INDUSTRY OVERVIEW

It is well recognized that the machinery industry is a crucial supporting industry to the manufacturing sector, which plays a significant role in Thailand's overall economy. This can be seen by the continued growth of both these industries. In 2014, the trade value of machinery and parts reached US$22.91 billion, nearly a 130% increase from 2009 levels.

Despite continued growth, developmental gaps are still apparent in the industry, as the production of highly complex and precise technological machinery is still in short supply in Thailand. This has resulted in the country being mainly reliant on importing those products. According to the Ministry of Commerce, machinery and parts was ranked 2nd in terms of highest import value. In 2014, Thailand imported machinery and parts products worth US$15.23 billion, a 107% increase from 2009.

Apart from that, ongoing regional economic expansion has contributed to the growth of Thailand's machinery and parts exports, leading to a 193% increase from 2009 to 2014.

In 2014, major import sources for machinery and parts were Japan (31.5%), China (19.2%) and Germany (9%). Conversely, the main export destinations for Thai machinery and parts were Japan (10.4%), United States (9.2%) and Indonesia (8.5%).

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**Imports and Exports of Machinery and Parts, 2009-2014**

<table>
<thead>
<tr>
<th>Year</th>
<th>Import (US$ Billion)</th>
<th>Export (US$ Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>7.34</td>
<td>2.62</td>
</tr>
<tr>
<td>2010</td>
<td>9.19</td>
<td>3.5</td>
</tr>
<tr>
<td>2011</td>
<td>11.11</td>
<td>4.35</td>
</tr>
<tr>
<td>2012</td>
<td>17.98</td>
<td>6.45</td>
</tr>
<tr>
<td>2013</td>
<td>14.98</td>
<td>15.23</td>
</tr>
<tr>
<td>2014</td>
<td>7.68</td>
<td>7.68</td>
</tr>
</tbody>
</table>

Source: Machinery Intelligence Unit, Iron and Steel Institute of Thailand
The majority of Thailand’s machinery and part imports in 2014 consisted of Tractor parts and accessories (HS 8708), valued at US$5.40 billion, followed by machinery for air pumps, vacuum pumps, compressors & fans, hoods & fans (HS 8414) at US$1.73 billion and turbo-jets, printing machinery (HS 8443) at US$1.24 billion.

Based on export value in 2014, the largest Thai machinery and parts export was parts and accessories of tractors (HS 8708), valued at US$6.82 billion. This is followed by printing machinery (HS 8443) valued at US$2.56 billion and refrigerators, freezers and other refrigerating or freezing equipment (HS 8418) valued at US$1.94 billion.

The total trade value of machinery and parts in 2014 was US$22.91 billion. The biggest sector was industrial machinery with a value of US$17 billion (74%), followed by machine tools at US$4 billion (18%) and agricultural machinery at US$1.9 billion (8%). According to the Department of Industrial Works, Ministry of Industry, in 2014 there were 5,532 factories in Thailand producing machinery and parts and a total of approximately 200,000 workers in the industry.
Thailand has an abundance of agricultural resources; it is estimated that in 2014 around 50% of the total land area in the country was being used for agriculture purposes. Although agricultural manufacturing machines are locally available, supply falls short of meeting demand and Thailand still imports high technology machines. According to the Machinery Intelligence Unit (MIU) of the Iron and Steel Institute of Thailand, the value of agricultural machinery imports in 2014 grew 296% from 2009 to US$792 million in 2014, consisting of US$786 million in agricultural machines and US$6 million in livestock machines. Major import sources of agricultural machinery are China, Japan and Malaysia.

Thai exports of agricultural machinery have also increased. The export value of agricultural machinery increased by 526% from 2009 to US$792 million in 2014, consisting of US$786 million in agricultural machines and US$6 million in livestock machines. Major export destinations of Thai agricultural machinery are Cambodia, Myanmar, Indonesia and Saudi Arabia.

The growth of Thailand’s automotive and electronics & electrical appliances (E&E) industries is an important factor driving demand for modern machine tools. According to the Machinery Intelligence Unit, imports of machine tools and parts grew by 200% from 2009 to 2014 to US$3.2 billion. This amount consists of US$2.99 billion in machine tool imports and US$206 million in hand tool imports. Meanwhile, exports of machine tools in 2014 were valued at US$85 million, a 374% increase from 2009. Hand tools accounted for US$71 million of those exports.

The top three machine tools imports were molding boxes for metal foundry (HS 8480), machine tools for working metal by forging, bending, folding, shearing (HS 8462) and metal lathes (HS 8458). Japan is a major import source of machine tools, accounting for half of total imports. The top three machine tool exports were molding boxes for glass, metal, rubber and plastic (HS 8480), machine tools for non-mechanical removal of material by laser or other light (HS 8456) and machine tools parts and accessories (HS 8466). Top export markets for Thailand are Japan, U.S., China and Netherlands.
INDUSTRIAL MACHINERY

Industrial machinery is used in the operation of several industries including; casting, paper and printing, construction, leather, packaging, food processing, electronics and electrical appliances, rubber and plastic, textile, and mining.

Growing manufacturing industries in Thailand have boosted imports of industrial machinery rapidly, with significant growth also present in exports. The trade value of industrial machinery in 2014 totaled US$16.96 billion. Thailand imported US$10.92 billion worth of industrial machinery in 2014, marking an 82% increase since 2009. Japan is the largest source of imports, followed by China and Germany. The largest importer of industrial machines was the construction industry with a value of US$2.16 billion, accounting for around 20% of the total value; followed by the rubber & plastic industry importing US$69 million (6%), the packaging industry at US$42 million (4%) and the mining industry at US$42 million (4%).

From 2009 to 2014, Thailand’s exports of industrial machinery grew 161% to US$6.04 billion. Major export destinations were Indonesia, Japan and the U.S. Top categories of industrial machinery exports were machinery for construction, with a value of US$1.46 billion or 24% of total exports, machines for paper & printing manufacturing at US$51 million (8%) and machines for metallurgy and casting at US$22 million (4%).

MOULD AND DIE

In 2014, Thailand was ranked 18th in the world for the export of moulding boxes for metal foundry (HS 8480) and 3rd for dies for drawing or extruding metal (HS 820720).

Moulds and dies are necessary inputs for downstream manufacturing especially in the automotive and parts sector, electronics & electrical appliances (E&E) and packaging industries. The demand for moulds and dies is expected to grow steadily in 2015 due to an increase in the domestic market.

According to the Mould & Die Industry Information of Thailand (part of the Thai-German Institute) there are approximately 4,207 companies registered with the institute and involved in the mould and die industry in Thailand. A majority of moulds and dies are utilized by Thailand’s automotive and E&E industries. Stamping, progressive and forming are the most common types of metal mould, while injection and blow are plastic moulds widely used by the auto and E&E makers as well as the packaging industry.

Mould and Die Imports and Exports, 2009-2014

Imports and Exports of Industrial Machinery and Parts, 2009-2014

Source: Machinery Intelligence Unit, Iron and Steel Institute of Thailand
Local mould and die manufacturers are able to meet an increase of local demand from Thailand’s downstream industries; however, it still leaves a significant opportunity in the market for higher quality mould and die imports from foreign manufacturers. In 2014, Thailand imported US$1.26 billion worth of moulds and dies. Japan was the largest source of mould and die imports, with China a distant second followed by Korea and Taiwan. At the same time, Thailand exported US$299 million of moulds and dies, mainly to Japan, the US and India.

### Thailand Top Ten Import and Export locations for Mould and Die, 2014

<table>
<thead>
<tr>
<th>Import Sources</th>
<th>Value (US$ million)</th>
<th>Export Destinations</th>
<th>Value (US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td></td>
<td>Country</td>
<td></td>
</tr>
<tr>
<td>1 Japan</td>
<td>374</td>
<td>1 Japan</td>
<td>83</td>
</tr>
<tr>
<td>2 China</td>
<td>236</td>
<td>2 US</td>
<td>46</td>
</tr>
<tr>
<td>3 South Korea</td>
<td>109</td>
<td>3 India</td>
<td>31</td>
</tr>
<tr>
<td>4 Taiwan</td>
<td>73</td>
<td>4 Indonesia</td>
<td>32</td>
</tr>
<tr>
<td>5 Singapore</td>
<td>35</td>
<td>5 Vietnam</td>
<td>19</td>
</tr>
<tr>
<td>6 Germany</td>
<td>21</td>
<td>6 Malaysia</td>
<td>16</td>
</tr>
<tr>
<td>7 Malaysia</td>
<td>18</td>
<td>7 China</td>
<td>15</td>
</tr>
<tr>
<td>8 Italy</td>
<td>8</td>
<td>8 Mexico</td>
<td>7</td>
</tr>
<tr>
<td>9 US</td>
<td>6</td>
<td>9 Philippines</td>
<td>6</td>
</tr>
<tr>
<td>10 Canada</td>
<td>5</td>
<td>10 Singapore</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: The Ministry of Commerce, Thailand

### Top Five Mould and Die Imports in 2014

<table>
<thead>
<tr>
<th>HS Code</th>
<th>Description</th>
<th>US$ Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>84807190</td>
<td>Moulds for rubber or plastics: Injection or compression types: for other than those of footwear</td>
<td>553</td>
</tr>
<tr>
<td>82072000</td>
<td>Dies for drawing or extruding metal</td>
<td>402</td>
</tr>
<tr>
<td>84807900</td>
<td>Moulds for rubber or plastics: Other than those of Injection or compression types: for other than those of footwear</td>
<td>105</td>
</tr>
<tr>
<td>82073000</td>
<td>Tools for pressing, stamping or punching</td>
<td>67</td>
</tr>
<tr>
<td>84804100</td>
<td>Moulds for metal or metal carbides of Injection or compression types</td>
<td>41</td>
</tr>
</tbody>
</table>

Source: Mould and Die Industry Information of Thailand

### Top Five Mould and Die Exports in 2014

<table>
<thead>
<tr>
<th>HS Code</th>
<th>Description</th>
<th>US$ Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>84807190</td>
<td>Moulds for rubber or plastics: Injection or compression types: for other than those of footwear</td>
<td>94</td>
</tr>
<tr>
<td>82072000</td>
<td>Dies for drawing or extruding metal</td>
<td>75</td>
</tr>
<tr>
<td>84807900</td>
<td>Moulds for rubber or plastics: Other than those of Injection or compression types: for other than those of footwear</td>
<td>72</td>
</tr>
<tr>
<td>82073000</td>
<td>Tools for pressing, stamping or punching</td>
<td>16</td>
</tr>
<tr>
<td>84804100</td>
<td>Moulds for metal or metal carbides of Injection or compression types</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: Mould and Die Industry Information of Thailand

Following successful government initiatives from 2005-2014 with nation-wide mould and die industrial development projects, which began with the ‘Mould and Die Industrial Development project: MDP’ in 2005-2009 and the second phase of it being the ‘Enhancement of Mould and Die Industry Competitiveness Project: MDC’ in 2010-2014, the government has initiated a follow-up project in 2015 with the ‘Mould and Die Industry Sustainable Development Project: MDS, 2016-2020’ to continue increasing the skills, competitiveness, sustainability and capacity of Thailand’s mould and die industry.

The ‘Mould and Die Industry Sustainable Development Project: MDS, 2016-2020’ project will aim to:
1. Develop a single standard for mould and die and its factories
2. Enhance ten factories per year to meet the standard
3. Enhance 360 mould and die technicians per year
4. Provide support for high precision/complex mould and die design to ten factories per year
5. Provide consultation services to 150 mould and die entrepreneurs per day
6. Produce six research papers concerning mould and die development
7. Provide technology transfer and development to mould and die entrepreneurs for 15 times
8. Establish four cluster groups for the mould and die industry to enhance business systems
9. Enable 75 mould and die entrepreneurs to exhibit their products to broaden their business
10. Establish a standardized database
WHY THAILAND

Thailand offers a number of advantages for manufacturing in the machinery and parts industry. These include:

Strong Business Climate: World Bank Doing Business 2015 report indicated that Thailand was ranked 26th in the world and 5th in East Asia and the Pacific in terms of ease of doing business.

Cluster Development: In order to promote greater productivity and efficiency in the machinery and mould & die industry, the government has encouraged the development of machinery and mould & die associations. Proximity between manufacturing firms and their suppliers allows for not only enhanced communication, but also improved flow of goods and lower costs. The four major mould & die associations in Thailand are the Mould & Die Cluster of Thailand (MDCT), Thai Tool and Die Industry Association (TDIA), Nano Global Precision Cluster (NGPC) and the Thai Mould and Parts Cluster (TMPC).

Growing Domestic Demand: The manufacturing sector in Thailand has exhibited continued growth and is expected to maintain that trajectory. This industry contributes significantly to the overall success of Thailand’s economy. More importantly, this sector relies heavily on machinery, mould and die equipment and materials. As such the machinery sector could also expect to see further expansions. Major manufacturing industries include:

Automotive industry
- Thailand is Southeast Asia’s largest vehicle producer and world’s largest manufacturer of one-ton pick-up trucks.
- In 2014, Thailand was the world’s 12th largest automobile manufacturing country
- Vehicle production volume in 2014 reached 1.88 million units, an 88% increase from 2009.

Electronics and electrical appliances industry
- Thailand is a world leading computer data storage unit manufacturing base, boasting the 2nd highest export value in the world after China.
- Thailand is also the world’s second largest producers of air conditioning units.
- The market growth of small electronic appliances in the middle of 2015 in Thailand was estimated to be approximately 5%.

Food processing industry
- Thailand is one of the world’s largest producers of food products such as rice, canned tuna, sugar cane, frozen seafood, chicken and canned pineapple product.
- In 2014, Thailand ranks 2nd in the world for net export for sugars, 9th for vegetables and 16th for seafood.
- Food consumption expenditure in Thailand increased by 3.8% in 2014.

Construction industry
- Thailand’s government budget for public investments in 2016 includes up to US$4.16 billion planned for expanding roads, mass transit and water management systems. The two main mass transit systems in Thailand are the Mass Rapid Transit (MRT) and the Bangkok Mass Transit System (BTS).
- The construction industry in Thailand is forecasted to grow in 2016 mainly due to government investment in the industry which has increased by 74% and investments by state enterprise increasing by 30%.
- The government is currently implementing an 8 year (2015-2022) infrastructure investment plan, with a budget of around US$75 billion, which aims to significantly expand and improve the country’s railway, road, mass transit, water and air transport.

Access to Markets: In order to enhance global commerce opportunities, Thailand has bilateral free trade agreements with many countries, including Japan, India, China, Australia, and New Zealand. Thailand is also currently in the process of establishing free trade agreements with the European Union, Canada, Turkey, and Chile. As a member of ASEAN, Thailand participates in multilateral free trade agreements with China, South Korea, Australia, New Zealand, India, and Japan. Furthermore, the ASEAN Free Trade Agreement (AFTA) has expanded Thailand’s market to include the 10 member states of ASEAN that collectively comprise a market of 600 million consumers.

The establishment of the ASEAN Economic Community (AEC) in 2015 will fully integrate this US$2 trillion market into the global economy. This new economic bloc with streamlined movement of goods, services, and investment capital will provide unparalleled opportunities for manufacturers.
Great Infrastructure: Located at the center of Southeast Asia, Thailand has become a transportation hub for the region, with convenient routes through the east-west and north-south corridor facilitating access to all nearby countries including Laos, Cambodia, Vietnam, Myanmar, Malaysia and Singapore and also southern China from the north and northeast of the Kingdom. Thailand boasts world-class infrastructure, including Bangkok’s Suvarnabhumi International Airport, Laem Chabang —a leading deep-sea port—, extensive road networks, rail links to all regions of the country and modern communication facilities, all of which combine to offer manufacturers easy and efficient exporting.

Investor-friendly Environment: In addition to the many incentives provided by the BOI, the Thai government imposes no export requirements, no local content requirements and no foreign equity restrictions on manufacturers.

Excellent Institutional Support: The Thai government is aware of the need to support the continued development of machinery industries, as well as the technological capabilities of its workforce. Thailand offers many resources for research and development (R&D), technical training and industrial organizations, including:

- Thai-German Institute (TGI)
- Machinery Intelligence Unit (MIU)
- National Metal and Materials Center (MTEC)
- Thai Tool and Die Industry Association (TDIA)
- Bureau of Supporting Industries Development (BSID)
- Thailand-Japan Technology Promotion Association (TJTPA)
- Metals and Materials Research Center – Kasetsart University
- Thailand’s Institute of Scientific and Technology Research (TISTR)
- National Science and Technology Development Agency (NSTDA)

“There are numerous positive factors for foreign investors to consider in investing in business and industries in Thailand. First of all, Thailand’s geography and its port access is convenient from a logistical standpoint, apart from that it also offers quality skilled workers at a reasonable rate. Additionally, the Thai government has policies supporting investments through the BOI. The main benefits of that policy that affect production cost are the import duty exemption and VAT for bringing in machinery and raw materials for production and export. All these factors are important considerations when deciding to invest somewhere. The positive outcome of these factors in Thailand can be seen by the increasing numbers of foreign investments here.”

-Mr. Yohei Toda, Managing Director & Ms. Nisanath Matklang, Logistics Manager of Sato-Shoji (Thailand) Co., Ltd.-

BOI INVESTMENT INCENTIVES

Thailand’s Board of Investment (BOI) offers a wide range of tax and non-tax incentives for projects that meet national development objectives.

Tax-based incentives include exemption of import duties on machinery and raw materials, and corporate income tax exemption of up to eight years. Non-tax incentives include permission to bring in expatriates, own land and take or remit foreign currency abroad.

Recognizing the importance of the role machinery plays in the continued economic development of Thailand, the Board of Investments offers attractive incentives to projects that manufacture machinery.

Projects approved for the manufacture of machinery, equipment and parts and/or repair of moulds and dies are granted a 5-year corporate income tax holiday, exemptions of import duty on machinery and import duty on raw or essential materials used in manufacturing export products, as well as non-tax incentives. In addition, projects approved for the assembly of machinery and equipment are granted a 3-year corporate income tax holiday, exemptions of import duty on machinery and import duty on raw or essential materials used in manufacturing export products, as well as non-tax incentives.

Projects approved for the manufacture of automation machinery and/or automation equipment with engineering design are granted an 8-year corporate income tax holiday, exemptions of import duty on machinery and import duty on raw or essential materials used in manufacturing export products, as well as non-tax incentives.

FOR FURTHER INFORMATION:

Thailand Board of Investment (BOI):
http://www.boi.go.th

Machinery Intelligence Unit:
http://www.miu.isit.or.th

Mould and Die Industry Information of Thailand: http://www.thaimould.com

Mould & Die cluster Service Cooperative of Thailand: http://www.mdsct.net