

Trade Relations between Taiwan and South Asia under the New Southbound Policy

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Abstract

This paper discusses the prospects for Taiwan's economic relations with South Asia, focusing on trade issues. The summary picture that emerges is that economic relations between Taiwan and the countries of South Asia largely focuses on India, that economic relations are relatively low compared to Taiwan's economic relations with the rest of the world, and that these economic relations are largely confined to "old economy," low value-added items for both imports and exports. This suggests that Taiwan's progress to a modern economy, driven by intellectual property built around its digital industries – information and communication technologies (ICT), in which Taiwan plays a globally central role, has not connected with similar industries in South Asia, such as India's software services industry. Put another way, South Asia is not part of the supply chain that Taiwan manages in new-age industries in ICT. We consider possible reasons: (1) Inadequate policy emphasis on new-economy industries and the services sector in Taiwan, perhaps due to established supply chains in East Asia and Southeast Asia; (2) Difficulties of doing business in South Asia due to tariff and non-tariff barriers. We also consider whether there are genuine opportunities for a dramatic change in the economic relations between Taiwan and South Asia, and explore policy options that policymakers on both sides should consider.

Keywords: *Taiwan, New Southbound Policy (NSP), Trade, South Asia*

新南向政策下台灣與南亞的貿易關係

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摘 要

本文探討台灣和南亞經濟關係的前景，並聚焦於貿易議題。整體的發現是台灣和南亞國家的經濟關係主要集中於印度；相對而言，台灣與南亞國家的經濟關係較之台灣與世界其他地區的關係，並不密切；且這些關係主要局限於「舊經濟」，即低附加價值產品的進口與出口。這意味著台灣受到數位產業—資通訊科技—的智慧財產權驅使而發展，並在全球扮演重要角色的現代經濟，並未和南亞地區的相似產業如印度的軟體服務業產生連結。換句話說，台灣在經營其新時代的資通訊產業時，南亞並非其供應鏈的一環。本文探討此中可能的理由：(1)或許因台灣在東亞與東南亞既有的供應鏈之故，台灣的政策不妥切地強調新經濟產業與服務部門；(2)南亞的關稅與非關稅障礙所導致的經商困難。本文探討台灣與南亞的經濟關係是否有出現顯著改變的真正機會，並探究雙邊的決策者應考量的政策選項。

關鍵詞：台灣、新南向政策、貿易、南亞

I. Introduction

This paper discusses the prospects for Taiwan's economic relations with South Asia,¹ focusing on trade issues. The summary picture that emerges is that economic relations between Taiwan and the countries of South Asia largely focuses on India, that economic relations are relatively low compared to Taiwan's economic relations with the rest of the world, and that these economic relations are largely confined to "old economy," low value-added items for both imports and exports. This suggests that Taiwan's progress to a modern economy, driven by intellectual property built around its digital industries – information and communication technologies (ICT), in which Taiwan plays a globally central role, has not connected with similar industries in South Asia, such as India's software services industry. Put another way, South Asia is not part of the supply chain that Taiwan manages in new-age industries in ICT.² We consider possible reasons: (1) Inadequate policy emphasis on new-economy industries and the services sector in Taiwan, perhaps due to established supply chains in East Asia and Southeast Asia; (2) Difficulties of doing business in South Asia due to tariff and non-tariff barriers. We also consider whether there are genuine opportunities for a dramatic change in the economic relations between Taiwan and South Asia, and explore policy options that policymakers on both sides should consider.

This paper proceeds as follows. We first provide an assessment of Taiwan's global status as an economy (Section 2). This is done in order to discover where its global comparative advantages lie. We then turn to an

¹ The paper does not analyze economic relations with all eight South Asian countries, but focuses only on Bangladesh, India and Pakistan. This is justified because these three countries accounted for 96.3% of the population and 96% of the foreign trade of South Asia. See Central Intelligence Agency, "World Factbook," 2019, Central Intelligence Agency, <https://www.cia.gov/library/publications/the-world-factbook>.

² New age industries in Taiwan's ICT sector comprise mainly hardware products that are high value-added. They include high-performance computers, flexible displays, mobility devices, and chips that are designed for artificial intelligence applications such as image sensing and speech recognition.

assessment of its economic relations with South Asia (Section 3). In this section, we explore the current state of relations, examine challenges and opportunities, and explore policy options for large-scale improvement. Given the globally important role played by services, especially services in ICT sectors, we look at the special case of services trade between India and Taiwan in Section 4. Section 5 provides a concluding discussion.

II. Taiwan's Global Presence

As of 2017, Taiwan is a developed country with per capita income of \$49,800, 30% above the OECD average of \$38,175. About 60% of the working age population participates in the workforce and the share of services to GDP is 62%. Taiwan has a high tertiary enrollment rate of 70%, the world's second highest after South Korea.³ See Table 1 below for comparisons with the OECD and a similar sized developed country, Australia.

³ Data compiled from Organization of Economic Cooperation and Development (OECD), <https://stats.oecd.org>, data for 2017; Chuing Prudence Chou, "Education in Taiwan: Taiwan's Colleges and Universities," Brookings Institution, November 12, 2014, <https://www.brookings.edu/.../education-in-taiwan-taiwans-colleges-and-universities>.

**Table 1 Taiwan's Development Parameters Compared with
Other Developed Countries (2017)**

Parameter	OECD	Australia	Taiwan
Population (m)	1154	24.4	23.6
Per capita income (PPP USD)	38,175	49,900	49,800
Median age (years)	37.9	38.7	40.7
Labor force participation rate (all/female) (%)	72 (60)	65 (59)	59 (50)
Share of services to GDP (%)	79	73	62
Share of trade to GDP (%)	56	39	114
Tertiary enrollment rate (%)	43	50	70
Fertility rate (#)	1.7	1.8	1.2
+65 Dependency ratio (%)	25.7	23.7	18.7

Note: (1) Data for 2017; (2) Trade data above includes merchandise and services trade; (3) Labor force participation rate; (4) +65 Dependency ratio is the share of population 65 years of age and above to the population aged 15-64 ('working age population'); (5) Median age and share of services to GDP for the OECD are not available. We have used US data as proxies.

Sources: (1) Per capita income, population, and median age: Central Intelligence Agency, "World Factbook," 2019, Central Intelligence Agency, <https://www.cia.gov/library/publications/the-world-factbook>; OECD, <https://stats.oecd.org>; Index Mundi, "Taiwan Demographics Profile 2018," Index Mundi, January 20, 2018, https://www.indexmundi.com/taiwan/demographics_profile.html; (2) Labor force participation rate, services and trade: World Bank, "World Bank Open Data," World Bank, data.worldbank.org; World Trade Organization, stat.wto.org; Director-General of Budget, Accounting and Statistics, Executive Yuan, "Images of Women R.O.C. (Taiwan)," February 2007, National Statistics R.O.C. (Taiwan), eng.stat.gov.tw/public/data/dgbas03/bs2/gender/Images%20of%20Women.pdf; Trading Economics, "Taiwan Exports," Trading Economics, 2019, <https://tradingeconomics.com/taiwan/exports>; (3) Fertility rate and dependency ratio (as of 2017) from United Nations Department of Economic and Social Affairs, "World Population Prospects: 2017 Revision," June 21, 2017, United Nations DESA/POPULATION DIVISION, <https://population.un.org/wpp>.

Taiwan's challenges include an aging population, that is already within 2% of its long-term peak of 24 million. With a low fertility rate of 1.2, Taiwan faces continuing demographic challenges in maintaining economic growth. One option is to increase labor force participation, including women's participation in the labor force, whose levels are below many developed countries. The female labor force participation rate is 50%, compared to the US is 57%.⁴ However, workforce participation rates are

⁴ US female labor force participation rate is 57%. Federal Reserve Bank of St. Louis,

constrained by a rapidly aging population, which both reduces the number of working age persons and puts demands on such persons to care for home-based senior citizens. Taiwan's median age of 40.7 years has overtaken the US at 37.9 years.

However, the relatively +65 low dependency ratio – an outcome of the baby boom that happened four decades ago – indicates that Taiwan still is some years away from facing Japan-like aging challenges to economic growth (Japan's +65 dependency ratio is 45.3%).⁵

The second challenge to Taiwan's future is the relatively low share of services to GDP at 62%, close to South Korea at 59% and below Japan at 69%. Manufacturing accounts for most of the rest, at 35%. This grew out of policies similar to those adopted by other East Asian economies. Such policies supported import substitution and export-oriented manufacturing, leading to the development of larger manufacturing sectors than other less-controlled developed economies.

One of the historical features of these policies that offered hope for transition to a more typical developed economy was support for small and medium enterprises. This was in contrast to industrial policy in Japan and South Korea, which favored large firms (*chaebol* in South Korea and *keiretsu* in Japan). As a result, manufacturing (including export-oriented manufacturing) used to be less dominated by large firms in Taiwan than in Japan and South Korea until 2005.⁶ However, large firms have increasingly come to dominate Taiwan's economy since then and, as of 2015, account for the bulk of output and exports (see Table 2 below).

There are several reasons why this change is important in an adverse

"Civilian Labor Force Participation Rate: Women," FRED Economic Data, <https://fred.stlouisfed.org/series/LNS11300002>.

⁵ United Nations Department of Economic and Social Affairs, "World Population Prospects: 2017 Revision," June 21, 2017, United Nation DESA/POPULATION DIVISION, <https://population.un.org/wpp>.

⁶ Charles Harvie and Boon-Chye Lee, eds., *The Role of SMEs in National Economies in East Asia* (Cheltenham: Edward Elgar Publishing, 2002).

way. The academic literature has established the importance of SMEs, both for their contribution to employment and growth, and to leading technological change in manufacturing. Further, as the world economy has moved towards services, SMEs have been at the leading edge of that change.

Table 2 SMEs' contribution to the economy

Country	Share of Employment (%)	Contribution to GDP (%)	Share of exports (%)
Japan	70	50	54
South Korea	88	49	31
Taiwan	78	42	17
USA	48	46	33

Note: (1) SME definitions vary by country; (2) Japan and South Korea data is for 2015; Taiwan data is for 2000, USA data for contribution to GDP is for 2008; other US data is for 2014.

Sources: (1) South Korea and Japan data: Naoyuki Yoshino and Ganeshan Wignaraja, "SMEs Internationalization and Finance in Asia," February 18, 2015, International Monetary Fund, <https://www.imf.org/external/np/seminars/eng/2015/jica2015/pdf/1-B1.pdf>; (2) Taiwan data: Small and Medium Enterprise Administration, Ministry of Economic Affairs, "White Paper on Small and Medium Enterprises in Taiwan," pp. 173-202, Small and Medium Enterprise Administration, Ministry of Economic Affairs, <https://www.moeasmea.gov.tw/list-en-2572>; (3) U.S. Data: Kathryn Kobe, "Small Business GDP: Update 2002-2010," January 1, 2012, U.S. Small Business Administration, <https://www.sba.gov/content/small-business-gdp-update-2002-2010>; U.S. Small Business Administration, "Frequently Asked Questions about Small Business," August 2017, U.S. Small Business Administration, <https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2017-WEB.pdf>; Mary Ellen Biery, "The Big Impact of Small Businesses: 9 Amazing Facts," *Forbes*, October 22, 2017, <https://www.forbes.com/sites/sageworks/2017/10/22/the-big-impact-of-small-businesses-9-amazing-facts/#5d693e0d1f33>; George Papadopoulos, et al., "Statistics on small and medium-sized enterprises," May 2018, Eurostat, http://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_on_small_and_medium-sized_enterprises.

As the share of trade to GDP in Table 1 indicates, trade is an important aspect of Taiwan's economy and past growth trajectory. Taiwan is a member of the WTO and has among the world's lowest tariff barriers. The average tariff rate in 2016 was 2.2%, compared with 2.1% in Japan, 6.9% in South Korea and 2.4% in the USA, and 2.7% globally.⁷

⁷ These are MFN trade-weighted average tariffs for 2015. World Bank, "World Bank Open Data," World Bank, data.worldbank.org; World Trade Organization, "Trade maps," World

Taiwan is a large exporter of goods – exports were about \$317 billion in 2017, up from \$280 billion in 2016.⁸ The table below provides comparative data.

Table 3 The World’s Leading Exporters

Rank	Country	Total (Goods) Exports (\$ bn)	Exports per capita (\$)	Exports as % of GDP
1	China	2,011	1,447	22.1
2	United States	1,471	4,498	12.8
3	Germany	1,283	15,458	16.5
4	Japan	683	5,421	17.9
5	South Korea	574	11,255	39.7
6	France	505	7,537	30.0
7	Hong Kong	488	65,946	201.6
8	Netherlands	460	26,437	82.5
9	Italy	436	7,148	30.1
10	United Kingdom	412	6,242	27.2
11	Canada	402	10,865	31.5
12	Mexico	359	2,895	35.4
13	Singapore	353	63,036	176.5
14	UAE	316	33,978	29.5
15	Taiwan	315	13,347 (6)	59.5 (4)

Note: (1) Figures in parentheses denote Taiwan’s global rank in that category; (2) Figures include re-exports.

Sources: Central Intelligence Agency, “World Factbook,” Central Intelligence Agency, [https://www.cia.gov/library/publications/the-world-factbook.](https://www.cia.gov/library/publications/the-world-factbook;); UNCTAD Database, unctadstat.unctad.org; data for 2017.

As the table above shows, Taiwan was the world’s 15th largest exporter in 2017.⁹ It ranked 6th for exports per capita, and 4th as a percentage of

Trade Organization, https://www.wto.org/english/res_e/statis_e/statis_maps_e.htm; U.S. Trade Representative (USTR), “Taiwan - Import Tariffs,” October 10, 2018, [Export.gov, https://www.export.gov/article?id=Taiwan-Import-Tariffs](https://www.export.gov/article?id=Taiwan-Import-Tariffs).

⁸ Trading Economics, “Taiwan Exports,” Trading Economics, 2019, <https://tradingeconomics.com/taiwan/exports>.

⁹ Note that a substantial portion of some higher ranked countries are re-exports (Hong Kong, Singapore) and crude oil (e.g., UAE and Netherlands). Sources: Census and Statistics

exports to GDP. Its leading exports are industrial machinery, computers and plastics (see Table 4 below). The impressiveness of these numbers can be gauged from knowing that though Taiwan accounts for 0.31% of the world's population, it accounts for 1.6% of world goods trade. Further, as noted earlier, it is at the center of several high value-added supply chains, such as the computer industry and semiconductors.

III. Taiwan's Trade Relations with South Asia

To provide a sense of where Taiwan's trade relations with South Asia are, we present the following tables for Taiwan's exports and imports. We have selected Bangladesh, India, Pakistan and Sri Lanka for analysis, as these together account for over 98% of South Asia's GDP.¹⁰

Department, Hong Kong, "Statistics on trade involving outward processing in the mainland of China, first quarter 2017 [12 Jun 2017]," June 12, 2017, Census and Statistics Department https://www.censtatd.gov.hk/press_release/pressReleaseDetail.jsp?charsetID=1&pressRID=4055; Pan Asian Economic Alliance (PAA), "Singapore- Economic Overview," PAA.net, https://paa.net/?page_id=607.

¹⁰ World Bank, "World Bank Open Data," World Bank, <http://data.worldbank.org>.

Table 4 Taiwanese exports to South Asian countries (2016)

Taiwan Exports	A Taiwan Total	B Global Share (%)	C Bangladesh	D Share (%)	E India	F Share (%)	G Pakistan	H Share (%)	I Sri Lanka	J Share (%)
1.Merchandise Exports ⁽¹⁾	281,000	1.8	921	2.2%	2,827	0.8	453	1.0	408	2.1
<i>Of which</i>			Exports >\$10m		Exports >\$30m		Exports >\$5m		Exports >\$5m	
2.Electrical machinery & equipment	124,100	44.3	91	9.9	390	13.8	46	10.2	15	3.8
3.Machinery including computers	30,200	10.8	-	-	261	9.2	5	1.1	-	-
4.Plastics	17,600	6.3	212	23.0	594	21.0	62	13.8	26	6.4
5.Technical apparatus	14,800	5.3	-	-	48	1.7	-	-	-	-
6.Fibers, Fabrics, Yarns and Apparel	10,640	3.8	236	25.7	101	3.6	78	17.2	195	47.9
7.Mineral fuels	9,800	3.5	-	-	-	-	-	-	-	-
8.Vehicles	9,300	3.3	-	-	-	-	10	2.2	-	-
9.Iron and steel	7,700	2.8	47	5.1	87	3.1	55	12.1	22	5.4
10.Organic chemicals	7,800	2.8	65	7.1	181	6.4	34	7.6	-	-
11.Goods of iron and steel	6,700	2.4	-	-	67	2.4	-	-	-	-
Other metals	4,847	1.7	-	-	30	1.1	6	1.2	-	-
12.Copper	3,500	1.2	-	-	-	-	-	-	6	1.5
13.Other chemicals	1,678	0.6	-	-	159	5.6	22	4.9	8	2.0
14.Paper products	1,386	0.5	28	3.0	-	-	-	-	14	3.4
15.Seafood	1,642	0.6	-	-	-	-	-	-	7	1.8
16.Leaner	529	0.2	21	2.2	-	-	-	-	-	-
17.Misc	-	-	-	-	-	-	15	3.4	-	-
18.Total		90.1		75.9		67.8		73.5	295	72.3

Notes: (1) Entries in this row refer to Taiwan's share of global exports, and each country's share of imports from Taiwan relative to total imports of that country.

Source: Author's compilation from UNCTAD Database, unctadstat.unctad.org. Figures are in USD m unless otherwise stated.

The table above presents merchandise exports from Taiwan to the four largest economies of South Asia, Bangladesh, India, Pakistan and Sri Lanka. Here is an analysis of the table:

1. Columns A and B list Taiwan's global exports. Data are for 2016. During this year, Taiwan exported \$281 bn of goods, equal to 1.8% of world exports. This is shown in row 1. Subsequent rows under columns A and B show the amount and share of different products

globally. For example, row 2 of columns A and B shows the total exports of electrical machinery and equipment (\$124.1 bn), which accounted for 44.3% of Taiwan's total exports.

2. Taiwan's exports to South Asian countries follow in subsequent columns. For example, row 1 of columns C and D shows that Taiwan's exports to Bangladesh were \$921 m in 2016, accounting for 2.2% of Bangladesh's imports for the year.
3. The South Asian country columns, C through J, also show the leading imports from Taiwan in value and share. For example, Bangladesh imported \$91 m of electrical machinery and equipment from Taiwan in 2016, equal to 9.9% of its imports from Taiwan.
4. The data on total exports to South Asia shows a relatively low share for South Asia as a whole. The largest importer in South Asia, India, relies on Taiwan for just 0.8% of its imports. The weighted average of Taiwan's exports to these countries is just 1% of these countries' imports basket, i.e., well below Taiwan's global share of 1.8%.
5. The composition of exports shows that exports to South Asia comprise a different basket than Taiwan's exports to the world. Taiwan's leading exports – electrical machinery, computers (and related machinery), and technical apparatus – do not find large markets in South Asia. While these three categories account for 60% of Taiwan's global exports, they have relatively small shares of Taiwanese exports to Bangladesh (9.9%), India (24.7%), Pakistan (11.3%) and Sri Lanka (3.8%). The weighted average across all these countries is 18.6%, i.e., less than a third of Taiwan's global export basket.
6. Textile-related exports (fiber, yarn, fabrics and apparel) are the single largest item for Bangladesh, Pakistan and Sri Lanka, and the second largest item for India. All four countries are large textile exporters. Textile exports from Taiwan to these countries consist mainly of synthetic fiber, yarn and fabrics (such as polyester yarn, derived from petrochemicals) for processing for re-export, i.e., they are intermediate goods that the South Asian countries process along with cotton and other raw materials for export to developed countries.

7. The single largest export is of plastic items. These items consist of synthetic polymers, such as polyvinyl chloride (PVC), also derived from petrochemicals. These are intermediate items used for domestic purposes such as PVC pipes for agricultural use.
8. Taiwan's competitive strength in petrochemical materials (both plastics and textile items) is an outcome of earlier industrial policies that were discussed above. Since the 1950s, companies such as Formosa Plastics were encouraged through state policy to grow their assets. Even though some of these industries are no longer high value-added industries for Taiwan, some of the companies remain among the largest in the world in their categories. For instance, the Formosa Plastics Group, with annual sales of about \$32 billion, is the world's sixth largest petrochemicals group.¹¹ At one time, in the mid-eighties, it was the world's largest and most profitable petrochemicals company, owing to economies of scale in what are termed as 'bulk' petrochemicals, such as PVC. Since then, due to technological progress, and in common with the chemical industry as a whole, the global petrochemicals industry has developed in the direction of what are still termed "specialty petrochemicals." These are petrochemicals that are developed for particular uses such as specialty detergents or lubricant additives. However, most of Formosa Plastic's sales are of low-margin bulk petrochemicals rather than specialty chemicals, unlike market leaders BASF and DowDuPont, which have a strong presence in the higher margin specialty chemicals markets.
9. Overall, the picture that emerges is that Taiwan's exports to South Asia consist largely of low-margin commoditized items. In particular, the "new-age" exporting industries that have powered Taiwan's

¹¹ Alexander H. Tullo, "C&EN's Global Top 50 chemical companies of 2017," *Chemicals and Engineering News*, Vol. 96, Issue. 31, July 30, 2018, American Chemical Society, <https://cen.acs.org/business/finance/CENs-Global-Top-50-chemical/96/i31>. The five firms larger than Formosa Plastics are BASF, DowDuPont, Sinopec, SABIC and INEOS.

growth since the rise of China are much less important. Only India shows some signs of a break-out into new age industries relevant to Taiwan, with Taiwan's top three exports accounting for 24.7% of India's imports from Taiwan, though still less than half the share of these items in Taiwan's total export basket.

Turning to Taiwan's imports, we present below Taiwan's imports from the four key South Asian countries.

Table 5 Taiwan's imports from key South Asian countries (2016)

Taiwan Imports	A Taiwan Global	B Global Share (%)	C Bangladesh	D Share (%)	E India	F Share (%)	G Pakistan	H Share (%)	I Sri Lanka	J Share (%)
1. Merchandise Imports	230,568	1.4	85	0.2	2,181.00	0.8	155	0.8	57	0.6
<i>Of which</i>			Imports > \$ 1m		Imports >20m		Imports > \$ 1m		Imports >\$1m	
2. Electrical machinery & equipment	60,034	26.0	-	-	-	-	-	-	-	-
3. Mineral fuels	31,900	13.8	-	-	878	40.3	95	61.3	5	9.5
4. Machinery including computers	30,941	13.4	-	-	-	-	-	-	-	-
5. Technical apparatus	9,467	4.1	-	-	-	-	-	-	-	-
6. Non-ferrous metals	7,600	3.3	-	-	253	11.6	3	1.9	-	-
7. Organic chemicals	7,400	3.2	-	-	81	3.7	16	10.3	-	-
8. Vehicles	7,300	3.2	-	-	-	-	-	-	-	-
9. Iron and steel	6,100	2.6	-	-	137	6.3	-	-	-	-
10. Fibers, Fabrics, Yarns and Apparel	3,600	1.6	62	72.3	52	2.4	27	17.4	19	34.0
11. Plastics	2,900	1.3	-	-	-	-	1	0.6	-	-
12. Other chemicals	3,000	1.3	-	-	23	1.1	-	-	2	3.8
13. Gems and jewellery	1,800	0.8	-	-	55	2.5	-	-	-	-
14. Seafood	1,100	0.5	2	2.3	35	1.6	2	1.3	6	10.1
15. Vegetable oils	389	0.2	1	1.5	-	-	1	0.6	3	5.7
16. Leather, footwear and travel goods	195	0.1	14	16.0	-	-	3	1.9	-	-
17. Misc	-	-	3	3.5	56	2.6	-	-	14	23.9
18. Total	113,692	75.2	82	95.4	1,570	72.0	148	95.5	50	87.1

Notes: (1) Entries in this row refer to Taiwan's share of global exports, and each country's share of imports from Taiwan relative to total imports of that country.

Source: Author's compilation from UNCTAD Database, unctadstat.unctad.org. Figures are in USD m unless otherwise stated.

The above table of imports is constructed similarly to the table of exports. Some highlights follow.

1. Columns A and B list Taiwan's global imports. Data are for 2016. During this year, Taiwan imported \$230.6 billion of goods, equal to 1.4% of world imports. This is shown in Row 1. Subsequent rows under columns B and C show the amount and share of different products globally. For example, row 2 of columns B and C shows Taiwan's total imports of electrical machinery and equipment (\$60.0 bn), which accounted for 26% of Taiwan's total imports.
2. Taiwan's imports from South Asian countries follow in subsequent columns. For example, columns C and D show that Taiwan's imports from Bangladesh were \$85 m in 2016, accounting for 0.2% of Bangladesh's exports for the year.
3. The South Asian country columns, C through J, also show the leading imports by Taiwan in value and share. For example, Bangladesh exported \$62 m of fibers, fabrics, yarn and apparel to Taiwan in 2016, equal to 72.3% of its exports to Taiwan.
4. The data on total imports of Taiwan from South Asia shows a relatively low share within South Asia. The weighted average of Taiwan's imports from these countries is just 0.7% of their exports basket, i.e., half of Taiwan's share of 1.4% of world imports.
5. As with exports, the composition of imports shows that imports from South Asia comprise a different basket than Taiwan's imports from the world. Taiwan's leading high-valued added imports – electrical machinery, computers and related machinery and technical apparatus – account for 43.5% of Taiwan's total imports, but none of these items is imported from any of the South Asian countries.
6. Unlike the case of Taiwan's exports, the basket of imports differs between India and Pakistan, which export a substantial amount of mineral fuels to Taiwan, and the other two South Asian states, whose exports of these items is negligible. Mineral fuels account for 40.3% of India's exports to Taiwan and 61.3% of Pakistan's exports to Taiwan. The reason is that, like Taiwan before it, Indian and Pakistani policymakers have, since the 1980s, incentivized their

industrialists to produce refined petroleum in order to achieve self-reliance. However, this has led to excess (and uncompetitive) supply in their own countries, which is then exported.

7. India's exports to Taiwan consist mainly of primary commodities. Mineral fuels, metals (ferrous and non-ferrous) and seafood account for 59.8% of India's exports to Taiwan.
8. For the other South Asian states, fibers, fabrics, yarn and apparel exports are significant items, accounting for 72.3% of Bangladesh's exports, 34% of Sri Lanka's exports and 17.9% of Pakistan's exports. Earlier, in the discussion on exports, we noted that this category was also the single largest import item for Bangladesh, Pakistan and Sri Lanka, and the second largest item for India. There is a difference in what is imported and exported. All four countries are large, low-margin textile exporters. Imports of fibers, fabrics and yarn from Taiwan support their textile export industry, which primarily produces apparel. Most of Taiwan's imports under this category consists of apparel items. The exception is India, which, though a large textile exporter, is a smaller producer of apparel than the other South Asian countries. Its textile export basket is more diversified, though also low-margin, and includes cotton yarn and fabrics.
9. Overall, the picture that emerges is that Taiwan's imports from South Asia consist largely of low-margin items, either textiles (Bangladesh, Sri Lanka), commoditized items (India), or a combination of the two (Pakistan). As with Taiwan's export basket, "new-age" industries that are important to East Asia and Southeast Asia are much less important. Even India, which imports some sophisticated items from Taiwan, does not export such items to Taiwan.

While the above analysis of exports and imports paints a somewhat discouraging picture of the potential, we stress that the limitations are primarily in high value-added segments of the Taiwanese and South Asian

economies. Taiwan and South Asia can still engage in enhanced trade of traditional items.¹² Some of these, such as sports goods, offer a two-way trading opportunity, since both Taiwan and South Asia appear to be globally competitive.

IV. The Potential for Services Trade

The data on merchandise goods trade discussed in the earlier section shows a discouraging picture of the prospects of Taiwan's trade with South Asia. Up to 2016, it appears that Taiwan's trade in goods is focused on low-margin items. To a large extent, this reflects the low stage of economic development of South Asia. As South Asia develops, this will change. In the short-term, it appears as if the growth of merchandise trade between Taiwan and the rest of South Asia will be constrained, with limited possibilities for trade diversification into high value-added items.

Does the services sector offer an opportunity for breaking-out of the low-margin groove? One candidate is Indian exports of software. India has developed a substantial software services sector since the 1970s, with export revenue of software and ICT-enabled services in 2017 of over \$100 billion. Largely driven by exports of software and ICT-enabled services, India is the world's seventh largest exporter of services (see Table below).

We now consider the potential for software services exports from India to Taiwan. Although exact figures of software trade between India and Taiwan are not available, US government data suggest it is small. These sources estimate the 2017 market size of Taiwan's software and software services to be \$6.9 billion, of which imports accounted for \$2.2 billion.¹³ Most of this is product software, which is supplied by American firms (\$1.8 billion). This implies a very small residual market of less than half a billion USD, imported from different countries. Unfortunately, this suggests there

¹² These include rubber products (HTS Chapter 40), tools (Chapter 82), toys, games and sports (Chapter 95), furniture and related products and (Chapter 94).

¹³ U.S. Trade Representative (USTR), "Taiwan - Computer Services and Software," October 10, 2018, Export.gov, <https://www.export.gov/article?id=Taiwan-Computer-Services-and-Software>.

may be only a small current market for Indian software services exports.

Turning to other services, we note that Taiwan is a large trader in services: in 2016, services imports were \$52.4 bn and exports were \$41.4 bn.¹⁴ Transport (21.6%), travel (32.6%) are the two main service exports, with financial, commercial and goods-related services making up the rest.

Business services, mainly warehousing, transportation and logistics services dominate services exports, along with tourism and other transport and travel. Imports are IP intensive items, travel and transport.¹⁵

Might there be potential for Taiwan's services exports, given that services comprise two-thirds of GDP, and given Taiwan's presence in digital goods which are IP intensive? It ranks 24th in the world in services exports, as shown in the table below.

Table 6 Services and ICT/IP Exports of Selected Countries (2016)

A	B	C	D
Country	Total service exports (global rank) (\$ bn)	Share of ICT/IP services in total services exports (%)	Main type of ICT/IP service export
China	206.5 (5)	12.3	Domestic manufacturing support
India	185.3 (7)	34.3	Overseas services support
Japan	186.3 (6)	23.1	IP licenses
Taiwan	54.4 (26)	5.8	Domestic manufacturing support
United States	797.7 (1)	16.7	IP licenses, software products

Sources: (1) World Trade Organization, stat.wto.org; (2) Knoema, "Service exports in current prices," Knoema, <https://knoema.com/atlas/ranks/Service-exports>.

¹⁴ World Trade Organization, stat.wto.org.

¹⁵ U.S. Trade Representative (USTR), "U.S.-Taiwan Trade Facts," USTR, <https://ustr.gov/countries-regions/china/taiwan>.

The above table shows the service export profile of selected countries. The United States is the global leader in services exports. 16.7% of these exports relate to services that are ICT or IP-related. These include IP-intensive general-use services that are targeted to businesses and consumers, such as search engines, smartphone operating systems and databases, as well as revenue from licensing particular applications, such as software to create images. While US ICT/IP exports focus on general-use and applications software with high IP content, Japan's ICT/IP revenue comes mainly from licensing IP for particular applications.

Such IP-intensive software is more valuable, typically, than other software services, such as customized applications for web-based corporate banking, or online maintenance of large telecommunications systems. These latter typically have low IP content. This is the area in which India generates most of its ICT/IP revenue.

The third category of ICT/IP enabled services is software to support manufactured products. Most of this is integration software, i.e., software that enables components of a network to work together. An example of this is software that enables a manufacturer of computer servers to link a set of printers into the network. Such software is usually specific to a manufactured product and has limited use outside the product. Exporters of such software usually work closely with the corresponding product manufacturer to develop current and subsequent generations of their software.

Most of China and Taiwan's ICT/IP-related services exports are in such supporting software to enable the functioning of computers and communications equipment that these countries export. For Taiwan, this accounts for 5.8% of total exports.

Of the above three categories, the highest value added is IP-intensive software, followed by customized applications for service industries and support software for manufactured products.

This appears to constrain the potential for Taiwan's services exporters to export to South Asia in two ways. First, it is low value-added. Second, it

is tightly linked to new-age manufactured products and is usually sold as part of a package that includes the manufactured product. Since Taiwan does not significantly export its new-age manufactured goods to South Asia, the potential for accompanying services is constrained.

According to a news report, as of late 2017, a large number of Taiwanese ICT firms were active in India, including large firms such as Wistron, Compal, Foxconn and HTC.¹⁶ These appear to be established with the objective of localizing products for the Indian market rather than for software services. One opportunity may be to leverage India's ICT skills for Taiwanese firms looking for new markets in customized applications for service industries, or startups for the global market, but these would not match Taiwan's current global export profile.

This is equally true for most of the non-ICT/IP trade. Taiwan's exports outside ICT/IP are dominated by traditional business services, mainly warehousing, transportation and logistics services. These are also tightly linked to manufactured goods exports. The low potential for such goods to be exported to South Asia would similarly constrain the corresponding service exports.

As with merchandise trade, the above analysis has focused on services that are high value-added. In addition, we have discussed traditional, lower value-added services that are tightly linked to Taiwan's trade in high value-added industrial items. This is not to argue that the potential for other services cannot be improved through focused policy effort. For example, tourism offers potential for growth, particularly from Taiwan to South Asia. However, like other personal services of this type, including education, export growth would be constrained by low affordability in South Asia. Language barriers may also constrain the growth of education services.

¹⁶ Origin source from American Chamber of Commerce, India. Published by American Chamber of Commerce, 2017, Available at Jens Kastner, "Eyes Fixed on India," *Taiwan Business Topic*, November 21, 2017, <https://topics.amcham.com.tw/2017/11/eyes-fixed-india>.

Services exports to Taiwan may also be constrained by a traditional set of non-tariff barriers in large business and consumer services such as banking and retail. According to US government data, exporters complain of significant nontariff barriers in the areas of medical devices, cosmetics and pharmaceuticals.¹⁷ Exporters also report restrictions on foreign professionals' credentialed and non-credentialed experience requirements in order to work in Taiwan. Some other countries' exporters have complained about non-tariff barriers in services, retail, pharmaceuticals, cosmetics, agriculture and the medical device sectors.¹⁸

V. Concluding Discussion

This paper discussed the prospects for Taiwan's economic relations with South Asia, focusing on trade issues. The summary picture that emerges is that economic relations between the countries of South Asia largely focuses on India, that economic relations are relatively low compared to Taiwan's economic relations with the rest of the world, and that these economic relations are largely confined to "old economy," low value-added items for both imports and exports. These include textile-related exports, which are the single largest Taiwanese exports to Bangladesh, Pakistan and Sri Lanka, and the second largest to India, while plastic goods account for the largest category overall, and the largest item of exports to India. The leading Taiwanese imports from South Asia are similarly traditional items. 59.8% of India's exports and 64.5% of Pakistan's exports to Taiwan consist of mineral fuels, metals and seafood, the other significant South Asia exports being textile-related products.

This suggests that Taiwan's progress to a modern economy, driven by intellectual property built around its digital industries – information and communication technologies (ICT), in which it plays a central role, has not

¹⁷ U.S. Trade Representative (USTR), "Taiwan - Trade Barriers," October 10, 2018, Export.gov, <https://www.export.gov/article?id=Taiwan-Trade-Barriers>.

¹⁸ Rabobank, "Country Report: Taiwan," Rabobank, November 2010, <https://economics.rabobank.com/contentassets/eaaf3d60c5c04c02ae6f23a3421c24ef/taiwan-201011.pdf>.

connected with similar industries in South Asia, such as India's software services industry. Put another way, South Asia is not part of a supply chain that Taiwan manages in new-age industries in ICT.

We considered whether services trade, including information and communication technologies/ intellectual property (ICT/IP) might offer opportunities for India-Taiwan trade, considering India's significant progress in software services and Taiwan's significant presence in the manufacturing of sophisticated electronics goods. We considered Taiwan's progress in software exports and concluded that it largely falls in the category of supporting software for manufactured goods. This category will grow only slowly as the domestic market in South Asia for ICT-related goods increases. The joint development of software for global markets is always a possibility, given the vibrant nature of startups in both countries, although it is difficult to forecast this for policymaking purposes. Limitations appear to exist for other services trade, outside the ICT/IP fields, as well. Taiwan's exports outside ICT/IP are dominated by traditional business services, mainly warehousing, transportation and logistics services. These are also tightly linked to manufactured goods exports. Finally, the apparently high incidence of non-tariff barriers in traditional service businesses such as banking and retail in India may also constrain the growth of services trade.

Thus, there may be several possible reasons for limitations on services trade between Taiwan and South Asia: (1) Inadequate policy emphasis on new-economy services sector in Taiwan, perhaps due to established manufacturing supply chains in East Asia and Southeast Asia; (2) Difficulties of doing business in South Asia due to tariff and non-tariff barriers. (3) The limited role of small firms and startups in South Asia – Taiwan collaboration.

The implication of the above analysis is that, absent policy interventions, there is not likely to be a change in the nature of Taiwan-South Asia economic relations. However, the constraints discussed above hopefully will provide guidance to policymakers to arrive at focus areas for change. These include: (1) looking at services as a growth area

independent of manufacturing, especially in ICT and other sectors for global markets. (2) Taiwanese trade agencies and trade associations should work with South Asian partners to reduce barriers to goods trade, including both tariff and non-tariff barriers. This could be pursued through free trade agreements with select South Asian countries, particularly India. (3) Taiwan should revitalize its SME sector so that it regains its position as an engine of innovation, employment and growth. The measures could include providing incentives for SME growth in global trade and support for innovation-led growth in SME firms.

Bibliography

- Biery, Mary Ellen, “The Big Impact of Small Businesses: 9 Amazing Facts,” *Forbes*, October 22, 2017, <https://www.forbes.com/sites/sageworks/2017/10/22/the-big-impact-of-small-businesses-9-amazing-facts/#5d693e0d1f33>.
- Census and Statistics Department, Hong Kong, “Statistics on trade involving outward processing in the mainland of China, first quarter 2017 [12 Jun 2017],” June 12, 2017, Census and Statistics Department, https://www.censtatd.gov.hk/press_release/pressReleaseDetail.jsp?charsetID=1&pressRID=4055.
- Central Intelligence Agency, “World Factbook,” 2019, Central Intelligence Agency, <https://www.cia.gov/library/publications/the-world-factbook>.
- Chou, Chuang Prudence, “Education in Taiwan: Taiwan’s Colleges and Universities,” Brookings Institution, November 12, 2014, <https://www.brookings.edu/.../education-in-taiwan-taiwans-colleges-and-universities>.
- Director-General of Budget, Accounting and Statistics, Executive Yuan, “Images of Women R.O.C. (Taiwan),” February 2007, National Statistics R.O.C. (Taiwan), eng.stat.gov.tw/public/data/dgbas03/bs2/gender/Images%20of%20Women.pdf.
- Federal Reserve Bank of St. Louis, “Civilian Labor Force Participation Rate: Women,” FRED Economic Data, <https://fred.stlouisfed.org/series/LNS11300002>.
- Harvie, Charles and Boon-Chye Lee, eds., *The Role of SMEs in National Economies in East Asia* (Cheltenham: Edward Elgar Publishing, 2002).
- Index Mundi, “Taiwan Demographics Profile 2018,” Index Mundi, January 20, 2018, https://www.indexmundi.com/taiwan/demographics_profile.html.
- Kastner, Jens, “Eyes Fixed on India,” *Taiwan Business Topic*, November 21, 2017, <https://topics.amcham.com.tw/2017/11/eyes-fixed-india>.
- Knoema, “Service exports in current prices,” Knoema, <https://knoema.com/atlas/ranks/Service-exports>.
- Kobe, Kathryn, “Small Business GDP: Update 2002-2010,” January 1, 2012,

U.S. Small Business Administration, <https://www.sba.gov/content/small-business-gdp-update-2002-2010>.

Organization of Economic Cooperation and Development (OECD), <https://stats.oecd.org>.

Pan Asian Economic Alliance (PAA), “Singapore- Economic Overview,” PAA.net, https://paa.net/?page_id=607.

Papadopoulos, George, et al., “Statistics on small and medium-sized enterprises,” May 2018, Eurostat, http://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_on_small_and_medium-sized_enterprises.

Rabobank, “Country Report: Taiwan,” Rabobank, November 2010, <https://economics.rabobank.com/contentassets/eaaf3d60c5c04c02ae6f23a3421c24ef/taiwan-201011.pdf>.

Small and Medium Enterprise Administration, Ministry of Economic Affairs, “White Paper on Small and Medium Enterprises in Taiwan,” pp. 173-202, Small and Medium Enterprise Administration, Ministry of Economic Affairs, <https://www.moeasmea.gov.tw/list-en-2572>.

Trading Economics, “Taiwan Exports,” Trading Economics, 2019, <https://tradingeconomics.com/taiwan/exports>.

Tullo, Alexander H., “C&EN’s Global Top 50 chemical companies of 2017,” *Chemicals and Engineering News*, Vol. 96, Issue. 31, July 30, 2018, American Chemical Society, <https://cen.acs.org/business/finance/CENs-Global-Top-50-chemical/96/i31>.

U.S. Trade Representative (USTR), “Taiwan - Computer Services and Software,” October 10, 2018, Export.gov, <https://www.export.gov/article?id=Taiwan-Computer-Services-and-Software>.

U.S. Trade Representative (USTR), “Taiwan - Import Tariffs,” October 10, 2018, Export.gov, <https://www.export.gov/article?id=Taiwan-Import-Tariffs>.

U.S. Trade Representative (USTR), “Taiwan - Trade Barriers,” October 10, 2018, Export.gov, <https://www.export.gov/article?id=Taiwan-Trade-Barriers>.

U.S. Trade Representative (USTR), “U.S.-Taiwan Trade Facts,” USTR,

<https://ustr.gov/countries-regions/china/taiwan>.

UNCTAD Database, unctadstat.unctad.org.

United Nations Department of Economic and Social Affairs, “World Population Prospects: 2017 Revision,” June 21, 2017, United Nations DESA/POPULATION DIVISION, <https://population.un.org/wpp>.

U.S. Small Business Administration, “Frequently Asked Questions about Small Business,” August 2017, U.S. Small Business Administration, <https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2017-WEB.pdf>.

World Bank, “World Bank Open Data,” World Bank, data.worldbank.org.

World Trade Organization, “Trade maps,” World Trade Organization, https://www.wto.org/english/res_e/statis_e/statis_maps_e.htm.

World Trade Organization, stat.wto.org.

Yoshino, Naoyuki and Ganeshan Wignaraja, “SMEs Internationalization and Finance in Asia,” February 18, 2015, International Monetary Fund, <https://www.imf.org/external/np/seminars/eng/2015/jica2015/pdf/1-B1.pdf>.