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SERVICES POLICIES AND MANUFACTURING EXPORTS

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Abstract

This paper uses a structural gravity model to show the effects of services policies on manufacturing exports. Whereas the previous literature has focused on indirect effects of policies—flowing through productivity effects in domestic services markets—we look at direct effects, namely the ability of domestic manufacturers to access services inputs on world markets at competitive prices. Our results show that discriminatory barriers to services trade have a significant negative effect on manufacturing exports. We use theory-consistent counterfactual simulations to show that the trade and real output effects of a 10% reduction in services trade restrictiveness are in fact much larger than those of a 10% reduction in tariffs. On a policy level, our results suggest that an additional argument for liberalizing services markets is that it in fact aids manufacturing sector development, due to the intimate links between the two.

Keywords: services, manufacturing, gravity model

JEL Classification: F13, F14, O24

Contents

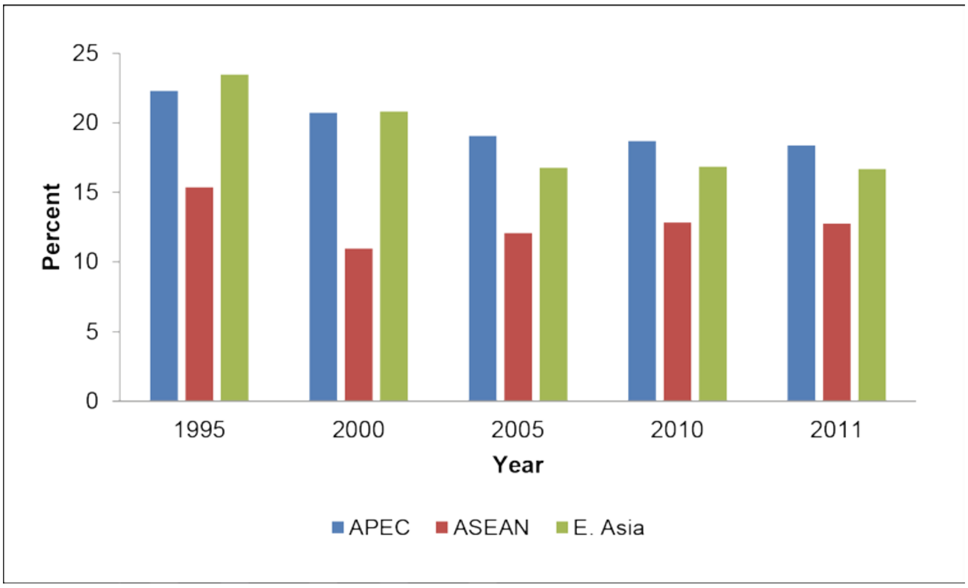
1. INTRODUCTION

Services and manufacturing are closely intertwined. Manufacturers use services as inputs into their production process. It is difficult to imagine a modern global value chain working without efficient transport services, financial services, logistics, and business services. The OECD-WTO Trade in Value Added (TiVA) data set gives us a first indication of just how important services are for exporters of manufactured goods. Focusing on Asia, we see that since the 1990s, the proportion of services value added in gross exports of manufactured goods has averaged just under 33% in APEC, ASEAN, and the East Asian countries. Interestingly, though, the split between domestic- and foreign-origin services value added has changed significantly. Figure 1 shows that domestic-origin services value added declines in all three subregions over the 1995–2011 period. However, as the constant total share of services implies, Figure 2 shows that the foreign-origin share increased. The 1990s and 2000s saw substantial liberalization of services markets all around the world, including in Asia. Indeed, the People's Republic of China's 2001 WTO Accession Agreement had real "bite" in services and was associated with meaningful changes in policy that significantly opened key services markets to international competition (Mattoo, 2003).

What does this dynamic mean for policy? Clearly, manufacturers need access to high-quality, competitively priced services. In particular in the context of developing countries, this necessarily involves some recourse to world markets. Indeed, we can see that reliance on world services markets by manufacturers has generally been increasing over time. This dynamic suggests intuitively that services policies can have direct and indirect effects on the performance of manufacturers, including in terms of export market gains. First, and best known, there is an indirect effect: opening up services markets to foreign competition by lowering trade costs increases competitive pressure and favors the reallocation of resources from less productive firms to more productive ones; as a result, sectoral productivity in services sectors increases (Miroudot et al., 2012). This dynamic has been shown to operate at the level of individual firms by Hoekman and Shepherd (2017): because many services are supplied locally, there is evidence of a productivity linkage between manufactured goods exporters and service suppliers in the same locality, which in turn fosters greater trade integration through the standard Melitz (2003) productivity selection channel.

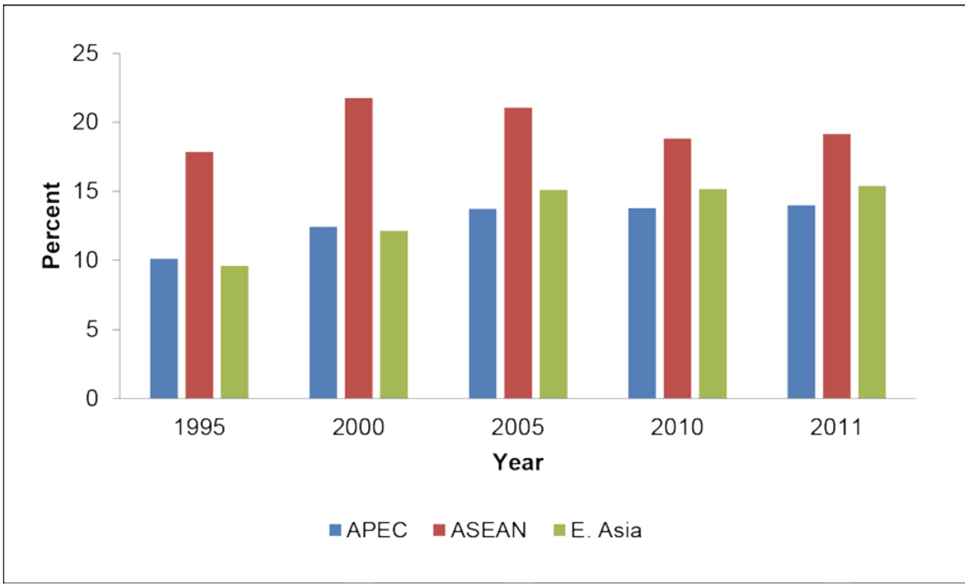
Less well known is the prospect that services policies could have a direct impact on exporters of manufactured goods. The mechanism is simple: as shown in Figure 1, manufacturers source a substantial proportion of their total services inputs from world markets. As a result, liberalization of trade policies that increase trade costs allows manufacturers to acquire those services at a lower price, which acts like a productivity shock, and promotes export market success in the same way as the indirect effect referred to in the previous paragraph. Hoekman and Shepherd (2017) again show suggestive evidence of such an effect using a gravity model, but it is little explored in the literature.

Figure 1: Domestic Services Value Added Embodied in Manufacturing Exports, by Region, 1995–2011, Percent of Gross Exports



Source: OECD-WTO TiVA.

Figure 2: Foreign Services Value Added Embodied in Manufacturing Exports, by Region, 1995–2011, Percent of Gross Exports



Source: OECD-WTO TiVA.

Against this background, the present paper adds to the literature in two main ways. First, we take account of recent developments in the gravity model literature to improve on the estimation framework used by Hoekman and Shepherd (2017). Like them, we introduce a measure of services policies directly into a gravity model of manufactured goods trade. But we also examine the relationship of this measure to tariffs and take account of domestic (intra-national) trade flows. Second, we take advantage of recently uncovered properties of the PPML estimator to conduct policy-relevant counterfactual simulations that are fully consistent with the constraints imposed by theory. We separately consider 10% reductions in applied tariffs and the restrictiveness of services policies. In a nutshell, we find that the trade and real output effects of the latter are significantly larger than the former. This result is a striking one. Liberalization of services policies typically produces larger welfare effects than tariff liberalization in CGE models, but not for the reason we examine here, namely the way in which it changes the ability of manufacturers to acquire services at world market prices. From a policy standpoint, this finding is particularly important in regions like developing Asia, where there is skepticism of the growth potential of services. An additional reason for moving forward on reforming services sectors is that such action can promote growth in manufacturing, which is an objective of all countries in the region.

The paper proceeds as follows. The next section discusses data and sources. Section 3 presents our econometric model and discusses the simulation methodology. Section 4 presents results. Finally, Section 5 concludes and discusses policy implications.

2. DATA

Table 1 presents a summary of the data used in this paper. Sources are standard for gravity control variables, and we use Mario Larch’s RTA data set to source a dummy variable equal to one when both countries are members of the same trade agreement (Egger and Larch, 2008).

Table 1: Data and Sources

Variable	Definition	Years	Source
Colony	Dummy variable equal to one for country pairs that were ever in a colonial relationship.	N/A	CEPII
Common Border	Dummy variable equal to one for countries that share a common land border.	N/A	CEPII
Common Colonizer	Dummy variable equal to one for country pairs that were colonized by the same power.	N/A	CEPII
Common Language	Dummy variable equal to one for countries that have a common official language.	N/A	CEPII
Exports	Total manufacturing exports from country i to country j in time period t.	2010	OECD-WTO TiVA
International	Dummy variable equal to one if country i and country j are not the same.		
Log(Distance)	Distance between country i and country j.	N/A	CEPII
Log(STRI)	Overall and sectoral Services Trade Restrictiveness Index.	2010	World Bank
Log(1+Tariff)	Simple average effectively applied tariff on manufactured goods imports.	2010	TRAINS

Table 2: Summary Statistics

Variable	Observations	Mean	Std. Dev.	Min.	Max.
Colony	2,898	0.03	0.17	0.00	1.00
Common Border	2,898	0.04	0.19	0.00	1.00
Common Colonizer	2,898	0.01	0.10	0.00	1.00
Common Language	2,898	0.07	0.26	0.00	1.00
Exports	2,898	11.74	189.23	0.00	8,537.31
International	2,898	0.98	0.13	0.00	1.00
Log(Distance)	2,898	1.60	1.07	–2.82	2.99
Log(STRI)	2,898	3.14	0.44	2.40	4.19
Log(Tariff)	2,805	0.05	0.05	0.00	0.30

Table 3: Correlation Matrix

	Colony	Common Border	Common Colonizer	Common Language	Exports
Colony	1.00				
Common Border	0.18	1.00			
Common Colonizer	–0.02	0.08	1.00		
Common Language	0.29	0.16	0.10	1.00	
Exports	–0.01	0.00	–0.01	–0.01	1.00
International	0.02	0.03	0.01	0.04	–0.38
Log(Distance)	–0.08	–0.36	–0.04	–0.04	–0.11
Log(STRI)	–0.05	–0.03	0.12	0.01	0.02
Log(Tariff)	–0.02	–0.11	0.09	–0.01	–0.05

	International	Log(Dist)	Log(STRI)	Log(Tariff)
Colony				
Common Border				
Common Colonizer				
Common Language				
Exports				
International	1.00			
Log(Distance)	0.35	1.00		
Log(STRI)	0.00	0.15	1.00	
Log(Tariff)	0.13	0.37	0.39	1.00

The standard source for trade data is UN Comtrade. However, it does not include data on self-trade, i.e., goods and services that are produced and consumed within the same country. Yotov et al. (2017) show that such data should ideally be included in gravity models, which rely for their theoretical basis on summing exports across all destinations—including the home country—to produce aggregates like total output and expenditure. We therefore use the OECD-WTO TiVA data set. It has balanced gross trade data by ISIC sector, along with gross production data at the same level of disaggregation. By subtracting world exports from total production, we can obtain a measure of self-trade. (For intermediate and final goods, we work directly with the input–output tables to obtain the required figures.) We emphasize that we work with trade and production data in gross, not value added, terms. Although trade in value added would be an interesting extension for our work, the theoretical foundation does not lend itself as easily to modeling in a gravity framework, and in particular to the same combined approach to estimation and simulation that we use here (see Noguera, 2012, for an attempt to embed value added trade in gravity logic).

The TiVA data are available for 63 exporting and importing countries (see Appendix for a list), which account for over 90% of world GDP. Although the data focus on OECD countries, they also include developing countries from all regions, and as such can be informative about bilateral trade patterns beyond the developed world, and between developed and developing regions. As far as coverage of Asian countries is concerned, the OECD data set covers 20 out of 21 APEC economies (all except Papua New Guinea), and 8 out of 10 ASEAN countries (missing only Myanmar and Lao PDR. In addition, it includes partner countries such as all EU members, the United States, and Canada.

For our empirical analysis, we use data on exports of manufactured goods (ISIC sectors 15–37). We start with a balanced panel of 63 exporters and importers in each sector aggregate for the year 2010. The number of observations falls as we introduce policy data. We draw data on effectively applied tariffs from TRAINS. Our source for services policies is the World Bank's Services Trade Restrictiveness Index (STRI). The STRI aims to capture policy measures that discriminate against foreign service providers. It is constant across all exporters. We therefore interact it with a dummy variable equal to one for inter- (as opposed to intra-) national trade in the way that Yotov et al. (2017) recommend for policy measures that are constant at the importer level.

3. ECONOMETRIC MODEL

Theory-consistent gravity models are well known in the trade literature. Anderson et al. (2015) develop a simple method for conducting theory-consistent policy simulations using the familiar structural gravity model derived from CES preferences across countries for national varieties differentiated by origin (the Armington assumption). The model takes the following form:

$$X_{ij} = \left(\frac{t_{ij}}{\Pi_i P_j}\right)^{1-\sigma} Y_i E_j \tag{1}$$

$$P_j^{1-\sigma} = \sum_i \left(\frac{t_{ij}}{\Pi_i}\right)^{1-\sigma} Y_i \tag{2}$$

$$\Pi_i^{1-\sigma} = \sum_j \left(\frac{t_{ij}}{P_j}\right)^{1-\sigma} E_j \tag{3}$$

$$p_j = \frac{Y_j^{\frac{1}{1-\sigma}}}{\gamma_j \Pi_j} \tag{4}$$

where X is exports in value terms from country i to country j; E is expenditure in country j; Y is production in country i; t captures bilateral trade costs; sigma is the elasticity of substitution across varieties; P is inward multilateral resistance, which captures the dependence of bilateral shipments into j on trade costs across all inward routes; Π is outward multilateral resistance, which captures the dependence of bilateral shipments out of i on trade costs across all outward routes; p is the exporter's supply price of country i; and gamma is a positive distribution parameter of the CES function.

Most commonly, the model represented by (1) through (4) is estimated by fixed effects, which collapses it into the following empirical setup:

$$X_{ij} = exp\left(T_{ij}\beta + \pi_i + \chi_j\right)e_{ij} \quad (5)$$

where T is a vector of observables capturing different elements of trade costs; π is a set of exporter fixed effects; χ is a set of importer fixed effects; and e is a standard error term.

The model has a number of salient features, which are well known, but which need restating. First, its structure makes clear that the elasticity of trade with respect to particular bilateral trade costs—such as membership in an RTA—specified within t is not an accurate summary of the impact of a change of trade costs on trade. The reason is that the multilateral resistance indices depend on trade costs across all partners, which means that the model takes account of general equilibrium effects. This point is typically recognized at the estimation stage, when fixed effects by exporter and by importer are included to account for multilateral resistance. However, when a counterfactual simulation is conducted, the effects need to be passed through the two price indices, not simply extracted from the relevant regression coefficient. This point is much less commonly appreciated in the literature.

Second, if the model is estimated by PPML with fixed effects as recommended by Santos Silva and Tenreyro (2006), then Fally (2015) shows that the estimated fixed effects correspond exactly to the terms required by the structural model. In other words, if (5) is estimated correctly, then it follows that:

$$\widehat{\Pi_i^{1-\sigma}} = E_0 Y_i \exp(-\pi_i) \quad (6)$$

$$\widehat{P_j^{1-\sigma}} = \frac{E_j}{E_0}\exp(-\pi_i) \quad (7)$$

where E0 corresponds to the expenditure of the country corresponding to the omitted fixed effect (typically an importer fixed effect) in the empirical model, and the normalization of the corresponding price terms in the structural model.

Let $\hat{\beta}$ be the PPML estimates of the trade cost parameters in (5). To see the impact of a counterfactual change in trade costs, such as the elimination of an RTA between two trading partners, we can re-estimate (5) imposing $\hat{\beta}$ as a constraint and with counterfactual trade costs T_{ij}^c:

$$X_{ij} = exp\left(T_{ij}^c\hat{\beta} + \pi_i + \chi_j\right)e_{ij} \quad (8)$$

Estimating (8) with PPML and the original trade data means that output and expenditure remain constant, so the PPML fixed effects adjust to take account of changes in multilateral resistance brought about by the change in bilateral trade costs. Once estimates have been obtained, counterfactual values of relevant indices can be calculated, but they are conditional on fixed output and expenditure although they take account of general equilibrium reallocations. In particular, $\widehat{X_{ij}}$ from (8) provides counterfactual values of bilateral trade that are consistent with the general equilibrium restrictions of theory, but which still sum to give observed output and expenditure, consistent with a remarkable property of the PPML estimator (Arvis and Shepherd, 2013; Fally, 2015).

It is possible to push the model further, by allowing counterfactual changes in factory-gate prices to drive changes in output and expenditure, which in turn lead to additional changes in trade flows, until the system converges. Specifically, endogenous responses in output and expenditure are as follows in an endowment economy where trade imbalance ratios $\phi_i = E_i/Y_i$ remain constant:

$$Y_i^c = \left(\frac{p_i^c}{p_i}\right) Y_i \tag{9}$$

$$E_i^c = \left(\frac{p_i^c}{p_i}\right) E_i \tag{10}$$

Anderson et al. (2015) propose an iterative approach to solving the system. First, use structural gravity to translate changes in output and expenditure into changes in trade flows:

$$X_{ij}^c = \frac{\left(t_{ij}^{1-\sigma}\right)^c}{t_{ij}^{1-\sigma}} \frac{Y_i^c E_j^c}{Y_i E_j} \frac{\Pi_i^{1-\sigma} P_j^{1-\sigma}}{\left(\Pi_i^{1-\sigma}\right)^c \left(P_j^{1-\sigma}\right)^c} \tag{11}$$

where superscript c indicates counterfactual values obtained from constrained estimation of (8) and calculation of relevant indices. Counterfactual values of output and expenditures come from applying market-clearing conditions $p_i = \left(\frac{Y_i}{Y}\right)^{1/1-\sigma} \frac{1}{\gamma_i \Pi_i}$, which makes it possible to translate changes in the fixed effects between (8) and (5) into first-order changes in factor-gate prices:

$$\frac{p_i^c}{p_i} = \frac{exp(\widehat{\pi_i^c})}{exp(\widehat{\pi_i})} \tag{12}$$

Further changes occur in a second-order sense, as changes in prices lead to further changes in output and expenditure, which in turn drive changes in trade. By iterating the PPML estimation and calculation of changes until convergence, it is possible to obtain full-endowment general equilibrium estimates of trade flows and relevant indices.

To summarize, Anderson et al. (2015) show that starting with the standard structural gravity model, it is possible to design a simple approach for first estimating the model's parameters, and then using the estimated parameters to perform counterfactual simulations in a way that is fully consistent with the general equilibrium implications of gravity theory. The methodology can be broken down as follows:

1. Estimate the model using PPML and fixed effects to obtain estimates of trade costs and trade elasticities for the baseline.
2. Solve the gravity system using the output from step 1 to provide baseline values of all indices.
3. Define a counterfactual scenario in terms of an observable trade cost variable.
4. Solve the counterfactual model in conditional general equilibrium, i.e., direct and indirect changes in trade flows at constant output and expenditure.
5. Solve the counterfactual model in full general equilibrium, i.e., direct and indirect changes in trade flows with endogenous output and expenditure driven by trade-induced changes in factory-gate prices.

Yotov et al. (2017) provide a detailed explanation of the above steps, as well as Stata code for implementing them in a general setting. We adopt their approach and freely adapt their code here. Concretely, we use PPML to estimate (8) for 2010. This setup allows us to introduce importer and exporter fixed effects to account for multilateral resistance, expenditure, and output. We specify the trade costs function as follows:

$$T_{ij}\beta = \beta_0 Policy_{ij} + \beta_1 \ln dist_{ij} + \beta_2 contig_{ij} + \beta_3 colony_{ij} + \beta_4 comcol_{ij} + \beta_5 comlang_{ij} + \beta_6 intl_{ij}$$

The Policy variable is either effectively applied tariffs or the STRI. The coefficient of primary interest is β_0, which gives the elasticity of bilateral trade flows with respect to changes in policy. Ideally, we would estimate the model over multiple years to attenuate simultaneity bias and control for country-pair unobservables, but the STRI is currently only available for a single year, 2010.

Once we have isolated β_0 from the regression, we again use data for 2010 to conduct the counterfactual simulations. We impose the estimated coefficients from the first stage as constraints, then proceed as in Anderson et al. (2015) to obtain counterfactual estimates of trade and real output effects.

4. RESULTS

This section presents the results of our analysis. We first discuss our econometric results and then move to a consideration of the trade and real output effects of liberalization of goods and services policies through our counterfactual simulations.

4.1 Estimation Results

Table 4 presents estimation results. Each column uses a different STRI, moving from the overall measure in Column 1 to the sectoral STRIs in the other columns. We enter the sectoral STRIs in separate regressions, rather than all at once, because they are strongly correlated, as would be expected, and so regression performance is poor due to inflated standard errors.

Table 4: Estimation Results

	Overall	Banking	Insurance	Professional	Retail	Telecom	Transport
Log(STRI)	–0.017 ***	–0.017 ***	–0.014 ***	0.003	–0.010 **	–0.006 **	–0.007
	(0.005)	(0.004)	(0.005)	(0.005)	(0.004)	(0.003)	(0.005)
Log(Tariff)	–1.972	–0.482	–1.515	–3.594 **	–2.707 **	–2.243 *	–3.401 ***
	(1.207)	(1.221)	(1.235)	(1.428)	(1.236)	(1.261)	(1.275)
Log(Distance)	–0.725 ***	–0.743 ***	–0.747 ***	–0.731 ***	–0.718 ***	–0.747 ***	–0.714 ***
	(0.050)	(0.041)	(0.045)	(0.048)	(0.052)	(0.051)	(0.048)
Common Border	0.241	0.254	0.225	0.208	0.231	0.203	0.239
	(0.254)	(0.249)	(0.255)	(0.262)	(0.252)	(0.255)	(0.255)
Colony	0.234 *	0.151	0.200	0.330 **	0.273 *	0.272 *	0.308 **
	(0.137)	(0.128)	(0.131)	(0.143)	(0.142)	(0.140)	(0.141)
Common Colonizer	0.062	0.011	–0.023	–0.140	–0.001	–0.069	–0.007
	(0.120)	(0.110)	(0.116)	(0.160)	(0.118)	(0.151)	(0.153)
Common Language	0.158	0.232	0.187	0.163	0.152	0.164	0.146
	(0.157)	(0.155)	(0.158)	(0.151)	(0.156)	(0.149)	(0.155)
Intl	–2.269 ***	–2.454 ***	–2.411 ***	–2.782 ***	–2.550 ***	–2.512 ***	–2.491 ***
	(0.166)	(0.117)	(0.133)	(0.264)	(0.141)	(0.142)	(0.206)
Observations	2,805.000	2,805.000	2,805.000	2,805.000	2,805.000	2,805.000	2,805.000
R2	0.414	0.414	0.414	0.414	0.414	0.414	0.414
Exporter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Importer Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: Estimation is by PPML in all cases. STRI sector is indicated at the top of each column. Robust standard errors corrected for clustering by country pair appear in parentheses below coefficient estimates. Statistical significance is indicated as follows: * (10%), ** (5%), and *** (1%).

Standard gravity variables typically have the expected signs in all models, although only distance and the colony dummy are statistically significant at the 10% level or better. In terms of the policy variables, the STRI has a negative and statistically significant coefficient in five out of seven regressions, namely the overall STRI and the sectoral STRIs for banking, insurance, retail, and telecom. Applied tariffs have a negative and statistically significant coefficient in four of the seven models; in addition, their coefficient is marginally significant when paired with the overall STRI (prob. = 0.102). We therefore conclude that the policies in goods and services markets both have a direct impact on trade costs affecting manufactured goods, and a less liberal stance in either area is associated with lower trade values. However, the regression results on their own do not allow a simple comparison between magnitudes of the two types of policies, given that they are measured on different scales (percent ad valorem and an index) and that the tariff coefficient is an elasticity while the STRI coefficient is a semi-elasticity. A counterfactual simulation that considers comparable shocks to the two variables can give a clearer idea of their relative influences on bilateral trade in manufactured goods. The next subsection turns to that issue.

4.2 Counterfactual Simulations

With the estimating platform in place, we can proceed to conduct counterfactual simulations as per the Anderson et al. (2015) methodology. We consider two scenarios, both based on estimation results from Column 1 of Table 4. The first scenario considers the trade effects of a 10% reduction in the restrictiveness of services policies, which we capture by a 10% reduction in the importing country's STRI. The second scenario considers a 10% reduction in effectively applied tariffs.

Table 5 reports changes in trade flows and real manufacturing output under the two scenarios. We limit consideration to non-OECD Asian countries only. We only report full general equilibrium estimates, using the terminology of Anderson et al. (2015). First, the table shows that the impacts on trade flows of decreasing services policy restrictiveness are much larger than those for reducing tariffs, although impacts are in both cases strictly positive, as would be expected. Changes in exports and imports are typically two to three times as high under the first scenario as under the second. Second, impacts on real manufacturing output are smaller than trade impacts in both cases, but this is in line with the fact that the Anderson et al. (2015) model falls into the class of models analyzed by Arkolakis et al. (2012). Those authors show that the welfare gains to the United States from the totality of its international trade is between 0.7% and 1.4% of GDP. Against that background, our figures for the impact of the two liberalization scenarios are in fact quite large. However, whereas the real output impacts of services liberalization are strictly positive, there are some small negative impacts in the case of tariffs, due to general equilibrium effects. Third, as would be expected from larger import impacts, the effects on real output of liberalizing services policies are considerably larger than those from liberalizing tariffs. The difference is qualitatively large for all countries in Table 5. This result sits well with existing CGE evidence that the welfare implications of services liberalization are typically much larger than for goods, but it is striking that the result flows only from a consideration of the impact of services policies on manufacturing, not on the services sector itself.

Table 5: Counterfactual Simulation Results for Total Trade, Percentage Change Over Baseline

	STRI			Tariffs		
	Delta Xi %	**Delta Mi %**	**Delta Y %**	**Delta Xi %**	**Delta Mi %**	**Delta Y %**
CHN	3.71	5.35	0.05	0.93	1.71	0.00
IDN	5.82	4.70	0.23	0.72	0.92	0.00
IND	7.49	5.81	0.16	1.68	1.74	–0.01
KHM	1.51	1.47	0.87	0.43	0.44	0.34
MYS	4.34	5.76	0.22	0.70	1.06	–0.02
PHL	4.87	5.15	0.42	0.59	0.97	0.05
THA	4.73	6.38	0.15	1.46	1.83	–0.03
VNM	4.87	3.53	0.44	1.07	1.00	0.08

Source: Author's calculations.

5. CONCLUSION AND POLICY IMPLICATIONS

This paper has used the latest developments in the gravity model literature, specifically the GE PPML approach of Anderson et al. (2015), to analyze the trade and real output implications of liberalizing services policies versus liberalizing tariffs. Our key finding is that the former scenario has much larger trade and real output effects than the latter scenario. This is a striking result, given that the policy change is essentially a cross-sectoral effect. However, it is quite consistent with the evidence presented above to the effect that exporters of manufactured goods typically source a substantial amount of their inputs from world services markets, so facilitating that access by liberalizing policies acts as a positive productivity shock and induces greater exports. Although we estimate using a reduced form based on this relationship, the evidence we have provided is consistent with the firm-level model in Hoekman and Shepherd (2017), which focuses on input linkages and indirect, as opposed to direct, effects of services liberalization on manufacturers.

From a policy perspective, our results are of particular importance in a region like developing Asia, where policy makers are strongly focused on manufacturing. In reality, development of manufacturing cannot be divorced from development of services. The two are closely intertwined, as the results in this paper make clear. Nonetheless, it is typically challenging to give services the policy priority they deserve in developing Asia due to the strong belief that manufacturing is the key to medium-term productivity and income growth. That challenge is only made more daunting by the growth of "services pessimism" driven in part by the premature deindustrialization thesis.

Our results suggest that a more weighty argument for policy makers in the region may be that services liberalization can boost manufacturing output and exports. In other words, policies that can bring about more competitive and integrated services markets are in fact perfectly aligned with the goal of promoting manufacturing. There is the opportunity for a win–win scenario that should appeal both to those convinced that the future of the region is in services and those who argue that the manufacturing sector needs to continue to develop in much of the region.

On an intuitive level, our findings reinforce the argument that there is no simple dichotomy between manufacturing and services. Instead, the two sectors are intimately linked, and the evidence suggests that that linkage is only growing tighter over time. While we do not discuss the merits of the premature deindustrialization thesis from the standpoint of productivity levels and dynamics, our results nonetheless suggest that a simplistic implementation of policies to promote manufacturing over services would perhaps be self-defeating. In a world economy, and a regional economy, that is increasingly "servicified," developing a competitive services sector, which is helped by pro-market services policies, is in fact a key component of promoting manufacturing. Policy makers would do well to act cautiously when considering altering the balance of incentives between manufacturing and services, as apparently sensible policies could have undesirable outcomes in a setting where the two sectors are as closely interlinked as they now are.

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