

Pacific Economic Monitor

July 2017

www.adb.org/pacmonitor

The *Monitor* provides an update of developments in Pacific economies and explores topical policy issues.

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Highlights

- **Uneven commodity price trends amid global economic uncertainties.** Although growth in the world economy is seen to accelerate through 2017 and 2018, potential shifts in trade policies of some advanced economies underpin a more guarded outlook. Price prospects for Pacific exports are mixed, while inbound tourism appears to be slowing.
- **Enhancing connectivity.** To help overcome remoteness, Pacific economies are looking to improve economic integration not only through ICT and transport network investments, but also by promoting greater competition and private investment. Enhanced connectivity, in turn, should translate to more inclusive economic opportunities and access to basic services.
- **Strengthening transport and trade links.** With populations dispersed across a vast ocean, efficient transport of passengers and cargo has been a constant challenge in the Pacific. The policy briefs in this issue discuss the importance of sound trade policy, innovative service delivery, and sustainable infrastructure in boosting international as well as interisland flows.

CONNECTING THE PACIFIC

Investing in connectivity to link communities, strengthen service delivery, and broaden economic opportunities

Information and communication technology (ICT)
Submarine cable connections and competition promotion

Individuals using the internet (% of population)

Pacific: 29.8%

World: 43.9%



e-learning



e-governance



e-health



e-commerce



ROADS

Maintenance for sustainability

Every \$1 in maintenance saves \$3 from lower vehicle operating costs and faster travel

SHIPPING AND PORTS

Franchise shipping schemes and climate-proofing infrastructure
Liner shipping connectivity index:



5 of 10 bottom countries

are in the Pacific

INVESTMENT AND TRADE FACILITATION

Incentives and customs modernization to facilitate flows

BROADCASTING

Privatization for expanded radio and television coverage

Source: Authors' interpretation of ADB. 2003. *Asian Road Funds and Road Maintenance: An Asian Perspective*. Manila; and World Bank. World Development Indicators online database.

2 Highlights



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ADB recognizes “East Timor” as Timor-Leste and “Vietnam” as Viet Nam.

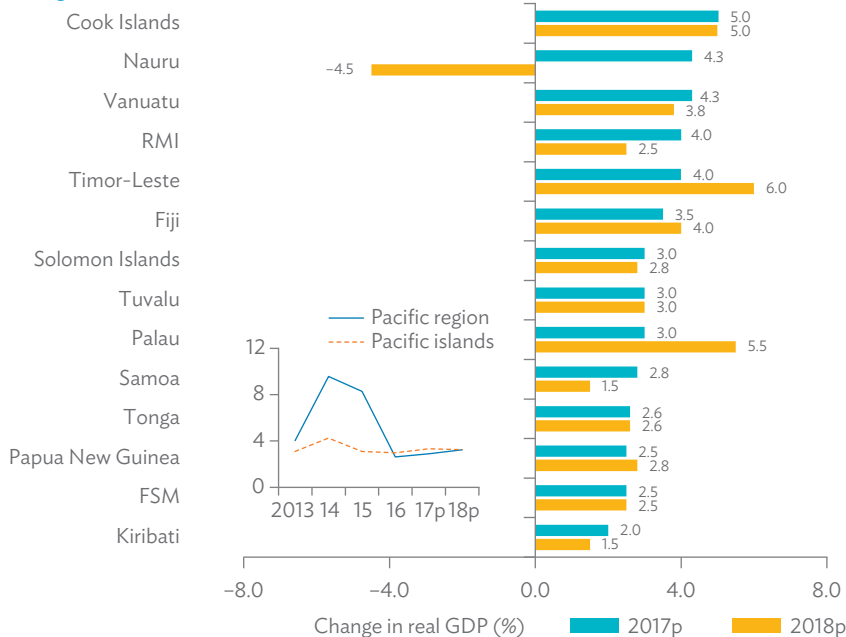
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Abbreviations

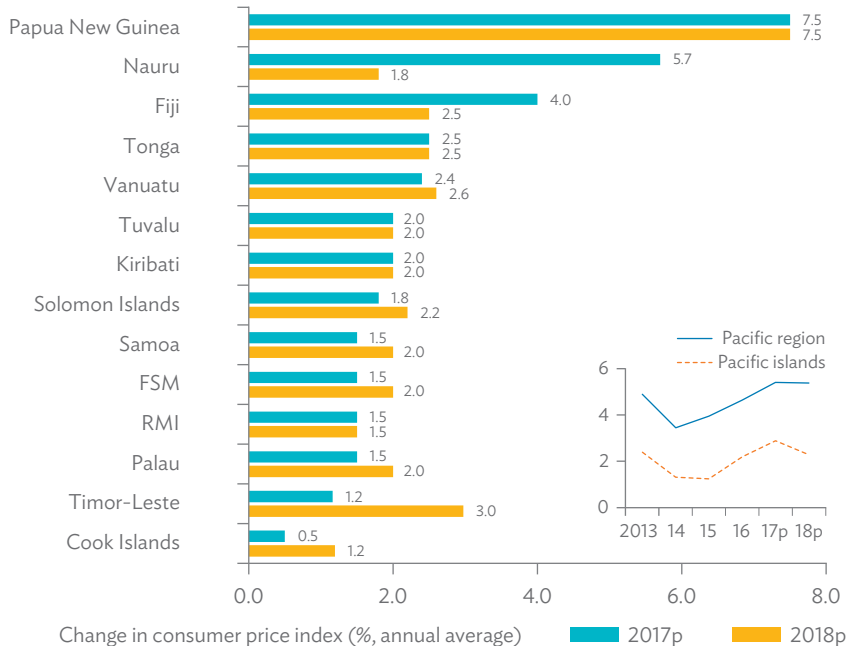
A\$	Australian dollar
ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
DTIS	Diagnostic Trade Integration Study
F\$	Fiji dollar
FSM	Federated States of Micronesia
FSS	franchise shipping scheme
FY	fiscal year
GDP	gross domestic product
GSP	generalized system of preferences
ICT	information and communication technology
LDC	least developed country
lhs	left-hand scale
m.a.	moving average
NZ\$	New Zealand dollar
PBC	performance-based contract
PNG	Papua New Guinea
PRC	People's Republic of China
rhs	right-hand scale
RMI	Republic of the Marshall Islands
SOE	state-owned enterprise
US	United States
WTO	World Trade Organization
y-o-y	year-on-year

Asian Development Bank projections

GDP growth



Inflation



FSM = Federated States of Micronesia, GDP = gross domestic product, p = projection, RMI = Republic of the Marshall Islands.

Notes: Projections are as of July 2017 and refer to fiscal years. Regional averages of GDP growth and inflation are computed using weights derived from levels of gross national income in current US dollars following the World Bank Atlas method. Averages for Pacific islands exclude Papua New Guinea and Timor-Leste. Timor-Leste's GDP is exclusive of the offshore petroleum industry.

Source: ADB estimates.

Notes

This *Monitor* uses year-on-year (y-o-y) percentage changes to reduce the impact of seasonality, and 3-month moving averages (m.a.) to reduce the impact of volatility in monthly data.

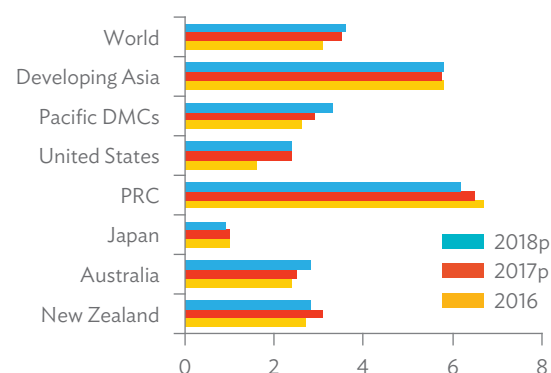
Fiscal years end on 30 June for the Cook Islands, Nauru, Samoa, and Tonga; 31 July for Fiji (starting 2017); 30 September in the Republic of the Marshall Islands, the Federated States of Micronesia, and Palau; and 31 December elsewhere.

International and regional developments

Stable growth but guarded prospects amid global uncertainties

- Stronger global demand in the second half of 2016 offset sluggish growth in the first half, causing a marginal slowdown of annual growth to 3.1% in 2016 from 3.4% in 2015. The upswing in the second half of 2016 led to advances in manufacturing and trade as well as strengthening of commodity prices. World output is projected to grow by 3.5% in 2017 and 3.6% in 2018. However, the shift to more inward-looking policies among some major economies—which may disrupt global trade—and uncertainties in United States (US) policy can pose serious risks to short- and medium-term global prospects.
- Growth in Developing Asia reflected the performance of the global economy in 2016, slowing to 5.8% in 2016 from 6.0% the previous year. The continued rebalancing in the People's Republic of China (PRC) moderated regional growth. However, recovery in the industrial economies, combined with the healthy and solid growth in other developing economies in the region, is expected to mitigate regional growth slowdown in the near future. The regional economy is expected to expand by 5.9% in 2017 and 5.8% in 2018.
- Meanwhile, growth in the Pacific subregion dropped to 2.6% in 2016 from 8.3% in 2015, driven by the slowdown in Papua New Guinea, the largest economy among ADB's 14 Pacific developing members. Faster expansion in the South Pacific and small island economies was insufficient to offset the shortfall. Some recovery in the Pacific's larger economies is expected to push regional growth to 2.9% in 2017 and 3.3% in 2018.
- The US economy strengthened significantly in the second half of 2016 as firms became more confident about future demand and the end of the inventory cycle. Growth is projected to accelerate from 1.6% in 2016 to 2.4% in both 2017 and 2018, supported by the recovery in consumer confidence and in the manufacturing sector. The decline in the unemployment rate to 4.4% in April 2017 is expected to translate to higher household demand, which may sustain the recovery of global trade.
- Growth in the PRC decelerated moderately from 6.9% in 2015 to 6.7% in 2016. The increasing dependence on consumption to drive growth indicates continued rebalancing of the economy and further shift of economic activity from industry to services. As growth is becoming more reliant on internal demand and less on exports, it is expected to remain at 6.7% in 2017 before slowing further to 6.4% in 2018. The PRC's declining demand for raw materials such as iron ore, copper, and coal will have an adverse impact on commodity exporters. On the other hand, countries exporting consumer goods to the PRC, as well as destinations for fast-growing Chinese tourism, may benefit greatly from the rebalancing.
- Japan's economy expanded by 0.5% in the first quarter of 2017. This was the fifth consecutive quarter of growth, the longest run in more than a decade. A weak yen fueled strong exports, although consumer spending remains tepid and deflation is still a major hurdle despite years of expansionary monetary policy. While short-term economic projections are optimistic, achieving the 1% growth projected for 2017 depends heavily on external factors. For instance, the possible weakening of the US dollar due to policy uncertainties will reduce the competitiveness of Japanese exports.
- The Australian economy recovered quickly from a contraction in the third quarter of 2016, to post full-year growth of 2.4%. Strong household consumption as well as favorable commodity price movements supported the expansion. Australia's growth is expected to rise to 2.5% in 2017 and reach 2.8% in 2018, with increasing contributions from domestic demand as the

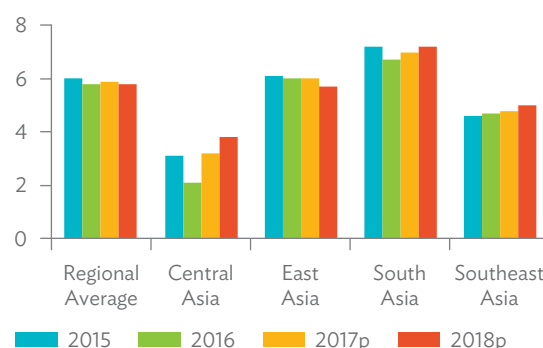
GDP Growth (% annual)



DMC = developing member country, GDP = gross domestic product, p = projection, PRC = People's Republic of China. Notes: Developing Asia and Pacific DMCs as defined by ADB. Figures are based on ADB estimates except for World GDP growth.

Sources: ADB. 2017. *Asian Development Outlook 2017 Supplement (July 2017)*. Manila; IMF. 2017. *World Economic Outlook April 2017: Gaining Momentum?* Washington.

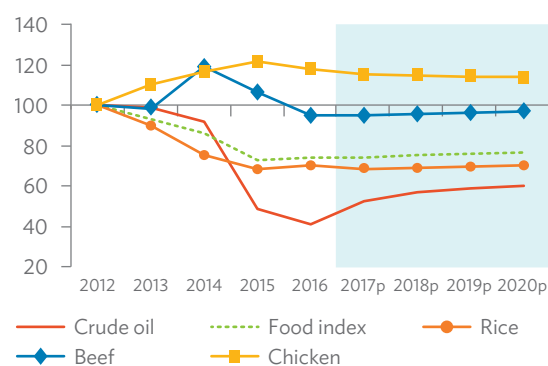
GDP Growth in Developing Asia (% annual)



GDP = gross domestic product, p = projection.

Source: ADB. 2017. *Asian Development Outlook 2017 Supplement (July 2017)*. Manila.

Prices of Import Commodities (2012 = 100, annual)

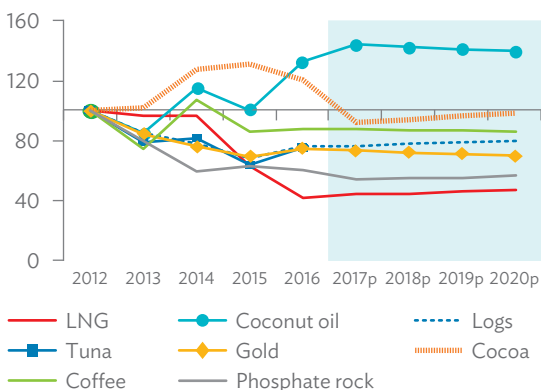


p = projection.

Source: ADB calculations using data from World Bank Commodity Price Data (Pink Sheets).

International and regional developments

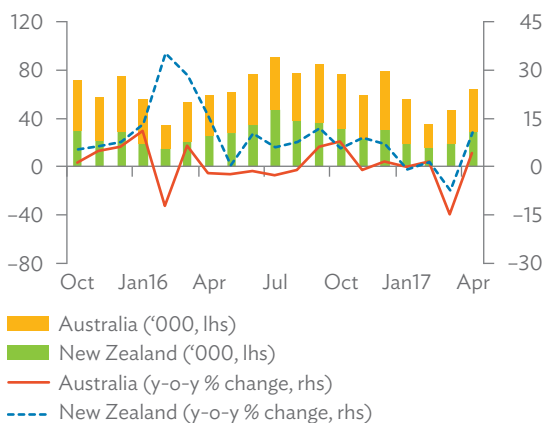
Prices of Export Commodities
(2012 = 100, annual)



LNG = liquefied natural gas, p = projection.

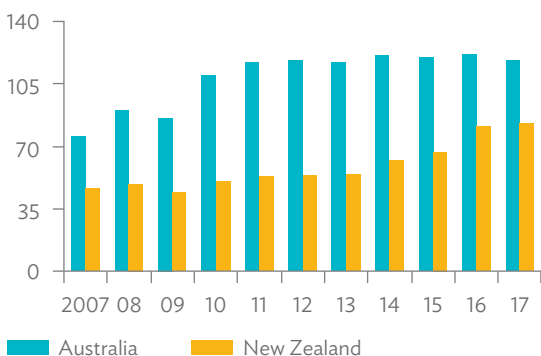
Source: ADB calculations using data from World Bank Commodity Price Data (Pink Sheets) and FAO GIEWS FPMA Tool.

Tourist Departures to Pacific Destinations
(monthly)



Sources: Australian Bureau of Statistics and Statistics New Zealand.

Tourist Departures to Pacific Destinations
(‘000, January–April totals)



Sources: Australian Bureau of Statistics and Statistics New Zealand.

economy shifts from a resource investment boom to broader-based growth. Even with the rebalancing of the economy, rising commodity prices and non-mining business investment will support the momentum of economic activity.

- Despite surging immigration, record-low borrowing costs, and a housing boom, New Zealand’s economy grew only 2.7%, lower than the 3.4% growth in 2015. The slower expansion was due to the deceleration in manufacturing and decline in primary industry production and exports. On the other hand, higher household spending and services output supported overall growth, but not enough to reach the projection of 2.8%. Economic prospects, however, remain solid, with growth expected at 3.1% in 2017 and 2.8% in 2018.

Commodity price outlook has mixed implications for Pacific exports

- Prices for most industrial commodities increased further, while agricultural prices remained steady, in the first quarter of 2017. Crude oil prices are forecast to rise to an annual average of \$55 per barrel, 28.5% higher than last year. Stable agricultural prices augur well for many Pacific developing member countries, which are net importers of food; but the prospective rise in industrial commodities, especially oil, may result in rising domestic prices. However, the impact of global price movements, particularly in oil, on Pacific countries has yet to be felt as inflation slowed down or even fell in many countries.
- Global food prices are expected to remain steady this year given the adequate supplies of most food commodities. Due to good crop conditions, large stocks can reduce the impact of any deficits in production. While the food commodity price index is expected to rise by a moderate 1.2% in 2018, potential risks to the forecast include movements in energy and fertilizer prices, weather patterns, and domestic trade policies supporting local farmers.
- Prospects for key Pacific exports remain mixed. Prices for liquefied natural gas are expected to increase by 6.0% in 2017 and stabilize in the next few years because of higher oil prices, while phosphate prices are projected to decline by 10.8% due to moderating demand coupled with rising exports from the PRC. The price of coffee is expected to remain stable for the next few years. On the other hand, the price of gold may decline by 2.0%, while the price of cocoa is projected to fall by 23.9% this year before recovering and increasing over the next several years.

Slow start to 2017 for tourism in the Pacific

- After only modest growth last year, departures from Australia to South Pacific tourist destinations fell by 2.6% (y-o-y) over the first 4 months of 2017. The Cook Islands, Fiji, Samoa, and Tonga each received fewer Australian tourists during this period. Only Vanuatu recorded an increase, reflecting continued recovery from the impacts of runway safety issues that hampered inbound tourism over the first half of last year.
- Further, the New Zealand market—last year’s bright spot for Pacific tourism—is likewise showing signs of weakness. From double-digit growth in 2016, departures from New Zealand to the South Pacific destinations rose by just 1.6% (y-o-y) over the first 4 months of 2017. The number of New Zealand tourists declined in Fiji and Tonga, and remained unchanged in Samoa. These trends partly reflect base effects and market saturation following large increases recently. In contrast, the Cook Islands sustained strong growth in arrivals, while Vanuatu saw a modest recovery aided by the availability of intermittent charter services. However, regular Air New Zealand flights to Port Vila remain suspended.

Enhancing connectivity is crucial to the Pacific and its people, who constantly contend with the challenges of geographic isolation and remoteness. Physical connectivity through air and maritime links brings people, goods, and services to and from the Pacific while digital connectivity through information and communication technology (ICT) integrates the region with the rest of the world. This section tackles Pacific developing member countries' efforts to enhance connectivity by expanding internet and other ICT connections, improving and maintaining transport networks, and strengthening investment facilitation. Ultimately, the goal of connectivity is to link Pacific peoples with each other, and enable them to access goods and important social services, as well as economic opportunities, locally and globally.

"Enhancing connectivity" was also one of the themes of the recently concluded 2017 Pacific Update Conference. Developments in ICT connectivity, and efforts to improve trade through e-commerce and maritime trade, were discussed. Sessions also examined the role of regional cooperation in improving connectivity. Other themes of the conference were "Promoting a blue-green economy" and "Creating accessible jobs." The 2017 Pacific Update Conference was organized and sponsored by ADB, the Australian National University, and the University of the South Pacific.

Presentations from the conference can be found here: <http://www.econ.fbe.usp.ac.fj/index.php?id=20862>

For further information: <https://devpolicy.crawford.anu.edu.au/png-and-pacific-updates/pacific-update>

Expanding broadband connectivity in Cook Islands and Tonga

Lead authors: Malie Lototele and Laisiasa Tora.

It is estimated that 75% of Pacific island countries, territories, and states will be connected to submarine cables in the next 2–3 years. Past experience suggests that a submarine cable connection, when complemented by the right policies, could significantly increase internet capacity while also reducing costs to provide the service. This would facilitate economic integration not just for countries, but also for far-flung and isolated communities within countries that would be difficult to access by other means.

Cook Islands. The World Bank estimates that every 10.0% increase in broadband penetration in low- and middle-income countries accelerates economic growth by 1.4%. Such impacts result from the harnessing of information and communication technology (ICT) for improved public service delivery; reduced transaction costs for business, government, and households; and new, ICT-enabled business opportunities.

Bluesky Cook Islands, which is 40% government-owned, is the sole telecommunications service provider in the Cook Islands. Bluesky provides 100% geographic coverage in telecommunications services, with 83% of the population having access to 3G services. In an effort to reduce communication costs, Bluesky commenced the use of medium Earth orbit satellite (O3b) service in 2014. A 1,250-megabyte prepaid package costs NZ\$50 and a postpaid package for 100 gigabytes' worth of data costs NZ\$699 per month. There is no unlimited data plan available. Uptake has been rapid, although capacity remains constrained and service is prone to weather disruptions.

Cook Islanders will soon be able to more easily access affordable telecommunications services, especially high-speed internet, once the ADB-supported submarine internet cable project has been completed. The \$25 million joint ADB and New Zealand Government project will link the islands of Rarotonga and Aitutaki in the Cook Islands, as well as Niue, to Samoa and French Polynesia via a regional submarine internet cable system.

A submarine cable would provide higher capacity and quality broadband internet at much lower cost to Cook Islands, making the internet more accessible and affordable to the broader population. This would help Cook Islanders maintain social cohesion with their relatives residing abroad. Regional integration would also be supported by increasing the frequency and quality of communications among the countries in the region, thus increasing trade in services (tourism and back-office functions) and allowing the region to form a sizable market for digital products and services. It would also strengthen the existing regional public goods and encourage new ones by allowing countries to pool knowledge and human resources available in the Pacific. Project preparation is underway and approval is expected in November 2017.

Tonga. The Kingdom of Tonga consists of 177 islands with a total area of 748 square kilometers (km²) divided into four island groups: Tongatapu, Ha'apai, Vava'u, and Niuas. Only 36 of Tonga's islands are inhabited and the total population is estimated at 103,000. Approximately 75% of the population lives in Tongatapu, the main island and location of the capital, Nuku'alofa. The entire country is considered remote from most markets and is approximately 1,000 kilometers (km) from Fiji and over 4,000 km from New Zealand.

In August 2011, ADB approved a \$9.7 million grant for the Tonga–Fiji Submarine Cable Project, an 827 km submarine fiber-optic communication cable system linking Tonga through Fiji. The laying of the cable, which provides an initial capacity of 10 gigabits per second, was completed in June 2013 and the cable system was commissioned in August 2013. International bandwidth use has grown from 37 megabits per second (Mbps) in July 2011 to 900 Mbps by November 2016. Further, the cost of connectivity has substantially declined from \$3,600 per Mbps per month to \$160–\$395 per Mbps per month.

The cable landing followed the liberalization of the telecom market in Tonga, and the main telecom operators—Tonga Communications Corporation and Digicel Tonga Ltd—purchase bandwidth directly from Tonga Cable Ltd (TCL), the state-owned enterprise that owns and operates the international cable. The University of the South Pacific, which is the largest user of bandwidth in Tonga besides the operators and the government, also purchases bandwidth directly from TCL. In October 2016,

Tonga's Parliament enacted the Communications Act and the Communications Commission Act to strengthen regulation in the sector. The latter legislation provides for the establishment of an independent regulatory function, firstly as a telecommunications and ICT regulator, and subsequently—as other utility regulatory frameworks mature—as a multisector regulatory institution.

In October 2012, the government requested ADB and World Bank support to extend the cable system and network coverage to the outer island groups of Ha'apai and Vava'u—Tonga's other major population centers—which would improve network coverage for an additional 20% of the population. Currently, internet connectivity in these areas is provided via satellite, which, apart from being costly, slow, and unreliable, is unlikely to meet growing demand in the future. Satellite connectivity is also inoperable during heavy rainfall, and limits the type of electronic applications that can be deployed, thereby constraining the delivery of digitized public services to the outer islands. The cable extension is expected to reduce internet costs by as much as 50% of satellite connection fees, while increasing current capacity almost fivefold.

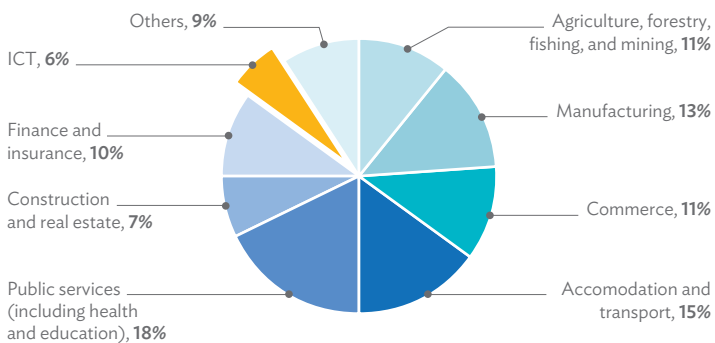
In December 2016, ADB and the World Bank agreed to support the cable extension and steady progress is being made. A cable landing station in Vava'u has been completed and construction of the station in Ha'apai is wrapping up. Installation of the cable is expected to take place in the first quarter of 2018.

Telecommunications reforms and ICT growth in Fiji

Lead author: Shiu Raj Singh.

Fiji is one of the most diversified Pacific economies, with a vibrant tourism industry that has driven recent growth. Its population of about 900,000 is spread over more than 100 islands. Interisland distances have resulted in demand for improved connectivity. With rising incomes, the demand for connectivity has increased. Per capita gross national income in 2015 was \$4,830. Tourism is a significant source of foreign exchange, with 792,320 tourists generating F\$1.6 billion in 2016 (equivalent to 16.0% of gross domestic product [GDP]). In relative terms, the ICT sector contributed 6.0% of total GDP in 2015 (Figure 1).

Figure 1: Structure of the Fiji Economy, 2015



ICT = information and communication technology.
Source: Fiji Bureau of Statistics.

Telecommunications reforms started in the late 1980s, with the aim to improve the provision of telecommunication services. Fiji Post and Telecommunications (FPTL) was established in 1990 to take over the government's telecommunications and postal services. In July 1996, FPTL split into two separate entities, Telecom Fiji Limited and Post Fiji Limited. Fiji International Telecommunications (FINTEL) was the monopoly operator for international services. It was 51% owned by the Government of Fiji and the remaining shares were owned by Cable and Wireless of the United Kingdom (UK). Vodafone Fiji—49% owned by Vodafone of the UK with the remainder owned by the Government of Fiji—launched services in 1994.

Amalgamated Telecommunication Holdings (ATH) was created in March 1998 to consolidate government assets in the telecommunications sector before privatization under a public sector reform program. This included full ownership of Telecom Fiji as well as 51% of Vodafone Fiji. The partial privatization of ATH was carried out in December 1998. The Fiji National Provident Fund (FNPF)—the country's pension system—holds majority shares in ATH. ATH has been listed on Suva's South Pacific Stock Exchange since March 2012.

In 2007, the government set out to remove all exclusivities in the telecommunications sector, whereby a telecommunications company could previously provide only one form of communication (mobile, fixed line or internet services). New legislation in 2008 opened the market and established an independent regulator—the Telecommunications Authority of Fiji. The Fiji Commerce Commission is responsible for monitoring unfair trade practices and imposing price controls. Responsibility for sector policy lies with the Department of Communications. Operators are now granted 15-year unified licenses allowing them to provide any telecom service.

Digicel Fiji (privately owned by Irish investors) entered the mobile market in 2008, even as foreign ownership in other operators ended. ATH consolidated control over its subsidiaries, acquiring 49% of FINTEL from the UK's Cable and Wireless in 2012. Vodafone Fiji became 100% locally owned when FNPF purchased 49% from Vodafone of the UK in 2014.

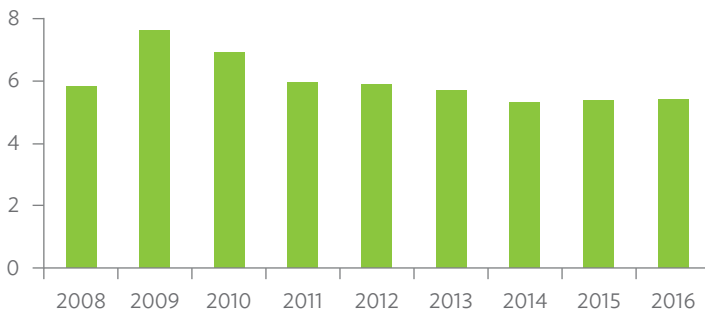
Commercial internet service was introduced by Telecom Fiji in December 1995. There are five internet service providers (ISPs) operating in the country using a variety of technologies including fixed wired, wireless, and mobile broadband (since 2008), with the last accounting for most subscriptions. Given the widespread coverage of mobile broadband (up to 95% of the population), the main barriers to even greater internet uptake are the cost of devices, the cost of service, and digital literacy.

Fiji has international telecommunication connectivity through satellite and the Southern Cross undersea fiber-optic cable. Fiji connected to Southern Cross in November 2000 at a cost of F\$45 million. All of Fiji's international internet traffic is via Southern Cross, with satellite only used for voice. Southern Cross has also benefited other countries in the Pacific, and Fiji has emerged as a regional hub for fiber connectivity. Submarine cables from Tonga and Vanuatu land in Fiji for onward transmission onto Southern Cross. Samoa is also connecting to Fiji with the intent to facilitate a

subregional hub. The Samoa connection will have a spur connecting Fiji's second-largest island to the Southern Cross network.

Since 2011, the contribution of the ICT sector to Fiji's GDP has been about 6%. On average, the sector has grown more rapidly (in real terms) than the overall economy, but falling prices resulted in reducing contribution to overall value of output (Figure 2).

Figure 2: Contribution of the ICT Sector to Fiji's GDP (%)



GDP = gross domestic product, ICT = information and communication technology.

Source: Fiji Bureau of Statistics.

Fiji has witnessed a remarkable transformation of its ICT sector over the last decade. Connection to the South Cross fiber-optic cable has provided progressively cheaper and higher-speed international backbone capacity for development of internet services. Introduction of competition in the mobile market has boosted penetration, dropped prices, expanded coverage, and facilitated wireless broadband services.

Communication gaps: ICT regulation and competition in the North Pacific

Lead authors: Rommel Rabanal and Cara Tinio.

Ongoing and planned efforts are expected to significantly expand the availability of faster, more affordable internet connectivity across the North Pacific economies of the Republic of the Marshall Islands (RMI), the Federated States of Micronesia (FSM), and Palau. These include submarine cable links to all four component states of the FSM—Chuuk, Kosrae, Pohnpei, and Yap—and Palau's tourist-heavy domestic market, to go alongside existing connections to the RMI's population centers, and reforms to boost competition among ISPs.

ICT submarine cables in the North Pacific. Broadband internet connectivity through submarine cables first came to the North Pacific in 2010 through the HANTRU-1 system that connected Ebeye, Kwajalein, and Majuro in the RMI, as well as Pohnpei in the FSM, to the Guam hub. Ongoing projects supported by ADB and the World Bank are soon expected to connect Palau and Yap through spurs and branching units from the Southeast Asia–United States system, and Chuuk through Pohnpei. A proposed World Bank project to also connect Kosrae in the medium term is seen to

complete the loop, fully linking the North Pacific economies with the global digital community through high-speed internet services.

Key issues. Although the RMI and Pohnpei were the first to be connected, available bandwidth capacity remained grossly underutilized due to high service fees stemming from monopolistic market structures and the cost of financing cable installation. In the RMI, the majority government-owned National Telecommunications Authority (NTA) is the sole provider of ICT services. NTA has consistently failed to generate sufficient revenues to finance repayment obligations for the HANTRU-1 loan, requiring government subsidies that have increased from \$1.4 million—about 1.4% of recurrent expenditures—in FY2013 (ended 30 September 2013) to \$1.9 million (2.0%) in FY2015. Weak finances have also constrained NTA from pursuing further investments to improve services.

Efforts to improve the legal and regulatory framework for ICT in the RMI have so far stalled. A World Bank budget support operation in 2013 aimed to facilitate the adoption of a new ICT policy that would restructure the NTA and liberalize the sector. Similar reforms have been undertaken in other Pacific economies including Fiji, Kiribati, and Tonga, with positive benefits in terms of healthy market competition and lowered prices. However, a combination of factors—including vested interests opposing ICT sector reforms, and capacity constraints that caused continuing lengthy delays in implementing complementary technical assistance—meant that the operation had limited success in achieving its key objectives.

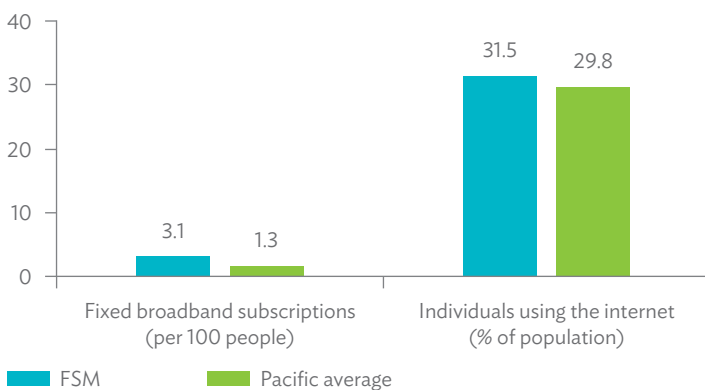
The RMI experienced a near-blackout of internet services when its submarine cable connection was damaged toward the end of 2016. For 3 weeks, bandwidth was limited to what could be provided via satellite, which was only a small fraction of that usually supplied by the cable. Internet access was thus rationed, mostly among government offices and businesses, and residential users were largely cut off from all but e-mail even after the NTA purchased additional satellite bandwidth to help alleviate the situation.

In contrast, the FSM has made significant progress in paving the way for increased competition in ICT services. The FSM Telecommunications Act of 2014 allows for the issuance of licenses to new ISPs, effectively introducing contestability to state-owned FSM Telecommunication Corporation's (FSMTC) monopoly position. The act also provides for the establishment of the Telecom Regulatory Authority—an independent regulator responsible for protecting consumers, issuing licenses, and managing interconnections and critical infrastructure-sharing among potential competitors. Recent experience in other Pacific economies including Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga, and Vanuatu suggests that telecommunications liberalization that is accompanied by the introduction of appropriate institutions and market structures can successfully attract new entrants even in markets with small customer bases.

FSMTC has operated on generally sustainable financial footing, requiring little or no government subsidies while covering a relatively broad segment of the population (Figure 3). It recently introduced mobile broadband (3G) service in Pohnpei. However, internet service fees remain elevated, partly due to the costs associated with financing the Pohnpei cable and diseconomies of scale in

servicing smaller, more remote areas through more expensive satellite connectivity. With broadband cable connections coming soon for Chuuk (the FSM's most populous state) as well as Yap (the state with the highest income per capita), demand for faster and more reliable internet connectivity should pick up, particularly as service costs come down. A synergistic boost to demand can also be expected once Kosrae is likewise connected and the digital divide across the four states is fully closed, allowing for nationwide information sharing and transfer, for example, through integrated e-education, e-health, and e-government systems. Rising demand could help attract new ISPs and soak up excess bandwidth capacity, and increased competition should drive down costs and lead to significant gains in consumer welfare.

Figure 3: FSM Internet Connectivity Indicators, 2015



FSM = Federated States of Micronesia.

Sources: International Telecommunication Union and World Bank.

Palau's relatively large tourism sector—with an annual tourist-to-resident ratio of about 8:1—generates sufficient demand to allow space for as many as three ISPs to operate at the same time. These operators, however, effectively target disjointed market segments with no arrangements for technical or commercial interconnection. The state-owned Palau National Communications Corporation (PNCC), the largest ISP, mostly serves household customers through slow dial-up connections, and more recently, mobile 3G data services. Palau Telecoms, a private provider, offers wireless broadband internet services mainly to government offices and business establishments such as hotels and resorts. Up until the indefinite suspension of its operations in July 2014, a second private provider—Palau Mobile Communications, a subsidiary of a mobile telecommunications company from Taipei, China—was also providing mobile 3G data services in major tourist areas and the Koror business district.

PNCC operates at full cost recovery. Although this effectively shields the government budget from the fiscal burden imposed by subsidies, Palau's exclusive reliance on expensive satellite links has kept the cost of internet services very high relative to other Pacific economies. With the forthcoming availability of a high-speed submarine cable connection, Palau aims to reduce the cost of broadband (minimum of 256 kilobits per second) internet for consumers from the current rate of \$650 per month to as low as \$45.

Palau's legal and regulatory framework for ICT is incomplete, with gaps in oversight of network interconnection, wholesale and retail tariffs, and broader competitive behavior. The government issued a national ICT policy in 2013, which provides for the establishment of an independent ICT regulatory authority. Independent regulation is seen to create a level playing field that will encourage more private investment, and lead to improved service quality and more affordable pricing for customers. The independent ICT regulator is expected to be in place by the end of 2017. The government is also reviewing a package of draft laws and regulations supporting pro-competitive sector reforms outlined in the ICT policy.

The Belau Submarine Cable Corporation (BSCC) is a state-owned enterprise created specifically to own and operate Palau's new high-speed fiber-optic submarine cable system. BSCC's inherent monopoly power over broadband capacity further highlights the need for strong regulation to ensure reasonable wholesale pricing and interconnection arrangements for retail service providers. The World Bank is currently providing technical assistance to support the operationalization of BSCC, including the preparation of a robust business plan and development of efficient operational arrangements to achieve least-cost provision of services. Although it will remain a majority government-owned corporation, BSCC is allowed by law to sell shares to private investors after the first 10 years of operation. Opening up BSCC to private sector participation is seen to encourage greater investment and maintain financially sound operations to ensure service quality over the longer term.

Next steps. As the North Pacific moves toward full broadband-based connectivity, progress in strengthening ICT regulation must be sustained to support greater competition, improve service quality, and reduce costs. This should include fully functional and effective independent ICT regulators in the FSM and Palau within the near term. In the RMI, efforts have been renewed to improve the National Telecommunications Authority's financial position and explore private sector participation toward strengthening the performance of the ICT sector. The RMI government is also seeking to link ICT sector development with its broader priorities, including reforms to public financial management and state-owned enterprises.

Efficient and reliable internet connectivity would help the North Pacific strengthen public financial management reforms by automating these functions, ensuring timely and accurate monitoring and reporting. It would also enable the North Pacific to work around the challenges posed by geographic distance. E-education and e-government would make use of ICT to improve access—particularly for more remote communities—to education and skills training, and frontline government services. Similarly, through e-health initiatives, ICT would broaden access to medical information and help improve the overall quality of health care.

E-commerce would enable local firms to market niche products and services, including high-value tourism, which would also capitalize on the North Pacific's remoteness by promoting natural, locally sourced ingredients and pristine locations and wildlife. With complementary technical assistance and capacity building, improved connectivity could also open up ICT-enabled services as another potential source of jobs, income, and economic growth.

Enhancing maritime connectivity in Kiribati and Tuvalu

Lead author: Malie Lototele.

The transport sector remains a priority for the small Pacific island economies, as geographic remoteness and dispersal make it difficult to move people and goods within and between countries.

Tuvalu, for example, comprises nine atolls, stretching over 680 kilometers (km) in the southwest Pacific. Because of their size, the outer islands have no airfield. Maritime transport provides the only link among the islands; it provides a lifeline to these outer islands by transporting essential goods, such as food and fuel, as well as people who need social services, particularly medical care and education.

But the outer islands also lack docking facilities, requiring small workboats to transfer passengers and cargo between ships and the shore. In addition to their inefficiency, such transfer activities cannot take place at night and are particularly dangerous when the sea is rough. In the past, serious accidents have occurred with economic damage and loss of life.

In 2016, ADB approved the Outer Island Maritime Infrastructure Project to help Tuvalu overcome connectivity constraints between the capital and the outer islands, as well as promote more inclusive and sustainable socioeconomic development. Under the project, (i) small-scale maritime facilities will be constructed at Nukulaelae, (ii) minor rehabilitation of boat ramps will be undertaken in Nanumaga and Niutao, (iii) the government's support for operations and maintenance will be strengthened, and (iv) a transport sector master plan will be developed.

Kiribati faces similar concerns, having 36 atolls scattered in a maritime zone about the size of India, and, as in Tuvalu, shipping services provide a vital link for the remote outer islands. Although there are frequent shipping services to islands closer to Tarawa, the country's capital, island groups farther away (e.g., the Southern Line groups) suffer from limited shipping services. To help remedy this, the government established Kiribati Shipping Services Limited (KSSL), a state-owned enterprise (SOE), in 2008. However, poor maintenance and management resulted in the deterioration of KSSL's fleet, and this has left KSSL with just one landing craft, the *LC Butimari*.

In its effort to maintain links to these distant islands, the government has bought another vessel to replace the *LC Butimari*. It also expects the *LC Linnix*, a gift from Taipei, China, to arrive in late August 2017. The government will lease these two vessels to KSSL, and is interested in exploring options to provide shipping services to the outer islands and improve the operational management of the vessels.

Further, an ADB technical assistance project to Kiribati recommended that management be contracted out to the private sector. It also recommends implementing a franchise approach that sets standards for frequency and regularity of service, maintenance and safety, and pricing (for further information, refer to the related policy brief on page 23). The project's recommendations are currently under government deliberation.

Improving transport connectivity in Papua New Guinea

Lead author: Yurendra Basnett.

OVERVIEW OF TRANSPORT INFRASTRUCTURE

Papua New Guinea (PNG) has over 600 islands, and altitudes ranging from 0 to 4,500 meters above sea level in the mountainous highlands (ADB 2012a: xi, 91). These geographic characteristics, coupled with the overall poor condition of transport infrastructure networks, mean that large segments of the population (especially those in rural areas) remain isolated from social services, regional markets, and income-earning opportunities. International comparisons show that the coverage and quality of PNG's transport networks lag far behind most other countries in Asia and the Pacific. Unequal distribution of transport infrastructure contributes to unequal access to economic opportunities in PNG. It is not possible to travel by land between most provinces. Coastal shipping services and aviation attempt to offset the road network gaps, but many of these services are not cost-effective outside of major regional centers; consequently, sufficient funding for operations and maintenance is not provided, creating sustainability concerns. Climate change and disasters also pose risks to the sustainability of transport infrastructure.

Rural accessibility is moderate, with 68% of the rural population living within 2 km of all-season roads. PNG has approximately 22,000 km of roads (Government of PNG 2012). The national road network comprises 8,738 km, only 40% of which is sealed. The focus of most road planning is the "national priority roads": 4,256 km (i.e., half of all national roads, both sealed and unsealed), in 16 separate alignments (Government of PNG 2012). More than 75% of the road system in PNG becomes impassable at some point during the year (ADB 2012: xi). However, it is notable that the condition of the 4,256 km of national priority roads has improved in recent years, with the proportion of the national priority road network judged to be in "good" condition, rising from 33% in 2007 to 46% in 2011 (Government of PNG 2012). Nonetheless, as for road safety, estimates indicate that crashes remain very high by Pacific standards (Government of PNG 2010b: 11–20).

Approximately 60% of the population resides on 6,500 km of coastlines and waterways, often without access to roads. Water transport predominates in these areas, especially on smaller islands. The state-owned PNG Ports Corporation (PNGPC) operates 16 ports, while private corporations operate at least 5 more. Lae Port handles nearly half the country's maritime freight. Port Moresby and Kimbe are the next largest. These three have each achieved cost recovery from operations. The remaining 13 PNGPC ports incur losses (Government of PNG 2013: 246–247).

PNG's international shipping is among the most expensive in the Pacific region, which is indicative of the lower levels of competition in the country. It takes an average of 23 days to export goods from PNG (approximately the same as the regional average) (World Bank 2014). The National Maritime Safety Authority provides navigation and safety services, and is the operator of navigational aids.

Deaths due to the sinking of overloaded ferries are not uncommon. More than 100 persons are estimated to die in small craft every year (CPCS Transcom 2011).

The overall condition of the 22 international and regional airports owned and managed by the National Airports Corporation has deteriorated over previous decades, and poses threats to safety if the trend is not reversed. PNG also hosts hundreds of rural airstrips. PNG Air Services provides navigation services. International air traffic serving Jacksons International Airport in Port Moresby, the country's international gateway, is very expensive, with unit costs (per passenger, per nautical mile) on flights to Australia the most expensive in the Pacific. Air Niugini's unit costs on Asian routes is more than 2.5 times intra-Asian flights.

TRANSPORT CONNECTIVITY VITAL FOR INCLUSIVE AND SUSTAINABLE DEVELOPMENT

A forthcoming ADB study finds that upgrading 1.0% of the route leading to the nearest town from earth to a sealed road surface (i) increases average household consumption by about 0.6%, (ii) raises the chance that a house will have a high-quality roof by about 0.2%, and (iii) decreases the probability that a household relies on subsistence farming by 0.1%. Furthermore, analyzing impacts across different subgroups suggests that the effects on consumption are at least twice as high for households with less than 4 years of average education, an illiterate household head, or a female household head, when compared with their respective opposite subgroups. The study finds effects of similar magnitude for the upgrading of a gravel road to a sealed road.

Government's agenda on transport connectivity, as contained in the PNG Development Strategic Plan 2010–2030, sets out an ambitious array of transport infrastructure investments, including increasing the share of national roads in good condition from 32% in 2010 to 100% in 2030, and tripling the length of the road asset inventory. It also includes a similarly large expansion in shipping and air transport capacity (Government of PNG 2010a). The National Transport Strategy released in 2013 provides a more prioritized list of transport investments, emphasizing the importance of asset maintenance and restoring PNG's existing but damaged road network.

ADB PROGRAMS TO IMPROVE INFRASTRUCTURE

ADB has had a long-running engagement with the government on improving transport infrastructure. Building on past experiences and in alignment with the government's priority, ADB is supporting a \$1 billion Sustainable Highlands Highway Investment project that would upgrade, rehabilitate, and sustainably maintain the 1,200 km, two-lane national Highlands Highway. This is the lifeline for the Highlands Region, connecting 1,800 km of regional and feeder roads and servicing an estimated 3 million people in the rural hinterland of the region (equivalent to 43% of the national population). It also connects landlocked mountainous provinces to the coastal province of Morobe and the Lae maritime port, which is the country's maritime gateway and a regional transshipment hub for the eastern reaches of the South Pacific.

The upgrading and rehabilitation of the Highlands Highway will contribute to (i) increasing access to opportunities for equality and prosperity in rural areas; (ii) establishing well-integrated, safe, affordable, and financially and environmentally sustainable transport systems; and (iii) improving access to health and education; and (iv) raising living standards of the people of PNG.

In addition to addressing long-standing issues with the road network, the Civil Aviation Development Investment Program is supporting improvements in safety and security in 22 airports. Specifically, the program aims to rehabilitate existing facilities (including runways, taxiways, and aprons) to accommodate current aircraft types, as well as to improve airfield drainage and maintenance, operational and terminal facilities, and landing equipment. The program will contribute to (i) savings accrued from non-incremental movement of aircraft in terms of aircraft operating costs and passenger time; (ii) benefits from safety improvements; and (iii) benefits to regional and local communities from construction activity, market sales, and higher tourism.

The investment needs far outstrip the resources available. Much of the investments in the transport sector have been financed through the budget. Given the fiscal constraints faced by the country, sustaining the recent high levels of budget allocation to the sector is likely to be difficult. Thus, the government should increase coordination leveraging concessional financing for transport infrastructure as well as explore cost-effective public-private partnerships.

Providing for infrastructure maintenance in Nauru, Solomon Islands, and Vanuatu

Lead author: Prince Christian Cruz.

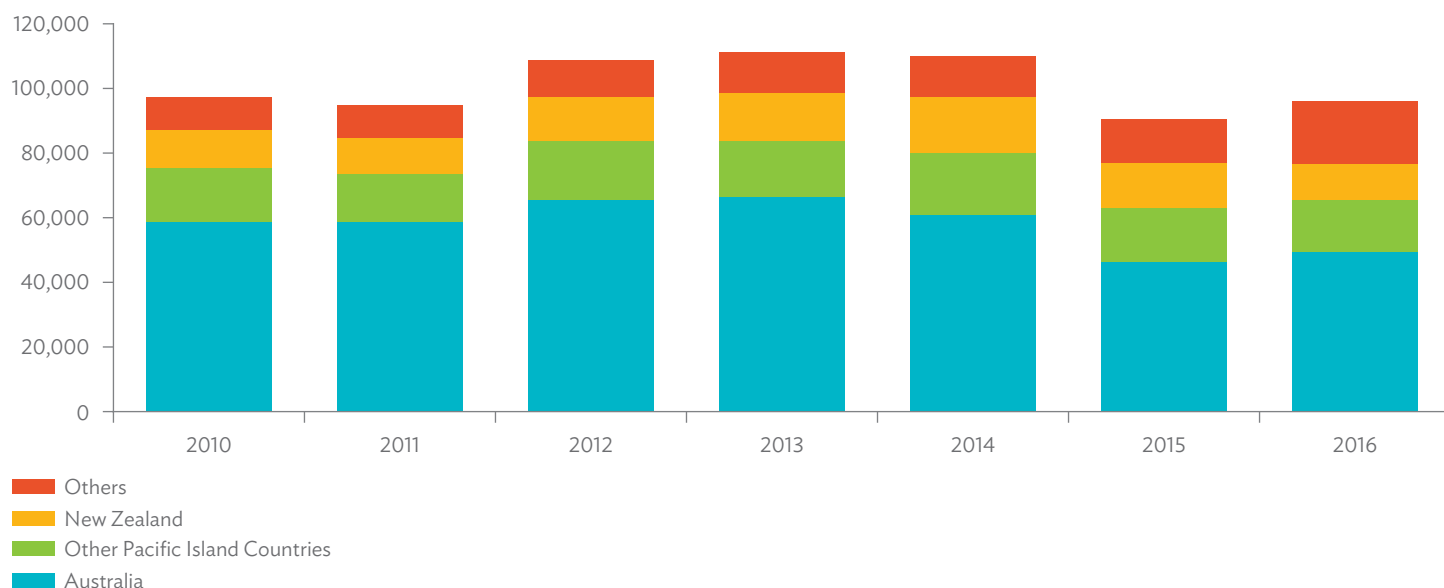
Infrastructure plays a vital role in development. Unfortunately, funding for the proper maintenance of infrastructure is often inadequate, which costs both the government and the public. In most cases, inadequate maintenance funding leads to faster wear and tear to the point that roads and other infrastructure are rendered unusable, leading to more expensive rehabilitation or reconstruction.

A BUMPY ROAD TO DEVELOPMENT

Inefficiencies caused by inadequate maintenance can lead to higher operating costs and longer travel times. This, in turn, can result in higher prices for consumers, and lower production incomes for producers. ADB (2003) estimates that for every \$1 spent on road maintenance, users receive a benefit equivalent to \$3 from lower fuel consumption, reduced vehicle wear and tear, and faster journey times.

Poorly maintained infrastructure also hampers the government's efficient delivery of basic services. In times of calamity, the immediate provision of emergency services and relief supplies can be delayed. Further, inadequate road maintenance also increases the number of accidents.

Figure 4: Vanuatu Visitor Arrivals by Usual Country of Residence



Source: Vanuatu National Statistics Office. 2017. *International Arrival Statistics March 2017*.

Poor maintenance of infrastructure affects tourism, one of the mainstays of many Pacific economies. For example, in early 2016, Qantas, Virgin Australia, and Air New Zealand suspended their flights (including code shares) to Vanuatu's main international airport in Port Vila. They cited concerns about the safety of the runway related to insufficient maintenance, and delays in upgrading and rehabilitation (Pryke and Dornan, 2016). State-owned Air Vanuatu, in charge of airport maintenance, continued its operations along with other Pacific-based airlines such as Fiji Airways.

The timing of the suspension could not have been worse as Vanuatu's tourism industry was still trying to recover from the setbacks caused by Cyclone Pam in March 2015. The runway underwent emergency repairs, causing one airline (Virgin Australia) to return in May, but Virgin Australia briefly suspended its flights again in August when another crack was found in the runway. Qantas only resumed its codeshare agreement with Air Vanuatu in June 2017, and Air New Zealand stated that it would only resume operations once extensive repairs are carried out. In 2012–2014, the 3 years before the cyclone, Australian tourists on average accounted for 58.7% of arrivals to Vanuatu, while 14.0% were from New Zealand. In 2015–2016, the average share of Australian tourists had dropped to 51.8%, while the share of New Zealand tourists eased to 13.2% (Figure 4).

Capital bias is cited as one of the most common causes of inadequate infrastructure funding, with more fanfare and media attention associated with the inauguration of new infrastructure (ADB 2003). Lump-sum funding for large capital projects are also more conducive to rent-seeking than small allocations for maintenance. In the case of Vanuatu, the frequent change in administration contributed to delays in the approval of contracts for maintenance and upgrading (Pryke and Dornan 2016).

Equity considerations may also come into play. Some politicians argue that it is difficult to allocate funds for road maintenance in one village when other villages do not even have roads (ADB 2003: 4). Capacity constraints within implementing agencies, and limited time horizons for budgeting, could also exacerbate the problem of inadequate maintenance (ADB 2013).

Some developed economies also experience problems in funding maintenance (Wessel and Olson 2017). Establishing a maintenance fund—whether for infrastructure in general or for a particular type (e.g., roads)—is one way to address this issue (ADB 2003). However, systemic constraints to ensuring infrastructure maintenance, such as weak institutional capacity and planning, should still be addressed. Even in the absence of a dedicated maintenance fund, Herral et al. (2011: 3–4) pointed out key aspects of good road asset development and maintenance based on *Road Deterioration in Developing Countries: Causes and Remedies* (World Bank 1988):

- (i) a coalition of diverse (private and public) stakeholders asserting “ownership” of good roads;
- (ii) planning based on road user costs and life cycle analysis of road agency costs;
- (iii) sustained funding mechanism for maintenance and capital renewal;
- (iv) division of work between “work design and supervision” and execution, contracted out competitively; and
- (v) quantitative performance monitoring to support accountability.

Solomon Islands is among the first countries in the Pacific to establish an infrastructure maintenance fund, the National Transport Fund (NTF). Nauru and Vanuatu are conducting consultations and studies to develop their own funds. Table 1 summarizes the characteristics of these three countries.

Table 1: Infrastructure Profiles of Nauru, Solomon Islands, and Vanuatu

	Nauru	Solomon Islands	Vanuatu
Population	11,400	602,700	283,900
Urbanization (% of population)	100	20	24
Main islands	1	6	14
Land area (km ²)	27	28,400	12,190
Total area (km ²)	308,506	1,597,492	827,891
Transport network			
Roads (approx.)	30 km	1,463 km	2,300 km
International ports	1	1	2
Wharves on outer islands	n/a	91	8–10
International airports	1	1	3
Domestic airfields	n/a	27	26

km = kilometer, km² = square kilometer, n/a = not applicable.

Note: Total area refers to exclusive economic zone.

Sources: Solomon Islands National Transport Plan 2017–2036; ADB Pacific Economic Monitor Database; Vanuatu 2015 National Infrastructure Sustainable Investment Plan.

SOLOMON ISLANDS NATIONAL TRANSPORT FUND

Solomon Islands has a road network of almost 1,500 km, about 174 km of which is sealed (i.e., with a smooth surface of bitumen, or concrete that can protect against water seepage) and 1,289 km unsealed (i.e., paved with materials like loose gravel or crushed coral). This network connects roughly 77% of the rural population to an all-weather road within a 2 km radius and could be considered moderately adequate, relative to both the population and national revenue, if the network is properly maintained and remains serviceable. However, only 62% of the network was in fair to very good (and thus maintainable) condition as of the end of 2014. At the same time, only 33 of the 81 wharves nationwide were in maintainable condition, with some requiring substantial repairs, and 48 were structurally deficient (ADB 2016: 7).

The NTF was established in 2009 alongside the National Transport Plan (NTP), which sets out the strategy for developing effective transport infrastructure and services in Solomon Islands. Initially covering 2011–2030, the NTP was updated in 2016 for the period 2017–2036. It aims to rehabilitate and restore all infrastructure assets to maintainable condition, and to have 100% of regularly maintained assets in good condition, by 2030. The NTF is designed to be a sustainable mechanism to fund the development and maintenance of transport infrastructure and services.

The NTP sets specific targets and monitoring indicators. Priorities are laid out in the accompanying Medium Term Transport Action Plan (MTTAP), which includes a 5-year (extended from 3 years) rolling financial plan for sustainable maintenance of existing assets.

The MTTAP 2017 covers the period 2017–2021. The NTP and MTTAP are updated by the NTF Secretariat, which reports to the NTF Board. The NTF Board, which manages the fund, is composed of the permanent secretaries of finance (chair), infrastructure development (deputy chair), aviation, development planning and aid coordination, and provincial government. The sixth member is nominated by the development partners that contributed to the NTF.

Funding for the MTTAP 2017 is estimated to be around \$80 million, with roughly 43% coming from the national government, 30% from the Government of Australia, and the rest from an ADB loan. Government funding is drawn from the national budget, not from a dedicated revenue source or user fees. Drawdown of the ADB loan will be linked to specific targets, such as maintenance of sealed and unsealed roads; inclusion of gender-responsive design features; and provision of counterpart funding from the national government. A nationwide infrastructure inventory survey was completed in 2015 (with a re-survey in 2016) to establish the Solomon Islands Transport Asset Management System Database, a key component for proper monitoring and project implementation.

Solomon Islands has yet to address the creation of a broad-based coalition of road owners. A positive development is the widespread consultation with public and private groups in crafting the NTP and the priority list. A private-sector-led coalition of local stakeholders may also arise as the private sector matures. The development of user fees or dedicated revenue sources is also worth exploring to ensure proper and sustainable budgeting for infrastructure maintenance.

VANUATU TRANSPORT INFRASTRUCTURE MAINTENANCE FUND

Despite having a smaller population and land area, Vanuatu has a longer road network and more airports compared with Solomon Islands. This highlights a greater need for maintenance funding, but the Pacific Region Infrastructure Facility (PRIF) estimates that Vanuatu's annual allocation for maintenance is just around half of the actual needs (Government of Vanuatu and PRIF 2015).

Increased funding for maintenance and operation of transport sector infrastructure is part of Vanuatu's National Sustainable Development Strategy 2016–2030 and the 2015 National Infrastructure Sustainable Investment Plan. Central to this strategy is the development of a proposed transport infrastructure maintenance fund (TIMF), which would serve as a repository and conduit for funding from the national government and development partners. It would be used exclusively for maintenance and operation of transport infrastructure. The TIMF would be managed by an independent board composed of local and national officials and private sector representatives. The private sector may be represented by the Chamber of Commerce, land transport association, tour operators, and shipowners. There will also be a separate secretariat under, but operating independently from, the Ministry of Infrastructure and Public Utilities. This will be headed by a competitively recruited chief executive officer on a fixed-term contract.

Although initial funding for the proposed TIMF is likely to come from the national budget and development partners, it is expected that financing will be sustained through a series of ring-fenced duties, levies, and taxes. These may include current taxes and charges related to roads (excise and import duties, value added tax, vehicle registration and licensing fees, and road tax), shipping (landing fees, marine fees, port dues, and wharfage tax), and aviation (aircraft and crew licensing fees, landing charges, and departure taxes).

The TIMF board is also expected to produce a 3-year rolling program and an annual Transport Network Program, which would identify the priority projects to be funded. In creating the programs, agencies are required to have an up-to-date database showing the conditions of transport infrastructure and the status of ongoing projects.

Based on the Ministry of Infrastructure and Public Utilities' concept note for the proposed TIMF, the fund would adhere closely to the best practices laid out in *Road Deterioration in Developing Countries*. Transparency in terms of reports and competitive bidding for projects are embedded through the process. As the TIMF is still in the planning phase, it is not clear to what extent these principles would be implemented. Creation of the TIMF would require an enabling law passed by Parliament.

NAURU INTEGRATED INFRASTRUCTURE ASSET MANAGEMENT STRATEGY

Although significantly smaller than Solomon Islands and Vanuatu, Nauru faces similar challenges in maintaining transport infrastructure. The road going around the entire island, which can be traversed in less than 1 hour, is sealed, but the problem in maintaining assets can be clearly observed in the case of Nauru Port (see related policy brief on page 26).

To address its infrastructure maintenance needs, the country is developing the Nauru Integrated Infrastructure Asset Management Strategy, which would cover not just roads, airports, and seaports, but also buildings and equipment required to provide public services. Assets currently under the Regional Processing Centre are also expected to be part of the integrated scheme.

As a first step, Nauru is developing an Asset Management Policy which will set the timing, resources, accountability and institutional settings required to establish the Integrated Infrastructure Asset Management Strategy. The policy will be tabled at the Cabinet in August 2017. The Strategy and its implementation are expected to be finalized 9 months after cabinet's policy approval.

The strategy is expected to ensure the alignment of the Nauru Economic Infrastructure Strategy and Investment Plan with the goals and objectives in the National Sustainable Development Strategy, while reflecting the accurate condition of infrastructure assets. It is also expected to assure adequate investments in preventative maintenance, repair, rehabilitation, renewal, and disposal of assets—all prioritized based on the risk of asset failure in service. In accordance with best practices, funding is expected to be largely covered by user fees; but recognizing the limits to this, continued government subsidies and development partner support will also be needed. Further, public consultations and continuous feedback from

public opinion will be considered in designing the asset management process. Infrastructure assets are also expected to be climate resilient and can meet financial, social, cultural, and environmental needs in a sustainable manner.

CONCLUSION

The use of dedicated infrastructure maintenance funds is still in the early stages in the Pacific. Establishing a sustainable, reliable fund should be based on local realities, with due consideration given to capacity constraints and political context.

Further, although a dedicated maintenance fund is important, the root causes of poor infrastructure asset maintenance must also be addressed. These include weak institutions, heavy reliance on development partner financing, political expediency, and lack of transparency in government spending decision and execution. In the long run, infrastructure service delivery should be more strongly linked to public financial management approaches so that more sustainable government systems are developed. A multi-development partner and multi-disciplinary work group to develop common approaches to sustainable infrastructure management in the Pacific—similar to the ones started by the PRIF (see Estigarribia and Rajah 2017)—would be most welcome.

State-owned enterprise reform in Samoa: forming partnerships, improving connectivity, and increasing market efficiency

Lead author: Shiu Raj Singh.

State-owned enterprises (SOEs) in Samoa are engaged in a wide range of activities. These range from the more conventional transport, utilities, housing, and postal services to banking, land development, and trustee services, and make up a portfolio with 1.37 billion tala (\$524.2 million) in assets. However, ADB's *Finding Balance 2016* report, which benchmarks the performance of most of the region's SOEs, estimates that Samoan SOEs account for only 3.0% of GDP. This suggests a lack of overall improvement in Samoa's SOE performance despite the country having a comprehensive Public Bodies (Performance and Accountabilities) Act since 2001, a reform and divestment policy calling for the divestment of all non-strategic SOEs, and a ministry devoted to overseeing SOE performance and service delivery. Examples from Samoa's mixed experience with privatization are provided below.

Public works. Prior to reforms implemented in 2002, the Public Works Department was suffering from severe capacity constraints and thus unable to meet reconstruction requirements following disaster-related damage in the 1990s. This led the Samoan government to outsource the reconstruction work to the private sector, which was ultimately successful in restoring the damaged infrastructure. Since then, the government has expanded its outsourcing policy to include road construction and maintenance. The Public Works Department, now called the Land Transport Authority, no longer undertakes construction on

its own, and instead manages contracts with private sector firms. Besides ensuring more efficient management of road assets, the privatization of the department has also helped spur competition, contributing to growth in private sector construction capacity.

Air transport. Noting that operating costs for Polynesian Airlines, Samoa's state-owned national airline, had increased to over half of the government's annual budget, the government entered a joint venture with Virgin Australia to establish Polynesian Blue (later renamed Virgin Samoa) in 2005. The resulting operation managed to show a profit. However, in May 2017, the Samoan government announced that it would withdraw from the joint venture on 5 December 2017 amid ongoing tensions over rising airfares and the benefits that Samoa's tourism industry derived from the deal. The government has publicly announced that it is finalizing a partnership with Fiji Airways, which will assist in the development of Samoa Airways. The partnership with Fiji Airways is expected to increase seat capacity in and out of Samoa. Virgin Australia, on the other hand, has applied to continue flights to Samoa, reflecting the profitability of the route.

Broadcasting services. The case of the Samoa Broadcasting Corporation (SBC), which operated radio and television stations, illustrates the quick wins that can be gained from privatization. Once a profitable enterprise, SBC had begun to incur losses before the government divested the SOE in 2008 to allow competition and private ownership. The company was sold to a consortium of shareholders, who implemented improvements that produced dividends in the first year after the sale. The new management subsequently instituted a reinvestment program that boosted broadcasting infrastructure, broadening radio coverage and increasing television broadcasting hours. The television station is now the main television station in Samoa, but shares the airwaves with five others (some of which were established after the privatization of SBC). The radio stations are still operating.

Information and communication technology-related services. Samoatel, the government-owned telecommunications provider, was privatized in 2011 with 75% of its shares sold to the American Samoan firm Bluesky. The remaining 25% was acquired by the Unit Trust of Samoa (UTOS), established in 2009 as part of Samoatel's privatization process. The subsequent deregulation of the telecommunications sector and entry of Digicel into the market has brought more accessible and affordable communication and internet services to Samoan consumers. The government now intends to deliver high-speed broadband services through a public-private partnership, with financing support from ADB and the World Bank.

Shipping. In 2012, the Samoan government bought out all other shareholders and became the sole owner of the loss-making Pacific Forum Line. However, it subsequently sold 50% of shares to Neptune Shipping, which services most Pacific island countries and now manages the Pacific Forum Line. Samoa is geographically located away from the main shipping lines and must therefore retain core shipping services to maintain its trade flows. Partnership with Neptune Shipping is intended to increase the shipping network in and out of Samoa.

Agriculture supplies. The government privatized the Agriculture Stores Corporation (ASC) in 2016 due to decades of poor financial performance brought about by increased competition from the private sector. The ASC was sold to the management team as a going concern, while the land and buildings owned by ASC have been retained under government ownership. Given the relatively small size of the Samoan economy, divestment can be difficult if there is little interest from the private sector.

There have been notable gains from privatization in Samoa, but lingering issues need to be addressed to ensure that future divestments bring about optimal benefits to the economy and promote private sector development.

For instance, management of SOEs remains a concern. Although criteria and a panel for selecting independent directors were established in 2010, and government ministers were removed from SOE boards in 2012, ministers and cabinet secretaries continue to exert significant operational control over SOEs. This may have implications on SOE performance and efficiency.

In addition, the UTOS—which lends to, and holds deposits of, SOEs—is itself an SOE. Given access to financing from the UTOS, borrowing SOEs need not undergo scrutiny from commercial lenders. This, together with the gaps in management, further reduces the impetus for these SOEs to improve their efficiency and profitability.

Finally, Samoa's mixed success with privatization may be partly attributed to the lack of a planned approach. With recent consideration of ownership, performance, and divestment policy, a more sequenced approach is expected in the SOE reform program.

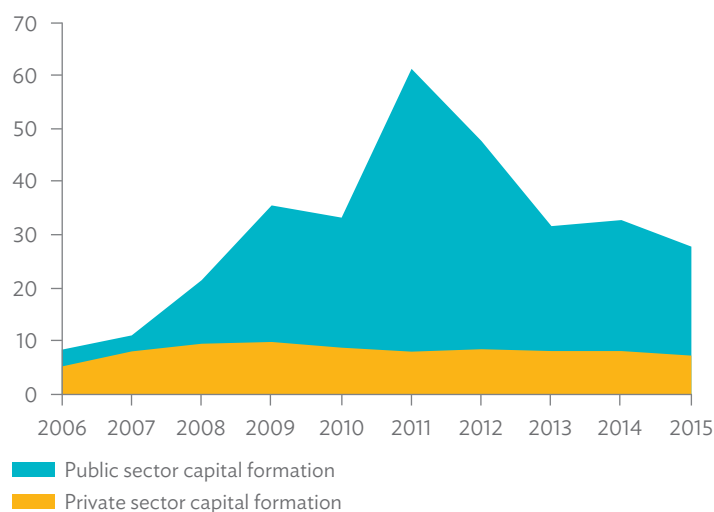
Attracting and facilitating private investment in Timor-Leste

Lead author: David Freedman.

Stimulating private investment is a key challenge for Timor-Leste. Total investment in the economy has risen sharply since 2007 on the back of a large fiscal stimulus, but private investment has not grown significantly and remains low when compared with neighboring countries in Southeast Asia and the Pacific (Figures 5–6). Improvements in physical infrastructure have made it easier to move people and goods around the country and to access key services such as electricity. However, skills shortages and weaknesses in the business enabling environment continue to undermine Timor-Leste's attractiveness as an investment destination.

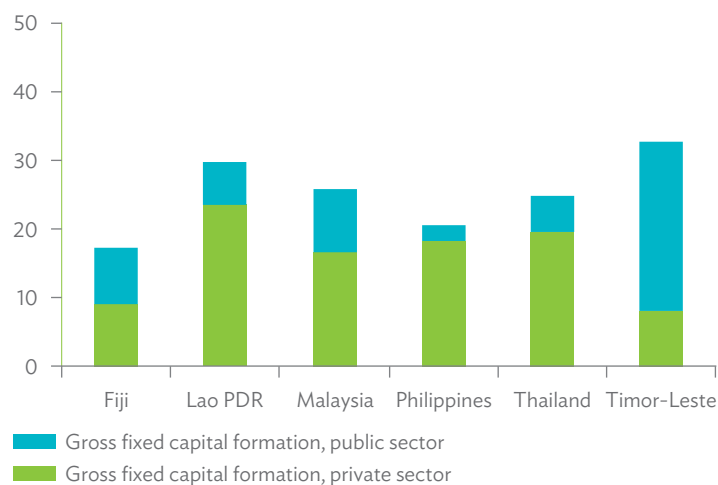
Timor-Leste's Strategic Development Plan 2011–2030 maps out a program of investments in infrastructure, human capital, and institutions to support the development of a sustainable non-oil economy. These long-term efforts will need to be complemented by carefully focused actions to attract and facilitate new private investment. Timor-Leste has made some progress in this area and could do even better by focusing its investment promotion efforts in areas with clear potential, strengthening investment facilitation, and using a more problem-driven approach when designing reforms to improve the business enabling environment.

Figure 5: Private and Public Investment in Timor-Leste, % of non-oil GDP



Source: World Bank. World Development Indicators online database.

Figure 6: Private and Public Investment, % of non-oil GDP (Timor-Leste vs. Comparator Countries, 2014)



Lao PDR = Lao People's Democratic Republic.

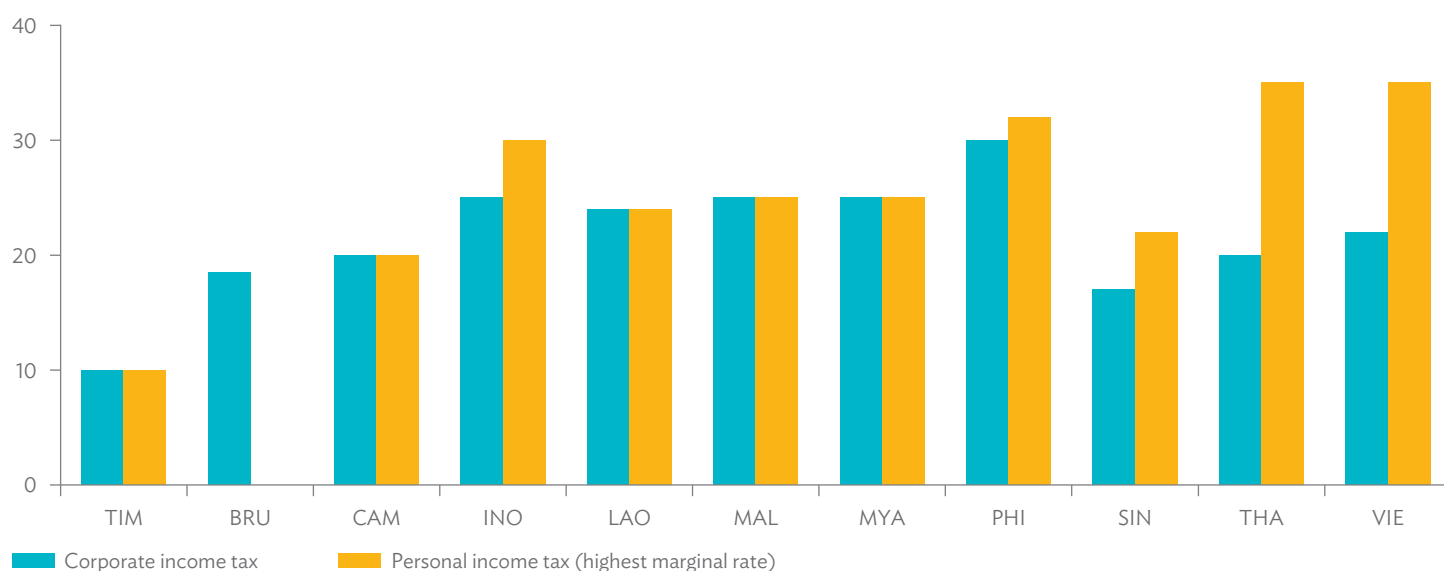
Source: World Bank. World Development Indicators online database.

THE LEGAL AND POLICY FRAMEWORK FOR PRIVATE INVESTMENT

Timor-Leste has relatively few restrictions on foreign investment and has offered a range of incentives to stimulate investment. In 2008, corporate and personal tax rates were reduced from 30% to 10%, which compares with an average corporate tax rate of 22.7% in the ASEAN region (Figure 7). Import tariffs were also reduced from 12.4% to 5.1%, which is low when compared to the tariffs applied by some other ASEAN members and may have dampened the incentives for investment in import substituting production.

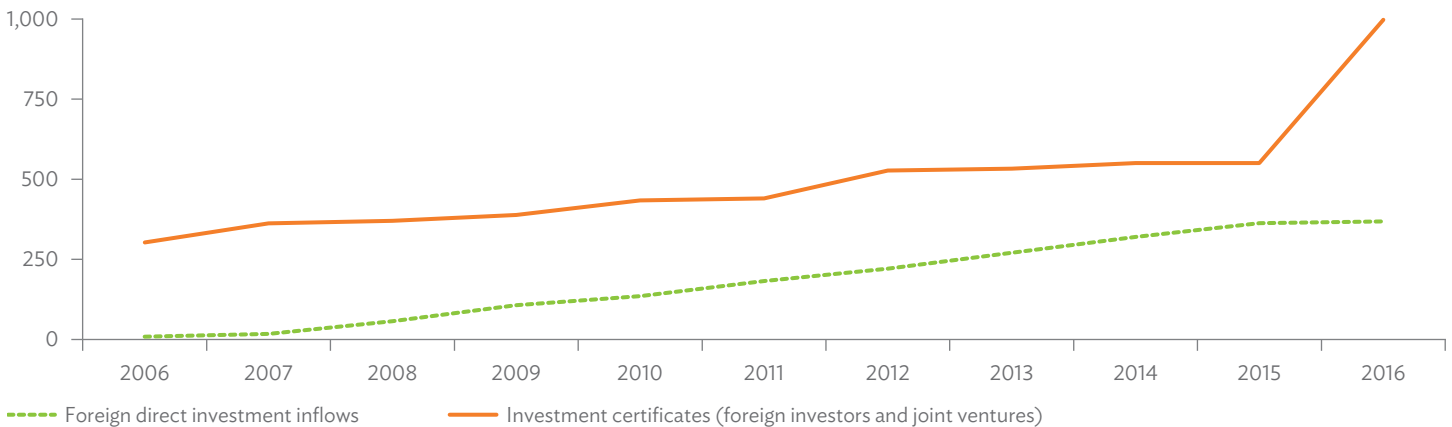
The 2011 Private Investment Law gave qualified domestic and foreign investors the opportunity to apply for an Investment Certificate that would grant additional incentives including income tax holidays and exemptions from import duties and sales taxes. The certification process was administered by Timor-Leste's investment promotion agency, and significant staff resources were devoted to screening and reviewing investor applications. However, an analysis of approvals between 2007 and 2016 suggests that many investments were either not completed or did not deliver the expected level of investment (Figure 8). This raises questions about the purpose and value addition of the certification process.

Figure 7: Income Tax Rates, %



BRU = Brunei Darussalam, CAM = Cambodia, INO = Indonesia, LAO = Lao People's Democratic Republic, MAL = Malaysia, MYA = Myanmar, PHI = Philippines, SIN = Singapore, THA = Thailand, TIM = Timor-Leste, VIE = Viet Nam.

Source: World Bank. World Development Indicators online database.

Figure 8: Investment Certificates vs. Actual Foreign Direct Investment Inflows in Timor-Leste (\$ million, cumulative)

Sources: Central Bank of Timor-Leste; TradeInvest Timor-Leste; ADB staff estimates.

A range of reforms has been implemented since 2015 to strengthen investment promotion and facilitation. Timor-Leste's investment promotion agency has been restructured and new staff have been recruited using transparent and competitive selection processes. The revamped agency has led several high-profile initiatives including publication of Timor-Leste's first investment guide and organization of investor conferences in Dili, Australia, and Singapore.

In 2017, a new private investment law was approved. The new law retains many of the features of the 2011 Private Investment Law. Investments with more than 25% foreign ownership are classified as foreign investment but the law does not restrict the sectors that are open to foreign investment. Other laws and regulations, including licensing procedures, do restrict the scope of activities of national and foreign investors, and the investment promotion agency is now tasked with maintaining a consolidated list of these restrictions.

Under the new law, Investment Certificates have been replaced by a new Declaration of Benefits available for investors in sectors that are seen as a priority for non-oil growth—agriculture, fisheries, forestry, manufacturing, hospitality, and tourism. Investors who successfully apply for a Declaration of Benefits will receive a similar package of benefits as investors who received certificates. This includes income tax holidays of 5–10 years, import duty and service tax exemptions, and a minimum of five work permits for skilled foreign workers.

Many important aspects of the new regime, including the eligibility criteria for investors seeking a Declaration of Benefits and the process for reviewing investor applications, will be defined through supplementary regulations that are yet to be promulgated. Streamlining the regulations for issuance of declarations of benefits should enable the investment promotion agency to focus on core activities.

STRENGTHENING INVESTMENT PROMOTION

Successful investment promotion relies on effective communication with prospective investors. Timor-Leste has made progress in this area since 2015 and now has a strong foundation to build on. Ensuring that investors can readily access comprehensive information about the legal and regulatory requirements for doing business is a crucial first step. Increasing the breadth and depth of information available through the investment promotion agency's website is an immediate priority.

Proactive efforts to identify and attract investors can have a large impact if they are realistic and well-targeted. There is strong potential in all priority sectors, but in many cases the underlying policy frameworks and sector plans are still being developed or reviewed. Promotional efforts should be focused on priority sectors where a clear policy and regulatory framework for private investment is already in place, such as tourism.

IMPROVING INVESTMENT FACILITATION

While some investors who received certificates did not complete their investment, there is also an unknown number of prospective investors who have did not invest due to actual or perceived difficulties in establishing and operating a business in Timor-Leste. Improvements in investment facilitation can help address both of these problems by making the process for establishing a new business easier and more transparent.

In Timor-Leste's case, there would be significant benefits to adopting a "whole-of-government" approach to investment facilitation. At the policy level, this would require a high-level commitment to strengthen facilitation with a clear message that all government agencies must help to facilitate legitimate private investments.

This high-level commitment could be operationalized through an intergovernmental mechanism for regularly reviewing problems that investors have encountered—e.g., in securing a license or approval needed to start their business—and identifying follow-up actions to resolve the problems. Regular intergovernmental meetings to review problems as they arise and to check on implementation of agreed follow-up actions would give investors the confidence that problems will be resolved and that they can avoid long delays and unnecessary frustrations.

LINKING INVESTMENT FACILITATION TO BUSINESS REFORM

Adopting a formal mechanism for whole-of-government investment facilitation would help generate a steady flow of information about the constraints that businesses in Timor-Leste face during establishment and operations. This is especially important in the case of pioneer investors planning to enter a sector that is thought to have broader potential.

Information collected through the facilitation process could be used as input into a more problem-driven approach to designing and implementing reforms to support economic diversification. This could include clarification and streamlining of general regulatory procedures such as taxation, environmental licensing and work permits, and sector specific issues such as licensing. Linking the prioritization of reforms to a steady flow of information about the challenges that businesses face during their establishment and operations would help to ensure that efforts to improve the business enabling environment are well-targeted and would complement the longer-term efforts to improve Timor-Leste's infrastructure, human capital, and institutions.

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Geographic remoteness and dispersion present perennial challenges to the efficient transport of people and goods across the Pacific. Among island economies separated by a vast ocean, maritime transport and trade are crucial to strengthening linkages within countries and islands, as well as with the rest of the global community. More efficient maritime transport requires investments in both physical infrastructure such as ports, connector roads, and harbor facilities, and soft infrastructure such as trade policy and customs reforms. A comprehensive approach to developing both types of infrastructure should help Pacific economies unlock greater benefits from international trade.

In cases where market outcomes cannot support minimum access, second-best approaches may be necessary to extend service delivery, even to the most remote island communities.

The policy briefs featured in this issue discuss the importance of sound policies, innovative service delivery, and sustainable infrastructure investments in enhancing connectivity in the Pacific.

Timor-Leste: Improving connectivity through trade policy

Introduction

Situated at the crossroads between Southeast Asia and the Pacific, the island of Timor has a long history of maritime trade with Southeast Asia, East Asia, and Europe. Deepening trade and investment linkages are also an important part of Timor-Leste's strategy for growing and diversifying its economy. Since achieving independence in 2002, Timor-Leste has been committed to joining the Association of Southeast Asian Nations (ASEAN) and the ASEAN Economic Community. The country has also begun the process for joining the World Trade Organization (WTO); it was granted WTO observer status in December 2016 and is preparing to negotiate for accession to full membership.

Joining ASEAN and the WTO will be important milestones in Timor-Leste's development. Achieving membership of the two organizations will require Timor-Leste to make binding commitments in a range of areas, including trade policy and intellectual property rights. In exchange for these commitments, Timor-Leste will gain secure access to export markets, and impartial and rules-based mechanisms to settle trade disputes. However, the accession processes will not directly address some of the key constraints to economic diversification in Timor-Leste and there is a risk that accession will strain public sector capacity at a time when the country is still transitioning from fragility to resilience.

This policy brief considers how trade integration and investments in connectivity can help Timor-Leste to achieve its goal of sustainable and inclusive development. Section 2 compares Timor-Leste's trade policies with those of other small island countries and shows how the country's policies, institutions, and actual trade flows have evolved during the past 10 years. Section 3 summarizes the key requirements for ASEAN and WTO membership, and outlines some of the policy changes that Timor-Leste will need to implement to meet these requirements. Section 4 reviews previous analysis on supply-side constraints to increasing Timor-Leste's non-oil exports and assesses progress in easing these constraints. Section 5 ends with some brief conclusions.

Trade policies and flows

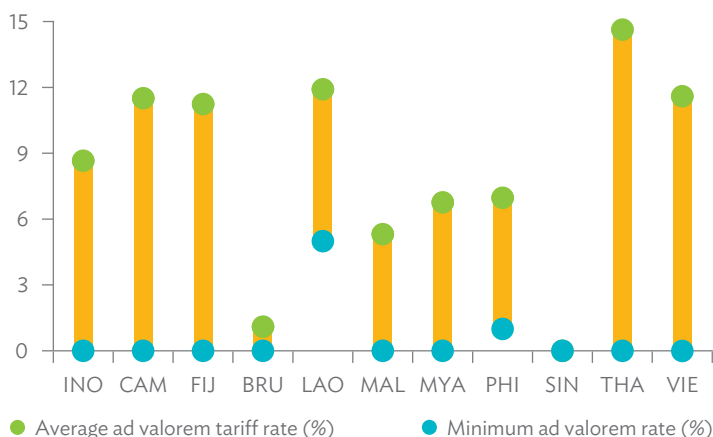
Trade policies. Timor-Leste qualifies for preferential access to a range of developed economy markets through the generalized system of preferences (GSP) for least developed countries (LDCs). This includes access to the GSP schemes of Australia, Japan, and New Zealand, and the European Union's Everything but Arms scheme for LDCs. These schemes do not require Timor-Leste to grant reciprocal access to its own market.

Since achieving independence, Timor-Leste has adopted liberal trade policies. There are minimal nontariff barriers, and no formal quantitative restrictions on merchandise trade. During 2002–2008, a uniform tariff of 6% was applied to all goods imports with additional excises on tobacco, alcohol, and a limited number of luxury goods. A sales tax of 6.0% was levied on the value of imported goods (including duty and any excises), resulting in an effective tax on imports of at least 12.4% of the import value.

In 2008, the ad valorem tariff and sales tax rates were reduced to 2.5% each, and some excises were eliminated. The cumulative effect of these changes was to reduce the minimum effective tax on imports from 12.4% of the import value to 5.1%. This is relatively low compared with the import tariffs that ASEAN members levy on non-ASEAN members, or that some other small island economies apply to countries qualifying for "most favored nation" treatment under the WTO rules (Figure 1). (This requires countries to extend trade benefits to all their WTO trading partners equally, although some exceptions—such as GSPs and free trade agreements—are allowed.) Trade in services has also been relatively liberal, with few explicit restrictions on provision of services by foreign businesses.

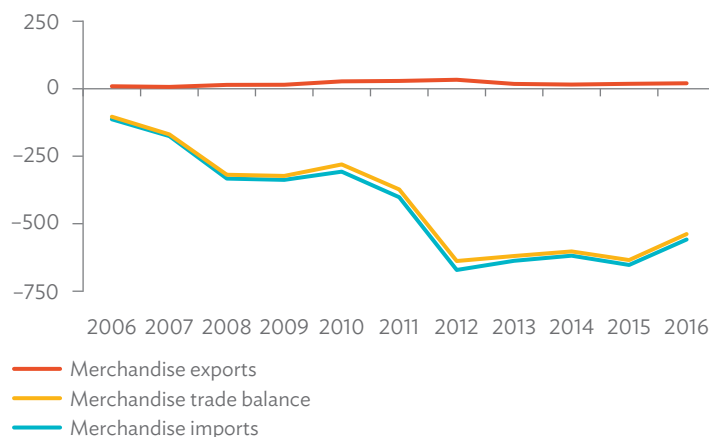
Timor-Leste is currently implementing an ambitious program to reform and modernize its customs administration and border management. Upgraded border facilities have been built at the main border crossing points with Indonesia, and in 2016, the government approved an updated customs procedures code supporting the consolidation, simplification, and automation of customs procedures. Approval of the updated code has been followed by the launching of a new IT platform for customs in 2017, and a government resolution to restructure the customs administration as a semiautonomous agency to improve efficiency.

Figure 1: “Most Favored Nation” Import Tariffs of Selected Countries



BRU = Brunei Darussalam, CAM = Cambodia, FIJ = Fiji, INO = Indonesia, LAO = Lao People’s Democratic Republic, MAL = Malaysia, MYA = Myanmar, PHI = Philippines, SIN = Singapore, THA = Thailand, VIE = Viet Nam. Sources: World Trade Organization and ADB estimates.

Figure 2: Timor-Leste’s Merchandise Trade (\$ million)



Source: Central Bank of Timor-Leste.

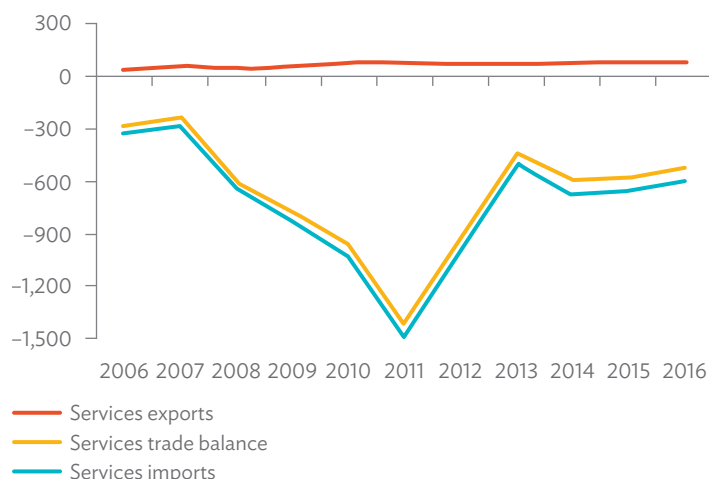
Customs modernization will lay the foundation for more efficient trade facilitation and the eventual development of a national single window for cross-border trade. Strengthening quarantine functions is an immediate priority, and work is already under way to update the policy and legal framework and strengthen capacity. Despite these positive steps, cross-country surveys suggest that Timor-Leste is still at a relatively early stage in strengthening trade facilitation and lags behind most other ASEAN members (ESCAP 2015). A national trade facilitation committee has been established to coordinate trade-related reforms, but further work is needed to operationalize the committee and develop a prioritized work program.

Trade flows. Timor-Leste’s trade in goods and services has grown significantly since independence. However, as Figures 2–3 show, most of this growth has been driven by a surge in imports that is linked to increases in public spending. The rise in overall imports was accompanied by growth in imports from the ASEAN region in particular (Figure 4).

Despite recent trade growth, Timor-Leste’s trade openness, as measured by the ratio of imports and exports to non-oil GDP, is not exceptional considering its income level and population (Figure 5), while the country’s low level of exports is somewhat unusual (Figure 6).¹ Supply-side constraints are the main cause of slow export growth. However, efforts to promote exports must also contend with the recent appreciation of Timor-Leste’s real exchange rate.

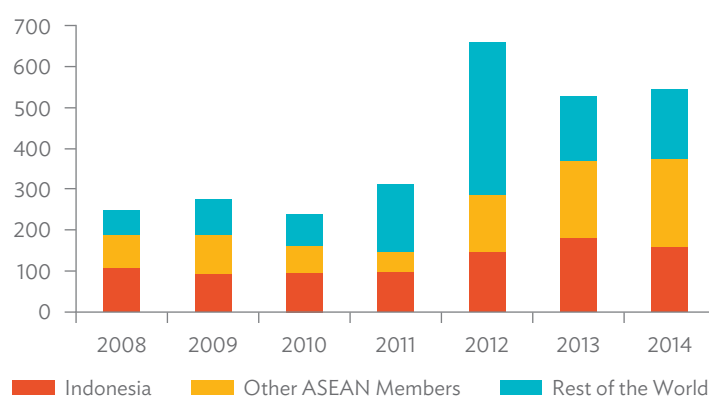
Timor-Leste uses the US dollar as its official currency, and a strong dollar has contributed to a 26.2% appreciation of Timor-Leste’s trade weighted real effective exchange rate since March 2013 (Figure 7). An alternative measure of exchange rate competitiveness—the Whopper® index—provides additional evidence that dollarization is placing Timor-Leste at a competitive disadvantage vis-a-vis some of the neighboring economies in Southeast Asia (Figure 8).

Figure 3: Timor-Leste’s Services Trade (\$ million)



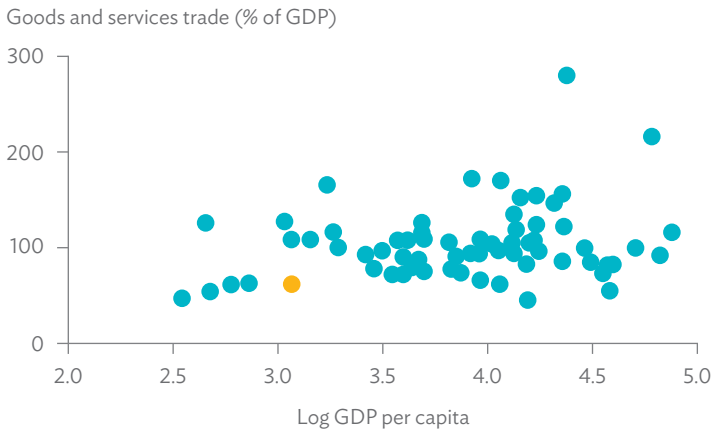
Source: Central Bank of Timor-Leste.

Figure 4: Timor-Leste’s Imports, by Country (\$ million)



ASEAN = Association of Southeast Asian Nations. Source: Timor-Leste trade statistics, various years.

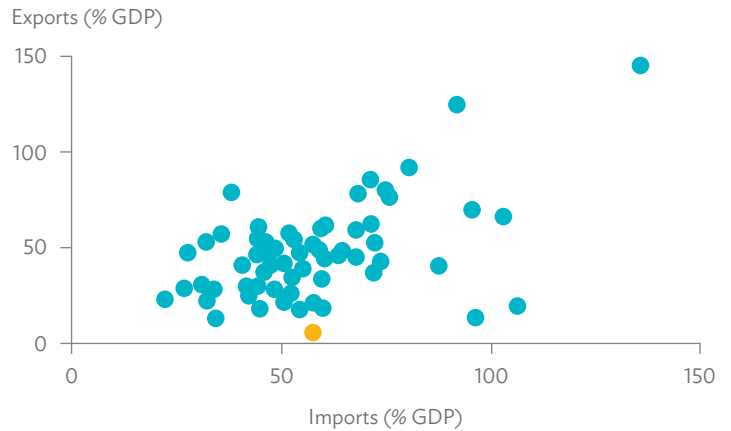
Figure 5: Trade Openness vs. per Capita Income



● Other countries with population of less than 5 million ● Timor-Leste

GDP = gross domestic product.
Sources: World Development Indicators; Timor-Leste National Accounts 2010–2015.

Figure 6: Exports vs. Imports



● Countries with population of less than 5 million ● Timor-Leste

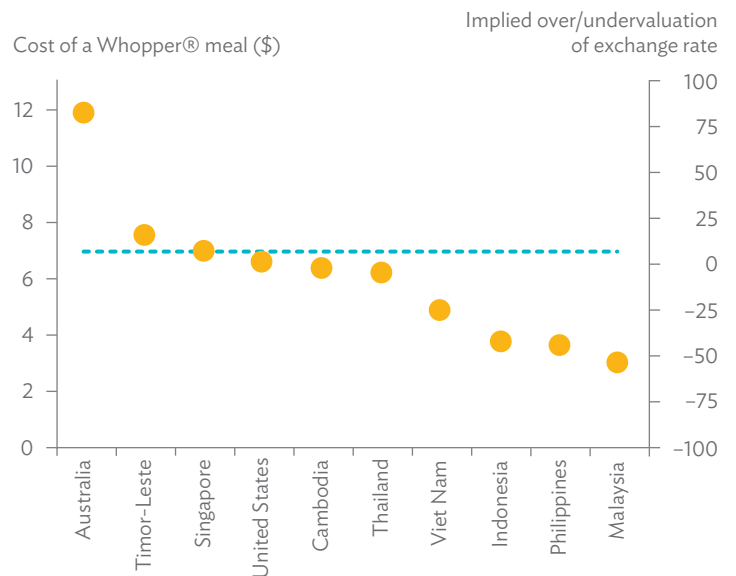
GDP = gross domestic product.
Sources: World Development Indicators; Timor-Leste National Accounts 2010–2015.

Figure 7: Timor-Leste Real Effective Exchange Rate (December 2001 = 100)



Source: Central Bank of Timor-Leste.

Figure 8: The Whopper® Index



Sources: Burger King; International Monetary Fund; State Bank of Vietnam; ADB estimates.

Accession to ASEAN and the WTO

Accession to ASEAN and the WTO will lead to changes in Timor-Leste’s trade policies and market access. The broad requirements for ASEAN and WTO membership are discussed in more detail below. However, it is important to note that the precise policy changes that Timor-Leste will need to implement, and the time frames for implementation, will not be certain until negotiations with the existing members of each grouping have concluded. This means that it will be important for Timor-Leste to have a clear sense of its own priorities before beginning to negotiate the terms of its accession.

As a WTO member, Timor-Leste will need to comply with a core set of agreements regulating the trade in goods, trade in services, and trade-related intellectual property. However, as a Least Developed Country (LDC), Timor-Leste will benefit from special conditions for WTO accession that were agreed by WTO members in 2012. These conditions reduce the market access requirements for acceding members and allow for additional flexibility through transition periods following accession.²

Joining ASEAN and the ASEAN Economic Community will require Timor-Leste to sign agreements on trade in goods and services that use the standards and mechanisms established through the WTO but aim for deeper levels of integration. The ASEAN Economic Community also extends into areas not covered by the WTO, including investment and labor mobility. A full discussion of the legal instruments and accession processes for the WTO and ASEAN is beyond the scope of this briefing, but key points relating to trade in goods and services are discussed below.

For trade in goods, both ASEAN and WTO membership will require Timor-Leste to forswear the use of quantitative restrictions and nontariff barriers, and make binding commitments on future tariff policies. For the WTO, Timor-Leste will commit to maintaining its import tariffs at or below an agreed schedule of “bound rates.”

Since Timor-Leste is an LDC, the requirements for average bound rates will be far above the current import tariff of 5.1%. While the bound rates for specific tariff lines can vary, in practice it seems likely that little or no immediate reduction in import tariffs will be required. For ASEAN, Timor-Leste will have to negotiate the time frame for eliminating tariffs on imports from other ASEAN members, and any exclusions for goods where tariff liberalization will not be required. Timor-Leste will also need to implement ASEAN and WTO standards for sanitary and phytosanitary protocols, customs valuation, and trade facilitation.

For trade in services, Timor-Leste will need to negotiate with interested WTO members on which of the 160 subsectors that are defined in the General Agreement on Trade in Services will be assigned for "national treatment" (i.e., equivalent treatment of domestic and foreign service providers) but will not be required to provide more extensive national treatment than the WTO's current LDC members. In the case of ASEAN, Timor-Leste will probably be required to match the commitments that ASEAN members have made to each other through the ASEAN Framework Agreement on Services. This includes liberalization of trade in business and professional services, construction, distribution, telecommunications, tourism, and maritime transport services.

Accession to ASEAN and the WTO will provide Timor-Leste with a range of benefits. As a WTO member, Timor-Leste would retain any preferential market access received through generalized system of preferences programs, and access the markets of all WTO members on a "most favored nation" basis. As an ASEAN member, Timor-Leste would have tariff-free access to the markets of the other ASEAN members, and could also negotiate for accession to the free trade agreements that ASEAN members have signed with Australia, the People's Republic of China, India, Japan, the Republic of Korea, and New Zealand. Besides securing and enhancing Timor-Leste's access to export markets, accession should also support improvements in Timor-Leste's policies and institutions for managing trade. WTO membership would allow access to impartial, rules-based mechanisms for trade dispute resolution.

Improved market access, better trade institutions, and increased confidence that policies will be maintained may help to stimulate private investment and increase competition. However, neither ASEAN nor WTO accession will directly address many of the supply-side constraints that have impeded the development of Timor-Leste's exports since independence. A selection of these constraints are discussed in the following section.

Tackling supply-side constraints

LDCs such as Timor-Leste typically need to address a wide range of issues in order to meet the requirements for WTO membership and make the most of the resulting opportunities. The Diagnostic Trade Integration Studies (DTIS) carried out through the Enhanced Integration Fund are one way of identifying and prioritizing the reforms, investments, and capacity development needed to strengthen trade. If done well, these studies can help to ensure that there is a consensus on priorities and that reform initiatives are well coordinated.

A DTIS for Timor-Leste was completed in 2010, well before the country applied for ASEAN or WTO membership (World Bank 2011). In addition to trade policy, the study considered supply-side constraints to export growth including transport connectivity, labor costs, the availability of skilled labor, financial sector development, and aspects of the business enabling environment such as business registration and contract enforcement. The study also featured more in-depth analyses of (i) the agriculture sector, which was identified as the main channel for increasing non-oil merchandise exports in the short term, and (ii) the value chains for production and processing of coffee, mung beans, and cattle. Of these, coffee was chosen because it showed the greatest potential for export growth and poverty reduction, while mung beans and cattle were selected as value chains with a recent history of production for export (mung beans) or an existing base of production and exports that could be expanded (livestock).

There has been solid progress in addressing some of the issues identified in the 2010 study. The road corridors linking Dili to Batugade, and to Gleno and Ermera, were identified as top priorities for agricultural trade, and upgrades of both roads are now close to completion. Work on other national road links is also progressing well. A new port is being developed close to Dili that will provide ample capacity for containerized cargo shipping and new airports in Oecusse and Suai have also been developed. However, much work remains to be done to improve transport connectivity. The 2015 rural roads master plan reported that around 60% of core rural roads are in poor or very poor condition. Of these, many are in the coffee producing regions that were identified as a priority for rural road repairs in the 2010 DTIS.

Progress in stimulating smallholder agricultural production or facilitating larger-scale private investments has also been very slow. A 2005 study identified around 12,000 hectares of old coffee plantations, and 14,000 hectares of forestry plantations that passed into state ownership in 1999 but were not in productive use (Nixon 2005). In some cases, this land is occupied or claimed by smallholder families and other private interests. Clarifying the land tenure for these parcels, and creating a supporting framework for bringing the land back into productive use, were identified as priorities in the 2010 DTIS. Progress has been limited, but the recent approval of a package of land laws and the ongoing rollout of a national cadastral survey should create the necessary preconditions for bringing old plantations back into production.

Despite significant development partner support for agricultural development programs in Timor-Leste, most of the DTIS recommendations to develop the coffee sector are yet to be fully implemented, and programs to develop the mung bean and livestock value chains are still at an early stage. Although there has been some good progress, cross-cutting constraints to the development of agricultural exports—including limited capacity for sanitary and phytosanitary inspection and certification, and weaknesses in the public extension system—still need to be addressed. The experience in the agriculture sector highlights the importance of maintaining close coordination between and among the government, development partners, and private sector stakeholders during the planning and implementation of programs to develop export sectors. This can be especially challenging for sectors or products where private production is still in its early stages, but is no less important.

Agriculture and agroforestry continue to have great potential for export growth and poverty reduction. However, an updated assessment of trade potential would also have to consider other primary products such as fisheries, aquaculture, and minerals; manufactured products such as cement; and services such as tourism. The potential for development of these sectors is clear, but there are still significant gaps in sector policy and regulatory frameworks. There is also a need to develop realistic strategies to develop these sectors that center on addressing sector-specific constraints to increased private investment.

Conclusion

Timor-Leste provides an interesting case study on the limits of liberal trade policies. While there is no reason to think that protectionist policies (e.g., high tariff and nontariff barriers) would have been more effective in stimulating sustainable economic growth, it is also clear that low trade barriers and preferential access to major export markets have not been sufficient to spur development of the country's export sectors since 2002. Although Timor-Leste's limited export capacity makes it an outlier, other LDCs and fragile and conflicted states face similar challenges in completing the investments and reforms needed to catalyze export growth and take advantage of the market access provided by multilateral trade agreements.

Membership in ASEAN and the WTO is a sensible objective for Timor-Leste, but careful strategic planning will be needed to define the country's negotiating objectives and make the most of the opportunities that come with membership. The WTO's provisions for LDCs mean that Timor-Leste should retain significant flexibility in its tariff policies after completing the accession process. While the specific conditions for accession will be negotiated with other WTO members, it is already clear that many of the key constraints to expanding non-oil exports fall outside the scope of the WTO and ASEAN accession processes. This means that it is important to recognize that (i) WTO and ASEAN accession will be a long-term undertaking, and (ii) there will be an ongoing need to build capacity for policy analysis and the design and implementation of trade-related initiatives.

Updating the 2010 DTIS is one approach that the Government of Timor-Leste could use to develop a carefully prioritized and sequenced program to strengthen trade competitiveness. However, the government and its partners may be able to achieve similar results through a more streamlined process drawing on the extensive analyses of trade policy, the business enabling environment, and specific sectors and value chains that are under way or have recently been completed. In either case, it will be important to use inclusive and participatory approaches, where possible, to ensure transparency and support the development of a strong consensus on the prioritization and sequencing of reform initiatives.

Lead author: David Freedman.

Endnotes:

- ¹ Petroleum sales from the Joint Production and Development Area that Timor-Leste shares with Australia are not included in the export figures. Petroleum production is currently forecast to end in 2021.
- ² For agricultural products, acceding LDC members are required to bind 100% of their tariff lines, with an overall average bound tariff rate of 50%. For non-agricultural products, acceding LDC members can choose between binding 95% of their tariff lines, with an average bound rate of 35% or binding a higher proportion of their tariff lines with a commensurate increase in the average bound rate. For services, WTO members have recognized that LDCs face difficulties in implementing national treatment and have stipulated that (i) acceding LDCs will not be required to offer service market access beyond that offered by existing LDC members; (ii) LDCs will be able to determine their own priorities for service trade liberalization; and (iii) LDCs will be offered technical assistance to implement any regulatory changes and capacity development programs needed to implement national treatment.

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Pushing the boat out: Franchise shipping schemes in the Pacific

Most Pacific economies comprise small islands dispersed over large stretches of ocean. The distance between and among islands, and the limited land area and local capacity to host and maintain airports, point to shipping as the main means of moving people and goods, accessing essential services, and harnessing vital socioeconomic resources and opportunities. However, voyages to remote, outer islands involve travel through open waters, requiring large vessels that are expensive to operate. These operations are not commercially viable.

Remote island communities lack reliable maritime services and commonly pay high fees for ad hoc charter services. This limits access to social services and economic opportunities, which contributes to these communities' high rates of hardship and vulnerability, and exacerbates the impacts of disasters and climate change.

This policy brief examines ADB's recent efforts to bring shipping services to remote areas in Papua New Guinea (PNG) and Solomon Islands through franchise shipping schemes (FSSs). Although outcomes appear positive, the experiences of both countries provide important lessons for the design and implementation of similar arrangements in the future.

An overview of franchise shipping schemes

FSSs allow private operators to provide subsidized shipping services along specified routes that service remote areas. Such schemes directly open travel to these areas, and shift the risk from operators to governments.

In PNG and Solomon Islands, FSSs have been implemented through performance-based contracts (PBCs), which specify (i) vessel capacity and safety certification, (ii) areas and routes to be covered, (iii) locations and frequency of calls, (iv) mechanisms for monitoring (e.g., verifying calls, submitting voyage data, spot compliance audits), and (v) tariff structures for passengers and cargo. Bidders indicate the amount of subsidy they would require based on their operating costs and assumptions on average vessel load. Due to lack of data on these seldom-traveled routes, PBCs allow adjustments on subsidy payments early in the contract period as actual revenues and costs become known.

Although subsidies pose a fiscal burden on the government, payments under an FSS are expected to decrease over time as economic activity is stimulated and routes become commercially viable. The PBCs also allow contractors to retain any earnings in excess of what is needed to break even (with subsidies), providing an incentive to keep operating costs low and maximize revenues by attracting more passengers.

Cases in the Pacific

Papua New Guinea. In 2008, a community water transport project cofinanced by ADB and the OPEC Fund for International Development introduced the FSS concept in PNG. The next year saw four PBCs awarded (out of six routes put up for bid) that required a total of 5.2 million kina (about \$1.9 million) in subsidies.

The initial tender faced a number of difficulties, including a lack of qualified operators and viable vessels to ply the routes; a contract time frame (3 years) too short for bidders to secure financing and recoup any investments; and reluctance of potential operators to contract with the government. By 2011, only two routes remained operational: two PBCs had been terminated for nonperformance and retendering was unsuccessful.

However, the FSS saw improvements over time as the government became more experienced in implementation and contractors began to realize the benefits of participating in the scheme. By 2015, one route (the South Coast route in New Britain Province) no longer needed a subsidy and six other routes were operating under the FSS.

Despite the difficulties experienced during the tendering process, ADB analysis upon completion of the project showed that the FSS approach provides a model for governments to efficaciously meet their community services obligations. Even during the subsidy phase, costs per traffic unit (i.e., passenger or unit of cargo) under the scheme were well below those for government-provided services (adjusted to 2010 prices) such as the government trawler fleet deployed in the 1980s and the Border Development Authority fleet (Table 1). Costs for the FSS were also less volatile. In addition, the subsidy requirement per traffic unit of the FSS approach was only 21% of the cost of the government trawler fleet, and 13% of the cost for the Border Development Authority fleet.

Table 1: Cost per Passenger or Unit of Cargo in PNG
(2010 kina)

Route	Minimum	Maximum	Range
Successful FSS routes	145	254	109
Government trawler fleet	926	1,446	520
Border Development Authority Fleet	1,081	2,801	1,720

FSS = franchise shipping scheme, PNG = Papua New Guinea.
Source: ADB estimates.

Apart from the socioeconomic benefits to the serviced communities from affordable and regular maritime transport, government capacity to administer the FSS efficiently improved. This was evidenced by development of procedures to analyze potential routes, models to set rates and estimate subsidies, and templates for standard bidding documents and reports. Government staff were also trained to apply bidding and monitoring procedures.

Solomon Islands. In 2010, a domestic maritime sector support project, funded by ADB and the European Union, commenced using FSSs to service routes not covered by existing operators, to stimulate economic activity along those routes.

However, as in the case of PNG, there were difficulties in the initial tender because of operator nonperformance as well as delays in implementation due to absence of qualified bids. Further, the life of the contract was even shorter than those in PNG, only 2 years, due to government funding constraints. Five PBCs were awarded but vessels were damaged or changed hands during the life of the PBC, and by the end of the first year, four of the initial contracts had been terminated.

The terminated contracts were successfully retendered, and in 2013, all routes were operational and passenger traffic reached a high of 20,000 (Figure 1). This progress was derailed in 2014 as cyclone-related vessel damage resulted in the suspension of two routes and discontinuation of another. However, more routes were added and by 2015 seven routes were operational. Of these, three required lower subsidies. The direct income of voyages to the Temotu Outer Islands was observed to have increased, with the third voyage earning about double the income of the first two voyages. This was due to high inbound shipments of agricultural products back from the rural communities, suggesting growing confidence in the service and increased economic activity.

Delays from contract termination and retendering significantly limited FSS activity in 2016, but as of May 2017, five FSS routes were operational, and contracts had been awarded for the remaining three routes. The Solomon Islands government is hopeful that all routes will be operational this year.

Analysis of the 2010–2016 financial performance of Solomon Islands routes under the FSS showed that the profitability (based on income in excess of the subsidized breakeven point) of all the routes averaged 29.8% of total voyage costs.

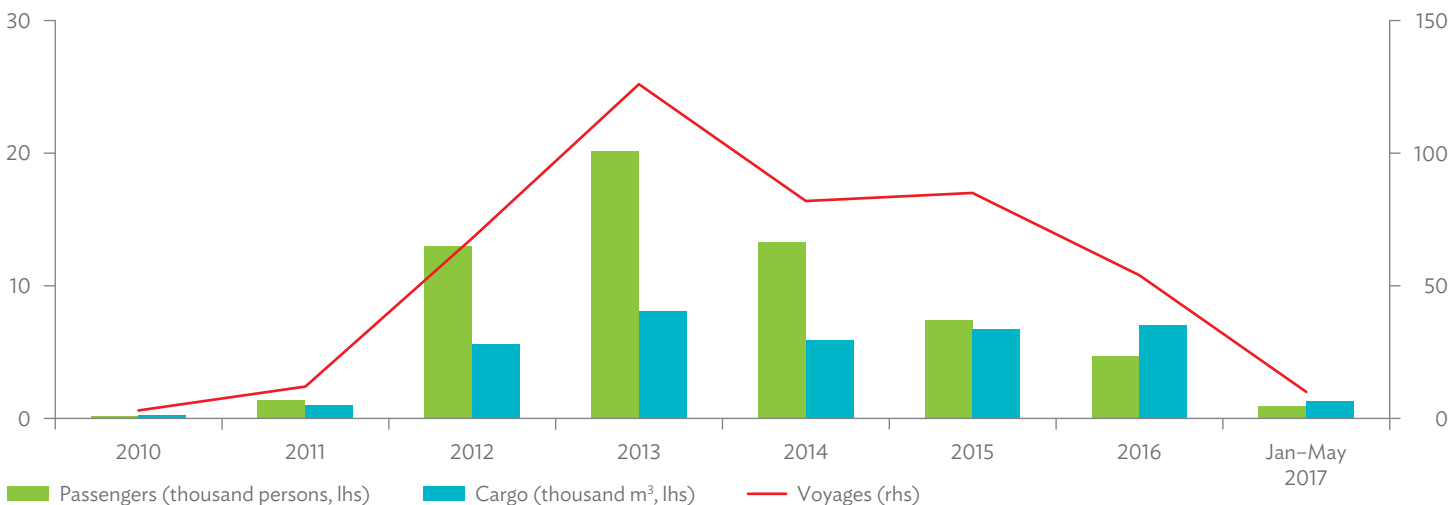
Lessons learned

Pacific experiences with FSSs thus far show that subsidized services have been useful in providing maritime transport to outer islands. The evidence from PNG and Solomon Islands shows that well-structured FSSs can provide an efficacious means of connecting remote outer islands to markets and social services; in some cases, the routes have even become profitable.

One key lesson is the need to strike a balance between development and commercial goals. Flexibility on the terms of the PBCs helped address the lack of interest that met initial tenders. For instance, shipping routes were restructured to include some profitable ports of call, compared with initial routes focused exclusively on nonviable areas. This invited more bids in both PNG and Solomon Islands, and eased the burden of subsidy. Longer contract periods could also be considered, where possible, to improve contractors' access to credit and allow time to recoup investments. To work around the constraint of their 2-year time frame, new PBCs in Solomon Islands will now feature a renewal option. Further, thorough analysis is needed to establish cost and revenue benchmarks. Tracking emerging data on FSS routes and operations will be a valuable resource in informing estimates.

Experience in the Solomon Islands project emphasizes the importance of streamlining procedures: prequalification requirements were lowered to attract participants to the FSS, bid documents were simplified, pre-bid meetings were conducted to clarify the scope of services required, and operators were given more time to prepare their bids. The Solomon Islands government also purchased and leased equipment to operators to help them comply with PBC-mandated maritime safety standards, and raised awareness among insurance brokers on maritime safety reforms to improve operators' access to insurance. Operators in PNG and Solomon Islands also benefited from having a financial system that enabled them to put up movable assets (e.g., vessels and the contracts themselves), through secured transactions frameworks, as collateral for loans.

Figure 1: Passenger and Cargo Traffic under the Solomon Islands Franchise Shipping Scheme, 2010–2016



lhs = left-hand scale, m³ = cubic meter, rhs = right-hand scale.

Source: Government of Solomon Islands, Ministry of Infrastructure Development. 2017. *Domestic Maritime Support (Sector) Project Phase 2—Franchise Shipping Scheme Monthly Progress Report* (various months). Honiara.

Local capacity building for management, monitoring, and evaluation is important to ensure country ownership and sustainability of FSSs. The gains realized under the FSS are partly due to government institutions in PNG and Solomon Islands developing experience in implementing the scheme. Enforcement of maritime administration and safety regulations is another major piece of the institutional framework surrounding the FSS, and both PNG and Solomon Islands continue to receive technical assistance to improve their capacity to exercise these vital functions.

In addition, coordination within the government—as well as with development partners and among the partners themselves—remains important as this would reduce resources used in redundant or competing efforts. For instance, grant-financed vessels that can be operated at lower cost have diverted traffic from FSS routes. The reduced traffic, in turn, has raised subsidy requirements necessary for FSS operators to maintain viability.

Finally, complementary investments would help sustain the FSS and promote demand in remote communities. This includes rehabilitation and reconstruction of water transport infrastructure (and construction of new structures, if needed). However, these investments must consider relevance to the FSS routes and needs of vessels operating in the area; the PNG project was adversely affected when government policy shifted from linking infrastructure investments to the FSS routes to instead constructing new facilities in other areas that were also incompatible with local vessels. Mitigating disaster risk, and providing for operations and maintenance of these facilities, is also crucial to ensuring that remote communities can stay connected via efficiently operating shipping services over the long term.

Lead author: Cara Tinio.

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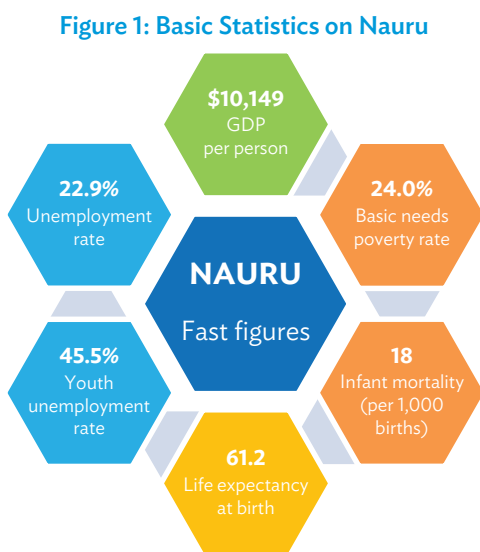
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Sustainable and climate-resilient connectivity for Nauru

Nauru, with a population of about 11,400, is far from all international partners and markets—the closest neighboring country is the Marshall Islands at 1,300 kilometers (km) away, while it is about 4,000 km to Sydney, Australia. It also continues to face critical social challenges particularly relating to formal employment and health outcomes (Figure 1).



GDP = gross domestic product.

Sources: Asian Development Outlook database and Secretariat of the Pacific Community National Minimum Development Indicators database.

Nauru's isolated, distant location and almost total reliance on maritime transport makes the effective functioning of its sole port in Aiwo critical to economic performance. Its fishing harbor at Anibare offers only some potential for an alternate off-shore light freight transfer point. Except for some passenger air traffic, all its economic, social, and cultural exchanges with the rest of the Pacific region and beyond are done by sea. Besides its current economy, any future economic development, food security, energy security, water security, basic health care, and education would also all rely almost exclusively on maritime transport. For example, 90% of the total food consumed in Nauru—and, indeed, 95% of the country's total imports—is brought in by ship. Total imports were estimated at \$95.9 million in FY2015 (ended 30 June).

However, the Aiwo port is frequently shut down by adverse sea and weather conditions, and the barges and lighters, which shuttle the break-bulk and container freight back and forth across the reef to the port from the cargo vessels anchored offshore, are limited in the conditions under which they can operate. In rough weather, the transfer process is slow, complex, dangerous to workers, subject to delays, and often damaging to the cargo. At times, transfer is not possible and operations are shut down. The offshore mooring for cargo vessels is over 60 years old and at risk of failure. When sea conditions become particularly difficult, cargo and container vessels cannot use the mooring system and must be left to drift, making any transfers more difficult and hazardous. The port itself was built around 115 years ago, and equipment breakdowns cause stoppages in both bulk (phosphate is moved by belts from the land

to vessels offshore, while fuel is piped ashore) and non-bulk freight flows. A reliable and climate-proofed maritime transport facility will help bring essential goods to the country in a more cost-effective manner, thereby increasing their affordability for the population.

To minimize disruptions in port services that have potentially wide-ranging social and economic implications in a small island economy, a port protected from winds and waves is to be constructed at Aiwo. Broadly, work will comprise construction of wharf with a dredged pocket berth, a breakwater to provide protection from waves, and building of onshore facilities including port buildings, container yard and security fence following international ship and port facility security (ISPS) requirements.

The port project, estimated to cost over \$70 million, is proposed to be cofinanced by ADB, the governments of Australia, Japan, and Nauru, and the Green Climate Fund. Although large-scale infrastructure projects like this are necessarily costly—particularly in the context of small economies such as Nauru—an upgraded port will be integral to supporting a fully functioning and connected economy. The project addresses a basic need at the country level for safer and more efficient transport of people and cargo. In this way, the port represents a lifeline facility that will help ensure not only regular supply of basic commodities such as food, fuel, and medical supplies, but also reliable access to overseas markets and services, including for education and health care. The protected port will be capable of servicing oceangoing ships and providing a relatively calm area for efficient and predictable loading and unloading of cargo all year round. Port closures should also be rare, and infrastructure would be resilient to the longer-term impacts of climate change (sea level rise and increasing rainfall).

Once the upgraded and protected port is in place, ships can travel directly to Nauru's coastline where they will be able to maneuver, dock, and be loaded and unloaded in calm conditions—without the need for trouble-plagued at-sea transfers of cargo between ships and barges. This will make the port's cargo operations more efficient and predictable, while also eliminating the current constant delays and interruptions. The new facilities will also make Aiwo a more attractive port of call and should be an incentive for a second shipping company, and possibly more, to begin services to Nauru. Overall, upgrading of the port is seen to lead to greatly lowered shipping costs, much fewer and shorter delays, and reduced damage and danger during the port's cargo transfer operations.

Similar harbor and port improvement projects of various sizes are under way in Tuvalu, and in the planning stages for Kiribati and Samoa. This reflects the importance of maritime connectivity to these sea-locked economies. Sustainable upgrades to maritime infrastructure supporting both domestic and international connectivity will help broaden the range of economic opportunities available to future Pacific generations, thereby promoting inclusive growth even for more remote communities.

Improving labor market outcomes in the Pacific: Policy challenges and priorities

Igniting and sustaining growth in the Pacific small island developing states (SIDS) remains a challenge. The unique geographic features—smallness, remoteness, and internal dispersion—continue to constrain sustained economic growth. Despite ongoing efforts, private sector development is still limited, and the public sector, subsistence agriculture, and traditional services dominate Pacific economies. Due to limited economic diversification and resultant high dependency on imports, SIDS economies must contend with low and volatile growth, and the lack of job opportunities has led to significant emigration from some SIDS.

Despite challenges posed by geographic constraints, some SIDS, such as Fiji and Palau, have established comparative advantages in some niche products and services (particularly tourism) and earned much-needed foreign exchange to finance their imports. However, even in these cases, growth has not necessarily led to effective poverty reduction. Although economic growth has created some job opportunities, local workers continue to leave and part of the created jobs have been filled by foreign workers. In Palau, for example, net remittance inflows have remained negative in recent years as outflows by foreign workers surpass inflows by overseas Palauans. How can we explain this paradox? Are local workers' skills limited or mismatched due to inappropriate education or the lack of vocational training? Are reservation wages of local workers too high because of emigration opportunities?

High fertility rates will drive rapid population growth in the SIDS, with the Pacific population estimated to double over the next 28 years. The structure of SIDS populations, where over 50% are below the age of 24, will increase pressure on the economies to generate enough jobs and to make them accessible to the domestic workforce. Further, geographic disadvantages may continue to prevent the SIDS from absorbing the growing workforce into the domestic labor market, and continued emigration may be inevitable.

Domestic job opportunities are key to channeling the benefits of economic growth to the local population, and establishing a link between growth and development. It is thus critical to identify major causes of workers' limited access to local jobs, and take needed actions to address them.

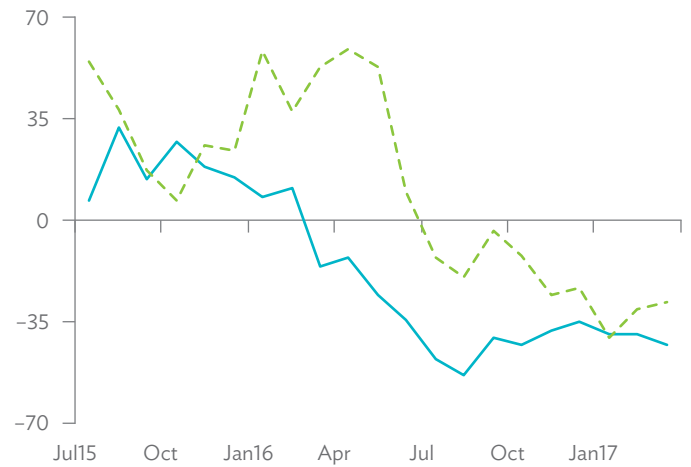
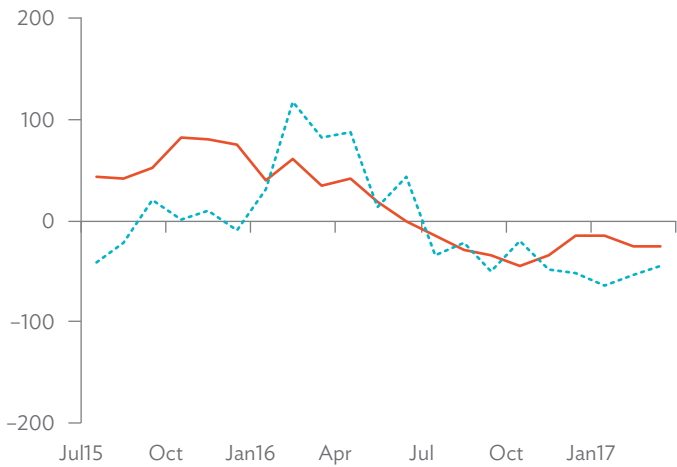
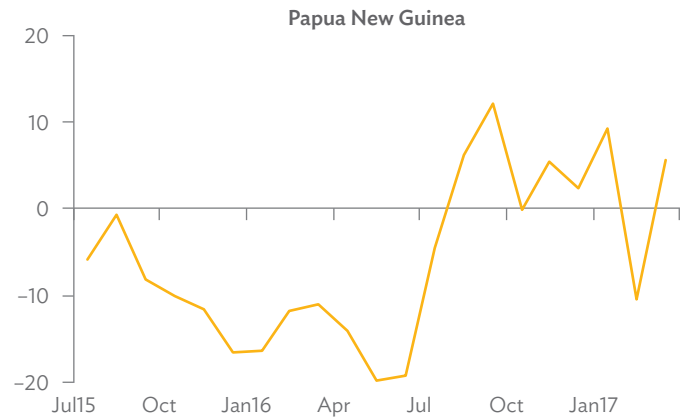
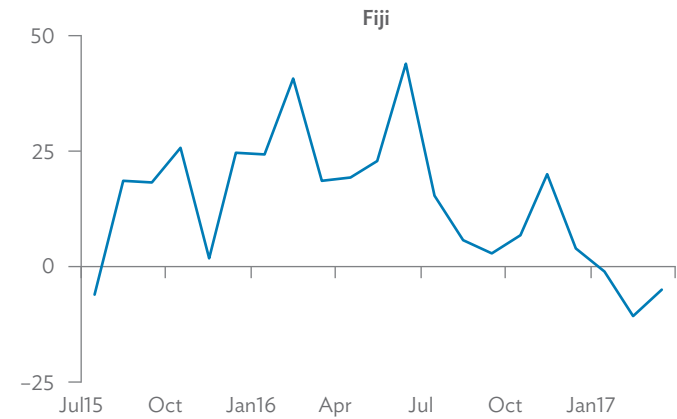
A new study titled *Improving Labour Market Outcomes in the Pacific: Policy Challenges and Priorities*, prepared under the knowledge partnership between ADB and the International Labour Organization, takes an in-depth look at labor market institutions, public employment services, migration policies, and inequalities affecting youth and women in the labor market. The study provides policy guidelines for improving labor market outcomes that focus on five key areas: (i) investing in underserved areas and tackling informality, (ii) strengthening labor market institutions to make growth more inclusive, (iii) adopting a migration policy that works for all, (iv) addressing inequities between men and women while tackling youth unemployment, and (v) better preparing for the future of work in the Pacific that is likely to be shaped by the need to tackle climate change.

Lead author: Norio Usui.

This page outlines the key issues examined in a forthcoming publication jointly produced by ADB and the International Labour Organization. Preliminary findings from this study were presented and discussed in a session under the “Creating accessible jobs” theme of the 2017 Pacific Update Conference.

Link to draft report: http://www.ilo.org/suva/publications/WCMS_559066/lang--en/index.htm

Nonfuel Merchandise Exports from Australia
(A\$; y-o-y % change, 3-month m.a.)

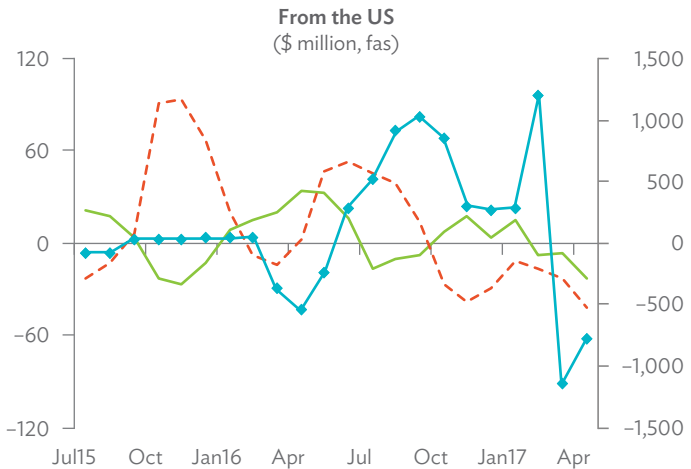
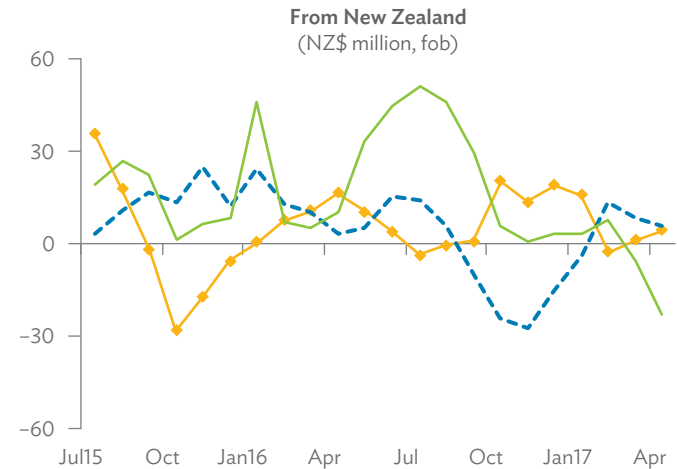


— Kiribati - - - Nauru

— Solomon Islands - - - Vanuatu

A\$ = Australian dollars, lhs = left-hand scale, m.a. = moving average, rhs = right-hand scale, y-o-y = year-on-year.
Source: Australian Bureau of Statistics.

Nonfuel Merchandise Exports from New Zealand and the United States
(y-o-y % change, 3-month m.a.)

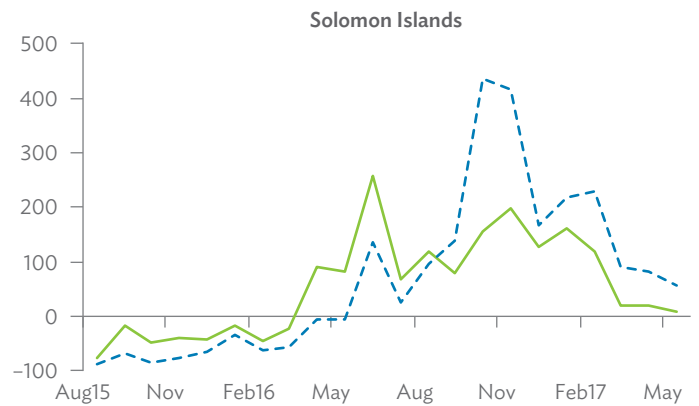
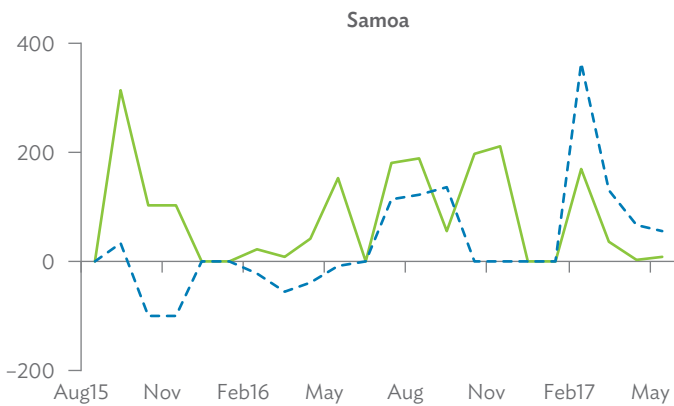
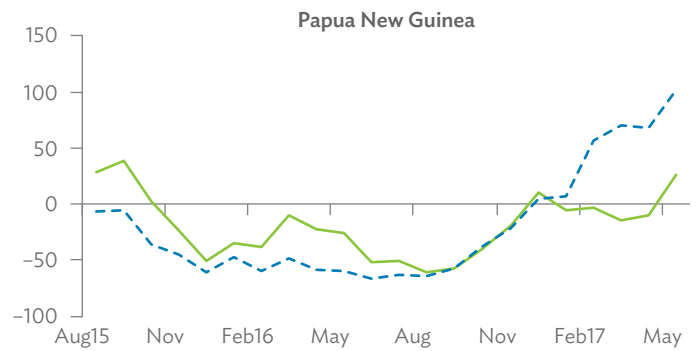
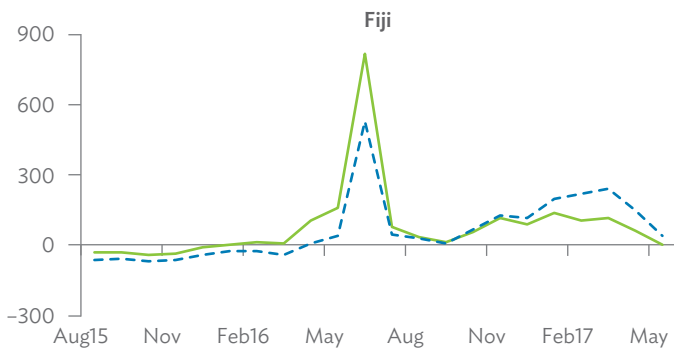


—◆ Cook Islands - - - Samoa — Tonga

— FSM —◆ RMI - - - Palau

fas = free alongside, fob = free on board, FSM = Federated States of Micronesia, m.a. = moving average, NZ\$ = New Zealand dollar, RMI = Republic of the Marshall Islands, US = United States, y-o-y = year on year.
Sources: Statistics New Zealand and US Census Bureau.

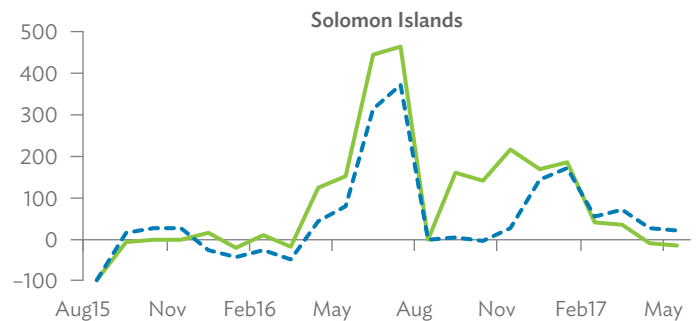
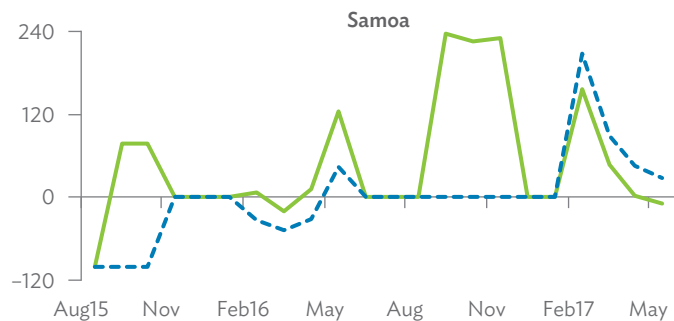
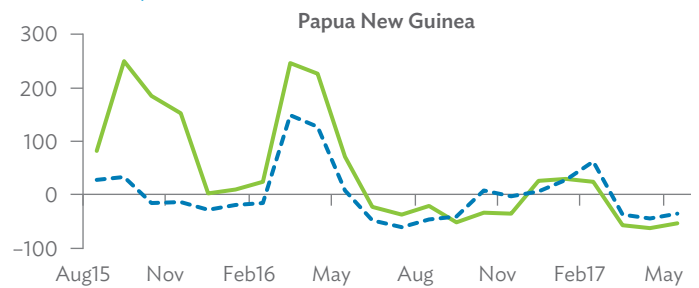
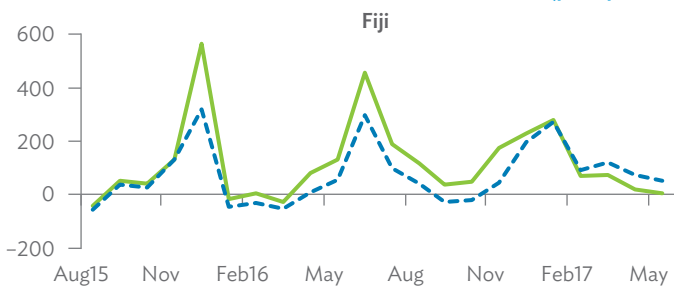
Diesel Exports from Singapore (y-o-y % change, 3-month m.a.)



— Volumes - - - Values

m.a. = moving average, y-o-y = year on year.
Source: International Enterprise Singapore.

Gasoline Exports from Singapore (y-o-y % change, 3-month m.a.)



— Volumes - - - Values

m.a. = moving average, y-o-y = year on year.
Source: International Enterprise Singapore.

Departures from Australia to the Pacific (monthly)



rhs = right-hand scale, y-o-y = year on year.
 Source: Australian Bureau of Statistics.

Departures from New Zealand to the Pacific (monthly)



rhs = right-hand scale, y-o-y = year-on-year.
Source: Statistics New Zealand.

Latest Pacific Economic Updates

	GDP Growth (% p.a.)			Inflation (% annual avg.)			Fiscal Balance (% of GDP)		
	2016e	2017p	2018p	2016e	2017p	2018p	2016e	2017p	2018p
Cook Islands	5.5	5.0	5.0	-0.1	0.5	1.2	3.7	-3.9	-3.1
Fiji	2.0	3.5	4.0	3.9	4.0	2.5	-4.0	-2.0	-4.5
Kiribati	1.8	2.0	1.5	0.7	2.0	2.0	-11.8	-7.5	-5.4
RMI	1.5	4.0	2.5	-1.3	1.5	1.5	-2.0	-2.0	-2.0
FSM	3.0	2.5	2.5	-0.3	1.5	2.0	11.0	10.0	10.0
Nauru	7.2	4.3	-4.5	7.2	5.7	1.8	-0.1
Palau	2.2	3.0	5.5	-1.3	1.5	2.0	2.0	4.0	4.0
PNG	2.0	2.5	2.8	7.0	7.5	7.5	-4.1	-2.5	-2.2
Samoa	7.1	2.8	1.5	0.1	1.5	2.0	-0.4	-3.5	-3.5
Solomon Islands	3.2	3.0	2.8	1.1	1.8	2.2	-5.9	-1.2	-1.5
Timor-Leste ^a	5.4	4.0	6.0	-1.4	1.2	3.0	-35.2	4.8	-11.9
Tonga	3.1	2.6	2.6	2.0	2.5	2.5	-3.1	-1.6	-0.8
Tuvalu	3.0	3.0	3.0	2.0	2.0	2.0	34.3	-4.8	-13.4
Vanuatu	3.8	4.3	3.8	0.9	2.4	2.6	-10.6	-16.9	-8.4

FSM = Federated States of Micronesia, GDP = gross domestic product, p = projection, PNG = Papua New Guinea, RMI = Republic of the Marshall Islands.

^a Timor-Leste GDP is exclusive of the offshore petroleum industry.

Sources: ADB. 2017. *Asian Development Outlook 2017 Supplement (July 2017)*. Manila; and statistical releases of the region's central banks, finance ministries and treasuries, and statistical bureaus.

Key data sources:

Data used in the *Pacific Economic Monitor* are in the ADB PacMonitor database, which is available in spreadsheet form at www.adb.org/pacmonitor

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ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to a large share of the world's poor. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

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