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# **Is Taiwan's New Southbound Policy Effective in the Global Supply Chain?**

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# **Is Taiwan's New Southbound Policy Effective in the Global Supply Chain?**

## **Abstract**

The emergence of the international fragmentation of production has led to structural changes in world trade. Trade in intermediate goods has turned out to be an important part of world trade, with an emphasis on the information and communications technology (ICT) sector in particular. Economic interdependence within the East Asia region indicates that this region as a whole is gradually being transformed into a single trading bloc, with a pronounced increase in the intensity of intra-regional trade. In terms of the global supply chain, China is now the nexus of a production network involving most countries in Asia and a final export market for the East Asia region. Indeed, China has become a regional hub for supply chain trade. However, China's position within the global supply chains is changing. China has become more competitive in intermediate goods due to industrial upgrading. The New Southbound Policy proposed by the Tsai administration is based on four principles, namely, economic cooperation, special talent exchange programs, resource sharing and regional integration, and is aimed at deepening economic and cultural links with 16 ASEAN and South Asian countries, as well as with Australia and New Zealand. In terms of the political and economic viewpoint, the goal of the New Southbound Policy is to keep Taiwan from becoming overly dependent on a single market (e.g., China), and to seek to establish bilateral economic partnerships with targeted countries to support a New Model for Economic Development.

**Keywords:** Taiwan's New Southbound Policy; global supply chain; international fragmentation of production

**JEL Classification Nos:** F13, F15, F21, F23

## 1. Introduction

Due to the acceleration in technological progress in transportation and communications, transportation and communications costs have thus been reduced. Moreover, with bilateral and regional free trade agreements, the processes of production have in turn become increasingly fragmented into various stages across countries.<sup>1</sup> In practice, multinational companies (MNCs) break their international fragmentation of production into various stages and dispersed regions from the beginning stage of design to the final stages of retail and customer service. Those stages in the production process are referred to as R&D/design, raw materials, intermediate inputs, semi-finished goods, final good assembly and packing, warehousing, retail/delivery and customer services.<sup>2</sup> For example, the spatial distribution of the Apple iPhone supply chain can be classified as: design and development and sourcing in the USA, China, Asia and Europe, manufacturing in China and warehousing and distribution in the USA.<sup>3</sup>

The emergence of the international fragmentation of production has led to structural changes in world trade. Trade in intermediate goods has turned out to be an important part of world trade, in the information and communications technology (ICT) sector in particular. For example, in 2010, trade in intermediate goods accounted for 56% of the world trade in goods and for 73% in services.<sup>4</sup> Although the growth of world trade declined from 2.7% in 2015 to 1.7% in 2016, around 80% of world trade is associated with the

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<sup>1</sup> See Fujita, Masahisa and Hamaguchi, Nobuaki. (2016), “Supply Chain Internationalization in East Asia: Inclusiveness and Risks”, *Papers in Regional Science*, 95 (1): 81–100.

<sup>2</sup> See United Nations Economic Commission for Europe (UNECE). (2016), *Guide to Measuring Global Production (2015)*, p. 3, at [http://www.unece.org:8080/fileadmin/DAM/stats/publications/2015/Guide\\_to\\_Measuring\\_Global\\_Production\\_\\_2015\\_.pdf/](http://www.unece.org:8080/fileadmin/DAM/stats/publications/2015/Guide_to_Measuring_Global_Production__2015_.pdf/) (accessed 13 April 2017).

<sup>3</sup> See Hillsberg, Alex. (2014), “How & Where the iPhone Is Made: Comparison of Apple’s Manufacturing Process”, at <http://comparecamp.com/how-where-iphone-is-made-comparison-of-apples-manufacturing-process/> (accessed 13 April 2017).

<sup>4</sup> See Caraballo, José G. and Jiang, Xiao. (2016), “Value-Added Erosion in Global Value Chains: An Empirical Assessment”, *Journal of Economic Issues*, 50 (1): 288–296.

global supply chains.<sup>5</sup>

Due to the international fragmentation of production, the East Asia region has undergone a rapid process of economic integration, with the formation of the ASEAN-China, ASEAN-South Korea and ASEAN-Japan free trade arrangements and the Regional Comprehensive Economic Partnership (RCEP). Nevertheless, Taiwan has been marginalized from the aforementioned regional trade agreements. Economic interdependence within the East Asia region indicates that the East Asia region as a whole is gradually being transformed into a single trading bloc, with a pronounced increase in the intensity of intra-regional trade. As regional economic integration has deepened and broadened, it has stimulated a rapid transformation of East Asia's economies, resulting in changes in both the level and the nature of these countries' industrial competitiveness.

Since Taiwan is a small and open economy, geographically fragmented production has thus significantly impacted its international business conduct, outward foreign direct investment and regional integration. Owing to the rising land prices and labor costs in the late 1980s, the production costs of Taiwanese labor-intensive industries have increased dramatically,<sup>6</sup> so that these industries have begun to lose their competitive advantage. The fragmented production of economic activities has further intensified the competition they face. In order to maintain their competitiveness and make a profit, many Taiwanese companies have set up manufacturing facilities overseas to take advantage of other countries' lower labor costs, i.e., China and Southeast Asian nations such as Indonesia, Malaysia, the Philippines, Thailand and Vietnam. In retrospect, Taiwan then-President Lee Teng-hui initiated a "Go South" policy in the 1990s, the policy aimed at encouraging Taiwanese investment to Southeast Asia rather than China. In 1994, Lee administration released "Policy Guidelines for Strengthening Economic and Trade Work in the Southeast Asia Region" as policy framework for "Go South" policy. In 2002, Chen Shui-bian

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<sup>5</sup> See Standard Chartered Bank. (2015), "Global Supply Chains: New Directions", at <<https://www.sc.com/en/news-and-media/news/global/2015-05-29-global-supply-chains-new-directions.html>> (accessed 31 March 2017).

<sup>6</sup> See Lien, Yung-Chih, Piesse, Jenifer, Strange, Roger and Filatotchev, Igor. (2005), "The Role of Corporate Governance in FDI Decisions: Evidence from Taiwan", *International Business Review*, 14 (6): 739–763.

reintroduced Lee's "Go South" policy for strengthening trade and investment with Southeast Asian countries.

The New Southbound Policy proposed by the Tsai administration is based on four principles, namely, economic cooperation, special talent exchange programs, resource sharing and regional integration, and is aimed at deepening economic and cultural links with 16 ASEAN and South Asian countries, as well as with Australia and New Zealand. The policy has an annual budget of NT\$42 billion.<sup>7</sup> In terms of the political and economic viewpoints, the goal of the New Southbound Policy is to keep Taiwan from becoming overly dependent on a single market (e.g., China), and to seek to establish bilateral economic partnerships with targeted countries to support the New Model for Economic Development. Therefore, this study uses the case study of Taiwan to explore the effectiveness of Taiwan's New Southbound Policy. The remainder of this paper is organized as follows. The next section presents the initial stage of the New Southbound Policy. The third section described the trade relations between Taiwan and the New South + 18 countries. The fourth section described investment relations between Taiwan and the New South + 18 countries, and the final section presents the conclusion drawn from this study.

## **2. Initial Stages of the New Southbound Policy**

In 2011, Taiwan had the world's highest participation rate of 67.6% in global value chains, followed by South Korea (62.1%), Germany (49.6%), China (47.7%) and Japan (47.4%).<sup>8</sup> Taiwanese companies continue to shift their production activities overseas, and Taiwan's sluggishness in setting up high value-added industries has resulted in worsening unemployment and weaker economic growth. During the presidential election campaign, President Tsai Ing-wen presented the New Model for Economic Development with innovation, job creation and an equitable income distribution. Innovation is the key driver for economic growth. Since Tsai took office in May 2016, the Tsai administration has been

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<sup>7</sup> See "Gov't Seeks to Create 'Economic Community'", *China Post*, 6 September 2016.

<sup>8</sup> See Central Bank of the Republic of China (Taiwan). (2017), "Reference for Reporters after the Board Meeting", at <<http://www.cbc.gov.tw/public/Attachment/732317431371.pdf>> (accessed 9 April 2017).

actively promoting a “five plus two innovative industries” policy to stimulate Taiwan’s sluggish economy.

The five plus two innovative industries include the five major innovative industries, namely, the establishment of an Asian Silicon Valley, smart machinery, green energy, the biotech & pharmaceutical industry and national defense. The two more innovative industries involve the drawing up of proactive strategies for fostering new agriculture and a circular economy.

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In May 2016, the National Development Council (NDC) unveiled a short-term policy to stimulate private investment by establishing an equity fund of NT\$100 billion under the National Development Fund and a trading company. The trading company is part of the government’s New Southbound Policy, and is to be capitalized at NT\$10 billion.<sup>10</sup> Meanwhile, the policy is intended to increase the quota of foreign exchange students from the Southeast Asia area to 56,000 per year by 2019 from 28,000 in 2016.<sup>11</sup> The policy also encourages Taiwanese students to study in partner countries with scholarships and financial aid from the government. Kaohsiung city could serve as a base for the policy because of

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<sup>9</sup> See “Gov’t Seeks to Create ‘Economic Community’”, *China Post*, 6 September 2016.

<sup>10</sup> See “NDC Outlines Proposal for Equity Fund”, *Taipei Times*, 26 May 2016.

<sup>11</sup> See “Cabinet Lays Out ‘Southbound’ Plan”, *Taipei Times*, 6 September 2016.

its unique strategic geographical location.<sup>12</sup>

In 2015, Taiwan had 10.5 million tourists, of which 4.18 million were from China. The figures reveal that the growth of Taiwan's tourism industry heavily depends on visitors from China. The number of Chinese tourists continued to rise in the period from January to April 2016, up by 10.61% year-on-year. However, after President Tsai Ing-wen took office in May 2016, for the period from January to April 2017, mainland tourist arrivals to Taiwan dropped by 50.2% year-on-year due to the cooling in cross-Strait relations.<sup>13</sup> Furthermore, the government will strive to diversify the sources of foreign tourists coming to Taiwan. In 2015, a total of 1.42 million tourists came from Southeast Asia. The government has launched a more relaxed visa requirement program. For example, a one-year trial period has been put in place for 30-day visa waivers to travelers from Thailand and Brunei while also offering conditional visa waivers to other Southeast Asian countries. The program is in line with President Tsai Ing-wen's New Southbound Policy.

Based on estimates prepared by the Ministry of Transportation and Communications, the number of Southeast Asian tourists is expected to increase by 280,000 annually and to generate NT\$130 million in tourism revenue. In addition, to provide more information for Southeast Asian travelers, the government has increased its advertisement budget from NT\$80 million in 2016 to NT\$200 million in 2017.<sup>14</sup> In 2016, a total of 1.53 million tourists came from New South +18 countries.<sup>15</sup>

### **3. Trade Relations between Taiwan and the New South +18 Countries**

In 2016, trade between Taiwan and the New South + 18 countries amounted to US\$96,018.2 million, a decrease of 3.3% from 2015 due to the slower global recovery (see Table 1). Furthermore, the ASEAN + 10 countries make up the second largest trading

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<sup>12</sup> See "Kaohsiung to Be Based for Push to Southeast Asia", *China Post*, 8 November 2016.

<sup>13</sup> See "Chinese Visitors to Taiwan Fall 50.2%", Focus Taiwan, at <<http://focustaiwan.tw/news/acs/201705040024.aspx>> (accessed 17 May 2017).

<sup>14</sup> See "Cabinet Unveils Plans to Boost Tourism", *Taipei Times*, 7 September 2016.

<sup>15</sup> See Ministry of Foreign Affairs, Taiwan. (2017), "New Southbound Policy: An Introduction", at <<http://nspp.mofa.gov.tw/nsppe/news.php?post=112894&unit=376>> (accessed 7 April 2017).



partner for Taiwan next to China. Trade between Taiwan and the ASEAN +10 countries reached US\$78,509.5 million in 2016, a decrease of 2.7% compared to 2015. Within the ASEAN +10 countries, Singapore (4.6% of Taiwan's total trade), Malaysia (2.8%) Vietnam (2.4%) and the Philippines (2.1%) are Taiwan's major trading partners (see Table 2).

Taiwan's exports are highly reliant on the information and communications technology sector, which has exposed the economy to fluctuations in world demand. In 2016, in the case of Taiwan's exports, China and Hong Kong (40.1% of the total) remained the top export destination, followed by the New South +18 countries (21.2%), ASEAN + 10 countries (18.3%) and the USA (12.0%).

Looking at the export data in more detail, there has been an increasing trend towards intermediate goods in Taiwan's export products to the ASEAN + 10 countries, indicating that a vertical division of labor can be observed between Taiwan and the ASEAN countries. In 2016, Taiwan's leading export products were electrical machinery and equipment and parts thereof (HS85, 43.3% of total exports), mineral fuels (HS27, 12.7%), machinery and mechanical appliances (HS84, 7.7%), plastics and articles thereof (HS39, 4.7%) and iron and steel (HS72, 4.4%) (see Table 3).

Table 1 Taiwan's Trade Statistics for the New South Market (Jan.–Dec. 2016)

Unit: US\$ millions

Country	Total	Exports	Imports	Surplus
Global	511,337.20	280,399.40	230,937.80	49,461.60
New South(18)	96,018.20	59,447.10	36,571.10	22,876.00
ASEAN(10)	78,509.50	51,321.60	27,188.00	24,133.60
Singapore	23,677.70	16,161.80	7,515.80	8,646.00
Vietnam	12,294.00	9,546.60	2,747.50	6,799.10
Philippines	10,869.80	8,658.90	2,210.90	6,448.00
Malaysia	14,125.00	7,842.30	6,282.60	1,559.70
Thailand	9,306.00	5,486.40	3,819.60	1,666.80
Indonesia	7,069.70	2,745.20	4,324.50	-1,579.30
Kingdom of Cambodia	728.60	650.60	78.00	572.70
Myanmar	281.90	212.10	69.80	142.40
Brunei Darussalam	136.00	13.70	122.20	-108.50
Lao People's Democratic Republic	21.10	3.90	17.20	-13.30
S.ASIA-6	7,094.80	4,611.90	2,482.90	2,129.00
India	5,007.50	2,823.50	2,184.00	639.50
Sri Lanka	464.70	407.30	57.40	350.00
Bangladesh	1,005.20	920.10	85.20	834.90
Pakistan	608.00	453.30	154.70	298.60
Nepal	9.10	7.50	1.60	5.80
Bhutan	0.20	0.20	0.00	0.20
Australia	9,173.60	3,086.40	6,087.20	-3,000.80
New Zealand	1,240.20	427.30	813.00	-385.70

Source: Directorate General of Customs, Taiwan.

Table 2 Taiwan's Trade Share and Growth Rate for the New Southbound Market  
(Jan.–Dec. 2016)

Unit: %

Country	Share			Growth Rate			
	Total	Exports	Imports	Total	Exports	Imports	Surplus
Global	100	100	100	-2.1	-1.7	-2.6	2.8
New South(18)	18.8	21.2	15.8	-3.3	-1.4	-6.3	7.4
ASEAN(10)	15.4	18.3	11.8	-2.7	-0.6	-6.4	6.8
Singapore	4.6	5.8	3.3	-3.7	-7.2	4.8	-15.5
Vietnam	2.4	3.4	1.2	0.3	-1.7	8	-5.1
Philippines	2.1	3.1	1	13.1	15.2	5.5	19
Malaysia	2.8	2.8	2.7	1.4	9	-6.7	236.3
Thailand	1.8	2	1.7	-5.17	-4.9	-5.5	-3.5
Indonesia	1.4	1	1.9	-22.1	-11.6	-27.5	-44.8
Kingdom of Cambodia	0.1	0.2	0	-3	-4.8	15.3	-7
Myanmar	0.1	0.1	0	1.9	-4.8	30	-15.8
Brunei Darussalam	0	0	0.1	-63.5	-42.6	-64.9	-66.6
Lao People's Democratic Republic	0	0	0	20.5	17.4	21.2	22.4
S.ASIA-6	1.4	1.6	1.1	0.2	-3.8	8.8	-15.3
India	1	1	0.9	1.2	-7	14.3	-43.1
Sri Lanka	0.1	0.1	0	-1.6	-2.1	1.6	-2.7
Bangladesh	0.2	0.3	0	1.2	1.6	-2.7	2
Pakistan	0.1	0.2	0.1	-7.3	5.1	-31.1	44.4
Nepal	0	0	0	1.8	9.3	-22.6	23.6
Bhutan	0	0	0	19.1	29.2	-23.7	45.5
Australia	1.8	1.1	2.6	-10.9	-10.3	-11.2	-12.2
New Zealand	0.2	0.2	0.4	-3.1	-2.6	-3.4	-4.3

Source: Directorate General of Customs, Taiwan.

In terms of imports, Taiwan's key import partners in 2016 included China and Hong Kong (19.6 % of the total), Japan (17.6%), the New South + 18 countries (15.8%), the USA (12.4%) and the ASEAN + 10 countries (11.8%). Taiwan's leading import products from the ASEAN + 10 countries include electrical machinery and equipment and parts thereof (HS85, 34.1% of total imports), mineral fuels (HS27, 16.7%), machinery and mechanical appliances (HS84, 13.6%), optical, photographic instruments (HS90, 3.9%) and plastics and articles thereof (HS 39, 2.1%) (see Table 4).

Table 3 Major Products Exported from Taiwan to the ASEAN + 10 Countries

HS2 Code	Product Categories	2016		2015		Growth Rate (%)
		Amount	Percent	Amount	Percent	
		(US\$100 million)	(%)	(US\$100 million)	(%)	
85	Electrical Machinery and Equipment and Parts Thereof	22,180.73	43.25	21,669.21	42.55	2.36
27	Mineral Fuels	6,502.10	12.68	6,450.42	12.67	0.80
84	Machinery and Mechanical Appliances	3,970.65	7.74	4,062.30	7.98	-2.26
39	Plastics and Articles Thereof	2,389.81	4.66	2,422.32	4.76	-1.34
72	Iron and Steel	2,245.94	4.38	2,199.64	4.32	2.11
60	Knitted or Crocheted Fabrics	1,484.31	2.89	1,548.51	3.04	-4.15
29	Organic Chemicals	993.57	1.94	1,040.77	2.04	-4.54
38	Miscellaneous Chemical Products	877.86	1.71	899.13	1.77	-2.37
54	Man-Made Filaments	850.09	1.66	905.01	1.78	-6.07
90	Optical, Photographic Instruments	802.96	1.57	770.90	1.51	4.16
	Other	8,992.50	17.53	8,960.92	17.59	0.35
	Total	51,290.53	100	50,929.12	100	0.71

Source: Ministry of Finance, Taiwan.

Table 4 Major Products Imported to Taiwan from the ASEAN + 10 Countries

HS2 Code	Product Categories	2016		2015		Growth Rate (%)
		Amount	Percent	Amount	Percent	
		(US\$100 million)	(%)	(US\$100 million)	(%)	
85	Electrical Machinery and Equipment and Parts Thereof	9,259.80	34.10	9,083.42	32.07	1.94
27	Mineral Fuels	4,528.52	16.68	5,353.61	18.90	-15.41
84	Machinery and Mechanical Appliances	3,702.03	13.63	3,085.99	10.90	19.96
90	Optical, Photographic Instruments	1,058.89	3.90	933.46	3.30	13.44
39	Plastics and Articles Thereof	580.68	2.14	631.30	2.23	-8.02
29	Organic Chemicals	541.15	1.99	617.48	2.18	-12.36
44	Wood and Articles of Wood; Wood Charcoal	496.94	1.83	588.81	2.08	-15.60
38	Miscellaneous Chemical Products	447.86	1.65	517.24	1.83	-13.41
74	Copper and Articles Thereof	436.88	1.61	401.79	1.42	8.73
71	Metals Clad With Precious Metal and Articles Thereof	413.93	1.52	1,207.16	4.26	-65.71
	Other	8,992.50	5,687.46	20.95	5,902.56	20.84
	Total	27,154.14	100.00	28,322.80	100.00	-4.13

Source: Ministry of Finance, Taiwan.

#### 4. Investment Relations between Taiwan and the New South +18 countries

As can be seen from Table 5, according to statistics compiled by Taiwan's Investment Commission, Ministry of Economic Affairs, as of the end of May 2017 (from 1991 to May

2017), Taiwanese investment in the New South +18 countries was concentrated in Singapore (4.6% of the total), Vietnam (3.1%), Thailand (1.2%), Australia (0.9%), the Philippines (0.5%) and Indonesia (0.4%). Taiwanese investment followed the path of small to medium-sized enterprises in the 1980s and early 1990s and large firms in 1990s.<sup>16</sup>

Because of the boost in China's economic reform and open door policy following Deng Xiaoping's Southern Tour in 1992, Taiwanese investment in China increased significantly, even more than that in ASEAN countries. Since Taiwanese companies have utilized their *guanxi* networks and personal contacts to establish a networked production system,<sup>17</sup> the favorite location for Taiwanese investors has thus been countries with a large population of ethnic Chinese, for example, Singapore and Malaysia. For the period from 2011 to 2015, Taiwanese investment in the ASEAN + 6 countries (Singapore, Vietnam, Thailand, Malaysia, the Philippines and Indonesia) was in the manufacturing sector (51%), followed by the services sector (49%), base metal manufacturing (28%), electronic components manufacturing (11%), chemical materials manufacturing (3%) and wholesale and retail (2%).<sup>18</sup>

Meanwhile, during the period from 1991 to May 2017, the Taiwanese government granted approval for a total of 42,262 Taiwanese investment projects in China, involving a combined total of US\$167,379.9 million in Taiwanese investment. China has been the main recipient of Taiwan's overseas investment, accounting for around 59.4% of the total. Due to the fragmented production, the structure of Taiwanese business operations in China has shifted towards the electronics and electrical appliance industries.

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<sup>16</sup> Chu, Wenyi, Ye, Kung-Don and Hsu, Mu-Lan. (1999), "Taiwanese Investment in Southeast Asia", *Global Economic Review*, 28 (1): 77–90.

<sup>17</sup> Jou, Sue-Ching and Chen, Dung-Sheng. (2006), "Regionalization of Networked Production: Taiwanese Manufacturing Capital in Southeast Asia and China", *Geography Research Forum*, 26: 9–31.

<sup>18</sup> Stuart, Conor. (2017), "Opportunities and Challenges: Taiwan's New Southbound Policy", at <[http://en.naipo.com/Portals/0/web\\_en/Knowledge\\_Center/Feature/IPNE\\_161028\\_0703.htm](http://en.naipo.com/Portals/0/web_en/Knowledge_Center/Feature/IPNE_161028_0703.htm)> (accessed 7 April 2017).

Table 5 Taiwan's Approved Outward Investment by Country (Area)

Unit: US\$ millions; %

Period	April 2017			May 2017			1991–May 2017		
	Accumulation								
Area	Cases	Amount	Percent	Cases	Amount	Percent	Cases	Amount	Percent
Mainland China	48	385.3	68.1	48	306.7	45	42,262	167,379.9	59.4
Singapore	0	0.9	0.2	2	8.2	1.2	537	13,081.1	4.6
British Caribbean	5	112.9	20.0	4	102.3	15.2	2,448	35,082.2	12.4
Vietnam	2	19.8	3.5	0	17.8	2.6	542	8,616.8	3.1
Philippines	0	0.0	0.0	0	0.0	0.0	156	1,492.3	0.5
H.K.	3	2.1	0.4	3	4.3	0.6	1,465	5,718.5	2.0
Indonesia	1	0.9	0.2	1	17.2	2.5	225	1,195.0	0.4
USA	7	16.3	2.9	13	62.6	9.3	5,139	13,363.8	4.7
Thailand	1	0.2	0.0	1	5.9	0.9	371	3,305.3	1.2
Samoa	2	9.3	1.6	3	5.3	0.8	543	1,725.7	0.6
Japan	4	4.7	0.8	4	87.2	13.0	705	8,420.8	3.0
Australia	0	0.7	0.1	0	0.0	0.0	85	2,602.4	0.9
Others	6	12.5	2.2	2	55.9	5.9	2,391	20,014.7	7.1
Total	79	565.5	100.0	81	673.4	100.0	56,869	282,000.5	100.0

Source: Investment Commission, Ministry of Economic Affairs, Taiwan.



## 5. Conclusions

Due to the trend toward the international fragmentation of production, the division of labor within the East Asia region has been transformed. The countries that make up the East Asia region are at different stages of economic development; the advanced countries within the region possess an advantage in terms of capital- and technology-intensive industries, while the developing countries enjoy a competitive advantage in terms of natural resources and labor-intensive industries. With individual countries focusing on different segments within the value chain, a complex international network has taken shape in East Asia, this being evidenced by a cross-Strait vertical division of labor in particular.

The integration of industrial production within the East Asia region employs a division of labor based around export processing. Materials and components are purchased within the region, assembled to make finished products mostly in China, and then exported to Europe and North America. It is worth stressing that China is moving up the global value chains due to the increasing share of its domestic content in exports. A complex division of labor that is characterized by intense industrial competition has developed, with China, Japan, South Korea and Taiwan being the key players. It should be further noted that the extent of integration within the East Asia region varies dramatically from industry to industry. The trade structure in East Asian economies is characterized by growing regional production networks and huge surpluses with the Western countries, the United States in particular. In April 2017, the U.S. Department of Treasury therefore included China, Japan, South Korea and Taiwan on its currency monitoring list.

Due to rising wages, China's cheap labor is no longer as big an attraction as it once was, and Taiwanese companies are starting to invest in business areas that are less labor-intensive. Since China's low-cost advantages could be replaced by other countries with even greater advantages in terms of cost such as ASEAN countries, Taiwan-based companies in China have also set up subsidiaries in ASEAN countries (i.e., Malaysia and Vietnam). There has been an increase in intra-firm trade between these subsidiaries. They produce the upstream products in China and ship them to ASEAN countries to support their

downstream operations.<sup>19</sup>

Although Taiwan's semiconductor fabrication operations remain competitive in the global supply chains, companies focusing on integrated circuit (IC) design, packaging and testing are now weakening their competitive advantage. Furthermore, the Achilles heel of Taiwan's ICT sector is that it is unable to become a brand marketer in the global supply chains.<sup>20</sup> Indeed, Taiwan's economic policy should focus on increasing value added in the global supply chains through R&D and innovation, in the ICT sector in particular. Without such value-added activity upgrades, Taiwan role in the global supply chains and East Asian economic integration will diminish.

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<sup>19</sup> See Chen, Tain-Jy. (2013), "East Asian Integration and Its Challenges to Taiwan", *Working Paper*, National Taiwan University.

<sup>20</sup> See Chen, Tain-Jy. (2016), "Supply Chain Positioning and Innovation: Taiwan's Challenge", *Working Paper*, East-West Center Workshop on Mega-Regionalism - New Challenges for Trade and Innovation, Hawaii.

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