

Looking South: Taiwan's Approach to Forging Manufacturing Partnership with Southeast Asian Countries under the New Southbound Policy

Chau-Chyun Chang, Li-Yen Ma, Ling-Chun Chen, Shu-Hung Lee, Jai-Yi Lin¹

Industry, Science and Technology International Strategy Center (ISTI)

Industrial Technology Research Institute (ITRI)

Abstract

This paper discusses Taiwan's approach to forging manufacturing partnership with Southeast Asian countries under the New Southbound Policy (NSP) as well as the prospect of future collaboration. The study is divided into four sections. Section one gives an overview of Taiwan's previous Southeast Asia-related policy initiatives and Taiwan's investment and trade relations with Southeast Asian countries in the past thirty years. Section two elaborates on the promotion of first-phase collaboration with six NSP target countries, which are prioritized based on a series of social, economic and industrial development indicators. Target sectors for collaboration are also suggested. In the third section, results of a survey on industry investment preference as well as case studies of Taiwan companies already established in the region are presented to offer an overview of Taiwanese enterprises' current operation and future investment

¹ Chau-Chyun Chang, Deputy General Director; Li-Yen Ma, Deputy Business Director; Ling-Chun Chen, Research Manager; Shu-Hung Lee, Associate Researcher; Jai-Yi Lin, Associate Researcher.

trend in Southeast Asia. In the fourth section, it is suggested that six sectors will benefit the most from industrial collaboration between Taiwan and six NSP target countries, and four aspects for future collaboration model are identified.

Keywords: *Southeast Asia, ASEAN, industrial collaboration, New Southbound Policy (NSP), investment*

南向新望：臺灣於新南向政策下與東南亞國家 製造業合作模式初探

張超群；馬利艷；陳玲君；李淑宏；林家毅

工業技術研究院(ITRI)產業科技國際策略發展所(ISTI)

摘 要

本文主要探討臺灣在「新南向政策綱領」的框架下，與東南亞國家於製造業合作之模式與展望。本研究共分四部分進行討論，首先回顧臺灣過去 30 年來推動之多項南向政策計畫，以及東南亞產業投資與經貿交流概況。第二部分進一步闡述透過社會、經濟及產業評估等指標，篩選出六個新南向首波合作國家與目前適合鏈接之產業。第三部分透過產業問卷調查結果，搭配東南亞臺商成功案例，說明目前臺商在東南亞布局概況，以及未來於東南亞可能投資趨勢。最後綜合分析，彙整出臺灣與首波合作國家進行產業鏈結，最可能受惠的六大產業，並勾勒未來與六國產業合作模式的四大構面。

關鍵詞：東南亞、東協、產業合作、新南向政策、投資

I. Introduction

With its continuing growth in population, GDP and trade, Asia has become an increasingly important center of global economy. Responding to the shifting global economy landscape, Taiwan, as a member of the Asian community, has also been seeking measures to accommodate the changes and ensuing challenges. The New Southbound Policy (NSP) proposed by the administration of President Tsai Ing-wen in 2016 is one of the initiatives set out to address the new scene. Through the New Southbound Policy, which targets ten ASEAN states, six South Asian countries, Australia and New Zealand as potential strategic partners for regional social and economic cooperation, Taiwan aims to build more new networks as well as strengthen old ties in the region. Industrial collaboration is regarded as one of the endeavors to achieve the purpose.

II. The Industrial Collaboration Policy Promoted under the New Southbound Policy

The New Southbound Policy is not Taiwan's first move seeking further collaboration with Southeast Asian countries. In this section, the evolution of previous southbound policies is introduced, followed by an overview of Taiwan's industrial investments in the region for the past three decades. The aim of strengthening industrial cooperation with NSP target countries to forge a more comprehensive value chain is then elaborated. Lastly, the opportunities and challenges of industrial collaboration between Taiwan and NSP target countries are further evaluated.

A. Taiwan's Industrial Investments in Southeast Asia in the Past 30 Years

Having established itself as an export-oriented, open economy, Taiwan sees foreign direct investment as an important strategy for expansion into overseas markets. China was the first important destination, in the 1970s and subsequently. However, in search of cheaper labor cost and market

expansion, Taiwan initiated its first southbound policy, composed of two phases, during the tenure of former President Lee Teng-hui in the 1990s. The first phase was the launch of “Enhancing Trade Work Program for Southeast Asia Region” between 1994 and 1996, targeting Southeast Asian countries particularly Thailand, Malaysia, Indonesia, Philippines, Singapore, Vietnam, and Brunei. The purpose was to encourage state-owned Taiwanese enterprises and private small and medium enterprises to invest in Southeast Asia. As part of the first phase, Taiwan signed investment protection, double tax avoidance and fiscal compliance agreements with various SEA countries.

The second phase involved the launch of “Enhancing Trade Work Program for Southeast Asia, New Zealand and Australia Region” between 1997 and 2002. This initiative added Laos, Myanmar, Cambodia, Australia, and New Zealand to the target countries. Due to the ongoing financial crisis taking place in Asia at the time, the foremost important mission for Taiwan Government involved assisting Taiwanese companies already relocated southbound to survive through the crisis, expanding the eligibility for applying export re-financing, increasing export insurance line and scale in order to assist Taiwanese companies with the acquisition of working capital.

The second wave of Southbound Policy was launched by former President Chen Shui-bian between 2002 and 2003. This phase aimed to enhance the financing, commercial and management links for Taiwanese companies in Southeast Asia. To achieve this, government policy supported Taiwanese companies to identify and establish channels for marketing and collaboration in addition to investment finance. The policy also promoted the signing of free trade agreements with Southeast Asian countries.

A third wave of Southbound Policy titled “Enhancing Trade Work Program for Southeast Asia, New Zealand and Australia Region” was promoted between 2014 and 2016 during the tenure of former President Ma Ying-jeou. The policy aimed to promote the research and practice of

collaboration in trade, investment, finance, labor, energy, and education fields with Southeast Asian countries.

Under the leadership of President Tsai Ing-wen, the “New Southbound Policy Program” was promulgated on August 17, 2016 to add six South Asian countries, in addition to ASEAN, Australia and New Zealand. The latest southbound policy emphasizes on people-oriented economic strategy and seeks to conduct multi-tier and comprehensive dialogues with ASEAN, South Asia, Australia, and New Zealand. The focus now includes talent creation through strategies such as support for vocational education of overseas talent within Taiwan. The policy encourages new immigrants to participate in new southbound work with proactive lifting of regulations and restrictions on people flow, logistics and cash flow, and control of business.

See Table 1 for a summary of previous Taiwan southbound policies and its latest version. In common parlance, the first three waves of southbound policies are collectively known as the old southbound policy. The policy promulgated in August, 2016 is referred to as the New Southbound Policy (NSP).

Table 1 Previous and Current Southbound Policies of Taiwan

	President Lee Teng-hui	President Chen Shui-bian	President Ma Ying-jeou	President Tsai Ing-wen	
Policy and Promotional Period	Launched the “Enhancing Trade Work Program for Southeast Asia Region” between 1994 and 1996 (First Phase)	1997-2016			2016/5 ~ Present
		“Enhancing Trade Work Program for Southeast Asia, New Zealand and Australia Region” between 1997 and	Re-initiated the Southbound Policy between 2002 and 2003	“Enhancing Trade Work Program for Southeast Asia, New Zealand and Australia Region” (7 th Phase) between 2014 and	Announced the “New Southbound Policy Program” on 2016/8/7

Taiwan's Approach to
Forging Manufacturing Partnership
with SEA Countries

		2002		2016	
Countries Covered	Thailand, Malaysia, Indonesia, Philippines, Singapore, Vietnam, Brunei	Added Laos, Myanmar, Cambodia, Australia, New Zealand	Southeast Asian Countries	Southeast Asian Countries	Southeast Asian Countries, Six South Asian Countries (India, Sri Lanka, Bangladesh, Nepal, Bhutan, Pakistan), New Zealand,
Main Contents	<ul style="list-style-type: none"> • Encouraged KMT Party-owned business, state-owned business and civil small and medium enterprises invested in Southeast Asia. • Signed "Investment Protection Agreement" with Philippines, Singapore, Malaysia, Indonesia, Thailand, and Vietnam. • Signed "Agreement for the Avoidance of Double Taxation 	<ul style="list-style-type: none"> • Proactively assisted Taiwanese companies to cope with the impact from financial crisis. • Strengthened the economic and business information collection of the SEA countries. • Expanded export insurance and the eligibility for applying export re-financing, line and scale. • Increased delegations for trade expansion 	<ul style="list-style-type: none"> • Diversified the possible risk of Taiwanese companies with investment in China on a big move. • Assisted Taiwanese companies to establish marketing channel, industrial collaboration and labor accessing Southeast Asia. • Enhanced the investment financing support system for Taiwanese companies in 	<ul style="list-style-type: none"> • High-level government officials led the delegations for marketing expansion. • Established sales channels and brands. • Aimed to promote the research and practice of collaboration in trade, investment, finance, labor, energy, and education fields with SEA countries. 	<ul style="list-style-type: none"> • The communication with Mainland China is still open. • People-oriented economic strategy. • Played the role of innovator, sharer and service provider. • Four links: Soft power, supply chain, regional market, and people-to-people. • Conducted multi-hierarchy and comprehensive negotiation and conversation with ASEAN, South Asia, New Zealand, and Australia. • Integrated with

	<p>and the Prevention of Fiscal Evasion” with Singapore, Malaysia, Indonesia, and Vietnam.</p> <ul style="list-style-type: none"> • Established special collaboration work team. • Senior government officials frequently visited SEA countries. • Held meetings with trade or energy ministers. • Enhance the title and ranking of interchange agencies between Taiwan and some SEA countries. 	<p>in SEA countries.</p>	<p>Southeast Asia.</p> <ul style="list-style-type: none"> • Provided Taiwanese companies investing in Southeast Asia with services for business management and investment convenience. • Promoted niche industry for investment in Southeast Asia. • Proactively promoted the negotiation and signing of free trade agreement in SEA countries. 		<p>vocational education, industry development and fostering of new southbound talents; encouraged new immigrants to participate in new southbound work.</p> <ul style="list-style-type: none"> • Lifted restrictions on people flow, logistics and cash flow as well as business control. • Encouraged and assisted the civil organizations with participation in new southbound work.
--	---	--------------------------	--	--	--

Source: Ming-huan Liu, “Opportunity for TPP and ASEAN,” speech delivered at Taiwan Stock Exchange Corporation (TWSE), December 28, 2016, Taipei, Taipei 101. Cited from Shu-mei Wu, “Opportunity for TPP and ASEAN: Report on IEK Special Lecture,” *Securities Services Review*, No. 657, February 2017, pp. 99-100.

Table 2 provides data on Taiwan’s investment to five ASEAN countries over the last 60 years. The cumulative cases of direct investment from Taiwan to five ASEAN countries surpassed 11,000 cases while the

cumulative investment amount reached USD 77,675 million. Vietnam, Indonesia and Thailand were key recipients. The table suggests that Taiwan plays an important role in foreign direct investment in Southeast Asia.

**Table 2 Taiwan's FDI to Five ASEAN Countries, 1959-2017
(September)**

Country		Vietnam	Indonesia	Thailand	Malaysia	Philippines
Local Investment Statistics (1959-2017 September)	No. of Cases	2,515	2,614	2,349	2,500	1,091
	Amount (USD Million)	30,875	17,582	14,338	12,370	2,507

Source: Department of Investment Services & Investment Commission, Ministry of Economic Affairs, R.O.C., "Monthly Report," https://www.moeaic.gov.tw/news.view?do=data&id=1197&lang=en&type=business_ann.

B. New Southbound Policy Promotes Industrial Value Chain Cooperation between Taiwanese and SEA Industries

In recent years, ASEAN and South Asian countries have become important export markets for Taiwan due to the growth in trade with these countries. Redrafting applicable policy to strengthen the exploration of ASEAN and South Asian markets are intended to support outbound trade strategies. The new policy aims to change the previous investment models of using SEA countries as OEM production bases for export to domestic market oriented investment.

The logic for doing so is to leverage their growth potential. According to Global Insight, the average annual economic growth rate for 10 ASEAN countries and 6 South Asian Countries between 2017 and 2022 could reach 4.9% and 6.0% respectively, outperforming the global economic growth rate of 3.1%. Moreover, the ASEAN and South Asian population is relatively young with 70% of population aged under 40 years, and the middle-class is on the rise. These factors indicate large domestic consumption potential.

According to the statistics released by the Ministry of Finance,

Taiwan's export to ASEAN countries in 2006 reached USD 27,586 million, constituting 13.9% of total export amount. Taiwan's export to ASEAN countries in 2017 reached the amount of USD 58,572 million, constituting 18.4% of total export amount. The export to ASEAN more than doubled in the last 10 years, indicating the increasing dependence of Taiwan on export to ASEAN countries.

As of 2015, the cumulative direct investment of Taiwanese companies in ASEAN countries had reached USD 86,900 million, second only to Taiwan's direct investment in Mainland China. Furthermore, the number of blue-collar workers from overseas working in Taiwan is 680,000 people as of 2016², mostly from Indonesia, Vietnam, Philippines, and Thailand. Interestingly, the number of foreign spouses reached 517,000 people by July 2016, an indicator of the closeness of relations between Taiwan and ASEAN.³

The New Southbound Policy Program consists of four aspects: trade cooperation, talent exchange, resource sharing, and regional links. As noted earlier, compared with the old southbound policy emphasizing on the trade and investment relation with Southeast Asia, the New Southbound Policy emphasizes people-oriented strategies, such as bilateral exchanges in the fields of industry, talent, tourism, culture, and education between Taiwan and target countries. Table 3 summarizes the intent of the NSP, summarized by the phrase "One Prospect, Three Concepts, Four Aspects, and Six Guidelines."

² Ministry of Labor, R.O.C., "Statistics of Labor," 2015, <http://statdb.mol.gov.tw/statis/jspProxy.aspx?sys=210&kind=21&type=1&funid=q13012&rdm=i9LaYIqq>.

³ National Immigration Agency, R.O.C., "Statistics of Work," 2016, <https://www.immigration.gov.tw/5382/5385/7344/7350/8887/>.

Table 3 Content of New Southbound Policy

Policy	Content	
One Prospect	Create reciprocal and win-win collaboration model and establish “sense of community.”	
Three Concepts	Long-term Cultivation; Diverse Opening; Bilateral Reciprocity	
Four Aspects	Trade Cooperation	Expand the bilateral exchange of trade and investment with partner countries, promote the integration of industry supply chain, link with domestic market, and establish new trade partnership.
	Resource Sharing	Intensify the exchange of scholars, students and industry human resource from both sides, promote the supplement and sharing of talent and resources with partner countries.
	Talent Exchange	Promote collaboration in medical health, technology, culture, tourism, agriculture, small and medium enterprises, promote the living standards of partner countries, and extend soft potential of Taiwan.
	Regional Chains	Expand the multi-lateral and bilateral systematic collaboration with partner countries, intensify negotiation and conservation, and dissolve controversies and discretions, and jointly promote regional security and prosperity.
Six Guidelines	Promoting Tourism	Provide convenience measures such as visa waiver, landing visa, electronic visa to eight ASEAN countries.
	Business Opportunities in Halal Industry	The food industry shall acquire Halal certificate and Islamic financing operation model.
	Industrial Collaboration	Promote industrial collaboration using conversation mechanism. Sign industry MOU to promote bilateral cooperation.
	Investment Promotion	Update investment insurance agreement, promote ASEAN strategic partnership program and assist Taiwanese companies with investment in clusters.
	Trade Expansion	Expand trade communication platform, sign bilateral economic cooperation agreement, boost export dynamics.
	Education Development	Establish ASEAN and South Asian scholarship program and encourage bilateral talent exchange.

Source: Executive Yuan, R.O.C., “Proposal of New Southbound Policy,” September 26, 2016, <https://www.ey.gov.tw/Page/5A8A0CB5B41DA11E/86f143fa-8441-4914-8349-c474afe0d44e>.

C. Opportunities and Challenges of the NSP's Industrial Collaboration

The opportunities and challenges of industrial collaboration between Taiwan and NSP target countries are discussed in this section.

With regard to internal strengths, Taiwanese companies are familiar with the operation of international supply chain and market expansion model. Taiwan has the industry policy and regulatory environment suitable for the long-term stable development of industries, which can be helpful for the industrial upgrade and transformation in NSP countries. Moreover, Taiwan also owns solid R&D technology foundation and has accumulated many processing technology skills in industries such as semi-conductors, information communication, machine tools, and components. Finally Taiwanese companies are good at quick response to market demand and utilization of existing resources for innovation.

The internal weaknesses include that the majority of Taiwanese companies are small and medium enterprises with limited resources, which affect the competitiveness in international market with difficulty in establishing brand image. Moreover, the progress of Taiwan participating in regional economic integration is slow and is adverse to industry export. The differences in religion, belief, culture, and customs between Taiwan and NSP target countries are substantial. Taiwan's financial institutions have limited operational bases in New Southbound countries, making it difficult for local Taiwanese companies to receive financing.

With regards to external opportunities, the majority of young consumer population and the rise of middle-class ranking in NSP target countries spur the domestic consumer market. Additionally, Taiwanese companies' marketing efforts in NSP target countries in the past have influence on local industries and can attract more Taiwanese companies to proceed and form an industry cluster. Taiwanese companies can also expand business opportunities using FTAs signed by NSP target countries.

External threats come from competing countries such as Japan, Mainland China and South Korea which have long cultivated the market in the region; the insufficient infrastructure development and shortage in talents and professional technicians in most NSP target countries; and unstable political situations. Companies ready to invest and market in NSP target countries should carefully think about how to use their own advantages and resources to grasp the opportunity and overcome the challenges, in order to turn crisis to opportunity.

Table 4 summarizes the SWOT analysis of industrial collaboration between Taiwan and NSP target countries.

**Table 4 SWOT Analysis of Industrial Collaboration
between Taiwan and NSP Target Countries**

Strength	Weakness
<ul style="list-style-type: none"> • Taiwanese companies are familiar with international supply chain operations and market expansion models. • Taiwan has an industrial policy and regulatory environment that is suitable for the long-term and stable development of the industry, which is very helpful to the industrial upgrading and transformation of the NSP target countries. • Taiwan has a solid foundation of R&D technology. In the past, Taiwan has accumulated many experiences in process technologies for the semiconductors, communications, machinery, and component industries. • Taiwanese firms are able to respond quickly to market demand and make good use of existing resource innovations. 	<ul style="list-style-type: none"> • Taiwan's industry is mostly composed of SMEs whose resources are limited, which affects competitiveness in the international market and is difficult to establish brand image and visibility. • Slow progress in participating regional economic integration, which is not conducive to Taiwan's industrial exports. • Great difference and gap in religious beliefs and cultural customs from those in the NSP target countries. • Taiwan's financial institutions have limited deployment in NSP target countries, and Taiwanese companies have difficulties in financing at locals.

Opportunity	Threat
<ul style="list-style-type: none"> • There are many young-age and rise of the middle class consumers which have driven domestic consumption in NSP target countries. • In the past, the deployment of Taiwanese companies in NSP target countries has exerted influence on local industries and helped attracting more Taiwanese companies to form industrial clusters locally. • Official policy supports the expansion of business in NSP target markets. • Use FTA which have been negotiated by NSP target countries or RCEP and CPTPP that they have participated in to further expand Taiwan's market opportunities. 	<ul style="list-style-type: none"> • Competing countries such as Japan, China, and South Korea have been working hard in NSP target countries for a long time. • The infrastructure and professional technical personnel in NSP target countries are insufficient. • The politics is unstable, and there is often a gap between policy-making and implementation. • The cost of local utilities and wages are rising and there are frequent strikes from the labor associations.

Source: Researchers' Analysis, ISTI of ITRI

III. Industrial Collaboration with Major Southeast Asian Countries

To better allocate resources, six NSP target countries are prioritized, based on a series of social, economic and industrial development indicators, for the first-phase collaboration. Four criteria for selecting sectors for industrial collaboration are further elaborated, and target sectors for collaboration are then suggested.

A. Selection Criteria for Industrial Collaboration with Southeast Asian Countries

The NSP aims to promote the integration of Taiwan's industrial value chain with that of NSP target countries. To better allocate resources, six NSP target countries are selected for the first-phase collaboration.

Table 5 illustrates the criteria for the selection of the first-phase collaboration countries, including factors such as economic growth rate, market size, degree of manufacturing development, degree of industrial linkage with Taiwan, per capita income, and human resources, etc. In the first phase of selection, India, Indonesia, Thailand, Malaysia, the Philippines, and Vietnam were prioritized. Other countries will be added for industrial collaboration in the future. It is estimated that the economic growth rates of the six prioritized countries will reach 5% to 8% by 2018, much higher than the global economic growth rate of 3.1%, and the population (demographic dividend) will reach 1.82997 billion, accounting for more than 25% of the world's total population with relatively abundant labor force and a vast young consumer population.

According to the “2016 Global Manufacturing Competitiveness Index” report released by Deloitte, India, Thailand, Malaysia, Vietnam and Indonesia were ranked the 11th, 14th, 17th, 18th and 19th, respectively, out of 40 countries, indicating that the five prioritized countries have the potential to be assisted by Taiwan's past experiences in the manufacturing industry for technological upgrading, industrial transformation, and supply chain value-adding. At present, there are more than 10,000 Taiwanese firms investing in the six prioritized countries, demonstrating that the degree of industrial linkage between the six countries and Taiwan is already quite high. In addition, the per capita income of those six countries is between 2,000-10,000 US dollars, while the median is at 4,495 US dollars, indicating that the future wage growth potential is high as well. Driven by the growth of the middle class, the market of durable and luxury goods consumption will be boosted. Finally, regarding the important human resources factor, students from the six prioritized countries account for about 20-50% of the population of the same age, indicating that the six countries have at least certain amount of high-quality human capital.

**Table 5 Selection Criteria of Target Countries for First-Phase
Collaboration**

	Estimated Economic Growth Rate by 2018	Market size (Demographic Dividend)	Global Manufacturing Competitiveness Index Ranking	Linkage with Taiwanese Industry	Per capita Income (US\$)	Rate of University Students among the Population of the Same Age Group
India	7.7%	13.34 billion	11	Approx. 80 Taiwanese firms	1,600	23.9%
Indonesia	5.5%	0.26 billion	19	2000 Taiwanese firms	3,440	31.3%
Thailand	3.5%	67.24 million	14	3000 Taiwanese firms	5,720	52.5%
Malaysia	5.0%	31 million	17	1750 Taiwanese firms	10,570	29.7%
Philippines	6.2%	0.102 billion	-	1170 Taiwanese firms	3,550	35.8%
Vietnam	6.3%	94.92 million	18	1700 Taiwanese firms	1,990	30.5%
Taiwan	1.87% (2017f)	23.52 million	7	-	23,231 (2016f)	70.7%

Source: World Bank Open Data, "GDP Growth & Population," 2017, <https://data.worldbank.org>; Deloitte, "2016 Global Manufacturing Competitiveness Index," <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/manufacturing/us-gmci.pdf>; Ministry of Education, R.O.C., "Statistics of Education," 2016, <https://stats.moe.gov.tw/>; Directorate General of Budget, Accounting and Statistics, Executive Yuan, R.O.C., "National Statistics," <https://eng.stat.gov.tw/>.

B. Focus of Collaboration Industries in Short-to-Medium Term

In the previous section, the six first-phase industrial collaboration countries were recommended for selection based on economic indicators. In this section, industrial assessment indicators are added to explore the potential for focused collaboration industries for short, medium, and long-term between Taiwan and the six countries.

First, four major selection strategies are used to identify collaboration industries. These include future development needs of partner countries, willingness of collaboration, Taiwan's strengths and output capacity, and level of involvement of third parties (competitors). Then, the economic classification index of the World Economic Forum (WEF)'s competitiveness report is used as the second selection criterion. Based on the development phase of each country, WEF classifies countries as three types: resource-driven, efficiency-driven, and innovation-driven. These principles are taken into consideration for selecting the industries for collaboration. Finally, bilateral discussions between Taiwan and the six prioritized countries were conducted to reach the consensus.

**Table 6 Selection Strategies for Collaboration Industries
between Taiwan and Six Prioritized Countries**

Strategies	Consideration Points
I. Future Development Needs of Partner Countries	<ul style="list-style-type: none"> • Market demand • Government's medium and long-term industrial promotion policy direction and key issues for the urgent development of domestic industrial development
II. Willingness of Collaboration	<ul style="list-style-type: none"> • Industry chain complementarity • The degree of interaction between the industries of the two countries/experience of past collaboration • The urgency of the need of the country
III. Taiwan's Strengths and Output Capacity	<ul style="list-style-type: none"> • Global industry competitiveness • Technology/system export experiences or certification

<p>IV. Level of Involvement of Third Parties (Competitors)</p>	<ul style="list-style-type: none"> • International/domestic industrial competition structure • Action of potential competitors
--	--

Source: Industrial Development Bureau (IDB), Ministry of Economic Affairs (MOEA), "Forging New Supply Chain Partnership in the Asia-Pacific Region," November 29, 2017, p.7 (in Chinese) https://www.moea.gov.tw/mns/ssc/news/wHandNews_File.ashx?file_id=59614.

Aligning business operations with local demands and policies is one of the important aspects regarding bilateral collaboration. For instance, achieving industrial and national development through adoption of ICT solutions has been at top of the agenda of many NSP target countries, as seen in policies such as Thailand's "Thailand 4.0" and India's "Smart Cities Mission". Taiwan has accumulated substantial industry capacity over the years, serving as a high-end IT and IC product manufacturing and service center. In 2017, Taiwan claimed over 80% global market share for motherboard and laptop production, and worldwide market share of IC foundry service exceeded 70%. In view of Taiwan's capacity and the development demand of partner countries, the ICT-related sector is considered to have great potential for future collaboration.

Table 7 shows the "Sectors for Collaboration with Six Prioritized Countries" planning identified via the aforementioned selection process. For collaboration between Taiwan and Indonesia, sectors including ship-building, ICT (smart city), food technology, and metal processing are prioritized. Collaboration with Thailand is slated to focus on food and biotechnology, textile, smart machinery, and ICT (smart city). Electronics, solar power system, smart machinery and industrial zone development are prioritized sectors for cooperation with the Philippines. Taiwan and India plan to work together in electronic manufacturing, smart city/green technologies, and smart vehicle components industries. Focuses of collaboration with Malaysia are textile, food/medical/cosmetics, information services and smart city. For Vietnam, sectors including basic technologies of light industry, smart application for smart city (such as smart campus and smart illumination), and textile are prioritized.

Table 7 Sectors for Collaboration with Six Prioritized Countries

Country	Sectors
Indonesia	<ul style="list-style-type: none"> • Ship-building • ICT (Smart City) • Food Technology • Metal Processing
Thailand	<ul style="list-style-type: none"> • Food and Biotechnology • Textile • Smart Machinery • ICT (Smart City)
Philippines	<ul style="list-style-type: none"> • Electronics • Solar System • Machinery • Industrial Zone
India	<ul style="list-style-type: none"> • Electronic Manufacturing • Smart City / Green Technology • Smart Vehicle Components
Malaysia	<ul style="list-style-type: none"> • Textile • Food, Medical and Cosmetics • Information Services • Smart City
Vietnam	<ul style="list-style-type: none"> • Basic Technology of Light Industry • Smart Applications of Smart Cities: Smart Campus and Smart Illumination • Textile

Source: Industrial Development Bureau (IDB), Ministry of Economic Affairs (MOEA), "Forging New Supply Chain Partnership in the Asia-Pacific Region," November 29, 2017, p.7 (in Chinese) https://www.moea.gov.tw/mns/ssc/news/wHandNews_File.ashx?file_id=59614.

C. Collaboration Model between Taiwan and Southeast Asian/South Asian Countries

The results of a survey conducted by Industrial Technology Research Institute (ITRI) and Chinese National Federation of Industries (CNFI) as well as case studies of Taiwan companies already established in the region

are presented in this section to offer an overview of Taiwanese enterprises' current operation and future investment preference in Southeast Asia.

(A) Questionnaires from ITRI and CNFI⁴

The NSP is an important foreign trade strategy of Taiwan. In this section, we discuss a survey with which the authors were involved. The ITRI and CNFI had conducted the "Survey Regarding Taiwanese Firms' Investment Preference and Current Status in ASEAN and South Asia" to understand the needs of Taiwan's industrial firms and the investment situation in NSP target countries. The survey conducted in 2017 included the 159 member associations under the Federation and companies under respective member associations. The survey period spanned from February 20 to May 31, 2017. There were a total of 130 valid responses.

When asked about "Has Your Company Invested and Expanded Business in Countries in Southeast and South Asia Regions?" 51% of the 130 respondents indicated that they have already entered the ASEAN and South Asian markets for investment or distribution, 15% of respondents noted that related projects have been under discussion, and 31% have not yet planned to invest in those areas (as Fig. 1 illustrates). Based on the above results, the total number of companies which have established operations in ASEAN and South Asia and those which have been considering entering the markets accounted for 66% of the total responses. It is evident that the interviewed companies have high interest in ASEAN and South Asia regions.

⁴ Source: Chinese National Federation of Industries (CNFI), *Results of Survey Regarding Taiwanese Firms' Investment Preference and Current Status in ASEAN and South Asia*, August 25, 2017.

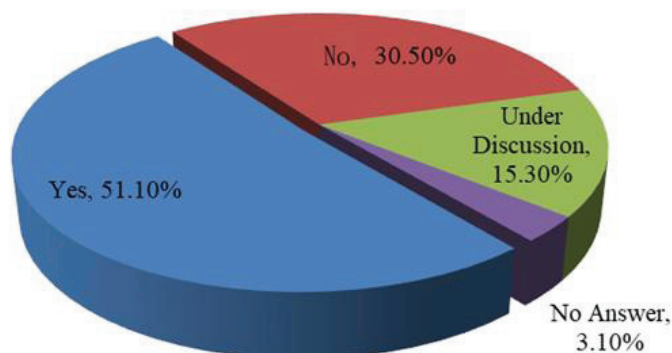


Figure 1. Has Your Company Invested and Expanded Business in Countries in Southeast and South Asia Regions?

Source: Chinese National Federation of Industries (CNFI), *Results of Survey Regarding Taiwanese Firms' Investment Preference and Current Status in ASEAN and South Asia*, August 25, 2017, p.4.

Regardless of whether the respondents have already been in the NSP target countries, companies' preferred destinations for investment are Vietnam (17%), followed by Indonesia (14%), Thailand (13%), and Malaysia (10%), India, the Philippines and Singapore have the same rate as 8%, while those who are interested in Myanmar account for 5%, Cambodia account for 4% and 2% for Bangladesh and Australia; Laos, Pakistan, and Sri Lanka accounted for 1%, respectively as those "other places" companies are interested in. Meanwhile, 5% of the respondents did not disclose their investment interest in the survey (as shown in Fig. 2). Based on the above results, Taiwan companies' preferred investment countries focus on Southeast Asian countries.

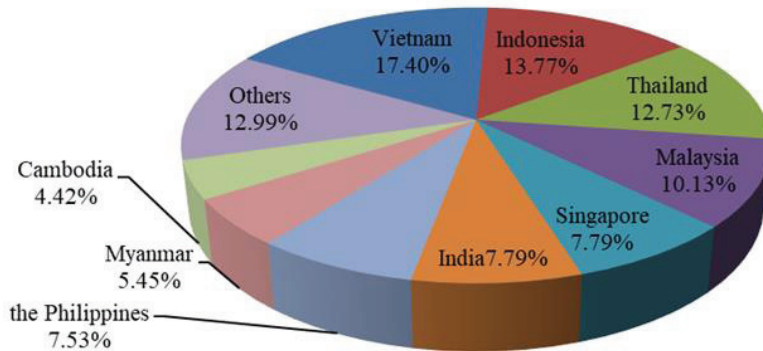


Figure 2. Preferred Countries for Investment

Source: Chinese National Federation of Industries (CNFI), *Results of Survey Regarding Taiwanese Firms' Investment Preference and Current Status in ASEAN and South Asia*, August 25, 2017, p.6.

When asked about the “Preferred Investment Mode at Local Markets”, responses showed that the highest proportion is establishing wholly-owned ventures (25%), followed by designating agents and distributors for local business operation (20%), and the rest are establishing branches (19%), joint-ventures with local firms (15%), distribution warehouses (6.6%), R&D sites (2.5%), and 11.17% remained unanswered.

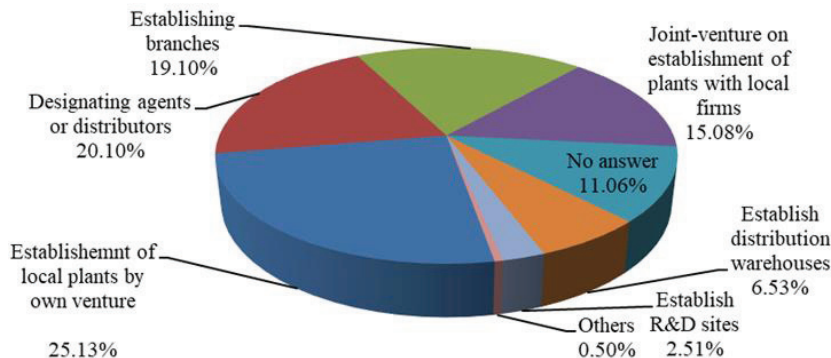


Figure 3. Preferred Investment Mode of Taiwanese Firms

Source: Chinese National Federation of Industries (CNFI), *Results of Survey Regarding Taiwanese Firms' Investment Preference and Current Status in ASEAN and South Asia*, August 25, 2017, p.7.

(B) Cases on Industrial Cooperation between Taiwan and Southeast Asian/South Asian Countries

Over the past three decades, a considerable number of Taiwanese companies have been expanding business into the emerging Asia market. Operation overview and market entry strategy of seven companies in the electronics/information service, smart manufacturing/metal, and light industries are presented to explore potential models for collaboration between Taiwan and NSP target countries.

1. Electronics and Information Services Industry: MediaTek, Acer, APEX, Geosat

Many Taiwanese high-tech companies have extended their reach to ASEAN and South Asian markets in the past 20 years, and have achieved abundant results.-MediaTek has been developing Indian market for 10 years. Acer, which combines brand advantages with innovative services in Thailand, has claimed the top position in the market. APEX has gradually opened the domestic market in India with its home care medical devices. Geosat has endeavored to explore a promising market of smart agriculture in Malaysia with its smart drones.

MediaTek uses three-phase strategy of “finding the leader, chasing the sheep into the sheep yard, and differentiating”.⁵ It worked with three companies with collaborative interests in India and supported these three companies to grow quickly. They became the leaders that chase the sheep into the sheep yard, and solve all possible problems that might be faced by

⁵ Chinese National Federation of Industries and Industrial Technology Research Institute, *New Southbound Policy for New Growth* (Taipei: Industrial Development Bureau, Ministry of Economic Affairs, 2017), pp.130-137.

the sheep such as providing maintenance insurance. Using this strategy, MediaTek successfully found out its specific positioning in the smart phone market in India and substantially increased its market share.

To build up its brand trust in Thailand, Acer,⁶ the computer manufacturing giant, not only implemented the express service with two-hour completion, but also launched theft insurance in order to address the high theft rate in Bangkok. Acer now is a well-known computer brand in Thailand and has established the record of top market leader for 11 consecutive years. In addition, as Thailand has been promoting the “Thailand 4.0” policy, Acer will expand its business scopes to cloud computing, IoT, VR and AR, and will focus on education, government, healthcare and entertainment fields.

APEX is a company starting from OEM business.⁷ It has professional designing and manufacturing capability on home-care medical devices and owns 143 patents. It took six years to successfully promote the “APEX” branded medical anti-decubitus cushion bed to the top leader in Asia. APEX started its journey southwards by choosing the Indian market. The company concluded that to explore the market and run the business smoothly in India, establishing a service model, a team and the best practices are the most important factors.

Geosat's main technology is taking aerial shots with drones, analyzing aerial photos with artificial intelligence into accurate numbers and coordinates. Then, it can further analyze the growth situation of crops and provide accurate fertilizer application advices. They entered the agricultural market with related technologies, launched the innovative services of establishing the digital terrain model to seize the huge business

⁶ Ibid. pp.76-81.

⁷ Ibid. pp.176-183.

opportunities in the ASEAN and South Asian agricultural markets.⁸

2. Smart Manufacturing and Metal Industry: China Steel, In Charm

China Steel currently has annual production capacity of 15 million tons, which is much lower than the world-class giants like ArcelorMittal and Baosteel. After in-depth market analysis, China Steel decided to develop the niche-based steel factory and explore the ASEAN and South Asian markets that have increasing demand for steel products.

In the Vietnam market, China Steel cooperated with Nippon Steel & Sumitomo Metal Corporation (NSSMC),⁹ the third largest producer in Asia, and established China Steel Sumikin Vietnam Joint Stock Company (CSVC) which greatly reduced geopolitical risks due to the strong diplomatic relations between Japan and Vietnam. With its global expansion and transformation to niche market, China Steel has performed very well in profitability. In 2016, its net profit ratio is ranked No. 1 in Asia's Class 1 steel companies.

In Charm International has been developing the ASEAN market for many years.¹⁰ It originally sold machine tools in Taiwan. After it entered Indonesia in 1990, in addition to working as an agent for machine tools, it also entered the local Japanese automobile supply chain and added the business of selling hardware accessories and setting up a forging factory locally.

To solve the problem of insufficient local senior technicians, In Charm spent three years to set up the Indonesian vocational training school “Formosa Technology Center” in Tangerang, Jakarta, Indonesia. The

⁸ Ibid. pp.110-115.

⁹ Ibid. pp.10-17.

¹⁰ Ibid. pp.18-23.

machine tools used in the training school came from Taiwan and the teachers were also hired from Taiwan. When the trainees make procurement decisions in the future, they will inevitably take Taiwanese machine tools as their top priority.

3. Light Industry: Taisun

The ASEAN countries have total population of over 600 million, and half of the population is the middle class with rising consumption capability. Take Vietnam as an example, the average age of the population is only 29 years old, a country with high demographic dividend. Taisun, the Taiwanese company who sells baby diapers in Vietnam, has abundant experiences.

Taisun,¹¹ known in Vietnam as the “king of brand diapers,” used the strategy of villages encircling cities. It set up 120 dealers in Vietnam, with an average of 1-2 dealers in each province, and more than 40,000 retail shops with overall market penetration rate reaching 30%. Currently, its sales volume of diapers ranks the fourth in Vietnam. Starting from Vietnam, Taisun also launched the globalized strategy, with marketing network spreading to more than 20 countries in Europe, USA, Africa, Australia, and Southeast Asia. It has 50% of the market share in Cambodia, and is also the top leader in Reunion Island, Fiji and Tonga.

IV. Prospects for Industrial Collaboration between Taiwan and Southeast Asian/South Asian Countries

Given Taiwan's industry capacity, six sectors are expected to benefit the most from industrial collaboration between Taiwan and six prioritized countries. Meanwhile, four aspects for future collaboration model are also suggested.

¹¹ Ibid. pp.168-175.

A. Sectors Benefiting the Most from Closer Industrial Ties between Taiwan and Southeast Asian/South Asian Countries

Taiwan has an advantageous manufacturing capacity and a complete industrial ecosystem highly attractive to the NSP target countries. It can use advanced industrial technologies and production capability to provide customized solutions for NSP countries. In addition, Taiwan's industry is characterized by an elaborate division of labor. Over the years, it has established a complete supply chain system, has abundant experience in industrial cluster development, and can replicate the experience of clustering in cooperation with the NSP target countries. Taiwan's industry also has accumulated years of marketing strength which can be shared with the NSP target countries and work together to develop regional and global markets.

Taiwan has comparative industrial advantages in electronics, metal machinery, consumer products and chemicals, green energy, resource recycling and smart cities. All these will benefit most when it is closely integrated with the six prioritized NSP target countries' industrial value chains.

The components of electronic products in the six countries mainly rely on import. In recent years, smart phones and Internet users have grown rapidly. In the future, driven by the demand of mobile communication-related products, the industry will grow rapidly. Metal machinery related industries and the metal demand will also grow rapidly due to the aggressive infrastructure development in the six countries and high growth of the manufacturing industry. The transportation construction drives the demand for machine tools and automobiles components, stimulating the industry to grow rapidly in the future. At present, the consumer products and chemicals industry in the six countries just start to grow, it is in urgent needs of foreign direct investment. With the abundant local natural resources in these countries, the industry will have a chance to

flourish in the future. The current economic trend of the six countries is growing, and the demand for various energy and the reuse of resources is enormous, driving the growth of green energy and resource recycling-related industries in the future. In addition, Taiwan has the experience of complete smart city communication technologies application, and can work with the six countries on smart city policy-making and industry-fostering.

B. Possible Industrial Cooperation Models with Individual Country

Based on the above analysis, four aspects for future collaboration model are also suggested, including collaborations in industry, market, system and capacity building, respectively. Following the time span adopted by most NSP target countries for outlining national development plans, a road map for potential collaborations over a period of ten years is proposed, and is composed of short-term goals (2018-2020) and medium and long-term ones (2021-2027).

In terms of industrial cooperation, the focus will be on the key collaboration industries between Taiwan and the six prioritized countries, and the collaboration models include expanding procurement, technical collaboration, product development, process optimization, and cooperation in demonstration sites. In the mid to long term, new cooperation countries and industries including emerging industries will be added as two major goals to increase the diversity of industrial cooperation.

In market cooperation, the focus will be on channels and marketing cooperation as well as business matching in the short-term, and can be extended to brand cooperation in the mid-long term to increase the added value of cooperation. In terms of system cooperation, after the first stage of assessment, there could be four directions for cooperation: cooperation in building up the validation standards, cooperation in setting up the industrial standards, mutual recognition of the test results, and streamlining the

operational procedures. Finally, the capacity build-up cooperation will focus on talent training, SME development, industrial clusters, science park planning, innovation and entrepreneurship, etc. to communicate and create the greatest value of cooperation.

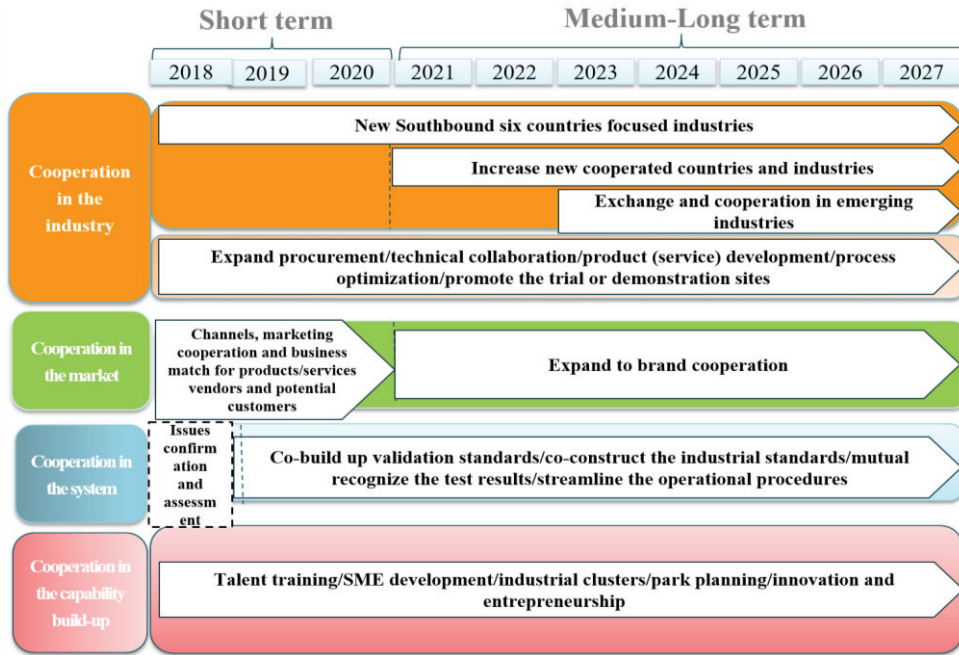


Figure 4 Road Map for Potential Collaborations with NSP Target Countries

Source: Researchers' Analysis, ISTI of ITRI.

V. Conclusion

The NSP aims to promote the integration of Taiwan's industrial value chain with that of NSP target countries. To better allocate resources, six countries are prioritized, based on a series of social, economic and industrial development indicators, for the first-phase collaboration. Target sectors for collaboration with individual countries are also suggested, following four selecting criteria including future development needs of partner countries, willingness of collaboration, Taiwan's strengths and output capacity, and level of involvement of third parties (competitors).

The NSP target countries offer a considerable consumer market with significant growth potential, which Taiwanese companies could benefit more from further industrial collaboration in order to forge closer ties with individual countries along the supply and value chains. Meanwhile, with most NSP target countries endeavoring to promote industrial development, Taiwan could also share its experience on technology innovation, industry cluster development and talent cultivation.

This paper focuses on how short- and mid-term collaboration industries between Taiwan and major Southeast Asian/South Asian countries may be developed under the New Southbound Policy (NSP). Our analysis provides a methodology to select and develop potential cooperation models to integrate bilateral industrial value chains and create a win-win innovative mode for collaboration. Our paper suggests that the cooperation model should concentrate on four major aspects: industry, market, system, and capacity building. Taiwan possesses remarkable manufacturing ability and a complete industrial ecosystem which is capable of providing customized technical and advanced solutions for Southeast Asian countries. Furthermore, in terms of marketing, Taiwan has accumulated many years of experiences that can be shared with SEA countries to co-develop the regional and global markets. On top of that, a complete supply chain has been established in Taiwan over the years due to its specialization and division of labor. This has constructed solid experience in forming industry cluster, which can also be valuable for each other to learn from. Lastly, Taiwan possesses industrial policy and regulatory environment advantageous to long-term industry growth that will be beneficial for both sides to co-create an industry development system in the aspect of institution. To sum up, mutual cooperation will not only stimulate the industrial transformation and upgrading of the manufacturing industries in Southeast Asian countries but also extend the market for Taiwan's industry, achieving mutual benefit and win-win situation.

Bibliography

- Chinese National Federation of Industries (CNFI), *Results of Survey Regarding Taiwanese Firms' Investment Preference and Current Status in ASEAN and South Asia*, August 25, 2017.
- Chinese National Federation of Industries and Industrial Technology Research Institute, *New Southbound Policy for New Growth* (Taipei: Industrial Development Bureau, Ministry of Economic Affairs, 2017).
- Deloitte, "2016 Global Manufacturing Competitiveness Index", <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/manufacturing/us-gmci.pdf>.
- Department of Investment Services & Investment Commission, Ministry of Economic Affairs, R.O.C., "Monthly Report," https://www.moeaic.gov.tw/news.view?do=data&id=1197&lang=en&type=business_ann.
- Directorate General of Budget, Accounting and Statistics, Executive Yuan, R.O.C., "National Statistics," <https://eng.stat.gov.tw/>.
- Executive Yuan, R.O.C., "Proposal of New Southbound Policy," September 26, 2016, <https://www.ey.gov.tw/Page/5A8A0CB5B41DA11E/86f143fa-8441-4914-8349-c474afe0d44e>.
- Industrial Development Bureau (IDB), Ministry of Economic Affairs (MOEA), "Forging New Supply Chain Partnership in the Asia-Pacific Region," November 29, 2017, https://www.moea.gov.tw/mns/ssc/news/wHandNews_File.ashx?file_id=59614.
- Liu, Ming-huan, "Opportunity for TPP and ASEAN," speech delivered at Taiwan Stock Exchange Corporation (TWSE), December 28, 2016, Taipei, Taipei 101. Cited from Shu-mei Wu, "Opportunity for TPP and ASEAN: Report on IEK Special Lecture," *Securities Services Review*, No. 657, February 2017, pp. 97-100 (in Chinese).
- Ministry of Education, R.O.C., "Statistics of Education," 2016, <https://stats.moe.gov.tw/>.
- Ministry of Labor, R.O.C., "Statistics of Labor," 2015, <http://statdb.mol.gov.tw/statis/jspProxy.aspx?sys=210&kind=21&type=>

1&funid=q13012&rdm=i9LaYIqq.

National Immigration Agency, R.O.C., "Statistics of Work," 2016,
<https://www.immigration.gov.tw/5382/5385/7344/7350/8887/>.

World Bank Open Data, "GDP Growth & Population," 2017,
<https://data.worldbank.org>.