key roles in developing NTPs, are responsible for budget allocations to and oversight of NTPs. Various line ministries may also be involved if NTPs cover more than one sector. Currently, there are 16 NTPs.

Other target transfer programs cover a wide range of objectives including capital investment, infrastructure investment, and economic development programs in specific regions. Although during the last decade this type of target transfer became less important, it still accounted for about 25 percent of local spending during 2006–11, suggesting that local authorities are less dependent on nondiscretionary resources.

Local governments are responsible for proposing activities and implementing associated programs at the local level. They prepare proposals, then discuss them with central government agencies, who in turn submit the financial proposals, including allocation to provinces, to the Ministry of Finance, and to the Ministry of Planning and Investment. Implementation must follow regulations set out by the central government agencies. The allocation of NTP resources is based on a set of eligibility criteria in relevant Prime Minister's decisions and accompanying circulars, which mainly constitute socioeconomic indicators.

In general, Viet Nam's intergovernmental fiscal transfer system works effectively to reduce fiscal disparities across jurisdictions. The final distributions of expenditures per capita both across and within provinces are fairly equalized (World Bank, 2014). Nonetheless, there are some institutional issues that may hinder the effectiveness of such a system. First, the transfer amount is determined in the first years of a stability period and remains constant in nominal terms over the whole period. For some richer provinces, local revenue increases could cover such shortages in real terms, but some poorer provinces suffer from the loss in real terms.

Second, there are some weaknesses in the transfer norms. For example, in the education sector, the norms use the number of school-aged children instead of enrolled pupils, discouraging provinces that have low rates of school enrollment from increasing enrollment rates. Third, there are some incentive problems due to the right to have full responsibility for resources allocation within assigned resources at the provincial level. While most

provinces use national transfer norms for allocating recurrent expenditure, some provinces design their own, creating incentive issues. For instance, while central norms for health are based on population, norms adopted in some provinces are based on permanent health care staff or physical endowment, thus encouraging district health sectors to expand their staff or benefiting disproportionately those places that are already better equipped, and/or creating incentives to maintain inefficient health care facilities (Le, 2006). Management costs could also increase due to diversified sources of funding for NTPs. Around 56 percent of funding for all NTPs during 2012–13 came from central authorities, 26 percent from local authorities, 5 percent from external donors, 4 percent from borrowing, and 9 percent from community contributions (World Bank, 2014). Each NTP may comply with some financial management rules and procedures.

Fourth, there is a huge gap between estimated budgets and realized budgets. It is estimated that the realized budget is usually 175 percent larger than the estimated one, implying a lack of predictability in NTPs (World Bank, 2014), ultimately impacting fiscal management. Further, it puts pressure on local government budgets and leads to a proliferation of unfunded mandates. In fact, many local government authorities claim that national programs and policies are not always accompanied by adequate or timely financing (World Bank, 2014). Under such cases, local governments either stop implementing NTPs or use their limited resources to implement the programs and seek reimbursement later.

Fifth, targets set in NTPs are ambiguous, and targets and resourcing are misaligned. A number of local authorities have argued that the targets set in NTPs are too ambitious and do not take into account costs and fiscal sustainability at the local government level (World Bank, 2014). Moreover, funding is also not conditional on outputs under the programs. In addition, capital projects developed under NTPs lack operations and maintenance resources, hurting the sustainability of the NTP targets.

Sixth, it is difficult for local authorities to coordinate so many target programs, partly because the number of programs is high, and national and even subnational steering committees are ineffective. The total number of target transfer schemes is 44, and the number of programs is even higher if province-level target programs are taken into account. The targets set out in such programs overlap (World Bank, 2014). Meanwhile, the ineffectiveness of national, and in some cases subnational, steering committees that have been established to help coordinate NTP planning and budgeting has resulted in fragmentation and weak monitoring and evaluation.

In summary, the revenue side of subnational government budgets remains, in many respects, highly centralized. The tax rates and bases of taxes, both shared and exclusive to subnational government, are

determined centrally. Provinces do, however, have the authority to set rates for a few local charges and fees and to determine how to allocate their revenues within their jurisdictions. Furthermore, despite the new budget law, some provinces use mechanisms contrary to the law, suggesting that de facto decentralization is somewhat greater than legally sanctioned.

10.2.5 Local Government Borrowing

Local borrowing has emerged as an important topic in Viet Nam, particularly for provinces that are unable to satisfy their capital spending needs through existing local revenue and transfers. The current system is geared to redistributing locally collected revenues, the bulk of which is contributed by a handful of provinces such as Ho Chi Minh City, Ha Noi, and Binh Duong, and has highlighted significant infrastructure financing deficits. Types of local government borrowing are shown in Table 10.4.

The new budget law and Public Debt Management Law 2009 stipulate the golden rule (i.e., provincial governments cannot borrow to meet recurrent expenditures). Borrowing is solely for capital investment projects that can generate returns to service debt. These laws also place a ceiling on local outstanding debt at 30 percent of a province's annual capital budget, except for Ha Noi and Ho Chi Minh City, where the ceiling is set at 100 percent of the annual capital budget. The government's public debt management strategy, 2012, set a ceiling of 3 percent of GDP for all local government debt and a ceiling of 65 percent of GDP for total public and publicly guaranteed debt including local debt.

Local authorities have a variety of debt-financing options available, including the domestic capital market (i.e., local bonds and loans from commercial banks), the State Treasury, development banks, and onlending from the central government of external funds (see Figure 10.4).

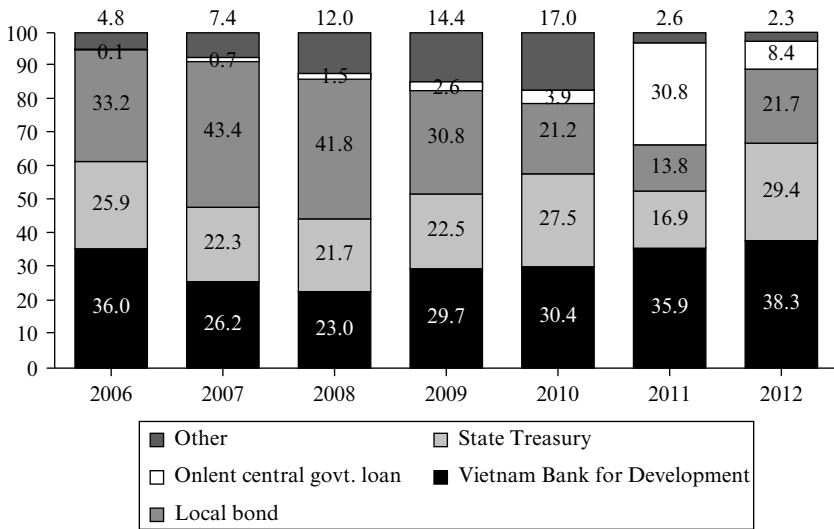
Such borrowing is monitored closely by the Ministry of Finance. Due to the borrowing ceilings imposed under the new budget law, local authorities can also turn to other forms of borrowing, such as local infrastructure development funds and overseas development assistance (as onlent by central government), which are not subject to the same limits. Local governments do not have direct access to financing from the central bank. In terms of administrative procedure, provincial borrowings are subject to various approval procedures depending on the utilization of fund and instruments, as stipulated by Public Debt Management Law 2009 and other secondary regulations. In general, all borrowings have to be inspected and approved by the Ministry of Finance and other central government agencies where applicable.

Thus, borrowing by local authorities remains very low. During the past

Table 10.4 Summary of different sources and types of local borrowing

| Type of borrowing | Regulations | Constraints |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local government bonds | Both the amount and rate of borrowings are controlled. The amount is monitored under a threshold, the rate is kept below a ceiling fixed by the Ministry of Finance, and procedures are adopted that apply for issuing government bonds. | Still underdeveloped, as only few provinces/cities can access bond markets; ceiling rates determined by the Ministry of Finance, and this results in undersubscription as rates to investors are unattractive; lack of transparency |
| Loans from commercial banks | Not controlled | Difficult and costly channel, as commercial banks reluctant to lend because lack of proper collateral |
| Borrowing from the State Treasury | Borrowings from provincial treasury are permitted for infrastructure projects that are allocated from the budget, the amount is monitored under a threshold, and the provincial budget deducted if repayments are late. | 12 months for projects that are allocated from the state budget, short-term borrowing for cash management purpose, uniform borrowing fee, most preferable type of borrowing for local governments given the low costs and streamlined approval process, will reduce as Treasury Single Account introduced |
| Borrowing from development banks (Viet Nam Development Bank and Viet Nam Social Policy Bank) | | Limited in scope, as developmental investment of local authorities and export-oriented projects of state-owned enterprises and other economic organizations credit to the poor and other policy beneficiaries |
| Onlending | All external onlending is through the central government. | Amount depends on the overall official development assistance available to Viet Nam, also graduating from the highly concessional loans in the medium term |

Source: Adapted from the 2002 Law and Public Debt Management Law.



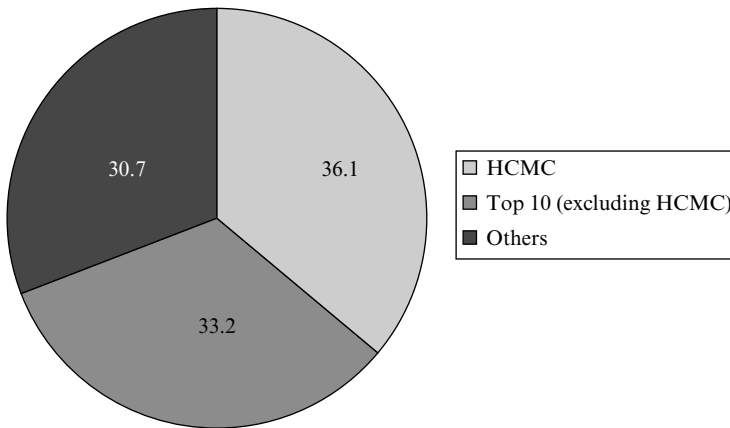
Source: Ministry of Finance (cited in World Bank, 2014).

Figure 10.4 Composition of local debt, 2006–2012 (%)

10 years, subnational debt was kept below 3 percent of GDP and financed only 4 percent of development expenditures. However, in 2011, around 13 provinces exceeded their outstanding debt stock limits of 30 percent of annual capital budget. Debt in some provinces was twice as high as the limit (World Bank, 2014).

Although nearly all provinces have engaged in some form of debt financing, the 10 largest borrowers represented more than two-thirds of subnational borrowing in 2012 (see Figure 10.5). The total subnational debt was also concentrated in these cities (42 percent of total local debt in 2012), but even within this group, Ho Chi Minh City dominated, accumulating 38 percent of the total local debt (World Bank, 2014) (see Box 10.1).

The ratio of local government borrowing to total local government revenue was 4.0 percent in 2007 and 2.4 percent in 2012. According to the World Bank (2014), local government borrowing tended to be higher in more developed, more fiscally autonomous, and more fiscally sustainable provinces. A higher borrowing level was also associated with a higher share of spending in local expenditure. Therefore, although borrowing levels are generally low, they seem consistent with the level of local development, capital spending needs, and fiscal sustainability trends.



Note: HCMC = Ho Chi Minh City.

Source: Authors' calculation using Ministry of Finance data.

Figure 10.5 Share of local government debt by province (%)

10.2.6 Fiscal Sustainability in Local Governments

The World Bank (2014) identified three sources of contingent liabilities in Viet Nam: public financial funds (PFFs), local SOEs, and banking sector stress.

Currently, Viet Nam has more than 30 central and local PFFs whose nature, scope, and scale of operations are diverse. Among these PFFs, only some specific central-level funds and local development investment funds have their own sources of revenue and expenditure mandates, and account for 95 percent of total expenditure of PFFs. The other local-level PFFs are small and operate mostly within provinces. Although most of these PFFs are dependent on either the central or local government budgets for their initial, and even operational capital (except for some funds that can mobilize revenues from beneficiaries such as health insurance and social insurance funds), their financial reports have never been incorporated into the annual budget and budget final account documents (World Bank, 2014).

Currently, there are 28 operating local development investment funds (LDIFs), which could be viewed as special purpose vehicles. These LDIFs are the largest PFFs operating at the local level. Legally, they are commercially oriented state financial institutions, are allowed to raise medium- and long-term capital, and can invest in cost-recovery infrastructure projects. Their responsibility includes undertaking financial and development

BOX 10.1 DEBT SUSTAINABILITY IN HO CHI MINH CITY

Ho Chi Minh City is the largest economic hub in Viet Nam, with relatively strong local revenue mobilization. More than half of local financing (inclusive of new debt flows) comes from decentralized revenues. The ratio of decentralized revenue to local recurrent expenditure averaged around 200 percent during 2006–11. Of total expenditures, capital investment made up 40–50 percent during 2006–11. The city's budget deficit is low, at about 0.1 percent of its GDP, and borrowing is also low. By the end of 2013, total outstanding debt from bond issuances was an estimated VND11.6 trillion, equal to 1.5 percent of local GDP and 49.0 percent of the capital budget in 2013. The average interest rate was 7 percent for three-year maturity, 6 percent for five-year maturity, and 5 percent for ten-year maturity.

Two ratios are used as measures of debt burden: (i) Ho Chi Minh City debt stock to GDP (threshold of 25 percent to assess solvency); and (ii) Ho Chi Minh City debt service to local revenue (threshold of 25 percent to assess liquidity). The thresholds are benchmarks and not strict ceilings.

For the baseline scenario, it is assumed that, in the medium term, economic indicators used in estimations (i.e., GDP growth, inflation, revenue and expenditure growth, and interest rate) are lower than during 2006–11 but they will return to their 2006–11 levels in the long term. Under this scenario, city debts can be viewed as sustainable, with a manageable debt stock–GDP ratio. However, city authorities should recognize liquidity pressures and the growing share of interest payments in total recurrent spending.

Liquidity pressure would be more obvious if a low-growth scenario occurs. In this scenario, growth slows to 5 percent per year over the medium term and gradually stabilizes to below the historical average of 8 percent over the long term, decentralized revenue growth falls by nearly one-third, and expenditures remain the same. Debt service requirements are likely to crowd out recurrent expenditures. The debt service–revenue ratio exceeds the threshold for almost the entire projection period; consequently, the golden rule will be broken over the long term.

Under a scenario that economic conditions become more favorable than the baseline scenario (e.g., a higher growth rate, higher revenue, and expenditure growth), the city would more than meet its capital spending needs and maintain sustainable levels of debt with stronger growth and revenue mobilization.

Source: World Bank (2014).

investments. Such types of special purpose vehicles have expanded considerably in Viet Nam and have mobilized a huge amount of funds for infrastructure investment. According to the World Bank (2014), the average annual growth rate of the operational capital of these funds was high at 40 percent during 2005–11.

LDIFs also engage in short-term borrowing on a rollover basis from state-owned commercial banks (SOCBs) and other SOEs. These short-term borrowings can lead to short-term-oriented investments, potentially re-allocating LDIF capital away from long-term infrastructure development.

Inappropriate borrowing by the LDIFs can also have a negative effect on the developing banking sector.

The second source of contingent liabilities in Viet Nam is local SOEs. There are 1,506 local SOEs and 982 public service enterprises. Due to their nature, these firms have easier access to commercial loans, especially from SOCBs. This has led to an increasing accumulation of debt of these firms. The World Bank (2014) estimated that more than half of about US\$3.5 billion of infrastructure financing from SOCBs was made to SOEs. These firms also have easier access to onlent government external loans. For example, by 2012, public service enterprises in water management and sanitation had total debt from onlent government external loans of US\$360 million (VND7.56 trillion) (World Bank, 2014). By law, these firms are financially independent from the agencies that have ownership rights over the firms. Yet in reality, if SOEs and public service enterprises get into trouble, they seek the support from their agencies to coordinate the debt workout.

Local authorities in recent years have accumulated payment arrears to construction firms, which, in turn, has prevented these firms from servicing their debts and has led to growing nonperforming loans in local banking systems. According to the National Audit Agency, by the end of 2011, total debts to construction companies by local governments amounted to VND91,273 billion (Tuoitre Online, 2013). There were 15 provinces with payment arrears larger than 100 percent of planned capital expenditure. The Ministry of Finance argues that this was in part due to loose commitment controls, which led local authorities to enter into arrangements with civil works contractors without adequate budget authority.

Local government borrowing is not included in the budget balance, thus not accounted for in the local budget balance. This could be viewed as the consequence of requirements regarding maintaining a balanced budget at the local government level, and exclusion of local budget deficits in the overall state budget deficit.

Current regulations relating to subnational borrowings may not reflect the ability of the local authorities to repay debts. The World Bank (2014) argued that it is hard to figure out the long-term creditworthiness of a province when looking at figures relating to debt stock and annual capital budget. In other words, local government borrowing does not necessarily reflect local government fiscal capacity. In 2011, many provinces, including those with less fiscal capacity, had borrowing much higher than the borrowing ceiling (World Bank, 2014). Another issue is that, under current regulations, local government borrowing does not cover guarantees and other contingent liabilities. This makes the figures on local government borrowing not reliable and hard to enforce.

The ceiling on local government debt does not create proper incentives for borrowers. The World Bank (2014) pointed out that the total amount of debt stock, which does not reflect the actual obligations for repaying the principal and interest, is not a good indicator since it does not reflect the actual debt burden faced by the local government. This, in turn, will cause difficulty in estimating the debt obligations in the future. In fact, compliance with debt limits in a particular year does not automatically ensure that a local authority will be able to repay its debt in the long term.

Currently, there is no formal requirement on reporting and disclosure of local debt to the public. Usually, such information is required to be reported to the Banking and Finance Department of the Ministry of Finance.⁷ This limits the development of the local government bond market since private investors have little information on the local authorities and cannot assess the creditworthiness of the local government fiscal stance. Reports from local authorities, when received, are usually late and not detailed, while processing such information is time-consuming since each province has its own reporting format.

10.3 EMPIRICAL ANALYSIS OF DEFICIT SUSTAINABILITY IN LOCAL GOVERNMENTS

In this section, the deficit sustainability of local governments in Viet Nam is analyzed using two estimation methods. First, fully modified ordinary least squares (OLS) is used to estimate the long-term correlations between the co-integration equation, which includes the vector of co-integration variables and stochastic regressor innovations. The panel nature of the data takes into account the cross-sectional heterogeneity at the provincial level. The analytical framework is based on Buettner and Wildasin (2006); Buettner (2009); Solé-Ollé and Sorribas-Navarro (2012); and Bessho (Chapter 9 in this book). Denoting own-source revenue as R_{it} , total local government expenditure as E_{it} , and balancing transfer as T_{it} , their relations are presented as:

$$R_{it} = \alpha E_{it} - \beta T_{it} + u_{it} \text{ or } u_{it} = R_{it} - \alpha E_{it} - \beta T_{it} \quad (10.1)$$

If u_{it} is stationary, and if R_{it} , E_{it} , and T_{it} are integrated of order 1, then these variables are co-integrated with co-integration vector $[1, -\alpha, +\beta]$. In this case, we can estimate the above equation using the fully modified OLS for co-integrated variables. Some implications can be inferred from this test: (i) if u_{it} is stationary, then the local government fiscal deficit is not explosive in the long term; and (ii) if $\alpha > 1$ (i.e., a 1 percent increase

in expenditure will increase revenue by more than 1 percent), then this will support the fiscal sustainability of local governments. To account for population differences among provinces, the above approach is also used with a vector of four variables: own-source revenue per capita, expenditure per capita, GDP per capita, and balancing transfer per capita.

Second, to further examine fiscal sustainability at the provincial level, based upon the Bohn (2008) model, this fiscal reaction equation is used:

$$Surplus_{it} = \alpha_0 + \alpha_1 Surplus_{it-1} + \alpha_2 GDPgap_{it} + \alpha_3 EXPgap_{it} + \alpha_4 BT_{it} + X'_{it}\alpha_5 + \pi_i + \varepsilon_t + v_{it} \quad (10.2)$$

where $Surplus_{it}$ is the primary surplus of province i at time t , $GDPgap_{it}$ is the GDP gap, $EXPgap_{it}$ is the expenditure gap, BT_{it} is the share of balancing transfer in total expenditure, X_{it} is a vector of provincial characteristics, π is fixed province effect, ε_t is the fixed time effect, and v_{it} is the error term.

$Surplus$ is calculated as the ratio of fiscal surplus to GDP. Fiscal surplus is the difference between local government revenue and local government expenditure. Balancing transfers and targeted transfers in local government revenue are not included. The GDP gap is the difference between the realized GDP and trend values of GDP or deviation of GDP from its trend.

Similar to Bohn (2008), a positive value of the GDP gap implies that the realized GDP is higher than its trend value. Similarly, the expenditure gap is the difference between the realized expenditure and its trend at the provincial level. A positive value of the expenditure gap implies that the realized expenditure is higher than its trend. Both trend values are calculated by using the Hodrick–Prescott filter using a smoothing parameter of 10,000. Therefore, the expenditure gap is expected to have a negative influence on the fiscal surplus, and the output gap variable is expected to have a positive influence on the fiscal surplus. If output is below its trend, the surplus should decrease. Similarly, if government spending is above its trend, the surplus should decrease. To examine how the fiscal deficit at the central government level may have implications for local government fiscal surplus, the share of balancing transfer in total expenditure is used. The more a province is dependent on balancing transfers, it is expected that the less fiscal surplus it will enjoy.

Instead of using data compiled by provinces due to missing data (i.e., some provinces do not publish their fiscal data in some years), data consolidated by the Ministry of Finance are used. These data, however, do not categorize expenditure and revenue items at the provincial level. To account for different fiscal capacities, in some estimations, the sample is divided into two groups: (i) provinces for which the share rate is 100

percent (i.e., poorer provinces); and (ii) provinces with sharing rates lower than 100 percent (i.e., better-off provinces).

To avoid spurious regressions, this study examines whether the panel data are stationary by using panel unit root tests (Levin et al., 2002; Breitung 2002; Im et al., 2003) and Fisher-type tests using Augment Dickey–Fuller (ADF) and Phillips–Perron (PP) tests (Maddala and Wu, 1999). Levin et al. (2002) and Breitung (2002) models were based on the ADF test and assumed homogeneity in the dynamics of the autoregressive coefficients for all panel units with cross-sectional independence, while Im et al. (2003); Fisher–ADF; and Fisher–PP tests allow for heterogeneity in the autoregressive coefficients for all panel members. The alternative hypothesis simply implies that some or all of the individual series are stationary. The panel unit root results are presented in Table 10.5.

There is a large difference in the test results. While under the assumption of homogeneity in the dynamic of autoregressive coefficients, Levin et al. (2002) and Breitung (2002) show that there is no unit root in individual variables, while Im et al. (2003), Fisher–ADF and Fisher–PP tests show that all variables have unit roots at the level and no unit root at the first difference. Because the sample includes all provinces in the country, heterogeneity is surely present. Therefore, it can be concluded that there are unit roots for the data in the level and no unit root for data at the first difference.

After testing for unit roots, co-integration among the variables of interest is investigated. Pedroni (2000) proposed a methodology to test for panel data co-integration, which allows testing for the co-integrated relationship in four different models: model without-heterogeneous trend and ignoring common time effect (M1); model without common time effect and allowing heterogeneous trend (M2); model with heterogeneous trend and allowing common time effect (M3); and model with common time effect and ignoring heterogeneous trend (M4). Pedroni (1999) showed that there are seven different statistics for the co-integration test: panel *v*-statistic, panel *pp*-statistic, Pedroni Panel-statistic, panel ADF-statistic, group rho-statistic, group Pedroni Panel-statistic, and group ADF-statistic. The first four statistics are known as panel co-integration statistics and are based on the within-dimension approach. The last three statistics are group panel co-integration statistics and are based on the between-dimension approach. In the presence of a co-integrating relationship, the residuals are expected to be stationary.

Panel A of Table 10.6 presents the result of M2 (with time effect and no-heterogeneous trend) and M3 (with time effect and heterogeneous trend) co-integration. For the first vector of the variable, six statistics from the M2 co-integration test strongly reject the null hypothesis of no

Table 10.5 Panel unit root test

| Null hypothesis | Unit root (assumes common unit root process) | | Unit root (assumes individual unit root process) | | |
|-----------------------------------------|----------------------------------------------|-----------|--------------------------------------------------|------------|-----------|
| | Levin, Lin, James-Chu | Breitung | Im, Pesaran, Shin | ADF-Fisher | PP-Fisher |
| <i>Level</i> | | | | | |
| Local government expenditure | -5.81*** | -4.30*** | 1.15 | 126.93 | 128.24 |
| Local government revenue | -7.55*** | -3.15*** | -1.05 | 130.90 | 225.90*** |
| Balance transfer | -17.24*** | -0.35 | -1.59 | 133.65 | 118.35 |
| Local government expenditure per capita | -4.72*** | -4.74*** | 1.84 | 120.46 | 115.58 |
| Local government revenue per capita | -8.29*** | -2.40*** | -1.27 | 136.70 | 222.90*** |
| Local GDP per capita | -4.85*** | 1.52 | 1.16 | 106.30 | 95.50 |
| Balance transfer per capita | -19.58*** | -0.55 | -2.14** | 138.27 | 134.62 |
| <i>First difference</i> | | | | | |
| Local government expenditure | -9.28*** | -2.16*** | -5.66*** | 222.36*** | 666.58*** |
| Local government revenue | -1.05 | -10.01*** | -3.75*** | 174.92*** | 833.69*** |
| Balance transfer | -21.66*** | -14.80*** | -10.96*** | 337.30*** | 638.29*** |
| Local government expenditure per capita | -7.14*** | -2.48*** | -5.67*** | 222.48*** | 688.28*** |
| Local government revenue per capita | -0.52 | -10.18*** | -3.52*** | 169.16*** | 821.24*** |
| Local GDP per capita | -13.65*** | -3.55*** | -4.84*** | 202.40*** | 378.90*** |
| Balance transfer per capita | -21.94*** | -14.68*** | -11.33*** | 345.62*** | 641.05*** |

Notes:

ADF = Augmented Dickey-Fuller; PP = Phillips-Perron; GDP = gross domestic product.

** p < 0.05; *** p < 0.01.

Source: Authors.

Table 10.6 Panel co-integration test

| Panel A: Model 1 | | | | | |
|------------------------------------------------------------------------------|----------------------------------|-------|-----------------------------------|-------|-------|
| (local government expenditure, local government revenue, balancing transfer) | | | | | |
| Pedroni Residual Co-Integration Test (H0: no co-integration) | | | | | |
| Trend assumption | Drift and no deterministic trend | | Drift and deterministic intercept | | Prob. |
| | Statistic | Prob. | Statistic | Prob. | |
| <i>H1: Common AR coefficients (within-dimension)</i> | | | | | |
| Panel v-Statistic | 2.739 | 0.003 | -1.940 | 0.974 | |
| Panel rho-Statistic | -2.155 | 0.016 | 2.176 | 0.985 | |
| Panel Pedroni Panel-Statistic | -14.653 | 0.000 | -14.758 | 0.000 | |
| Panel ADF-Statistic | -4.272 | 0.000 | -1.489 | 0.068 | |
| <i>H1: Individual AR coefficients (between-dimension)</i> | | | | | |
| Group rho-Statistic | 2.029 | 0.979 | 5.584 | 1.000 | |
| Group Pedroni Panel-Statistic | -21.255 | 0.000 | -22.822 | 0.000 | |
| Group ADF-Statistic | -4.316 | 0.000 | -1.636 | 0.051 | |
| <i>Kao Residual Co-Integration Test</i> | | | | | |
| ADF | -5.711 | 0.000 | | | |

Panel B: Model 2
(local government expenditure per capita, local government revenue per capita,
balancing transfer per capita, GDP per capita)

Pedroni Residual Co-Integration Test (H0: no co-integration)

| Trend assumption | Drift and no deterministic trend | | Deterministic intercept and trend | |
|-----------------------------------------------------------|----------------------------------|-------|-----------------------------------|-------|
| | Statistic | Prob. | Statistic | Prob. |
| <i>HI: Common AR coefficients (within-dimension)</i> | | | | |
| Panel v-Statistic | -2.562 | 0.995 | -6.334 | 1.000 |
| Panel rho-Statistic | 1.611 | 0.946 | 5.057 | 1.000 |
| Panel Pedroni Panel-Statistic | -11.122 | 0.000 | -14.350 | 0.000 |
| Panel ADF-Statistic | -8.975 | 0.000 | -9.160 | 0.000 |
| <i>HI: individual AR coefficients (between-dimension)</i> | | | | |
| Group rho-Statistic | 5.655 | 1.000 | 8.309 | 1.000 |
| Group Pedroni Panel-Statistic | -31.219 | 0.000 | -36.478 | 0.000 |
| Group ADF-Statistic | -10.967 | 0.000 | -9.523 | 0.000 |
| <i>Kao Residual Co-Integration Test</i> | | | | |
| ADF | -7.908 | 0.000 | | |

Notes: AR = autoregressive; GDP = gross domestic product; ADF = Augment Dickey-Fuller.

Source: Authors.

co-integration in the sample. Meanwhile, only two statistics from the M3 co-integration test show a strong rejection of the null hypothesis, while two statistics show a weak rejection (at 90 percent confidence level). Although there are mixed results of the co-integration of the variables, it is hard to accept the null hypothesis that there is no co-integration in the data.

Panel B of Table 10.6 reports the results of the co-integration test for the vector of four variables: expenditure per capita, revenue per capita, balancing transfer per capita, and GDP per capita. The results indicate that in both cases (with- and without-heterogeneous trends), four of the seven statistics show a strong rejection of the null hypothesis that there is no panel co-integration among the sample, so the null hypothesis of no co-integration among the four variables can be accepted.

Following Pedroni (2004), the long-term relationship between the co-integrated variable is estimated by using the fully modified OLS estimator to avoid the bias of the OLS estimator (see Table 10.7). The fully modified OLS results indicate that the coefficients of local government expenditure in all specifications are statistically significant. The estimation results from the fully modified OLS panel estimation indicate that a 1 percent increase in expenditure leads to an increase of local government revenue by 1.45 percent (for all provinces) and 1.60 percent (for poorer provinces).⁸ The results support fiscal sustainability in the whole sample and for the sample of poorer provinces. The estimation results also indicate that balancing transfers have a negative relationship with revenues in poorer provinces, suggesting that balancing transfers may create some incentive issues and ultimately discourage provinces in raising their revenue efforts.

The relationship between three variables is then examined by using expenditure at the local government level as dependent variables as follows:

$$E_{it} = \tau + \alpha^e R_{it} + \beta^e T_{it} + u_{it} \quad (10.3)$$

If $\alpha^e < 1$, (i.e., a 1 percent increase in revenue increases expenditure by less than 1 percent), then fiscal sustainability is supported. The results in panel B of Table 10.7 show that the coefficient of revenue in all specifications is lower than 1, supporting the results presented in panel A with revenue as the dependent variable.

To account for provincial heterogeneity, the long-term relationship is analyzed between four variables, revenue per capita, expenditure per capita, provincial GDP per capita, and balancing per capita, using the fully modified OLS estimator panel. The results are reported in panel C (with revenue per capita as the dependent variable) and panel D (with expenditure per capita as the dependent variable). These results support those using aggregate data. It is interesting to note that local GDP per capita

Table 10.7 Fully modified ordinary least squares for co-integration relationship

| | All provinces | | Poorer provinces | |
|-------------------------------------------------------------------------|---------------|----------------|------------------|----------------|
| | Coefficient | Standard error | Coefficient | Standard error |
| <i>Panel A: Dependent variable: local government revenue</i> | | | | |
| Local government expenditure | 1.453*** | 0.01 | 1.600*** | 0.011 |
| Balancing transfer | 0.01 | 0.021 | -0.214*** | 0.023 |
| N*T | 720 | | 588 | |
| Adjusted R2 | 0.881 | | 0.423 | |
| <i>Panel B: Dependent variable: local government expenditure</i> | | | | |
| Local government revenue | 0.671*** | 0.023 | 0.649*** | 0.025 |
| Balance transfer | 0.113*** | 0.023 | 0.158*** | 0.026 |
| N*T | 720 | | 588 | |
| Adjusted R2 | 0.281 | | 0.337 | |
| <i>Panel C: Dependent variable: local government revenue per capita</i> | | | | |
| Local government expenditure per capita | 1.228*** | 0.047 | 1.598*** | 0.053 |
| Balancing transfer per capita | -0.083* | 0.048 | -0.354*** | 0.054 |
| Local GDP per capita | 0.275*** | 0.041 | -0.124*** | 0.045 |
| N*T | 718 | | 586 | |
| Adjusted R2 | 0.724 | | 0.496 | |

Table 10.7 (continued)

| | All provinces | | Poorer provinces | |
|-----------------------------------------------------------------------------|---------------|----------------|------------------|----------------|
| | Coefficient | Standard error | Coefficient | Standard error |
| <i>Panel D: Dependent variable: local government expenditure per capita</i> | | | | |
| Local revenue per capita | 0.277*** | 0.054 | 0.373*** | 0.06 |
| Balancing transfer per capita | -0.117** | 0.047 | -0.095* | 0.056 |
| Local GDP per capita | 0.418*** | 0.039 | 0.287*** | 0.043 |
| N*T | 718 | | 586 | |
| Adjusted R2 | 0.579 | | 0.767 | |
| <i>Panel E: Dependent variable: local GDP per capita</i> | | | | |
| Local government expenditure per capita | 0.172*** | 0.047 | 0.181*** | 0.053 |
| Local revenue per capita | 0.052 | 0.056 | 0.037 | 0.061 |
| Balancing transfer per capita | -0.057 | 0.048 | -0.067 | 0.055 |
| N*T | 719.00 | | 586.00 | |
| Adjusted R2 | 0.908 | | 0.845 | |

Notes:

GDP = gross domestic product.

* p < 0.1; ** p < 0.05; *** p < 0.01.

Source: Authors.

does not have a statistically significant effect on revenue per capita but does have a positive and statistically significant effect on expenditure per capita.

Table 10.8 presents the debt sustainability analysis. Columns 1 and 2 are estimation results using the fixed-effect estimator, and columns 3 and 4 use the dynamic panel generalized method of moments (GMM) estimator. The sample in panel A consists of all provinces, and panel B includes only provinces with sharing rates of 100 percent.⁹

The estimation results using fixed-effects estimators suggest that for both samples (i.e., all provinces and poorer provinces), the local expenditure gap has a negative effect on the fiscal surplus, implying that a 1 percent increase in the gap between realized expenditure and its trend value would reduce the fiscal surplus by 0.15 percentage points for all provinces and 0.12 percentage points for poorer provinces. The provincial population also has a negative effect on the fiscal surplus, because more populous provinces may have to spend more to meet the demand within their jurisdiction, thus their fiscal deficit declines as the population increases. In contrast, GDP per capita has a positive effect on the fiscal surplus. However, unlike expectations, the local GDP gap has a negative effect on the fiscal surplus, that is, as the local realized GDP is higher than their trend values, the fiscal surplus is lower. A clear explanation for this issue does not exist; it is potentially due to an endogeneity issue.

To account for this endogeneity, third lags of dependent variables and independent variables as instrumental variables are used. The statistics from the Hansen test and first-order and second-order autoregression tests all satisfy the identification conditions for dynamic GMM specifications. The estimation results show that the fiscal surplus in the last period has a negative effect on the current fiscal surplus, ensuring that the fiscal surplus is not explosive and supports fiscal sustainability at the local level. The estimation results obtained from dynamic GMM indicate that the local GDP gap has a positive effect on the fiscal surplus, although they do not have an economic effect for poorer provinces. While the expenditure gap has the expected sign for the specification with the whole sample, it has a positive effect on fiscal surplus for poorer provinces. This suggests that provinces that suffer from expenditure gaps may increase their efforts to increase their own-source revenues, which could help them cover gaps in expenditure and accumulate extra revenue. This, in turn, supports the previous conjecture that the balancing transfer system may discourage provinces in increasing their revenue efforts. The coefficient on the ratio of balancing transfer to total expenditure is negative and statistically significant, suggesting that the more dependent on government transfers a province is, the higher the likelihood that it will go into deficit.

Table 10.8 Budget deficit sustainability analysis (dynamic panel data analysis)

| | Fixed-effect estimator | | Panel GMM | |
|------------------------------------|------------------------|----------------|-------------|----------------|
| | Coefficient | Standard error | Coefficient | Standard error |
| <i>Panel A: All provinces</i> | | | | |
| Lagged dependent variable | | | | |
| Local GDP gap | -0.073 | 0.069 | -0.096*** | 0.002 |
| Local expenditure gap | -0.152*** | 0.037 | 0.135*** | 0.028 |
| Population (in log) | 0.018 | 0.048 | -0.086*** | 0.006 |
| Local GDP per capita | 0.201*** | 0.03 | -0.233*** | 0.047 |
| Balancing transfer/expenditure | 0.037 | 0.025 | 0.178*** | 0.019 |
| Constant | -0.672 | 0.092 | -0.106*** | 0.012 |
| No. of observation | 767 | | 531 | |
| No. of instruments | | | 59 | |
| Hansen (p-value) | | | 0.214 | |
| 1st order autoregression (p-value) | | | 0.003 | |
| 2nd order autoregression (p-value) | | | 0.680 | |

Panel B: Poorer provinces

| | | | | | |
|------------------------------------|-----------|-------|--|-----------|-------|
| Lagged dependent variable | | | | | |
| Local GDP gap | -0.058 | 0.091 | | -0.025*** | 0.003 |
| Local expenditure gap | -0.123** | 0.048 | | 0.000 | 0.046 |
| Population (in log) | -0.265* | 0.143 | | 0.088*** | 0.018 |
| Local GDP per capita | 0.242*** | 0.018 | | -0.200*** | 0.066 |
| Balancing Transfer/expenditure | -0.017 | 0.015 | | 0.220*** | 0.034 |
| Constant | -0.722*** | 0.041 | | -0.074*** | 0.015 |
| No. of observation | 624 | | | 432 | |
| No. of instruments | | | | 48 | |
| Hansen (p-value) | | | | 0.496 | |
| 1st order autoregression (p-value) | | | | 0.0243 | |
| 2nd order autoregression (p-value) | | | | 0.3165 | |

Notes:

GMM = generalized method of moments; GDP = gross domestic product.

* p < 0.1, ** p < 0.05, *** p < 0.01.

Source: Authors.

10.4 CONCLUSIONS AND SOME POLICY IMPLICATIONS

Since the new budget law was promulgated in 2002, the fiscal responsibilities of local authorities have significantly increased; thus, local fiscal policies play a large role in Viet Nam's growth and development. To fulfill their growing role, the central government has granted local authorities more financial resources, including sharing parts of its revenue with local governments. Intergovernmental fiscal transfers have also been reformed to play an important role in mitigating vertical and horizontal fiscal imbalances.

However, several issues hinder the effectiveness and efficiency of fiscal decentralization in Viet Nam, including unclear expenditure assignments among tiers of governments, various measures and regulations that limit the autonomy of local governments in carrying out expenditure revenue management, and a lack of minimum standards for expenditure outcomes. Regarding intergovernmental fiscal transfers, although the transfer system is working fairly well, weaknesses in transfer norms, incentive problems in resources mobilization and allocation, and existence of many national and provincial targeted programs with overlapping objectives and targets also limit the efficiency of this system. Local governments are permitted to borrow in capital markets, but it seems that the fundamental foundations for local government borrowing management are weak. Lack of transparency is also observed in all aspects of fiscal decentralization.

To make fiscal decentralization work better in Viet Nam, it is recommended that:

- (i) The central government should make expenditure assignments more explicit. It could also give up some of its responsibilities to lower tiers of governments. The central government also needs to design minimum standards of services delivery, not only to secure acceptable equality in services delivery across jurisdictions but also to provide local governments with more autonomy over resources allocation.
- (ii) The central government should review its current sharing arrangements such as using separate formulas for each revenue source instead of using a common formula. The central government could further strengthen local government revenues by allowing provinces to impose surtaxes on some types of taxes such as personal income taxes and local business taxes, or by giving them more autonomy in setting fees and charges. Introducing a property tax could be considered in the longer term.

- (iii) Regarding intergovernmental fiscal transfers, some measures could be taken immediately, such as revising transfer norms, adopting a formula-based transfer system, and avoiding negotiations to mitigate incentive problems in resources allocation.
- (iv) The central and provincial governments should review the current targeted programs, including objectives and targets, and identify overlapping programs. Resources allocations for each program should be matched with the targets. In addition, financial resources for each program should be linked to outcomes.
- (v) To strengthen the current legal foundations for local government borrowing, areas that should be emphasized include having a transparent reporting system for local government debt reporting, developing a creditworthiness evaluation mechanism for local governments, and specifying a threshold on local debt stocks and debt servicing to ensure debt sustainability.
- (vi) Measures should be created that ensure fiscal accountability at the local government level.

NOTES

1. Different from many other economies, the budget law in Viet Nam not only covers the central government budget but also that of intergovernmental fiscal relations, and subnational budget management arrangements, which are usually treated separately in decentralization and local government laws. This feature reflects the country's nested budget system (World Bank, 2014).
2. Viet Nam's data do not distinguish capital expenditure for the education and health sectors, so data on education and health expenditures are included in recurrent spending (World Bank, 2014).
3. In 2011, despite the declining trend, trade and petroleum-related revenues are still equal to 8 percent of national GDP. Similarly, corporate income tax from unified accounting firms is equal to 7 percent of GDP (World Bank, 2014).
4. Compared to other Asian economies, this share of this own-source revenue is similar (World Bank, 2014).
5. In the second stability period, per capita norms were assigned in 14 sectors. The norms took into account the geographic locations of the population within a province. Higher norms were established for those living in remote or mountainous areas, and even higher ones were created for those who live in the highlands or on islands to take into account the input price differences, economies of scale, and number of vulnerable populations.
6. For example, for the health sector, urban areas are allocated VND105,600 per person per year, whereas mountainous areas are allocated VND1,986,880 person per year. This recognizes different costs of services delivery across different geographic areas.
7. The Public Debt Bulletin is a consolidated debt bulletin produced by the Ministry of Finance.
8. There is some statistical evidence indicating that the sample of better-off provinces is small for this analysis, so the estimation with the sample of better-off provinces is not carried out.
9. It should be noted that, due to the small number of provinces with a share rate less than

100 percent, estimates using the fixed-effect estimator and dynamic generalized method of moments (GMM) could be inconsistent, so this type of equation for such provinces is not done.

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PART IV

Behavioral Implications of Central–Local Government Relations

11. Debt dynamics, fiscal deficit, and stability in government borrowing in India: a dynamic panel analysis

Panchanan Das

11.1 INTRODUCTION

The debt and interest payments of the subnational governments have been increasing, although the rates have declined slowly in recent years in India. If fiscal deficits follow a course of a self-continuing rise in the debt to gross domestic product (GDP) ratio affecting adversely the growth rate, the fiscal policy would be inefficient creating a more serious debt problem. One popular way to stabilize the high debt to GDP ratio is to create primary surplus through restrictive fiscal policies at least temporarily by following the neoclassical solution. But, it is not an easy task for subnational governments in India to generate a primary surplus even in the short run, primarily because the subnational governments at the state level have limited power to raise tax revenues while they have to bear a lot of expenditure liabilities. Moreover, a benevolent government, both at the national and subnational levels, has some compulsions to provide different types of welfare benefits through the revenue account of the budget, creating more deficit.

As the financial power and tax autonomy for the subnational governments are limited, control and reallocation of expenditure have been the primary source to adjust budget deficits. In this context, the expenditure side of the budget has a significant role in fiscal performance and government borrowing by influencing economic growth. The widening gap between revenues and expenditures in the states' budgets has resulted in government borrowing. The interest rates applicable to the borrowing by the state governments are higher than the rate charged by the union government in India.¹ Borrowing by the government at the subnational level at higher interest rates has raised the debt servicing costs and worsened further their fiscal imbalance. Thus, fiscal deficits at the subnational level are more critical than those pertaining to the national government in India

(Chelliah, 2001). In effect, the fiscal federalism in India has been creating a vicious cycle of deficit and debt for many years, and the debt vulnerability as experienced recently in West Bengal, Punjab, and some other states in India is an outcome of it.

Against this background, the main focus of this chapter is to look into whether the budget structure in terms of the allocation of expenditure by revenue and capital account has an influence on government borrowing and on economic growth in Indian states. The study investigates the current fiscal health of the state governments in terms of the major deficit and debt indicators. The analysis is based on panel data from 17 non-special category states² in India from 1980 to 2013. The effects of government expenditures of different types on the debt to GDP ratio and on economic growth have been estimated after controlling for fixed state-specific effects. Potential endogeneity has been addressed by estimating the relationship with a one-way error component fixed effect model.

The long-run debt–deficit behavior is analyzed within the framework developed by Domar (1944) on the basis of Keynes's approach to public debt. Domar's observation is a contrast to the neoclassical view that the primary deficit leads to an ever-growing public debt that inevitably leads to an increasing tax burden on the economy. One of the major hypotheses of Domar's study is that if the GDP grows exponentially, the growth rate of debt converges to the growth rate of GDP and, thus, the ratio of debt to GDP will tend to a stationary state. It follows that higher proportional growth of GDP reduces ultimately the ratio of debt to GDP. The higher the share of borrowing utilized in capital formation through the capital account, the greater will be the growth-enhancing effect. Public investment in health, education, and research and development contributes to higher economic growth.

The empirical results of this study indicate that state-specific unobserved factors mostly related to the budget management capabilities of the state governments and the motivation of the political parties in power in the states have had a decisive impact on the rise in government borrowing and on economic growth of the Indian states. The composition of government spending has had an effect on government debt as well as on the growth rate. Government borrowing has been increasing because of higher government spending on public consumption through the revenue account, not because of higher capital outlays. While the higher government spending in the revenue account by borrowing enhances GDP growth through the multiplier effect, it will increase debt. On the other hand, if government borrowing was used for capital formation, then growth potential of the economy would increase and the higher growth will ultimately reduce the share of public debt in GDP. The higher growth elasticity of revenue

expenditure as observed in this chapter is mostly explained by the multiplier effect of Keynes's type, but conflicting the way to fiscal adjustments on the sustainability of debt dynamics. The major contribution of the present chapter to the literature consists of analyzing in detail the regional variation of deficit structure and its impact on government borrowing and growth at the subnational level in the context of the fiscal reforms prescribed by the Finance Commission of India.

The rest of the chapter is organized in the following way. Section 11.2 describes the regional variation in fiscal capacity, fiscal health, and the incidence of borrowing of the subnational governments within the federal fiscal structure as observed in India. Three major deficit indicators, namely, the revenue deficit, the primary deficit, and the gross fiscal deficit are used to analyze fiscal health of the state governments. Poor fiscal health is an indication of a high incidence of debt that varies significantly across the states. Section 11.3 presents different theoretical views on the relationship between budget deficit, public debt, and economic growth. Section 11.4 interprets the empirical results. The empirical analysis focuses on the impacts of the budget structure on the rise in debt burden of the state governments in India by decomposing total government expenditure in revenue and capital accounts. Section 11.5 concludes.

11.2 FISCAL CAPACITY, FISCAL HEALTH, AND GOVERNMENT BORROWING

Fiscal capacity of a state is measured conventionally by its own tax ratio. The variation of state's own tax revenue as a percentage of its domestic product across the non-special category states as observed very recently is shown in Table 11.1. The tax ratio was the highest in Karnataka and the lowest in West Bengal in 2013–14. The states exhibiting higher tax ratios during this fiscal year included Kerala, Tamil Nadu, Punjab, Goa, and Chhattisgarh. The tax ratio for most of the states remained roughly stable over the last three fiscal years. The higher tax ratio, however, is not necessarily an indicator of a healthy fiscal position of an economy. As shown below, the fiscal performance in terms of deficit indicators of some states like Punjab and Kerala was not so sound despite their higher tax ratio.

As the sources of revenues of the subnational governments in India are restricted, state governments depend highly on the national government for funds. The intergovernmental transfer, however, is a problem of political economy in a sense that the design and implementation of a transfer system depends largely on political bargaining between the national and the subnational governments. It seems that the states with greater bargaining

Table 11.1 Own tax, share of central tax, and central grant by states in India

| | Own tax revenue | | | | Share of central tax | | | | Central grant | | | |
|----------------|-----------------|---------|---------|---------|----------------------|---------|---------|---------|---------------|---------|---------|---------|
| | 2011-12 | 2012-13 | 2013-14 | 2013-14 | 2011-12 | 2012-13 | 2013-14 | 2013-14 | 2011-12 | 2012-13 | 2013-14 | 2013-14 |
| Andhra Pradesh | 9.4 | 9.7 | 9.8 | 9.8 | 3.9 | 3.3 | 3.4 | 3.4 | 3.7 | 2.9 | 2.9 | 2.9 |
| Bihar | 6.0 | 6.3 | 7.0 | 7.0 | 16.4 | 13.4 | 13.3 | 13.3 | 9.0 | 8.4 | 8.4 | 7.9 |
| Chhattisgarh | 9.0 | 10.1 | 10.4 | 10.4 | 6.6 | 6.0 | 6.2 | 6.2 | 7.9 | 7.1 | 7.1 | 6.9 |
| Goa | 7.3 | 8.9 | 10.6 | 10.6 | 2.4 | 2.4 | 2.9 | 2.9 | 1.4 | 1.4 | 1.4 | 2.4 |
| Gujarat | 8.9 | 9.4 | 9.6 | 9.6 | 2.0 | 1.7 | 1.7 | 1.7 | 2.2 | 2.1 | 2.1 | 2.0 |
| Haryana | 7.8 | 8.1 | 8.5 | 8.5 | 1.3 | 1.1 | 1.1 | 1.1 | 2.0 | 2.6 | 2.6 | 2.6 |
| Jharkhand | 6.2 | 7.2 | 7.1 | 7.1 | 8.1 | 7.3 | 6.9 | 6.9 | 9.1 | 12.5 | 9.3 | 9.3 |
| Karnataka | 11.9 | 12.2 | 12.6 | 12.6 | 3.6 | 3.0 | 3.2 | 3.2 | 4.1 | 4.6 | 4.6 | 4.5 |
| Kerala | 9.8 | 10.7 | 11.7 | 11.7 | 2.9 | 2.4 | 2.6 | 2.6 | 2.7 | 2.4 | 2.4 | 2.5 |
| Madhya Pradesh | 10.3 | 9.3 | 8.7 | 8.7 | 8.6 | 7.1 | 6.4 | 6.4 | 7.2 | 5.6 | 5.6 | 5.2 |
| Maharashtra | 8.6 | 8.8 | 8.4 | 8.4 | 1.6 | 1.4 | 1.5 | 1.5 | 2.3 | 2.1 | 2.1 | 2.0 |
| Odisha | 7.9 | 7.5 | 7.8 | 7.8 | 9.1 | 7.0 | 7.5 | 7.5 | 9.4 | 7.0 | 7.0 | 6.7 |
| Punjab | 8.6 | 10.0 | 10.6 | 10.6 | 2.0 | 1.8 | 2.0 | 2.0 | 2.2 | 3.4 | 3.4 | 3.3 |
| Rajasthan | 7.4 | 7.7 | 7.8 | 7.8 | 5.4 | 4.6 | 4.9 | 4.9 | 4.2 | 3.1 | 3.1 | 3.2 |
| Tamil Nadu | 10.4 | 11.4 | 11.7 | 11.7 | 2.8 | 2.4 | 2.5 | 2.5 | 2.5 | 1.5 | 1.5 | 1.5 |
| Uttar Pradesh | 9.0 | 9.2 | 9.6 | 9.6 | 10.8 | 9.5 | 9.6 | 9.6 | 5.9 | 4.7 | 4.7 | 4.3 |
| West Bengal | 5.5 | 6.1 | 6.5 | 6.5 | 5.0 | 4.2 | 4.4 | 4.4 | 5.9 | 4.3 | 4.3 | 4.8 |

Note: Figures shown as a percentage to net state domestic product (NSDP) at current prices.

Sources: Author's calculations with data from Reserve Bank of India, State Finances: A Study of Budgets, various years; Government of India, Central Statistics Office.

power manage to receive larger per capita transfer (Singh and Vasishtha, 2004) and in the process horizontal imbalance remains a cause of concern along with the prominence of vertical imbalance. The transfer through the Finance Commission, although restricted to the non-plan side of the budget, plays an important role in correcting the horizontal imbalance.³

There has been a significant regional variation in the distribution of taxes collected by the union government as well as the grants provided by the central government (see Table 11.1). The state's share of central tax relative to the state's domestic product was the highest, over 13 percent, in Bihar followed by Uttar Pradesh and Odisha⁴ in 2013–14. The proportional share of central tax was the lowest at just about 1 percent, in Haryana during the 2013–14 fiscal year. The share of central tax as a percentage to state's income was 4.4 in West Bengal in that period. Jharkhand got the highest central grant and Tamil Nadu got the lowest grant relative to states' income in 2013–14. The states displaying a higher ratio included Bihar, Chhattisgarh, and Odisha. In West Bengal, the ratio was moderate at 4.8.

In analyzing fiscal health at the subnational level, this chapter focuses attention on revenue deficit, primary deficit, and gross fiscal deficit. The problems of fiscal deficit and public debt in an economy have been accumulated through a long-run process. The revenue deficits at the subnational level in India have persisted since the late 1980s, and the progressive deterioration in state finances started since the late 1990s. Deficits in the budget of most state governments recorded the highest levels with the lowest central transfers to states during the late 1990s and the beginning of the next decade. Growing revenue expenditure (particularly in the form of wages, salaries, and pensions), losses of state public sector enterprises, and declining transfers from the union government are mostly attributed to worsening finances of the states. In addition, states' own tax revenue declined significantly partly because of different types of tax exemptions provided by the state governments to the private corporations in the process of competition to attract private capital in the wake of neoliberal reforms since the early 1990s.

Revenue deficit increased at the highest rate in Bihar followed by Uttar Pradesh, Punjab, and West Bengal during the 1990s. Deficit in the revenue account, however, improved only in Goa over the 1980s and 1990s and in many states during 2000–13, probably because of the initiation of fiscal reforms legislation. But in West Bengal, Kerala, and Gujarat the deficit deteriorated during this period and at a significantly higher rate in West Bengal. The poor performance of the states on revenue balance is due to the lack of revenue receipts to meet expenditure, including interest payments on past debt (Das, 2015). The gross fiscal deficit also followed

roughly the similar pattern. The deterioration in fiscal deficit during the 1990s was mainly because of a higher interest burden to the states.

Table 11.2 displays a comparison of the deficit indicators (deficits relative to states' income) among 17 non-special category states during the past three fiscal years. The most important indicator of fiscal health is revenue deficit. West Bengal was at the top in terms of revenue deficit relative to income in 2011–12, but the revenue deficit declined significantly during the past three years and it ranked fourth in 2013–14. Haryana registered the highest deficit in revenue account followed by Kerala and Punjab during the 2013–14 fiscal year. Many states in India managed to create a surplus in the revenue balance recently because of the initiation of the fiscal responsibility legislation by following the recommendation of the Report of the Twelfth Finance Commission (GOI, 2004). West Bengal's poor performance (along with some other states) on revenue balance is due to the lack of revenue receipts to meet expenditure, including interest payments on past debt.

The overall resource gap between receipt and expenditure, taking both the revenue and capital accounts together, is reflected in the fiscal deficit. Capital receipts cover receipts as capital in nature and capital expenditures comprise spending, usually met from the borrowed funds, to create capital assets. The gross fiscal deficit relative to states' domestic product varied widely across the states with the highest deficit in Goa and the lowest in Maharashtra in 2013–14. The gross fiscal deficit in West Bengal was significantly small during this period.

Fiscal deficit less interest payments determines primary deficit, the extent of borrowing used by the government for current expenditures both in revenue and capital accounts. The remaining part of fiscal deficit is claimed by interest payments. The primary deficit on revenue account might show the true resource gap in the government budget. As the primary revenue balance (revenue deficit less interest payments) does not consider interest payment liabilities on past debts, a surplus in primary revenue account is required to reduce the overall revenue account deficit. All the non-special category states have experienced a surplus in the primary fiscal balance consistently during the past three years, but unevenly across the states. West Bengal generated the highest surplus in primary balance while experiencing significant fiscal deficit.

As the states have limited capacity to generate revenue they are forced to borrow to meet their fiscal deficit, and higher fiscal deficit causes the higher incidence of indebtedness. A growing debt ratio implies that public expenditure is excessively devoted to unproductive spending primarily because of inefficient fiscal management of the state governments. Non-development expenditure on administrative services, salaries, pensions,

Table 11.2 Major deficit indicators of state governments

| | Revenue deficit | | | | Primary deficit | | | | Gross fiscal deficit | | | |
|----------------|-----------------|---------|---------|---------|-----------------|---------|---------|---------|----------------------|---------|---------|---------|
| | 2011-12 | 2012-13 | 2013-14 | 2011-12 | 2012-13 | 2013-14 | 2011-12 | 2012-13 | 2013-14 | 2011-12 | 2012-13 | 2013-14 |
| Andhra Pradesh | -0.53 | -0.25 | -0.13 | -1.75 | -1.73 | -1.85 | 2.59 | 3.11 | 3.18 | 2.59 | 3.11 | 3.18 |
| Bihar | -2.17 | 0.28 | -2.16 | -1.91 | -1.85 | -1.84 | 2.66 | 6.33 | 2.78 | 2.66 | 6.33 | 2.78 |
| Chhattisgarh | -2.63 | -1.57 | -1.57 | -0.96 | -0.90 | -0.78 | 0.65 | 3.33 | 3.33 | 0.65 | 3.33 | 3.33 |
| Goa | -0.79 | 1.03 | 0.56 | -1.84 | -1.97 | -2.24 | 2.31 | 5.72 | 6.17 | 2.31 | 5.72 | 6.17 |
| Gujarat | -0.62 | -0.67 | -0.71 | -2.09 | -2.06 | -2.07 | 2.13 | 3.11 | 3.15 | 2.13 | 3.11 | 3.15 |
| Haryana | 0.53 | 1.02 | 0.70 | -1.44 | -1.62 | -1.77 | 2.62 | 2.61 | 2.56 | 2.62 | 2.61 | 2.56 |
| Jharkhand | -1.23 | -3.26 | -2.10 | -1.94 | -1.87 | -1.62 | 1.66 | 2.44 | 2.72 | 1.66 | 2.44 | 2.72 |
| Karnataka | -1.15 | -0.20 | -0.12 | -1.46 | -1.45 | -1.61 | 3.02 | 3.30 | 3.38 | 3.02 | 3.30 | 3.38 |
| Kerala | 2.95 | 1.10 | 0.65 | -2.26 | -2.24 | -2.18 | 4.71 | 3.67 | 3.42 | 4.71 | 3.67 | 3.42 |
| Madhya Pradesh | -3.58 | -1.93 | -1.28 | -1.89 | -1.76 | -1.58 | 2.08 | 3.14 | 3.01 | 2.08 | 3.14 | 3.01 |
| Maharashtra | 0.21 | 0.00 | -0.01 | -1.62 | -1.59 | -1.56 | 1.88 | 1.64 | 1.81 | 1.88 | 1.64 | 1.81 |
| Odisha | -3.17 | -1.40 | -0.81 | -1.46 | -2.13 | -2.11 | -0.35 | 1.32 | 2.53 | -0.35 | 1.32 | 2.53 |
| Punjab | 2.99 | 1.89 | 0.62 | -2.72 | -2.74 | -2.67 | 3.73 | 3.73 | 3.29 | 3.73 | 3.73 | 3.29 |
| Rajasthan | -0.93 | -0.19 | -0.22 | -2.18 | -2.04 | -1.98 | 1.01 | 2.73 | 2.83 | 1.01 | 2.73 | 2.83 |
| Tamil Nadu | -0.23 | -0.07 | -0.09 | -1.44 | -1.49 | -1.66 | 2.86 | 2.96 | 2.97 | 2.86 | 2.96 | 2.97 |
| Uttar Pradesh | -1.14 | -0.80 | -1.25 | -2.51 | -2.35 | -2.13 | 2.53 | 3.06 | 3.03 | 2.53 | 3.06 | 3.03 |
| West Bengal | 3.03 | 2.39 | 0.55 | -3.27 | -3.16 | -3.04 | 3.68 | 3.75 | 2.11 | 3.68 | 3.75 | 2.11 |

Notes:

Deficits are expressed as percentage to net state domestic product (NSDP) at current prices. The negative figures indicate surpluses.

Sources: Author's calculations with data from Reserve Bank of India, State Finances: A Study of Budgets, various years; Government of India, Central Statistics Office.

and interest payments has grown considerably since the late 1980s in all states (Das, 2015). As a result, revenue deficit relative to fiscal deficit increased disproportionately in every state during the 1990s. Many states, however, managed to control non-developmental expenditure through fiscal reforms during the later decades. Debt burden increased significantly in all states except Goa from 1980–81 till the mid-2000s. Interest burden, measured by interest payment as a share of revenue receipts, increased everywhere in the country and at a higher rate during the 1990s. Average interest payments during 2000–13 were the highest (over 37 percent, of the revenue receipt) for West Bengal followed by Punjab exhibiting nearly one-fourth of its revenue receipt as interest for public borrowing during the same period. Rajasthan, Gujarat, and Kerala registered interest payments over 20 percent, of their revenue receipt.

Recently, the debt ratio declined, although slowly in most states in India (see Table 11.3). In West Bengal, the debt burden was the highest among the non-special category states despite exhibiting moderate fiscal deficit in 2013–14. If the fiscal deficit on revenue account gap for a state is relatively high, as in the case of West Bengal, the state is in a worse position. A very high debt ratio in West Bengal was strongly related to a high revenue deficit relative to its fiscal deficit.⁵ Total debt stock in the state was over 36 percent, of its net domestic product, registering the highest share among the non-special category states, and in Chhattisgarh it was lowest at below 13 percent, during 2013–14. Punjab ranked second followed by Uttar Pradesh in terms of debt liability during the same period. Since the late 1980s, subnational governments have been experiencing financial imbalance primarily because of growing non-development expenditure on administrative services, salaries, pensions, and interest payments. The interest payment liability of West Bengal was more than one-fifth of its revenue receipt, far above the interest liability of other non-special category states, during this fiscal period. However, interest liability of the state declined over the past three fiscal years by following the fall in debt ratio. Interest payments have been one of the major components of revenue expenditure of states making revenue deficits more vulnerable. A large debt ratio and corresponding larger proportion of interest payment is a cause of concern from the point of view of stability and sustainability of fiscal policy of the government of West Bengal.

A sharp deterioration of financial health of the state governments during the past few decades has not only been because of state-specific reasons, but also owing to the ever-growing vertical imbalance (GOI, 1994). As discussed above, the rate of deterioration of the fiscal health is not similar for all states in India. West Bengal among all non-special category states in India has been experiencing severe fiscal strain in terms of debt ratio as

Table 11.3 Debt indicators of state governments

| | Total outstanding debt relative to NSDP (%) | | | | Interest payment relative to revenue receipt (%) | | | Revenue deficit relative to fiscal deficit (%) | | |
|----------------|---------------------------------------------|---------|---------|--|--------------------------------------------------|---------|---------|------------------------------------------------|---------|---------|
| | 2011-12 | 2012-13 | 2013-14 | | 2011-12 | 2012-13 | 2013-14 | 2011-12 | 2012-13 | 2013-14 |
| Andhra Pradesh | 23.48 | 22.19 | 21.97 | | 11.29 | 10.94 | 11.36 | -0.20 | -0.08 | -0.04 |
| Bihar | 28.58 | 25.04 | 24.29 | | 8.38 | 7.78 | 7.36 | -0.82 | 0.04 | -0.78 |
| Chhattisgarh | 13.82 | 13.02 | 12.96 | | 4.60 | 3.99 | 3.34 | -4.05 | -0.47 | -0.47 |
| Goa | 25.12 | 26.87 | 30.94 | | 12.28 | 11.52 | 11.35 | -0.34 | 0.18 | 0.09 |
| Gujarat | 27.58 | 25.89 | 25.25 | | 17.36 | 16.15 | 15.93 | -0.29 | -0.21 | -0.22 |
| Haryana | 16.95 | 18.23 | 18.64 | | 13.09 | 13.51 | 14.39 | 0.20 | 0.39 | 0.27 |
| Jharkhand | 24.40 | 24.23 | 22.79 | | 10.12 | 7.58 | 7.35 | -0.74 | -1.34 | -0.77 |
| Karnataka | 22.97 | 22.94 | 20.88 | | 8.68 | 8.07 | 8.67 | -0.38 | -0.06 | -0.03 |
| Kerala | 30.86 | 30.65 | 30.79 | | 16.55 | 14.61 | 13.21 | 0.63 | 0.30 | 0.19 |
| Madhya Pradesh | 27.29 | 24.32 | 21.30 | | 8.47 | 8.29 | 8.19 | -1.72 | -0.61 | -0.43 |
| Maharashtra | 21.66 | 20.54 | 20.24 | | 14.43 | 13.28 | 13.53 | 0.11 | 0.00 | -0.01 |
| Odisha | 26.60 | 22.71 | 20.36 | | 6.41 | 9.89 | 9.77 | 9.05 | -1.06 | -0.32 |
| Punjab | 32.89 | 32.90 | 33.09 | | 23.93 | 17.80 | 17.81 | 0.80 | 0.51 | 0.19 |
| Rajasthan | 27.55 | 25.95 | 25.25 | | 13.84 | 12.41 | 11.97 | -0.93 | -0.07 | -0.08 |
| Tamil Nadu | 18.99 | 19.45 | 19.51 | | 10.41 | 10.02 | 10.99 | -0.08 | -0.02 | -0.03 |
| Uttar Pradesh | 37.70 | 35.24 | 32.83 | | 11.83 | 10.53 | 9.59 | -0.45 | -0.26 | -0.41 |
| West Bengal | 40.16 | 38.35 | 36.66 | | 27.06 | 24.72 | 22.05 | 0.82 | 0.64 | 0.26 |

Note: NSDP = net state domestic product.

Sources: Author's calculations with data from Reserve Bank of India, State Finances: A Study of Budgets, various years; Government of India, Central Statistics Office.

shown in Table 11.3. Rising interest payments, inadequate recovery of user charges, rising expenditure on wages and salaries, and sluggishness in the central transfer of resources have been the major factors for the deterioration in the fiscal conditions of the Indian states (Reserve Bank of India, 2002). While the states' own revenue sources are not increasing fast enough to match their rising expenditure, central devolution and other assistance are not adequate to cover the gap. Revenue deficits have widened and borrowings are being increasingly used to meet revenue expenditure.

Thus, there has been a marked deterioration in the fiscal health of all states in India since the early 1990s, reaching a peak in the mid-2000s in most states. While the fiscal health of the state governments has improved recently, the debt ratio and the interest payments are still alarming and the primary causes for the growing debt ratio need to be analyzed. In this chapter I have estimated the relative contribution of revenue expenditure and capital expenditure to government borrowings in a framework of debt dynamics as suggested by Domar (1944) (see section 11.3). The standard theory in public economics suggests that the erosion of fiscal viability will be more if the larger proportion of total borrowing is used for bridging the revenue deficit. Thus, the pattern of use of government borrowings is crucial as far as the sustainability of debt finance is concerned.

11.3 BUDGET DEFICIT, PUBLIC DEBT, AND ECONOMIC GROWTH

As discussed above, high fiscal deficit has left a legacy of huge public debt and growing interest payments. The escalating debt burden also has a serious implication for the fiscal imbalance of the states. In this context, an empirical estimation of the long-run relationship between debt and deficit has immense significance to examine whether the fiscal policies adopted by the state governments are sustainable. The sustainability of public debt ratio is an important issue as it can be regarded as an indicator of the efficiency of public finance.

In the neoclassical model, budget deficits financed by borrowing have no expansionary effect on GDP. In this case interest rate rises crowd out the multiplier effect of private spending on GDP. The endogenous growth model, however, has favored government borrowing to finance the deficits if it is used in growth-enhancing sectors such as developmental expenditures on public infrastructure, education, and health (Barro, 1990; Lucas, 1988; Romer, 1990). There was significant contribution to the analysis of debt sustainability by Diamond (1965) in a general equilibrium framework. He analyzed the effect of a positive stock of debt on long-term

competitive equilibrium of an economy with neoclassical technology. Rankin and Roffia (2003) developed further a model of debt sustainability on the basis of this approach.

The budget deficit in Keynes's sense has a multiplier effect on aggregate demand that ultimately generates employment and income even when the deficit is financed by borrowing. The traditional Keynesian framework does not distinguish between alternative uses of the fiscal deficit as between government consumption or investment expenditure. It also fails to distinguish between alternative sources of financing the fiscal deficit through monetization or external or internal borrowing. Keynes, later on, put forward a detailed analysis of the budget by arguing that full employment may be ensured through the increase in capital expenditure keeping the revenue expenditure under control. But, capital expenditures should be efficient and carried out by following some economic principles (Keynes, 1980). If public investment is capable to yield a positive return, the deficit will be controlled in the long run. Subsequent elaborations of the Keynesian paradigm envisage that the multiplier-based expansion of output leads to a rise in the demand for money, and if money supply is fixed and the deficit is bond financed, interest rates would rise offsetting at least partially the multiplier effect. Keynesians argue that deficits may stimulate savings and investment even if interest rates rise, primarily because of the employment of unutilized resources. However, at full employment, deficits would lead to crowding out even in the Keynesian paradigm. On the basis of Keynes's framework, Domar (1944) formulated the necessary conditions for fiscal sustainability. Domar's model has been extended by Buiter (1985) and further developed by Blanchard et al. (1990). In this structure, the ratio of public debt to GDP will converge in the long run to its initial level to attain fiscal sustainability.

Domar (1944) studied the relationship between budget deficits and the behavior of the ratio of the public debt to GDP over time. He argued that there need not be a tendency for debt to GDP ratio to grow indefinitely. According to him, if income grows at a constant percentage rate, the growth rate of debt will approach the growth rate of income and, therefore, the ratio of debt to GDP will tend to a stationary state. Thus, the problem of the debt ratio lies in the ability to make income grow rather than in attempting to reduce it without taking account of the effects of such a reduction on income. A higher growth of income can be achieved if sufficient amount of the expenditures is directed toward increasing the efficiency of production. This empirical study is based on an extended formulation of the theoretical framework developed in Domar (1944) with panel data from 17 non-special category states over 1980–2013. A similar type of model has been used by Rangarajan and Srivastava (2005)

in studying India's state finances. But, they considered the long-run constancy of the nominal growth rate and effective interest rate in their basic formulation of the model.

11.4 EMPIRICAL ANALYSIS

This chapter addresses the question of how different types of government spending are responsible for the rise in debt at the subnational level in India. The chapter focuses on the impacts of the budget structure on the rise in debt burden of the state governments by decomposing total government expenditure in revenue and capital accounts. To examine the shape of the debt–deficit relationship, I hypothesize that the states' economic growth is more responsive to government spending on capital formation than to spending on public consumption. The more the growth rate is sensitive to capital expenditure, the lower the debt burden in terms of net interest payment will be (interest payment less return to capital). Thus, the larger the proportion of public debt toward capital outlay, the larger the growth rate will be, and debt will be sustainable.

To test these hypotheses empirically I have used panel data for government borrowing, own tax ratio, and different components of government expenditures from 17 non-special category states over 34 years (1980–2013). The Reserve Bank of India publishes the data on state finances from budgets of the state governments. I have used this database in this study. The data on state government finances are based on the receipts and expenditure statements presented in the budget documents of the state governments over the years. Data on net state domestic products (NSDP) are collected from the National Accounts Division of the Central Statistical Office. States' domestic products at constant (2004–05) prices are used to find out economic growth and NSDP at current prices are used to calculate debt and deficit ratios because debt and deficits are provided at current prices.

In many empirical studies, the problem of debt sustainability is examined by testing co-integration between the time series of revenues and expenditures. As long as government expenditure and revenue are stationary in first differences and are co-integrated, the fiscal position will be sustainable (Hakkio and Rush, 1991). Co-integration between revenue and expenditure indicates that there is a mechanism that pushes government finances toward the equilibrium level as defined by the inter-temporal budget constraint. An implication of the presence of co-integration is that the adjustments in revenues and expenditures take place in such a way that they move together. If fiscal deficit is stationary, as in the

case of co-integration between revenue and expenditure, higher interest payments, for example, implies lower spending in other components in the budget so that the co-movement of expenditure with revenues is maintained.

Buiter and Patel (1992) tested the sustainability of public sector debt in India by carrying out unit root tests with data for 1971–89 and found that the overall public sector debt was unsustainable irrespective of the alternative interest rate. Rajaraman and Mukhopadhyay (2000) tested for sustainability in terms of stationarity of the debt to GDP ratio by taking the national and subnational governments together in India from 1952 to 1998 and observed that public debt is not sustainable. Olekalns and Cashin (2000) applied the methodology as developed in Hakkio and Rush (1991) to examine the sustainability of budget deficits for the union government with data from 1951–98. The tests carried out by them failed to reject the hypothesis of no co-integration and thus India's fiscal policy was not sustainable during that period. Jha and Sharma (2004) performed empirical tests to ascertain whether government expenditures and revenues are co-integrated in India using long time series data. They found, on the basis of a sample period starting in the early 1950s, that if structural breaks are taken into account, government expenditures and revenues were co-integrated, and therefore growth in government debt in India has been consistent with the requirements of sustainability. Thus, there has been a debate in the existing literature on sustainability of the debt ratio in the Indian context. Moreover, most of the studies attempting to examine debt sustainability in India have concentrated on the problem of the union government. Recently, Das (2013) examined financial stability and sustainability along the debt–deficit spiral over time for Kerala, Punjab, and West Bengal in the canonical framework. The study observed a sharp increase in the revenue account gap causing fiscal deficit that grew steadily in these three states during the late 1990s to the early 2000s.

In this chapter, the debt–deficit relationship has been estimated in a panel data frame with data from 17 non-special category states over 34 years (1980–2013). While the theory of co-integration as developed in Engle and Granger (1987) may be applicable to estimate the relationship between revenues and expenditures with long period data from the union budget, the co-integration estimation of this type may not be appropriate for individual states because of the non-availability of data for state finances for a sufficiently long period. Moreover, panel data provide more variability, more degrees of freedom and less co-linearity (Baltagi, 2013). The estimable equation is derived from the inter-temporal government budget equation described in equation 11A.5 in the Appendix:

$$\Delta y_{it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it} + \gamma x_{3it} + \delta y_{it-1} + \varepsilon_{it}$$

$$\varepsilon_{it} = \mu_i + e_{it} \quad (11.1)$$

Here, y_{it} denotes outstanding public debt in state i and time t ; x_{1it} and x_{2it} are the capital outlay and revenue expenditure respectively; x_{3it} denotes state's own tax revenue. All variables are normalized by NSDP at current (2004–05) prices. As suggested by the inter-temporal budget equation in the Appendix (equation 11A.5), the desired signs of β_1 and β_2 are positive, and that of γ and δ are negative. We decompose the error term into two components: a state-specific error μ_i and an idiosyncratic error e_{it} . The Hausman (1978) test suggests that the state-specific error is non-stochastic. Thus fixed effect one-way error component model is the proper choice in estimating the debt–deficit relationship at the subnational level. Each state has a fixed value on this latent variable (fixed effects), μ_i , measuring unobserved heterogeneity. The state-specific fixed effects capture the budget management capabilities of the state government, along with the impact of population size, income per capita, unemployment rate, and the political orientation of the government. These factors are likely to determine the costs of public services and to represent different preferences for public goods and debt financing. Larger states, for example, have lower administrative costs per capita. The unemployment rate controls both structural economic problems and the business cycles.

To examine the type of debt–deficit relationship it is necessary to take into account the proportional shares of the borrowed fund used as public consumption in the form of revenue expenditure and public investment through capital outlay. As mentioned above, the larger the proportion of government expenditure for accumulation of capital, the higher will be the growth rate of the economy and, in this case, the probability of debt sustainability will be higher.

The stochastic behavior of the variables incorporated in equation 11.1, panel data unit root tests developed by Levin, Lin, and Chu (LLC) (2002) and Im, Pesaran, and Shin (IPS) (2003) are used. Testing unit roots in panel data framework is more powerful than unit root tests applied to individual series because the information in the time series is enhanced by that contained in the cross-section data. In addition, in contrast to individual unit root tests that have complicated limiting distributions, panel unit root tests lead to statistics with a normal distribution in the limit (Baltagi, 2013). The LLC test employs a null hypothesis of a unit root using the following basic Augmented Dickey–Fuller (ADF) specification:

Table 11.4 Estimated statistics for panel unit root tests

| Series | LLC t-statistics | IPS W-statistics |
|------------------|------------------|------------------|
| y_{it} | -1.173 | 0.079 |
| Δy_{it} | -3.563 | -4.863 |
| x_{1it} | -3.332 | -3.784 |
| Δx_{1it} | -10.060 | -14.795 |
| x_{2it} | 3.752 | 3.019 |
| Δx_{2it} | -11.046 | -9.699 |
| x_{3it} | -0.049 | -1.874 |
| Δx_{3it} | -8.215 | -11.969 |

Notes:

y_{it} denotes debt-gdp ratio in state i and time t .

x_{1it} and x_{2it} are the revenue expenditure and capital outlay relative to state's income.

x_{3it} denotes state's own tax revenue to state gdp ratio.

Sources: Author's calculations with data from Reserve Bank of India. State Finances: A Study of Budgets, various years; Government of India, Central Statistics Office.

(11.2)

$$\Delta y_{it} = \rho y_{it-1} + \sum_j \beta_{ij} \Delta y_{it-j} + \eta x_{it} + v_{it}$$

Here y_{it} refers to the pooled variable, x_{it} represents exogenous variables in the model such as state fixed effects and individual time trends, and v_{it} refers to the error terms that are assumed to be mutually independent disturbances. It is assumed that ρ is identical across the states, but the lag order for the difference terms across the states is allowed to vary. By contrast, the less restrictive IPS test estimates a separate ADF regression for each of the 17 cross sections to allow for individual unit root processes. Table 11.4 reports (summary) panel unit root tests on the relevant variables given in equation 11.1 above. As can be seen, both tests fail to reject the unit root null for all the variables in level form, but the tests do reject the null of a unit root in difference form. Thus the series of y , x_1 , x_2 , and x_3 are $I(1)$, and their first differences are $I(0)$.

The causality from government expenditure to government debt, if any, is estimated by employing the generalized method of moments (GMM) approach developed by Arellano and Bond (1991) in a dynamic panel frame with one period lag. The use of panel data in estimating common relationships across regions is particularly appropriate because it allows the identification of region-specific effects that control for missing or unobserved variables. In Arellano and Bond (1991), the fixed effects are

Table 11.5 Dynamic panel estimation of debt and government spending

| Explanatory variables | Coefficients | z-statistics | P > z |
|-----------------------|--------------|--------------|-------|
| Intercept | 0.227 | 2.52 | 0.012 |
| $\log y_{it-1}$ | 0.023 | 0.51 | 0.607 |
| $\log x_{1it}$ | 0.275 | 7.05 | 0.000 |
| $\log x_{2it}$ | 0.005 | 1.79 | 0.073 |
| $\log x_{3it}$ | -0.092 | -2.88 | 0.004 |
| Wald $\chi^2(4)$ | | 60.31 | |
| Prob > χ^2 | | 0.0000 | |

Sources: Author's calculations with data from Reserve Bank of India, State Finances: A Study of Budgets, various years; Government of India, Central Statistics Office.

first eliminated by using first differences instead of the actual level of the variables and then an instrumental variable estimation of the differenced equation is performed. The lagged values of the endogenous variable or other variables which are correlated with the differenced error term, starting with lag two and potentially going back to the beginning of the sample, are used as instrumental variables in the model. The overall validity of instruments is checked by the Sargan test of over-identifying restrictions.

The estimated results shown in Table 11.5 suggest that the change in debt ratio is significantly more sensitive to revenue expenditure than capital expenditure at the subnational level. The elasticity of debt due to capital outlay was very little, but the government borrowing was highly attributable to public consumption in revenue account. Thus, a much larger fraction of the government debt has been used as revenue expenditure as public consumption at the subnational level. The increase in the states' own tax revenue improved significantly the debt situation of the state governments. The coefficient for lagged debt ratio provides the nature of dynamics, but it is statistically insignificant. A higher level of expenditure, either in revenue account or capital account or both is the conventional reason for debt for every government. Public debt is also affected by some other factors relating to the capability of fiscal management of the government that are state specific and unobserved. The extent of debt escalating effect varied widely across the states because of the variation in fiscal performance of the subnational governments.

We observe that the increase in revenue expenditure has been mostly responsible for the higher level of borrowing at the subnational level in India. Government borrowing may be sustainable when it has a growth-enhancing effect at a given cost per unit, the interest rate. Higher growth due to debt financed government expenditure could be the return from

Table 11.6 Growth effect of borrowing by states

| Variables | Coefficient | t-statistics | P > t |
|-------------------------------------|-------------|--------------|-------|
| $\log x_{1it}$ | 3.1 | 2.830 | 0.005 |
| $\log x_{2it}$ | 0.1 | 8.930 | 0.000 |
| <i>State-specific fixed effects</i> | | | |
| Andhra Pradesh | 16.3 | 21.860 | 0.000 |
| Bihar | 14.6 | 22.880 | 0.000 |
| Chhattisgarh | 15.9 | 21.300 | 0.000 |
| Goa | 13.4 | 19.980 | 0.000 |
| Gujarat | 16.6 | 20.900 | 0.000 |
| Haryana | 16.0 | 20.690 | 0.000 |
| Jharkhand | 15.8 | 21.480 | 0.000 |
| Karnataka | 16.1 | 21.490 | 0.000 |
| Kerala | 15.8 | 21.370 | 0.000 |
| Madhya Pradesh | 15.2 | 22.150 | 0.000 |
| Maharashtra | 17.6 | 21.310 | 0.000 |
| Odisha | 15.3 | 21.210 | 0.000 |
| Punjab | 15.8 | 21.470 | 0.000 |
| Rajasthan | 15.8 | 21.370 | 0.000 |
| Tamil Nadu | 16.6 | 21.810 | 0.000 |
| Uttar Pradesh | 16.4 | 22.250 | 0.000 |
| West Bengal | 16.7 | 21.730 | 0.000 |

Sources: Author's calculations with data from Reserve Bank of India, State Finances: A Study of Budgets, various years; Government of India, Central Statistics Office.

borrowing. This is because higher growth ultimately results in higher government revenues. Table 11.6 produces the estimates of growth-enhancing effects of capital expenditure and revenue expenditure of the subnational governments in India. The results have been obtained by applying a one-way error component fixed effect model. I hypothesize that capital outlay has more growth-enhancing effect than the revenue expenditure. But the estimated results shown in Table 11.6 fail to reject this hypothesis.

The growth elasticity of revenue expenditure is significantly higher than the elasticity of capital outlay. Again, as shown in Table 11.5, a larger proportion of government borrowing has been used in public consumption as revenue expenditure at the subnational level. In that sense, borrowings of the state governments have a growth-enhancing effect, but the other way around. Government borrowing induced higher growth in states' income mainly through the multiplier effect, not by raising public investment as such. The growth-enhancing power of government borrowing has not been

the same across the states. The growth effect of borrowing was the highest in Maharashtra and the lowest in Goa. In West Bengal, Gujarat, and Tamil Nadu, the growth effect was higher among the non-special category states. In Punjab, on the other hand, the growth effect was moderate while the incidence of borrowing for public consumption was high.

11.5 SUMMARY AND CONCLUSIONS

This chapter describes the current fiscal health of the state governments in India in terms of the major deficit and debt indicators. Fiscal capacity, measured by its own tax ratio, varies considerably across the states. The tax ratio was the highest in Karnataka and the lowest in West Bengal in 2013–14. There has also been a significant regional variation in the distribution of taxes collected by the union government as well as the grants provided by the central government. Perhaps, the most important indicator of fiscal health is revenue deficit, which was the highest in Haryana during 2013–14, while Bihar exhibited the highest revenue surplus during the 2013–14 fiscal year. The extent of borrowing used by the government for current expenditures is reflected in the primary deficit. All major states have recently experienced surplus in their primary fiscal balance. In 2013–14, West Bengal generated the highest surplus in primary balance while experiencing significant fiscal deficit and the highest debt ratio among the non-special category states.

While government debt and interest payments have no additional liability of the economy as a whole, larger interest payments have an adverse impact on income distribution and distort domestic demand in the form of higher consumption expenditure at the cost of capital accumulation and provision of public goods and services (Rakshit, 2000). The interest payment liability of West Bengal was more than one-fifth of its revenue receipt, far above the interest liability of other non-special category states, during the fiscal period 2013–14. While the states' own revenue sources are not increasing fast enough to match their rising expenditure, the central devolution and other assistance are not adequate to cover the gap. Revenue deficits have widened and borrowings are being increasingly used to meet revenue expenditure.

There has been a marked deterioration in the fiscal health of all states in India since the early 1990s, which reached a peak in the mid-2000s in almost every state in India. While the fiscal health of the state governments has improved recently, the debt ratio and interest payments are still alarming and the primary causes for growing debt ratio need to be analyzed. The expenditure side of the budget has a significant role in fiscal performance

and government borrowing by influencing economic growth. The pattern of use of government borrowing is crucial as far as the sustainability of debt finance is concerned. The effects of government expenditures of different types on the debt to GDP ratio and on economic growth have been estimated after controlling for fixed state-specific effects. This chapter addresses the question of how different types of government spending are responsible for the rise in debt at the subnational level.

The empirical findings suggest that the change in debt ratio is significantly more sensitive to revenue expenditure than capital expenditure at the subnational level. The increase in the states' own tax revenue did not improve significantly the debt situation of the state governments. The growth elasticity of revenue expenditure is significantly higher than the elasticity of capital outlay. Thus, the borrowings of the state governments have a growth-enhancing effect, but the other way round. The results also indicate that state-specific unobserved factors mostly related to the budget management capabilities of the state governments and the motivation of the political parties in power in the states have had a decisive impact on the rise in government borrowing and on economic growth of the states.

For a viable fiscal system, debt ratio should be sustainable over a long time. Debt will be sustainable when government consumption expenditure and transfer payments are to be met from revenue receipts of the government, while public investment and net government support to private investment should be financed through borrowing. The empirical findings of this chapter reject this hypothesis. In the empirical results expounded in this chapter, a growing debt ratio implies the inefficiency in fiscal management of the government in a sense that government spending on capital fails to contribute to the economic growth significantly. Thus, more emphasis is to be put on capital expenditure than on public consumption to make public debt sustainable at the subnational level.

NOTES

1. In India, the central government of India is officially referred to as the union government.
2. Special category states are given a higher share in the union government's resource allocation, due to their severe topography, underdevelopment, and other social problems.
3. The Finance Commission decides on tax shares and makes grants.
4. In 2011, the Government of India approved the name change of the State of Orissa to Odisha. This chapter reflects this change. However, when reference is made to policies that predate the name change, the formal name Orissa is retained.
5. One can compare states' fiscal performance on asset creation by comparing a ratio of revenue deficit relative to fiscal deficit, a part of fiscal deficit that does not transform to create government assets. If the fiscal deficit is caused by the revenue account gap, then it will be an idle deficit.

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APPENDIX

Domar's model can be summarized in terms of the following inter-temporal budget constraint by assuming budget deficits are debt financed:

$$G_t + r_t D_{t-1} - R_t = D_t - D_{t-1}$$

or

$$P_t + r_t D_{t-1} = D_t - D_{t-1}$$

or

$$D_t = P_t + (1 + r_t) D_{t-1} \quad (11A.1)$$

Here, G_t is government spending (including transfer payment but excluding interest liability), R_t is government revenue, D_t is outstanding debt and r_t is rate of interest in time t . $G_t - R_t = P_t$, the primary deficit. In this specification of dynamic budget constraint, the possibility to finance budget deficits through the creation of high-powered money is ruled away. This is because the subnational governments have no power to create money through the national central bank.¹ Thus the subnational governments are more similar to a private borrower as they rely on some external source for the liquidity required to finance its expenditures in excess of revenues.

By normalizing with GDP, $Y_t = (1 + g_t) Y_{t-1}$, g_t being the growth rate:

$$d_t = p_t + \left(\frac{1 + r_t}{1 + g_t} \right) d_{t-1}, \quad p_t = \frac{P_t}{Y_t} = \frac{G_t}{Y_t} - \frac{R_t}{Y_t} = \gamma_t - \tau_t \quad (11A.2)$$

Equation 11A.2 suggests that the outstanding public debt is an accumulated sum of primary deficit and past stock of debt adjusted with the ratio of interest rate to GDP growth. Initially, Domar assumed that the economy's growth rate is exogenously given and is independent of public spending. The real interest rate is considered to be higher than the economy's growth rate.

By subtracting d_{t-1} from both sides of equation 11A.2 yields:

$$\Delta d_t = \gamma_t - \tau_t - \left(\frac{g_t - r_t}{1 + g_t} \right) d_{t-1} \quad (11A.3)$$

The change in debt over time is the sum of primary deficit and, gap between growth rate and interest rate. When growth rate of GDP equals the interest rate, any increase in public debt would be the outcome of

accumulated primary deficit only. As long as the rate of interest exceeds growth of GDP, debt stock will be more than the level of primary deficit. Thus the debt-stabilizing primary deficit is:

$$p^*_t = \left(\frac{g_t - r_t}{1 + g_t} \right) d_{t-1} \quad (11A.4)$$

If interest rate is higher than growth rate, and growth rate is exogenous and independent of public spending and taxation,² the debt GDP ratio could be reduced or stabilized only by generating primary surplus, i.e. either by increasing the tax ratio or by reducing the expenditure ratio. If the government runs a primary surplus, the debt ratio d_t declines over time at a rate $\left(\frac{g_t - r_t}{1 + g_t} \right)$. If, on the other hand, the economy's growth rate g_t is higher than the interest rate r_t , the ratio of the public debt to the GDP can be stabilized or reduced even if the government runs a primary deficit. When the government decides to reduce its expenditures or increase taxes, these decisions have obvious depressive effects on the economy through multiplier effect. And, in effect, during depression the government has to increase expenditure, for example in the form of unemployment subsidies, and even to reduce tax rate.

Now, let us extend the analysis cited above by decomposing total government expenditure (G) into capital expenditure (G1) and revenue expenditure (G2). While the former is productive enhancing employment and output growth, the most part of the later component is unproductive. We assume that growth rate of GDP (g_t) is an increasing function of capital expenditures. If productive public expenditures are able to raise the economy's growth rate, the stabilization of the debt ratio can be achieved through changes in the composition of the public expenditure, while the ratio of total public spending to GDP remains unchanged. The economy moves from a growth path characterized by a debt ratio increasing over time to a higher growth path characterized by a stable debt ratio.

The dynamic budget constraint becomes:

$$\Delta d_t = \gamma_{1t} + \gamma_{2t} - \tau_t - \left(\frac{g_t(\gamma_{1t}) - r_t}{1 + g_t(\gamma_{1t})} \right) d_{t-1} \quad (11A.5)$$

Here, γ_1 is the ratio of capital outlay to GDP, γ_2 is the ratio of revenue expenditures to GDP, and $g(\gamma_1)$ is the economy's growth rate.

$$\gamma_1 + \gamma_2 = \gamma < 1, g'(\gamma_1) > 0 \quad (11A.6)$$

The economy's growth rate would reach its maximum when all public expenditures are productive, i.e., $\gamma_2 = 0$

Notes

1. The possibility to finance public deficits by issuing high-powered money is excluded even if the government has a power to issue high-powered money because financing deficits through the creation of additional money would generate inflation in the long run. In a New Keynesian model, the increase in the supply of money generates inflation in so far as it raises aggregate demand and, hence, employment.
2. The hypotheses that the interest rate on the debt is higher than the income growth rate, taken as exogenous and independent of public spending and taxation, have been supported by empirical studies (Blanchard et al., 1990).

12. Forms of government decentralization and institutional quality: evidence from a large sample of nations

Rajeev K. Goel and James W. Saunoris

12.1 INTRODUCTION

The decentralization of government functions can improve institutional quality and government performance (Besley and Coate, 2003; Brueckner, 2003; Goel and Saunoris, 2016a; Prud'homme, 1995; Rodriguez-Pose and Gill, 2003; World Bank, 1999). Over time, the ways in which governments provide services to their populations have changed due to administrative capacities and technology. The physical and fiscal traditional forms of government decentralization (Lynch, 1989) have evolved to include virtual decentralization. Physical decentralization involves creating subnational branches or tiers of government, fiscal decentralization deals with greater subnational control over tax collection and government spending (Yeung, 2009), and virtual decentralization uses the internet to provide information and access to various government services (e.g., health advice, tax filings, passport applications, and business registration).

This chapter examines the effects of government decentralization on institutional quality in a large sample of countries. Corruption and the shadow economy are used to proxy for institutional quality, and virtual, physical, and fiscal decentralization represent the various forms of government decentralization. Corruption and the underground economy are two widely recognized illegal activities that impact the effectiveness of government policies.¹ A greater prevalence of corruption and/or the underground sector undermines government control over policies and their enforcement, signifying a diminished state of institutional quality.

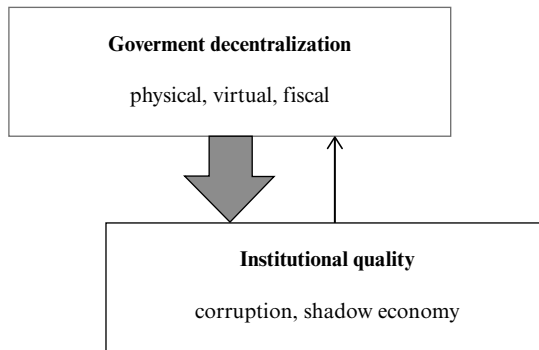
12.2 THEORETICAL BACKGROUND AND RELEVANT LITERATURE

Among the three dimensions of government decentralization considered, fiscal decentralization seems to have garnered the most interest in the literature.² This may be due to the greater ease and practicality of assigning government spending to the local level and to quantifying such endeavors. Physical decentralization, also common, is difficult to alter in the short term, as changes in levels of government often entail lengthy legislative and administrative processes (Goel and Nelson, 2011). Virtual decentralization is new; given the recent advent of the internet and digital divide across countries, policy makers are just beginning to implement government services in cyberspace. For researchers, quantifiable measures of such actions are only beginning to become available; thus, this chapter focuses on virtual decentralization.

Government decentralization influences the quality and delivery of government functions, which can impact illegal activities, including corruption and the underground economy.³ The effects of various forms of decentralization on corruption and the shadow economy differ, however. For instance, physical decentralization can provide better communication between government bureaucrats and the public than virtual decentralization. Regarding corruption, greater proximity between bureaucrats and the public may promote greater transparency – or make forming corrupt relationships easier. Fiscal decentralization may make rent seeking easier at the local level, yet also be coupled with the threat of greater transparency and exposure (Arikan, 2004). With respect to the underground economy, the transparency associated with physical decentralization can enable better monitoring of shadow activities (Bram, 2013). However, physical decentralization may also make government officials more aware of potential shadow activities in which they can engage; this incentive could be mitigated by virtual decentralization. Fiscal decentralization may affect the shadow economy by making it easier to outsource some government functions to the informal sector.

Overall, it is unclear whether all types of government decentralization yield similar dividends in terms of reducing illegal activities and improving institutional quality. The effects of decentralization on corruption have been widely studied,⁴ but the literature on the linkage between decentralization and the shadow economy is somewhat more modest.⁵ Corruption and the shadow economy are widely prevalent across the world⁶ and have been used as indicators of institutional quality (Knack and Keefer, 1995). However, the effects of virtual decentralization on corruption and the shadow economy are largely unclear.⁷

Unlike corruption, the involvement of government officials in shadow



Source: Authors.

Figure 12.1 Government decentralization and institutional quality

activities is indirect. Private parties engage in shadow operations (either directly or via outsourcing) to skirt regulations or to avoid taxes. There are several potential channels of influence of decentralization on the underground sector. For instance, greater decentralization, especially via e-government, lowers costs of obtaining information, encouraging compliance with laws. Further, government presence online may act as a deterrent to certain shadow operations online (Bram, 2013). E-government may also allow for ‘yardstick’ competition (Besley and Case, 1995), allowing voters to easily access information on taxes and spending in neighboring countries or within federal systems. This enhanced transparency may reduce the underground economy by raising tax morale (Torgler and Schneider, 2009) (see Figure 12.1).

All of these theoretical considerations form the foundation of this analysis that is primarily focused on assessing the relative impacts of different decentralization modes on institutional quality. The main hypothesis of this chapter is that greater decentralization of government structure, powers, and services improves institutional quality by lowering corruption and underground activities, although the type of decentralization may matter.

12.3 DATA AND EMPIRICAL ESTIMATION

12.3.1 Data

The annual data used in this chapter are a cross section of over 120 countries. Variable definitions and sources are in Appendix Table 12A.1.

The main sources of these data are well known and widely used in the literature. The main variables of interest include measures of the shadow economy, corruption, and forms of government decentralization. It is important to note that both corruption and the shadow economy are illegal activities; thus, information on their prevalence is not readily forthcoming.

To instill confidence in the findings, two measures of each are used. First, with regard to the underground sector, Alm and Embaye (2013) used the currency demand approach to estimate its size (*Shadow1*), the main idea being that cash transactions are harder to trace, so shadow operations involve a greater demand for cash. The average size of the shadow economy with the *Shadow1* measure in the sample is 31 percent of gross domestic product (GDP), with considerable variation across countries. For instance, the Democratic Republic of the Congo has the largest shadow economy at 59 percent, whereas Switzerland has the smallest shadow economy at just over 11 percent.

A somewhat broader measure, used by Schneider et al. (2010), is also employed, known as *Shadow2*.⁸ They employed a specific type of structural equations model, the multiple indicators, multiple causes (MIMIC) model, to estimate the latent shadow economy variable (*Shadow2*). They used covariance information from observable variables classified as either 'causes' or 'indicators' of the shadow economy within a simultaneous equations model. Thus, while *Shadow1* focuses on only one indicator of the shadow economy (i.e., currency), *Shadow2* is a more comprehensive measure. The correlation between these two measures, *Shadow1* and *Shadow2*, of the shadow economy is 0.79 (see Appendix Table 12A.2).

Corruption is the other measure of institutional quality (Knack and Keefer, 1995). Again, two measures are employed. *Corruption1* is an index of cross-national corruption from 0 to 6 from the International Country Risk Guide.⁹ In the re-scaled index, countries with a rating of 6 display high levels of corruption, whereas index numbers closer to 0 are freer of corruption. The average level of corruption in the sample is 3, with the Democratic Republic of the Congo being the most corrupt and Finland the least.

As a robustness check, another measure of cross-national corruption perceptions from Transparency International is also used: *Corruption2*. The Corruption Perceptions Index is a composite index that ranks countries based on the perceived level of corruption in the public sector, which is based on surveys and assessments collected from various institutions. The index is widely used, both in the media and academic research (Lambsdorff, 2006), although its time series comparability is limited. Appendix Table 12A.2 shows that the correlation between the two measures of corruption, *Corruption1* and *Corruption2*, is also high (0.90) and statistically significant.

To account for the level of government decentralization within a country, three measures capture the various forms of decentralization. The first measure, *DECENT-PHYSICAL*, measures the extent of physical decentralization by detailing the number of tiers, or subsets, of government, including the central government (e.g., states and counties in the United States; states, districts, and tehsils in India; and prefectures in Japan). Greater physical decentralization brings the government closer to the public, improving transparency and responsiveness to local needs while increasing the potential for illegal acts between the public and government officials.

Second, *DECENT-FISCAL* captures spending discretion at the local level (e.g., for health care, education, roads, and sanitation). This aspect of decentralization provides greater fiscal autonomy at the lower levels of government.

Finally, *DECENT-VIRTUAL*, measured as e-government, is used to capture virtual decentralization. E-government is broader than the number of internet users that some studies have used (Elgin, 2013). According to UNDESA (2014), e-government is '[t]he use of information and communication technology and its application by the government for the provision of information and public services to the people'. E-government serves to increase accountability through transparency, enhance the efficient use of public resources, and improve the delivery of public services. Furthermore, e-government facilitates interactions between governments, between the government and businesses, and between the government and consumers.

Appendix Table 12A.2 shows that the correlations between physical decentralization and the shadow economy (*Shadow1*) and corruption (*Corruption1*) are positive (0.09 and 0.23, respectively). The correlations between fiscal decentralization and the shadow economy and corruption are negative (−0.45 and −0.33, respectively), whereas the correlations between virtual decentralization and the shadow economy and corruption are negative (−0.80 and −0.83, respectively).

The other cross-country variables are from other international sources (see Appendix Table 12A.1). All models are estimated using cross-sectional data. The lack of good time series comparability of the available corruption indices is the main reason for this choice.

12.3.2 Empirical Estimation

To formalize the baseline models, extant literature on the shadow economy, corruption, and government decentralization is used.¹⁰ Corruption and the shadow economy share some common determinants. As mentioned previously, the literature provides relatively greater guidance with regard to

the effects of fiscal and physical decentralization. The estimated equations for the shadow economy and corruption, respectively, take the following general forms.¹¹

Determinants of the shadow economy

Assuming that underground activities are driven by stringent regulations and high taxes and given the government structure, the cross-national determinants of the shadow economy are estimated using equation 12.1:

$$\text{Shadow economy}_{ij} = f(\text{Decentralization}_{ik}, \text{Economic conditions}_i, \text{Democracy}_i, \text{Transition}_i, \text{Asian}_i, \text{Regulation}_{im}) \quad (12.1)$$

where

$i = 1, 2, 3, \dots$;

$j = \text{Shadow1}, \text{Shadow2}$;

$k = \text{DECENT-VIRTUAL}, \text{DECENT-PHYSICAL}, \text{DECENT-FISCAL}$;

$m = \text{TAX}, \text{WageREG}, \text{PriceControls}, \text{LAW}$.

The focus in the empirical analysis is on the sign, magnitude, and statistical significance of the coefficients on the decentralization variable, with decentralization alternately measured by *DECENT-VIRTUAL* (virtual), *DECENT-FISCAL* (fiscal), and *DECENT-PHYSICAL* (physical).

The dependent variable is alternately a specific and a broad measure of the shadow economy (*Shadow1* and *Shadow2*, respectively).

Turning to a discussion of the control variables for the shadow economy, to account for the level of development in the country, the log of real GDP per capita (*GDP*) is used, while a dummy variable is used to capture countries in transition (*Transition*) and those in Asia (*Asian*). Greater economic prosperity increases the opportunity costs of engaging in illegal activities (i.e., corruption and the shadow economy), and more prosperous countries may have better enforcement.

Democracy is an index used to control for the degree of democracy. More democratic nations have greater freedom of press and more transparent legal systems that curb illegal activities, including corruption and the shadow economy (Lambsdorff, 2006). Alternately, the rule of law (*LAW*) can be used to gauge whether a consistent set of punishments form a deterrent to illegal acts.¹² Other important determinants of the shadow economy include higher tax rates (Corchón, 1992) and burdensome regulations. To account for these, an index of top income tax rates and top marginal income and payroll tax rates (*TAX*), as well as one for burdensome regulations relating to minimum wages (*WageREG*), are included. Additionally, price controls (*PriceControls*) are included. Other things

being the same, higher taxes and higher regulations prompt movements to the underground sector.

Determinants of corruption

Based on the above discussion, the determinants of corruption are estimated via the following relation, with both the structure and size of the government now included in equation 12.2:

$$\text{Corruption}_{iz} = g(\text{Decentralization}_{ik}, \text{Economic conditions}_i, \text{Democracy}_i, \text{Transition}_i, \text{Asian}_i, \text{Government size}_i, \text{LAW}_i, \text{Protestant}_i) \quad (12.2)$$

where $z = \text{Corruption1}, \text{Corruption2}$.

For denoting cross-national corruption as the dependent variable, *Corruption1* and *Corruption2* are employed. For determinants of corruption, *GDP* and *Democracy* serve as deterrents to corrupt behavior. Democracy allows voters a voice in the political sphere and to determine the competence of public officials. Transition countries, to the extent that they have underdeveloped institutions, are likely to experience greater corruption. To account for this, a dummy variable for transition countries (and for countries in Asia to see any regional differences in this regard) is included. The size of government (*GovtSize*) proxies for corruption opportunities (via bureaucratic red tape increasing rent-seeking opportunities). Alternately, a larger government may be associated with better monitoring (Guriev, 2004; Rose-Ackerman, 1999). Finally, the fraction of population that is Protestant (*Protestant*) has been shown to reduce corruption because of its strong moral compass (Lambsdorff, 2006; Treisman, 2000). This variable may be seen as accounting for social influences on corruption.

To estimate the relationship between decentralization and institutional quality given potential simultaneity issues, two-stage least squares (2SLS) estimation is used (see Figure 12.1). In response to growing concern over public corruption and the spread of the shadow economy, the government may increase its involvement in e-government to enhance transparency and instill confidence among the populace. The potential simultaneity prompts the use of instrumental variables to correct for this inherent endogeneity. To instrument *DECENT-VIRTUAL*, numbers of internet users and telephone lines, and population density are used. The more users connected via telephone lines and the internet, the higher the perceived benefits of the government being online.

Further, *DECENT-FISCAL* is instrumented using *Age* (i.e., age of a country's democracy), *Federal* (i.e., federalist government structure),

Independent (i.e., number of years since a nation's independence) and *Latitude*.¹³ The relevancy and validity of these instruments are tested using three diagnostic tests reported at the bottom of each results table.¹⁴

12.4 RESULTS

Appendix Tables 12A.3 and 12A.4 report results of the effects of various forms of government decentralization on institutional quality. Given the potential simultaneity between these dependent variables and *DECENT-VIRTUAL* in each case, 2SLS results are reported with *DECENT-VIRTUAL* instrumented by *Internet*, *Telephone*, and *PopDen*. A similar accounting of simultaneity is also done in regard to *DECENT-FISCAL* in Appendix Table 12A.4.¹⁵ The R²s are decent, and the other statistics confirm the validity of the instrument choice.

12.4.1 Effects of Decentralization on the Shadow Economy

Appendix Table 12A.3 reports the main results, with *Shadow1* as the dependent variable. Both greater virtual and greater physical decentralization decrease the spread of the shadow economy. The signs on *DECENT-VIRTUAL* and *DECENT-PHYSICAL* are negative and statistically significant in models 2.1–2.2. The results with regard to government tiers broadly support earlier findings by Buehn et al. (2013). In terms of relative magnitudes, a 10 percent increase in *DECENT-VIRTUAL* would decrease the shadow economy by about 9 percent, while a similar increase in *DECENT-PHYSICAL* would have about one-third of that impact, based on respective elasticities evaluated at corresponding means.

In other factors, greater democracy and minimum wage regulations increase the underground sector. Democracies may have slower court systems due to formal legal processes, which may encourage shadow operators. Minimum wage regulations may prompt some businesses to pay their employees in cash and 'off the books'. Transition countries, *ceteris paribus*, have a larger shadow economy. This is consistent with underdeveloped institutions in transition nations. The effects of economic conditions (*GDP*), tax rates (*TAX*), and price controls (*PriceControls*) are statistically insignificant.

12.4.2 Effects of Decentralization on Corruption

Turning to the effects of decentralization on corruption, with corruption measured by *Corruption1*, the effect of *DECENT-VIRTUAL* on

corruption in Appendix Table 12A.3 is negative and statistically significant. This effect of *DECENT-VIRTUAL* is consistent with other findings in the literature with other corruption measures and/or sample of nations (i.e., Andersen, 2009; Choi, 2014; Kim, 2014). Remarkably, the elasticity of corruption with respect to *DECENT-VIRTUAL* is similar in magnitude to the elasticity of the shadow economy with respect to e-government (-0.9 in both cases).¹⁶ The effect of government tiers or *DECENT-PHYSICAL* is also negative, yet statistically insignificant. Thus, while government tiers proved effective in combating the shadow economy in Appendix Table 12A.3, they fail to combat corruption.

Like models 2.1–2.2 with the shadow economy as the dependent variable, transition countries also have greater corruption in model 2.3. A larger government size decreases corrupt activity. This finding is consistent with a larger government being able to devote more resources to monitoring. Further, nations with a larger proportion of Protestants have lower corruption, *ceteris paribus* (Lambsdorff, 2006). The effects of GDP and democracy on corruption are insignificant. This finding is somewhat sensitive to the choice of the sample of nations considered and the time period covered (Lambsdorff, 2006).

12.4.3 Additional Considerations

To verify the validity of the main results, a series of robustness checks are conducted. First, alternative measures of both the shadow economy and corruption are considered. This is useful, especially given the difficulties with effectively measuring these illegal activities. Second, an alternative measure of decentralization (*DECENT-FISCAL*) is considered, associated with the devolution of spending authority to subnational governments. This form of decentralization has been widely studied, especially regarding its effects on corruption. Third, as another consideration of the quality of institutions, we account for the rule of law (*LAW*). A consistent rule of law increases the costs for illegal acts and thus is a deterrent. Finally, unique regional aspects of countries in Asia are considered.

Robustness check 1: alternate measures of the shadow economy and corruption

Model 3.1 of Appendix Table 12A.4 uses an alternate measure of the shadow economy based on the multiple indicators, multiple causes model (i.e., *Shadow2*) as the dependent variable. As discussed above, the *Shadow2* measure is somewhat broader than the *Shadow1* measure. The overall format of the estimated equation is the same as equation 12.1.

With *Shadow2* as the dependent variable, *DECENT-VIRTUAL* again

has a negative and statistically significant coefficient. However, the effect of *DECENT-PHYSICAL* is now statistically insignificant. Thus, while the effects of virtual decentralization on the shadow economy are robust to alternate measures of the shadow economy, those of physical decentralization are not. In other results, the effects of economic conditions and regulations are insignificant in this case. However, similar to Appendix Table 12A.2, transition nations have a larger shadow sector, *ceteris paribus*.

Model 3.2 of Appendix Table 12A.4 uses the Corruption Perceptions Index developed by Transparency International as the dependent variable. *Corruption2* is based on perceptions about corruption, while *Corruption1* is based on expert ratings of (mainly political) corruption. Again, *DECENT-VIRTUAL* has negative and significant effects on *Corruption2*, while *DECENT-PHYSICAL* does not. Transition nations are more corrupt, while predominantly Protestant nations are less so.

The effect of *GDP* is positive and marginally significant. This is consistent with bribe affordability arguments, rather than with greater economic prosperity increasing the opportunity costs of corruption. The effects of government size, democracy, and fractionalization are statistically insignificant.

Robustness check 2: effects of fiscal decentralization

The multidimensionality of decentralization prompts the use of alternate measures of decentralization. Others have also considered fiscal decentralization in its effects on the size of the shadow economy (e.g., Buehn et al., 2013) and corruption (e.g., Arikan, 2004). To this end, a measure of fiscal decentralization in models 2.2 and 2.3 from Appendix Table 12A.3 are included, and these results are in models 3.3 and 3.4 in Appendix Table 12A.4. Because of possible reverse feedback from both shadow and corrupt dealings, fiscal decentralization is instrumented using *Age*, *Federal*, *Independent*, and *Latitude* (Treisman, 2006). These instruments can be considered exogenous and broadly influence the structure of government over the long term.

The coefficient on *DECENT-VIRTUAL* is negative, although insignificant, in influencing the size of the shadow economy, and negative and significant for reducing corruption. The differences are partly related to the significant drop in observations and degrees of freedom between the two sets of results. Similar to the main findings, the coefficient on *DECENT-PHYSICAL* is negative and significant in model 3.3, and insignificant in model 3.4.

Turning to the effects of fiscal decentralization, the coefficient on *DECENT-FISCAL*, although negative, is insignificant in model 3.3, and positive and insignificant in model 3.4. Therefore, fiscal decentralization

does not prove to significantly impact the size of the shadow economy nor the level of corruption. These findings are consistent with Buehn et al. (2013), where they found that government tiers have a negative effect on the size of the shadow economy, and failed to find a statistical influence of fiscal decentralization on the shadow economy. On the other hand, the results regarding the ineffectiveness of fiscal decentralization in controlling corruption differ from those obtained by Fisman and Gatti (2002), who considered only fiscal government decentralization.

In models 3.3 and 3.4, alternate measures of institutions are considered by replacing *Democracy* with a measure capturing the level of rule of law (*LAW*) within a country. The coefficient on this variable is negative and significant in both cases, thus stronger rule of law helps contain the spread of the shadow economy and reduces corruption. In other effects, the coefficients on the control variables are somewhat consistent with those in Appendix Table 12A.3, with some notable differences. In particular, the coefficient on *WageREG* is now insignificant in model 3.3, and the coefficients on *Transition* and *GovtSize* are both insignificant in model 3.4.

Robustness check 3: consideration of countries in Asia

Models 3.5 and 3.6 in Appendix Table 12A.4 replace *Transition* with a dummy variable equal to one if the country is in Asia (*Asian*). This provides a dimension of regional effects. Further, Asia includes many of the most populated, and several of the most densely populated, nations in the world. Plus, many countries in Asia were colonized in previous centuries. All of these factors either shaped institutions over time or altered propensities to engage in illegal acts (e.g., changing discount rates with greater population and/or greater population density).

Overall, the results remain consistent with those reported in Appendix Table 12A.3. *DECENT-VIRTUAL* negatively impacts both the size of the shadow economy and corruption, whereas *DECENT-PHYSICAL* negatively impacts the size of the shadow economy and fails to influence the level of corruption. The coefficient on *Asian* is insignificant in model 3.5, with the shadow economy as the dependent variable, but positive and significant in model 3.6, with corruption as the dependent variable. Thus, on average, countries in Asia tend to have greater public corruption, but not necessarily a larger underground sector.

12.5 CONCLUSION

Overall, virtual decentralization is relatively more effective in controlling both corruption and the shadow economy, relative to other forms of

decentralization. In the literature, the effectiveness of (physical) decentralization, in some cases, can be seen as supporting related findings (e.g., Dell'Anno and Teobaldelli, 2015; Buehn et al., 2013); however, the results with regard to virtual decentralization are new. Further, the effectiveness of e-government in reducing corruption supports earlier findings with a different specification and sample, and without consideration of the shadow sector (e.g., Andersen, 2009; Choi, 2014).

In other findings, rule of law is effective in checking both corruption and the shadow economy, nations with predominantly Protestant populations are less corrupt, and transition nations show greater corruption and more prevalent shadow economies. Countries in Asia are more corrupt but do not necessarily have larger shadow sectors.

Thus, it can be concluded that policy makers looking to improve governance and to control corruption and the shadow economy should consider the potential benefits of virtual decentralization. The internet-based provision of government services may be cheaper, amenable to faster alterations (e.g., increasing the scope of services offered), have a greater geographic reach, and be relatively less bound by legislative red tape. As the digital divide narrows over time, these benefits are likely to expand. These are superior advantages over physical decentralization, although not all government services are as equally amenable to virtual decentralization. A larger government, via physical decentralization, could curb corruption through strengthened checks and balances. Moreover, the effectiveness of the rule of law in controlling both corruption and the underground sector is a signal for nations to strengthen this aspect. The externalities to the underground sector from strengthened wage regulations should also be recognized by policy makers. Finally, transition nations warrant some special attention to control corruption and the shadow economy.

NOTES

1. Note that institutions may be measured along numerous dimensions and that quantifying them is often difficult. See Knack and Keefer (1995) and Voigt (2013).
2. See Adam et al. (2014); Ebel and Yilmaz (2003); Fisman and Gatti (2002); Kyriacou and Roca-Sagalés (2011); de Mello and Barenstein (2001); Oto-Peralías et al. (2013); Treisman (2006); and Yeung (2009).
3. The demerits of decentralization have been recognized by Prud'homme (1995).
4. See, for example, Bardhan and Mookherjee (2006); Fisman and Gatti (2002); and Goel and Nelson (2011).
5. See, for example, Buehn et al. (2013); Goel and Saunoris (2016b); and Teobaldelli (2011).
6. See Schneider and Enste (2000); Tanzi (1982); and Transparency International (<http://www.transparency.org>).
7. See Andersen (2009); Elgin (2013); and Kim (2014) for some exceptions.

8. Also see Schneider (2005).
9. See Dreher and Schneider (2010); Fisman and Gatti (2002); and Treisman (2007) for some applications of this index.
10. For the shadow economy, see Gërzhani (2004) and Schneider and Enste (2000). For corruption, see Aidt (2003); Lambsdorff (2006); Shleifer and Vishny (1993); and Treisman (2000; 2007). For the effects of government decentralization, see Arian (2004) and Panizza (1999).
11. While corruption and the shadow economy are considered separately, there could be scenarios where the two activities are interdependent. See Buehn and Schneider (2012); Dell'Anno and Teobaldelli (2015); and Dreher and Schneider (2010).
12. See Voigt (2012) for an interesting related discussion.
13. In contrast, Fisman and Gatti (2002) examined the effect of fiscal decentralization on corruption using a country's legal system to instrument fiscal decentralization.
14. To determine the relevancy of the instruments, the Kleibergen and Paap (2006) rk LM statistic is used. Rejection of the null in this case indicates that the instruments are relevant. The first-stage F-statistics are also reported to check for correlations between the endogenous variable and instruments. However, if the instruments are only weakly correlated with the endogenous variables, this can lead to a bias. Consequently, the Kleibergen and Paap rk Wald statistic is used to test if the endogenous variable is only weakly correlated with the instruments. This statistic is compared to the critical values in Stock and Yogo (2005). Finally, the validity of the instruments is tested using the Hansen J statistic.
15. As argued above, physical decentralization in the form of government tiers is generally fixed; thus, this variable is not endogenized. See Goel and Saunoris (2016a) for an alternate treatment.
16. Details available upon request.

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APPENDIX

Table 12A.1 Variable definitions, summary statistics and sources

| Variable | Description [countries; mean; standard deviation] | Source |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <i>Shadow1</i> | The size of the shadow economy calculated using the currency demand approach and dynamic panel data methods (% of GDP). Data available up to 2006. [11; 31.02; 9.44] | Alm and Embaye (2013) |
| <i>Shadow2</i> | The size of the shadow economy calculated using the multiple indicators, multiple causes model (% of GDP). Data averaged from 1999 to 2007. [162; 33.04; 12.75] | Schneider, Buehn, and Montenegro (2010) |
| <i>Corruption1</i> | Assessment of corruption in the political system. Originally the index scale ranged from 0 to 6, with lower levels indicating higher corruption, rescaled so that higher values indicate higher values of corruption. Data available up to 2012. [143; 3.07; 1.10] | PRS Group. International Country Risk Guide. http://www.prsgroup.com |
| <i>Corruption2</i> | Corruption perceptions index. This index measures the perceived corruption in the public sector. The index is on a scale from 0 to 10, with 0 being the most corrupt, and 10 being the least corrupt. The index was rescaled so that higher scores indicate more corruption. Data averaged from 1998 to 2013. [184; 5.94; 2.06] | Transparency International. http://www.transparency.org/ |
| <i>DECENT-VIRTUAL</i> | E-government development index. This is a composite measure of the provision of and investment in online services, telecommunications connectivity, and human capacity. The index is based on a scale 0 to 1, with 1 indicating the highest degree of e-government. Data averaged from 2003 to 2014. [190; 0.42; 0.20] | UNDESA (2014) |

Table 12A.1 (continued)

| Variable | Description [countries; mean; standard deviation] | Source |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <i>DECENT-PHYSICAL</i> | Number of tiers of government, including central. 'Each government in a country has a jurisdiction, an area of space or a subset of the country's population over which that government has constitutional authority. A tier of government is the subset of governments in a country such that all members of this subset have jurisdictions that are contained by the same number of (other governments') jurisdictions. For instance, all governments whose jurisdictions are contained only by the jurisdiction of the national government are denoted "first-tier" subnational governments. All those whose jurisdictions are contained by that of the national government and that of one "first-tier" government are "second-tier" governments.' Data as of mid-1990s. [155; 3.72; 0.91] | Treisman (2008) |
| <i>DECENT-FISCAL</i> | Subnational government expenditures (% of total government expenditures). Data averaged up to 2000. [70; 22.54; 14.37] | IMF (2001). Derived from IMF Government Finance Statistics World Bank (2014) |
| <i>GDP</i> | The natural log of GDP per capita in constant 2000 US dollars. Data up to 2012. [199; 8.13; 1.65] | Gwartney and Lawson (2009) |
| <i>PriceControls</i> | A subcomponent of business regulations measuring the extent of price controls on a scale from 0 to 10. The index was rescaled so that higher scores indicate more regulation. Data averaged from 2000 to 2007. [127; 5.05; 1.95] | |
| <i>Democracy</i> | A measure of democracy (index) ranging from 0 to 10 with higher numbers signifying higher degrees of democracy. This measures the general qualities of political institutions and processes. Data up to 2013. [165; 5.22; 3.67] | Marshall and Jaggers (2012) |

| | | |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <i>WageREG</i> | A subcomponent of labor market regulations on a scale from 0 to 10. The index was rescaled so that higher scores indicate more regulation. Data averaged from 2000 to 2007. [136; 4.81; 2.23] | Gwartney and Lawson (2009) |
| <i>TAX</i> | Index based on the top marginal income tax rate where countries with higher marginal tax rates that take effect at lower income thresholds receive lower ratings. The index is from 0 to 10 and was rescaled so that higher scores indicate least favorable outcomes. Data averaged from 2000 to 2007. [122; 3.18; 2.34] | Gwartney and Lawson (2009) |
| <i>Protestant</i> | The percent of the population that belonged to the Protestant religion in 1980. [205; 14.76; 23.38] | La Porta, et al. (1999) |
| <i>GovtSize</i> | Index based on government expenditures, taxes, and enterprises. The index is from 0 to 10 and was rescaled so that higher scores indicate least favorable outcomes. Data averaged from 2000 to 2007. [140; 3.72; 1.39] | Gwartney and Lawson (2009) |
| <i>Internet</i> | Internet users per 100 population. Data available up to 2013. [202; 17.04; 15.35] | World Bank (2014) |
| <i>Telephone</i> | Telephone lines per 100 population. Data available up to 2013. [202; 19.40; 19.96] | World Bank (2014) |
| <i>PopDen</i> | Population density per square kilometer of land area. Data available up to 2012. [210; 349.70; 1661.06] | World Bank (2014) |
| <i>LAW</i> | Index of rule of law. This index reflects perceptions of society abiding by rules as well as the quality of contract enforcement, property rights, the police, and the courts. Index ranges from -2.5 to +2.5, with higher values corresponding to better outcomes. Data used from 1996 to 2012. [213; 0.006; 0.99] | Kaufmann et al. (2010) |
| <i>Independent</i> | Years since country's independence, ranging from 0 to 250 (the latter value is used for all non-colonized countries). [85; 119.73; 89.76] | Persson and Tabellini (2003) |

Table 12A.1 (continued)

| Variable | Description [countries; mean; standard deviation] | Source |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Age</i> | Age of country's democracy. Defined as $\text{Age} = (2000 - Z)/200$, where Z is the first year of democratic rule. [85; 0.21; 0.22] | Persson and Tabellini (2003), Table 4.1 |
| <i>Latitude</i> | Rescaled variable for country's latitude: the absolute value of latitude divided by 90 and taking values between 0 and 1. [78; 0.32; 0.19] | Persson and Tabellini (2003) |
| <i>Federal</i> | Dummy variable that equals one for a country that has a federalist government structure, zero otherwise. [83; 0.16; 0.37] | Persson and Tabellini (2003) |
| <i>Transition</i> | Dummy variable equal to one if the country is a transition country and zero otherwise. Countries classified as transition include Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Romania, Russian Federation, Serbia, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. | United Nations. http://www.un.org |
| <i>Asian</i> | Dummy variable equals one if the country is an Asian country and zero otherwise. (N = 49) | Countries-of-the-World.com. https://www.countries-of-the-world.com/countries-of-asia.html |

Notes:

GDP = gross domestic product.

All data are annual by country, averaged over the usable data starting in 1990, unless otherwise noted.

Table 12A.2 Correlation matrix of key variables

| | <i>Shadow1</i> | <i>Shadow2</i> | <i>Corruption1</i> | <i>Corruption2</i> | <i>DECENT-VIRTUAL</i> | <i>DECENT-PHYSICAL</i> | <i>DECENT-FISCAL</i> |
|------------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|------------------------|----------------------|
| <i>Shadow1</i> | 1.000 | | | | | | |
| <i>Shadow2</i> | 0.788*** [0.000] | 1.000 | | | | | |
| <i>Corruption1</i> | 0.761*** [0.000] | 0.706*** [0.000] | 1.000 | | | | |
| <i>Corruption2</i> | 0.810*** [0.000] | 0.697*** [0.000] | 0.945*** [0.000] | 1.000 | | | |
| <i>DECENT-VIRTUAL</i> | -0.800*** [0.000] | -0.683*** [0.000] | -0.827*** [0.000] | -0.883*** [0.000] | 1.000 | | |
| <i>DECENT-PHYSICAL</i> | 0.088 [0.520] | 0.119 [0.382] | 0.233* [0.084] | 0.315** [0.018] | -0.305** [0.022] | 1.000 | |
| <i>DECENT-FISCAL</i> | -0.446*** [0.001] | -0.311** [0.019] | -0.331** [0.013] | -0.312** [0.019] | 0.442*** [0.001] | 0.112 [0.409] | 1.000 |

Notes:

*** Denotes statistical significance at the 1% level, and ** denotes statistical significance at the 5% level.

N = 56; List-wise deletions are used to handle missing data.

Table 12A.3 Government decentralization and institutional quality

| Dependent Variable | <i>Shadow1</i> | | <i>Corruption1</i> |
|----------------------------------------|-----------------------|------------------------|----------------------|
| | (2.1) | (2.2) | (2.3) |
| <i>DECENT-VIRTUAL</i> | -53.755*** (9.799) | -51.310*** (11.156) | -5.322*** (1.231) |
| <i>DECENT-PHYSICAL</i> | -2.228*** (0.685) | -2.232*** (0.678) | -0.027 (0.070) |
| <i>GDP</i> | 0.398 (1.410) | 0.220 (1.655) | 0.183 (0.137) |
| <i>Democracy</i> | 0.543** (0.226) | 0.606** (0.250) | -0.028 (0.022) |
| <i>TAX</i> | -0.119 (0.282) | -0.169 (0.291) | |
| <i>WageREG</i> | 0.991*** (0.318) | 0.964** (0.397) | |
| <i>PriceControls</i> | | 0.312 (0.364) | |
| <i>GovtSize</i> | | | -0.094** (0.039) |
| <i>Protestant</i> | | | -0.011*** (0.003) |
| <i>Transition</i> | 4.046*** (1.543) | 3.527** (1.630) | 0.876*** (0.173) |
| Observations | 92 | 90 | 112 |
| R-squared | 0.722 | 0.729 | 0.707 |
| <i>Diagnostic Tests</i> | | | |
| First Stage F-Statistic | 31.87*** [0.000] | 23.91*** [0.000] | 35.61*** [0.000] |
| Kleibergen–Paap rk Wald F statistic | 31.87 | 23.91 | 35.61 |
| Kleibergen–Paap rk LM statistic | 19.92*** [0.000] | 18.44*** [0.000] | 17.94*** [0.000] |
| Hansen's J statistic | 3.305 [0.192] | 4.069 [0.131] | 3.401 [0.183] |

Notes:

See Table 12A.1 for variable details.

Constant included but not reported.

All models are estimated using two-stage least squares, with *DECENT-VIRTUAL* treated as endogenous.

Excluded instruments include *Internet*, *Telephone*, and *PopDen* (see Goel and Saunoris, 2016a).

Robust standard errors are in parentheses, and probability values are in brackets.

Asterisks denote significance at the following levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

The critical values for the Kleibergen–Paap rk Wald F statistic are in Stock and Yogo (2005).

Table 12A.4 Government decentralization and institutional quality: additional considerations

| Dependent Variable | Alternate measures | | Fiscal decentralization | | Countries in Asia | |
|------------------------|------------------------|-----------------------|-------------------------|----------------------|-----------------------|----------------------|
| | Shadow2 (3.1) | Corruption2 (3.2) | Shadow1 (3.3) | Corruption1 (3.4) | Shadow1 (3.5) | Corruption1 (3.6) |
| <i>DECENT-VIRTUAL</i> | -55.792*** (16.710) | -12.937*** (2.642) | -20.101 (17.226) | -3.629*** (1.399) | -48.585*** (9.501) | -4.722*** (1.375) |
| <i>DECENT-PHYSICAL</i> | 0.603 (1.043) | 0.173 (0.111) | -3.217*** (1.100) | 0.034 (0.125) | -2.625*** (0.625) | -0.106 (0.073) |
| <i>DECENT-FISCAL</i> | | | -0.100 (0.073) | 0.006 (0.006) | | |
| <i>GDP</i> | -0.332 (2.005) | 0.448* (0.267) | -1.523 (1.437) | 0.194 (0.167) | -0.373 (1.287) | 0.062 (0.153) |
| <i>Democracy</i> | 0.611 (0.435) | 0.067 (0.042) | | | 0.542** (0.258) | -0.015 (0.028) |
| <i>TAX</i> | -0.589 (0.459) | | 0.438 (0.292) | | -0.132 (0.288) | |
| <i>WageREG</i> | 0.491 (0.595) | | 0.192 (0.840) | | 0.872*** (0.309) | |
| <i>GovtSize</i> | -0.093 (0.082) | | | | | -0.059 (0.036) |
| <i>Protestant</i> | | -0.018*** (0.004) | | | | -0.011*** (0.003) |
| <i>LAW</i> | | | -4.197* (2.398) | -0.027 (0.053) | | |
| <i>PriceControls</i> | | | -0.193 (0.523) | -0.688*** (0.130) | | |

Table 12.A.4 (continued)

| Dependent Variable | Alternate measures | | Fiscal decentralization | | Countries in Asia | |
|-------------------------|---------------------|----------------------|-------------------------|----------------------|---------------------|----------------------|
| | Shadow2 (3.1) | Corruption2 (3.2) | Shadow1 (3.3) | Corruption1 (3.4) | Shadow1 (3.5) | Corruption1 (3.6) |
| <i>Transition</i> | 9.828*** (2.685) | 1.770*** (0.316) | 5.719*** (0.777) | 0.074 (0.145) | | |
| <i>Asian</i> | | | | | -0.469 (1.687) | 0.299* (0.172) |
| Observations | 107 | 124 | 40 | 45 | 92 | 112 |
| R-squared | 0.550 | 0.721 | 0.870 | 0.871 | 0.716 | 0.675 |
| <i>Diagnostic Tests</i> | | | | | | |
| First Stage F-Statistic | 33.85*** [0.000] | 39.05*** [0.000] | 8.92*** [0.000] | 5.35*** [0.000] | 32.15*** [0.000] | 34.78*** [0.000] |
| <i>DECENT-VIRTUAL</i> | | | | | | |

| | | | |
|----------------------|---------------------|---------------------|---------------------|
| <i>DECENT-FISCAL</i> | | | |
| Kleibergen–Paap rk | 33.85 | 39.05 | 11.87*** [0.000] |
| Wald F statistic | | | 10.80*** [0.000] |
| Kleibergen–Paap rk | 22.11*** [0.000] | 21.73*** [0.000] | 5.957 [0.428] |
| LM statistic | 0.707 | 2.764 | 0.785 |
| Hansen's J statistic | [0.702] | [0.251] | [0.978] |
| | | | 32.15 |
| | | | 23.84*** [0.000] |
| | | | 2.462 |
| | | | [0.292] |
| | | | 34.78 |
| | | | 21.59*** [0.000] |
| | | | 2.297 |
| | | | [0.317] |

Notes:

See Table 12A.1 for variable details.

Constant included but not reported.

All models are estimated using two-stage least squares, with *DECENT-VIRTUAL* and *DECENT-FISCAL* treated as endogenous.

Excluded instruments for *DECENT-VIRTUAL* include *Internet*, *Telephone*, and *PopDen*.

Excluded instruments for *DECENT-FISCAL* include *Age*, *Federal*, *Independent*, and *Latitude*.

Robust standard errors are in parentheses and probability values are in brackets.

Asterisks denote significance at the following levels: *** p < 0.01, ** p < 0.05, * p < 0.10.

The critical values for the Kleibergen–Paap rk Wald F statistic are in Stock and Yogo (2005).

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