

# Non-Equity Modes of Trade in ASEAN

## Promoting new forms of trade between Japan and ASEAN

PAPER 9  
A P R I L  
2020

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## NOTES

The terms country and/or economy as used in this study also refer, as appropriate, to territories or areas; the designations employed and the presentation of the material do not imply the expression of any opinion whatsoever on the part of the ASEAN-Japan Centre concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The following symbols have been used in the tables:

- Two dots (..) indicate that data are not available or are not separately reported.
- A dash (-) indicates that the item is equal to zero or its value is negligible.
- Use of a dash (-) between dates representing years, e.g., 2015–2016, signifies the full period involved, including the beginning and end years.

Reference to “dollars” (\$) means United States dollars, unless otherwise indicated.

There are 10 papers in total. Five (Cambodia, Lao PDR, Myanmar, the Philippines and Viet Nam) have been published. The other papers are being produced subsequently.

Paper 1. Brunei Darussalam

Paper 2. Cambodia (published in August 2019)

Paper 3. Indonesia

Paper 4. Lao People’s Democratic Republic (published in March 2020)

Paper 5. Malaysia

Paper 6. Myanmar (published in March 2020)

Paper 7. Philippines (published in March 2018)

Paper 8. Singapore

**Paper 9. Thailand**

Paper 10. Viet Nam (published in December 2018)

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## CONTENTS

<b>1. Introduction</b> .....	<b>1</b>
<b>2. Characteristics and scope of NEMs: Thailand</b> .....	<b>3</b>
2.1 Scale and scope .....	<b>3</b>
2.2 NEM by modality .....	<b>6</b>
(1) Contract farming/contract growing (cooperatives) by integrators: Chicken meat .....	<b>6</b>
(2) Subcontracting (or outsourcing): Apparel industry .....	<b>16</b>
(3) Subcontracting: Automotive parts industry .....	<b>28</b>
(4) Subcontracting: Jewellery industry .....	<b>39</b>
(5) Other types of NEMs: Offshoring .....	<b>44</b>
2.3 Crucial factors affecting the capacity development of local Thai firms: Backward linkages .....	<b>47</b>
<b>3. Opportunities and challenges for NEMs in Thailand</b> .....	<b>52</b>
3.1 Ownership/non-ownership .....	<b>55</b>
3.2 Relationships between NEMs and industries .....	<b>55</b>
3.3 Ownership and control .....	<b>56</b>
3.4 Localization strategies .....	<b>56</b>
<b>4. Policy implications</b> .....	<b>57</b>
4.1 Enhancing capacities of local firms .....	<b>57</b>
4.2 Mainstreaming sustainable development .....	<b>58</b>
4.3 Improving the institutional setting .....	<b>59</b>
<b>References</b> .....	<b>63</b>



## KEY MESSAGES

- The volume of Thailand's non-equity mode (NEM) production and exports has been increasing, reaching an estimated \$106 billion in the goods sector alone in 2016. NEMs are estimated to have accounted for 48% of total merchandise exports in 2016. If services are included, NEM exports that year would amount to at least \$150 billion.
- Thai firms are involved in various types of NEMs, including contract farming and growing, subcontracting, management contract and franchising. The type of NEM varies by industry.
- Chicken integrators are a good example of contract farming and are also business partners of transnational companies (TNCs). The industry is one of the best-performing and highest employment-generating ones in the agricultural sector. Thailand was the fourth largest exporter of broiler meat and broiler meat products in 2015, sharing 6.2% of global exports of broiler meat. Chicken integrators participate in a wide range of value chain activities, from poultry raising to retailing. They have stable NEM agreements and alliances with foreign customers.
- Having the ability to supply the entire textile and garment value chain, from upstream to downstream, the textile and apparel industry in Thailand has traditionally flourished. The export value of textiles and garments in 2016 was \$6.5 billion; their share of total exports and export value has remained flat. Development of design capacity is required in order to continue NEM relationships and to maintain and explore domestic and regional markets.
- Thailand's automotive industry contributed about 12% of the total gross domestic product (GDP) in 2016 and was ranked as the largest automobile producer in ASEAN in that year. Automotive component exports amounted to \$16.3 billion, or 43% of exports from the ASEAN+6 group of countries. Local Thai firms typically have developed their technological capabilities through backward linkages with TNC affiliates in Thailand.
- Jewellery is one of the top 10 export industries in Thailand. The export value of gems and jewellery was \$16 billion in 2016. The main Thai firms that have linkages with TNCs are not large firms but rather medium or small ones. The industry faces a reduction of skilled workers and needs to invest more in research and development and in training to sustain the skilled labour force.
- Thai NEM partner firms have developed their capabilities to differentiate them from competitors in neighbouring countries. They have experience in capability building and technological learning from having direct technological transfer from TNCs through foreign direct investment (FDI), or backward linkages with TNC affiliates in Thailand or customers outside Thailand. The question is whether Thai firms have acquired enough of the capabilities that TNCs require in their partner firms.
- Local Thai firms' capabilities in both technological and managerial skills should be enhanced to meet TNCs' current and potential demand. Once these necessary capabilities have been attained, firms can have more initiative or autonomy in their operations; they can find potential customers through networks; and independently from TNCs in terms of autonomy or initiatives, they can then create their own business activities or create their own Thai brands in the long run.
- As local NEM firms and their foreign clients have no equity relationship, the normal TNC governance of foreign affiliates in host countries is sometimes almost absent. The Thai government thus cannot rely only on the compliance level and guidance of foreign clients for the governance of local NEM firms.
- The government of Thailand should consider implementing the regulatory framework for NEM firms to export, promote innovation, expand employment and upgrade technology successfully.





## 1. INTRODUCTION

Trade is not always undertaken between independent firms. Both arm's-length and non-arm's-length trade exist, and in the latter, trade may also take place between foreign companies and local firms without an equity relationship, with the local firms controlled by the foreign ones. In Thailand, this non-equity mode (NEM) of trade is spreading in the form of international subcontracting in manufacturing of automobiles, electronics and garments, among other industries; contract farming in agriculture and livestock, as in shrimp aquaculture and food processing; international franchising in fast food and retail (including convenience) stores; variations of build-own-operate-transfer arrangements and other concessions in infrastructure projects; and management contracts (e.g. in international hotel chains).<sup>1</sup> This paper examines the case of Thailand within the overall framework of the NEM project by the ASEAN-Japan Centre (AJC) (box 1).

In Thailand, the 32nd largest economy in the world and the 2nd largest in ASEAN after Indonesia (according to World Bank data), NEMs in all three sectors – primary, manufacturing and services – have been contributing significantly to economic development. In manufacturing, for example, the automotive industry plays a pivotal role, accounting for 12% of GDP. For auto parts alone, exports reached over \$7.4 billion in 2016, with more than 1,700 supplier companies.

The next section explains the characteristics and scope of NEMs by type and introduces particular types that have distinguishing characteristics in Thailand. Section 3 provides a picture of opportunities and challenges in the selected industries and analyzes the implication of NEMs for the economy. The last section makes suggestions about policy implications.

### Box 1. The NEM project by the ASEAN-Japan Centre

Other than arms-length relationships, equity holding is not the only means of exerting control over the international value chain. Companies also enter into contractual relationships with other independent firms. This trade is gaining importance as the system of global production becomes more integrated and forms value chains. This is an area in which lack of knowledge and a huge gap of research exist in ASEAN. It also calls for an overall analytical framework to assess development impacts in order to propose a generic policy framework for dealing with this kind of transaction. The fundamental difference to normal trade is that non-equity forms of operations relate to a contractual partnership between private parties. The role of the state related to this partnership is limited to setting the framework conditions within which the private parties can freely negotiate the terms of their cooperation. By better understanding this phenomenon, including the scale and scope, and filling a policy analysis gap, the ASEAN-Japan Centre (AJC) will provide ASEAN country governments with policies that they need to consider in order to fully benefit from these new forms of trade, as well as investment.

In order to understand the scale and scope of non-equity involvement in major industrial sectors, a case study methodology is used. The reasons for taking this approach are two-fold: (1) balance-of-payments and supplementary statistics do not provide the detail necessary to accurately measure cross-border non-equity participation; and (2) the relevant microdata are fragmented and disconnected. As much as possible, each case study builds on existing research and statistics.

.../

<sup>1</sup> There are also many types of NEMs of business activities among local companies. As this paper focuses on NEMs in the context of international trade, it does not address the case of NEMs among local companies.

**Box 1. The NEM project by the ASEAN-Japan Centre (Concluded)**

New opportunities are opening up for ASEAN countries in the context of TNCs' international innovation networks. Although attracting FDI and encouraging foreign TNCs to establish affiliates remain important options, governments need to review their current regulatory regimes in the context of international innovation networks. A key objective of this study is to make recommendations on which policies (investment and industrial) governments need to consider in order to fully benefit from emerging opportunities.

**Table 1. Description of selected non-equity modalities, including examples of typical industries, in Thailand**

Modality	Description (in the international context)	Typical industries	Company examples
Subcontracting	Agreement whereby a TNC contracts out to a host-country firm one or more aspects of product design, processing or manufacturing. Includes contract manufacturing and design, and outsourcing in the case of services or business processes.	Electronics	Sumitronics (Japan)
		Garments	<ul style="list-style-type: none"> <li>• Sheico (Taiwan Province of China)</li> <li>• VT Garment (Myanmar)</li> </ul>
		Automotive parts	Denso (Japan)
Contract farming/ contract mining	Agreement between a TNC buyer and host-country farmers and miners (including governments) that establishes conditions for the production and marketing of farm and mining products.	<ul style="list-style-type: none"> <li>• Agriculture</li> <li>• Fishery</li> </ul>	<ul style="list-style-type: none"> <li>• Siam Export Mart (Thailand)</li> <li>• PTN Group (Thailand)</li> </ul>
Licensing	Contractual relationship in which a TNC (licensor) grants to a host-country firm (licensee) the right to use an intellectual property (e.g. copyrights, trademarks, patents, industrial design rights, trade secrets) in exchange for a payment (royalty). Includes brand licensing, product licensing, process licensing (cross-licensing, intra-firm licensing).	Food	Sahachol Food Supplies (Thailand)
		Character goods	<ul style="list-style-type: none"> <li>• Dream Express (Thailand)</li> <li>• True Corporation Public (Thailand)</li> <li>• Kiragames (Thailand)</li> <li>• Kantana Group Public (Thailand)</li> </ul>
Franchising	Contractual relationship in which a TNC (franchisor) permits a host-country firm (franchisee) to run a specified business modelled on a system developed by the franchisor in exchange for a fee.	Retail	Charoen Pokphand (Thailand)
		Education	Kumon Thailand (Japan)
Management contracts	Agreement under which operational control of an asset in a host country is vested in a TNC contractor that manages the asset in return for a fee.	Tourism and hospitality	Compass Hospitality Group (Thailand)
Other	Includes concessions, lease agreements, build-operate-transfer arrangements, etc., in the context of public-private partnerships.	Infrastructure	Bangkok Expressway Co. Ltd. (Kumagaigumi, Japan)

Source: AJC.

## 2. CHARACTERISTICS AND SCOPE OF NEMS: THAILAND

### 2.1 Scale and scope

According to the Ministry of Commerce and the Bank of Thailand, in 2017 the country's total external trade (exports plus imports) in goods and in services reached some \$459 billion and \$121 billion, respectively.<sup>2</sup> With a favourable world economy, the export growth of both goods and services in 2017 registered a surplus of more than 5%.

In 2010 UNCTAD estimated global NEM production at over \$2 trillion of sales (UNCTAD, 2011).<sup>3</sup> However, it noted that the analysis of NEMs is complex, as "the web of directly owned, partially owned, contract-based and arm's-length forms of international operation of TNCs is tangled, and some of the distinctions between the different modes are blurred" (p. 130). Thus, the analysis is limited to a number of industries in which NEMs are especially important. Various trade data show that the growth of world trade has stagnated since 2008. In 2016, trade in goods declined by 0.2% from the previous year to \$15.9 trillion, only a \$0.8 trillion increase from 2010 at current prices.<sup>4</sup> In this context, NEM export activity in Thailand in 2016 was estimated at \$106.4 billion in the goods sector alone, which had total exports of \$236.6 billion. The amount of NEM activity jumps if services trade is considered. For example, tourism, one of the major services industries using NEMs in Thailand, had \$36.7 billion revenue in 2016 and a 9.2% share of GDP.<sup>5</sup> Total NEM exports of goods and services reached at least \$150 billion in 2016, and NEMs accounted for 48% of total exports. Tables 1 and 2 summarize NEM operations by mode and in selected main industries, respectively.

In each sector, NEM exports are substantial. In the primary sector, the production and export of chicken meat is a good example of the contract farming and contract growing<sup>6</sup> that is operated and managed by cooperatives and chicken meat exporters affiliated with major food companies such as Saha Farms, Charoen Pokphand (CP) and Cargill. Chicken meat is a major agricultural export of the country; Japan is the largest export destination, receiving products worth \$302 million, or 51% of all chicken meat exports from Thailand in 2016.<sup>7</sup> Rice and rubber are other major agricultural exports.

In the secondary sector, the automobile industry has been playing a major role in driving Thai exports and FDI. The industry constituted about 12% of total annual GDP in 2016. There are 18 car assemblers in the country, owned either 100% by foreign manufacturers or through joint ventures between Japanese and local companies. The industry includes some 2,500 automotive suppliers operating at different levels.<sup>8</sup> These suppliers are the backbone of the industry, which had \$6.53 billion in exports in 2016.

<sup>2</sup> Goods exports: \$236.6 billion; goods imports: \$222.7 billion; services exports: \$75.3 billion; services imports: \$45.5 billion.

<sup>3</sup> Contract manufacturing and services outsourcing accounted for \$1.1–1.3 trillion, franchising \$330–350 billion, licensing \$340–360 billion, and management contracts about \$100 billion (UNCTAD, 2011).

<sup>4</sup> IMF, Trade of Goods, Selected Indicators (source: International Financial Statistics).

<sup>5</sup> *Travel & Tourism Economic Impact 2017* (WTTC, 2017).

<sup>6</sup> Contract growing is a contract between a production company and a cooperative, typically called a "poultry production and purchase agreement".

<sup>7</sup> UN Comtrade.

<sup>8</sup> See AJC, *Global Value Chains in ASEAN, Paper 10: Thailand*, March 2019.

The apparel industry attracts foreign companies in all stages along the value chain from upstream to downstream. In 2016, exports of textiles and clothing amounted to \$7.5 billion and exports of footwear to \$0.8 billion. The industry includes roughly 4,700 textile manufacturers.

As for the tertiary sector, various services are growing rapidly. The share in GDP of this sector alone reached 55% in 2015, with an average growth rate of 6.6% from 2005 to 2015.

Convenience stores are growing rapidly in urban areas, replacing local shops and stores. Among them is a well-developed example of store franchising: 7-Eleven, the largest international chain of convenience stores. It has 11,000 stores in Thailand: about 50% are franchised stores whose owners pay franchise fees and marketing fees to C.P. Seven Eleven, which in turn makes payments to the parent company in Japan.

According to a World Travel & Tourism Council report, the direct contribution of travel and tourism to GDP in 2017 was \$42 billion, or 9.4% of the total. The industry also generated 6.2% of total employment in that year. Within the industry, hotels – and international hotel chains in particular – contribute to NEM operations through management contracts.

Table 2. NEM operations in major sectors, 2016

Sector	Secondary			Tertiary	
	Primary	Secondary	Tertiary	Automobile parts	Jewellery
<b>Industry (representative example)</b>	<b>Rubber</b>	<b>Chicken meat</b>	<b>Textiles and Clothing</b>	<b>Automobile parts</b>	<b>Jewellery</b>
Product/services	Technically specified rubber Ribbed smoked sheet	Cooked chicken Uncooked chicken	Textiles Footwear Headgear	Engine parts Suspension Brake Wheel tyre Electronic parts Engineering materials	Selecting Gem cutting Sawing Brioting Jewellery manufacturing Design
No. of companies (NEM-related estimation)	About 40 export companies [Rubber producers for Thai companies are NEMs]	Over 40 export companies [Chicken meat producers for Thai companies are NEMs]	Over 4,700 [Thai Garment Manufacturers Association: TGMA]	About 2,500 Tier 1: 700 Tier 2: 1,800 [Thai Auto-Parts Manufacturers Association: TAPMA]	Over 145
Major companies	Sri Trang Agro Von Bun Dit Southland	Saha Farms CP Cargill GFPT Betagro	Hi-Tech Apparel Thanulux Nanyang Tuntex	Aepico Hiteck Somboon Auto Alliance Thailand Thai Summit Bosch Denso	Pranda Jewellery Goldfine Manufacturers
Estimated export volume (Estimated exports by NEMs)	\$4.46 billion (\$1.56 billion)	\$3.05 billion (2017) 790,000 tonnes (\$2.44 billion)	\$8.3 billion (\$5.8 billion)	\$6.53 billion (\$2.61 billion)	\$3.9 billion (\$1.5 billion)
<b>NEM modality</b>	<b>Contract farming</b>	<b>Contract farming</b>	<b>Subcontracting</b>	<b>Franchising/ licensing</b>	<b>Contract manufacturing</b>
Estimated NEM employment	About 6 million	35,000 households	About 1 million	Over 140,000	About 100,000
Export growth	4% increase in export share, 2012-2016	12% increase in export amount, 2016-2017	8% decrease in export amount, 2012-2016	18% increase of export amount in 2016 from 2012	3% increase in export value, 2016-2017
Market and trade scale	China (44%) Malaysia (14%) Japan (6.9%) United States (6.3%)	Japan (51%) EU (28%)	ASEAN (23%) United States (16%) EU (13%) Japan (11%)	Malaysia (13%) Indonesia (11%) Japan (11%) United States (7.6%) India (5.1%)	United States (32%) Germany (15%) United Kingdom (7.9%) Hong Kong, China (6.3%) Japan (3.5%)
Product/service scope	World's biggest rubber exporter; but global market is shrinking	Exports to Japan and non-EU markets likely to continue to grow for the next few years	Exports to ASEAN and exports of functional textiles likely to continue to grow	Over 70% of export value is from OEMs. Responding to new technologies (e.g. eco car and EV) is a key to development.	More convenience stores to open

Source: AJC.

Note: EU = European Union. Selected industries only. 2016 data unless otherwise noted.

\* Thailand convenience store market outlook (2016).

## 2.2 NEM by modality

There are many foreign firms and TNCs doing business with local partners under NEMs in various industries. The type of their involvement and their contribution to the Thai economy vary by modality and industry. In this section, modalities such as contract farming and subcontracting are examined by looking at a particular industry that relies on the modality.

### (1) Contract farming/contract growing (cooperatives) by integrators: Chicken meat

In the production of meat, Thailand has the capability to compete on a global level. Production of broiler meat expanded 6.3% between 2010 and 2016, from 1.33 million tons to 1.92 million tons. Between 2010 and 2016, Thailand exported 30-35% of domestically produced broiler meat. In 2015, according to the Office of Agricultural Economics, Thailand's production of broiler meat and broiler meat products accounted for 2% (1.78 million tons) of the world's total production (89.55 million tons). That year, Thailand was the fourth largest exporter of broiler meat and broiler meat products, recording 6.2% (0.67 million tons) of global broiler meat exports (10.79 million tons).<sup>9</sup>

Japan was Thailand's main export partner for broiler meat in 2016, accepting 51% of total exports, up from 39% in 2012, when the EU was Thailand's biggest export partner (with 40% of total exports). After Japan lifted its import ban in 2013, the value of exports of broiler meat to Japan increased from \$0.4 million to \$302 million in 2016.<sup>10</sup> Apart from Japan, the EU and ASEAN markets are the other main export destinations, accounting for 28% and 8.1% of total broiler meat exports in 2016, respectively (figure 1).

In 2015, Japan imported 0.94 million tons of chicken (both frozen raw meat and frozen processed items), of which about 34% (approximately 0.32 million tons) came from Thailand. Of the total, about 10% of frozen raw meats and 24% of frozen processed items were imported from Thailand. Total exports of chicken from Thailand to the world were in excess of 0.67 million tons (0.21 million tons of frozen raw meat and 0.46 million tons of frozen processed meat) in 2015 (figure 2).

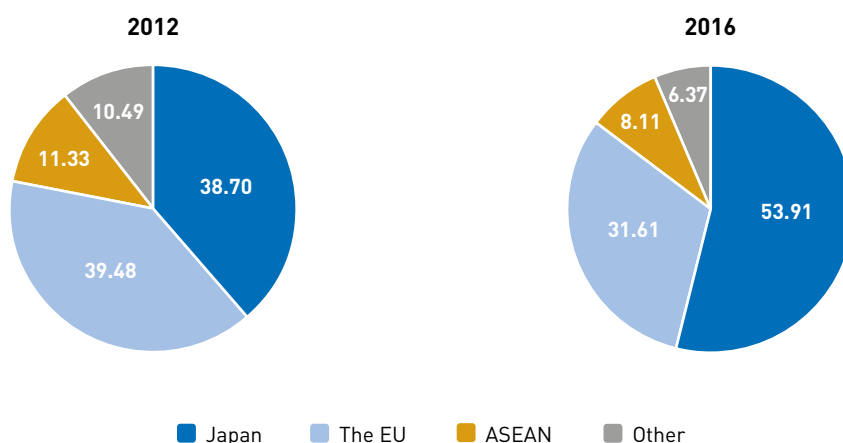
In the export of heat-processed chicken meat, the top five firms (Cargill, CP, GFPT, Betagro, BRF) produced 71% of total exports, and in the export of frozen raw chicken meat, the top five firms (Saha Farms, CP, Cargill, GFPT, Betagro in 2015) produced 67% of total exports (ALIC, 2015).<sup>11</sup> These firms, called integrators, started with feeding factories or poultry farms. By vertically integrating their management from upstream to downstream in the value chain, they achieved competitiveness by having lower costs for feed and chicks (which account for the majority of the production costs of chicken-related products). Later, these integrators intensified the production scale by absorbing small firms and by further strengthening their degree of integration. Today, these integrators are the main players in the chicken broiler industry in Thailand. Smaller firms merely sell the purchased chick to a contract farmer to grow for sale to a chicken disposal facility, whereas an integrator owns all or part of the stages: cropland chicken, chicken disposal facilities and feed factories.

<sup>9</sup> Behind Brazil (38.1%), the United States (27.6%) and the EU (11.6%).

<sup>10</sup> Since 2012, several economies have lifted bans on imports of fresh and processed broiler meat from Thailand. The bans had been in place since the outbreak of the H1N1 bird flu in 2004. Economies that lifted bans were the EU in July 2012, Japan in December 2013, Singapore in June 2013 and the Republic of Korea in November 2016.

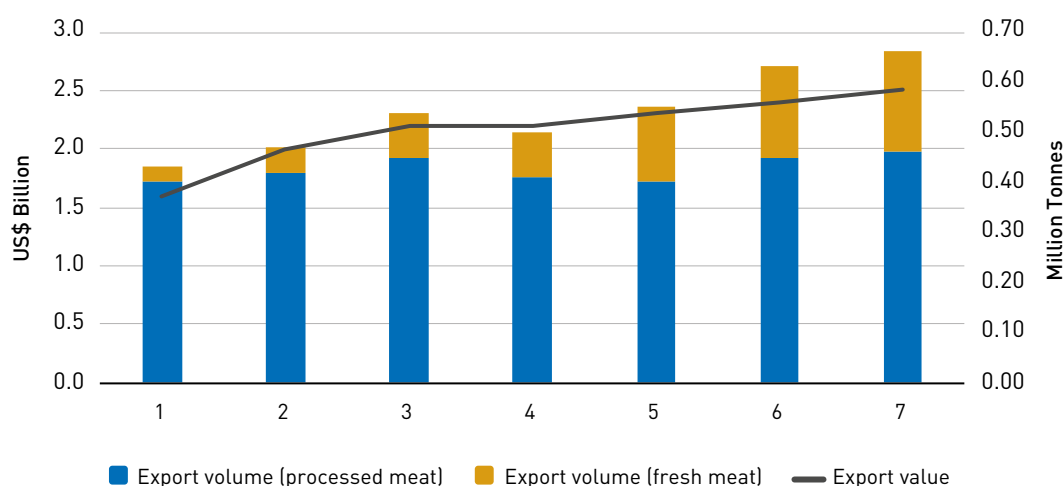
<sup>11</sup> Agriculture & Livestock Industries Corporation, Japan.

Figure 1. Key export partners of Thailand, 2012 and 2016 (Per cent)



Source: Office of Agricultural Economics, Thailand.

Figure 2. Broiler meat export value and volume for Thailand, 2010–2016



Source: Office of Agricultural Economics, Thailand.

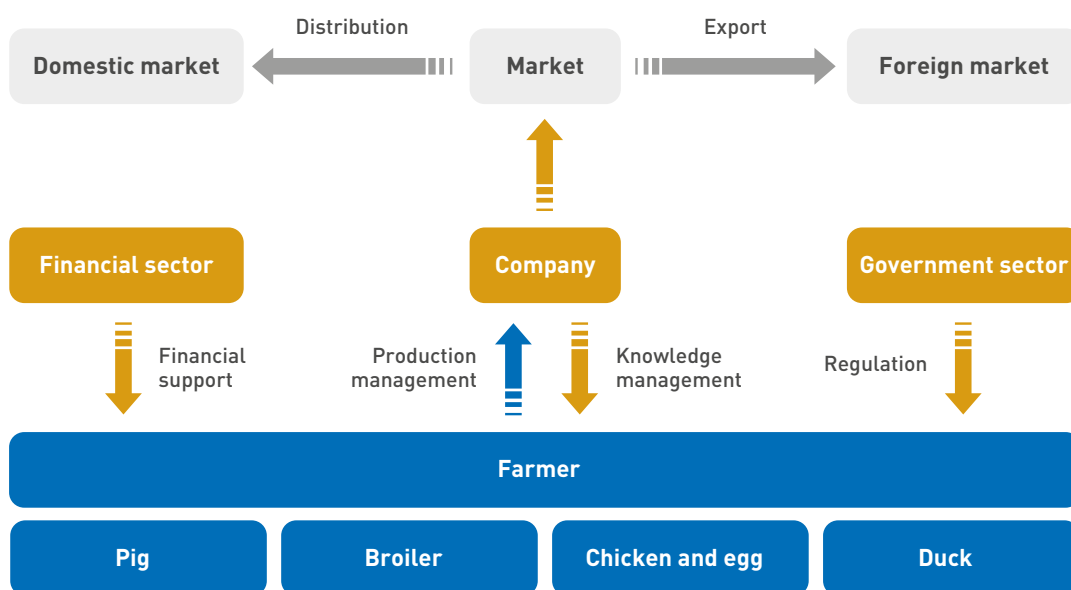
### Business model of integrators

In 2016 the number of contract farmers for chicken meat included approximately 35,000 households in central Thailand (ALIC, 2016). The total number of birds raised was about 260 million, with the average farmer raising about 10,000. Most farmers produce birds under a contract with a chicken firm, whether small or integrator. The length of contracts is one year; the purchase price of feed and chicks, and the price of the chicken to be shipped to these firms are predetermined (ALIC, 2016). Major integrators have their own farms (70% of their production) and contracting farms (about 30%).

Figure 3 illustrates the general business model for contract farming in the chicken meat industry in Thailand. The industry targets both domestic and foreign markets. Stakeholders are the financial sector, the government, farmers and companies that are integrators. Each stakeholder has its own role. The financial sector supports farmers with various financial services. The government plays various roles for farmers and companies, which are explained in more detail later. Companies play various roles in the market, with the financial sector, and with farmers.

Figure 4 describes the business model of chicken integrators. Integrators purchase the chicken from contract farmers. Then integrators process the chicken into either (1) frozen chicken meat, (2) frozen partially processed chicken, (3) frozen cooked, processed and packed chicken, or (4) frozen cooked and processed chicken that needs additional heating. These frozen products are exported, for example to Japan. In Japan, imported products are either (1) frozen products sold directly to households in supermarkets, (2) ready-to-eat chicken products sold in convenience stores and heated in the stores, or (3) cooked chicken sold in restaurants by cooking from frozen chicken meat or frozen partially processed chicken meat.

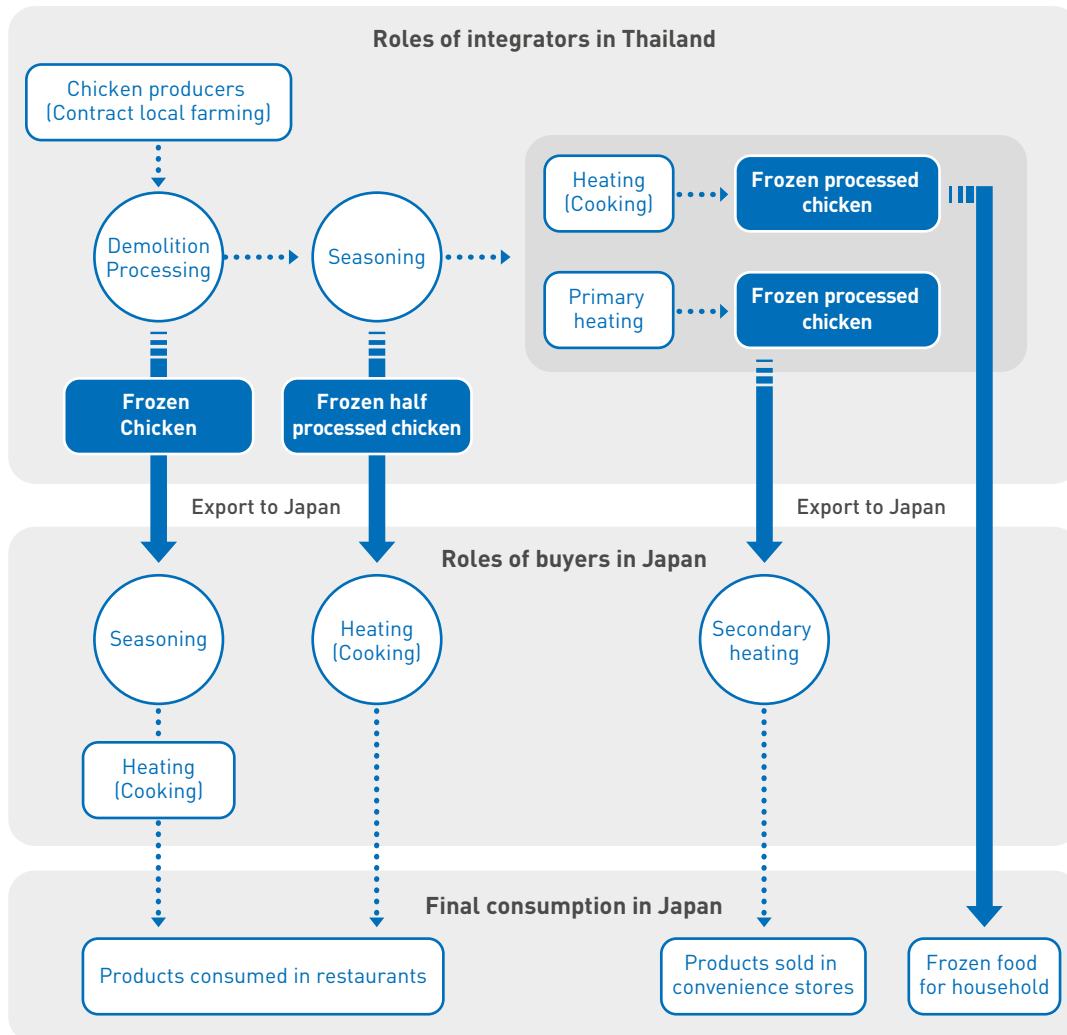
Figure 3. **General model of contract farming of chicken meat industry in Thailand**



Source: Issariyodom et al. (2008).



Figure 4. Business model of chicken integrators in Thailand



Source: ALIC (2016).

Most large companies or company groups have adopted the model of vertically integrated farms, whether fully or partially. Contract farming in chicken meat is an external contract between a processing company (buyer) and local broiler farms (sellers and/or suppliers). Contract farming became very popular in the 1970s as it facilitated Thai companies exporting their chicken products to foreign markets on the basis of their high standards of production. Contract farming helped companies ensure the quality and quantity of their input material, especially the level of food safety, to meet international standards as well as their customers' requirements. Contract farming played an important role in the development of the Thai chicken meat industry at the beginning of export-oriented production.

Of six major exporting firms (Cargill, CP, GFPT, Betagro, BRF, Saha Farms), four are examined here: box 2 describes Betagro Group, box 3 describes Charoen Pokphand Foods PCL (CPF), box 4 describes Saha Farms and box 5 describes GFPT PCL.

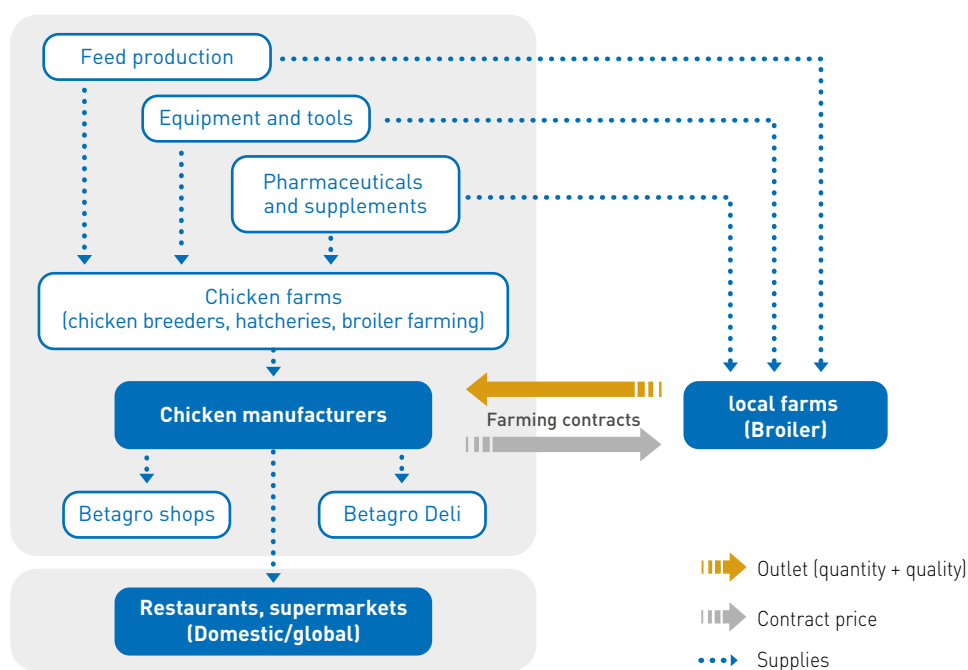
**Box 2. Betagro Group**

Betagro Group (Thailand), founded in 1967, had about 30,000 employees as of 2017 and owns two main plants: Better Foods Co. in Samutsakorn and Betagro Foods Product International Co., Ltd., in Lop Buri. The company engages in the production of animal feed, livestock, animal health products and food products. It also engages in food retailing and wholesaling, as well as restaurant, resort and plantation crop businesses. It serves customers in Thailand and internationally.

It owns 10% of its farms and the remaining 90% are contract farms, a higher share than at the average integrator. This is because the company considers contracting farmers important as long-term partners.

As the group considers strategic alliances with foreign firms critical, it has several alliances with Japanese firms, such as Mitsubishi Corporation, Ajinomoto Co., Inc., and Ito-Ham Foods. In order to avoid price competition in the Japanese market, most integrators in Thailand have tried to differentiate themselves from competing companies, such as Chinese ones, by offering products with higher value added (ALIC, 2010). Betagro Group established Betagro Foods Product International Co., Ltd., a joint venture between Mitsubishi Corporation (50% stake) and Ajinomoto Betagro Frozen Foods (Thailand) Co., Ltd., which is itself another joint venture with Ajinomoto Corporation (51% stake).

The group has introduced Betagro Quality Management 24/7, which controls production processes 24 hours a day, to ensure the quality of its products. This program is even applied to the most suitable choice of feeding material and breeding management for contract farmers and the company's own farms, as well as to guaranteeing the quality of food processing plants and facilities in Thailand. Since this program is an internationally guaranteed standard of chicken quality based on the regulations of the United Kingdom's Royal Society for the Prevention of Cruelty to Animals, the group expects to increase its exports to countries that have high quality standards.

**Box figure 2.1. Contract farming under Betagro Group**

Source: Betagro Group report.

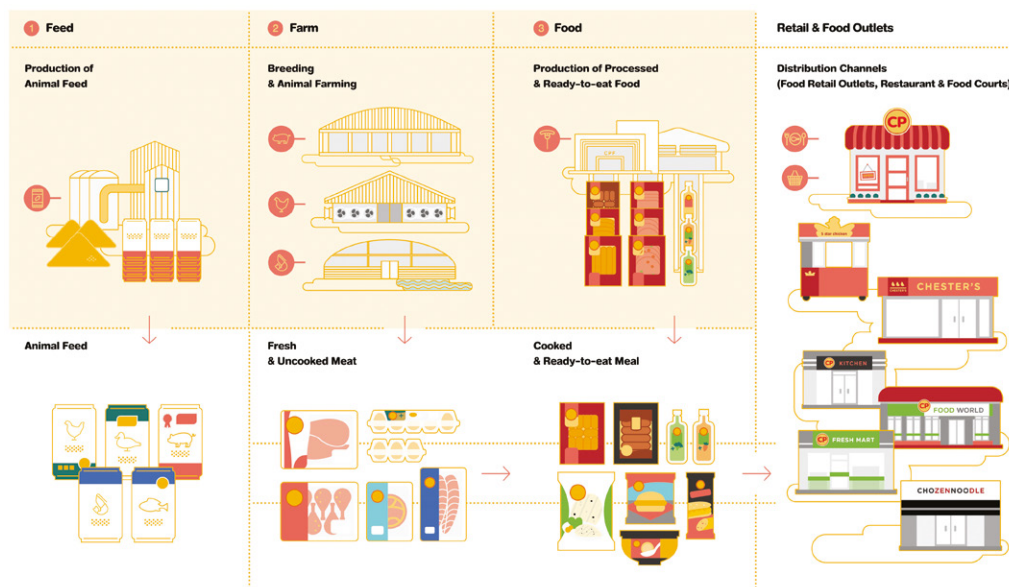
**Box 3. Charoen Pokphand Foods PCL (CPF)**

Charoen Pokphand (CP) Group is one of the largest integrators and the largest food-related manufacturer in Thailand. One of its biggest subsidiaries is Charoen Pokphand Foods (CPF), with a diversified value chain from food processing to food retailing (such as Seven-Eleven) in Thailand. The group owns four plants, in Saraburi, Minburi, Bangna and Nakhon Rtchasima that are operated by CPF.

In the Japanese market, for example, CPF cooperates with 12,000 stores of Seven-Eleven Japan to supply teriyaki chicken and shrimp chili sauce – imported as frozen partially cooked products from Thailand – after cooking onsite. The group also sells their imported products in stores that do not compete directly with its Japanese alliance partners (ALIC, 2010).

One of the notable innovations by Thai chicken integrators has been to introduce animal welfare initiatives to respond to demand from consumers or distributors in export destination countries. CPF started to implement its initiative in response to requests from consumers in the United Kingdom. CPF became the first Thai chicken supplier of Tesco (United Kingdom).

**Box figure 3.1. CPF business**



Source: CPF report.

As illustrated in box figure 3-1, CPF has three categories of business: (1) feed production: animal feed for swine, broilers, layers, ducks, shrimp and fish; (2) farm production: animal breed, commercial animal and preliminary processed meat (slaughtering, semi-prepared, fresh and uncooked products); and (3) food production: semi-cooked and cooked meat, and ready-to-eat food products under owned brand, other company's brands and customers' brands.

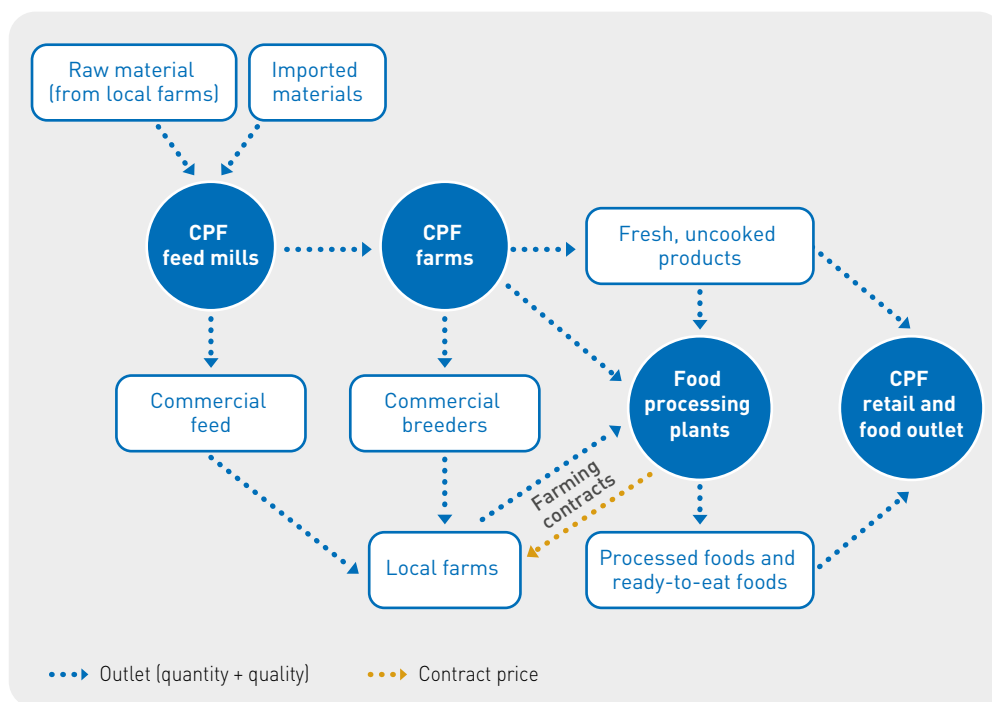
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### Box 3. Charoen Pokphand Foods PCL (CPF) (Concluded)

In addition, CPF retail and food outlets sell the company's brands such as Kitchen Joy, 5-Star, BK and BKP in its Thailand operations, and 5-Star, Taste Inc. and Michelina's in its international operations. The company also produces products under customers' brand names. CPF's distribution channels are operated directly by the company or through franchisees.

CPF introduced the concept of contract farming to the Thai agricultural sector in 1975. As of 2015, about 5,000 farmers had undertaken contract farming with CPF. Under the contracts, the company determines a standard and quality of a farm product to ensure food safety and farmers deliver their products into the supply chain, as illustrated in the box figure 3-2. The farmers do not need to find a market and worry about the price of their products, as the price is guaranteed in the contract before the farmers start producing. Thus, both the company and the farmers benefit from risk reduction, stable income and sustainable development.

Box figure 3.2. **Contract farming with CPF**



Source: Pornsi Laurujisawat (2012).

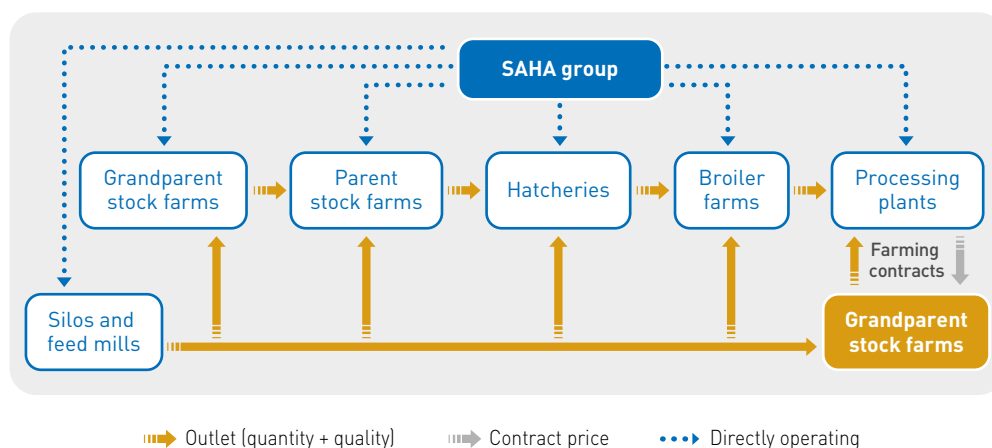
**Box 4. Saha Farms**

Saha Farms Co. Ltd processes, produces and exports frozen chicken products to customers in Thailand, Japan, the United Kingdom, Germany, China, the Netherlands, Belgium and other countries. It started with small-scale farms, producing 500 birds per week in 1969. In 1974, with cooperation from a Japanese importer, Saha Farms started exporting processed chicken meat products to Japan under the KISS brand. Today, Saha Farms Group is one of the largest chicken product exporters of Thailand, with 7,800 employees. The company’s production systems observe international standards related animal welfare, hazard analysis critical control point (HACCP) and good manufacturers’ practices. The company has R&D facilities and certificates of HACCP.

In addition, Saha Farms was the first company in Thailand’s history to utilize antibiotic-free chickens and its value chain is fully vertically integrated chicken businesses, as illustrated in box figure 4-1.

- Grandparent stock farms in Pechaboon Province: An imported breed, the U.S. Cobb, is raised in a modern, climate-controlled system to supply parent farms, both domestically and internationally, with more than 2 million parents per year.
- Parent stock farms in several provinces (Lopburi, Chonburi, Prachinburi and Bangkok) have a combined production capacity of 145 million hatching eggs per year.
- The hatcheries of Saha Farms have the capacity to produce 60 million chicks annually in 36 hatcheries and 36 incubators.
- Broiler farms enable chickens to be grown fast, and have the potential of sending more than 120,000 chickens per day to the processing plants.
- Processing plants use grown chicken, mainly from the company farms and others from contract farms. Saha’s processing plants in Pechaboon and Lopburi can handle at least 450,000 chickens per day.
- Silos and feed mills produce chicken feed using input materials (corn, soybeans) from local farmers. The company operates two silos in Ayutthaya and Lopburi provinces with the capability to buy up to 350,000 tons of corn per year from the farms. The silos have a combined drying capacity of 100 tons of corn and 60 tons of soybeans per hour and have a minimum storage capacity of 200,000 tons per year. Saha Farms has two feed mills in Lopburi Province, producing high-quality chicken feed for all the farms in the project with a minimum production capacity of 500,000 tons per year.

**Box figure 4.1. Contract farming with Saha Group**



Source: Saha Group report.

**Box 5. GFPT PCL**

GFPT PCL produces and distributes frozen and cooked chicken products in Thailand and internationally. The company was founded in 1981 and had 7,381 employees as of 2017. The company's plant is located in Samuthprakarn. The company is involved in eviscerating chicken ; producing and distributing processed food products; and operating a feed mill and parent chicken farm for egg production and distribution. It also operates a grandparent chicken farm for production and distribution of parent stock chicks, a parent chicken farm and hatchery for production and distribution of chicks, and a broiler farm.

The main business of the company is broiler meat, with annual sales of 123,000 tons, of which about 30% is exported. The company has subsidiary companies such as KFPC (fodder production), Grand Prize Breeding (ancestor chicken production), Krung Thai Farm (hatch facilities) and M.K.S. Farm (poultry farm), GF Foods (chicken processing plant) and McKey Foods, which supplies McDonald's (chicken processing plant).

The company has a joint venture with Nichirei Foods Inc. (Japan), called GFPT Nichirei (Thailand) Co. Ltd. (51% stake). GFPT Nichirei was established in 2008 and has 4,800 employees in Chon Buri. It manufactures fresh frozen chicken meat and sells cooked chicken products in Japan and internationally. In the Japanese market, this exported frozen chicken is sold in convenience stores with which Nichirei Foods in Japan has alliances.

**Implications from case studies**

From these four case studies, the following implications for Thai integrators can be found:

- Integrators engage in a wide range of activities in the value chain, from poultry raising to retailing.
- The market for their products is both international and domestic.
- Each integrator has NEM agreements and alliances with foreign customers through joint ventures in Thailand as well as independent integrators.
- Each integrator has undertaken efforts to obtain international recognition for its production. Betagro obtained certification Royal Society for the Prevention of Cruelty to Animals, CP Foods obtained animal welfare recognition, Saha Farms has R&D facilities and certificates for HACCP and GMR, and GFPT has a joint venture with Nichirei Foods Japan to introduce a high foreign standard.
- The integrators understand international market demand well; for example, Japanese and European consumer demand.

The main competitors of Thailand integrators are firms in Brazil, as costs for feed such as soyabean are very low there. However, according to the Thai Broiler Processing Exporters Association, Thai firms have differentiated products such as kara-age (special Japanese fried chicken). Thai firms have also upgraded the domestic chicken industry through efforts toward automation, dealing with issues such as environmental and food safety. The firms follow each recipient country's standard for processing chicken, a requirement that comes from the special NEM relationships. Their customers are also enthusiastic in helping Thai firms upgrade. Tesco even comes to Thailand to check the quality and adherence to standards and to issue their certificate for Thai firms.

The chickens that become broiler meat and broiler meat products are from contracting farmers who do not have direct equity relationships with integrators or with their customers (e.g. Tesco, Seven-Eleven Japan, Mitsubishi).

### Challenges for Thai firms

Exports of broiler meat and broiler meat products have been increasing due to the high demand for meat products from Thailand. In order to maintain or increase the level of production and export, the production rate of contract farmers needs to be stable or growing. In order to achieve this, integrators play a huge role by upgrading their production capacity and the quality of their products to meet the international standards of export destinations.

Contracting farms are critical for integrators. However, contract law in Thailand does not necessarily protect contracting farmers. The levels of safety and of quality control are other important considerations for foreign customers.

The fact that Thailand is one of the main world exporters of broiler meat and broiler meat products means that contract farmers face some problems in raising chickens. The production cost of a live broiler in 2016 was about \$0.43 to \$0.44, higher than in competitors outside Thailand. This relatively higher production cost is caused by higher feed cost, the dominant cost component of broiler production in Thailand.<sup>12</sup>

As the production of broilers continues to grow, the domestic supply of corn is becoming insufficient. The insufficient supplies of locally produced corn and of highly import-dependent soyabean need to be dealt with by the Department of Livestock Development (DLD), a government agency under the Ministry of Agriculture and Cooperatives. The DLD is responsible for overseeing and controlling the livestock industry, including animal health, treatment, breeding, quality control of animal feed, animal clinics, animal diseases, livestock and meat processing, with the aim of achieving international standards for both domestic consumption and exports.

The Thai government has been making efforts to upgrade the industry through its Thailand 4.0 initiative. Some integrators are using computerized systems, so that the working areas of employees and fertilizing areas of chickens can be strictly separated. These systems also monitor cleanliness to shut out any germs or diseases from the fertilizing areas. However, the process of cooking chicken and the industry's processes as a whole are still labour intensive and far from the concept of Thailand 4.0. There is still some room for improvement in government support to the industry.

Along with the DLD, the Thai Broiler Processing Exporters Association, established in 1991, acts as a regulating and service agency for the large number of Thai chicken meat producers and exporters. All 20 members are leading Thai producers and exporters.<sup>13</sup> About 30% have their own chicken farms and 70% have contract farms. Some member firms employ as many as 200,000 contract farmers. Usually one farm needs about 20,000 birds to break even or make profits. Member firms support their contract farmers. Usually contract farms have chickens and pigs as well as cornfields.<sup>14</sup> Most member firms are in Lopburi and Nakornpratom provinces. Usually the contract period for the firms is one year, renewable each year. This is because prices for chicken fluctuate. There is a farming law, under the Ministry of Agriculture and Cooperatives.

<sup>12</sup> In Thailand, the key feed ingredients for broilers are corn (62%) and soybean meal (30%), with the average wholesale price of corn (\$0.27/kg) being 73% cheaper than soybean (\$0.47/kg) in 2015. However, due to high tariffs on importing corn (20% with a special importing permit, 73% without a permit), farmers prefer not to import corn as a feed ingredient.

<sup>13</sup> Member firms include CPF (Thailand) PCL, Cargill Meats (Thailand) Co., Ltd., BETAGRO (Better Foods Co., Ltd.), BRF (Thailand) Co., Ltd., GFPT PCL., GFPT Nichirei (Thailand) Co., Ltd., TFG (Thai Foods Group) PCL, Panus Poultry Co., Ltd., Central Poultry Processing Co., Ltd., Tanoasree Thai Chicken Co., Ltd., Laemthong Food Products Co., Ltd., Laemthong Poultry Co., Ltd., Sun Food International Co., Ltd., F&F Food Co., Ltd., and Bangkok Ranch PCL.

<sup>14</sup> More than 60% of local corn is used for chicken feed.

To member firms, the association provides information and data, including new or revised international regulations for each country or region. Meetings are held to help members understand issues and explain the market situation. Since member firms' target market is global, firms need to be aware of new standards, new laws or new regulations, such as those related to the International Organization for Standards and food safety. In order to raise awareness, the DLD provides lectures on these issues. The department has a checklist for safety and farm standards, which each firm needs to meet in order to be approved. Good manufacturing practices and good agricultural practices follow international standards, under the DLD. In addition to representatives of local government, the association invites people from the EU or Japan or each exporting country's government to such meetings.

**Table 3. Summary of contract farming: Chicken meat industry**

Opportunities	Challenges
<ul style="list-style-type: none"> <li>• Job creation for farmers</li> <li>• Possibility of exploring new markets as well as existing markets (Japan and United Kingdom)</li> <li>• Possibility of adding higher value on existing products</li> <li>• Possibility of exploring new demand from new lifestyles (healthier eating habits)</li> <li>• Possibility of establishing healthier images of chicken</li> <li>• Heavy dependence by foreign TNCs on Thai integrators for chicken products</li> </ul>	<ul style="list-style-type: none"> <li>• Compliance issues by Thai firms for contracting farmers</li> <li>• High cost of feed</li> <li>• Need to maintain safety and quality levels required by foreign TNCs</li> <li>• Demand from local customers in Thailand and ASEAN regions is increasing (leading to lack of supply of chicken meat for foreign TNCs)</li> <li>• Government needs to consider supporting wider value chain (starting upstream)</li> <li>• Still room for improvement in Thailand 4.0 implementation</li> <li>• Government needs to consider easier imports of feed for animals</li> </ul>

Source: AJC, based on company interview.

## (2) Subcontracting (or outsourcing): Apparel industry

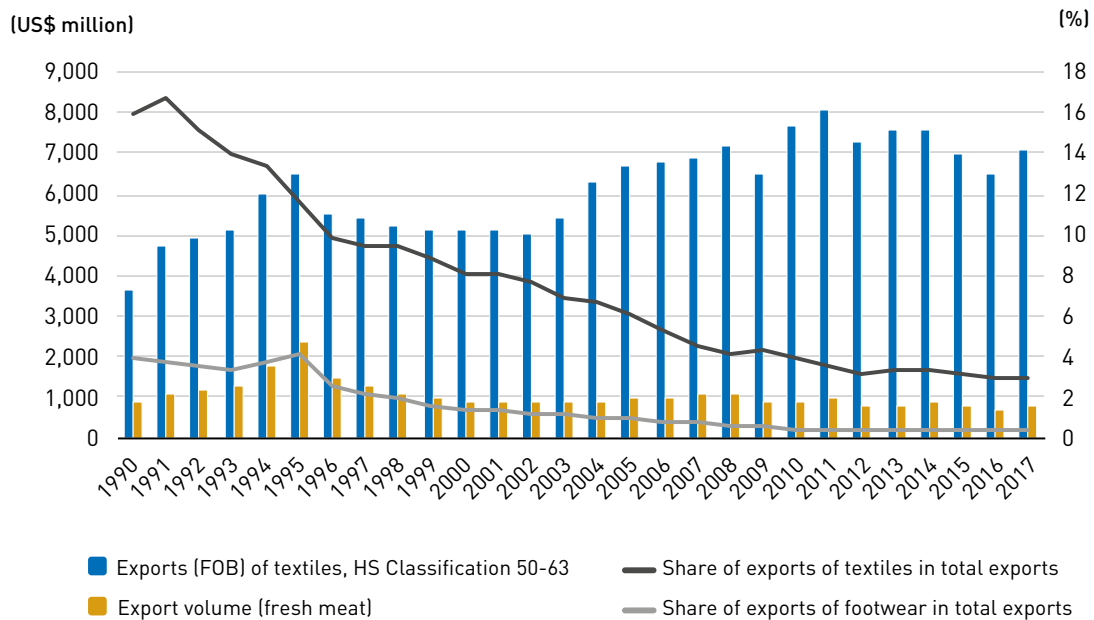
The Thai apparel, garment and footwear industries have been developed over decades. In 1990, exports of textiles amounted to \$3.7 billion and exports of footwear and headgear to \$0.9 billion, accounting for 16% and 4% of total exports from Thailand, respectively. Combined exports of textiles and clothing amounted to \$6.5 billion in 2016 (figure 5). Export amounts have been growing in textiles, reaching \$7 billion by 2017 but those of footwear have declined, to \$0.8 billion. Data show a decline in the export shares: 3% for textiles and 0.3% for footwear in total exports from Thailand (figure 5).

Thailand has the ability to supply the entire textile and garment industry chain, from upstream to downstream. This industry was attractive for FDI thanks to Thailand's cheap labour and land prices, as well as good-quality hand-made products. However, in recent years, the industry has faced several challenges, including rising labour costs and increasing competition, and has started to lose its competitiveness.

As noted, one of the strengths of the industry in Thailand is that Thai firms can cover all stages of value chains, from upstream to downstream. Thailand has roughly 4,700 manufacturers of textiles, ranging from fibres to yarns, to dyeing to cloth production (Thailand Textile Institute). The textile and garment industries in Thailand are mainly categorized into four sectors: fibre, yarn, fabric and clothing. In the upstream segments, synthetic fibre is procured from the petrochemical industry and natural fibre is sourced from organic material. The fibre undergoes spinning for the formation of yarn. This part of the value chain primarily caters to wholesalers and clothing manufacturers, including suppliers for TNCs in Thailand and importers.



Figure 5. Exports of textiles, footwear and headgear and their shares in total exports



Source: Euromonitor International from United Nations, International Merchandise Trade Statistics Thailand.

The yarn formed in the upstream segment enters the mid-stream segment, where it undergoes the process of weaving or knitting, which are also done by suppliers for TNCs in Thailand. Either of the two processes leads to the formation of cloth, which is then transferred to the finishing industry for dyeing and/or printing. The middle stream largely serves retailers and clothing manufacturers, along with importers. The list of large apparel TNCs (table 4) suggests that this process is done in Thailand. The cloth then enters the downstream segment, where it reaches consumers through the garment industry.

Table 4. Largest apparel TNCs with supplier factories in Thailand

Company	Country	Brands	Supplier Factories (including Thailand)	Sales (US\$ billion)
1 Inditex, Industria de Diseño Textil SA	Spain	Zara Pull & Bear Massimo Dutti Bershka Stradivarius Oysho	47 countries	30.97
2 H&M (Hennes & Mauritz AB)	Sweden	H&M COS Weekday Cheap Monday Monki ARKET Afound	38 countries	24.31
3 Fast Retailing	Japan	Uniqlo GU	6 countries	17.34
4 GAP Inc.	United States	GAP Banana Republic Old Navy	30 countries	15.86
5 L Brands	United States	Victoria's Secret Pink Bath & Body Works Henri Bendel La Senza	5 countries	12.63
6 PVH Corp	United States	Tommy Hilfiger Calvin Klein Izod Arrow	50 countries	8.91
7 Ralph Lauren	United States	RRL Ralph Lauren Vintage	Over 700 manufacturers worldwide	6.65
8 NEXT	United Kingdom	NEXT	41 countries	5.64
9 American Eagle Outfitters	United States	American Eagle Outfitters Aerie	29 countries	3.80
10 Abercrombie & Fitch	United States	Abercrombie & Fitch, Hollister Co.	4 countries	3.49

Source: AJC, compiled from companies' annual reports.

### Business model of TNCs and positioning of Thai firms in the industry value chain

The expansion of free trade following the elimination of the Multi-Fibre Arrangement in 2005 resulted in a greater number of apparel producers across a greater number of countries (Abernathy et al., 2006). Luxury-brand companies seek to retain control over the manufacturing and distribution of their products to sustain a consistent brand image across international markets. Most companies, however, have moved to both offshore sourcing and outsourcing options (Fernie and Grant, 2015). Table 5 provides a typology of the supply chain relationships of fashion retailers with Thailand's apparel exporters.

**Table 5. Typology of fashion retailer supply chain relationships**

Vertically integrated or strong control of supply network	<ul style="list-style-type: none"> <li>• Luxury fashion houses or those with a unique business model (e.g. Zara, Benetton, American Apparel)</li> <li>• A greater international store network, more offshore sourcing</li> </ul>
Mid-market retailers with collaborative relationships	<ul style="list-style-type: none"> <li>• Quick response concepts for offshoring business</li> <li>• Development of international sourcing and distribution hubs</li> <li>• Use of full-package intermediaries (e.g. Li &amp; Fung)</li> </ul>
Fast-fashion retailers	<ul style="list-style-type: none"> <li>• Strong emphasis on sourcing from the cheapest suppliers</li> <li>• Relationships can be short and variable</li> <li>• Markets classified into short and long lead times</li> <li>• For Western European retailers, a gradual shift from China to Viet Nam, Turkey to Egypt, and Romania to Moldova in terms of sourcing patterns</li> </ul>

Source: Based on Fernie and Perry (2011).

Table 6 shows different levels of TNC sourcing and their implications for Thai suppliers. There is a horizontal link between sourcing and other functional areas. Activities such as design, product development and sourcing are assigned to the most competent units across the world. Different levels of apparel TNCs offer different potential positioning for Thai firms. For example, at level 3, Thai suppliers may be able to become supplying partners for those TNCs that purchase internationally as part of a courting strategy. At level 4, there are opportunities for Thai suppliers to become OEM partners. Worldwide capabilities in design, product development and sourcing are necessary to operate at level 5, which offers the potential to be an original design manufacturing (ODM) partner in the product development function in these TNCs.

**Table 6. The five levels of sourcing and potential positioning for suppliers in Thailand**

Level	Characteristics of apparel TNCs	Potential positioning for Thailand
1	Domestic purchasing only	Limited local suppliers
2	International purchasing only as needed – reactive sourcing	International full-scale local suppliers
3	International purchasing as part of a sourcing strategy – proactive sourcing	Supplying partner
4	Global sourcing strategies integrated across worldwide locations	OEM partner
5	Global sourcing strategies integrated across worldwide locations and functional groups	ODM partner

Source: Based on Fernie et al. (2009) and Trent and Monczka (2005).

Note: At Level 1, smaller retailers will source domestically. Level 2 is the use of international sourcing only when needed, i.e. the products cannot be sourced in the domestic market (reactive sourcing). Level 3 involves proactive international purchasing as part of an overall sourcing strategy. Level 4 is the first of two global sourcing strategies integrated across worldwide locations. Operating at this level requires executive leadership that endorses the global perspective. It requires highly skilled personnel, advanced information systems and an organizational structure that enables coordination of global operations. At Level 5, global sourcing strategies are integrated not only across worldwide locations but also across functional groups such as product development or marketing.

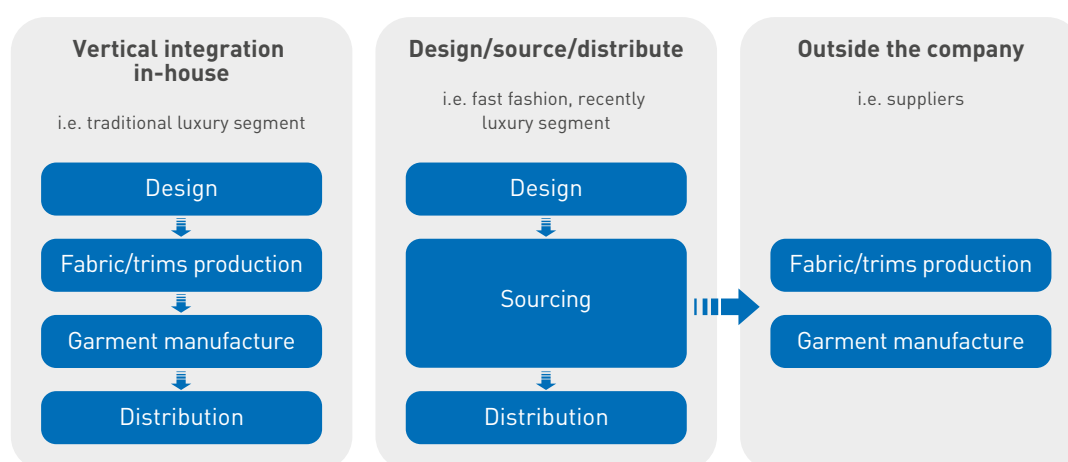
Table 7 presents the characteristics of the different combinations of outsourcing and offshoring. Both sourcing overseas and outsourcing non-core functions have been used by large retailers to achieve profitability by driving down the costs of product supply.

**Table 7. Different combinations of offshoring and outsourcing**

	Internalized activities performed in-house	Externalized outsourcing
Domestic activities performed at home	Domestic activity Company performs the activities at home	Domestic outsourcing External suppliers in home country
<b>Offshoring</b>	Offshoring/FDI Own subsidiary performs the activities in foreign country	<b>Offshore outsourcing/NEM</b> External suppliers in foreign countries

Source: Based on Fernie et al. (2009) and Pyndt and Pedersen (2005).

Mass outsourcing was facilitated by a combination of geopolitical reasons (e.g. the end of trade quotas), market needs (e.g. increased competition) and technological advancements (e.g. information and communication technology and transport improvements) (Azuma and Fernie, 2004; Djelic and Ainamo, 1999). Most domestic production in the industrial core areas centres on luxury and upscale textile products with a strong association to country-of-origin features: cashmere in Scotland, luggage and handbags in France, shoes in Italy. Luxury segments tend to internalize the production function in order to retain control over quality and to protect the artisan skills that underpin the production of bespoke luxury goods, which is paramount for protecting brand value. Thus, it is not easy for suppliers in Thailand to get involved with this type of vertical integration business model of TNCs. It is necessary to seek a different type of segment to be potential OEM or ODM partners. However, there is a change of supply chain patterns in the fashion industry. As figure 6 shows, not all luxury companies have vertically integrated structures.<sup>15</sup> The vertical integration model is becoming rare even within the sectors that have been strong advocates of controlling the supply chain.

**Figure 6. Supply chain models in the fashion industry: vertical integration and design/source/distribute models**

Source: Fernie and Perry (2011).

<sup>15</sup> In 2011, up to 20% of Prada's collections were made in China, Turkey and Romania (Sanderson, 2013), and Burberry had a similar tendency to use full-package overseas suppliers.

### Compliance of major TNCs

Local suppliers can have relationships with fast-fashion retailers (table 4) through NEMs of international production. Recently, some apparel TNCs have been disclosing their suppliers' lists every year (table 8) because of requirements for transparent governance. For example, Inditex (Industria de Diseño Textil SA) has the largest sales in the apparel market. In 2018, it had 1,079 suppliers with a total of 3,087 factories in Asia and the rest of the world (table 8).

**Table 8. Number of suppliers of Inditex, Industria de Diseño Textil SA, 2018**

Region	Number of stores in each region by brand									Number of suppliers	Number of factories
	Total Stores	Zara	Pull & Bear	Massimo Dutti	Bershka	Stradivarius	Oysho	Zara Home	Uterqüe		
Worldwide	7,475	2,251	979	780	1,098	1,017	670	590	90	1,805	6,959
Europe	5,508	1,352	691	534	763	746	456	406	60	661	3,739
Asia and rest of world	1,662	571	193	185	225	199	150	123	16	1,079	3,087

Source: Inditex annual report.

### Cases of suppliers (OEM and OEM) in Thailand

For this study, three suppliers were interviewed in Thailand: S.P. Brother Co. Ltd. (supplier of Levi Strauss & Co.); Theparerg Co., Ltd. (supplier of Levi Strauss & Co.); and Thong Thai Textile Co., Ltd. (supplier of Levi Strauss & Co. and Adidas) (table 9).

**Table 9. Local suppliers in Thailand who have linkages with TNCs, selected cases**

Name of the company	S.P. Brother Co., Ltd.	Theparerg Co., Ltd.	Thong Thai Textile Co., Ltd.
Year established year	1985	1985	1959
Number of employees	985	570	1,900
Export destinations	EU, Japan	EU, Japan	United States, EU
Experience with Japanese customers	3 years	7 years	No experience
Product development time	..	30-45 days	60-90 days
Production time	3-4 months	30-45 days	..
OEM	OEM	OEM	OEM
ODM	with 2 people	ODM 2 persons	No design yet, only OEM
Small lot order	..	..	Small lot orders accepted
OEM:ODM	80:20	..	..
Female:male	90:10	80:20	70:30
Factories outside Thailand (# of employees)	Cambodia (..)	Myanmar (550)	Lao PDR (250) Myanmar (400)
Suppliers from the official suppliers' list	Levi Strauss & Co.	Levi Strauss & Co.	Levi Strauss & Co. Adidas

.../

Table 9. Local suppliers in Thailand who have linkages with TNCs, selected cases (Concluded)

Name of the company	S.P. Brother Co., Ltd.	Theparerg Co., Ltd.	Thong Thai Textile Co., Ltd.
Suppliers from interview data (OEM) in EU	Ben Sherman Ted Baker London Boss Hugo Boss Eden Park Henleys DKNY Pringle of Schotland Massimo Dutti Vroom & Dreesmann Burberry Manor Maddison John Lewis Burton Mariner Timberland Manor JIL El Corte Ingles	Factory in Thailand: Monoprix (France, OEM) Roden (UK, OEM) Vigino (Netherland OEM)  Factory in Myanmar: El Conte Inglés (Spain) Dustin Emilio Pucci	Decathlon (France)
Suppliers from interview data (OEM) in global market	..	..	Adidas
ODM in EU	Golf Pointe (Switzerland, golf related) Harry Wilson (Belgium) Glenbrae (United Kingdom)	..	..
Suppliers from interview data (OEM) in United States and Canada	Diadora Toad & Co. Patagonia Robert Barakett Cooper Jones Supply	..	Levi's (United States) Reebok (United States)
OEM in Japan	Montbell K The Shop TK Crocodile F.O.KIDS Gunze HusHusH	Thailand: Double_B Miki house (OEM) F.O.KIDS (OEM and ODM)  Myanmar: WEGO Earth music and ecology	Kappa Kissmark (basic polo)
OEM in Asia	Jim Thompson Levi's Jockey Pierre Cardin Lee Hush Puppies Guy Laroch	Levi's (Thailand) CC Double O (Thailand) Portland (Thailand) AIIZ (Thailand)	Canterbury (New Zealand)
Workers' minimum salary per month	Thailand: \$300 Cambodia \$170	..	..
Quality control	Fabric inspection: 100% inspection, four-point system Garment inspection : AQL 2.5 Safety: Metal/Needle Detector Accreditation: ISO9001 version 2010	ISO 9001: 2008, Compliance certification from Sedex (by Sedex) and TOE (Levi's)	ISO9001:2008 ISO 14001:2004 OHSAS 18001:2007

Source: AJC, based on company interviews.

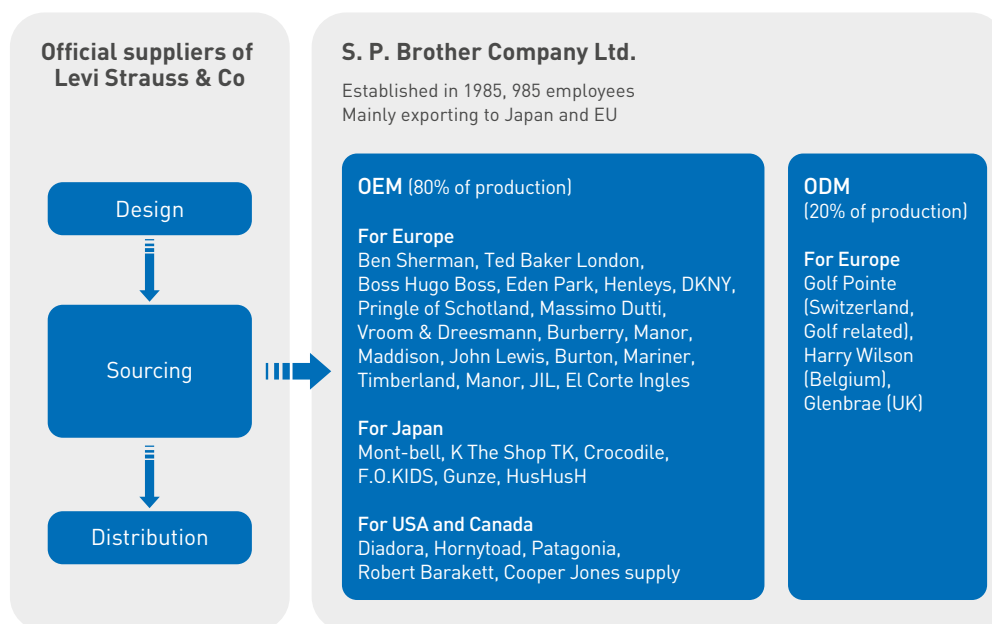
In the next section, each supplier’s development path and business model are introduced: box 6 introduces S.P. Brother Co., Ltd., box 7 introduces Theparerg Co., Ltd. and box 8 introduces Thong Thai Textile Co., Ltd.

**Box 6. S.P. Brother Co., Ltd.**

S. P. Brother Co., Ltd., was established in 1985 with 985 employees. The company produces pants, underwear, T-shirts and polo shirts using 400 machines. Although products of the company are mainly exported to Japan and the EU, some products have been sold as its own brand (Khaki Bros.) in Thailand since 2014. Eighty per cent of its production is OEM for European, Japanese, United States and Canadian markets. The company has ODM capability: 20% of production is ODM, mainly for the European market. Two designers are available to perform ODM for foreign customers. It takes about three to four months to produce and deliver products to customers. Some Japanese customers who lack Cambodian contacts have entered into strategic linkages with the company in order to have connections with Cambodian factories through Thai suppliers.

The company applies several levels of fabric inspection (100% inspection, a four-point system, garment inspection, and AQL 2.5). For safety standards, the firm has a metal/needle detector system. The firm also has ISO9001 version 2010 accreditation. Although this is not necessarily specific to this company, as there is no tariff between Japan and Thailand, nor between Japan and Cambodia, Thai suppliers have the advantage of benefiting from Japan’s Thailand plus one strategy (through Cambodian connections), which is also attractive for TNCs.

**Box figure 6.1. Positioning of S. P. Brother Co., Ltd., in the value chains of TNCs**

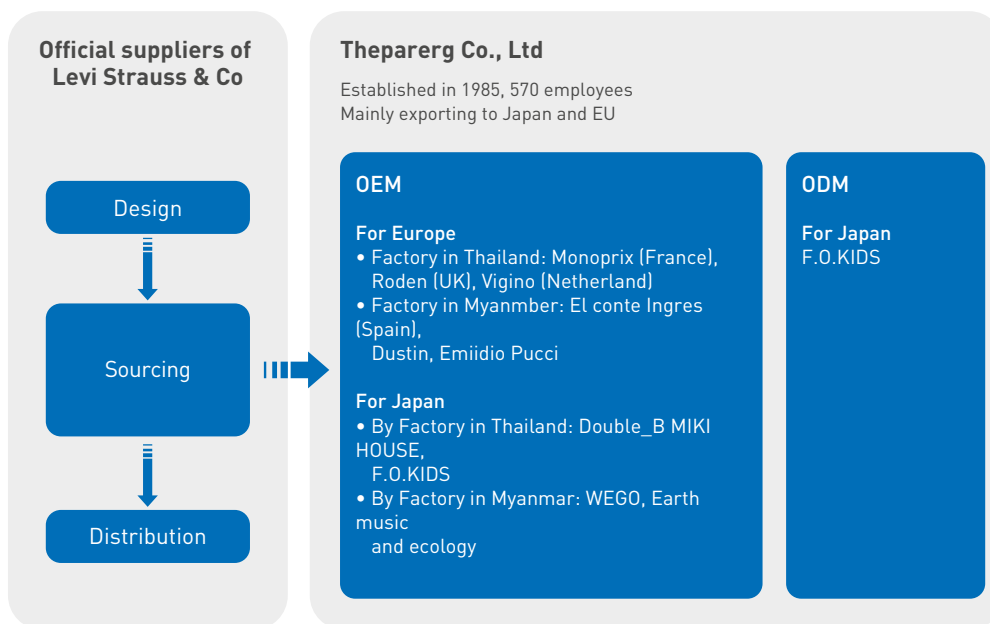


Source: AJC, based on company interview.

**Box 7. Theparerg Co., Ltd.**

Theparerg Co., Ltd was established in 1985 and had 570 employees as of 2017. Its products range widely, from blouses, dresses and skirts to infant wear, children's wear (woven), denim wear, jeans, pants, shorts, trousers, boxers, woven shorts and swimming trunks. The company does OEM work for the European and Japanese markets and ODM work for the Japanese market. New product development takes 30 to 45 days, as does mass production. Two people are available to perform ODM for foreign customers. Depending on customers' requirements for production cost and quality, the company uses factories in Thailand and in Myanmar. It earned ISO 9001 accreditation in 2008 and compliance certification from Sedex and TOE (Levi's).

**Box figure 7.1. Positioning of Theparerg Co., Ltd., in the value chains of TNCs**



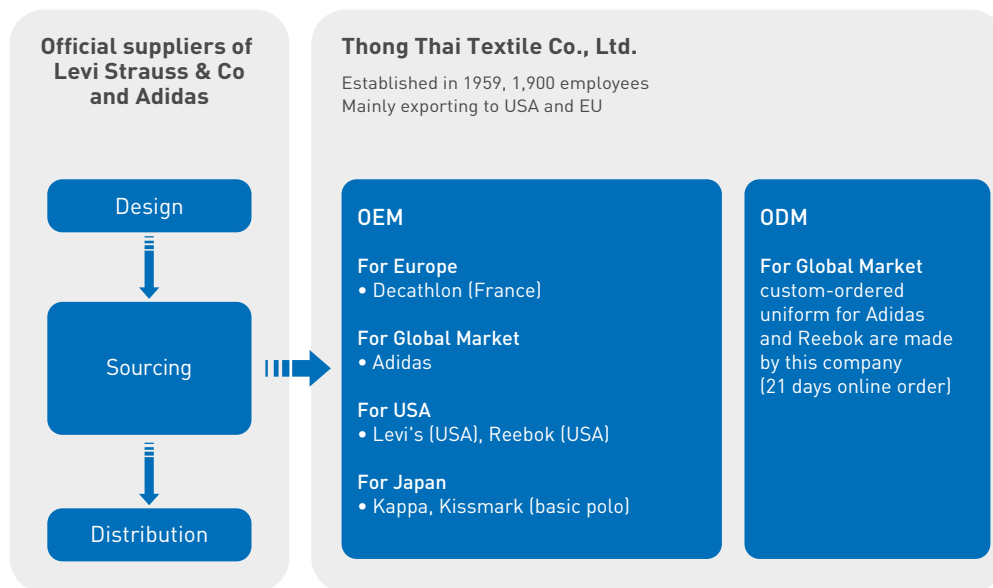
Source: AJC, based on company interview.



**Box 8. Thong Thai Textile Co., Ltd.**

Thong Thai Textile Co., Ltd was established in 1959. It has 1,900 employees and an average of 300 machines in the factory. Its main products are sportswear and jackets. Its main exporting partners are the United States, the EU and Asian countries. The company responds to customers' needs such as small lot orders. New product development takes 60 to 90 days. The company is competitive in printing technology, which is attractive for foreign customers. Both Adidas and Reebok have ordered custom uniforms from the company (it takes 21 days to deliver worldwide to individual customers through online orders). In order to perform ODM for foreign customers, the company needs to have designers but they are not yet available. It has a factory in Myanmar for low-cost production. For both the Thai and United States markets, the company has its own brand, focusing on online orders for women's sports and fitness. The company has international certificates in ISO9001:2008, ISO 14001:2004, and OHSAS 18001:2007.

**Box figure 8.1. Positioning of Thong Thai TextileCo., Ltd., in the value chains of TNCs**



Source: AJC, based on company interview.

### Implications from the case studies

The case studies have the following implications for Thai suppliers:

- Thai suppliers in the industries are already conducting OEM for foreign TNCs. Their roles have been upgraded from low-cost production to OEM or even ODM. As seen in table 5, different levels of sourcing by TNCs directly affect Thai suppliers. TNCs consider international purchasing as a part of their sourcing strategy through NEM international production in Thailand. In some cases, Thai suppliers are actively acting as OEM partners or ODM partners with TNCs. Thai suppliers can normally respond to all TNC requests, as they cover the entire value chain of the industries.
- As Thai suppliers with NEM relationships tend to have FDI in neighbouring countries as well, they become Thai TNCs. This means that suppliers have relocated their manufacturing plants to other neighbouring ASEAN countries such as Cambodia, Viet Nam and Myanmar to lower their operating costs. Having both upgraded functions in Thailand and cost-saving functions in neighbouring ASEAN countries creates advantages for Thai suppliers.
- Thai suppliers have initiatives to explore new markets and secure quality control. They already perform ODM for foreign TNCs. However, the number of in-house designers is not enough.
- Thai suppliers have tried to find areas or functions that can differentiate Thailand from neighbouring host countries. In order to take on roles other than cheap labour, Thai suppliers have to move up the value chain. In addition to cheaper labour costs, neighbouring countries offer other advantages: there is no tariff for exporting from Cambodia, Myanmar and the Lao People's Democratic Republic to the EU, for example, and Viet Nam has a free trade agreement with the EU. What Thai suppliers see as ownership advantages include obtaining access to wider supply chains, from yarn to final products. In order to perform ODM, suppliers need to discuss the design of a product with yarn producers and colour options with dyeing operations. In the whole process, customers from overseas look for speedy responses. As it is crucial for foreign customers to have available small lot production, customization and short lead times, Thai suppliers can have advantages over their competitors. Thai suppliers have their own brands in the Thai market in addition to OEM or ODM for foreign TNCs.

### Challenges for Thai firms

By covering all stages in both the textile and the garment industries, TNCs can establish linkages with Thai suppliers not only for cheaper products but also for differentiated products through OEM or ODM. As for the cost-saving products, many suppliers in neighbouring ASEAN countries are more competitive than Thai suppliers in terms of production costs. Thai suppliers need to differentiate themselves from suppliers in neighbouring ASEAN countries so that they can compete in the global as well as the local markets. Local suppliers must improve capabilities such as (1) development of new products, with a strong emphasis on innovation; (2) R&D, so as to deliver products with wider appeal in the market; (3) technological excellence, by adopting modern spinning machinery; (4) development of cordial relations with partners for the procurement of high-quality materials for yarn production; and (5) provision of the largest variety of yarn products to its customers. By upgrading their capabilities in Thailand, suppliers perform OEM or even ODM for TNCs in the global market.

### Roles of government and relevant associations

In order to deal with this situation, the Thai government has been taking various steps to reposition the textile and garment industries, particularly in terms of focusing on providing premium-quality products at competitive prices, upgrading technology and conducting training programs for workers.

In order to enhance the competitiveness of the textile and garment industries in the local as well as global markets, the non-profit Thailand Textile Institute was established under the Ministry of Industry in 2005. The Institute studies and analyses industrial information in order to assist companies in the following areas: (1) planning, (2) human resource development, (3) technological development, (4) product research, (5) quality standards development, (6) brand awareness creation and (7) new markets discovery. The Institute acts as a connection centre for all industry players including manufacturers, investors, suppliers and buyers. It focuses on quality, time and efficiency with a view to decreasing costs and improving quality through various initiatives such as smoothly running supply chain management, focusing on innovation, deepening education of human resources, improving marketing techniques and emphasizing R&D. In 2014, the Institute announced the “Thailand Textile and Fashion Industries Development Strategy 2015–2030” for transforming the industries into “new creative + knowledge industries” by building on their existing advantages of (1) comparative advantage in fashion culture, (2) craftsmanship that is creative, (3) a popular tourism destination that attracts people from around the world, (4) geographical location advantage, (5) manufacturing knowledge in all sectors along the supply chain and (6) a close cultural connection to Asia as their future largest marketplace.<sup>16</sup>

The Thai Garment Manufacturers Association (TGMA) is an association for textile and garment (not including footwear) firms, including 2,000 members in the garment industry and 5,000 members in the textile industry. The TGMA is one of the eight associations under the National Federation of Thai Textile Industries and the biggest in terms of membership. There are many opportunities for the TGMA to negotiate with the National Federation, which directly negotiates or communicates with the appropriate sections of the government.

Thai suppliers of TNCs have been investing in neighbouring countries such as Cambodia and Myanmar. The TGMA supports their members’ FDI efforts. Three suppliers in the case study use factories in Thailand and subsidiaries in Cambodia or Myanmar.

Thai suppliers understand the strengths of each country; e.g. trousers can be produced well in Cambodia, jackets in Viet Nam, football shirts and sports jerseys in Thailand. Thai firms have differentiated printing technology that cuts the end of a jacket and cleans it without sewing by machine. Thai firms’ printing technology, supported partially by the TGMA, is one of their unique ownership advantages that cannot be easily copied by neighbouring countries.

The TGMA has helped to upgrade Thai suppliers’ roles in the value chains of TNCs, by going beyond looking for cheap labour to seeking ways to upgrade production and management processes for OEM or ODM.

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<sup>16</sup> Thailand Textile and Fashion Industries Development Strategy 2015–2030 (<http://www.thaitextile.org/index.php/blog/2016/03/INDUSTRYSTRATEGYTHI>).

Table 10. Summary of subcontracting: textile and garment industries

Opportunities	Challenges
<ul style="list-style-type: none"> <li>• Job creation</li> <li>• Further potential to perform OEM</li> <li>• Further potential to perform ODM</li> <li>• Possibility of having more Thai brands through learning from ODM</li> <li>• Ownership advantages of Thai firms that can differentiate them from competitors: quick response, small lots, short production time</li> <li>• World trend towards transparent governance of TNCs in the industry</li> </ul>	<ul style="list-style-type: none"> <li>• Service competition is for low-cost production</li> <li>• Cannot compete in price, have to compete in quality (higher value added is required)</li> <li>• Labour costs getting higher in Thailand</li> <li>• Development of design capability is required to have continuous NEM relationship</li> <li>• Consumers and demand are outside Thailand</li> <li>• Compliance issues of Thai suppliers (some of them are TNCs as well)</li> <li>• Government needs to support local firms in dealing with these challenges, e.g. support for design level or for substantial investment for R&amp;D</li> <li>• Still room for improvement in Thailand 4.0 implementation</li> </ul>

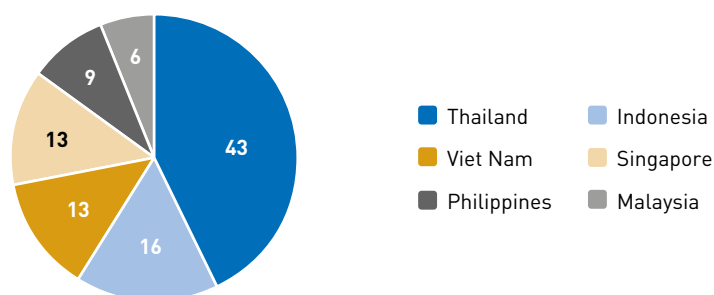
Source: AJC, based on company interview.

### (3) Subcontracting: Automotive parts industry

Thailand's automotive industry contributed about 12% of the total annual GDP in 2016. Thailand was ranked as the largest automobile producer in ASEAN, with production reaching 1.94 million units in 2016, of which 69% were passenger vehicles and the rest commercial vehicles (Thailand Autobook, 2017). The country is considered Asia's automobile hub, with automobile exports accounting for 61% of total production in Asia in 2016, and ranked 13th in the world in auto production in 2016.

As the automotive industry is strongly supported by the Thai government, several international automakers have invested in the country. Manufacturers of automotive parts use Thailand as an export hub because of its proximity to key countries such as Japan, Malaysia and Indonesia. As of 2016, automotive component exports from Thailand amounted to \$16.3 billion (43% of ASEAN+6 exports), which was followed by Indonesia (16%) and Viet Nam (13%) (figure 7).

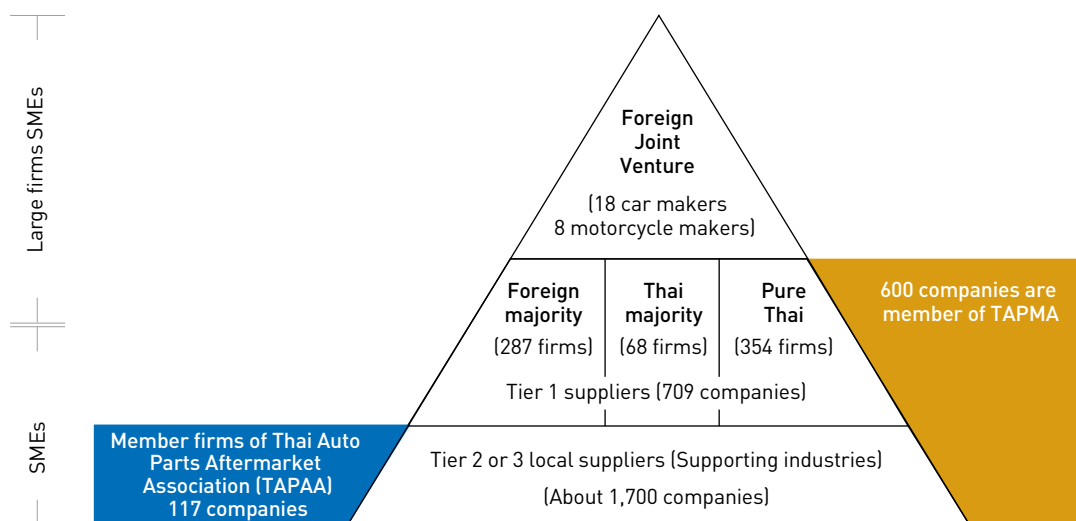
Figure 7. Exports of auto part components from ASEAN+6, 2016 (Per cent)



Source: UN Comtrade.

The automotive industry in Thailand comprises several automakers, supported by automotive component suppliers operating at different levels (figure 8). These suppliers are classified as tier 1, tier 2 or tier 3 suppliers, depending on their scale of operations and technical expertise. Tier 1 suppliers supply components such as engines, suspensions, brakes, tyres and electronic components, while tier 2 and tier 3 suppliers provide engineering materials and special services such as sheet rolls, bars and surface treatments. Tier 1 suppliers are firms that supply parts to car manufacturers directly. Figure 8 shows the 18 car assemblers and 8 motorcycle makers in Thailand, which are owned 100% by foreign manufacturers or joint ventures. As of 2014, Thailand’s automotive industry was supported by 709 tier 1 suppliers and about 1,700 tier 2 and 3 suppliers. Of the tier 1 suppliers, 386 supply parts to car assemblers, 201 supply parts to motorcycle manufacturers, and 122 firms supply to both (Poapongsakorn and Techakanont, 2008).

Figure 8. Industry structure of auto parts manufacturers in Thailand



Source: Updated from Yongkiat Kitaphanich, TAPMA (2002), cited in Poapongsakorn and Techakanont (2008), based on data provided by Nikkei Shimbun and SPEEDA.

There are 16 major categories of auto components (table 11).<sup>17</sup> This report looks at five components in which local Thai suppliers are active: (1) brake equipment, (2) automotive metal components, (3) seatbelts/airbags, (4) tyres, and (5) automotive and industrial rubber products. There are differences of value added between component categories.

<sup>17</sup> They are transportation equipment, automotive components, automotive engine components – injection/cooling equipment, exhaust system components, powertrain components, brake equipment, vehicle suspension, automotive electronic components, dashboard/lighting equipment, automotive metal components, seatbelts/airbags, car seats, automotive body/interior components, vehicle assembly, tyres, and automotive and industrial rubber products.

Table 11. Industrial categorization in Thailand (Per cent)

Unit	Sales growth in 2017	Net profit margin
Transportation equipment	2.1	6.0
Automotive components	0.7	6.3
Automotive engine components - injection/cooling equipment	2.8	7.5
Exhaust system components	-9.4	2.9
Powertrain components	6.4	6.0
<b>Brake equipment</b>	<b>-1.0</b>	<b>9.1</b>
Vehicle suspension	-1.6	7.5
Automotive electronic components	2.3	6.8
Dashboard/lighting equipment	12.2	9.0
<b>Automotive metal components</b>	<b>-0.7</b>	<b>7.1</b>
<b>Seatbelts/airbags</b>	<b>7.2</b>	<b>6.5</b>
Car seats	1.2	3.5
Automotive body/interior components	-0.1	3.7
Vehicle assembly	-0.9	7.3
Tyres	-1.6	7.8
<b>Automotive and industrial rubber products</b>	<b>4.8</b>	<b>100.8</b>

Source: Thai Auto Parts Industry Association.

For example, brake equipment is manufactured by tier 1 suppliers. The brake equipment industry procures materials from tier 2 suppliers (mainly small and medium enterprises (SMEs<sup>18</sup>)) and processes these materials into brake equipment. Brake equipment manufacturers not only sell their output in Thailand, but also export a substantial portion. In 2015, total exports were 42% of the value of total automobile production in the country.<sup>19</sup> The industry is concentrated, with three major players – Somboon Advance Technologies, Fortune Parts Industry and Aapico Hitech – holding about 90% market share in both drum and disc brakes. Most brake equipment manufacturers in Thailand produce service brakes, which covers drum and disc brakes. However, the production of anti-lock braking systems (ABS) and brake assist systems is increasing due to their growing use in the automobile industry.

Thailand's automotive body/interior components industry is one of the largest markets for automotive parts in ASEAN. Driving forces behind this industry's growth are large TNC subsidiaries in the region with integrated capabilities in design, engineering and manufacture, as well as local car manufacturers. According to the International Organization of Motor Vehicle Manufacturers, in 2016 Thailand's automotive industry ranked 12th globally in terms of production volume, whereas Indonesia ranked 17th and Malaysia 24th. The industry manufactures critical value added components including transmission systems, brake systems, airbag systems and steering systems.

<sup>18</sup> In Thailand, SMEs are defined as companies with no more than 200 employees and B 2 million in assets. SMEs make up 99.6% of all enterprises in the country, creating jobs for more than 10.5 million people, which accounts for three-fourths of the national workforce ([https://www.boj.go.th/tir/issue/201205\\_22\\_5/3.htm](https://www.boj.go.th/tir/issue/201205_22_5/3.htm)). Microenterprises or micro firms in this report are defined as having fewer than five employees, and small enterprise or small firms as having between five and 50 employees (Wasuntiwongse, 1999).

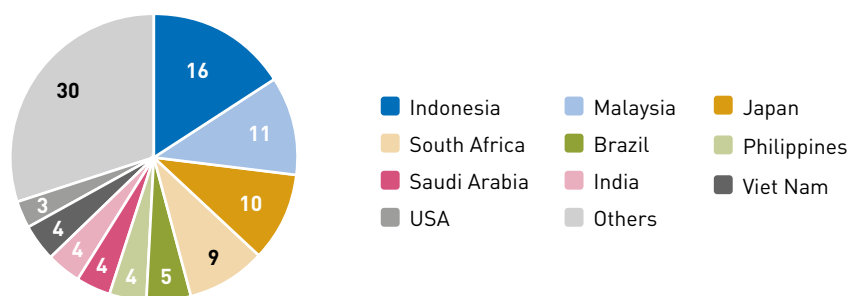
<sup>19</sup> In Thailand, the end market for these manufacturers is assemblers and vehicle manufacturers such as Toyota (Thailand) and Suzuki Motor (Thailand).

### Export partners

Thailand has been exporting automotive components to high-demand countries, mainly in the Asian region. In 2016, automotive component exports increased by 5.3% to \$16.3 billion. Other parts and accessories for vehicles (four-wheelers) dominated automotive components exports (42%), followed by pneumatic tyres and inner tubes of rubber (22%), spark-ignition reciprocating internal-combustion piston engines and parts (22%), and other components (13%) that include transmission shafts and cranks, electrical equipment used in engines, ignition wiring sets and general components used in motorcycles. As of 2016, Malaysia was the country’s major export partner for other parts and accessories for vehicles (four-wheelers) (11%), followed by Japan (10%), Indonesia (10%), the United States (8%) and South Africa (6%)

Exports of brake equipment, including brakes and service brakes for automobiles, increased by 8.6% to \$7 billion, primarily due to a major surge in demand for automotive parts exports. This increase in exports was possible only because of the increase in production of braking systems by the major TNCs. In 2016, the top two partners were the same – Indonesia with a 16% share, followed by Malaysia with 11% (figure 9).

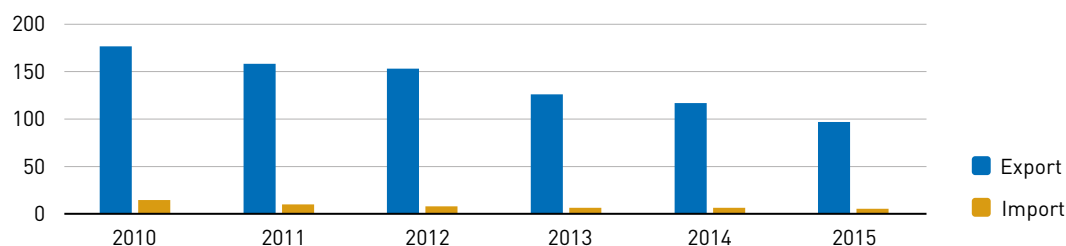
Figure 9. Major export partners of brake equipment from Thailand, 2016 (Per cent)



Source: UN Comtrade.

Thailand is a net exporter of safety seatbelts, with exports accounting for 95% of total trade (exports plus imports) in 2015 (figure 10). These exports declined by 11% to \$97 million in 2015 from \$177 million in 2010. Japan is Thailand’s key export destination for safety seatbelts, contributing 66% of total export value, \$64 million in 2015, down from \$115 million in 2010. Apart from Japan, other top export destinations in 2015 were Malaysia (6%), Australia (5%) and the Philippines (4%).

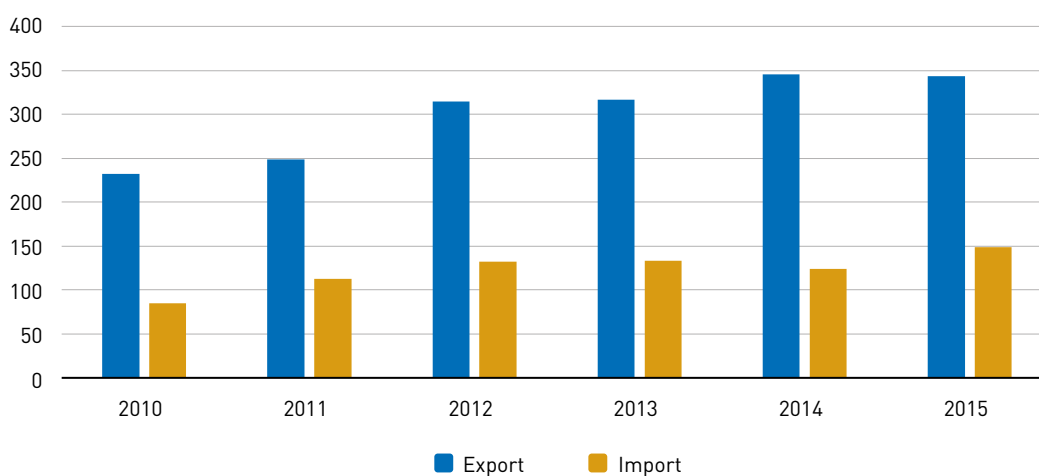
Figure 10. Thailand’s export and import of safety seatbelts, 2010–2015 (US\$ million)



Source: UN Comtrade.

Thailand is also a major net exporter of airbags. In 2015, these exports contracted marginally to \$343 million (figure 11). Despite a decline since 2010 of 57%, Japan remains Thailand's number one export partner for airbags, accounting for 28% of total airbag export value in 2015. Other key export partners in 2015 were China (11%), Mexico (9%) and the United States (7%).

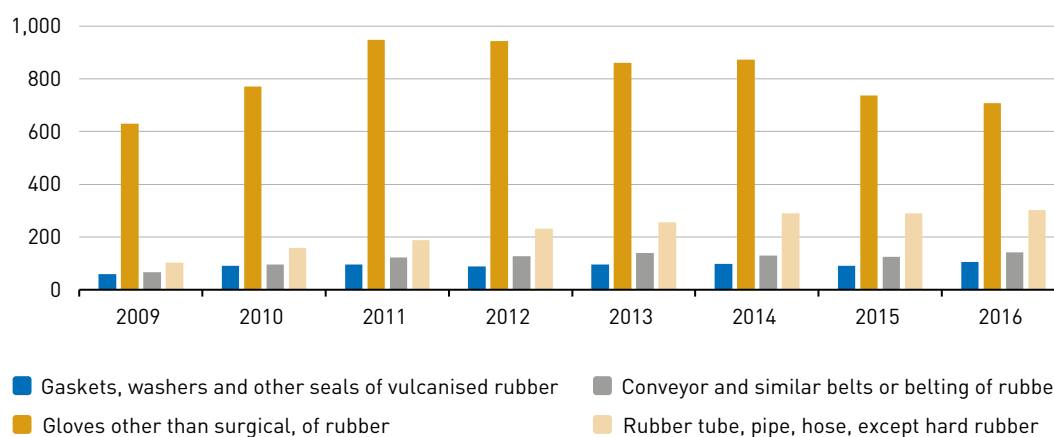
Figure 11. Thailand's export and import value of airbags, 2010–2015 (US\$ million)



Source: UN Comtrade.

In 2015, Thailand's key export market for its automotive and industrial rubber products was the United States. The growth in rubber tube products exports was steady over the preceding five years (figure 12).

Figure 12. Export value of automotive and industrial rubber products in Thailand, 2009–2016 (US\$ million)



Source: UN Comtrade.



### Changes in business model and industry's development path

The industry has both domestic and foreign players, with foreign players operating either through subsidiaries or through joint ventures with domestic players. The top three players in brake equipment are Siam Aisin Co., Somboon Advance Technology and Kiriū, which together accounted for 90% of market share as of 2012. Siam Aisin and Kiriū are the foreign-origin players dominating the industry, holding about 70% market share. Somboon Advance Technology is a leading domestic player that has about 29% of market share. Major international manufacturers of automotive metal components such as Bosch (Germany) and Denso Corporation (Japan) have established manufacturing facilities in Thailand.

Similarly, Thailand's safety seatbelt and airbag industry is largely dominated by foreign companies, such as Autoliv Thailand (a subsidiary of Autoliv Inc. from Sweden), Takata TOA (joint venture with Takata Japan and TOA Group), Ashimori (a subsidiary of Ashimori Industry Japan), and some local firms such as Thai Seatbelt and Luckytex PCL. Since the end of the 1980s and especially since the elimination of the bans on foreign majority ownership after the financial crisis, Japanese corporations have increased their shares in local firms and often have become majority shareholders, strengthening their control of the manufacturing.

Japanese TNCs first deal with local companies as vendors. If they determine that the local companies have adequate technical capacity and are reasonably reliable, they promote those companies to subcontractors. The proportion of subcontractors to vendors varies from company to company. Subcontractors are provided with design specifications and limited technical assistance. If substantial technical assistance is required, a separate contract for technology transfer may be secured. The majority of Thai suppliers (subcontractors) are SMEs starting with OEM with small orders from several customers. Through intensifying in OEM, many successful local companies promote R&D activities to develop their own design of automotive parts, and conduct both OEM and ODM. Cooperation with TNCs has been contributing to the development of the Thai automotive part industry and automotive industry, which are promoting their own brands based on their manufacturing experience, technology and design learning. In many cases, even a fully Thai-owned company may have great technological dependence on foreign automakers through technical assistance agreements.

### Challenges for the Thai suppliers

As a result of continuous government support for the industry, in 2014 (latest data available), the automotive components industry in Thailand counted over 2,400 manufacturers. The industry includes numerous SMEs that operate on a limited scale due to their limited technical expertise and lack of financial support. As a result, major international manufacturers of automotive components such as Bosch (Germany) and Denso Corporation (Japan) have established manufacturing facilities in the country. Although the entry of foreign players has supported growth in the industry, it also poses a threat to domestic manufacturers as most of them are small-scale players striving to survive.

The majority of domestic brake equipment manufacturers, including manufacturers of advanced brake equipment systems such as ABS and regenerative brakes for eco-friendly cars, lack the technological capabilities to develop state-of-the-art products. Consequently, domestic manufacturers (tier 1) have to depend on foreign companies, entering into joint ventures or procuring licences from them. However, the Thai government's local content requirement regulation has helped in the transfer of knowledge to domestic manufacturers from their technologically superior foreign counterparts. The lack of technological know-how in domestic firms has encouraged imports of brake equipment from countries such as Japan. However, imports of brake equipment and related parts decreased by 15% between 2012 and 2016 to \$293 million, which indirectly implies the development of technological capability in Thailand that supports the industry's local production.

In 2015, Thailand started to host a regional conference of producers and traders in braking systems, brakes and friction materials. Shifting away from price competition and paying more attention to R&D, the 4th South and Southeast Asia Brake conference and Exhibition in 2018 had the objective to upgrade the knowledge and understanding of entrepreneurs in the braking system industry in ASEAN as a whole and to build a unified network of producers in the region.

### Government support

Thailand's Board of Investment (BOI) offers healthy incentives to manufacturers of vehicles and automotive components. These incentives are applicable to different manufacturers, depending on their operational regions, which are classified into three zones.<sup>20</sup> The BOI supports this industry as a super cluster. Depending on the area of investment within the industry as well as the type of technology required for production, investors are eligible for both tax and non-tax incentives.<sup>21</sup>

The Thai government started to implement an auto development policy in the 1960s, first introducing high tariffs for imported cars, which encouraged foreign car manufacturers to start knock-down production. The local content requirement regulation imposed by the BOI has encouraged domestic manufacturing of automotive parts, including brake equipment. The BOI imposed local requirements for the manufacturing of engines for pick-up trucks in 1986. In 1989, 20% of local content was required for engines of passenger vehicles. The local content regulation stipulated that a certain ratio of auto parts be procured locally, forcing foreign players to set up brake equipment manufacturing units in Thailand. Furthermore, companies manufacturing high-tech automotive components,<sup>22</sup> classified as a priority activity by the government, enjoy exemptions from corporate income tax and import duty for a period of eight years, irrespective of the zone, as the government strives to promote the domestic automotive industry.

Since 1991, with improvements in technology to cope with the expansion and demand of the automobile market and the development of mass production system, the Thai government has changed its policy from a conventional protectionist one to an open market one. Tariffs on imported cars and assembly parts have been reduced significantly. Although competition became intense due to an increase in imported cars, the domestic market has become divided into domestic cars and imported cars since the latter are essentially limited to luxury cars.

With favourable government policies for some decades as well as tax incentives, the automotive industry is set to enjoy consistent growth. Moreover, the rise in disposable income in Thailand has boosted automobile sales in recent years. The government has also undertaken various free trade agreements, which along with the ASEAN Economic Community that became effective since 2015, benefits the domestic industry through better sharing of R&D and the attraction of greater foreign investment.

<sup>20</sup> Zone 1 comprises Bangkok, Samit Prakan, Samut Sakhon, Nakhon Pathom, Nonthaburi and Pathum Thani. Zone 2 consists of Ayutthaya, Chachoengsao and Chonburi. Zone 3 comprises Rayong along with the remaining provinces.

<sup>21</sup> In terms of tax incentives, investors may be granted up to eight years of corporate income tax exemption with an additional five years of 50% reduction in that tax. Non-tax incentives include <sup>privileges</sup> such as granting permanent residence to specialized project leaders and permission for foreigners to own land to implement the promoted activities.

<sup>22</sup> The high-tech segment comprises automotive components such as anti-lock braking systems, substrates for catalytic converters, electronic fuel injection systems, regenerative braking systems and batteries for electric-powered vehicles.

**Roles of associations**

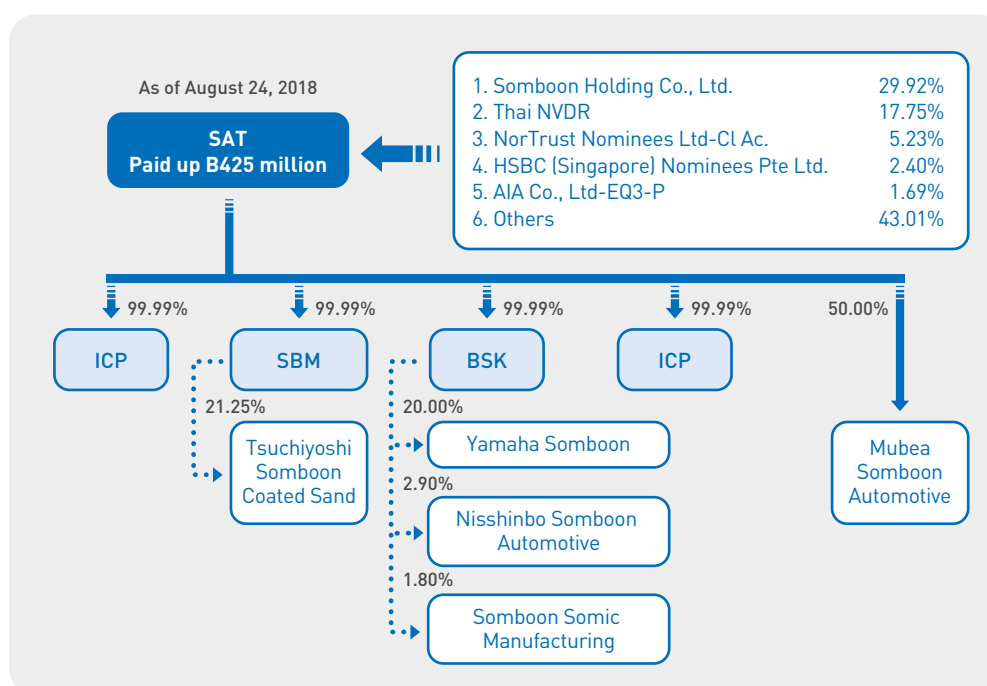
The Thai Automotive Industry Association is an association for all the car makers and motorcycle manufacturers. The Thai Auto Parts Manufacturers Association (TAPMA) is the association for auto parts manufacturers. There are more than 600 member firms in the TAPMA, most of which are Thai firms and SMEs (with factories, without pure trading companies). Member firms are tier 1, 2 and 3 suppliers for major car makers. The major tier 1 suppliers that are 100% Thai and members of the TAPMA are Somboon Advance Technology (SAT) (box 9), Thai Rung Union Car (box 10) and Auto Alliance Thailand (box 11). The tier 2 suppliers are usually larger suppliers, with 500 to 800 employees, that supply the tier 1 suppliers. The sizes and scale of the tier 3 suppliers varies from SMEs to larger suppliers with up to 500 employees.

### Box 9. Somboon Advance Technology (SAT)

Somboon Advance Technology (Thailand) (SAT), incorporated in 1941 as a private limited company, became a public limited company in 2004. Its shares were listed on the Stock Exchange of Thailand in 2005. The company and its five subsidiaries are engaged in manufacturing auto parts for vehicles such as passenger cars and pick-up trucks. As illustrated in box figure 8-1, SAT invested in International Casting Products Co., Ltd., Samboon Malleable Iron Industrial Co., Ltd., Bangkok Spring Industrial Co., Ltd., Samboon Forging Technology Co., Ltd., and Mubea Somboon Automotive (50% ownership). The company's offerings include parts such as brake discs and brake drums, suspension parts and engine parts.

As of 2016, the company has a 28% market share in domestic disc brake and drum brake manufacturing. Revenue from brake sales grew at 28% during 2013-2016 to reach B 1.7 billion in 2016. As of 2016, the brake equipment segment accounted for 20% of the company's total revenue.

Box figure 9.1. Company structure of Somboon Advance Technology (SAT)



Source: Company report.

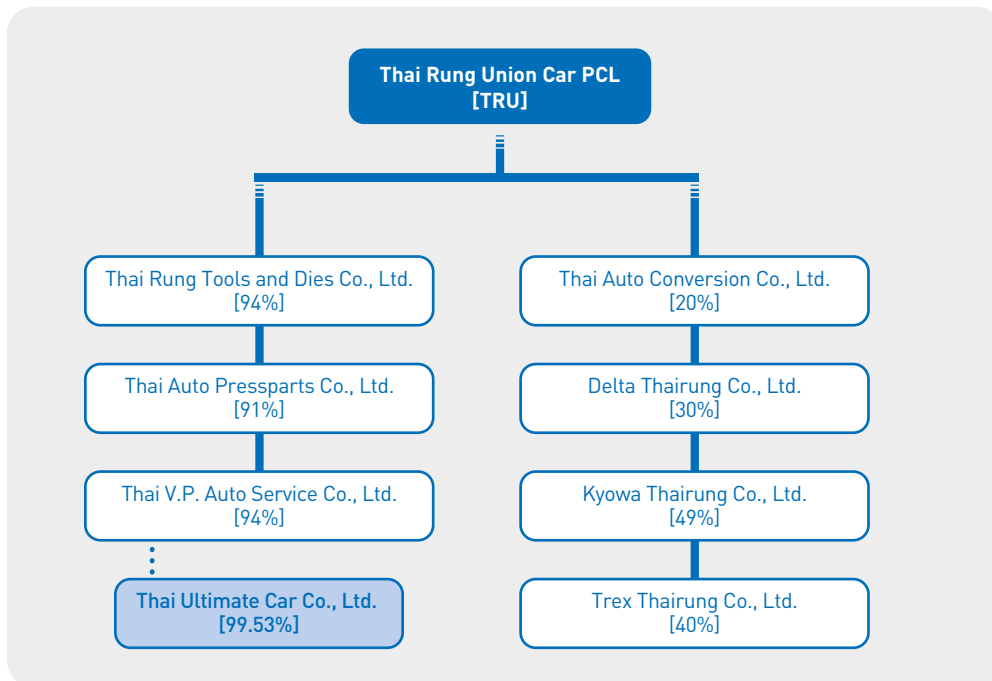
Note: Somboon Holding & Kitaphanich Family owns approximately 44%

SAT engages in NEM relationships with local companies and with foreign companies to become their subcontractors. Its main customers include Mitsubishi, Toyota/Hino, Kubota, Isuzu, Honda and Nissan (all Japan). Most of them have their own subsidiaries or facilities in Thailand to produce their commercial products. The two types of subcontract between SAT and its customers are for OEM and replacement equipment manufacturing. However, to run the business, SAT relies on its suppliers (88 main suppliers). The input is from both local companies and imported resources.

**Box 10. Thai Rung Union Car PCL**

Thai Rung Union Car PCL was established in 1967. The company supplies many kinds of automotive products, focusing mainly on OEM parts and contract assembly, and on expanding its market for parts and bodies to various regions around the world. Besides assembling customers’ brands, Thai Rung Union Car manufactures its own brand of car called TR. As illustrated in box figure 10-1, the company has seven subsidiaries and one sub-subsidiary in Thailand. The company had about 1,400 employees as of 2017. Manufacture of equipment for production of car accessories contributes the majority of the firm’s revenues, 65% of the total in 2017, followed by car assembly and other related car services (23%).

**Box figure 10.1. Company structure of Thai Rung Union Car**



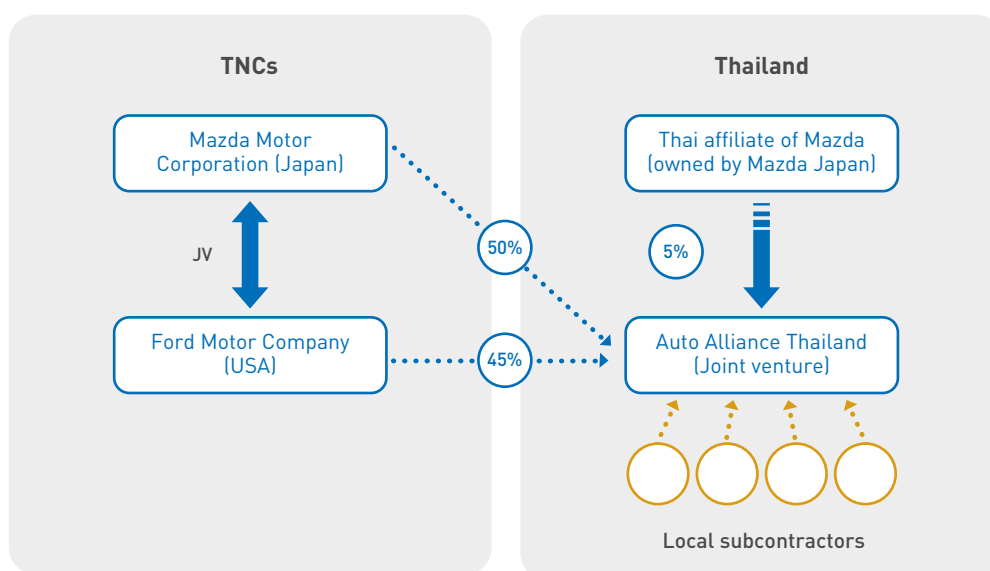
Source: Company report.

**Box 11. Auto Alliance Thailand Co., Ltd.**

After establishment in 1995 as a joint venture between Ford Motor Co. and Mazda Motor Corporation, Auto Alliance Thailand Co., Ltd., started mass production in 1998. The initial investment was about \$500 million and reached \$1.5 billion after the expansion of the passenger car plant in 2007. Today it is becoming one of the largest and the most modern automotive manufacturing facilities in Southeast Asia.

- Products: Ford Ranger, Ford Everest, Mazda BT 50 Pro, Mazda 2, Mazda 3 and Mazda CX-3
- Markets: 130 countries
- Capacity: 175,000 units/year
- Employees: 6,900

**Box figure 11.1. Company structure of Auto Alliance Thailand**



Source: Company report.

Auto Alliance Thailand is a foreign-owned joint venture. By locating in Thailand, the company benefits from cost reductions and gains market share, while it also contributes to the development of Thai companies, especially majority-Thai SMEs, through local subcontracting. For example,

- They create more jobs for local labourers and train them to become skilled workers.
- High competition forces local SMEs to improve their product quality, to be proactive in innovating, promoting R&D and doing marketing.
- They start by subcontracting small, simple parts of automotive products; then, step by step, many SMEs begin OEM for more complicated parts and develop into conducting ODM.

The TAPMA provides incentives for developing the industry and helps members solve problems. For example, some agreements are not favourable for all Thai vehicle makers; e.g. there is no tariff on trucks or pick-up trucks. The TAPMA tries to negotiate with the government so that its incentives are not greater than those of the Japan-Thailand Economic Partnership Agreement. As these new or revised agreements will significantly affect the auto parts industry, the TAPMA negotiates with policymakers. The TAPMA also organizes business exhibition and matchmaking every two years.

Major foreign TNC subsidiaries are also the members (such as Denso, Bosch and Ogihara) as tier 1 suppliers. For example, APICO and Delta from Taiwan Province of China and SAIC Shanghai Group (a joint venture with CP Group) are members. Delta has 20,000 to 30,000 employees in Thailand and is actively introducing robots and automation. The TAPMA organizes visits to bigger foreign members to learn their automation or new technology. The TAPMA also provides training programs for member firms with foreign firms such as Toyota, Nissan and other car makers.

The Thai government established the Automotive Human Resource Development Academy for mobile training. Top trainers are sent from Denso and other members such as SAT to do in-house training at member firms. Although training is actively provided, it takes a long time for member firms to absorb new technology and skills. Most of the member firms are SMEs, and it is not easy for these firms to introduce automation or robotization.

**Table 12. Summary of subcontracting: Automobile parts industry**

Opportunities	Challenges
<ul style="list-style-type: none"> <li>• Job creation</li> <li>• Further demand in ASEAN and Thailand</li> <li>• Higher technological level than competitors in ASEAN</li> <li>• Technological know-how acquired by local Thai firms</li> <li>• Transparent governance of TNCs in the industry</li> <li>• Standardization of some automotive parts and lower requirements for integral manufacturing models (particularly for Japanese TNCs)</li> <li>• Flexibility of being SMEs (for some Thai firms)</li> </ul>	<ul style="list-style-type: none"> <li>• Severe competition among suppliers in ASEAN countries</li> <li>• Continuous investment required to update technological level and know-how</li> <li>• Investment required to deal with electric and other newly developed automobiles</li> <li>• Investment required to deal with new regulations in foreign customers' markets, e.g. environmental issues, quality issues</li> <li>• Government support needed for dealing with these challenges (e.g. substantial investment for new technologies)</li> <li>• Still room for improvement in Thailand 4.0 implementation</li> </ul>

Source: AJC, based on company interview.

#### **(4) Subcontracting: Jewellery industry**

Over the past 30 years, Thailand's jewellery industry has developed from the cottage level, comprising artisans who applied their skills to incorporating gems into jewellery, to a large-scale, export-oriented industry. Skills have been handed down through generations and, combined with modern manufacturing techniques, they have helped the country become a global production and trade centre for jewellery.

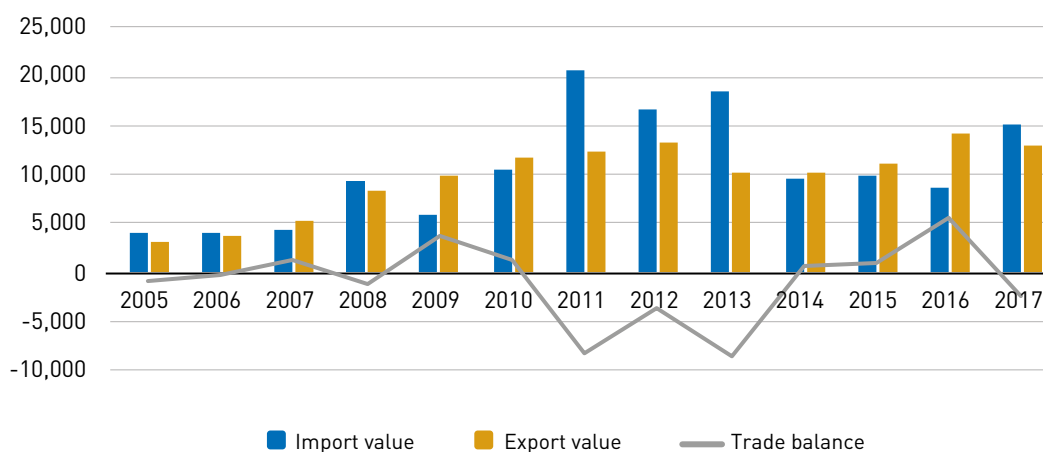
According to the Gem and Jewellery Institute of Thailand, there are about 2,200 registered manufacturers and thousands of household businesses, with 800,000 jobs throughout its supply chains. In the domestic market, the gem and jewellery trading system has been growing, with over 8,000 retailers and wholesalers in the system and many thousands outside it. However, 80% of Thai

gem and jewellery production is export oriented. Large and medium enterprises focus on exports and generally have foreign ownership and the resources to invest in machines and to stock raw materials (gemstones).

Some areas in Thailand where gemstones were available and the mining industry was very lively are no longer active. For example, in Kanchanaburi, which used to have good sapphires, the mining industry has lost its vigour, and in Chanthaburi, which used to have good rubies and yellow sapphires, the mining industry is already gone. Chanthaburi is transitioning to become a centre for cutting gemstones. Originally, Bangkok was where one found craftsmen to cut gemstones, and some still are found there (about 30% of all craftsmen). In the former mining areas, firms are small to medium size, with 1 to 100 employees. The dealers are all Thai, but the buyers are from India and China.

Jewellery is one of the top 10 export industries in Thailand. In 2016, gems and jewellery were the third most important export category and accounted for 7% of overall exports. In 2016, the value of these exports increased by 19% to \$14 billion. The trade balance was positive at \$5.6 billion, the third consecutive year of surplus (figure 13). The export of unwrought or semi-manufactured gold constituted the largest share of exports at 51%, worth \$7 billion, followed by jewellery (25%), diamonds (12%), colour stones (7.5%) and costume jewellery (3%). Thailand is also one of the largest global centres for coloured stones, specializing in gemstones and semi-precious coloured one, particularly rubies, sapphires and emeralds. The major trade partner is Switzerland. It has become the major destination for Thai gem and jewellery exports, accounting for 30% of all such exports in 2016. It was followed by Hong Kong and the United States, with 17% and 9%, respectively.

Figure 13. Thailand's gem and jewellery trade balance, FY2005–FY2017 (US\$ million)



Source: UN Comtrade.

### Business model of the industry

Gem and jewellery production plays a crucial role in the Thai economy through the creation of jobs and the development of related industries. The industry has three segments: (1) gemstone heating, cutting and polishing; (2) jewellery design, casting (modelling, smoothing and plating), setting, polishing, quality control and packaging; and (3) sales and marketing in domestic and international markets. Figure 14 illustrates the business model of the industry in Thailand.



Figure 14. **Business model of the gems, precious stones and jewellery industry in Thailand**



Source: Fiscal Policy Research Institute.

According to the Gem and Jewellery Institute of Thailand, exports to China through Hong Kong, China are increasing significantly. Firms in Hong Kong import loose stones and process them there. For Japanese customers, who require high-value items, products are designed in Japan, processed in Thailand and exported from Thailand. Thai firms have OEM roles and NEM relationships with Japanese customers. United States customers buy large quantities of products that are designed in Thailand, with OEM and ODM roles for Thai firms. As for European firms, it is interesting to see that most European TNCs have conducted FDI primarily to manufacture products in Thailand. They are highly concerned about design and do not collaborate with or outsource to Thai firms.

Thailand has been known for having the highest-quality rubies, pink sapphires and yellow sapphires. In Myanmar, coloured gemstones such as rubies and sapphires as well as jade are trimmed and exported to Thailand, where products are processed by Thai firms. Recently, some gold and silver has been imported from Uzbekistan and Africa; in addition, major rough stones supplied from Africa, which are usually small, are then trimmed in Thailand.

Two jewellery companies using NEMs in Thailand are examined as cases: Pranda Jewellery (box 12) and Goldfine Manufactures (box 13).

#### Box 12. Pranda Jewellery

Pranda Jewellery PCL, founded in 1973, has its group headquarters in Bangna, on the outskirts of Bangkok. The company engages in the production, distribution and retailing of fine jewellery in Thailand, the United States, Germany and other countries. Its core business is the production, distribution and retail of fine jewellery; it also manufactures costume jewellery. The company is one of Thailand's leading jewellery exporters, with 3,534 employees in Thailand in 2018 (2.1% of the total workforce in the industry) and a total of about 5,000 employees worldwide. The company also operates retail and franchise outlets in Asia and the Middle East, as well as offering its products through e-commerce.

.../

**Box 12. Pranda Jewellery (Concluded)****ODM (Original design manufacturing-subcontracting):**

In the first decade of its establishment, Pranda Jewellery set up a product development centre dedicated to creating original designs and pioneering differentiated products. The company quickly became renowned for being a high-quality and original design supplier. In the following decades, the company continued expanding into massive production by setting up new facilities in key locations, including not only Thailand but also Indonesia and Viet Nam. Over the years, Pranda has established a fully integrated value chain involving designing, producing, distributing and retailing its own products. Conducting ODM contributes to the success of Pranda today, and creates growth opportunities for partners.

**OBM (Original brand manufacturing-brand owner):**

Pranda Jewellery owns many well-known jewellery brands such as Prima Gold, Prima Diamond, Prima Art, Gringoire, Gemond, Merii, Ariva, Julia and Esse. It runs the business by offering differentiated products that suit target markets. The company's sustainable strategy is to achieve a balance of sales, 50% ODM and 50% OBM.

The company's subsidiaries in Thailand, Viet Nam and Indonesia are proficient in retail management, operating more than 100 of its own retail shops and franchise businesses.

Note: AJC organized an "ASEAN Showcase" on 27 November 2014 in Tokyo, in which this company participated.

**Box 13. Goldfine Manufacturers (GM)**

Goldfine Manufacturers PCL manufactures, imports and exports ornaments and jewellery in Thailand and internationally. It is also involved in manufacturing and processing various cutting stones. The company manufactures gold, silver and platinum jewellery sets with diamonds, precious stones, semi-precious stones, pearls and other stones. It also develops designs to suit customers' requirements.

Goldfine was founded in 1989 and is based in Bangkok. The company employ about 250 workers. It has a 100% directly owned subsidiary in Viet Nam. In 2015, Goldfine recorded revenue of B 1.4 billion.

Goldfine is working in OEM and ODM: In OEM, the company produces about 1 million pieces annually. In ODM, the company has a collection of more than 2,000 designs for customers; as noted, it also manufactures customers' own designs and supports customers in developing designs before manufacturing. The company designs items on the basis of current fashion trends of customers in its main export markets.

From the case studies, the following commonalities were identified:

- The markets for Thai firms are currently two, one for exports and the other for consumption in Thailand but targeting tourists from overseas. Therefore, demand is heavily dependent on foreign customers.
- Thai firms take on the role of OEM for foreign TNCs.
- Foreign TNCs (including retail stores in foreign countries) are the main customers for Thai firms.
- Thai firms have capabilities to design jewellery to meet foreign TNCs' requests and to conduct ODM (table 13).

### Challenges for Thai suppliers

Most manufacturers are SMEs, which means that 90% of jewellers cannot afford high-tech machines for production or investment for R&D. It was noted that there has been a reduction in skilled workers. The industry needs to invest more in R&D and training to sustain a skilled labour force.

The precious metals and mining industry in Thailand comprises gold, silver, platinum, palladium, rhodium, and industrial and gem-quality diamonds. Precious metals are predominantly used in the jewellery, electronics and automobile industries. In 2016, gold metals accounted for the majority of the industry's production value (89%), followed by silver metals (10%).<sup>23</sup> However, very few domestic companies specialize in exploration, development and production of precious metals in Thailand. These companies rely on the technical expertise of the foreign players that dominate Thailand's mining industry.

In the interviews for this report, it was found that the roles of Thai suppliers in Thailand are changing. Originally Thailand had locational advantages related to the availability of gemstones (table 13). Thailand became a location for gemstone heating, cutting and polishing followed by jewellery design, casting (modelling, smoothing and plating), setting, polishing, quality control and packaging. Previously all activities in the value chain were conducted in Thailand; however, the original business model and the availability of various functions of the value chain within Thailand have completely changed. Recently, the availability of gemstones has been limited, in Thailand as well as in neighbouring countries such as Myanmar and Cambodia. Therefore, suppliers have to import gemstones in order to apply existing skills to produce jewellery products. This shift is reflected in the growth of imported stones and in the trade balance of the industry. In order to improve the trade balance, high value added products must be produced and exported. In addition, as the local market is limited, the foreign market is important for Thai jewellery. Although European jewellery TNCs are still investing in Thailand through FDI, competition among foreign TNCs is already severe in this market.

### Roles of associations and government

The Thai Gem & Jewellery Traders Association has played an important role in integrating a typically fragmented industry by promoting Thai jewellery at jewellery fairs outside the country. Other organizations supporting the industry include the Thai Diamond Manufacturers Association, the Thai Gem & Jewellery Manufacturers Association, the Gold Traders Association, the Thai Jewellers Association and Jewel Fest Club, and the Gems, Jewellery and Precious Metal Confederation of Thailand.

The industry also receives strong support from the government of Thailand. The Ministry of Commerce, in collaboration with the Thai Gem & Jewellery Traders Association, set up the Gem and Jewellery Institute of Thailand in 1998 to develop and promote gem and jewellery exports. Clusters of gems and jewellery producers have formed around gem processors, training institutions and retail jewellery companies. These have been recognized as international centres for gemstone processing and trading.

The Thailand BOI offers attractive non-tax and tax incentives to investors. In particular, to attract new projects for sustainable growth, the BOI and the Industrial Estate Authority of Thailand grant comprehensive benefits and privileges to gem and jewellery investors. The Department of Export Promotion, under the Ministry of Commerce, also supports the industry's development.

<sup>23</sup> "Mineral Statistics of Thailand 2015-2016", Department of Primary Industries and Mines.

Exporters are exempted from or pay reduced import duties and value added tax on raw materials. The abolition of import and export duties on diamonds in 1991 strengthened Thailand's status as a centre where gemstones from around the world are shipped to be processed. Similarly, value added tax on gold bullion imports was abolished in September 2000. These supports helped local firms integrate into foreign TNCs' GVCs.

**Table 13. Summary of contract manufacturing: gem and jewellery industry**

Opportunities	Challenges
<ul style="list-style-type: none"> <li>• Job creation</li> <li>• Opportunities for SMEs and micro firms</li> <li>• Potential OEM role for foreign TNCs</li> <li>• Potential ODM role for foreign TNCs</li> <li>• Possibility to have more Thai brands through learning from ODM</li> <li>• Access to foreign markets through NEM relationships and Thai firms' FDI</li> </ul>	<ul style="list-style-type: none"> <li>• Compliance of Thai suppliers (since they are TNCs as well)</li> <li>• Availability of gemstones</li> <li>• Need to look for higher value added to correct trade balance</li> <li>• Need government support for dealing with these challenges (e.g. substantial investment for learning new designs, easier imports of gemstones)</li> <li>• Still room for improvement in Thailand 4.0 implementation</li> </ul>

Source: AJC, based on company interview.

### **(5) Other types of NEMs: Offshoring**

In addition to contract farming, subcontracting and contract manufacturing, other types of NEMs are already integrated into the Thai economy. Franchising and licensing are common, as mentioned earlier. Offshoring businesses are also emerging in some industries, reflecting advances in design power, information technology skills and a wide range of consumer interest. One such example is the entertainment content industry (box 14).

#### Box 14. Thai entertainment content industry

The Thai entertainment content industry started with the film (motion picture) industry some three decades ago. Current segments are (1) motion picture, (2) television broadcasting, (3) games, (4) music and karaoke, and (5) animation. The total revenue of the industry in 2017 was B 207 billion (\$6.3 billion).

Box Figure 14.1. Revenue, employment and number of organizations in the entertainment and content industry, 2017

Category	Revenue (B millions)	Employment	Number of firms (organizations)
Film and animation	26,039	26,600	8,919
Film	..	22,000	8,794
Animation	..	4,600	125
Internet (for purchasing and accessing content)	80,000	..	..
Music and karaoke	10,593	31,900	9,217
Game	24,500	41,000	19,017
TV (advertisement)	65,786	18,000	1,228
Total	206,918	117,500	38,381

Source: D2E (p. 13).

Note: License fees paid to foreign partners are not included in revenue.

In the music and karaoke industry, 84% of revenue came from Thai music and 16% came from imported music (non-Thai) in 2017. However, in the Thai film and animation industry, 89% of revenue came from imported films (non-Thai) and 11% from local Thai films (D2E). TRUE Corporation has a master franchisor agreement with Pokemon (Japan), which is broadcast on its cable TV network (with B 500 million (\$14.3 million) in sales in 2015).<sup>a</sup> In the game industry (B 24 billion (\$0.72 billion) in revenue), most games are imported from Japan, China and the Republic of Korea; only about 1% of games are Thai products.

In the film industry, there are some 9,000 firms and many related smaller firms. There are 125 firms in the animation industry, which has a labour union with strict regulations. The numbers of jobs in TV and film firms are shrinking, whereas the number in the internet industry is growing.

Japanese animation companies (such as those producing Doraemon, One Piece, Pokemon and some other characters) and Pachinko machine companies have been outsourcing part of their value chain functions to Thai firms. These functions include colouring or painting, but not designing. Some Thai companies have created their own design characters for Japanese firms and sold the copyrights to them.

<sup>a</sup> Nikkei MJ, 10 December 2014, p. 10.

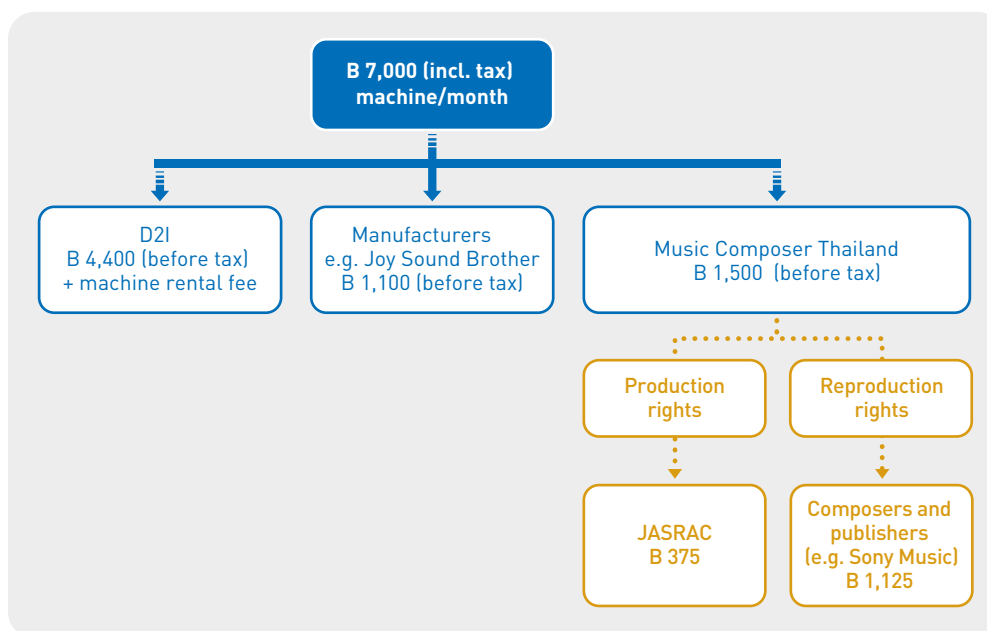
**Box 14. Thai entertainment content industry**

Japanese film and animation (particularly animation) have been popular in Thailand; however, recently films from United States and China have been growing. Hollywood movie companies have offices in Thailand for promoting their products and have contractual agreements directly with Thai firms. For example, the licensing firm of Doraemon (Japan) is not in Thailand but in Hong Kong, China.

In the music industry, D21, for example, has a licensing agreement with Japanese TNCs, which operate 300 karaoke stores in Thailand. About 700 rooms in those stores have Japanese songs only.

In Japan and the Republic of Korea, there are organizations to support copyright-related matters as well as to promote products. In Japan, the Content Overseas Distribution Association was founded to reduce piracy problems through cooperating with content holders and copyright-related organizations, and to actively promote the international distribution of Japanese content, such as music, films, animation, TV programs and video games. In the Republic of Korea, there is a similar organization, the Korea Creative Content Agency.

In Thailand, there are some regulations for the supporting industry. However, these regulations are very outdated and insufficient to support the current environment for the industry.

**Box figure 14.2. Revenue structure of D21**

Source: AJC, based on company interview.

## 2.3 Crucial factors affecting the capacity development of local Thai firms: Backward linkages

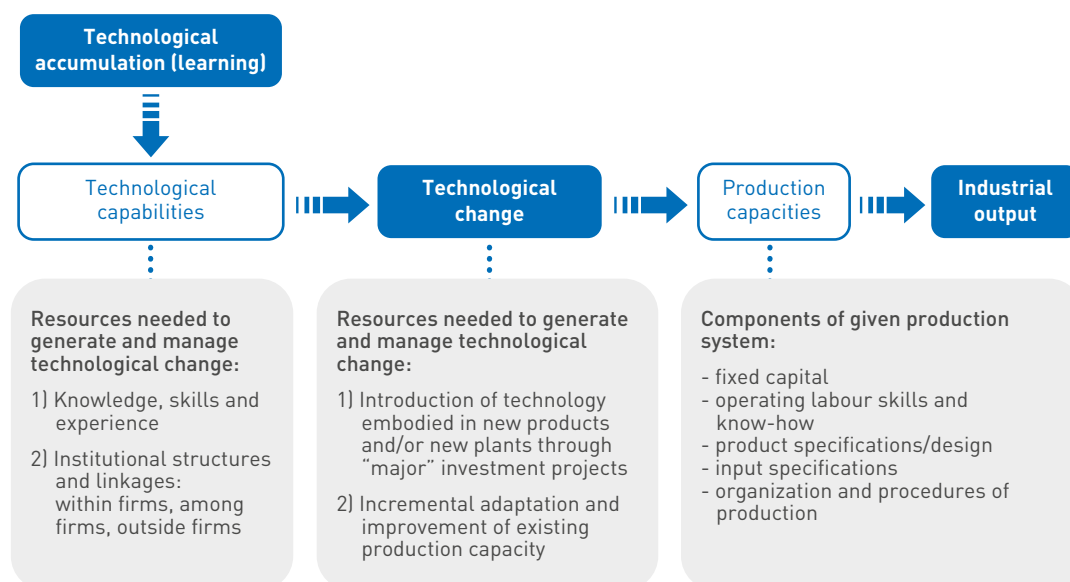
Analysis of the industry-specific development of local Thai firms reveals that Thai NEM partner firms have developed capabilities so that they can differentiate themselves from competitors in neighbouring host countries. The question is whether Thai firms have acquired capabilities that TNCs and NEM partners consider as requirements for partner firms.

There are two patterns of acquiring such capabilities. The first pattern is having the experience of being a joint-venture partner with TNCs. Before becoming NEM partners, many local Thai firms were partner firms in joint ventures with TNCs that had interests in investing in Thailand. This can be seen in the chicken meat industry, where local Thai firms operate both in joint ventures with TNCs and on their own as integrators. The second pattern is establishing backward linkages with subsidiaries of TNCs. Thai firms in the automotive parts industry have been suppliers to TNC subsidiaries directly as tier 2 or 3 suppliers. The apparel and garment industry and the gem and jewellery industry both have backward linkages through supplier-customer relationships.

In both patterns, local Thai firms have experienced capability-building and technological learning from having (1) direct technological transfer from TNCs through FDI in the form of joint ventures, or (2) backward linkages with TNC subsidiaries in Thailand or customers outside Thailand. The development of capacities and capabilities is key to both attracting FDI and increasing technological spillovers<sup>24</sup> from TNCs. An organization's technological capability comprises the knowledge, skills and experience necessary to organize marketing, to innovate and to produce (Lall and Wignaraja, 1998; Ernst et al., 1998).

"Technological learning" refers to the way organizations accumulate or acquire technological capabilities (Malerba, 1992). Concerning the process of technological learning in industry, Bell and Pavitt (1995) distinguish between technological capabilities and production capacity, as illustrated in figure 15. Technological capabilities include skills, knowledge and experience, and the particular institutional structures and linkages necessary to generate and manage technical change. Production capacity incorporates the resources used to produce industrial goods at given levels of efficiency and with given input combinations: equipment that embodies technology, operational and managerial know-how and experience, product and input specifications, and organizational methods and systems (Bell and Pavitt, 1995). In industrialized countries, these two kinds of capability are loosely linked; however, in developing countries, these capabilities are not necessarily effectively linked (Bell and Pavitt, 1995).

<sup>24</sup> Spillovers occur when local firms benefit from the TNC subsidiary's superior knowledge of a product or process technologies or markets, without incurring a cost that exhausts the gain from the improvement (Blomström et al., 2000).

Figure 15. **Technological accumulation: basic concepts and terms**

Source: Adapted from Bell and Pavitt (1995, p. 55).

It is commonly observed that firms rely on innovation, moving along a supply chain that includes the conduct of R&D, the development of new products, the search for resources in the host economy and the improvement of manufacturing processes. Final products are usually refined and marketed in the home or host economy or on the international market. Within this process, a TNC subsidiary as well as NEM relations create vertical linkages, both backward and forward,<sup>25</sup> as outlined in table 14.

Upstream or downstream process links as well as backward or forward product links are usually described as vertical linkages (von Tunzelmann, 1995). Firms have been driven to develop closer relationships with upstream suppliers and downstream customers (von Tunzelmann and Acha, 2005). In Thailand and other developing host countries, however, given the existence of a technology gap between suppliers and subsidiaries, the evidence shows little flow of technological knowledge from subsidiaries to local suppliers.

Local suppliers are involved in the process of manufacturing at the level either of the sourcing of parts or components, or the manufacture under subcontracting arrangements, depending on the supplier's technological capability and the TNC's clients' strategies. The technological capability of a local supplier affects a subsidiary's decision as to whether to source components locally in the host country or to source regionally or internationally. With the rapid global technological advancement in the examined industries (chicken meat, apparel and garment, automotive parts, and gem and jewellery industries) and the ongoing process of globalization, it is critical for local firms to be more technologically capable if they wish to participate in the industry, for it is too easy for TNCs to find

<sup>25</sup> Backward linkages refers to all relations established with supplier firms and that exist when TNC subsidiaries acquire goods or services from local suppliers, whereas forward linkages describes the relations established with customers in the host country or in the global market.



Table 14. Backward linkages and other relationships between TNC subsidiaries and local suppliers and organizations

Form	Relationship of TNC subsidiary to local firms			Relationship of foreign affiliate to non-business institution
	Backward (sourcing)	Forward (distribution)	Horizontal (cooperation in production)	
"Pure" market transaction	"Off-the-shelf" purchases	"Off-the shelf" sales	N/A	N/A
Short-term linkage	Once-for-all or intermittent purchases (on contract)	Once-for-all or intermittent sales (on contract)	N/A	N/A
Longer-term linkage	Longer-term (contractual) arrangement for the procurement of inputs for further processing Subcontracting of the production of final or intermediate products	Longer-term (contractual) relationship with local distributor or end-customer Outsourcing from domestic firms to foreign affiliates	Joint projects with competing domestic firm	<ul style="list-style-type: none"> <li>• R&amp;D contracts with local institutions such as universities and research centres</li> <li>• Training programmes by universities for firms</li> <li>• Traineeships for students in firms</li> </ul>
Equity relationship	Joint venture with supplier Establishment of new supplier-affiliate (by existing foreign affiliate)	Joint venture with distributor or end-customer Establishment of new distribution affiliate (by existing foreign affiliate)	Horizontal joint venture Establishment of new affiliate (by existing foreign affiliate) for the production of same goods and services as it produces	Joint public-private R&D centres, training centres, universities N/A
Spillovers	Demonstration effects in unrelated firms: - Spillovers on processes (including technology) - Spillovers on product design - Spillovers on formal and tacit skills (shopfloor and managerial) Effects due to mobility of trained human resources Enterprise spin-offs Competition effects			

Source: UNCTAD (2001).

other suppliers, in other regions or countries, with which to interact. The development of local suppliers' capacities and capabilities is a key to both attracting FDI and NEM, and to increasing technological spillovers from subsidiaries.

One of the factors in the influence of local suppliers' technological capabilities on a subsidiary's motivations to engage in backward linkages is the need for cost efficiency in procuring inputs in host countries. Local suppliers play a crucial role in meeting subsidiaries' demands, such as for quality and delivery, through backward linkages. A supplier's technological capability to meet these demands contributes to the strengthening of backward linkages between subsidiaries and local firms. Such interactions further benefit local suppliers in terms of exposure to the subsidiary and to the standard of the TNC group's manufacturing operations in the global market.

### **How backward linkages worked for Thai firms**

The upgrading of technological level, knowledge level and managerial skills can take a long time and is not easy to achieve. The process of upgrading occurs through technological learning. In order to upgrade subsidiary and supplier capabilities, there are various ways in which backward linkages between subsidiaries and suppliers can be formed and strengthened. The realization of the full potential benefits derived from such linkages by the supplier also involves the transfer of the capacity to understand, use and improve upon a given technology (Komoda, 1986). It involves the adoption of the acquired technology, as well as its absorption by the supplier (Baranson and Roark, 1985).

Assets such as technology, knowledge and managerial skills flow from a subsidiary to linked local suppliers through backward linkages of different qualities. Backward linkages take several different forms: pure market transactions, short-term linkages and long-term linkages (table 13). In contrast to pure market transactions and short-term linkages, long-term linkages are often preferred by local suppliers and are typically more beneficial.

The experiences of Thai firms suggest that it is necessary to have a form of long-term backward linkage with foreign TNCs (either with subsidiaries in host countries or a headquarters in a home country) that has influenced the capacity-building of local suppliers. Long-term linkages, as shown by NEMs, mean long-term buyer-supplier relationships, such as contractual arrangements for the procurement of inputs, and the subcontracting of production of intermediate or final products. Within long-term linkages, different types of linkages exist within the broader backward linkage. There are seven possible categories of linkage and the means by which these assets flow from the subsidiary to suppliers, based on the nature of what the subsidiary can offer for local suppliers (figure 16). In each category, a subset of categories relating to technology or knowledge flows can be derived according to the areas of technology involved. How and in what form backward linkages are created in the focused four industries are explained in turn.

### **Experiences of capacity-building in the chicken meat industry**

The various types of backward linkages in figure 16 reflect the fact that the main Thai firms that have linkages with TNCs are not SMEs, but larger firms. Some have diversified their value chain functions from production of chicken meat to retail sales of chicken meat products. Most of the Thai firms have vertically covered different levels that relate to the production of chicken meat, so they have contracted with many farmers. In the earlier industrial development phase, local Thai firms built capabilities through having joint ventures with TNCs. In this phase, rather than building their capabilities through having backward linkages, they learned required technologies directly from the TNCs. At the same time, Thai firms were acting as integrators to distribute chicken meat in the Thai market. Most large Thai integrators have both joint-venture and 100% local-owned firms. In the mature industrial development phase, for TNC partners in a home economy such as Japan or Europe, the risks of NEM relationships with local Thai firms are lower than those with firms

Figure 16. Different types of backward linkages



Source: Compiled and modified from Lall (1980) and UNCTAD (2001).

in neighbouring countries, as TNCs know them well – and local Thai firms also make efforts to maintain high levels of quality to sustain relationships with their customers as well as joint-venture partners.

### Experiences of capacity-building in the apparel and garment industry

Local firms that have NEM linkages with foreign TNCs include both SMEs and larger firms. Some of them have conducted FDI in neighbouring countries and become Thai TNCs with subsidiaries overseas. This implies that Thai firms create their own backward linkages and at the same time are involved in the backward linkages created by foreign TNCs. In the industrial development stage, the linkages that Thai firms had with foreign TNCs in this industry were seen as longer-term (contractual) arrangements for subcontracting of the production of final products. Their relationship was a supplier-customer one; therefore, the initiative for ordering products was coming from foreign TNCs. As Thai firms continued to have linkages with foreign TNCs, TNCs have started to require lower costs for their products that Thai firms produce. This is why Thai firms started to invest in neighbouring countries, so that they can meet TNCs' demand for lower costs. Through longer-term linkages with TNCs, Thai firms have learned and acquired the capabilities to design products. For some firms, foreign TNCs have been helpful in teaching design technology, when it was too costly for foreign TNCs to produce in their home countries. In the mature industrial development phase, Thai firms have divided their roles into (1) lower-cost production for their subsidiaries in neighbouring countries and (2) higher value added production for Thai firms in Thailand. Currently, Thai firms continue to have NEM relationships with foreign TNCs for value added products manufactured in Thailand (ODM) and for lower-cost bulk production manufactured in their subsidiaries (OEM). As a result, Thai firms have acquired design capabilities and hence have developed a "Thai brand" in the industry, which is very popular in ASEAN countries. This development is partially solving one of the critical problems of the industry, the fact that all the customers are located outside Thailand.

### Experiences of capacity-building in the automotive parts industry

Local Thai firms have developed their technological capability typically through having backward linkages with TNC subsidiaries in Thailand. As discussed, due to local content requirements by the government, many foreign TNCs have invested in the country, which has encouraged the growth of long-term (contractual) arrangements for the procurement of inputs for further processing in subsidiaries in Thailand. In the industrial development phase, subcontracting of the production of final parts or intermediate products has been actively initiated by subsidiaries of foreign TNCs. Because of its large local firms with diversified value chain functions in related areas, Thailand has become an active exporter of automotive parts within ASEAN and to other automotive-producing countries in ASEAN such as Indonesia, the Philippines, and Malaysia and outside ASEAN such as India and China.

### Experiences of capacity-building in the gem and jewellery industry

Unlike in the automobile parts industry, the main local Thai firms that have linkages with TNCs are not large firms but rather small or medium ones. Those that have linkages with local Thai firms in Thailand are either SMEs or micro firms. These SMEs or micro firms have the roles of gem cutting or craftsmanship tasks necessary for Thai suppliers that have linkages with foreign TNCs. Although the industry is one of the important exporting industries, the size of the firms at each level is smaller than the other industries focused on in this report. The linkages that local Thai firms have with foreign TNCs involve once-for-all or intermittent purchases (on contract). Although this relationship does not seem to be a pure market transaction, the linkages are short-term due to the severe competition. Local Thai firms' capabilities have been developed through having foreign customers (since local demand is limited), but their design or technology capabilities are not transferred, as other industries have experienced. A similar case can be found in the furniture industry in the Philippines.<sup>26</sup>

## 3. OPPORTUNITIES AND CHALLENGES FOR NEMS IN THAILAND

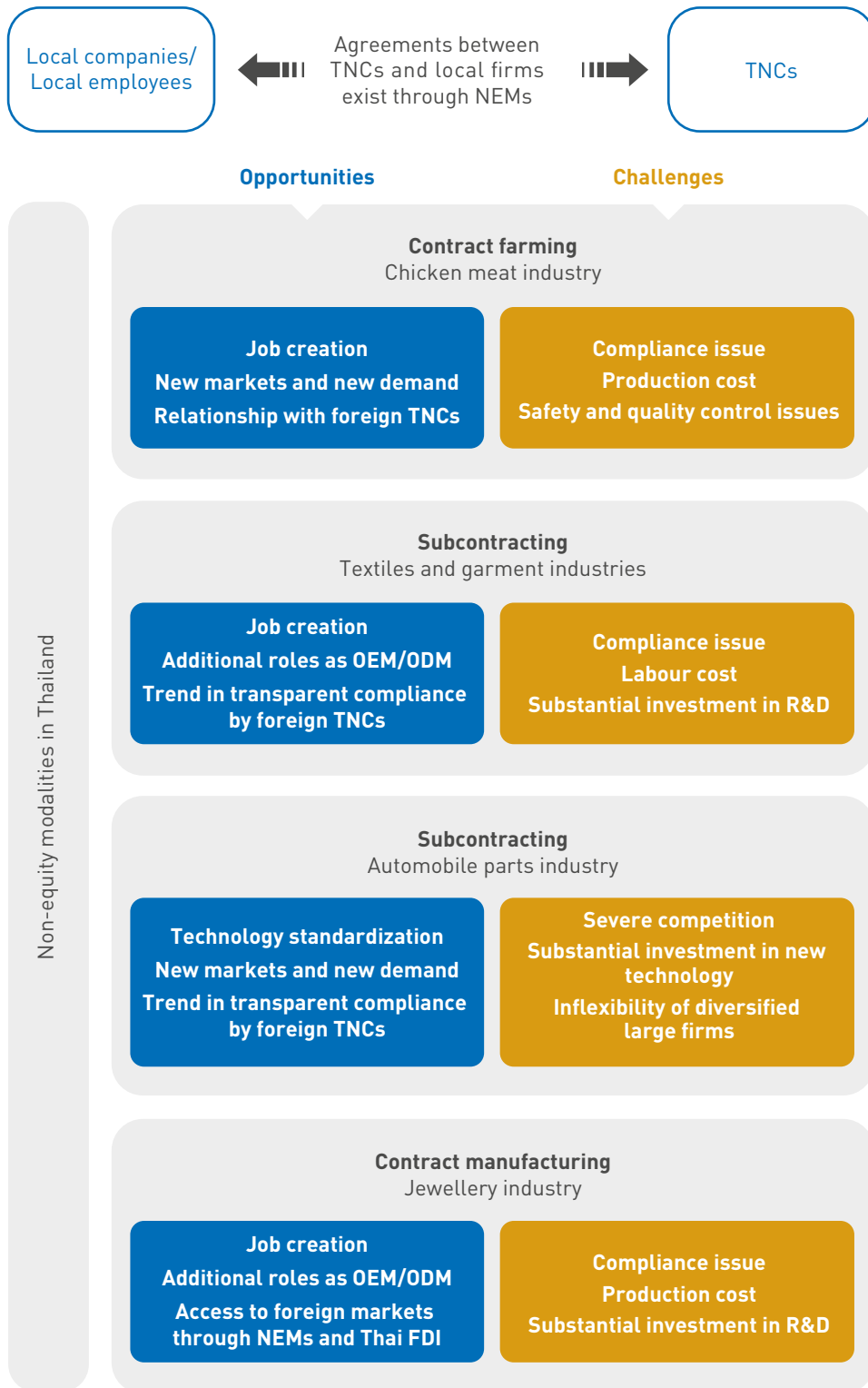
By establishing NEM agreements with TNCs, each industry can benefit from a number of opportunities. However, there are also challenges for local firms, particularly because of the characteristics of NEMs and the experiences of industrial development in Thailand.

The issues faced by local Thai firms range from those related to contractual agreements to those related to industry characteristics and TNC strategies. Both opportunities and challenges can be found for each category, which can be grouped into issues of (1) continuity, (2) NEM characteristics, (3) capacity-building and (4) local firms' initiatives and local embeddedness (figure 17).

In their quest to take advantage of the opportunities, local NEM firms will also face challenges if they seek to strategically appropriate TNCs' know-how and technological skills for their use by linking with them (figure 18). They may also build capacities to deal with these challenges and even promote their business by using TNCs' networks of GVCs. In addition, national NEMs can use their supply chain experience.

<sup>26</sup> See AJC, *Non-Equity Modes of Trade in ASEAN: Paper 7. Philippines*.

Figure 17. Summary of opportunities and challenges for NEMs in Thailand



Source: AJC.  
 Note: Major industries only.

Figure 18. Opportunities and challenges for local firms engaged in NEM



Source: AJC.

### 3.1 Ownership/non-ownership

If business activities are not owned by TNCs, it is easier for TNCs to enter the market through NEMs. If TNCs can find local firms that can produce products instead of their own affiliates, TNCs can contract with local firms without owning an affiliate in a host country. This is one of the advantages of having a NEM for TNCs in a host country. In the textile and garment industries and the gem and jewellery industry, TNCs are looking for partners that produce products for them at a lower cost than the TNC at the required level of quality. For these industries, there are potential opportunities for local firms to have contract agreements with TNCs and export products produced in Thailand. Although such opportunities can be viewed as attractive by local firms, those firms need to have a minimum level of management skills, including autonomy and initiative, as well as technological skills and capacity, because TNC support is limited. In addition, TNCs' decision making about selecting local partners and terminating contracts with them can be volatile, as the contracts are not guaranteed for long terms and can be terminated anytime. One of the characteristics of NEMs is that demand for particular products or services comes from outside the country and is not predictable. Since demand cannot be controlled, local firms have to build capacity without having exact knowledge of the size of NEM operations with potential customers.

### 3.2 Relationships between NEMs and industries

Particular modalities are linked to particular industries in Thailand. For the chicken meat industry, some modalities are present at the same time. Through FDI, there are joint-venture firms between foreign TNCs and local Thai firms whose target market is partly in the TNC's home country, such as Japan, and partly in Thailand. This creates opportunities for local employees to be integrated into the subsidiaries' business activities; at the same time, it provides opportunities for capacity-building for local firms. Through NEMs, local Thai firms (which also may have joint ventures with foreign TNCs) have contract agreements with TNCs that create exports of products to the TNC's home country. This creates opportunities for local firms to receive orders from customer TNCs located outside Thailand. For both modalities, since their target markets are outside the country, food security and quality controls should be secured by the government. Having both modalities in Thailand, local Thai firms in the chicken meat industry have been learning from TNCs and have been linked into TNCs' strategies in their home countries.

Different types of modalities are also linked to the automotive parts industry. Foreign TNCs have used FDI for assembly plants to produce automobiles in Thailand. At the initial industrial development stage, most tier 1 suppliers of foreign TNC subsidiaries are from TNCs' home countries. These suppliers (e.g. Aisin, Denso, Bosch) have to find tier 2 suppliers in Thailand. Local Thai firms are trying to be joint-venture partners with foreign TNCs to supply to tier 1 suppliers or be pure Thai tier 2 suppliers. The industrial structure creates similar modalities for tier 3, 4 and even 5 suppliers. Because of the industry's requirements (e.g. technological awareness and quality control), all players need to work towards industrial and technological development.

In the textile and garment industries and the gem and jewellery industry, subcontracting and contract manufacturing are typical modalities engaged in by TNCs in Thailand.

### 3.3 Ownership and control

One of the salient features of a NEM is that foreign TNCs do not directly own the business activities of local firms but have indirect control over them. Local firms are not controlled through equity but by contract agreement. This presents a number of challenges for local firms, as the contracts between local firms and TNCs can easily be jeopardized. For instance, if local firms do not meet the quality of products required by TNCs, TNCs can easily terminate their contracts. If the demand of the TNC shifts to a new product and local firms do not have the capacity to meet the new demand, then TNCs can easily terminate their contracts and make new ones with competitors in another country. This is related to the fact that TNCs are utilizing the local firms through NEM for their strategy, and the choice of modality reflects in part the stages of GVCs.

Where TNCs own firms (or affiliates) in a country, TNCs directly control their activities. TNCs make efforts to control quality by, for example, investing further in human resources to improve quality. TNCs may change their overall strategies so that the positioning of their affiliates in Thailand is ready to meet possible new demand. In the chicken meat industry and the automotive parts industry, TNCs either have both modalities in Thailand or have already invested substantially in transferring technologies or know-how. TNCs have been making efforts to upgrade local Thai firms business activities to meet such a shift.

Under NEMs, local firms have many opportunities for new businesses. In order to sustain their operations or activities without direct support from TNCs, local firms should create their own business activities such as creating their own brands. Some examples are seen in the textile and garment industry and the chicken meat industry. Whether local firms can strategically utilize TNCs by linking with them or build the capacity to do so remain the challenges for local firms.

### 3.4 Localization strategies

Local firms' operations or activities constitute part of TNCs' global operations, whether they are undertaken through FDI or NEMs. If local firms need to implement localization strategies or local firms' activities need to reflect locally embedded factors to meet TNCs' demands, local firms will have initiatives for the operation, which in turn will create more opportunities. In the textile and garment industries and the gem and jewellery industry, firms' operations or activities in Thailand do not need to implement a localization strategy. What local firms do is meet the requirements of or order from TNCs, which is one of the characteristics of outsourcing. However, the initiatives that local firms can take are limited, and they will face challenges if any negative factors arise on the TNCs' side.

Whether farming in the chicken meat industry or subcontracting in the automotive parts industry, operations or activities are required to accord with TNCs' global strategy and with local regulations, whereas that is not necessarily required in the textile and garment industries and the gem and jewellery industry. In both of these, firms with operations or activities in Thailand do not need to implement a localization strategy because their products are largely destined for abroad. In both, however, local firms should make efforts to build their production capacity.

Foreign TNCs can outsource a part or the whole of any production or services, or even part of their GVCs to Thailand, since localization is a low priority as they are not directly present in the local economy. However, although TNCs may terminate their agreements with contracting firms, TNCs nonetheless need their own localization strategies, even in NEM operations for the continuation of



their business in the country. Local NEM firms have to be equally as important as TNCs' affiliates in the formation of GVCs. Local firms should undertake initiatives independently from TNCs in order to integrate their operations and activities into TNCs' overall production networks and into GVCs.

## 4. POLICY IMPLICATIONS

The Thai government has implemented tremendous efforts to further develop the industries focused on here (automotive parts, chicken meat, textiles and garments, and gems and jewellery) through strengthening technology, knowledge and industry-specific business associations. In addition to current policies that focus on developing potential employees through education and training, the challenges that local firms will face in the medium to long run centre on developing local firms' overall capabilities and mainstreaming sustainable development in NEM operations.

### 4.1 Enhancing capacities of local firms

Local firms' capabilities in both technological and management skills should be enhanced to meet TNCs' current and potential demand. Once these necessary capabilities have been attained, firms can have more initiative or autonomy in their operations; they can find potential customers through networks; and independently from TNCs in terms of autonomy or initiatives, they can then create their own business activities or create their own Thai brands in the long run.

In order to enhance local firms' overall capabilities, the government needs to provide support at two levels – the individual firm and the industry.

At the individual firm level, the government needs to support the following efforts:

- Implementing continuous internal training for employees within local firms. Local firms need to train employees for higher-skilled jobs. Judging from the results of the interviews done for this study, not all local firms implement continuous or regular training because of the costs incurred. Furthermore, local firms that have contracts with foreign clients do not necessarily implement training for the micro firms or SMEs or individual farmers (craftsmen) with which those local firms have contracts, (and that thus have indirect NEM relationships with TNCs). Direct or indirect financial supports for training would help local firms focus on internal training tailored to the needs of the firms themselves or the demand from their client TNCs.
- Establishing a learning centre where local firms can learn about NEM operations or activities. Local firms need to be aware of the changes and future demand in their industries rather than focusing only on current operations. The government can support this learning by being a facilitator that connects individual firms with potential customers. A learning centre could cover all aspects of NEMs in forming, executing and evaluating contracts, as well as operating.
- Creating a conducive environment for local firms, to facilitate their globalization and localization strategies. To meet current and potential demand by TNCs and to integrate with TNCs' current and potential GVCs, local firms need to be familiar with TNCs' changing strategies. Each firm needs to learn about their customers' strategies. The government can offer support for different types of strategies, introducing good practices in different industries at the individual level, rather than simply offering support for an industry as a whole.

At the industry level, industrial or business associations and the government can work toward the following goals:

- Creating an environment for competition and cooperation between local firms. Local firms need to ensure continuity in their operations or activities by enhancing their capabilities, as they compete among themselves. Local competition implies that a number of firms will become competitive enough to become TNCs' partners or vendors. The government could help create a better environment for firms to compete against each other and cooperate with each other so that NEM industries as a whole become more competitive.
- Promoting local firms to a higher position in GVCs. Shifts in demand by TNCs and changes in TNCs' GVCs in Thailand derive mostly from TNCs' requests for cost reduction. If each local firm can upgrade its value added activity, they can attain higher levels in value chains, both horizontally and vertically. The government can promote local firms' capabilities explicitly by supporting innovation and technical upgrading. Only then may such firms partner with foreign TNCs in NEM operations.
- Putting an innovation policy in place for local firms to encourage and protect technologies they need in order to operate under NEMs. Competition to become a TNC's NEM partner is high. For example, in the textile and garment industry there are competitors who offer products at lower prices. Particularly if the products offered by local firms are standardized and are not required to be localized, competition will be much more severe. A strong innovation policy is required as Thailand is trying to overcome the middle-income trap, like other advanced ASEAN member states. Innovations flourish only when they are protected by a proper framework of intellectual property rights. Such protection is still at a premature stage, as the country is classified as being in "transition from stage 1 to stage 2" (the second lowest in terms of development stage), in the World Economic Forum's Global Competitiveness Index 2017–2018. In addition, on innovation and sophistication factors the country is ranked 32nd, with a score of 4.72.<sup>27</sup>
- Protecting local employees from unreasonable conditions. There are some benefits to being employed by NEM firms. In recent world trends of transparent governance policy for foreign TNCs, lists of suppliers are disclosed and foreign TNCs are aware of local employees' working conditions. However, the governance policies of foreign TNCs affect only local firms that have direct NEM relationships; they do not yet apply to micro firms or SMEs or individual farmers or craftsmen who have indirect contracts with foreign TNCs. Therefore, local employees need to be protected by a labour policy for the industry, as current working environments or conditions do not necessarily meet global standards.

## 4.2 Mainstreaming sustainable development

As local NEM firms and their foreign clients have no equity relationship, the typical TNC governance of foreign affiliates in host countries is sometimes almost absent. Despite this, the firms interviewed for this study follow customers' compliance levels and guidance, not their local standards. Customers (foreign TNCs) from the United States and Europe, and recently from Japan, have increased the monitoring of human rights in suppliers outside their own countries and presented their own guidance, based on international guidelines. In the gem and jewellery industry, subcontracted workers of local NEM firms are part of foreign clients' supplier networks; however, those clients have no direct contact with these subcontracting workers (a similar situation was found in the textile and garment industries, particularly those for employees of Thai subsidiaries in neighbouring host countries). Even though some foreign clients have implemented corporate social responsibility

<sup>27</sup> Singapore is ranked 3rd and has a score of 5.71. Malaysia is ranked 23rd with a score of 5.17. Viet Nam is ranked 55th and has a score of 4.36. The Philippines is ranked 56th and has a score of 4.35 (World Competitiveness Report).

principles at local NEM firms, these principles are not necessarily conveyed to subcontractors. The Thai government cannot rely only on foreign clients' compliance levels and guidance, as they often do not provide an appropriate level for the whole society.

The foreign clients of NEM firms have their own compliance standards. The business community needs to have guiding principles such as the UN guiding principles on business and human rights. According to the UN's guidance,<sup>28</sup> human rights due diligence "should cover adverse human rights impacts that the business enterprise may cause or contribute to through its own activities, or which may be directly linked to its operations, products or services by its business relationship" (p. 17).

### 4.3 Improving the institutional setting

Thailand has been an attractive FDI destination for foreign TNCs. As a result, a number of TNC subsidiaries have backward linkages with local Thai firms.

Two directions of policy implications emerge from these characteristics. The first direction is promoting NEM policy as well as FDI policy. In addition to the current industrial policy encouraging FDI, the government could pursue industrial policy to encourage NEM agreements with foreign NEM clients. Competitive advantages can be found in the country in the areas of manufacturing where supporting industries are integrated and where subcontracting and franchising have a long history in diversified industries. In addition to the government's current industrial policy encouraging the sophistication of industrial structure in manufacturing, the government can possibly pursue industrial policy to encourage NEM agreements with foreign NEM clients. Further contributions to economic development, industrial development and employment creation could be expected with NEMs. In this context, policies in areas such as innovation and technological readiness and governance guidelines in all suppliers (including micro and SMEs that subcontract with local NEM firms) under NEM agreements are therefore important.

The second direction is that the adoption of the Sustainable Development Goals by the United Nations provides opportunities for the government to shape the conduct of NEM firms to mainstream such goals. In building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation are key elements. Environmental standards have already become important in bilateral trading relationships. Such monitoring by TNCs has increased over the years.

Pressure on environmental standards has also mounted because of problems of global warming and climate change. Thailand has ratified the 2015 Paris Accord (and the subsequent time-deferred version of the Marrakech Proclamation in 2016) under the United Nations Framework Convention for Climate Change. Hence, the government should raise awareness, as well as promote innovation towards the formation of a major standards organization to coach and certify NEM firms.

The government should consider implementing and strengthening the regulatory framework for NEM firms to export, promote innovation, expand employment and upgrade technologically. This initiative should start with a profound evaluation of the critical policy pillars shown in table 15. This would be the first step for the government to decide whether it should strengthen the policy framework of NEM promotion and, if so, to decide what, how and to what extent to do so in order to meet a certain level of international standards, from the viewpoints of foreign NEM clients, local NEM firms, local NEM firms' subcontracting firms and local employment standards.

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<sup>28</sup> United Nations (2011), "Guiding Principles on Business and Human Rights: Implementing the United Nations 'Protect, Respect and Remedy' Framework", United Nations Human Rights Office of the High Commissioner. New York and Geneva.

**Table 15. Checklist for NEM agreements and operations to maximize benefits from and minimize costs with NEM**

NEM policy of the Thai government	Compliance with laws	Whether there is an agreement on contract performance
		Whether there is an agreement on contract terms (duration)
		Whether there is an agreement on contract termination and its process
		Whether there is an agreement on contract arrangement (additional contracts) and its process
	Respect for human rights	Whether there are rules on non-discrimination
		Whether there are rules on basic human rights
		Whether there are rules on harassment (power balance between local NEM firms and TNCs)
	Environmental consideration	Whether there are guidelines on air pollution by local NEM firms
		Whether there are guidelines on water contamination by local NEM firms
		Whether there are guidelines on environmental friendly goods or services by local NEM firms
	Work environment	Whether there are employment rules (laws) on age under the NEM agreement
		Whether there are employment rules (laws) on gender under the NEM agreement
		Whether there are guidelines on a safe and pleasant work environment for local NEM firms
		Whether there are employment rules (laws) on working environments under the NEM agreement
		Whether there are employment rules (laws) on working conditions under the NEM agreement
		Whether there are employment rules (laws) on working hours under the NEM agreement
		Whether there are employment rules (laws) on taking holidays under the NEM agreement
		Whether there are employment rules (laws) on treatment of absence under the NEM agreement
		Whether there are employment rules (laws) on maternity-related leave under the NEM agreement
		Whether there are guidelines on provision of support system of childcare and nursing care
Whether there are employment rules (laws) on terminating employment contracts under the NEM agreement		
For local firms' development	Whether there is a program through local NEM firms can improve their technology and capacity	
	Whether there is a program through which local NEM firms' employees can learn	
	Whether there is a program through which local NEM firms can gain an understanding of NEM policy	
	Whether there is a program through which local NEM firms can gain an understanding of the business environment of the industry	
Subcontractors/suppliers	Whether there are guidelines for similar NEM policy for local subcontractors and suppliers	

**Table 15. Checklist for NEM agreements and operations to maximize benefits from and minimize costs with NEM (Concluded)**

For TNCs, required by the Thai government	Earning the trust of customers and consumers	Whether there are guidelines for TNCs to provide correct information on their products or services
	Mutual growth with partner companies	Whether there are guidelines for TNCs to respect free and fair trading rules
		Whether there are guidelines for TNCs to provide relevant information required for trading
	Coexistence with local communities	Whether there are guidelines for TNCs to develop relationships based on trust with local NEM firms
		Whether there are guidelines for TNCs to establish and maintain a good relationship with local communities where local NEM firms are located

Source: Adapted from "Corporate Code of Conduct, the Third Edition", Tokyo Chamber of Commerce and Industry (2013).



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