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DEEPENING LINKAGES BETWEEN SOUTH ASIA AND SOUTHEAST ASIA

SYNTHESIS REPORT

JUNE 2022



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DEEPENING LINKAGES BETWEEN SOUTH ASIA AND SOUTH EAST ASIA

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EXECUTIVE SUMMARY

Although economic linkages between South Asia¹ and Southeast Asia² have been strengthened over the past decade, integration between these two regions remains limited. Can new approaches to regional integration help revitalize trade and economic links between South Asia and Southeast Asia?

This report looks at new approaches to strengthen trade and revitalize economic links between South Asia and Southeast Asia. It documents the emerging trade, investment, and migration trends between the two regions. The report explores the current constraints that limit the links between South Asia and Southeast Asia, discusses the expected gains from their removal, and provides recommendations on advancing regional integration to policy makers in both regions.

The analysis adds value to previous studies by focusing on less explored areas, such as digital issues and environmental goods and services. It employs novel data sets on services, investments, and migration to better understand the intraregional complementarities. The report also applies innovative techniques, such as machine

learning to estimate the restrictiveness of services barriers and an economywide general equilibrium model that explicitly incorporates services and investments to provide a more complete picture of regional integration that goes beyond trade in goods. Finally, the assessments consider the rising global trade tensions and challenges related to the COVID-19 pandemic.

LIMITED INTEGRATION BETWEEN SOUTH ASIA AND SOUTHEAST ASIA

There has been limited integration between South Asia and Southeast Asia despite progress over the past decade. Although trade linkages have grown by more than ninefold over the past two decades – from US\$38 billion in 2000 to US\$349 billion in 2018 – significant untapped potential for trade integration between South Asia and Southeast Asia remains. At US\$260 billion, Southeast Asian exports to South Asia are almost three times higher than South Asian exports to Southeast Asia, amounting to 4.2 and 25.6 percent of total exports in Southeast Asia and South Asia, respectively.

¹ South Asia includes Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

² Southeast Asia includes Brunei, Cambodia, China, Indonesia, the Lao People's Democratic Republic, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

³ Environmental goods and services are those whose main function is to address or contribute to an environmental issue or challenge. However, this has proven difficult to translate into the standard goods and services classifications used to analyse trade. The simplest and widest used list for goods is that of the Asia-Pacific Economic Cooperation, but other broader lists have been proposed by the Organisation for Economic Co-operation and Development, among others (see annex A).

Foreign direct investment (FDI) linkages are even more underdeveloped. Interregional FDI stocks amounted to a total of US\$15 billion in 2019, up from US\$4.6 billion in 2009. Southeast Asian FDI stocks in South Asia have steadily increased over the years to a total of US\$13.4 billion in 2019, compared with stagnating South Asian FDI stocks in Southeast Asia, at only US\$1.3 billion in 2019. Finally, the importance of intraregional migration in South Asia has declined, with migration flows shifting toward the Middle East and North Africa and those to Southeast Asia exhibiting the fastest growth.

Despite their growth over the past 20 years, trade and investment linkages between South Asia and Southeast Asia are still constrained by high tariffs, non-tariff barriers (NTBs) and burdensome and costly customs processes. South Asian tariffs applied on imports from Southeast Asia (amounting to 6.9 percent) are nearly three times higher than Southeast Asian tariffs on imports from South Asia (at 2.8 percent).

While tariffs remain important obstacles to regional integration, the restrictiveness of NTBs, at an average interregional ad valorem equivalent of 225 percent, towers over that of tariffs. Non-tariff measures (NTMs) cover a wide range of measures, such as sanitary and phytosanitary (SPS) requirements, technical barriers to trade, pre-shipment inspection, nonautomatic licensing requirements, and price controls. While some NTMs are justified and aim to protect human health and safety of plant or animal life, there are many that serve protectionist purposes and are a significant deterrent to trade and an impediment to the competitiveness of firms.

Significant barriers hamper trade in services, with high services ad valorem equivalents relative to tariff rates for goods, more than 10 percent in all cases, and as high as 70 percent in some sectors. There is significant room to improve the efficiency of trade processes and that of control agencies, customs, and border authorities in both regions.

EXPECTED GAINS FROM DEEPENING LINKAGES BETWEEN SOUTH ASIA AND SOUTHEAST ASIA

Deepening integration with Southeast Asia can expand trade, generate greater inflow of FDI, and promote digitization and environmental protection in South Asia. Greater access to goods and services markets in Southeast Asia provides much-needed diversification for South Asian exports. The ongoing pandemic highlights the benefits of rapid technological progress and digitization in connecting countries. Digitization has also expedited information exchange between border agencies and traders within countries, reducing person-to-person interactions and addressing trade-related issues in a more expedient manner. The pandemic also calls for trade to play a bigger role in climate action while fostering development. These issues are particularly important for South Asia as it remains the most disconnected region, with intraregional trade between its nations at only 5.6 percent (compared with 25 percent in the Association of Southeast Asian Nations (ASEAN) or 22 percent in Sub-Saharan Africa). As international cooperation is under growing strain because of the COVID-19 pandemic and trade tensions between the United States and China, South Asian and Southeast Asian countries may consider new regional cooperation opportunities to stimulate economic growth, poverty reduction, and inclusiveness in a post-pandemic world.

The results show that a South Asia–Southeast Asia regional integration agenda that combines the liberalization of tariffs, NTBs, trade facilitation, and FDI barriers could boost gross domestic product (GDP) by 0.4 to 10.6 percent for South Asia and by 0.1 to 0.4 percent for Southeast Asia. If the trade and investment reforms pursued within the interregional integration are extended in a multilateral integration track to third countries and intra regionally within South Asia and Southeast Asia, the gains for participating countries would be

significant, increasing GDP by 17.6 and 15.7 percent in the two regions, respectively. The costs of no integration between the two regions are significant, cutting the GDP gains by half for South Asia and by a third for Southeast Asia. Finally, the results also show that given a sustained trade dispute between the United States and China, Southeast Asian countries could capitalize on the opportunities provided by US-China trade diversion, with GDP gains that could add up to 0.5 and 0.8 percent for South Asia and Southeast Asia (excluding the losses experienced by China), respectively.

POLICY RECOMMENDATIONS FOR ADVANCING INTEGRATION BETWEEN SOUTH ASIA AND SOUTHEAST ASIA

The evidence in this report has three key implications for policy makers:

- First, as a general proposition, the largest economic gains come from nondiscriminatory policy reforms. While these reforms – covering goods, services, and investment – are consistent with the aims of the multilateral trading system, they do not strictly require multilateral negotiations to be feasible: individual countries are always free to liberalize autonomously, on a de facto most favored nation basis. This path forward has much to recommend, as it allows countries to achieve significant economic gains but does not require complex coordination with policy makers in other countries. Given the difficulty of moving forward on multilateral negotiations, this path is one that should seem increasingly appealing to policy makers in South Asia and Southeast Asia, especially in investment in services, with the growing

realization of their importance in the regional trading landscape.

- The second implication comes in the form of a partial exception to this finding: South Asia. Given historical political tensions there, the degree of regional integration is very low compared with Southeast Asia and other world regions. The gains from regional integration in South Asia are therefore very high in relative terms, that is, starting from a baseline of low intraregional trade. Of course, regional integration is not straightforward given the political landscape. The size of the gains from preferential integration should not overshadow the more general finding that multilateral liberalization, including when undertaken autonomously, can bring significant economic gains to South Asia just as it can to Southeast Asia.
- The third implication is that an ambitious regional integration agenda that covers goods, services, and investments can boost gains for both South Asia and Southeast Asia. An agenda that covers services and investment reforms and improvements in trade facilitation, in addition to the liberalization of tariffs and NTBs, produces the largest benefits for both regions.

Regional integration can be pursued through free trade agreements (FTAs). South Asian policy makers can join existing regional groupings such as ASEAN or the Regional Comprehensive Economic Partnership. A case can be made for signing bilateral agreements with individual Southeast Asian countries. Hub-and-spoke FTAs⁴ tend to marginalize the spoke economies, since factories in the spokes have artificially lower market access than factories in the hub. Consequently, hub-and-spoke FTAs can become an artificial

⁴ Hub-and-spoke FTAs may produce an inferior outcome for a region and could prove divisive as they tend to marginalize the spoke economies both economically and politically while at the same time granting leverage to the hub economy (Baldwin, 2004).

deterrent to investment in the outer economies. Filling in the gaps with spoke-spoke FTAs may remove this policy-induced investment deterrent and avoid self-induced peripherality for spoke nations although political economy constraints may restrain such liberalization.

Deeper regulatory cooperation can be pursued as part of FTAs or other regional mechanisms. Regulatory cooperation in the selected areas examined in this report, ranging from protection at the border, such as SPS measures, to new elements, such as digital trade, complementarity of factors, and environmental goods and services, is explored in more depth in this report as a means of providing options for deepening economic linkages between South Asia and Southeast Asia:

Addressing Non-Tariff Measures: The Case of SPS Reforms

Increasingly, SPS measures are impacting trade in agricultural goods and exporters must meet progressively more complex requirements. Numerous SPS-related procedural roadblocks exist in Asia. To address outdated legislation, overlapping bureaucracies, and insufficient capacity, policy makers in South Asia and Southeast Asia can focus on national and regional reforms such as implementing trade facilitation measures, and improving regional cooperation on developing SPS capacity, mutual recognition, and harmonization of SPS processes.

Service Sectors and Regulatory Approaches: The Case of Digital Services

Governments in South Asia and Southeast Asia must adapt to the rapidly evolving realities of the digital services market. As technological disruption reaches highly regulated sectors, adequate regulation becomes pressing. Regulatory heterogeneity is particularly challenging for many small and medium-size enterprises when

attempting to scale up their business from the national level to trading at the regional level. To address regulatory challenges and heterogeneity issues and prepare for the digital developments over the coming decades, policy makers in South Asia and Southeast Asia can focus on developing supporting policies for digital services, pursuing sectoral legislative and regulatory reforms in services, and harmonizing or encouraging mutual recognition of qualifications and regulations.

Leveraging the Untapped Potential of FDI and Its Complementarity with Labor Migration

Mounting evidence of FDI and migration complementarity suggests that developing countries could better leverage factor movements to support national and regional economic development. Potentially large gains are achievable at minor cost by simply improving information accessibility for investors and migrants.

Making Regional Trade Sustainable: The Role of Environmental Goods and Services

Buyers of products manufactured in South Asia and Southeast Asia are increasingly pressuring their suppliers to demonstrate a range of environmental attributes and outcomes. To move toward more sustainable trade growth, policy makers in South Asia and Southeast Asia can focus on reducing the tariffs on environmental goods to boost domestic uptake of cleaner technologies and spur green growth; upgrading of existing trade agreements to allow for the inclusion of more environmentally friendly provisions; liberalizing trade in services to promote the free movement of environmental experts and services; facilitating trade in environmental goods and services to help countries commit to and implement more ambitious climate-related targets; and investing in trade facilitation and reducing NTBs on environmental goods and services to help domestic firms maintain their comparative advantages.





INTRODUCTION

Although economic linkages between South Asia and Southeast Asia have been strengthened over the past two decades, integration between these two regions remains limited. Studies point to numerous challenges of integration, such as lack of adequate “hard” and “soft” infrastructure connectivity between economies, tariff barriers and non-tariff barriers (NTBs), closed services markets, and limited participation of lower-income economies in regional production networks and supply chains.⁵ The lack of proper and effective implementation of regional agreements, such as the South Asian Association for Regional Cooperation or the Regional Comprehensive Economic Partnership deal in 2019, further accentuates regional divisions.

The COVID-19 crisis has severely affected the global economy, including Asia, through disruptions to flows of goods and services in the region’s global value chains (GVCs). There is no clear picture of how the pandemic and geopolitical tensions will transform the global economy or affect the interdependence between production networks, but there are expectations that they may weaken globalization and accelerate demands for

self-sufficiency that have been apparent since the global financial crisis. In Asia, the pandemic may reshape trade, investment, and migration flows, accelerating the trends toward shortening supply chains and reshoring by multinationals, with implications for regional integration strategies.

Deepening integration with Southeast Asia can expand trade, generate greater inflow of foreign direct investment (FDI), and promote digitization and environmental protection in South Asia. Greater access to goods and services markets in Southeast Asia provides much-needed diversification for South Asian exports. The ongoing pandemic highlights the benefits of rapid technological progress and digitization in connecting countries. Digitization has also expedited information exchange between border agencies and traders within countries, reducing person-to-person interactions and addressing trade-related issues in a more expedient manner. The pandemic also calls for trade to play a bigger role in climate action while fostering development. These issues are particularly important for South Asia as it remains the most disconnected region, with intraregional trade between its nations at

⁵ ADB (2021a); ASEAN and World Bank (2013); Wignaraja (2014); Wignaraja et al. (2014); Sapkota et al. (2018).

only 5.6 percent (compared with 25 percent in the Association of Southeast Asian Nations (ASEAN) or 22 percent in Sub-Saharan Africa). As international cooperation is under growing strains because of the COVID-19 pandemic and trade tensions between the United States and China, South Asian and Southeast Asian countries may consider new regional cooperation opportunities to stimulate economic growth, poverty reduction, and inclusiveness in a post-pandemic world.

The main objective of this report is to look at new approaches to strengthen trade and revitalize economic links between South Asia and Southeast Asia. Section 1 documents the emerging trade, investment, and migration trends between South Asia and Southeast Asia, with particular focus on digital and environmental goods and services.⁶ Section 2 explores the current constraints that limit the links between the two regions, and section 3 discusses the expected gains from their removal. Section 4 concludes with recommendations on advancing regional integration between South Asia and Southeast Asia.

The analysis adds value to previous studies by focusing on less explored areas, such as digital and environmental issues, in a regional context and employing novel data sets on services, investment,

and migration for better understanding the interregional complementarities. The report also applies innovative techniques, such as machine learning to estimate the restrictiveness of services barriers and an economywide general equilibrium model that explicitly incorporates services and investment to provide a more complete picture of regional integration that goes beyond trade in goods. Finally, the assessments take into account the rising global trade tensions and challenges related to the COVID-19 pandemic.



⁶ Environmental goods and services are those whose main function is to address or contribute to an environmental issue or challenge. However, this has proven difficult to translate into the standard goods and services classifications used to analyze trade. The simplest and widest used list for goods is that of the Asia-Pacific Economic Cooperation, but other broader lists have been proposed by the Organisation for Economic Co-operation and Development, among others (see annex A).



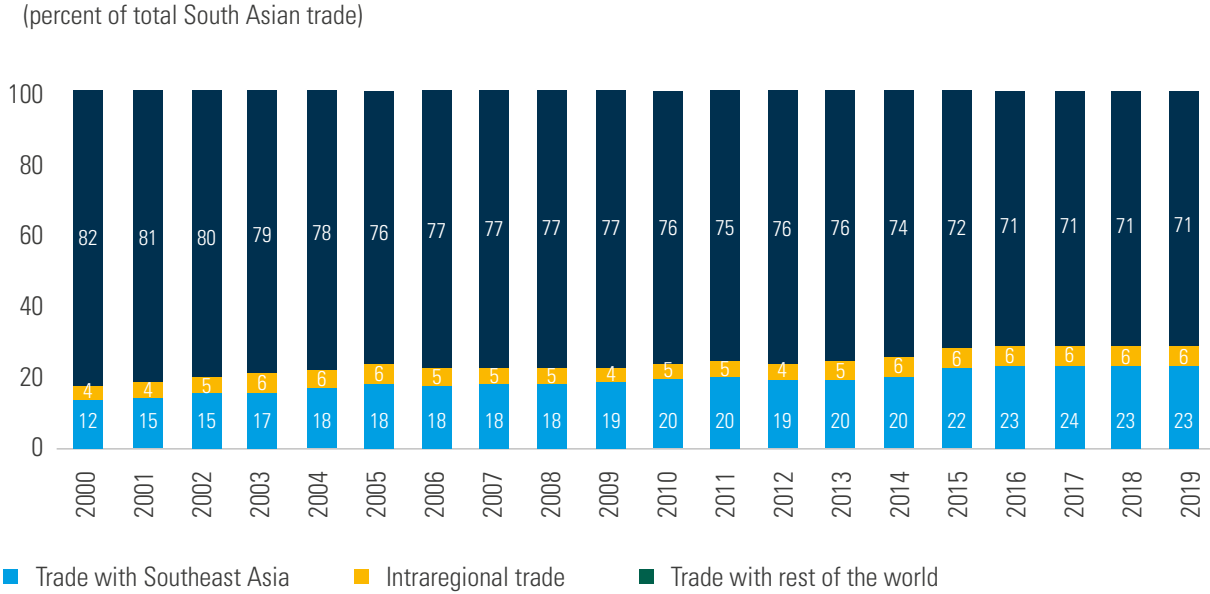
1. TRENDS IN REGIONAL TRADE, FOREIGN DIRECT INVESTMENT, AND MIGRATION

DYNAMIC REGIONAL TRADE IN GOODS

South Asian trade with Southeast Asia has grown significantly over the past 20 years. Trade with Southeast Asia grew on average by 14.3 percent between 2000 and 2019 to reach US\$241.2 billion in 2019. It outpaced the growth in intraregional trade (13.2 percent) as well as trade with the rest of the world (11.9 percent) over the same period.

As a result, the share of trade with Southeast Asia grew from 13.8 percent of total South Asian trade in 2000 to 23.2 percent in 2019, while trade with the rest of the world declined from 82.1 to 71.2 percent. At the same time, intraregional trade in South Asia grew marginally from 4 percent in 2000 to 5.6 percent in 2019 (figure 1).⁷

FIGURE 1 | SOUTH ASIA’S TRADE WITH DIFFERENT REGIONS



Source: Calculations using BACI data.

⁷ The analysis uses the BACI database developed by the Centre d’Études Prospectives et d’Informations Internationales (CEPII). The BACI database provides disaggregated data on bilateral trade flows for more than 5,000 products and 200 countries. The database is built from data directly reported by each country to the United Nations Statistical Division (Comtrade). The CEPII developed a procedure that reconciles the declarations of the exporter and the importer, which may be different in the original data. Products are defined as items from the Harmonized System nomenclature, at the 6-digit level. The figures are based on the share of intraregional trade in total trade. Intraregional trade as a share of regional gross domestic product hovers around only 1.0 percent in South Asia, versus 2.6 percent in Sub-Saharan Africa and about 11.0 percent in East Asia and Pacific, reflecting low levels of trade within the region (Kathuria 2018).

South Asian exports to Southeast Asia are driven primarily by India. In 2019, South Asia's exports to Southeast Asia stood at around US\$57.1 billion. India's exports to Southeast Asia increased at a higher rate than those of other South Asian economies and accounted for almost 89 percent of exports from South Asia to Southeast Asia in 2019.

Manufacturing products dominate South Asia's trade with Southeast Asia but trade in high-tech products such as information and communications technology (ICT) is declining. Although clothing is the region's main manufacturing export to the world, South Asia mostly exports machinery and transport equipment and chemical products to Southeast Asia.

Trade in environmental goods remains limited between South Asia and Southeast Asia, yet there is untapped trade potential. Less than 10 percent of the regions' environmental exports is destined for countries in South Asia or Southeast Asia. Similarly, less than 7 percent of total imports in both regions

comes from intraregional trade. Overall, the growth of environmental goods exports has intensified in Southeast Asia over the past decades, increasing from 5.2 percent in 2002 to 13.7 percent in 2020. By contrast, South Asia's performance is relatively modest, with the environmental goods share of total exports remaining on average around 4 percent (Stojanov 2021).

Southeast Asian economies are more integrated into GVCs compared with South Asia, in both downstream and upstream economic activities (table 1). Regardless of the stagnating growth of GVCs in South Asia and the possibility of retrenchment due to automation and trade conflicts, participation in value chains still provides opportunities to boost growth through adaptive policies, deeper reforms, and expansion of digital infrastructure. By deepening ties with Southeast Asia, South Asian nations can improve their linkages with GVCs, acquire knowledge, and grow.

TABLE 1 | PARTICIPATION IN GVCs BY SOUTH ASIA AND SOUTHEAST ASIA

	Trade based (% of gross exports)			Production based (% of domestic value added)		
	2000	2010	2020	2000	2010	2020
South Asia						
Bangladesh	22.2	25.6	24.0	2.5	4.6	1.5
Bhutan	27.2	34.5	30.4	10.6	20.2	14.7
India	30.9	38.6	33.4	6.4	9.7	9.0
Maldives	40.5	45.4	39.5	34.5	30.2	24.6
Nepal	28.7	31.6	38.3	9.6	3.7	3.8
Pakistan	26.2	28.6	23.3	6.6	6.2	3.5
Sri Lanka	35.1	34.4	26.2	16.7	7.2	4.4
Southeast Asia						
Brunei Darussalam	32.9	37.3	44.2	48.2	55.5	44.9
Cambodia	37.2	38.1	50.0	8.6	10.8	23.3
China	30.8	35.1	32.2	8.2	10.7	7.0
Indonesia	37.1	40.0	35.0	21.5	16.2	10.9

Lao PDR	36.4	36.6	32.1	16.7	15.8	24.2
Malaysia	67.3	60.8	55.3	42.3	33.1	31.2
Philippines	43.1	42.4	45.4	14.5	14.2	10.2
Singapore	66.8	65.8	58.0	40.0	44.1	42.2
Thailand	43.7	48.7	41.7	19.7	20.1	19.8
Vietnam	36.6	54.5	56.7	19.6	21.7	22.5

Source: ADB 2021b.

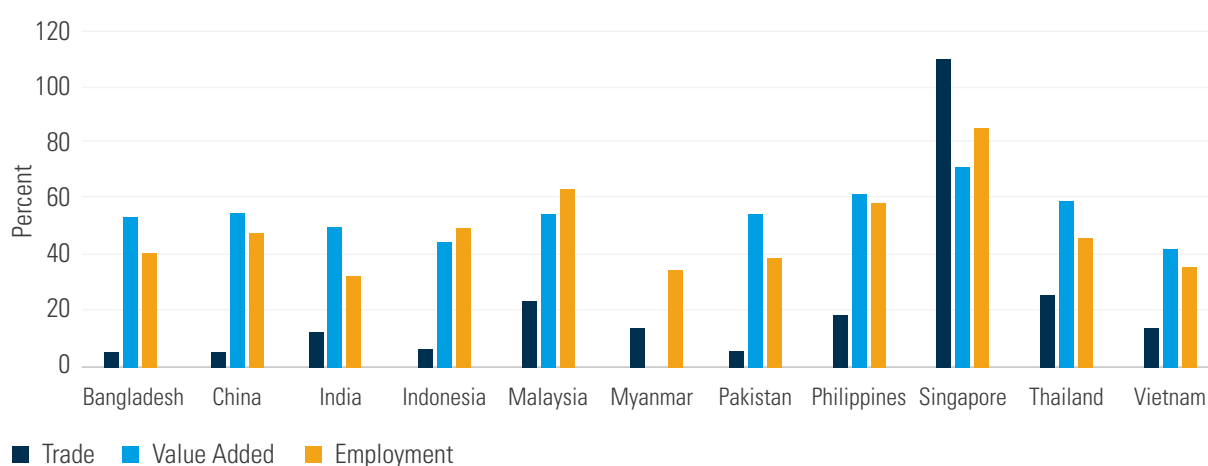
Note: For the methodology, see ADB (2021b).

UNEXPLORED POTENTIAL OF REGIONAL TRADE IN SERVICES

Services play a significant and growing role in South Asia and Southeast Asia. In all, Southeast Asian and South Asian services account for at least 40 percent of total economic activity (figure 2). Similarly, services account for over one-third of total employment in all countries and up to 60 percent in Malaysia and 80 percent in Singapore. With the exception of Singapore, however, services trade relative to gross domestic product (GDP) is much smaller, at less

than 20 percent in all cases. By comparison, the ratio of merchandise trade to GDP is significantly higher, a multiple of five or six in many cases. While output and employment have a large role for services relative to goods, including manufacturing, the same is not true of trade: these data suggest that economic activity still tends to skew heavily toward goods, although the measurement of services trade faces numerous challenges (box 1).

FIGURE 2 | CORE SERVICES INDICATORS, SELECTED ASIAN COUNTRIES, 2019



Source: World Development Indicators.

Note: Trade is total services trade relative to gross domestic product (GDP); value added is services sector value added as a percentage of GDP; and employment is service sector employment as a percentage of total employment.

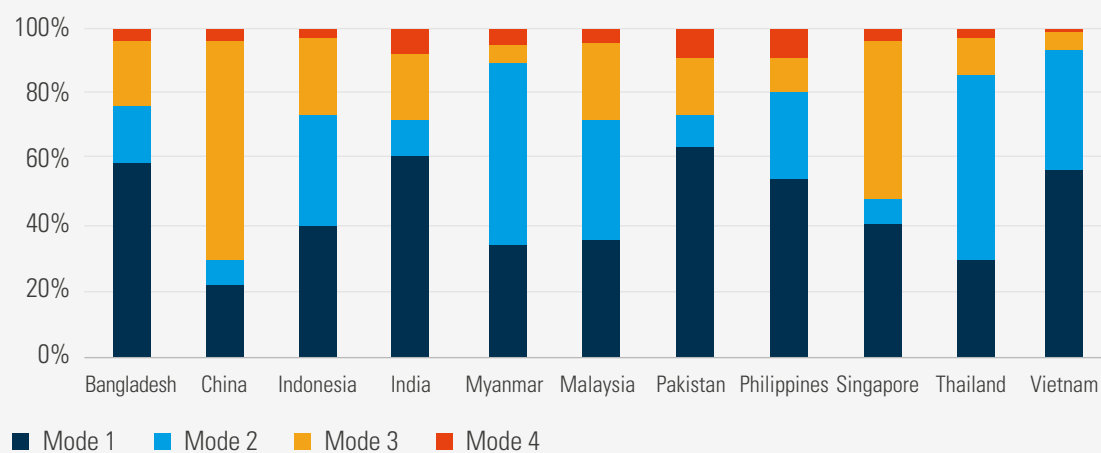
BOX 1 | MEASURING TRADE IN SERVICES – CHALLENGES AND RECENT DEVELOPMENTS

The data used to compute trade in services in figure 2 are drawn from the balance of payments, but the General Agreement on Trade in Services (GATS) recognizes four modes of supply for international services trade that do not correspond to statistical concepts in standard balance of payments data. GATS Mode 1 is pure cross-border services trade, for instance when a lawyer in Malaysia advises a client in the Philippines without either party moving. Mode 2 involves movement of the consumer, such as when an Indian tourist visits Thailand. Mode 3 is sales by foreign affiliates, for instance when a Chinese distributor sets up a subsidiary in Pakistan and uses it to sell services there. Finally, Mode 4 involves temporary movements by service providers, such as when a Singaporean

accountant works temporarily in Bangladesh and then returns to Singapore.

Figure B1.1 shows total services exports for the countries of interest in 2017, the latest year for which data are available, broken down by GATS mode of supply. A clear finding is that Mode 3 is an important way of selling services abroad, in particular for China and Singapore, while other modes that are only imperfectly captured by the balance of payments are also significant. Mode 1 accounts for no more than 60 percent of total services exports once the calculations account for all modes of supply. As a result, the data on trade relative to gross domestic product (GDP) in figure 2 tend to understate the true level of services trade.

FIGURE B1.1 | SERVICES EXPORTS, BY MODE OF SUPPLY, SELECTED ASIAN COUNTRIES, 2017 (PERCENT)



Source: TISMOS.

Table B1.1 presents dollar figures for total merchandise trade as a point of comparison, then total services trade (the sum of exports and imports) for the countries of interest based on TISMOS and the balance of payments. The comparison makes the point clearly that services trade is more widespread than standard data sources would suggest, often substantially so: China's services

trade in TISMOS is more than double what is recorded in the balance of payments, while a number of other countries see differences of 50 percent or more. Although services trade relative to GDP is still lower than for goods in all the countries considered here, the difference is less pronounced once the calculation accounts for all modes of supply.

TABLE B1.1 | TOTAL SERVICES TRADE FROM DIFFERENT SOURCES, 2017 (US\$, BILLIONS)

	Goods	Services BOP	Services TISMOS
Bangladesh	88.790	12.382	24.519
China	4003.572	667.784	1957.469
India	762.510	299.913	405.423
Indonesia	320.727	57.142	103.272
Malaysia	414.698	79.780	121.509
Myanmar	33.158	6.705	10.431
Pakistan	78.126	17.799	26.963
Philippines	171.403	61.252	87.232
Singapore	697.547	348.024	659.877
Thailand	461.872	118.588	159.883
Vietnam	420.704	29.660	61.402

Source: World Development Indicators and TISMOS.

Why does this disjuncture exist between goods and services trade, in particular given the rapid development of information and communications technologies over recent years? An important part of the answer is likely to relate to trade policy: while tariffs have fallen to historically low levels in goods sectors through successive rounds of World Trade Organization negotiations, as well as regional initiatives, the same is

generally not true of services. The GATS, like the General Agreement on Tariffs and Trade, established bindings for most favored nation trade policies in services, but those bindings were for many countries restrictive compared with applied policies when the agreement was signed. Since then, multilateral services negotiations have faltered, with the result that large-scale liberalization has not taken place through multilateral agreements.

Source: Shepherd (2020).

CROSS-BORDER TRADE IN SERVICES

South Asia's share of cross-border services trade with Southeast Asia increased slightly from 10.9 percent in 2005 to 12.8 percent in 2019. At the same time, intraregional services trade remained mostly flat, at around 3 percent of total services trade, while the share of services trade with the rest of the world witnessed a marginal decrease. In 2019, India accounted for more than three-quarters of services trade (exports plus imports) with Southeast Asia, growing by almost 4 percentage points from 2005. Pakistan's contribution to services trade with Southeast Asia

almost halved from 2005 to 2019, while the trade share of the remaining South Asian economies remained mostly flat.

India and Singapore are major players in computer and information technology (IT) services, while most other South Asian and Southeast Asian countries are lagging. Cost competitiveness driven by a large pool of qualified talent, coupled with investments in IT/science education, as well as software technology parks for better infrastructure and continuous innovation,

are major sources of India's ICT success. Gaps in infrastructure and quality standards and concerns about the regulatory and policy frameworks offset the cost arbitrage opportunity in several South Asian and Southeast Asian countries. Malaysia, the Philippines, Thailand, and Indonesia are also important players, with relatively significant exports, which is indicative of their linkages with global markets in IT and IT-enabled services (ITES) and their participation in production networks with India, Singapore, or both as important nodes in that network. Relatively significant imports indicate that India, Thailand, Malaysia, and Indonesia are also significant consuming economies for IT and ITES. Given the relative size of the Sri Lankan economy, trade in IT and ITES is quite significant; however, neither Sri Lanka nor Bangladesh represents a significant domestic market. Vietnam is a relatively modest player in IT and ITES, but the sector is growing rapidly in that country.

There is significant potential for intraregional IT and ITES trade. The presence of economies with dynamic IT and ITES sectors, such as India, Singapore, Malaysia, the Philippines, Thailand, Vietnam, Indonesia, Sri Lanka, and Bangladesh, indicates strong potential for trade and investment in this sector. The availability of niche skills in



tasks related to programming, data analytics, and database management, as well as the need for local customization for their large domestic markets, has led to the establishment of a tiered localization structure within the ITES industry. The critical nodes are served by global development centers. Smaller regional product clusters and regional delivery centers serve large national or regional markets. The availability of certain types of skills leads to specialization in certain types of tasks in certain economies, and these locations have become an important part of the production chain serving global clients directly or through the global development centers, mediating their overall service delivery by combining their task outputs with others. For example, the Philippines, with its large pool of English-speaking professionals, is an important global location for the performance of certain back-office and analytical tasks. Sri Lanka is another example, where the country has developed a niche for the performance of certain accounting services tasks (Banerjee 2021). Some sectors in Southeast Asia and South Asia are already demonstrating the transformative power of technology and digitization of services (box 2).

A brave new world? Looking ahead, there are already signs that in at least some of the more developed South Asian and Southeast Asian economies, fifth generation (5G) wireless technology will open up exciting new possibilities for the development of new and innovative service solutions. Furthermore, automation and additive manufacturing (3D printing) are already impacting manufacturing sectors (for instance, the textiles and garments industry) by changing production processes and the relative importance of inputs. The key implication for textile exporters such as Bangladesh is that they need to adopt these technologies to improve productivity and retain production. Future technologies, including improved artificial intelligence and deep learning technology, as well as increased uptake of the use of blockchain, are technological developments that governments must consider when looking at the digital economy.

BOX 2 | LEADING E-SERVICE SECTORS IN SOUTH ASIA AND SOUTHEAST ASIA

A joint Temasek and Google report identifies the following sectors as early contributors to an e-services revolution in the region:

- *Travel and tourism.* Travel and tourism was one of the first sectors to be disrupted worldwide, through direct digital flight sales by airlines, comparison and booking sites, and sharing economy sites allowing the listing of private accommodations for rental. An example in South Asia is a Sri Lankan app, CityGuide, while in Southeast Asia, digital sales represent a significant and growing part of the tourism market through companies such as AirAsia, the regional airline headquartered in Malaysia,^a and Triip.me,^b a travel service based in Singapore and Vietnam.
- *Media (advertising, gaming, subscription music, and video on demand).* Online media covers a vast range of different forms of media and profit generation models, with platforms using search data to generate targeted advertising services, multiple services selling subscription models for digital access to media, as well as digital media companies that provide an on-demand marketplace for gaming, video content, or e-books. An example in South Asia is ALT Balaji, a subscription-based video service in India. In Southeast Asia, Garnea^c is a digital gaming platform that combines online gaming and social networking across various territories, and Iflix^d and Trueld^e provide video on-
- *demand services based in Malaysia and Thailand, respectively.*
- *E-commerce platforms.* Online marketplaces have sprung up across the region, using a variety of business models, from business-to-business e-commerce platforms like IndiaMart^f to business-to-consumer sites like India's Snapdeal, which has attracted investment from the likes of Alibaba and Softbank.^g Other examples include Llazada,^h a Southeast Asia-based e-commerce group, or Shopee,ⁱ a Southeast Asia-focused full-service e-commerce platform.
- *Education.* The education sector has recently been disrupted by technology, but, as the experience of COVID-19 has illustrated, the sector has enormous potential for future development. Online tutoring and educational apps are perhaps the most developed areas of digital education; however, many schools and universities are looking for ways to move more teaching and examinations online. Given the demand for education, there are already several successful online education providers in the region, such as Topica,^j a Vietnamese edtech service that provides digital university courses from several global institutions; Cialfo,^k a Singaporean service designed to help students track applications to international universities; and Ruangguru,^l an Indonesian tutoring platform with more than 7 million users.

^a <https://www.airasia.com/en/gb>.

^b <https://www.triip.me/>.

^c <https://www.seagroup.com/products/garena>.

^d <https://blog.iflix.com/about/>.

^e <https://home.trueid.net/about>.

^f <https://www.indiamart.com/>.

^g <https://www.snapdeal.com/page/about-us>.

^h <https://www.lazada.com/en/about/>.

ⁱ <https://careers.shopee.sg/about/>.

^j <https://topica.asia/aboutus.html>.

^k <https://cialfo.co/intl/en-US/home>.

^l <https://bimbel.ruangguru.com/>.

- Financial services.* The rollout of digital financial services and fintech has begun to snowball in Southeast Asia, with US\$12.49 billion invested across 547 deals in 2019.^m The range of fintech products and financial services that are now available online is enormous, including investment advisory services, digital insurance providers, and digital wallets and bank accounts, to name just a few. Notable examples include Paytmⁿ an Indian payment services website, as well as Mobikwik, in India. Codapayments,^o which is headquartered in Singapore, allows for the creation of digital wallets in 20 countries, thus enabling consumers without access to any formal banking to buy goods and services online and via mobile technology. Capbay^p and Modalku,^q respectively, offer Malaysian and Indonesian peer-to-peer financing. Indonesia-based Doku^r was one of the first digital payment services in the region. Kash in Bangladesh allows for mobile transfers and is interoperable with traditional payment systems.
- Health care.* Like education, e-health care has great potential in South Asia and Southeast Asia, as a mechanism to increase access to basic services and as a potential generator of export earnings. Notable examples include online consultations, prescription delivery, and test sample collection as provided by Praava Health in Bangladesh, Samitivej hospital^s in Thailand, and Haldoc^t in Indonesia. In the Philippines, Lifetrack^u is a radiology scan-sharing service aimed at doctors operating in remote areas that has recently started to include machine learning on scans. Although there is great unmet need for health care, regulation limits the extent to which these services can be supplied cross-border.
- Information technology (IT) support and consultancy.* The significant supply of IT skills in the region presents a valuable growth opportunity for exports. There are many examples of South Asian and Southeast Asian IT consultancy and freelancing sites, enabling individual IT providers or small companies to offer their services more widely, such as the Malaysian skills marketplace Freelancing.^v There are so many IT skills marketplaces in India that they merit their own comparison listing of the top 25 freelance websites.^w Fast growth and international expansion are also characteristic in this area of business, with software companies, such as CO-WELL Asia in Vietnam, opening new offices and providing services to international customers, involving business solutions, e-commerce, augmented reality–virtual reality, and software testing.



^m <https://www.dashdevs.com/blog/a-complete-overview-of-the-southeast-asia-s-fintech-market/>.

ⁿ <https://paytm.com/>.

^o <https://www.codapayments.com/company>.

^p <https://capbay.com>.

^q <https://modalku.co.id/>.

^r <https://www.doku.com/en/>.

^s <https://www.samitivejhospitals.com/>.

^t <https://www.halodoc.com/>.

^u <https://lifetrackmed.com/en/radiology/>.

^v <https://www.freelancing.my/>.

^w <https://www.flop2hit.com/startup/best-freelance-websites-india/>.

TRENDS IN INVESTMENT

Even before the COVID-19 crisis, South Asia did not fully benefit from its FDI potential. Overall, South Asia performs poorly on attracting FDI, with total inward FDI stocks amounting to only 14 percent of regional GDP, significantly lower than the global average at 41 percent of GDP (figure 3, panel A). A poor business environment, the dominant role of the state, little competition, and high informality hinder the development of a more dynamic private sector and attraction of more investment. In addition, pronounced trade and investment barriers, combined with weak logistics and infrastructure systems, fragility, and insecurity, hamper South Asia's investment potential.

Although total inward FDI stocks in South Asia have more than doubled since 2010, their growth has tapered off recently. Total inward FDI in the region more than doubled from US\$239 billion to US\$524 billion between 2010 and 2019 (figure 3 panel B), benefitting from high growth, improvements in the business environment, and liberalization measures. By contrast, global FDI stocks grew by only 60 percent over the same period, expanding from US\$22.8 trillion in 2010 to US\$36.4 trillion in 2019. Most of the growth in the region's inward FDI stocks occurred between 2013 and 2017; however, since 2017, FDI stocks have declined slightly.

Intraregional FDI accounts for only a small fraction of the South Asian total, amounting to 0.8 percent or US\$3.9 billion in 2019 (figure 3, panel C). More than 96 percent of FDI in the region originates from high-income countries. At 0.8 percent of the total, intraregional investment ties are thus significantly weaker than regional trade ties, which stood at 5.6 percent in 2019. Despite the increase in the overall level of investment in the region, the share of intraregional FDI has been hovering at less

than 1 percent of the total over the past decade.

The three largest intraregional FDI corridors account for total intra-South Asia FDI. Among South Asian countries, India is by far the largest investor in the region, accounting for three-quarters of regional inward FDI or US\$3 billion in 2019 (figure 3, panel D). The three largest FDI corridors in the region are also dominated by India, with important FDI stocks in Sri Lanka (US\$1.7 billion), Bangladesh (US\$0.7 billion), and Nepal (US\$0.5 billion). There are also notable investment stocks from Sri Lanka in Bangladesh and from Pakistan in Bangladesh. Intraregional FDI in South Asia is estimated to be one-fifth of its potential, with an annual gap of US\$13.7 billion in 2019. FDI has been consistently below potential, and in absolute terms the gap has risen from US\$6.4 billion in 2010 (Lakatos 2021).⁸

FDI could be key for diversification into services in South Asia. Two-thirds of global services trade flows are delivered through FDI, including establishing a commercial presence abroad, compared with only 30 percent through direct cross-border supply (Maurer, Lanz, and Magdeleine 2016). Moreover, services are predominant sectors in FDI, accounting for almost two-thirds of global FDI stocks (UNCTAD 2016). Although trade in services via commercial presence is less prominent in South Asia, services account for most of the FDI in the region. For example, over the past two decades, FDI in India went largely to services, with 16.5 percent of the cumulative inflows in financial, business, ICT, and research and development services, followed by computer software and hardware (13.3 percent), telecommunications (7.2 percent), trading (5.7 percent), and construction (5.0 percent) (DPIIT 2021). In Bangladesh, banking and power were in

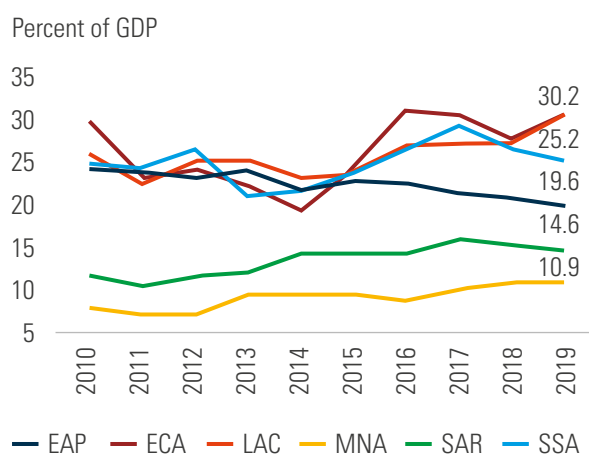
⁸ FDI potential is estimated using a standard gravity model from the literature (Bergstrand and Egger 2007) that is estimated using Poisson pseudo maximum likelihood for a sample of 244 countries and 32,262 country pairs for 2009–19.

the top four FDI sectors in fiscal year 2020, with 12.5 and 11.1 percent, respectively (Bangladesh Bank 2020). In 2019, about 19.3 percent of FDI stocks in Pakistan were registered in financial services, 14.5 percent in power, and 8 percent in oil and gas (State Bank of Pakistan 2020). In fiscal year 2020, the main FDI sectors in Nepal included

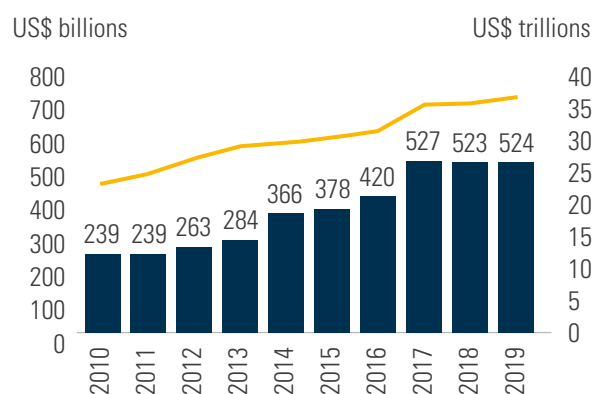
service sectors such as energy (39 percent), services (20 percent), and tourism (16 percent) (Department of Industry 2020). Hence, policy measures that boost the attractiveness of FDI in South Asia could help countries in the region to diversify into services and upgrade into higher value-added manufacturing and service sectors.

FIGURE 3 | RECENT FDI TRENDS IN SOUTH ASIA

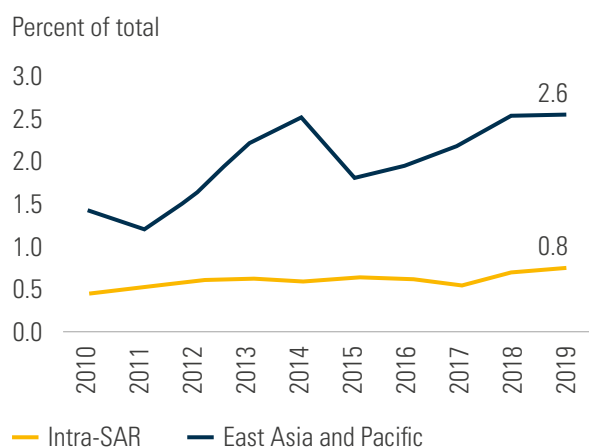
A. FDI-to-GDP ratio



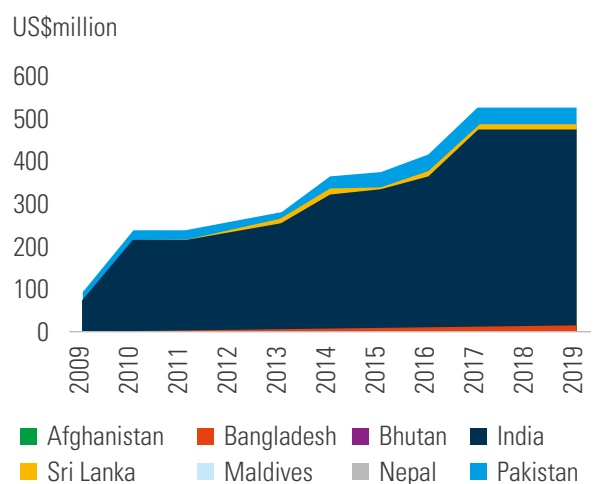
B. South Asia: Total inward FDI stocks



C. South Asia intraregional inward FDI stocks



D. South Asia inward FDI stocks, by country



Source: Lakatos 2021.

Note: The data are from 2019. EAP = East Asia and Pacific; ECA= Europe and Central Asia; FDI = foreign direct investment; GDP = gross domestic product; LAC= Latin America and the Caribbean; MNA = Middle East and North Africa; SAR = South Asia; SSA= Sub-Saharan Africa.

There is significant potential for improving investment ties with Southeast Asian countries. At US\$13.3 billion and more than four times the rate of intra-South Asia investment, FDI from

Southeast Asia accounted for 2.6 percent of South Asia's total FDI stocks in 2019. The five largest bilateral investment corridors exceeding the US\$1 billion mark add up to more than two-

thirds of Southeast Asian investment in South Asia. Three of the largest bilateral FDI corridors are those pertaining to China into Sri Lanka, Pakistan, and India, at US\$2.2 billion, US\$2.1 billion, and US\$1.4 billion, respectively. Similarly, the Philippines' FDI stocks in India stood at US\$1.5 billion and Malaysia's FDI stocks in Sri Lanka at US\$1 billion.

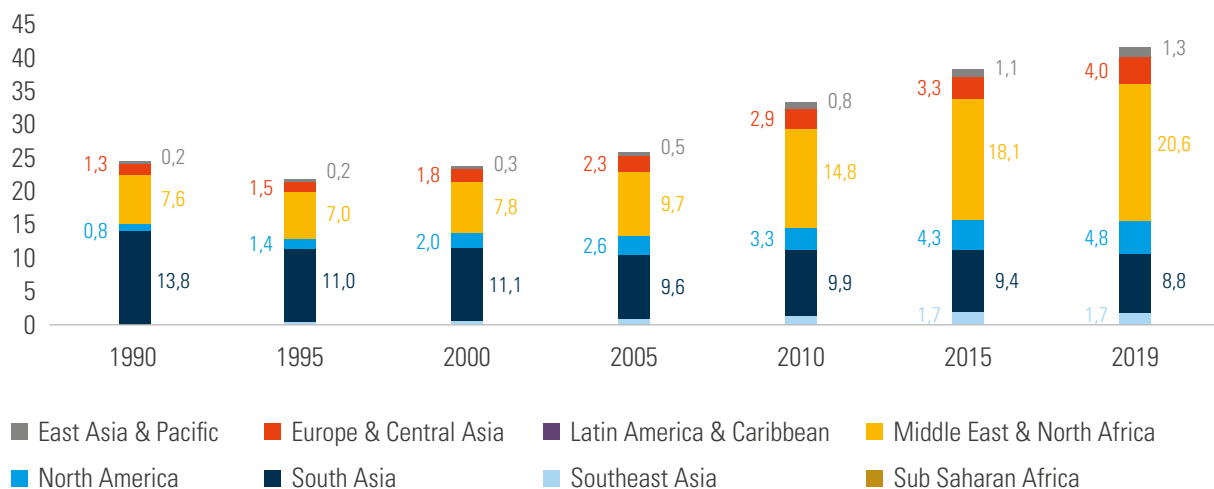
MIGRATION TRENDS

The importance of intraregional migration in South Asia has declined, with migration flows shifting toward the Middle East and North Africa and those to Southeast Asia exhibiting the fastest growth. A total of 41.2 million people migrated from South

Asia in 2019, the second largest region of origin next to Europe and Central Asia. According to the United Nations Department of Economic and Social Affairs, the number of emigrants from South Asia has grown by an average of 2 percent annually since 1990. They largely moved within South Asia (60 percent) in the 1990s, but over the following three decades, 13 million more South Asian migrants took residence in the Middle East and North Africa, equivalent to a third of all South Asian migrants in 1990, increasing to half by 2019 (figure 4). Migration to Southeast Asia has remained relatively low, but it has had the fastest annual growth (7.7 percent) compared with the other regions, its share rising from 1 to 4 percent between 1990 and 2019.

FIGURE 4 | SOUTH ASIAN MIGRATION, BY REGION OF DESTINATION, 1990–2019

(millions)



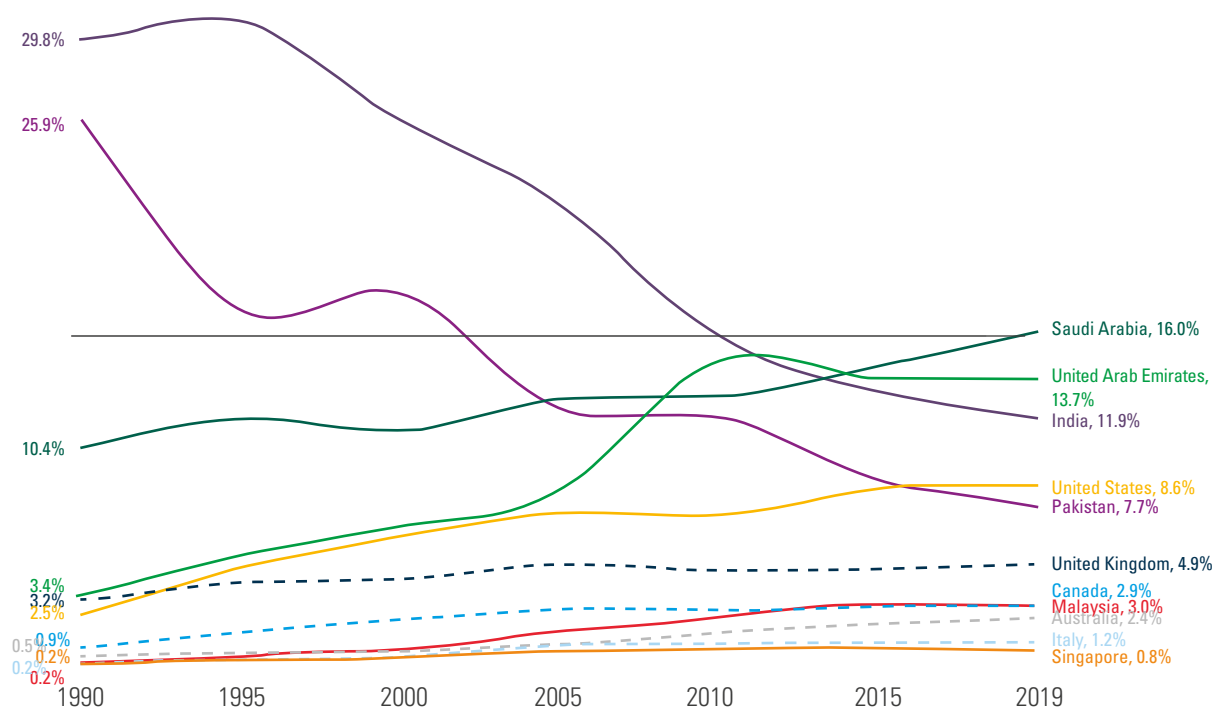
Source: UNDESA database on Migrant Stock (accessed October 2021), <https://www.un.org/en/development/desa/population/migration/data/estimates2/estimates19.asp>.

South Asian migrants are largely concentrated in Saudi Arabia and the United Arab Emirates, followed by the United Kingdom, the United States, Malaysia, and Singapore. As of 2019, half of the South Asian migrants were in six major destinations, namely, Saudi Arabia (16 percent), the United Arab Emirates (13.7 percent), India (11.9

percent), the United States (8.6 percent), Pakistan (7.7 percent), and the United Kingdom (5 percent). So, while pandemics like COVID-19 affect all countries, the effects will likely be exacerbated by trade tensions, migration policies, fluctuations in commodity prices, and the economic outlook in these six countries.

FIGURE 5 | SOUTH ASIAN MIGRATION, TOP CORRIDORS

(share of total)



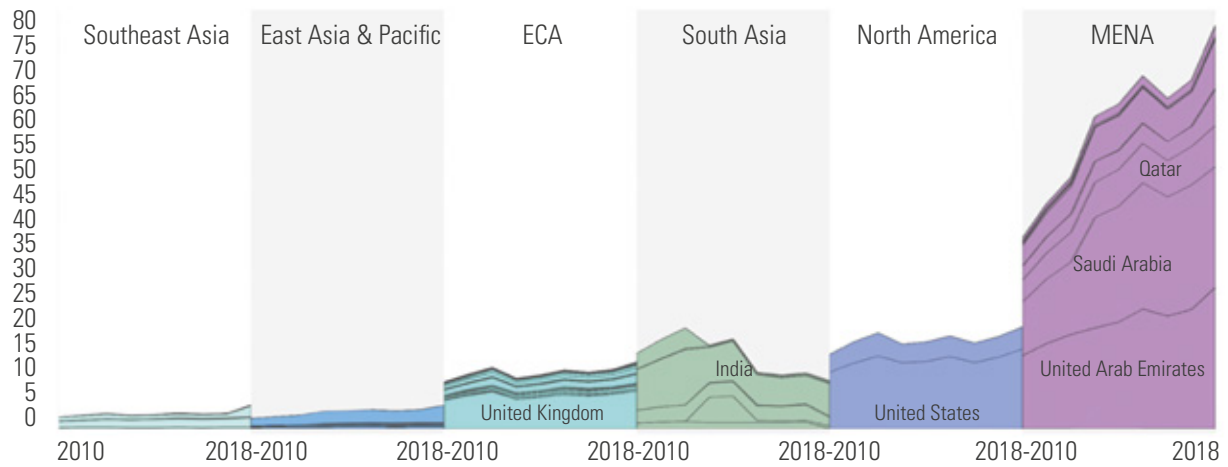
Source: UNDESA database on Migrant Stock (accessed June 2020), <https://www.un.org/en/development/desa/population/migration/data/estimates2/estimates19.asp>.

Remittances have increasingly become a significant source of income in South Asia, largely originating from the Middle East. South Asian migrants have proved to be resilient during the COVID-19 crisis and were able to continue sending funds home. Inflows to South Asia rose to 20 percent of the global total in 2019, up from 10 percent in 1990, with India being the largest recipient of remittances since 2008. The share of intraregional remittances, while still substantial, has been on a decline, replaced by inflows from the Middle East and North Africa, specifically the United Arab Emirates and Saudi Arabia (figure 6). According to 2020 estimates, remittances amounted to about 23.5 percent of GDP in Nepal, followed by 9.9 percent in Pakistan, 8.8 percent in Sri Lanka, and 6.6 percent in Bangladesh. Remittances have increasingly become an important countercyclical source of income in South Asia.



FIGURE 6 | REMITTANCES TO SOUTH ASIA, BY SOURCE REGION/COUNTRY, 2010–18 (US\$, BILLIONS)

(US\$, billions)



Source: World Bank Migration and Remittances Database (accessed June 5, 2020).

Note: Sub-Saharan Africa and Latin America and the Caribbean were excluded due to low figures. ECA = Europe and Central Asia; MENA = Middle East and North Africa.

For some countries, inward remittances represent a much larger inflow than FDI. Only Vietnam and Cambodia receive significant inflows of both, which suggests greater potential to leverage the diaspora for investment. It also evidences a slight negative correlation between remittances

and inward FDI of -0.33 (-0.28 if Singapore is excluded), although this alone is not evidence of emigration deterring FDI through an exodus of relatively capable workers and the exchange rate and competition effects of remittances (Yarcia et al. 2021).



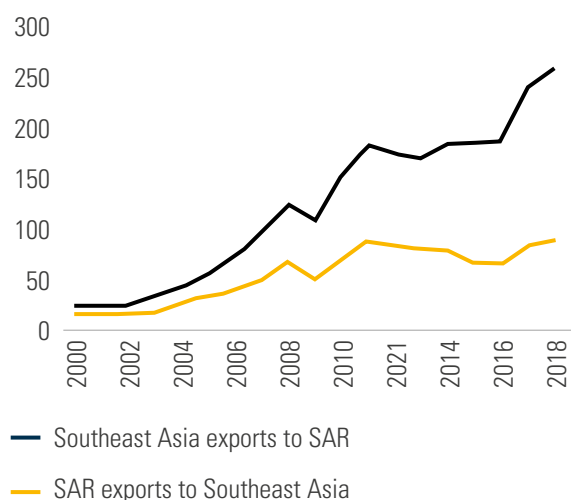
2. WHAT EXPLAINS THE LIMITED INTEGRATION BETWEEN SOUTH ASIA AND SOUTHEAST ASIA?

Despite their growth over the past 20 years, trade and investment linkages between South Asia and Southeast Asia are still constrained by high tariff barriers and NTBs, burdensome and costly customs processes, and other barriers to trade and FDI. Although trade linkages have grown by more than ninefold over the past two decades – from US\$38 billion in 2000 to US\$349 billion in 2018 – significant untapped potential for trade integration between South Asia and Southeast Asia remains. At US\$260 billion, Southeast Asian exports to South Asia are almost three times higher

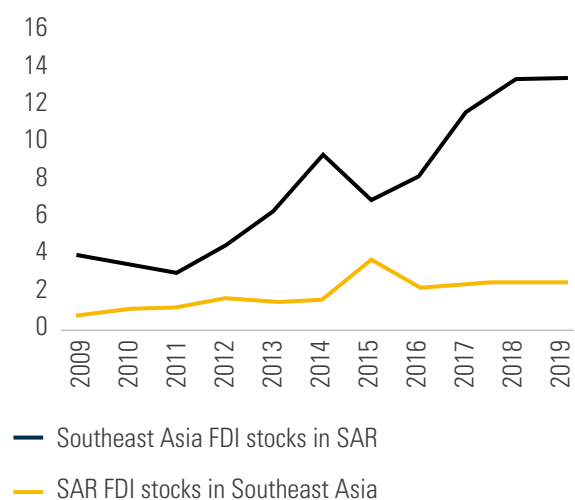
than South Asian exports to Southeast Asia (figure 7, panel A), amounting to 4.2 and 25.6 percent of total exports in Southeast Asia and South Asia, respectively. By contrast, FDI linkages are even more underdeveloped. Interregional FDI stocks amounted to a total of US\$15 billion in 2019, up from US\$4.6 billion in 2009. Southeast Asian FDI stocks in South Asia have steadily increased over the years to a total of US\$13.4 billion in 2019, compared with stagnating South Asian FDI stocks in Southeast Asia, at only US\$1.3 billion in 2019 (figure 7, panel B).

FIGURE 7 | TRADE AND FDI LINKAGES BETWEEN SOUTH ASIA AND SOUTHEAST ASIA

A. Trade flows
(US\$, billions)



B. FDI stocks
(US\$, billions)



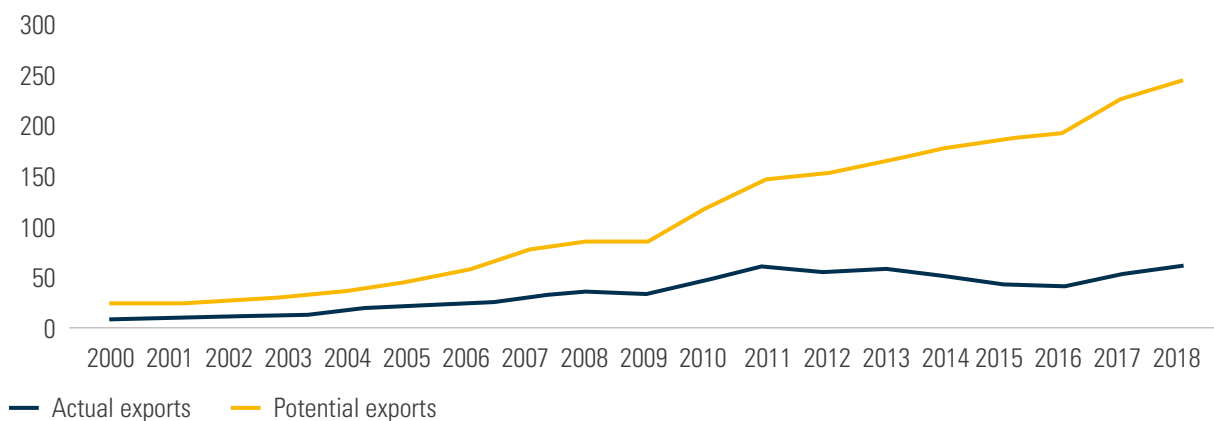
Sources: World Bank WITS database, goods trade only; Bekkers et al. 2021.
Note: EAP = Southeast Asia; FDI = foreign direct investment; SAR = South Asia.

Gravity model estimates indicate that the untapped export potential to Southeast Asia is substantial.⁹ Gravity model estimates show that South Asia has been consistently under-exporting to Southeast Asia. The gap was estimated at around US\$186.2 billion in 2018 (figure 8). India's export potential to Southeast Asia is the largest by far. On average, from 2000 to 2019, India is estimated to have under-exported to Southeast

Asia by US\$52.4 billion per year. During the same period, average under-exports from Pakistan, Bangladesh, and Sri Lanka were US\$9.4 billion, US\$8.4 billion, and US\$3.1 billion, respectively. Export potential for smaller economies varies between US\$0.2 billion and US\$1.6 billion. For all South Asian economies, the proportion of under-exports to China is greater compared with all the ASEAN economies combined.

FIGURE 8 | ACTUAL AND POTENTIAL EXPORTS TO SOUTHEAST ASIA

(US\$, billions)



Source: Calculations from CEPII gravity data.

HIGHER TARIFFS IN SOUTH ASIA THAN IN SOUTHEAST ASIA

South Asian tariffs applied on imports from Southeast Asia (6.9 percent) are nearly three times higher than Southeast Asian tariffs on imports from South Asia (2.8 percent) (figure 9, panels A and B). Within South Asia, Bhutan, Maldives, and Pakistan stand out as the most protectionist countries, with average tariffs of 28, 13, and 12 percent, respectively. In Southeast Asia, tariffs on imports from South Asia are significantly lower, but in relative terms they

are highest in the Philippines and Cambodia (at 6.8 and 5.3 percent, respectively).

High interregional tariffs lead to efficiency and productivity losses and have wide-ranging consequences, affecting not only trade flows, but also firms, consumers, and investment decisions. First, tariffs increase the price of imported inputs, which forces firms to source their inputs from other sources and potentially

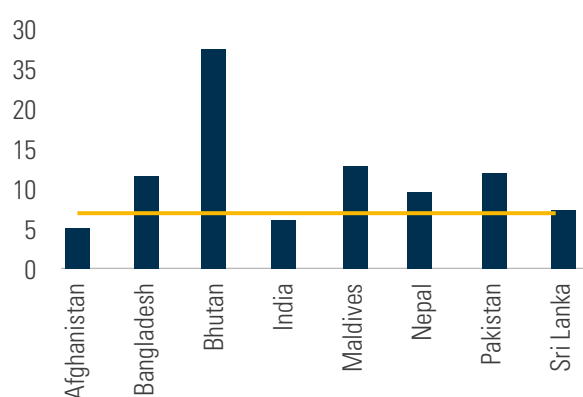
⁹ The gravity model specification and methodology used for this estimation were drawn from Kathuria (2018) and the data are from CEPII (for details, see Conte et al. 2021), which can be accessed at: http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=8.

pass the increases in costs to consumers. This in turn will impact firms' hiring decisions and potentially spill over to changes in wages. Given the international fragmentation of production and complex value chains, tariffs result in cascading trade costs as intermediate goods cross borders multiple times through the stages of production (Diakantoni et al. 2017). Tariffs

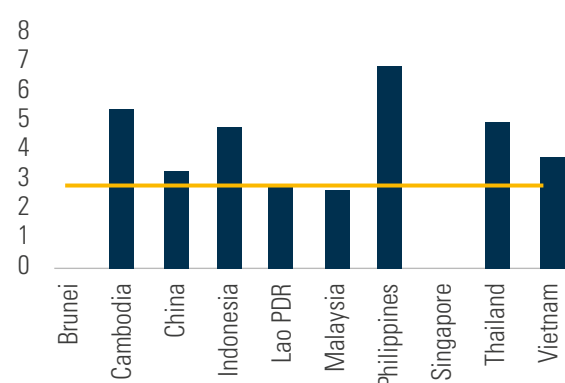
also increase the prices of imported goods for consumers, reducing their purchasing power and limiting the availability of imported goods. Finally, tariffs increase the prices of imported capital goods, which likely weighs on investment and disproportionately impacts low-income countries, which rely heavily on imports of machinery and capital goods.

FIGURE 9 | SOUTH ASIA–SOUTHEAST ASIA TARIFFS

A. South Asia's import tariffs on exports from Southeast Asia (percent)



B. Southeast Asia's import tariffs on exports from South Asia (percent)



Source: World Bank WITS database.

Note: Values are trade-weighted averages for 2019. Where 2019 data are not available, the closest available yearly data were used.

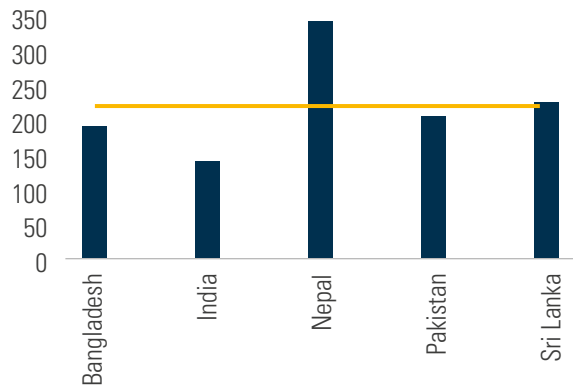
NTBS REMAIN MORE IMPORTANT THAN TARIFFS

Although tariffs remain important obstacles to regional integration, the restrictiveness of NTBs, at an average interregional ad valorem equivalent (AVE) of 225 percent, towers over that of tariffs (figure 10). Non-tariff measures (NTMs) cover a wide range of measures, such as sanitary and phytosanitary (SPS) requirements, technical barriers to trade, pre-shipment inspection, nonautomatic licensing requirements, and price control measures (see box 3 for examples of SPS challenges). While some NTMs are justified and aim to protect human health and safety or plant or animal life, there are many that serve

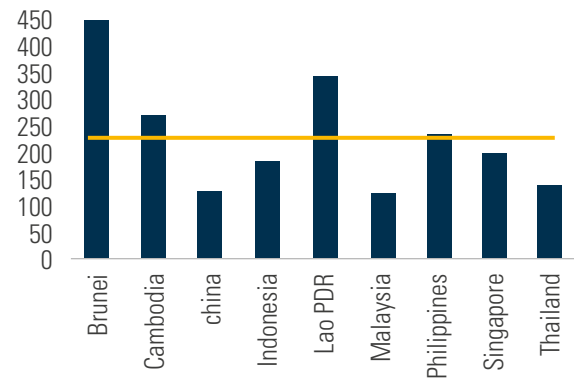
protectionist purposes and are a significant deterrent to trade and an impediment to the competitiveness of firms. South Asia's NTBs applied on imports from Southeast Asia are the highest in Nepal, estimated at an AVE of 353 percent, and Sri Lanka, at 230 percent. Conversely, Southeast Asian NTBs applied on imports from South Asia are the highest in Brunei (457 percent) and the Lao People's Democratic Republic (345 percent) and significantly lower in China (127 percent) and Malaysia (123 percent). A case study on environmental goods is provided in box 4.

FIGURE 10 | INTERREGIONAL NON-TARIFF BARRIERS

A. AVEs of South Asia's NTBs on Southeast Asia's exports (percent)



B. AVEs of Southeast Asia's NTBs on South Asia's exports (percent)



Source: UNESCAP-World Bank Trade Costs Database.

Note: Values are averages for 2015–19. AVEs = ad valorem tariff equivalents; NTBs = non-tariff barriers.

BOX 3 | SPS CHALLENGES AND SOLUTIONS – EXAMPLES IN BANGLADESH AND NEPAL

In some cases, countries implement non-tariff measures (NTMs) as protectionist measures restricting trade, but more often the procedures related to both protectionist and legitimate sanitary and phytosanitary (SPS) measures and the application of the measures are the real impediments to trade. In many cases, geographical access to certification services, lack of capacities to provide required services, or inefficient, redundant, or duplicative procedures and processes hamper trade, increasing time and costs and particularly impacting perishable agricultural products.

Bangladesh relies on many different government agencies to address SPS issues. Coordination among agencies has been identified as a challenge and contributes to customs and border inefficiencies. Evaluations of Bangladesh's SPS capacity have led to training programs, advice, and technical assistance from countries and international aid agencies. SPS capacity reviews highlight deficiencies, including lack of risk management and risk assessment expertise, inadequately trained personnel, poor communication with producers, inadequate equipment and training for analytical technicians, and outdated SPS policies and regulations. Opportunities for improvements in SPS-

related infrastructure have been suggested, including private sector accredited laboratories, review of mandatory standards, and the use of trade facilitation tools such as harmonization, equivalence, and mutual recognition, particularly with India (Kathuria and Malouche 2016).

Bangladesh has taken steps to respond to SPS trade constraints. Following EU bans on fishery products, Hazard Analysis and Critical Control Points (HACCP) management of prawn processing was implemented, and accredited testing laboratories were established to ensure that products could meet EU SPS standards (Naureen et al. 2006). Advancements have been documented; a US report (USDA/FAS 2020) stated that "Bangladesh is a role model of acceptance and advancement of modern agricultural biotechnology." Improvements to the laboratory system in Bangladesh have resulted from internal evaluations (Hossain 2013) and evaluations by external agencies. A Purdue University assessment of the food safety system in Bangladesh noted that although shrimp processing is a well-developed export-oriented sector, there were limitations in lab accreditation for some testing parameters and underutilization of testing equipment

due to shortages in human resources and lack of leadership (Suman et al. 2021). The prawn experience in Bangladesh has demonstrated that making the necessary changes to meet stringent SPS requirements results in net economic gain (Yunus 2009).

Recent evaluations of Nepal's SPS capacity have identified serious gaps (ITC 2017; ADB 2019). Problem areas include SPS-related standards that lag international norms in traceability and poor HACCP implementation, labeling, and recognition of genetically modified organisms. Institutional constraints include the lack of a national accreditation agency, lack of a legislative framework for HACCP, limitations within the Food Act for export certification, capacity to undertake pest risk assessment, and a lack of trained personnel to implement SPS measures. Resolving an infrastructure gap with respect to accredited laboratory testing, the Nepal National Food and Feed Reference Laboratory received accreditation from India's National Accreditation Board for Testing and Calibration Laboratories in 2019. This will provide testing for a wide

range of food products including ginger, cardamom, and tea and lessen procedural obstacles at the border. Some earlier reviews identified outdated procedures, extensive documentation requirements, and lack of coordination and cooperation among various government bodies as procedural challenges to SPS compliance.

Nepal has undertaken major legislative reforms to meet World Trade Organization obligations since its accession in 2003 (STDF 2010). Key areas for further improvement include implementing systems approach procedures such as Good Agricultural Practices and HACCP, incorporating a risk-based approach to food safety regulation, updating SPS-relevant legislation to meet international standards, and improving risk analysis and accredited laboratory testing capacity. Establishing an internationally recognized accreditation body to certify testing laboratories is a high priority. The International Plant Protection Convention's Phytosanitary Capacity Evaluation tool was applied prior to 2011; the update that was planned for 2021 could provide valuable insights into gaps in phytosanitary capacity.

BOX 4 | TARIFFS AND NTBS AFFECTING ENVIRONMENTAL GOODS IN SOUTH ASIA AND SOUTHEAST ASIA

Average tariffs on environmental goods and environmentally preferable products (EPPs) are lower in Southeast Asian countries than in South Asia. Environmental goods cover air pollution control; renewable energy; water and waste management; environmental monitoring, assessment, and analysis; environmental consulting; remediation and cleanup services; cleaner technologies; and carbon capture and storage. EPPs have less adverse impacts on human health and the environment compared with competing products that are designed to achieve the same purpose. These environmental benefits can arise in production, consumption, and disposal. EPPs are of particular interest to developing countries and include a range of agricultural and natural products, such as lac, gum, and

resins; fertilizers, colorants, and wood products; wool, cotton, and silk; and vegetable fibers. As such, high tariffs on these products imposed by developed countries can constrain developing country competitiveness.

Accessibility to these EPPs and environmental goods is important because they can fuel the production, transportation, and consumption decisions needed for the low-carbon transition. High barriers also limit entry of firms into the market. Pakistan and India top the South Asian list, with tariffs of 7.2 and 5.3 percent, respectively, on environmental goods. For EPPs, India, Nepal, and Afghanistan have high rates. In contrast, the Southeast Asian countries generally have lower tariffs, notably Singapore with a zero tariff (figures B4.1 and B4.2).

FIGURE B4.1 | SIMPLE MFN AVERAGE TARIFFS ON ENVIRONMENTAL GOODS

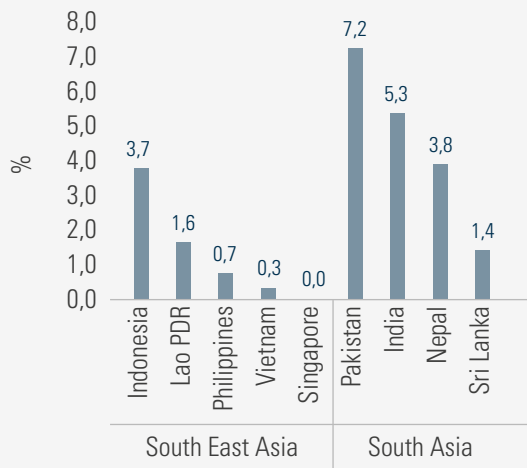
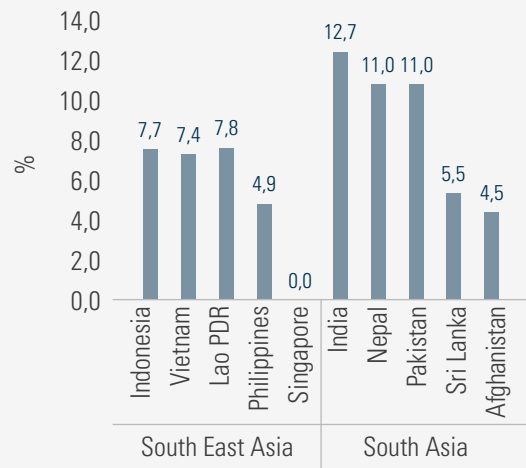


FIGURE B4.2 | SIMPLE AVERAGE MFN TARIFFS ON ENVIRONMENTALLY PREFERRED PRODUCTS

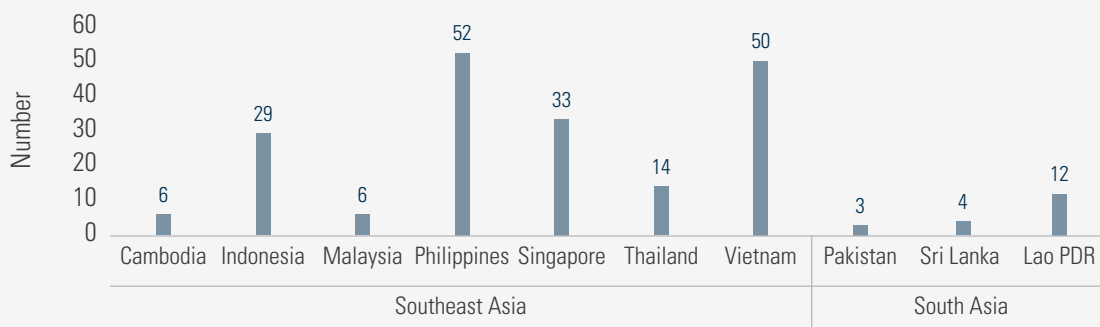


Source: WITS Comtrade.

As opposed to tariffs on environmental goods and EPPs, non-tariff measures (NTMs) in Southeast Asian countries are significantly higher than those in South Asian countries. The Philippines tops this list in Southeast Asia (figure B4.3), with several regulations and standards on hazardous waste management. Specifically, importers, manufacturers, distributors, and dealers need to comply with the Philippine Energy Standards and Labelling Program. Authorities also require testing and sampling at the expense of the importer, who must comply with storage and packaging requirements, for example, a transport,

storage, and disposal facility permit. Additionally, licensees involved in exporting must determine that the importing country has the appropriate technical and administrative capability, resources, and regulatory infrastructure needed for the management of radioactive sources in a manner consistent with the stipulated guidance. Vietnam comes second, with 50 recorded NTMs. The renewable energy sector experiences the most NTMs, especially by importers of generator sets. Renewables also have the highest import value in Vietnam, led by photosensitive semiconductor devices.

FIGURE B4.3 | NUMBER OF NTMS APPLIED ON SELECTED ENVIRONMENTAL GOODS



Data sources: UNCTAD-TRAINS; ITC MACMAP (for Vietnam).

Note: These goods include renewable energy, monitoring equipment, and air pollution and waste management products.

The main non-tariff issues in environmental goods trade include non-categorization of these types of goods and services, anti-dumping duties, excessive documentation required by partner countries, lack of adequate infrastructure for quality checks, inadequate implementation of modern customs procedures, limited application of information and communications technology, lack of transparency in import-export requirements, lack of compliance with technical international standards, lack of adequate border facilities, and lack of through-transport arrangements. The development of harmonized standards for environmental goods across South Asia remains nascent, and there are considerable asymmetries in testing procedures across countries in the region.

Divergent standards across the region lead to poor coordination and communication among the neighboring countries, thereby increasing the reluctance to export environmental goods.

Moreover, access to environmental services, such as environmental monitoring and training of personnel for water and renewable energy technologies, is constrained by the restrictions imposed on commercial presence for service providers and regulations on the movement of labor with skills in this sector. It has been observed that although companies are willing to provide services such as installation and maintenance on-site, companies still prefer providing this as a one-time service because of increases in costs.

Source: Chemutai (2021).

TRADE FACILITATION NEEDS TO IMPROVE



There is significant room to improve the efficiency of trade processes and that of control agencies, customs, and border authorities in the region. The time and costs associated with the process of trading are significant. On average, documentary and border compliance is estimated to add up to 96 hours and US\$384 in Southeast Asia compared with 127 hours and US\$468 in South Asia (figure 11, panels A and B).

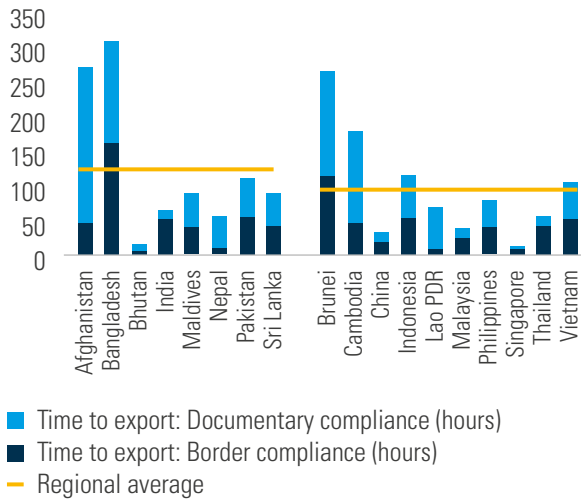
While the time and costs of trading goods in Southeast Asia remain high, some countries have made progress in implementing their World Trade

Organization (WTO) Trade Facilitation Agreement (TFA) commitments. Overall, close to 40 percent of the TFA commitments have been implemented in South Asia, significantly lower than Southeast Asia's average at 83 percent. Across countries, the rate of implementation of commitments varies significantly, with China and Malaysia having implemented all their TFA commitments, Pakistan and India close to 79 percent, and the lowest in Nepal at 2 percent and Maldives at 16 percent (figure 11, panel C).

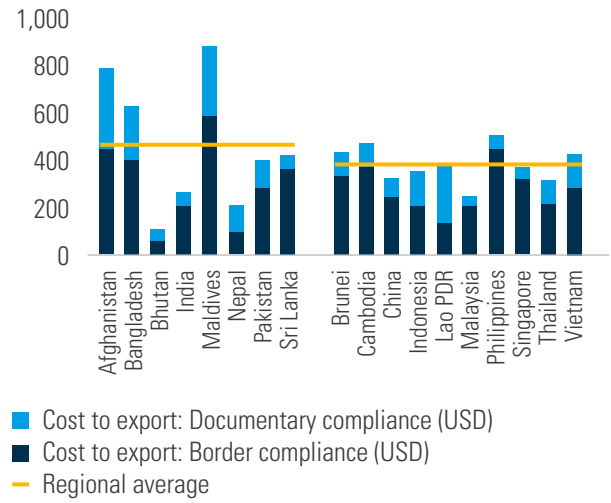
With the exception of Singapore, all Southeast Asian countries perform below the international best practice on trade facilitation indicators (figure 11, panel D). In South Asia, the average trade facilitation index reaches 12.2 and much lower in the case of Nepal (7.6) and Bangladesh (9.3). Conversely, Southeast Asian countries perform close to the best practice (18.2), with an average trade facilitation index of 15.1. Additional information is available from the trade profile of the South Asia region based on the World Bank's Exporter Dynamics Database for 2000–20 (box 5).

FIGURE 11 | TRADE FACILITATION COMMITMENTS AND INDICATORS

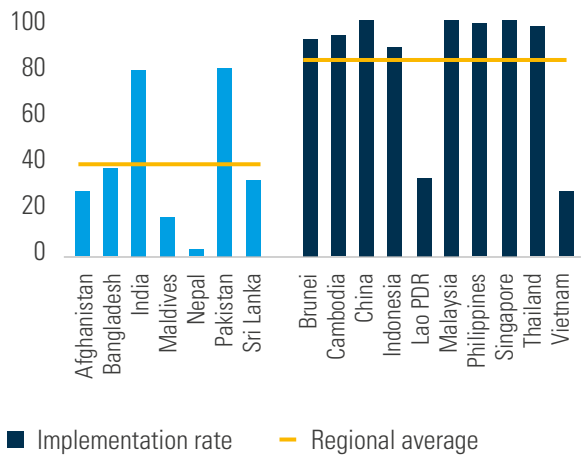
A. Time to export: Documentary and border compliance (hours)



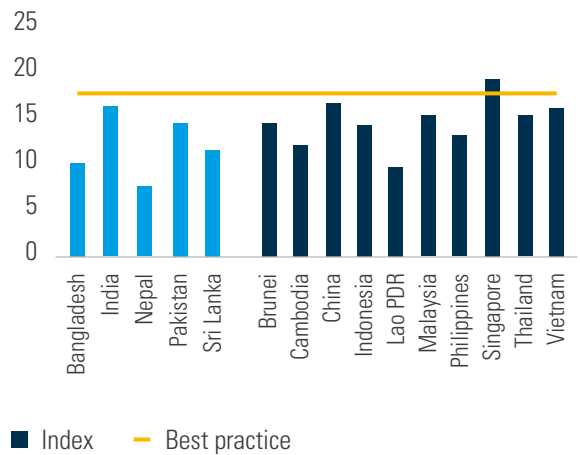
B. Cost to export: Documentary and border compliance (US\$)



C. WTO trade facilitation agreement commitments: Implementation to date (percent)



D. Trade facilitation indicators (index)



Sources: World Bank 2020 Doing Business indicators; Organisation for Economic Co-operation and Development trade facilitation indicators. Note: WTO = World Trade Organization.

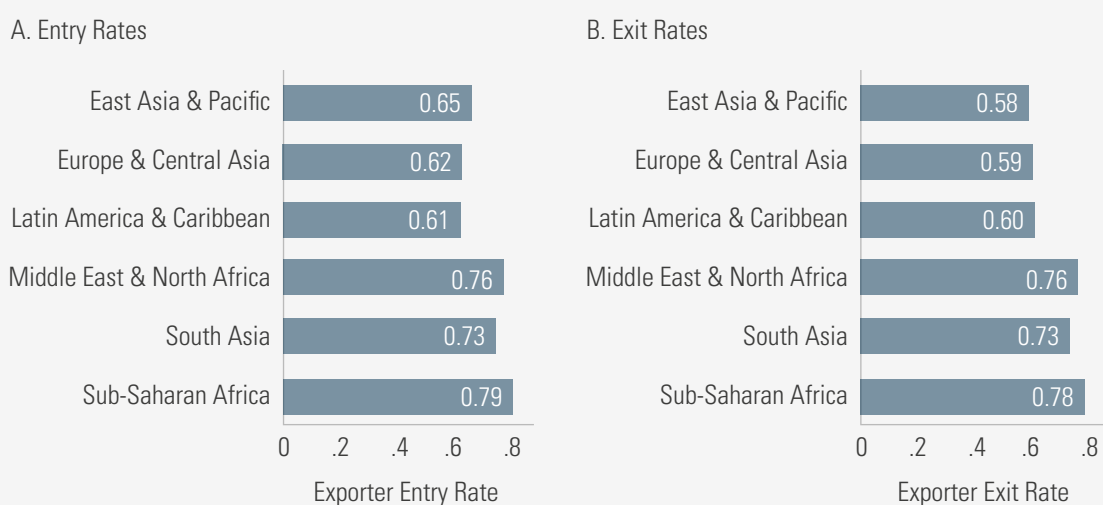


BOX 5 | TRADE PROFILE OF THE SOUTH ASIA REGION BASED ON THE WORLD BANK'S EXPORTER DYNAMICS DATABASE FOR 2000–20

South Asia's inclusion in international markets during the past two decades has had positive results. Overall, relative to other regions of similar size, stage of development, and export basket, while South Asia has fewer exporters, they are larger and have more diversified destination markets, suggesting that

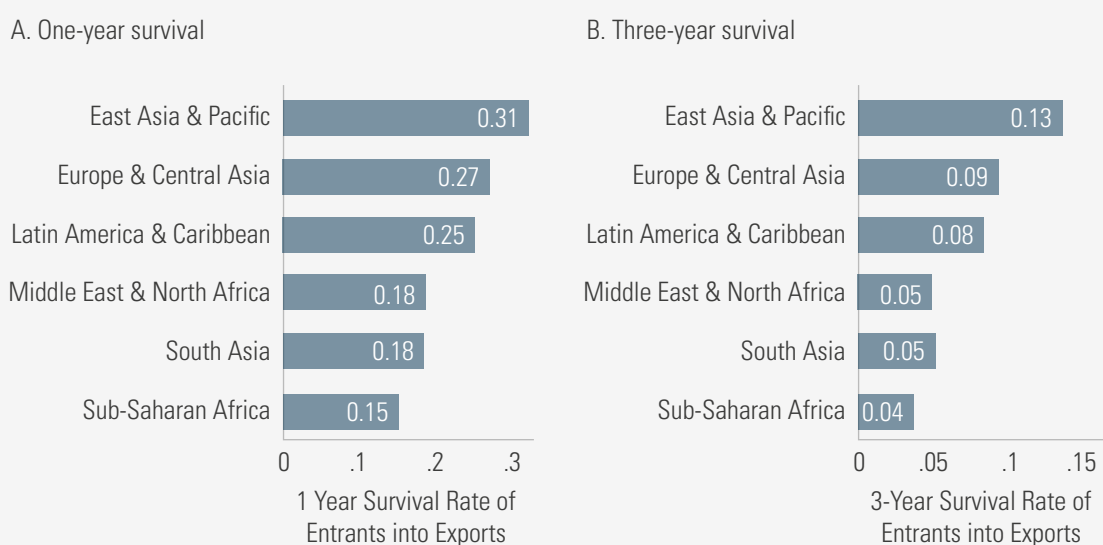
these successful exporting firms are competitive internationally. In addition, the entry and exit rates by product category of South Asia's exporters are higher relative to those of exporters in comparable countries (figure B5.1), but their survival rates upon entry are lower (figure B5.2).

FIGURE B5.1 | EXPORTER ENTRY AND EXIT RATES, BY PRODUCT CATEGORY



Source: Calculations based on data used for the Exporter Dynamics Database.

FIGURE B5.2 | SURVIVAL RATES OF NEW EXPORTERS, BY PRODUCT CATEGORY



Source: Calculations based on data used for the Exporter Dynamics Database.

Note: All countries in the Exporter Dynamics Database with available indicators at the country-year level in 2000–20 enter the averages shown in panels A and B.

To improve South Asia's exporter performance, governments could consider relaxing restrictive import licensing requirements for intermediate inputs that are necessary for exporting firms. This will enable smaller exporting firms to expand and have access to cheaper and higher quality imported inputs, which may enhance their competitiveness. The success of these smaller exporters will increase the number of exporters in South Asia and reduce the concentration in exporting sectors. Empirical evidence based on Bangladesh, India, and China suggests that access to imported inputs helps promote the product scope and

productivity of domestic firms.

Along the same line of reasoning, any other policies that may help exporting firms access imported intermediates will help promote exporter performance. Such policies may include tariff/value-added tax reductions or duty drawbacks on imported materials, improvements in financing, and reduction in credit constraints for small exporting firms. Customs reforms to enhance efficiency at the borders may also encourage firms to rely more on the imported inputs that are necessary for them to compete in export markets.

Source: Kee, Forero, and Fernandes (2021).

SIGNIFICANT BARRIERS HAMPER TRADE IN SERVICES

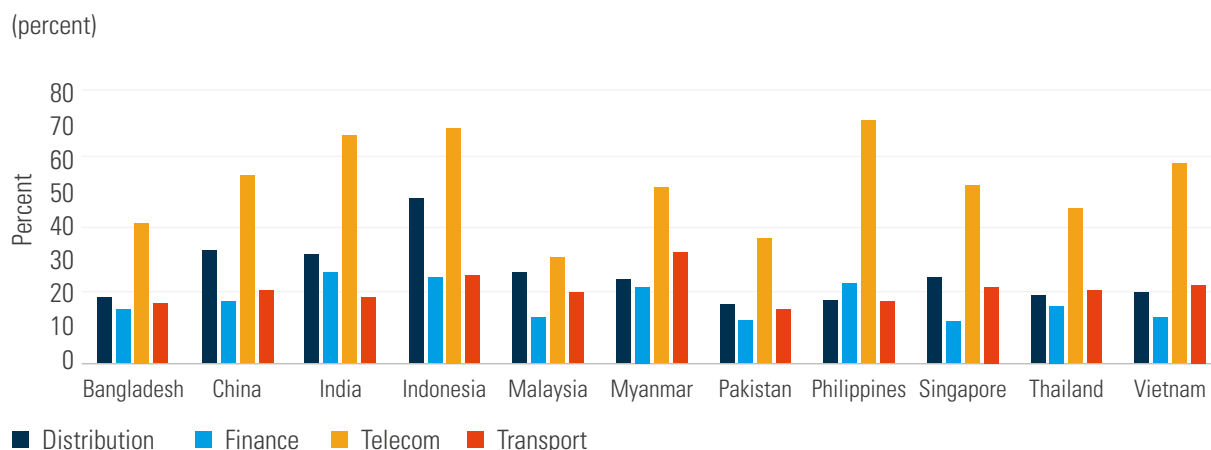
The AVEs of services barriers are high relative to tariff rates for goods, in excess of 10 percent in all cases, and as high as 70 percent in some sectors. The AVEs were quantified using machine learning techniques and a gravity model estimation (box 6). In sectoral terms, AVEs are highest in the telecom sector, at 52 percent on average. For the other sectors, the average is lower: 18 percent in finance, 22 percent in transport, and 26 percent in distribution. But in all cases, the average degree of market insulation brought about by services trade restrictions is high relative to what is seen in goods markets. Singapore provides the clearest demonstration of this point: it has zero tariffs in goods markets but maintains significant restrictions on trade in services (figure 12).

Bangladesh, Malaysia, Pakistan, Singapore, Thailand, and Vietnam have less restrictive policies. China is taken as a comparator. The other countries have more restrictive policies than China. The overall results obscure heterogeneity at a detailed level. For instance, China is quite restricted in distribution services relative to all countries except Indonesia. For other sectors, the

relative pattern of restrictiveness is more complex. But Indonesia and India generally have relatively restrictive services policies compared with the other countries in the sample.

Cross-cutting policy measures also play an important role in determining overall Services Policy Index scores. The main horizontal restrictions are visa processing restrictions in Bangladesh, Indonesia, Myanmar, Pakistan, the Philippines, and Vietnam. Thailand has a restrictive visa processing regime for business arrivals. Bangladesh, Indonesia, Myanmar, and Malaysia have policy restrictions related to land acquisition, while India, Pakistan, and Singapore retain some data transfer restrictions.

In sectoral terms, AVEs are highest in the telecom sector, at 52 percent on average. For the other sectors, the average is lower: 18 percent in finance, 22 percent in transport, and 26 percent in distribution.

FIGURE 12 | AD VALOREM TARIFF EQUIVALENTS OF THE SERVICES TRADE POLICIES INDEX, SELECTED ASIAN COUNTRIES

Source: Estimates based on data from Hoekman and Shepherd 2020.

Note: The ad valorem tariff equivalent is the equivalent ad valorem tariff that would restrict trade to the same degree as the bundle of regulatory measures captured by the Services Trade Restrictiveness Index. The figure combines estimates for horizontal measures with sector-specific ones, which are numerous in the database and so cannot be presented individually.

BOX 6 | QUANTIFYING BARRIERS TO TRADE IN SERVICES USING MACHINE LEARNING AND GRAVITY MODEL ANALYSIS

The first major effort to look systematically at applied services policies was undertaken by the Australian Productivity Commission (APC) in the early 2000s. The APC's framework is still the reference point for work in this area, but the exercise itself was more in the nature of a proof of concept, as the project undertook exploratory work for a variety of countries and sectors but was not developed into an ongoing project to track services trade restrictiveness. The APC coined the term "Services Trade Restrictiveness Index" (STRI) as the name for its summary index of policy restrictiveness in each sector, and the term has been used extensively by subsequent researchers.

The APC's basic framework still informs STRI projects today. The first stage is to produce regulatory questionnaires in the sectors of interest. Once the regulatory questionnaires have been designed, they need to be filled in, one sector in one country at a time. Once the responses to the individual questions in the regulatory questionnaire have been systematically coded by country-sector pair, the next step is to use that coded database to produce summary measures of

restrictiveness, or STRIs. From a technical perspective, the problem is one of weighting and aggregation: analysts need to choose a set of weights applied to individual policy measures in producing summaries and must select a mathematical function by which the weighted methods are aggregated into a single number.

The construction of STRIs is extremely labor intensive and therefore costly. It also requires considerable analytical capacity. Finally, there is a clear interest in standardizing approaches across countries, so that results can easily be compared. These considerations favor the production of STRIs by international agencies, and two major initiatives are currently in operation. The Organisation for Economic Co-operation and Development (OECD) publishes STRIs in 22 sectors for its member countries, which are mostly in the high-income group, along with major emerging markets. In all, the OECD data cover 45 countries from 2014 to 2019, with data updated annually. The second effort was launched by the World Bank. It has resulted in STRIs for 105 countries for 2008 (released in 2012), and jointly with the World Trade Organization (WTO), a database

covering 68 countries for 2016 (STRIs released in 2020). The current WTO–World Bank database and World Bank STRIs cover 68 countries, of which 45 use data taken directly, with permission, from the OECD database. The WTO–World Bank database has expanded country coverage by 23 countries.

While similar in overall structure, the OECD and WTO STRIs have important differences in the ways in which the indexes are constructed. But it is also important to address quantification of impacts. OECD work has used a standard economic model to show that a country's STRI score is negatively associated with both its imports and exports of services, and that differences in regulations within the STRI database, referred to as regulatory heterogeneity, also have a negative association with observed bilateral trade (Nordas and Rouzet 2017). Subsequent work has looked at estimation of ad valorem equivalents (AVEs) based on observed STRI scores (Benz 2017). There is thus an important body of evidence showing that the OECD STRI is correlated with bilateral trade flows, and that it can be used to produce estimates of economic impact in standard AVE form. For the World Bank STRI, Jafari and Tarr (2014) produced estimated AVEs from the original (2008) STRI data; there are no such estimates for the 2016 data, nor for the revised version of the 2008 data using the 2016 methodology. The World Bank itself has never produced a model of the economic impact of its STRIs, but van der Marel and Shepherd (2013) use the 2008 version

to show that the measures are indeed associated with observed bilateral trade in services, although the results are only statistically significant in some sectors.

Hoekman and Shepherd (2020) use a machine learning procedure to produce a Services Policies Index (SPI). It can be understood as a good approximation of the OECD STRI—for which the aggregation algorithm has not been made public—based on the policy data available in the WTO–World Bank data set for 2016. It covers 68 countries and eight sectors, including the countries identified above as of particular interest in the South Asian and Southeast Asian context, in addition to China as a comparator. The SPI correlates with the OECD STRIs for those countries in both data sets at just under 0.9, where a correlation coefficient of one indicates a perfect fit.^a The index therefore offers a good approximation of the OECD data, and the authors consider it to be effectively an extension of the methodology developed by the OECD, with the variation that new countries are added to the data even without observing the weighting and aggregation algorithm used by the OECD in the original exercise.

Subsequently, the SPIs were converted to AVEs using a gravity model.^b While the SPI covers eight sectors, lack of availability of trade data means that AVEs can only be calculated for four more aggregated sectors. Nonetheless, the results cover an important part of the services economy from a policy perspective.

^a The World Bank issued its STRI after the working paper version of Hoekman and Shepherd (2020) was first circulated. The published version of that paper shows that the SPI is also correlated with the World Bank STRI with a coefficient of 0.8, which is similarly very high.

^b Conversion to AVE terms is standard for non-tariff measures in the goods literature. However, it involves the simplifying assumption that policies can accurately be summarized through their impacts on trade costs in percentage of value terms. Services policies also have effects on the fixed costs of foreign market entry, which means that the true restrictiveness of the measures captured in the SPI may be higher than figure 12 suggests.

Source: Shepherd (2021).

INVESTMENT POLICY BARRIERS AND DOMESTIC FACTORS RESULT IN SIGNIFICANT “MISSING” INTERREGIONAL FDI

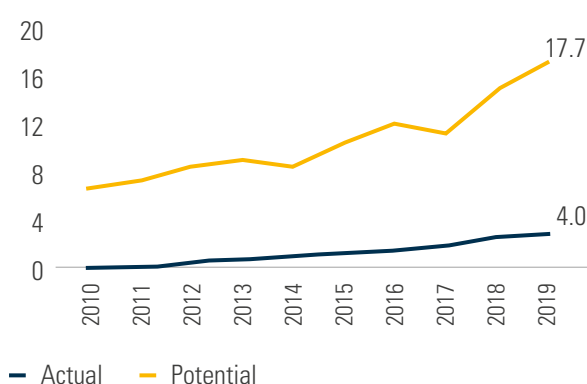
Investment policy barriers combined with domestic factors, such as the lack of an enabling business environment, result in significant “missing” interregional FDI (see the estimation methodology in box 7). Intraregional FDI in South

Asia is estimated to be one-fifth of its potential, with an annual gap of US\$13.7 billion in 2019 (figure 13, panel A). It is estimated that South Asia–Southeast Asia FDI stocks stand at half their potential, with a gap of up to US\$12.3 billion (figure 13, panel B).

FIGURE 13 | MISSING FDI IN SOUTH ASIA

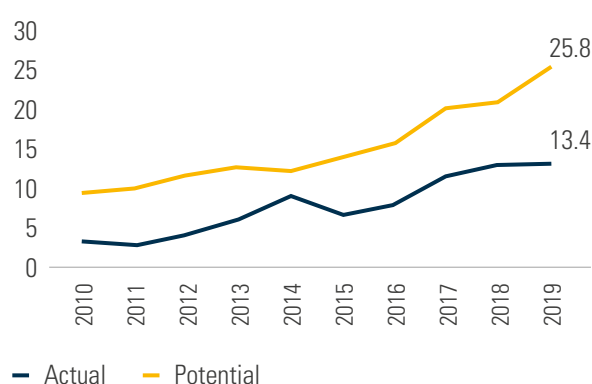
A. Missing intra-regional FDI

US\$ billion



B. Missing FDI from East Asia and Pacific

US\$ billion



Source: Lakatos 2020.

Note: FDI = foreign direct investment.

The significant gap between actual and potential intraregional FDI can be mostly attributed to underinvestment between India and Pakistan and India and Bangladesh. FDI stocks from Pakistan and Bangladesh in India stood at zero in 2019, with estimated gaps of US\$6.1 billion and US\$1.7 billion, respectively. Similarly, total investment from India in Pakistan amounted to US\$26 million in 2019, US\$3.8 billion below its estimated potential. Estimates also suggest that investment from India in Sri Lanka and Nepal exceeded potential by US\$1.3 billion and US\$0.2 billion, respectively.

Improving investment ties with Southeast Asia could close the annual gap of US\$12.3 billion in missing FDI in South Asia. Estimates based on a gravity model suggest that a large share of the missing FDI from Southeast Asia can be explained by underinvestment in India. There are

systematic gaps found in terms of investment in India by China (US\$6.1 billion), Indonesia (US\$1.6 billion), Vietnam (US\$1 billion), and the Philippines (US\$0.9 billion). There is also an estimated gap of US\$0.9 billion from China in Bangladesh. There is overinvestment by China in Sri Lanka and Pakistan and by Malaysia in Bangladesh and Pakistan.

Empirical estimations also show that corporate income taxes, tariffs, and a weak business environment have significant and negative impacts on inward FDI. A 1 percent decline in corporate income taxes could boost inward FDI by 3.8 percent. Similarly, a 1 percent reduction in import tariffs could increase FDI by up to 3.5 percent. Finally, a weak enabling business environment characterized by procedural and time delays also contributes – a 1 percent decline in the index could boost FDI by up to 0.3 percent.

BOX 7 | ESTIMATING FDI POTENTIAL: METHODOLOGICAL FRAMEWORK

The determinants of foreign direct investment (FDI) identified in the literature can be classified into four major buckets: market-related determinants (market size, market growth, and market structure), resource-oriented determinants (availability of labor and natural resources and cost of factors of production), efficiency-seeking determinants (labor productivity), and policy determinants (investment barriers, trade openness, business environment, and fiscal policies).

Empirical work on the determinants of FDI has relied heavily on a gravity-type framework that is well established in the applied trade literature, where market size and distance between trading countries account for a large share of the explanatory power (Eaton and Tamura 1994; Wei 2000; Blonigen and Davies 2000; Blonigen et al. 2007; Bergstrand and Egger 2007). Theoretical models describing foreign investment

decisions introduce a number of modifications to the standard gravity model and suggest that differences in factor endowments, exchange rates, and technology are significant in explaining FDI decisions. Other analysis of FDI patterns highlights the potential role of common culture and language between countries, especially when FDI is in the form of mergers and acquisitions (Head and Ries 2008).

In this report, FDI potential is estimated using the gravity model that follows the standard specification outlined in the literature (Bergstrand and Egger 2007). The gravity model is estimated using Poisson pseudo maximum likelihood (PPML) for a sample of 244 countries and 32,262 country pairs for 2009–19. The PPML specification allows taking into account the large number of zero stocks reported in the data. The specification of is as follows:

$$FDI_{hst} = \alpha_0 + \alpha_1 \ln(GDP_{ht}) + \alpha_2 \ln(GDP_{st}) + \alpha_3 \ln(dist_{hs}) + \alpha_4 ComLang_{hs} + \alpha_5 \ln(tariff_{ht} + 1) + \alpha_6 \ln(CIT_{ht} + 1) + \alpha_7 \ln(BusinessEnv_{ht}) + \gamma_t + \varepsilon_{hst}$$

where subscript h refers to the host country, s to the source country, and t to years. FDI_{hst} represents bilateral FDI stock in host country h from source country s in year t . GDP_{ht} and GDP_{st} are the gross domestic product (GDP) of the host and source countries in year t , respectively. $Dist_{hs}$ stands for the distance between the host and source countries, h and s ; $ComLang_{hs}$ is a common language dummy; $tariff_{ht}$ represents the average trade-weighted tariffs applied by the host country in year t ; CIT_{ht} represents the corporate income tax rate in the host country in year t ; and $BusinessEnv_{ht}$ stands for an index representing the time and procedures to start a business in the host country in year t . Additional dummy variables control for high-income status of the host and source

countries, respectively.

The data sources are as follows: bilateral FDI stock data come from the International Monetary Fund's Coordinated Direct Investment Survey database; GDP, distance, and common language data originate from the Gravity Database of the CEPII (Centre d'Etudes Prospectives et d'Informations Internationales) (Conte, Cotterlaz, and Mayer 2021); tariff data come from the World Bank World Integrated Trade Solution database; corporate income taxes originate from the Tax Foundation's Corporate Tax database (Asen 2020); and data on the time and days to start a business come from the World Development Indicators. The detailed results of the regression are presented in annex B.



Despite past liberalization efforts, barriers to trade in South Asia continue to be among the highest in the world, with average tariffs amounting to more than 10 percent in 2019. The average import tariffs applied by Maldives, Sri Lanka, and Nepal were all in excess of 10 percent in 2019. Although high tariffs in FDI host countries can encourage “tariff-jumping” FDI and incentivize firms to substitute away from trade and increase FDI, empirical evidence suggests that overall, tariffs have a negative impact on inward FDI. High trade restrictions in host economies will also limit the benefits of FDI and have an adverse impact on the development of backward linkages with domestic firms and technological spillovers. In line with the literature, the gravity model estimated here shows a negative and significant relationship between FDI and import tariffs, indicating that a 1 percent decline in tariffs could lead to a 3.5 percent increase in FDI stocks.

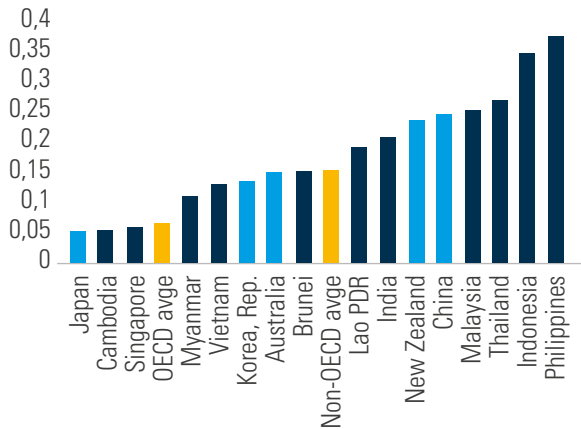
FDI is becoming increasingly sensitive to corporate taxation, reflecting the increasing mobility of capital. Existing studies show that on average, a 1 percentage point increase in the tax rate results in a 3.7 percent decline in FDI. However, the sensitivity of FDI to taxes depends on a wide range of characteristics of the host country and the degree of mobility of capital. Another interesting finding in the literature is that while lower tax rates in host countries fail to attract FDI significantly, higher taxes tend to discourage new investment. Among South Asian countries, India and Bhutan have the

highest statutory corporate income tax rates, at 30 percent, followed by Pakistan, at 29 percent, and Sri Lanka, at 28 percent, and above the global average of 24 percent. Evidence also shows that low corporate taxes do not compensate for the lack of an enabling business environment for attracting FDI, such as a weak business environment, poor infrastructure, limited access to markets, or other weak investment conditions.

FDI AND MIGRATION POLICIES: REGIONAL SNAPSHOTS

Existing indicators of FDI and migration policies have limited coverage of South Asia and Southeast Asia. They are nonetheless worth highlighting as a starting point. The Organisation for Economic Co-operation and Development (OECD) FDI Regulatory Restrictiveness Index for 2019 captures all of Southeast Asia but only India in South Asia. Cambodia and Singapore fall below the OECD average restrictiveness and Myanmar and Vietnam are also quite competitive; however, the other countries rate relatively poorly on this measure (figure 14). The coverage for the Migration Integration Policy Index is equally limited, with India and Indonesia being only countries in the region that are included in the index (figure 15). They are by far the worst performing countries on the index, well below other relatively less developed regions and countries (Eastern Europe, Argentina, Brazil, Turkey, and Mexico).

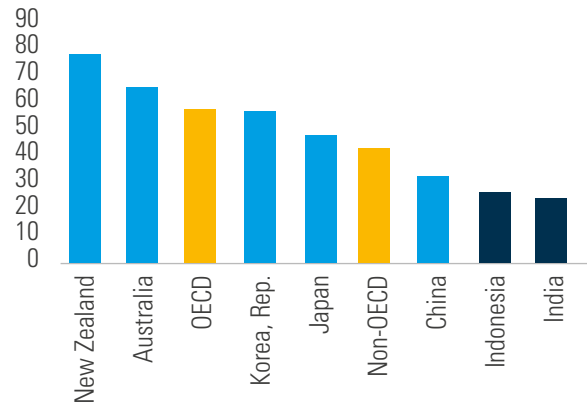
FIGURE 14 | OECD FDI REGULATORY RESTRICTIVENESS



Source: OECD 2020.

Note: Higher FDI index values correspond to higher restrictiveness. FDI = foreign direct investment; OECD = Organisation for Economic Co-operation and Development.

FIGURE 15 | MIPEX, 2020 INDEX



Source: MIPEX 2020.

Note: Higher MIPIX values correspond to greater integration. MIPEX = Migration Integration Policy Index.

A regional snapshot developed by Nixon (2021) to gain a deeper understanding of South Asia and Southeast Asia summarizes a relatively extensive range of FDI, migration, and complementarity policy features (207 in all). It largely follows established convention in categorizing policies. For FDI, the OECD’s FDI Restrictiveness Index provides inspiration with some tailoring, dividing policies into framework/protections, equity and ownership restrictions, approval and screening, land ownership, other (additional restrictions and incentives), and outward investment. For migration, the Determinants of International Migration database categorizations are similarly followed with some adjustments, separating policies into framework/protections, legal entry and stay, border control, integration, exit, and emigration. A complementarity category is added to capture overlapping policies that directly impact both FDI and migration, such as visa policies for foreign investors (companies and individuals) and policies encouraging migrant entrepreneurship, return migration for business development, and remittance investment facilitation. The information is correct as of the April 1, 2021, cut-off date.

The individual country policies are summarized by category on a simple color-coded, five-point scale

(table 2). The purpose is not to provide a scientific comparison between countries or a quantitative indicator but to illustrate areas of relative strength and weakness for individual countries and the region. Australia, China, Japan, the Republic of Korea, and New Zealand are included alongside South Asian and Southeast Asian countries to enable further comparison. Although it would be tempting to assign numerical values and sum across categories, this would provide a misleading overall assessment of limited value. An aggregate summary snapshot is nonetheless provided for ease of comparison and grouping purposes in table 3. Some subjectivity in the color coding was unavoidable in the absence of a formulaic quantitative approach, with every effort made to provide a fair comparison between countries within each category.



TABLE 2 | REGIONAL INVESTMENT AND MIGRATION POLICY SNAPSHOT

Country	Foreign Direct Investment							Migration					Complementarity
	Framework/ protections	Equity/ ownership	Approval/ screening	Land	Other	Outward	Framework/ protections	Legal entry	Border control	Integration	Exit	Emigration	Overall
Afghanistan	Green	Red	Red	Red	Green	Green	Red	Red	Red	Red	Red	Red	Red
Bangladesh	Red	Green	Red	Red	Yellow	Red	Red	Red	Red	Red	Red	Green	Red
Bhutan	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Brunei	Red	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Cambodia	Yellow	Green	Yellow	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red
India	Green	Red	Yellow	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red
Indonesia	Yellow	Red	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Lao PDR	Red	Yellow	Red	Red	Yellow	Yellow	Red	Red	Red	Red	Red	Red	Red
Malaysia	Yellow	Red	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Maldives	Red	Red	Red	Red	Yellow	Green	Red	Red	Red	Red	Red	Red	Red
Myanmar	Green	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Nepal	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Pakistan	Green	Red	Red	Red	Green	Red	Red	Red	Red	Red	Red	Red	Red
Philippines	Yellow	Red	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Singapore	Green	Green	Yellow	Red	Red	Green	Red	Red	Red	Red	Red	Red	Red
Sri Lanka	Red	Red	Red	Red	Yellow	Red	Red	Red	Red	Red	Red	Red	Red
Thailand	Green	Red	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Vietnam	Yellow	Red	Red	Red	Yellow	Red	Red	Red	Red	Red	Red	Red	Red
Country Economies													
Australia	Green	Green	Red	Green	Green	Green	Red	Red	Red	Red	Red	Red	Red
China	Yellow	Yellow	Red	Red	Yellow	Yellow	Red	Red	Red	Red	Red	Red	Red
Japan	Green	Green	Yellow	Green	Green	Green	Red	Red	Red	Red	Red	Red	Red
Korea, Rep.	Yellow	Yellow	Green	Green	Green	Green	Red	Red	Red	Red	Red	Red	Red
New Zealand	Green	Green	Red	Green	Green	Green	Red	Red	Red	Red	Red	Red	Red

■ Extensive shortcomings
 ■ Major shortcomings
 ■ Mix of pros and cons
 ■ Some gaps
 ■ Almost no gaps

Note: The snapshot is for illustration purposes only, with more detailed policy information provided in Nixon (2021). Scores are not cumulative across categories for investment environment restrictiveness, as severe restrictions in one category or broader factors (for example, political instability or conflict) can make the environment more restrictive than the sum of its parts. Rather, the scores provide evidence of an accumulation of policy shortcomings of varying magnitudes.

FDI and migration complementarity within the South Asia and Southeast Asia regions is not well leveraged. Formal immigration channels are severely restricted in many countries, and although FDI is treated relatively favorably, restrictions remain extensive in many countries.

There is considerable potential to deepen and diversify FDI and migration movements between South Asia and Southeast Asia. The factor movement patterns reflect limited consideration of complementarity, which contributes to and is a product of prohibitive policies.

TABLE 3 | AGGREGATE SUMMARY SNAPSHOT

Country	Foreign direct investment	Migration	Complementarity	Total
Australia	4.00	3.33	4.00	3.78
Singapore	3.50	3.00	4.00	3.50
Japan	4.50	3.00	3.00	3.50
New Zealand	3.83	3.67	3.00	3.50
Korea, Rep.	4.00	2.67	3.00	3.22
Philippines	2.50	3.00	4.00	3.17
Pakistan	3.67	2.50	3.00	3.06
Cambodia	3.50	2.50	3.00	3.00
Malaysia	3.00	2.67	3.00	2.89
India	3.33	2.17	3.00	2.83
Sri Lanka	2.33	2.67	3.00	2.67
Thailand	3.33	2.67	2.00	2.67
China	2.50	2.50	3.00	2.67
Vietnam	2.00	2.83	3.00	2.61
Indonesia	3.00	2.33	2.00	2.44
Bangladesh	2.33	1.83	3.00	2.39
Myanmar	3.17	2.00	2.00	2.39
Afghanistan	3.33	1.67	2.00	2.33
Brunei	2.67	2.17	2.00	2.28
Maldives	1.83	2.33	2.00	2.06
Lao PDR	2.17	1.67	2.00	1.94
Nepal	1.67	2.17	2.00	1.94
Bhutan	2.17	1.83	1.00	1.67
Average (region)	2.74	2.34	2.58	2.55
Average (all)	2.97	2.49	2.70	2.72

Source: Nixon 2021.

Note: Numerical values were assigned as extensive shortcomings = 1, major shortcomings = 2, mix of pros and cons = 3, some gaps = 4, and almost no gaps = 5. Aggregate scores represent averages by category (FDI, migration, and complementarity). Scores are not provided as a numerical indicator representative of the investment policy environment, only to allow for a simplistic illustrative sorting. FDI = foreign direct investment.

■ Extensive shortcomings ■ Major shortcomings ■ Mix of pros and cons ■ Some gaps ■ Almost no gaps

Every country has its own unique combination of FDI and migration policy settings; however, there are several important cross-cutting themes. All the countries have major shortcomings in at least one policy area that would benefit from significant reform (table 3). Many countries lack basic protections (rights) for foreign investors and migrants and/or have systems that are difficult to navigate without engaging expensive expertise.

Immigration barriers are significantly higher than FDI barriers. Immigration is almost universally viewed as filling temporary skills deficits and not as a persistent contributor to labor markets and development. Entry and integration policies are commensurately limited, imposing strict conditions (employer sponsorship, short stays, minimum qualifications, cumbersome approvals, and non-transferability) and minimal support (curtailed rights, limited access to essential services, and no help integrating) or efforts to tackle anti-immigrant sentiment. Emigration policies range in their efficacy, but they contain fewer gaps or detractors than immigration policies in most countries. The outcomes do not always match the objectives, however, as there are limits to supporting citizens in other jurisdictions.

Most of the countries retain some combination of minimum investment requirements, local directorship or content requirements, and market access restrictions (often discriminatory public procurement or state-owned enterprise concentration). Comparatively few countries limit profit/capital repatriation or impose business structure requirements or foreign-specific taxes. Significant equity restrictions (particularly in key service sectors) and burdensome investment approval processes persist in most countries. Post-establishment intervention powers are extensive or unspecified, providing limited certainty to investors. Land ownership rules remain highly discriminatory against foreign entities and persons, erecting barriers to long-term business development and migrant integration. Approaches to outward investment are polarized. Countries prohibit or severely restrict investment or have

almost completely liberalized outward FDI policies (and in some cases actively facilitate investment).

FDI and migration complementarity is constrained despite a general understanding of labor flexibility as a basic investor need. Visa rules restrict business continuity and limit opportunities for labor migrants to make a longer-term contribution via business development, investment facilitation, or permanent residency. Policies seeking to channel diaspora and individual investor capital into productive investment are underdeveloped, as are programs supporting emigrant return and reintegration. Formal remittance channels have improved considerably, but there are vast cost and accessibility differences across the region and informal channels retain a large share.

South Asia and Southeast Asia could strengthen collaboration as traditional migration corridors are being disturbed by the pandemic. Southeast Asian countries encourage admission of migrant workers originating from South Asia, but mostly under temporary or seasonal labor schemes to ease labor shortages in industries that are less preferred by locals (for example, agriculture, manufacturing, construction, and domestic workers). Furthermore, only specific categories of migrants have a clear regulatory pathway to permanent immigrant status or naturalization, and those who are unable to integrate permanently and, thereby, access health and social protection on par with citizens, have been disproportionately exposed to adverse shocks associated with the COVID-19 pandemic.

Complementarity is scarcely acknowledged across the region, with very few countries explicitly recognizing investors' labor needs and migrants' potential contributions to investment generation and entrepreneurship. Many investor visas are not tied to genuine business investment and seek wealth rather than skills. Visa inflexibility regularly places additional burdens on investors and migrants for simple matters such as renewals, category transfers, and replacement personnel for an approved position. Quotas and time limits are

generally inconsistent with long-term business needs and unnecessary from a regulatory perspective (investors will hire less costly locals first anyway if they meet the skill requirements). A comprehensive review of migration and FDI policies to reflect complementarity considerations should form part of broader policy framework enhancements.

The absence of a long-term and comprehensive migration policy is also a common concern. Policies generally reflect ad hoc responses to emerging concerns, such as business needs, irregular migration, local unemployment, social unrest, and national security. Clearer statements of purpose and better integrated frameworks for different policy arms (legal entry, border control, integration, and so forth) would provide an essential reform building block. Border control efforts would benefit from greater cooperation between countries – to reinforce hard borders and develop more effective soft border approaches. There are significant gaps in efforts to reduce regional inequality, promote formal migration channels, and align incentives for migrants and employers to cooperate with regulators. Formal channels must offer better trade-offs of rights and costs to discourage irregular alternatives.

In conclusion, interregional trade, investment, and integration between South Asia and Southeast Asia are currently stymied by high trade and transport costs, red tape, inefficient customs procedures, and infrastructural and logistical bottlenecks, with adverse effects on long-term productivity and growth. First, despite liberalization efforts, tariffs remain important obstacles to trade: South Asian countries' tariffs on imports from Southeast Asia are nearly three times higher than Southeast Asia's tariffs on imports from South Asia, at 6.9 and 2.8 percent, respectively. Second, NTBs are even more pronounced, at an average interregional AVE of 225 percent. Furthermore, inefficient customs procedures and burdensome documentary requirements lead to significant time delays and high costs associated with the process of trading: on average, documentary and border compliance

is estimated to add up to 96 hours and US\$384 in Southeast Asia compared with 127 hours and US\$468 in South Asia.

Another key result is that patterns of services policy restrictiveness vary substantially across countries and sectors. It is also likely that they vary significantly within different regional integration arrangements, of which there are a number involving the countries studied. However, there are as yet no systematic data on services policy liberalization in the context of regional agreements. This area is one where future data collection and research would have significant value added for policy researchers and governments, in particular given the difficulty of moving forward in multilateral services negotiations and the salience of regional integration in Southeast Asia in particular. Finally, there are significant barriers to FDI that contribute to a gap of US\$12.3 billion in "missing" interregional FDI.





3. WHAT ARE THE EXPECTED GAINS FROM DEEPENING LINKAGES BETWEEN SOUTH ASIA AND SOUTHEAST ASIA?

ESTIMATING THE ECONOMY-WIDE GAINS FROM DEEPER INTEGRATION BETWEEN SOUTH ASIA AND SOUTHEAST ASIA

Recent World Bank analysis highlights the impacts of deeper integration between South Asia and Southeast Asia using a computable general equilibrium model that incorporates services.¹⁰ The modeling framework and the data are briefly described in box 8. The first four scenarios capture the impacts of interregional and preferential liberalization through a progressively more ambitious integration agenda, starting with the reduction of South Asia–Southeast Asia tariffs, which is then complemented by the

liberalization of NTBs, improvements in trade facilitation, and the liberalization of FDI. The next two scenarios aim to capture the impacts of integration in a multilateral context, namely the impacts of sustained and prolonged US–China trade tensions and the impact of an “open regionalism” scenario. The last scenario implies that reforms considered in the interregional integration track are extended not only to third countries, but also intra-regionally within South Asia and Southeast Asia.

¹⁰ The model underlying the simulations is the Global Trade Analysis Project (GTAP)-FDI model – a multi-region, multi-sector, and multi-factor computable general equilibrium model (Lakatos and Fukui 2014; Hertel 1997). The model is calibrated using the GTAP 11 database representing the global economy in 2017 (Aguiar, Narayanan, and McDougall 2020) and endogenously updated to 2021 to capture the latest macroeconomic developments. To capture the FDI and multinational linkages of the GTAP-FDI model, the GTAP database has been complemented with an explicit breakdown of FDI stocks and cross-border operations of multinational companies. The model is ideal for measuring the impact of policies that have wide-ranging effects as it takes into consideration general equilibrium linkages. These include interactions between consumers, producers, and governments; inter- and intra-industry links; interactions between domestic and foreign markets; investment decisions; and resource constraints.

BOX 8 | MODELING FRAMEWORK AND DATA

The model underlying the simulations is the Global Trade Analysis Project–Foreign Direct Investment (GTAP-FDI) model – a multi-region, multi-sector, and multi-factor computable general equilibrium model (Lakatos and Fukui 2014; Hertel 1997). The model is calibrated using the GTAP 11 database representing the global economy in 2017 (Aguiar, Narayanan, and McDougall 2020) and endogenously updated to 2021 to capture the latest macroeconomic developments. To capture the FDI and multinational linkages of the GTAP-FDI model, the GTAP database has been complemented with an explicit breakdown of FDI stocks and cross-border operations of multinational companies. The model is ideal for measuring the impact of policies that have wide-ranging effects as it takes into consideration general equilibrium linkages. These include interactions between consumers, producers, and governments; inter- and intra-industry links; interactions between domestic and foreign markets; investment decisions; and resource constraints.

For the purpose of the simulations, the GTAP database has been aggregated into 17 sectors and 31 countries/regions. The 17 sectors are the following: vegetables and fruits, other agriculture, energy, meat, other food, beverages and tobacco, textiles, wearing apparel, motor vehicles, machinery, other manufactures, construction, trade, transportation, public administration, business services, and other services. The 31 countries/regions are as follows: Australia; New Zealand; China; Hong Kong SAR, China; Japan; the Republic of Korea; Mongolia; Taiwan, China; Brunei; Cambodia; Indonesia; the Lao People's Democratic Republic; Malaysia; the Philippines; Singapore; Thailand; Vietnam; the rest of East Asia and Pacific; Bangladesh; India; Nepal; Pakistan; Sri Lanka; the rest of South Asia; the United States; the rest of North America; Latin America and the Caribbean; the European Union; Europe and Central Asia; the Middle East and North Africa; and Sub-Saharan Africa.

The important innovation in the GTAP-FDI model concerns the explicit treatment of FDI. In the model, FDI is associated with the international mobility of capital

and firms operating across national borders. As in the pioneering work of Petri (1997), the GTAP-FDI model employs the Armington assumption of national product differentiation to distinguish between product varieties differentiated not only by firm location, but also by firm ownership. In comparison, the standard GTAP model distinguishes product varieties by firm location only. In addition, as in Petri (1997), the model defines investor preferences as a nested imperfect transformation function that allocates a given investment budget across sectors and regions. On the supply side, compared with the standard GTAP model where in a given region and sector there is one representative firm that produces goods and services, the GTAP-FDI model differentiates between domestic firms and foreign-owned affiliates of multinational companies that also produce goods and services. Further, each of these firms combines value added and intermediate inputs using a Leontief technology as their production technology. The specification implies that intermediate inputs (just as final demand) are differentiated not only by the region of firm location, but also by the region of firm ownership.

Although the model is not a dynamic one, the closure has been adapted to capture the medium- to long-term effects of the considered policy reforms. In simple terms, this implies that investment adds to the existing capital stock and is available for production (Walmsley 1998).

Data

The modeling of FDI and foreign affiliates requires the following data: capital stocks disaggregated by region of ownership/location and sector, and cost and sales structure of domestic firms and foreign affiliates. The global FDI stock data documented in Bekkers et al. (2021) are used to disaggregate capital stocks by industry, host, and source country in the GTAP database. Using the foreign affiliates sales data described in Bekkers et al. (2021), the production side of the GTAP database is disaggregated.

As in World Bank (2021), this analysis makes use of the

World Bank–UNESCAP trade costs database (Arvis et al. 2016). This database is the only one available that provides estimates of non-tariff trade costs at the bilateral level, which is essential for the analysis of deeper South Asia–Southeast Asia regional integration described in

this report. In the scenarios, it is assumed that 50 percent of the total non-tariff trade costs are actionable (possible to be affected by policy measures), and 50 percent of these actionable barriers are liberalized – a conservative assumption for potential integration scenarios.

Source: Lakatos (2021).

The scenarios and their assumptions are as follows:

- *Scenario 1.* South Asia–Southeast Asia tariff liberalization: a uniform 90 percent cut in bilateral tariffs between South Asian and Southeast Asian countries across all sectors. Tariff cuts are not applied to trade flows within South Asia or within Southeast Asia.
- *Scenario 2.* Scenario 1 plus a 50 percent reduction in bilateral NTBs between South Asian and Southeast Asian countries. It is assumed that 50 percent of the total non-tariff trade costs are actionable (possible to be affected by policy measures), and 50 percent of these actionable barriers are liberalized – a conservative assumption for potential integration scenarios. The assumption of 50 percent liberalization is aligned with Wignaraja et al. (2014) and others in the literature who assume that only about half of the NTMs are actionable.
- *Scenario 3.* Scenario 2 plus improvement in trade facilitation implying a 15.5 percent reduction in trade costs between South Asia and Southeast Asia. According to Moïse and Sorescu (2013), implementing the WTO TFA could reduce trade costs by up to 15.5 percent. Bilateral trade costs come from the United Nations Economic and Social Commission for Asia and the Pacific–World Bank trade costs database.
- *Scenario 4.* Scenario 3 plus South Asia–

Southeast Asia FDI liberalization, closing half the gap in bilateral FDI as estimated in section 2.

- *Scenario 5.* Sustained US-China trade tensions – as specified in Petri and Plummer (2020), this scenario assumes an increase in US-China tariffs in place by December 2019, 10 percent increase in agricultural and manufacturing US-China NTBs, 50 percent increase in US-China services NTBs, and US-China FDI barriers double.
- *Scenario 6.* Open regionalism – South Asia and Southeast Asia extend the same liberalization to the rest of the world and regionally within South Asia and Southeast Asia.
- *Scenario 7.* Costs of no integration – South Asia and Southeast Asia do not integrate intra-regionally but engage in liberalization with the rest of the world.

IMPACTS ON SOUTH ASIA

The results show that the South Asia region could reap important gains from interregional South Asia–Southeast Asia tariff liberalization (Scenario 1), with an estimated increase in South Asia’s GDP by 0.4 percent (table 4). Gains from such tariff liberalization would be multifold. Preferential tariff liberalization would translate into “trade creation” effects in participating countries. Improved access to Southeast Asian markets for South Asian exporters will not only provide

South Asian firms new trading opportunities, but also catalyze their participation in GVCs. Access to Southeast Asian imported intermediates would reduce input costs and translate into efficiency gains. The results show that with the exception of Nepal, all South Asian countries stand to benefit. The most pronounced gains are estimated to accrue to Sri Lanka (3 percent) and Bangladesh (1.4 percent). Interestingly, the results also reveal that an important portion of the gains are due to the expansion of exports. South Asia's exports are shown to increase by 6.8 percent, compared with imports, which rise by 4.5 percent. The total exports of Nepal, Pakistan, and Bangladesh increase significantly more than the regional average, by 19.7, 16.7, and 16.5 percent, respectively. Finally, the case of Nepal is worth highlighting. Nepal is the only country in the region that stands to lose slightly, with a decline in GDP by 2 percent. A closer look at the disaggregated results shows that this is because of trade diversion effects with its most important trading partner, India, which dominate the trade creation effects with Southeast Asian countries.

NTM liberalization combined with the reduction of tariffs in the previous scenario is estimated to boost gains by close to 12-fold for South Asia, translating into an increase of 4.7 percent of regional GDP (Scenario 2). The benefits for Sri Lanka, Pakistan, and Nepal – currently applying the highest NTBs on imports from Southeast Asia – could be even higher, boosting their GDP by 14.7, 11.6, and 10.4 percent, respectively. The benefits of NTM liberalization would be multifold. Lower NTMs would translate into cost and efficiency savings for firms, boost competitiveness, improve diversification, and help in upgrading production to higher value-added manufactures. The reduction of red tape is expected to benefit small and medium-size firms the most and encourage their participation in international trade.

A more ambitious integration agenda implying improvements in trade facilitation indicators, in addition to the liberalization of tariffs and

NTBs, could further boost gains for South Asia, increasing regional GDP by up to 4.5 percentage points or 9.2 percent (Scenario 3). Improvements in trade facilitation through the reduction of South Asia–Southeast Asia trade costs are expected to boost South Asia–Southeast Asia trade, output, and investment and also benefit consumers. Higher interregional export demand would have several implications for domestic markets in South Asia. To satisfy increased demand for their export products, South Asian countries would expand domestic supply, which in turn would result in an increase in demand for imported intermediates and an aggregate increase in imports. Consumers would benefit from lower prices and workers from higher wages. Increased activity would boost rates of return on capital and lead to an increase in investment, both domestic and foreign.

On deep integration between the two regions, the liberalization of tariffs and NTBs, trade facilitation, and liberalization of barriers to FDI would translate into the most pronounced benefits for South Asia. The results show that undertaking such a comprehensive and deep regional integration agenda would increase South Asia's GDP by 10.6 percent. Regional exports would also expand by 41.5 percent and by much higher in the cases of Pakistan and Bangladesh, at 67.6 and 62 percent, respectively.

The next two scenarios consider a multilateral track for integration between South Asia and Southeast Asia.

If the United States and China were to engage in a sustained trade dispute, keeping in place the previously imposed retaliatory tariffs, countries in the South Asia region are set to benefit from trade diversion opportunities. Even in the absence of any additional reform measures, GDP in South Asia is expected to increase by 0.5 percent (Scenario 5). Assuming that South Asian countries can capitalize on the opportunities provided by the US-China trade diversion and expand exports to respond to these new sources of demand in the United

States and China, South Asian economies such as Sri Lanka, Pakistan, and Nepal would benefit the most. On average, South Asian exports are

found to increase by 0.7 percent and even more in the cases of Sri Lanka and Pakistan, by 2.4 and 1.1 percent, respectively.

TABLE 4 | IMPACT ON SOUTH ASIA

(percent change)

	Scenario 1 (S1)	Scenario 2 (S2)	Scenario 3 (S3)	Scenario 4 (S4)	Scenario 5 (S5)	Scenario 6 (S6)	Scenario 7 (S7)
	South Asia – Southeast Asia tariff liberalization	S1 + South Asia – Southeast Asia NTB liberalization	S2 + South Asia – Southeast Asia trade facilitation	S3 + South Asia – Southeast Asia FDI liberalization	Sustained US-China trade war	Open regionalism	Costs of no integration
Impact on GDP							
Bangladesh	1.4	8.2	13.1	14.3	0.4	17.7	6.5
India	0.2	3.2	7.0	8.4	0.4	13.6	7.4
Nepal	-2.0	10.4	13.9	15.9	0.9	36.6	12.6
Pakistan	0.4	11.6	21.4	23.1	0.9	29.5	12.0
Sri Lanka	3.0	14.7	23.0	25.7	2.0	98.3	30.1
Rest of SAR	1.3	10.0	18.1	19.6	0.6	36.9	18.6
Total SA	0.4	4.7	9.2	10.6	0.5	17.6	8.4
Impact on exports							
Bangladesh	16.5	43.8	60.4	62.0	0.8	70.4	18.4
India	4.6	19.2	36.2	37.2	0.6	58.8	22.1
Nepal	19.7	12.2	6.9	6.0	-1.5	3.4	-19.6
Pakistan	16.7	42.6	66.0	67.6	1.1	88.2	18.9
Sri Lanka	9.9	26.6	38.7	41.5	2.4	144.7	38.0
Rest of SAR	5.3	15.9	25.9	26.9	0.7	61.8	16.2
Total SAR	6.8	23.2	40.4	41.5	0.7	63.7	21.5
Impact on imports							
Bangladesh	12.5	32.9	46.0	47.1	1.4	55.2	20.6
India	3.8	16.9	33.8	34.7	1.1	57.4	24.8
Nepal	-4.1	11.6	16.5	18.8	1.7	53.1	19.3
Pakistan	4.5	19.3	34.6	35.9	1.4	47.7	15.5
Sri Lanka	6.1	19.5	29.2	31.4	2.8	117.4	36.0
Rest of SAR	0.8	7.4	14.2	15.3	0.9	33.1	15.2
Total SAR	4.5	18.3	34.0	35.1	1.2	58.0	23.7

Source: World Bank staff simulations.

Note: The results reflect the medium- to long-term effects of policy changes on GDP, exports, and imports, expressed in constant 2021 terms. FDI = foreign direct investment; GDP = gross domestic product; NTB = non-tariff barrier; SAR = South Asia.

The benefits to South Asia of a multilateral integration track would be significant, on average boosting the region's GDP by 17.6 percent and exports by 63.7

percent. If the reforms considered in the ambitious interregional South Asia–Southeast Asia liberalization (Scenario 4) are extended and replicated not only by

third countries, but also intra-regionally within South Asia and Southeast Asia, countries such as Sri Lanka and Nepal stand to benefit the most, with increases in GDP of 98 and 36 percent, respectively.

South Asia has a lot to lose from missing out on intraregional integration (Scenario 7), with GDP more than halving and exports dropping to a third compared with the open regionalism scenario. South Asia's GDP gains would decline from 17.6 percent in the open regionalism scenario to 8.4 percent. India and Pakistan would be among the least affected. By contrast, Sri Lanka's and Nepal's GDP would drop to a third of their potential in a multilateral integration scenario. The impact of the "no integration" scenario on South Asia's exports would be even more pronounced, declining on average from 63.7 to 21.5 percent.

IMPACTS ON SOUTHEAST ASIA

Notably and not surprisingly, the impact of interregional South Asia–Southeast Asia integration on Southeast Asia is generally positive but much more muted (table 5). Deeper integration with the South Asia region could bring GDP gains that range between 0.1 and 1.4 percent and an increase in exports of 0.5 to 4.1 percent for the Southeast Asia region as a whole.

For Southeast Asia, the liberalization of South Asia–Southeast Asia tariffs could translate into GDP gains of up to 0.1 percent and somewhat higher for countries such as Thailand, at 0.3 percent (Scenario 1). While most Southeast Asian countries would benefit from trade creation opportunities with South Asia, Cambodia and Lao PDR are estimated to lose slightly due to trade diversion effects with their main trading partners within the region, China and Thailand. A progressively more ambitious integration agenda, implying the liberalization of NTBs, trade facilitation, and the liberalization of FDI in addition to tariff cuts, could significantly boost the benefits for Southeast Asia and result in GDP gains of up to 1.4 percent and an increase in exports of 4.1 percent.

A sustained US–China trade dispute is estimated to

be beneficial for all countries in the Southeast Asia region, except China (Scenario 5). Thailand and Vietnam are best positioned to reap the benefits of trade diversion between the United States and China, with estimated increases of 1.2 percent in GDP and 1.7 and 1.8 percent, respectively, in exports. The impact on China is comparable to previous estimates (Freund et al. 2020), translating into a decline in GDP of 1.6 percent and a decline in exports of 4.8 percent.

The benefits of multilateral integration could be significant and boost Southeast Asian GDP by 15.7 percent and exports by 55 percent (Scenario 6). "Open regionalism" would benefit countries that are strongly dependent on trade and deliver a significant boost to GDP in Vietnam (74.1 percent), Thailand (66.8 percent), Cambodia (66.7 percent), and Singapore (41 percent). The benefits for countries with large domestic markets and lower trade openness would be somewhat more moderate, for instance boosting GDP by 11.4 percent in China, 11.5 percent in Indonesia, and 12 percent in Brunei.

In the absence of interregional integration (Scenario 7), Southeast Asia would still benefit but significantly less than in the "open regionalism" scenario, with GDP gains declining from 15.7 to 10.2 percent. The losses for Cambodia and Lao PDR would be particularly pronounced, with GDP declining from 66.7 and 15.4 percent in the open regionalism scenario to 21.2 and 1.6 percent, respectively. Export gains would also be wiped out, with an average regional decline from 55.2 to 31.6 percent.

To sum up, the results show that a South Asia–Southeast Asia regional integration agenda that combines the liberalization of tariffs, NTBs, trade facilitation, and FDI barriers could boost GDP by 0.4–10.6 and 0.1–1.4 percent in South Asia and Southeast Asia, respectively. If the trade and investment reforms pursued within the interregional integration are extended in a multilateral integration track to third countries intra-regionally within South Asia and Southeast Asia, the gains for participating countries would be significant, increasing GDP by 17.6 and 15.7 percent in the two regions, respectively. The

costs of no integration between the two regions are significant, cutting the GDP gains by half for South Asia and by a third for Southeast Asia. Finally, the results also show that given a sustained trade dispute between the United States and China, Southeast

Asian countries could capitalize on the opportunities provided by US-China trade diversion, with GDP gains that could add up to 0.5 and 0.8 percent for South Asia and Southeast Asia (excluding the losses experienced by China), respectively.

TABLE 5 | IMPACTS ON SOUTHEAST ASIA

(percent change)

	Scenario 1 (S1)	Scenario 2 (S2)	Scenario 3 (S3)	Scenario 4 (S4)	Scenario 5 (S5)	Scenario 6 (S6)	Scenario 7 (S7)
	South Asia – Southeast Asia tariff liberalization	S1 + South Asia – Southeast Asia NTB liberalization	S2 + South Asia – Southeast Asia trade facilitation	S3 + South Asia – Southeast Asia FDI liberalization	Sustained US-China trade war	Open regionalism	Costs of no integration
Impact on GDP							
Brunei	0.0	0.8	1.5	1.8	0.4	12.0	6.4
Cambodia	-0.3	1.4	3.4	4.0	1.1	66.7	21.2
Indonesia	0.0	0.5	1.1	1.6	0.4	11.5	6.7
Lao PDR	-0.1	1.3	2.2	2.6	0.2	15.4	1.6
Malaysia	0.0	0.6	1.9	2.5	1.0	44.0	24.2
Philippines	0.1	1.6	3.2	3.8	1.0	38.1	20.7
Singapore	0.1	2.1	3.6	4.2	0.6	41.0	26.7
Thailand	0.3	1.7	3.5	4.3	1.2	66.8	34.3
Vietnam	0.1	2.2	4.8	5.4	1.2	74.1	39.9
China	0.1	0.3	0.5	1.0	-1.6	11.4	8.2
Rest of Southeast Asia	0.0	0.7	1.6	2.1	0.7	19.5	10.8
Total Southeast Asia	0.1	0.4	0.8	1.4	-1.2	15.7	10.2
Impact on exports							
Brunei	0.0	0.3	0.6	0.8	0.4	7.5	4.3
Cambodia	-0.3	1.4	3.2	3.7	1.5	86.7	21.3
Indonesia	0.4	2.4	4.5	4.9	0.7	30.3	13.8
Lao PDR	-0.1	3.5	5.1	5.4	0.5	38.9	-6.0
Malaysia	0.2	0.9	2.4	2.9	1.5	54.0	27.9
Philippines	0.2	2.9	5.3	5.8	1.5	62.6	30.9
Singapore	0.5	2.6	3.9	4.5	0.5	37.0	23.2
Thailand	0.6	2.6	5.0	5.7	1.7	92.7	42.6
Vietnam	0.4	2.3	4.6	5.0	1.8	75.1	38.5
China	0.5	1.8	3.4	3.8	-4.8	54.3	33.7
Rest of Southeast Asia	0.1	0.9	1.8	2.2	0.8	21.8	10.4
Total Southeast Asia	0.5	2.0	3.6	4.1	-2.4	55.2	31.6

	Impact on imports						
Brunei	-0.1	-0.2	-0.2	0.0	0.6	5.4	5.0
Cambodia	-0.5	0.7	2.2	2.6	1.9	78.8	23.4
Indonesia	0.7	3.5	6.0	6.4	1.2	38.1	17.6
Lao PDR	-0.2	4.9	7.3	7.7	1.0	40.1	-1.9
Malaysia	0.3	1.0	2.4	2.9	2.0	59.2	29.6
Philippines	0.1	2.4	4.1	4.5	1.9	60.0	30.1
Singapore	0.6	3.1	4.5	5.0	0.7	41.3	24.5
Thailand	0.7	2.7	5.0	5.6	2.0	93.8	42.2
Vietnam	0.4	2.3	4.3	4.7	2.3	79.0	40.2
China	0.8	2.4	4.1	4.4	-6.7	69.0	42.4
Rest of Southeast Asia	0.1	0.8	1.6	1.9	1.4	23.0	11.0
Total Southeast Asia	0.7	2.4	4.2	4.5	-3.3	65.5	37.3

Source: World Bank staff simulations.

Note: The results reflect the medium- to long-term effects of policy changes on GDP, exports, and imports, expressed in constant 2021 terms. FDI = foreign direct investment; GDP = gross domestic product; NTB = non-tariff barrier.

ESTIMATING POTENTIAL GAINS FROM SERVICES TRADE LIBERALIZATION IN SOUTH ASIA AND SOUTHEAST ASIA

The cost of restrictive services policies is much higher than the applied rates of tariff protection in goods. The gains from preferential liberalization in South Asia, based on a simulation of preferential liberalization covering South Asia and Southeast Asia, dwarf the gains from a modest multilateral liberalization because of the strong impact exerted by the change in regional policies, starting from a baseline of very low integration. Using a structural gravity model to estimate the gains from a policy reform involving the South Asian and Southeast Asian countries (box 9), the results show that countries reduce their Services Policy Index scores by 10 percent on a multilateral basis, with all other countries maintaining baseline policies. This simulation is equivalent to coordinated unilateral liberalization among the South Asian and Southeast Asian countries. An additional simulation, by contrast, assumes that the countries also sign a complete network of preferential trade agreements among themselves but keep their multilateral Services Trade Policy Index scores

constant. It therefore equates to a preferential liberalization scenario, whereby the countries under study liberalize their services policies only vis-à-vis each other, through a network of regional agreements. The scenario takes into account the preferential liberalization that has already taken place in this country group, including through ASEAN's agreements with its partners.

It is striking that for Bangladesh and Pakistan, the gains from preferential liberalization are huge relative to the other changes recorded in the figures for distribution, finance, and transport (figures 16 to 19 show the results from these simulations, expressed as counterfactual percentage changes in exports relative to the model baseline). The reason for this result is that the complete network of trade agreements considered in the preferential liberalization scenario includes preferential liberalization between these countries and India, their regional neighbor with a large internal market. As such, the gains from preferential liberalization

in South Asia, as part of this general simulation of preferential liberalization covering South Asia and Southeast Asia, dwarf the gains from a modest multilateral liberalization because of the strong impact exerted by the change in regional policies, starting from a baseline of very low integration.

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It is important to keep this result in context. It is not observed in general for other countries, where the gains from both scenarios are smaller,

but the changes in exports due to multilateral liberalization are typically stronger than from further preferential integration. Of course, the other countries in the group already have a relatively dense network of regional agreements among themselves, which means that the preferential scenario does not involve large-scale additional liberalization.

In terms of scale, the effects of policy liberalization are largest in telecom: multilateral liberalization has an average export gain of 12.6 percent. Next come finance (5.5 percent), distribution (3.6 percent), and transport (3.0 percent). The averages for the preferential scenario are skewed by the very large numbers for Bangladesh and Pakistan. Excluding these two countries results in average changes that are smaller than for the multilateral scenario in distribution, finance, and telecom. The differences between the two scenarios are large: the gains from a modest multilateral liberalization are at least 50 percent higher than those from preferential integration, and as high as 10 times more for telecom. The exception to this overall pattern is transport, where regional integration tends to have a stronger effect than a modest multilateral liberalization. The reason is likely that the benchmark of an "average" trade agreement effect implicitly involves more liberalization than the 10 percent cut in restrictiveness considered for the multilateral reform scenario.

BOX 9 | STRUCTURAL GRAVITY MODEL TO UNDERTAKE SIMPLE GENERAL EQUILIBRIUM SIMULATIONS OF SERVICES POLICY REFORMS

In addition to constructing Services Policy Indexes (SPIs) using World Trade Organization–World Bank data, Hoekman and Shepherd (2021) use a structural gravity model to undertake simple general equilibrium simulations of policy reforms. Arkolakis, Costinot, and Rodriguez-Clare (2012) and Costinot and Rodriguez-Clare (2014) show that standard single-sector gravity models like the Armington model of Anderson and Van Wincoop (2003) or the Ricardian model of Eaton and Kortum (2002) have the same relationship between changes in trade costs – such as policy reforms – and counterfactual changes in trade flows. Baier, Yotov, and Zylkin (2019) provide a simple algorithm for solving the system while respecting general equilibrium constraints.

The Hoekman and Shepherd (2021) structural gravity model distinguishes between multilateral and preferential policies. As of this writing, no data are

available on preferential services policies for most countries. So the expedient is to interact the SPI with a dummy variable for countries that are members of the same regional agreement. The authors find that the interaction term usually has a positive and statistically significant coefficient, which is consistent with the degree of trade liberalization within regional agreements. The question deserves further research using directly collected data from agreements; however, as previous work such as Miroudot and Shepherd (2014) indicates, most services policy reforms are de facto nondiscriminatory, even when they are associated temporally with entry into a regional agreement.

To formalize the above statements, the standard gravity model takes the following form, considering a single year and single sector cross-section only:

$$(9.1) X_{ij} = F_i F_j t_{ij}^{-\theta} e_{ij}$$

where: X_{ij} is exports from country i to country j ; the F terms are exporter and importer fixed effects; t_{ij} is bilateral trade costs; θ is a parameter capturing the sensitivity of demand to cost; and e_{ij} is an error term satisfying standard assumptions. Trade costs t are specified in the usual iceberg form. These costs are unobserved but can be specified in terms of observable proxies. For the present purposes, the model includes

standard gravity model controls based on geography and history, along with tariffs, a preferential trade agreement (PTA) dummy, and an indicator of service sector restrictiveness (the Services Trade Restrictiveness Index (STRI), for presentational purposes), as well as an interaction between the STRI and a dummy for countries that are members of an economic integration agreement (EIA), the services equivalent of a PTA for goods. Formally:

$$(9.2) -\theta \log t_{ij} = b_1 STRI_j * intl_{ij} + b_2 STRI_j * intl_{ij} * EIA_{ij} \\ + b_3 \log(1 + tariff_{ij}) + b_4 PTA_{ij} + b_5 \log(distance_{ij}) + b_6 contiguous_{ij} \\ + b_7 colony_{ij} + b_8 common\ language_{ij} + b_9 common\ colonizer_{ij} \\ + b_{10} same\ country_{ij} + intl_{ij}$$

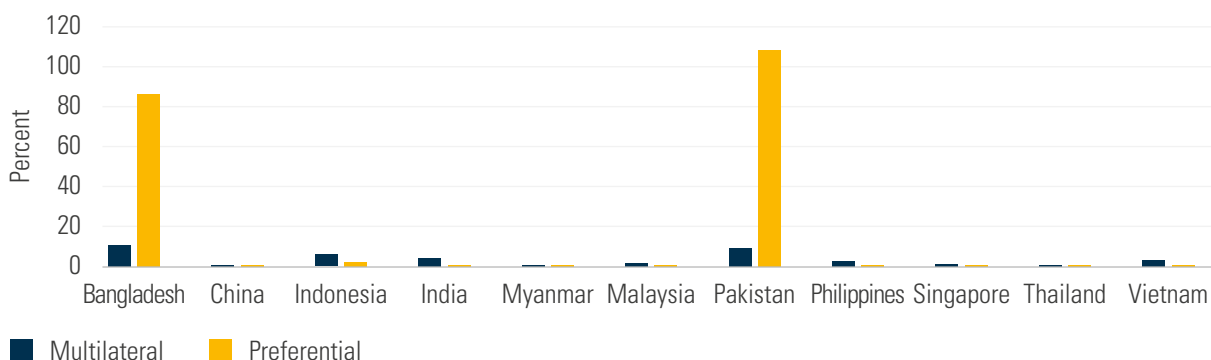
Standard international trade data are not well-suited to structural gravity modeling because they do not include internal flows. Hoekman and Shepherd (2021) therefore use the Eora multi-region input-output table. Eora covers 183 countries and 26 sectors through a single harmonized

input-output table. They use data for 2015 only, the latest available year, corresponding most closely to the year of the SPI data (2016). Estimation is by Poisson pseudo-maximum likelihood, and counterfactual simulations are solved using the approach of Baier, Yotov, and Zylkin (2019).

Source: Shepherd (2020).

FIGURE 16 | EXPORT IMPACTS OF MULTILATERAL AND PREFERENTIAL LIBERALIZATION: DISTRIBUTION SERVICES (PERCENT OVER BASELINE)

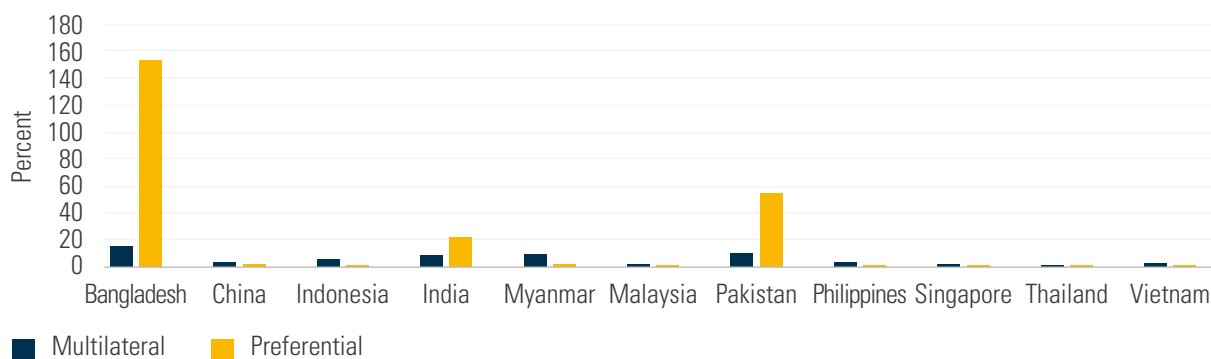
(percent over baseline)



Source: Calculations based on Hoekman and Shepherd 2021.

FIGURE 17 | EXPORT IMPACTS OF MULTILATERAL AND PREFERENTIAL LIBERALIZATION: FINANCIAL SERVICES (PERCENT OVER BASELINE)

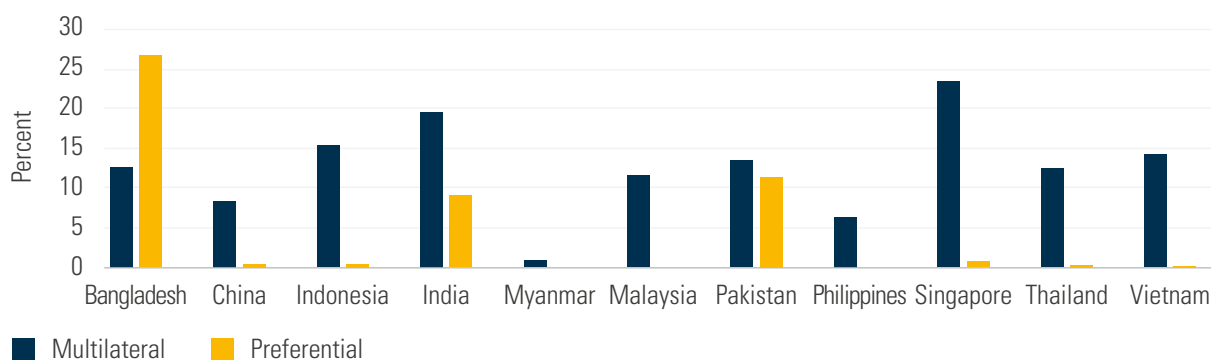
(percent over baseline)



Source: Calculations based on Hoekman and Shepherd 2021.

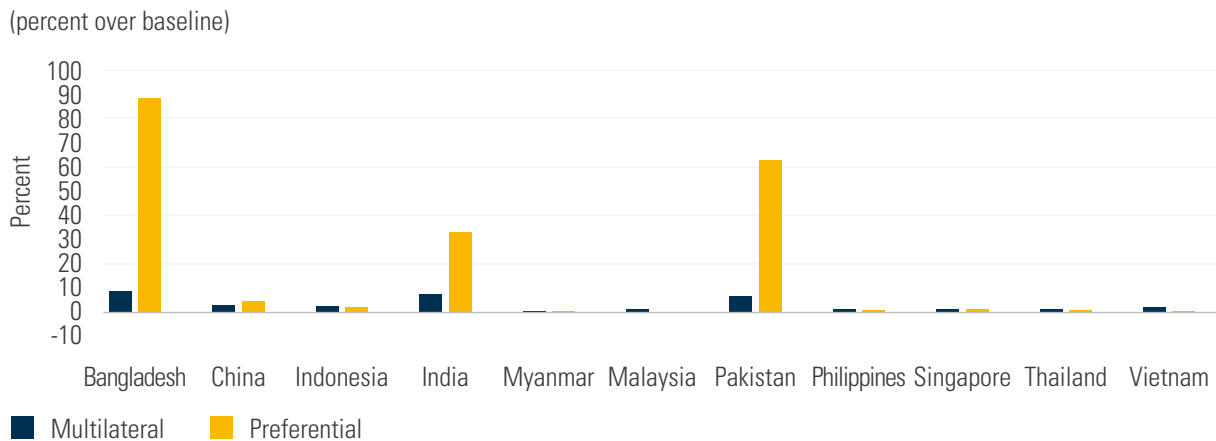
FIGURE 18 | EXPORT IMPACTS OF MULTILATERAL AND PREFERENTIAL LIBERALIZATION: TELECOM SERVICES (PERCENT OVER BASELINE)

(percent over baseline)



Source: Calculations based on Hoekman and Shepherd 2021.

FIGURE 19 | EXPORT IMPACTS OF MULTILATERAL AND PREFERENTIAL LIBERALIZATION: TRANSPORT SERVICES (PERCENT OVER BASELINE)



Sources: Shepherd 2021, based on Hoekman and Shepherd 2021.

The analysis undertaken here shows that liberalizing services policies in South Asia and Southeast Asia can help boost the regional services economy. But as noted at the outset, there is more to international trade in services than is captured in standard data from the balance of payments, which are used for the simulations here. The simulations do not take account of trade under the General Agreement on Trade in Services Mode 3 (sales by foreign affiliates), and they only capture the other modes of supply imperfectly. The figures reported should therefore be considered as lower bounds on the likely true effects of policy liberalization.

Another limitation is that the models used are single sector, so they do not capture the input-output relationships at the core of the concept of embodied services trade. As such, regional integration of services markets can promote greater sourcing of services inputs from abroad in other sectors, including manufacturing, with consequent trade and income gains. This dynamic is important, and again suggests that the figures produced by the simulations here are on the low end.

Taking the simulation results set against these

limitations highlights the importance of moving forward on services policy reforms in the region. The point is all the more salient in light of the COVID-19 pandemic, which has had major implications for services activities, in particular those requiring international travel or personal interactions. As such, policy makers across Asia will be called upon to pay renewed attention to measures that can help support services production, trade, and employment, following the severe shocks to which they have been subjected over the past year.

The potential gains from regional integration in South Asia are very high in relative terms, that is, starting from a baseline of low intraregional trade. Given the historical political tensions in South Asia, the degree of regional integration is very low compared with Southeast Asia and other world regions. Of course, regional integration is not straightforward given the political landscape. The size of the gains from preferential integration should not overshadow the more general finding that multilateral liberalization, including when undertaken autonomously, can bring significant economic gains to South Asia just as it can to Southeast Asia.



4. ADVANCING REGIONAL INTEGRATION BETWEEN SOUTH ASIA AND SOUTHEAST ASIA – SELECTED ISSUES

The evidence from the simulations in this report has three key implications for policy makers.

- First, as a general proposition, the largest economic gains come from nondiscriminatory policy reforms. While these reforms – covering goods, services, and investment – are consistent with the aims of the multilateral trading system, they do not strictly require multilateral negotiations to be feasible: individual countries are always free to liberalize autonomously, on a de facto most favored nation basis. This path forward has much to recommend, as it allows countries to appropriate significant economic gains but does not require complex coordination with policy makers in other countries. Given the difficulty of moving forward on multilateral negotiations, this path is one that should seem increasingly appealing to policy makers in South Asia and Southeast Asia, especially in the area of investment in services, with the growing realization of their importance in the regional trading landscape.
- The second implication comes in the form of a partial exception to this finding: South Asia. Given historical political tensions there, the degree of regional integration is very low compared with Southeast Asia and

other world regions. The gains from regional integration in South Asia are therefore very high in relative terms, that is, starting from a baseline of low intraregional trade. Of course, regional integration is not straightforward given the political landscape. The size of the gains from preferential integration should not overshadow the more general finding that multilateral liberalization, including when undertaken autonomously, can bring significant economic gains to South Asia just as it can to Southeast Asia.

- The third implication is that an ambitious regional integration agenda that covers goods, services, and investment can boost gains for both South Asia and Southeast Asia. An agenda that covers services and investment reforms and improvements in trade facilitation, in addition to the liberalization of tariffs and NTBs, produces the largest benefits for both regions.

Regional integration can be pursued through free trade agreements (FTAs). South Asian policy makers can join existing regional groupings such as ASEAN or the Regional Comprehensive Economic Partnership. A case can be made for signing bilateral agreements with individual Southeast Asian countries. Hub-and-spoke

FTAs tend to marginalize the spoke economies, since factories in the spokes have artificially lower market access than factories in the hub. Consequently, hub-and-spoke FTAs can become an artificial deterrent to investment in the outer economies. Filling in the gaps with spoke-spoke FTAs may remove this policy-induced investment deterrent and avoid self-induced peripherality for spoke nations (Baldwin 2004).

Deeper regulatory cooperation can be pursued as part of FTAs or other regional mechanisms. Regulatory cooperation in the selected areas examined in this report, ranging from protection at the border, such as SPS measures, to new elements, such as digital trade, complementarity of factors, and environmental goods and services, is explored in more depth below as a means of providing options for deepening economic linkages between South Asia and Southeast Asia.

ADDRESSING NON-TARIFF MEASURES – THE CASE OF SANITARY AND PHYTOSANITARY REFORMS

SPS measures were designed to limit NTMs to legitimate human plant and animal health concerns based on the least restrictive measures, but NTMs have increased dramatically over the past two decades as countries have reduced tariff barriers. These increases can be attributed to various factors, including trading tariff barriers for NTBs, but also increased global awareness of SPS hazards, greater precision in testing, climate change and changing distributions of pests and diseases, increased variety in traded commodities, and lower tolerance for chemical residues by importing countries (particularly by developed countries).

SPS compliance is a critical part of the trade equation. The ability to produce and trade a commodity is driven by many factors, including basic economic functions such as production capacity at a competitive cost, market demand,

and transportation logistics. But another critical part of the trade equation lies in import conditions imposed by importing countries. These can be in the form of tariffs, import quotas, and, particularly relevant to this discussion, SPS requirements. SPS compliance is sometimes a game changer. Although SPS compliance can also be a benefit to trade by providing a quality product that can elevate export competitiveness and establish a country with increased market share, and reducing trade costs through lowering of border formalities, failure to meet an importing country's requirements can mean complete cessation of trade.

South Asian and Southeast Asian countries vary in their basic ability to trade and the SPS challenges they face. Many factors contribute to these differences, including economic capacity, geography, access to ports, distance to markets, commodity portfolio, internal and regional political stability, alliances with neighboring countries, technical capacity, regulatory capacity, and governance systems. In some circumstances, these are tied to the level of economic development or the unique geography of individual countries. In other cases, regional differences can be linked to intraregional connectivity, effective trade facilitation, and functional cooperative initiatives among regional partners. Other factors include legacies from colonial influences and the dynamics of agricultural reform and changes in trade patterns following independence. All the countries in South Asia and Southeast Asia have unique circumstances that influence their capacity to respond to trade-related SPS issues, but many similarities exist. For example, smaller countries, such as Bhutan, Nepal, and Lao PDR, share commonalities related to limited economic and human resources, while larger economies can be burdened by complex bureaucracies. In addition, these are landlocked countries that are reliant on transportation systems and neighboring countries for access to ports.

The costs associated with SPS compliance capacity must be considered, including human resources for SPS oversight, and building and

maintaining accredited laboratory systems. As international trade systems increasingly adopt SPS concepts, it is essential that exporting countries build their awareness of and capacity for SPS compliance.

This can be accomplished through phytosanitary and veterinary evaluations, and training programs and workshops available through various international development agencies. Exporters often need to comply with plant health or food safety testing requirements of importing countries. This can be challenging when products do not meet the requirements (for example, presence of quarantine pests or products exceed maximum residue limits), accredited laboratory testing facilities are not available to exporters, or laboratory certification is not recognized by the importing country. Governments and aid agencies can help by providing chemical management training programs, building and staffing accredited laboratories, and ensuring that mutual standards recognition is included in bilateral trade agreements. Regionally, Southeast Asia has some clear advantages related to the development of SPS capacity.

To address outdated legislation, overlapping bureaucracies, and insufficient capacity, policy makers in South Asia and Southeast Asia can focus on the following national and regional SPS-related reforms:

Implementing trade facilitation measures

- Analyses have shown a trend of decreasing average trade costs in Indonesia, Malaysia, the Philippines, Singapore, and Thailand from 1990 to 2006 (Sourdin and Pomfret 2009). The improvements are likely the result of ongoing trade facilitation efforts made by these countries in recent years (Bayley 2014). ASEAN is promoting the concept of the ASEAN Single Window as an integrated platform for the electronic exchange of border trade-related documents among its member states, facilitating trade through faster clearance of cargo and release
- of shipments. Implementation remains low, but it is progressing with the addition of more documents, such as the electronic Phytosanitary Certificate, electronic Animal Health Certificate, and electronic Food Safety Certificate, as well as the possibility of exchange of such electronic trade documents with ASEAN countries. The Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific, which entered into force in 2021, has been signed by Bangladesh, Cambodia, China, Armenia, and the Islamic Republic of Iran, leading the way for other countries to adopt and implement the Agreement.
- The World Bank South Asia Regional Trade Facilitation Program is advancing digitization of border documents for Bhutan, Bangladesh, and Nepal. Part of this effort is to connect the Nepal National Single Window to the International Plant Protection Convention's ePhyto hub to facilitate exchange of electronic phytosanitary certificates (ePhytos). Implementation of ePhytos provides efficiency gains for traders who can apply for and receive certificates remotely as well as increased confidence in the authenticity of certificates issued by authorities.
- Efforts to implement risk-based border management measures in some countries (for example, the Philippines and Thailand) and increased transparency of requirements have contributed to efficiency improvements in trade. However, in many countries in both regions, the application of risk-based approaches to reduce interventions and remove duplicative or unnecessary documentary requirements such as licenses and permits is still overused by authorities and contributes to inefficiencies in trade. Greater cooperation between border agencies within the countries or between regional partners is also needed to improve trade efficiencies. Regional administrative burdens of both importing and exporting countries play a role in trade efficiency.

Improving regional cooperation on developing SPS capacity, mutual recognition, and harmonization of SPS processes

- Tangible targets that can lead to greater SPS capacity for all countries include a broad range of initiatives. These can include restructuring and coordinating government departments to streamline SPS response capacity, establishment of accredited laboratory facilities with trained personnel for testing and certification of commodities, and SPS training for all participants of SPS trade-related commodity production streams, including producers, processors, exporters, regulators, and so forth. All parties must be kept up to date with standards and technologies as they change. Access to information and transparency of procedures provide predictability so that traders both know what is required and what will happen to their goods during trade processes.
- Trade arrangements and membership in economic unions are beneficial to members when the focus is regional harmonization, mutual recognition, equivalence, and the implementation of least-restrictive SPS trade measures. Other benefits of effectively run regional organizations have been realized through SPS training and trade facilitation exercises. FTAs, bilateral or between a region and individual countries, provide

opportunities for cooperation on SPS issues and special commitments reflecting adaptations to regional conditions. Trade agreements increasingly include chapters on SPS measures. These promote regional cooperation, coordination of activities, and transparency and encourage support from developed economy partners. Some extend beyond the provisions of the WTO SPS Agreement, adding greater precision to the concepts of cooperation, such as requiring prescribing time frames for consultation, requiring that partners be given the opportunity to review and comment on risk assessments, and so forth. In Southeast Asia, developed economies have provided leadership to regional partners in developing regulatory capacity. Australia, for example, coordinates an annual meeting of regional regulators in an effort to build capacity and harmonize understanding through technical discussion leading to improved understanding of what is expected to meet market requirements by both exporting and importing officials. With appropriate knowledge dissemination of these technical requirements, producers and traders are better positioned to increase commodity compliance and thereby market stability. In South Asia, countries focus on their collaboration with India but could consider partnering with ASEAN countries in selected areas (Allen et al. 2021).



SERVICE SECTORS AND REGULATORY APPROACHES – THE CASE OF DIGITAL SERVICES

Governments in South Asia and Southeast Asia must adapt to the rapidly evolving realities of the digital services market. Many Southeast Asian countries are already demonstrating the transformative power of technology and the emergence of digital services such as IT and ITES, e-health, e-education, e-financial services, e-distribution, or e-transport. Although, except for India and some niche markets in the region, these services are in a more incipient phase in South Asia, the need to address the new technologies is becoming ever closer and more apparent. Technological developments, including improved artificial intelligence and deep learning technology, as well as the advent of 5G and increased uptake of blockchain, are disrupting sectors and enabling the digital provision of new services, raising new legal and regulatory questions.

As technological disruption reaches highly regulated sectors, adequate regulation becomes pressing. Unsurprisingly, the first services in South Asia and Southeast Asia to experience significant technological disruption were in less regulated sectors, such as e-commerce and ride hailing. However, as digital services have expanded into more regulated sectors, the impacts exerted by national and regional regulations have been thrown into sharper relief. For example, in just one subsector of healthtech – telemedicine – the regional variations in regulation are significant. Only a few countries have created specific regulation around telemedicine. For example, India introduced several telemedicine measures as a reaction to COVID-19,¹¹ while Singapore introduced a regulatory sandbox in 2018.¹² The

Philippines has introduced legislation that draws together a group to examine the regulation of telemedicine.¹³ In Thailand, telemedicine has grown significantly without clear rules and regulations on medical liability or access to patients' health records. These different regimes, coupled with the absence of legislation on telemedicine in the rest of the region, have created a complex environment of overlapping medical practice regulations, medical device regulations, and medical data regulations, which make it virtually impossible for a regional provider to emerge. This situation is echoed in many other traditionally highly regulated service sectors.

Regulatory heterogeneity is particularly challenging for many small and medium-size enterprises when attempting to scale up their business from the national level to trading at the regional level.¹⁴ Complying with the requirements of differing national regulations can be daunting, particularly for small businesses that struggle to meet the administrative and cost barriers. By encouraging regulatory convergence, this barrier can be greatly reduced. Another concern arising from national regulation is the creation of regulatory gray areas.¹⁵ Due to unclear regulatory environments, many digital service providers operate in an environment where they are permitted to continue operations provided that a specific regulation is not enforced. Examples include the use of commercial messaging for medical purposes or other private data transmissions.¹⁶ This is obviously a suboptimal situation, as it creates an environment where existing services could be rapidly shut down

¹¹ Jalan (2020).

¹² Ministry of Health of Singapore (2018).

¹³ Luci-Atienza (2019).

¹⁴ Nordás (2016).

¹⁵ OECD (2018).

¹⁶ Drake et al. (2016).

without the scrutiny present under full regulatory change. It also creates a dependency on the whims of the enforcer, again creating an unstable investment and development environment.

What is clear from these developments is that ignoring them is not an option. At best, this could lead to societies being left behind and not having access to innovation that could provide huge advances across a broad spectrum of sectors. At worst, it could lead to the use of these technologies outside safe and regulated parameters, creating great potential for consumer harm. Therefore, governments must prepare themselves for the explosion of possibilities that technology will present in the near future.

To address regulatory challenges and heterogeneity issues and prepare for the digital developments over the coming decades, policy makers in South Asia and Southeast Asia can focus on the following national and regional reforms:

- *Developing supporting policies for digital services.* Digital services require general supporting policies in areas like data protection, cyber security, consumer protection, competition law, and recognition of e-signatures and electronic transactions, which are the basic building blocks of all business online. Dialogue is needed on the regulatory architecture that ensures a transparent national regulatory environment that protects consumer interests and makes compliance as easy as possible for companies. Relevant laws and regulations that are currently in place or absent in countries in South Asia and Southeast Asia are summarized in table 6. Unsurprisingly, the countries with the most vibrant digital service economies are those with the most complete legislative and regulatory frameworks. The table also shows that there are still important gaps in several countries in the basic legislative infrastructure
- needed to support digital services, such as privacy and consumer protection. Even where such frameworks exist, however, there is no guarantee that these are properly supportive. Regional information exchanges between South Asia and Southeast Asia could help address the challenge of keeping up with the need for rapidly evolving frameworks.
- *Pursuing sectoral legislative and regulatory reforms in services.* Asymmetries of information in services often prompt policy intervention in the form of regulation, which can create barriers to entry and service supply. Professional services, for example, are often highly regulated, while lengthy approval mechanisms may be required to provide financial or audio-visual services. As a result, regulation needs to be calibrated and designed carefully to achieve the public interest justifications that motivate its introduction, without raising costs, reducing efficiency, or creating rigidities in industries. Regulation can be an even greater issue for digital services because the ability of such services to develop and be commercialized will often require positive action on the part of regulators.
- *Harmonizing or encouraging mutual recognition of qualifications and regulations.* There is an opportunity to promote a regional debate on the regulation of digital services and e-trade. If a degree of consensus and standardization could be achieved regionally, this would make market entry and product development far less complex, significantly reducing the regulatory burden on producers without compromising on the level of consumer protection offered by regulators. Options include adding regulatory elements to existing regional agreements or embarking on new regional regulatory initiatives, perhaps focused on selected priority sectors. This could mean agreeing on standard practice in

developing regulation that specifically affects e-commerce providers. It could also involve exchange of information on balancing risks,

using evidence from other jurisdictions, as well as gathering evidence through trials such as regulatory sandboxes.

TABLE 6 | NATIONAL REGULATIONS DIRECTLY RELATED TO THE DIGITAL ECONOMY

Country	Electronic transactions	Consumer protection	Privacy and data protection	Cybercrime	AI	Blockchain
India	Y	N	Y	Y	N - But ongoing dialogue	Ban on crypto assets under review following India Supreme Court decision in March 2020
Sri Lanka	Y	Y	N	Y	N	N
Bangladesh	Y	Y	N	Y	N	Ban on cryptocurrencies
Nepal	Y	Y	Y	Y	N	All transactions related to Bitcoin are illegal
Pakistan	Y	N	Draft	Y	N	Not recognized in any way but not currently regulated
Bhutan	Y	Y	Y	Y	N	N
Afghanistan	Draft	N	N	Y	N	N
Malaysia	Y	Y	Y	Y	N - But plans to develop national AI framework	Not recognized as legal tender, regulations put in place to record exchanges for anti-money laundering and tax purposes
Singapore	Y	Y	Y	Y	Research funding into ethics and AI regulation - authorization for trials of autonomous vehicles	Currently working on full regulatory framework including initial coin offering, payments, exchange licensing, and so forth
Indonesia	Y	Y	Y	Y	N - But promoting discourse	Not banned, but warned against use
Brunei Darussalam	Y	N	N	Y	N	Not considered legal tender, not regulated
Vietnam	Y	Y	Y	Y	N	Not considered legal tender, reports on working toward a legal framework

Country	Electronic transactions	Consumer protection	Privacy and data protection	Cybercrime	AI	Blockchain
Philippines	Y	Y	Y	Y	N	Trading is subject to permission from the central bank
Cambodia	Y	Y	N	Draft	N	Not legal tender, but not illegal, banks asked not to allow people to conduct transactions – development of internal interbank blockchain network
Thailand	Y	Y	Y	Y	N	Working toward implementation of new laws on tax and exchange registration, financial institutions asked not to trade
Lao PDR	Y	Draft	Y	Y	N	N
Myanmar	Y	Y	Draft	Draft	N	N

Source: UNCTAD 2020.

LEVERAGING THE UNTAPPED POTENTIAL OF FDI AND ITS COMPLEMENTARITY WITH LABOR MIGRATION

Mounting evidence of FDI and migration complementarity suggests that developing countries could better leverage factor movements to support national and regional economic development. South Asian and Southeast Asian countries offer a diverse range of approaches to FDI and migration policies and their intersection. This only partly reflects differences in economic development, with historical, political, and societal influences explaining much of the divergence. And while there is no single policy formula that is appropriate for every country, collective experience regionally and globally offers lessons from which opportunities for enhancement can be drawn.

Potentially large gains are achievable at minor cost by simply improving information accessibility for investors and migrants. A regional initiative could

improve website navigation, consolidation of regulatory information, and accessible translations. Visa inflexibility and red tape are a widespread concern. Annual renewals, non-transferability between employers and visa categories, strict sponsorship requirements, and multiple approval processes (for visas, work permits, and registration) deter migrants and investors alike. Cooperation to cut red tape and highlight country differences would also promote smoother processes across the region. FDI approval processes are also more of a burden than a benefit in most countries that deploy them. Streamlined and inexpensive approvals that facilitate host country integration and guard against post-establishment interference can improve investor certainty and appease wary locals, but in most of the countries in the region, they lack objective criteria and timely, transparent, and predictable processes.

MAKING REGIONAL TRADE SUSTAINABLE – THE ROLE OF ENVIRONMENTAL GOODS AND SERVICES

Trade in environmental goods and services (EGS) is essential to support global efforts to reduce environmental degradation and the resulting inequalities, enabling developing countries to embark on a more resilient, inclusive, and greener path to recovery from the COVID-19 pandemic. Climate change is expected to affect business productivity and competitiveness in the near future. Therefore, reducing trade barriers for EGS in developing countries is crucial to improve and maintain firms' competitiveness by ensuring access to affordable and appropriate EGS that are critical for environmental protection and climate change mitigation.

The broader debate revolving around trade in EGS also has important consequences for countries in South Asia and Southeast Asia. Policy makers and private sector actors need to learn how to mitigate environmental impacts and adjust their business operations. The wider effects of trade in EGS should not only be considered within industry, but also across sectors, as companies must shift from a strategy of "pollute and grow" to a more sustainable strategy of "mitigate and grow."

South Asia has not yet moved toward more sustainable trade growth. Economic growth in the region is driven by environmentally hazardous modes that should be transmuted through extensive trade in EGS. Policy makers should focus on mitigating environmental pollution, enhancing energy efficiency and the use of renewable energy, and promoting environmental industries and creating green jobs. Substantial trade in EGS can reduce environmental degradation as well as promote growth.

Potential enablers of green growth in South Asia and Southeast Asia are related to the use of renewable energy and the shift of industries away from carbon-intensive growth toward more sustainable growth models. The largely

untapped potential for trade in South Asia remains an important element to spur economic growth through trade in EGS, which will also improve the sustainability of other industries, such as textiles in Bangladesh, phosphates in India, or tourism in Sri Lanka. Focusing on economic growth through EGS is necessary for policy makers to help create more sustainable and long-term jobs.

Trade and FDI will play a crucial role in this transition. Companies that are involved in global production processes and exporting will be exposed to new stringent environmental requirements. This will likely affect other domestic industries and businesses. Several untapped opportunities and strong regional linkages and production networks in South Asia and Southeast Asia could lead to a more complex regional value chain in environmental goods that could accelerate technology transfer and adoption and reduce environmental degradation. Policy makers need to ensure that an appropriate investment environment is created to attract new FDI in EGS-intensive sectors with a high potential for spillover effects to other major industries at the national level. Prioritization is key for promoting a greener recovery from the pandemic.

Liberalizing trade in environmental goods can increase the competitiveness of domestic firms by promoting the growth of highly productive firms. In addition, trade in EGS can help reduce greenhouse gas emissions and the use of fossil fuels, which in turn can significantly increase productivity. However, trade liberalization alone will not be sufficient to create a regionally integrated market for trade in EGS. The availability of investments and incentives to increase the uptake of EGS is also important for creating a market and integrating the value chain. The region has a growing network of trade and investment agreements, including with China and Korea. Nevertheless, challenges related to policy coherence, coordination, and

long-term planning can act as barriers to trade and investment in EGS.

While various trade and environmental policies are implemented at the national level, there is a need for harmonization of these policies at the regional level. Examples include electronic recognition of test certificates to avoid double testing; access to affordable testing; and harmonization of some sectoral areas, such as water quality, energy efficiency, pipes, quality of solar panels, and so forth. A regional framework that includes standards and identifies and monitors barriers to trade in EGS could be created to unlock the existing trade potential for EGS.

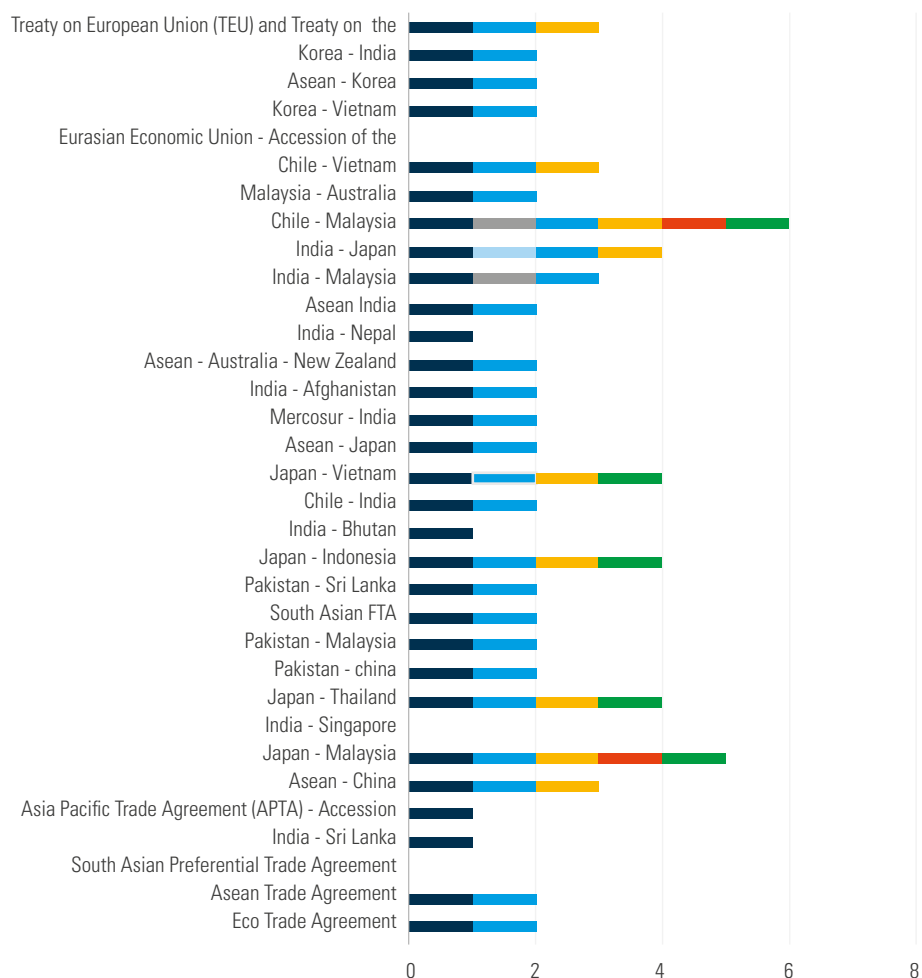
Reductions of tariffs and NTMs could boost domestic uptake of cleaner technologies and spur green growth in South Asia. Looking at the Southeast Asian countries, their development of renewable industry could be attributed to the low tariffs in the ASEAN region, as well as the proximity of Southeast Asian countries to Chinese markets and the spinoff of technologies, existence of a competitive semi-conductor sector, potential for Chinese companies to ship equipment to European and US markets without being subject to antidumping rules, and large potential for those countries to adopt solar technologies. As such, South Asian countries would be best placed to institute policies enabling the development of this industry, of course, in tandem with research and development.

Regional trade agreements have traditionally described environmental regulations but are often not ambitious. The World Bank's Deep Trade Agreement's database 2.0 reveals that of all the trade agreements globally, the European Union's trade agreements have attempted to include environmental provisions in the most significant way, covering issues of institutions, cooperation, and welfare, as well as an enforcement mechanism. However, Shapiro (2020) finds that these agreements typically describe domestic environmental regulations or monitoring investments, but not patterns of tariffs and NTBs. Many of these merely seek to prevent the relocation of dirty industries by barring the use of weak domestic environmental policies to lure dirty production across borders. Thus, governments need to delineate the types of trade policies that affect the environment so that appropriate amendments can be made.

In the region, the Chile-Malaysia Free Trade Agreement contains the most advanced environmental provisions (figure 20). This agreement includes provisions that prohibit the dilution of environmental protection to promote trade, technical assistance in the environmental area, and provisions on cooperation and the establishment of an intergovernmental committee on environment. Additionally, compared with all the other trade agreements analyzed in the South Asia and Southeast Asian regions, the Chile-Malaysia FTA also requires states to control ozone-depleting substances.



FIGURE 20 | ENVIRONMENTAL PROVISIONS IN SOUTH ASIAN AND SOUTHEAST ASIAN TRADE AGREEMENTS



- Does the agreement provide for a general exception to other obligations for environmental reasons?
- Does the agreement prohibit dilution of environmental protection to promote trade?
- Does the agreement provide for differential and greater liberalization of trade environmental goods?
- Enforcement: Does the agreement subject environmental provisions to general state to state dispute settlement?
- Ext. Assistance: Does the agreement provide for technical assistance/financial assistance/capacity building specifically in the environmental area?
- Env. Protection: Does the agreement require states to control ozone-depleting substances?
- Cooperation: Does the agreement establish an intergovernmental committee on environment?

Source: Deep Trade Agreements 2.0 database.

To move toward more sustainable trade growth, policy makers in South Asia and Southeast Asia can focus on the following national and regional reforms:

- For South Asia, a reduction in the tariffs on environmental goods could boost domestic uptake of cleaner technologies and spur

green growth. Looking at the Southeast Asian countries, their development of renewable industry could be attributed to the low tariffs in the ASEAN region, as well as the proximity of Southeast Asian countries to Chinese markets and the spinoff of technologies. Similarly, South Asian countries could benefit from this proximity to improve their access

to EGS by reducing or eliminating tariffs on these products.

- *There is a need for appropriate measures to regulate markets for environmental goods, including standards and the capacity to implement them while minimizing the costs of compliance for producers and distributors of such goods.* Cooperation and knowledge sharing between regulators and standards bodies would facilitate trade in EGS. Ultimately, this could lead to common approaches to standards and mutual recognition of conformity assessment.
- *Upgrading of existing trade agreements allows for the inclusion of more environmentally friendly provisions and can help reduce NTMs.* This will provide the basis for greener and more sustainable trade in EGS by allowing countries to align their environmental standards and take action to reduce their carbon emissions, while using trade to achieve these goals. South Asian countries would benefit from stronger collaboration with ASEAN and other countries by deepening existing trade agreements.
- *The liberalization of trade in services can help to promote the free movement of environmental experts and services.* Trade in services and environmental provisions should become a priority for existing trade agreements, particularly so for trade agreements in South Asia. Work in this area is still in its infancy in South Asia, while it is relatively advanced in Southeast Asia, where most trade agreements cover environmental provisions and trade in services. Trade in services will be crucial for the conservation and monitoring of environmental assets and knowledge transfer. Therefore, policy makers in South Asia should take steps to deepen their trade agreements with provisions that can facilitate trade in EGS.
- *Facilitating trade in EGS would help South Asian countries commit to and implement more ambitious climate-related targets.* South Asian countries could follow the ASEAN model, which sets targets for renewable energy, energy efficiency standards, waste management, and air pollution.
- *Overall, investing in trade facilitation and reducing NTBs on EGS can help domestic firms maintain comparative advantages.* The world is in transition to a low-carbon future, and competitiveness will increasingly depend on the ability to implement environmental technologies and demonstrate environmental benefits. Countries that improve access to EGS now are likely to give their companies an advantage over countries that are slow to implement measures to facilitate this trade.



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ANNEXES

ANNE X A | APEC LIST OF ENVIRONMENTAL GOODS

HS code	Air pollution control
840420	Auxiliary plant for use with boilers of heading 84.02 or 84.03 (for example, economizers, super-heaters, soot removers, gas recovers); condensers for steam or other vapor power units
840490	Auxiliary plant for use with boilers of heading 8402 or 8403 (for example, economizers, super-heaters, soot removers, gas recovers); condensers for steam or other vapor power units; parts
841960	Machinery for liquefying air or other gases
841989	Industrial machinery, plant, or equipment for the treatment of materials, by process involving a change in temperature, nesoi
842139	Filtering or purifying machinery and apparatus for gas (other than intake air filters for internal combustion engines)

HS code	Environmental monitoring, analysis, and assessment equipment
902610	Instruments and apparatus for measuring or checking the flow or level of liquids
902620	Instruments and apparatus for measuring or checking pressure of liquids or gases, nesoi
902680	Instruments and apparatus for measuring or checking other variables of liquids or gases, nesoi (e.g., heat meters)
902690	Parts and accessories for instruments and apparatus for measuring or checking the flow, level, pressure, or other variables of liquids or gases, nesoi

902710	Gas or smoke analysis apparatus (automatic NO _x and NO ₂ sampler and measuring apparatus; automatic SO ₂ sampler and measuring apparatus)
902720	Chromatographs and electrophoresis instruments
902730	Spectrometers, spectrophotometers, and spectrographs using optical radiations (ultraviolet, visible, infrared)
902750	Instruments and apparatus for physical and chemical analysis using optical radiations (ultraviolet, visible, infrared), nesoi (e.g., automatic infrared oil content analyzer)
902780	Instruments and apparatus for physical and chemical analysis, nesoi (magnetic resonance instruments, mass spectrometers, etc.)
902790	Microtomes; parts and accessories for instruments and apparatus for physical or chemical analysis (e.g., polarimeters, refractometers)
903149	Measuring or checking instruments, appliances, and machines, nesoi (e.g., profile projectors)
903180	Other instruments, appliances, and machines, not elsewhere specified in heading 90.31
903190	Parts and accessories for measuring or checking instruments, appliances, and machines, nesoi; parts and accessories for profile projectors
903290	Parts and accessories of automatic regulating or controlling instruments and apparatus
903300	Parts and accessories (nesoi in this chapter) for machines, appliances, instruments, or apparatus of Chapter 90

HS code	Environmentally preferable goods
441872	Other Assembled Flooring Panels, Multilayer, of Bamboo (44187210)

HS code	Management of solid and hazardous waste and recycling systems
840290	Super-heated water boilers and parts of steam generating boilers
840410	Auxiliary plant for steam, water, and central boiler
841780	Other industrial or laboratory furnaces and ovens, including incinerators, non-electric
841790	Industrial or laboratory furnaces and ovens, including incinerators, nonelectric, and parts thereof: parts
847420	Crushing/grinding machines for earth/stone/ores/other mineral substance, in solid (including powder/paste) form

847982	Mixing, kneading, crushing, grinding, screening, sifting, homogenizing, emulsifying, or stirring machines, nesoi in Chapter 84
847989	Machines and mechanical appliances having individual functions, nesoi in this chapter; other (e.g., air humidifiers or dehumidifiers; machines for squeezing radioactive waste)
847990	Parts of machines and mechanical appliances having individual functions, not specified/included elsewhere in this chapter (e.g., parts of air humidifiers or dehumidifiers)
851410	Resistance heated furnaces and ovens
851420	Furnaces and ovens; functioning by induction or dielectric loss
851430	Industrial or laboratory electric furnaces and ovens, nesoi
851490	Parts for industrial or laboratory electric furnaces and ovens (including those functioning by induction or dielectric loss); parts for other industrial or laboratory equipment for the heat treatment of materials by induction or dielectric loss
854390	Parts of the machines and apparatus of 85.43

HS code	Natural risk management
901580	Surveying instruments and appliances, hydrographic, oceanographic, hydrological, meteorological, or geophysical instruments and appliances, nesoi

HS code	Renewable energy plant
903289	Automatic regulating or controlling instruments and apparatus (excluding thermostats, manostats, and hydraulic types), nesoi
840690	Parts for steam and other vapor turbines
841182	Gas turbines, except turbo-jets, and turbo-propellers, of a power exceeding 5,000 kW
841199	Parts of gas turbines
841290	Parts of the engines and motors of 8412.10-8412.80
841919	Instantaneous or storage water heaters, non-electric (solar water heaters)
841990	Parts of machinery, plant or laboratory equipment of heading 84.19
850164	AC generators (alternator), of an output exceeding 750 kVA

850231	Wind-powered electric generating sets
850239	Electric generating sets and rotary convertors: other
850300	Parts suitable for use solely or principally with the machines of heading 8501 or 8502 (e.g., nacelles and blades for wind turbines)
850490	Parts for electrical transformers, static converters, and inductors
854140	Photosensitive semiconductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light emitting diodes (solar cells)
901380	Optical devices, appliances, and instruments, nesoi (solar heliostats)
901390	Parts and accessories for optical devices, appliances, and instruments, nesoi (parts for solar heliostats)

HS code	Wastewater management and potable water treatment
841939	Dryers, other (sludge driers)
842121	Filtering or purifying machinery and apparatus for liquids: for filtering or purifying water
842129	Filtering or purifying machinery and apparatus for liquids: other
842199	Parts of household filtering and purifying machines for gases

Note: nesoi = not elsewhere specified or indicated.

ANNE X B | PPML GRAVITY ESTIMATES

	(S1)	(S2)	(S3)	(S4)
Host country GDP	0.602*** (-0.0484)	0.666*** (-0.0467)	0.748*** (-0.0556)	0.738*** (-0.0628)
Source country GDP	0.644*** (-0.0545)	0.629*** (-0.0531)	0.631*** (-0.0524)	0.526*** (-0.0576)
Distance	-0.769*** (-0.0645)	-0.711*** (-0.0627)	-0.709*** (-0.063)	-0.565*** (-0.0608)
Common language	0.909*** (-0.205)	0.999*** (-0.203)	1.057*** (-0.208)	0.896*** (-0.233)
Host country tariff		-4.714* (-2.765)	-3.816 (-2.698)	-3.491* (-1.865)
Host country CIT			-4.553*** (-1.202)	-3.785*** (-1.232)
Host days/procedure to start a business				-0.330*** (-0.112)
HIC host fixed effect				0.195 (-0.261)
HIC source fixed effect				1.870*** (-0.31)
Constant	4.381*** (-0.801)	25.37** (-12.79)	42.65*** (-11.16)	36.30*** (-13.13)
N	153,093	146,332	140,861	138,958

Note: CIT = ; GDP = gross domestic product; HIC = high-income country; PPML = Poisson pseudo maximum likelihood.

