

MACHINERY BROCHURE

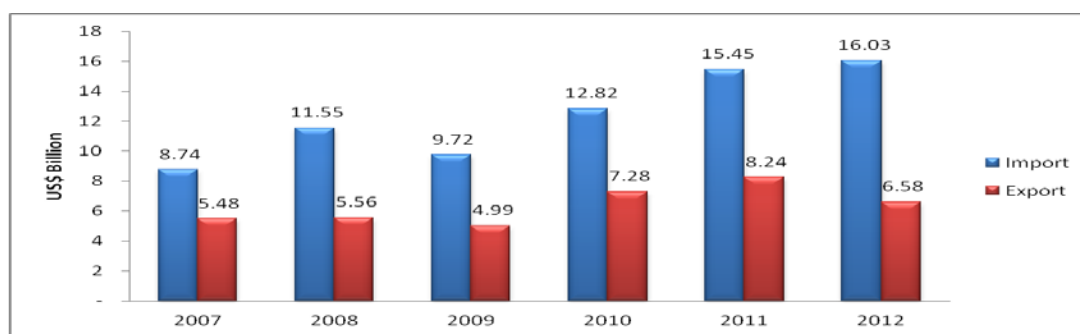
April 2013

INDUSTRY OVERVIEW

In the first 11 months of 2012, the trade value of machinery and parts reached at US\$22.60 billion, an almost 60% increased from 2007 levels.

According to the Ministry of Commerce, machinery and parts was ranked 2nd in terms of highest import value. During January-November 2012, Thailand imported machinery and parts products worth US\$16.03 billion and exported US\$6.58 billion, a 114% and 29% increase from 2007, respectively.

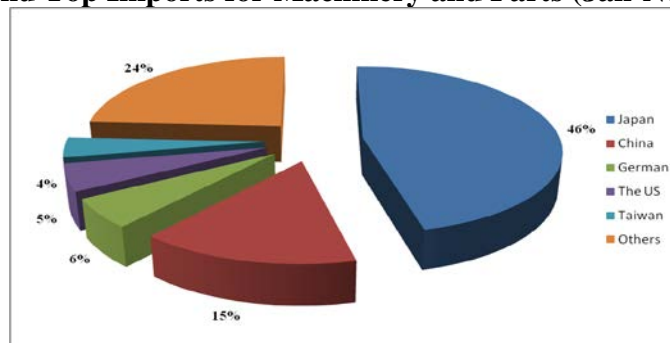
Machinery and Parts Imports and Exports: 2007 – 2012 (Jan-Nov)



Source: Machinery Intelligence Unit, Iron and Steel Institute of Thailand

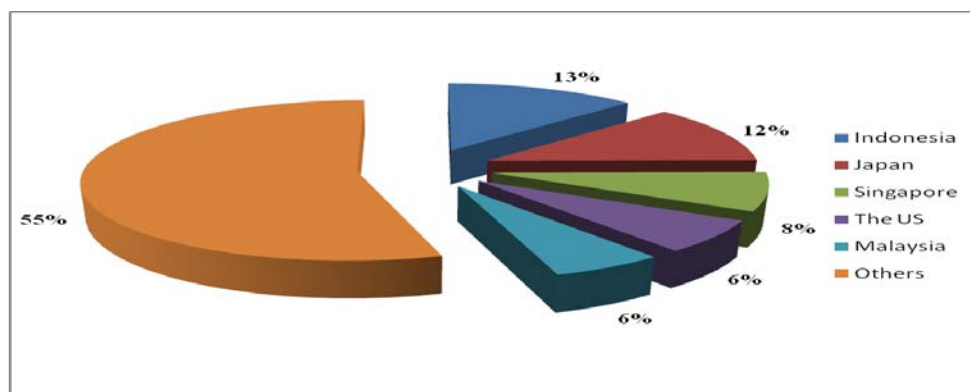
January-November 2012, major import sources for machinery and part imports were Japan (46%), China (15%) and Germany (6%). Conversely, main export destinations of Thailand machinery and parts were Indonesia (13%), Japan (12%) and Singapore (8%).

Thailand Top Imports for Machinery and Parts (Jan-Nov 2012)



Source: Ministry of Commerce, Thailand

Thailand Top Exports for Machinery and Parts (Jan-Nov 2012)



Source: Ministry of Commerce, Thailand

The majority of machinery and part imports in January – November 2012 was machinery for working rubber & plastics for manufacturing (HS 8477), valued at US\$1.20 billion, machinery for and air pumps, vacuum pumps, compressors & fans, hoods & fans (HS 8414) at US\$1.06 billion, and turbo-jets, turbo-propellers and other gas turbines (HS 8411) at US\$937 million.

Top 5 Machinery and Parts Imports (Jan-Nov 2012)

HS Code	Description	US\$ Million
8477	Machinery for working rubber & plastic for the manufacturing of production from these materials	1,206
8414	Air, vacuum pumps, compressor & fans, hoods & fans	1,055
8411	Turbo-jets, turbo-propellers and other gas turbines	937
8443	Printing machinery, machines for uses ancillary to printing	859
8462	Machine tools for forging, bending, stamping	781

Source: Machinery Intelligence Unit, Iron and Steel Institute of Thailand

Based on export value in January – November 2012, the largest Thai machinery and parts exports were printing machinery (HS 8443), valued at US\$1.33 billion, air pumps, vacuum pumps, compressors & fans, hoods & fans (HS 8414), valued at US\$818 million, and self-propelled bulldozers, angle dozers, graders, excavators (HS 8429), valued at US\$664 million.

Top 5 Machinery and Parts Exports (Jan-Nov 2012)

HS Code	Description	US\$ Million
8443	Printing machinery, machines for ancillary printing uses	1,329
8414	Air pump, vacuum pumps, compressors & fans, hoods & fans	818

8429	Self-propelled bulldozer, angle dozer, grader, excavator	664
8421	Centrifuges, including centrifugal dryers, filtering, purifying machinery	593
8428	Lifting, handling, loading, unloading machinery (excluding lift, escalator, conveyer)	401

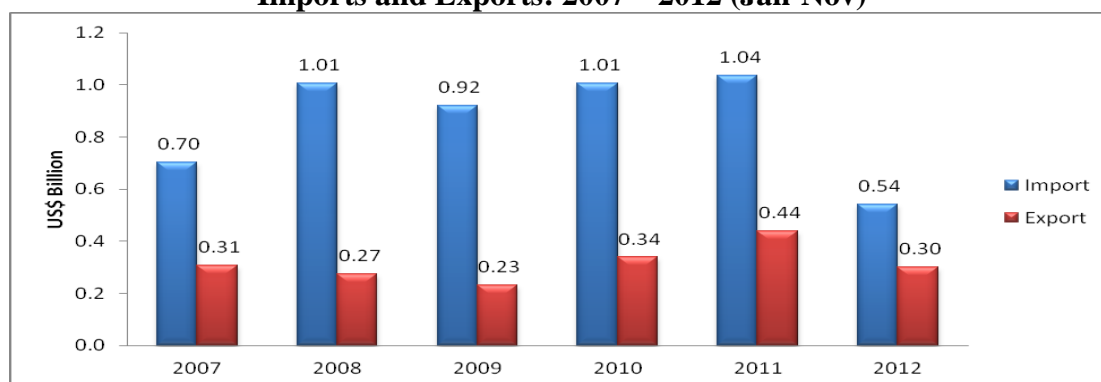
Source: Machinery Intelligence Unit, Iron and Steel Institute of Thailand

AGRICULTURAL MACHINERY

According to the Machinery Intelligence Unit (MIU) the value of agricultural machinery imports in 2011 grew 47% from 2007 to US\$1.04 billion: US\$966 million in agricultural machines and US\$70 million in livestock machines. Japan and China were the main sources of agricultural machinery imports.

In 2011, the export value of agricultural machinery increased by 43% from 2007 to US\$439 million, and consisted of US\$430 million in agricultural machines and US\$9 million in livestock machines. Major export destinations are ASEAN member countries.

**Agricultural Machinery and Parts
Imports and Exports: 2007 – 2012 (Jan-Nov)**



Source: Machinery Intelligence Unit, Iron and Steel Institute of Thailand

MACHINE TOOLS

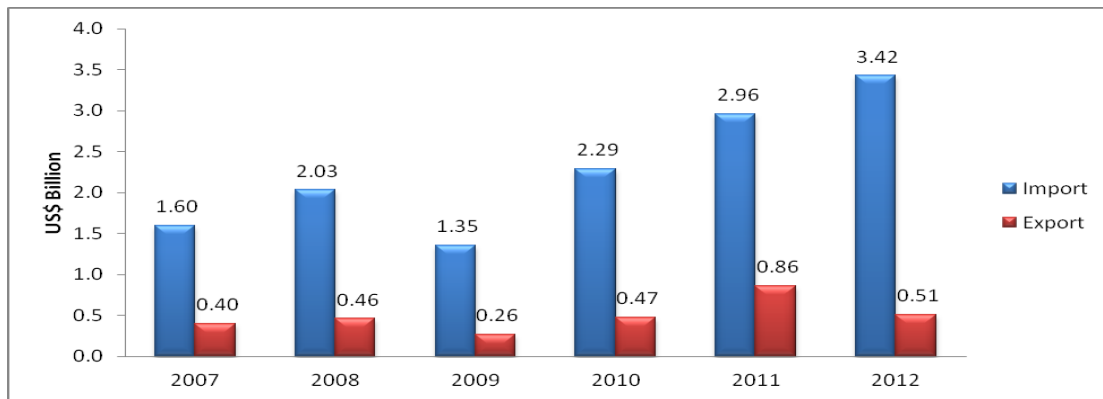
According to MIU, trade value of Thai machine tools in January- November 2012 reached US\$3.93 billion. Growth of imports from 2007 increased 114% to US\$3.42 billion in 2012.

The top three machine tools imports were machine tools for forging, bending and stamping (HS 8462), machine tools for drilling, boring and milling (HS 8459) and machine tools for honing or finishing metal (HS 8460). Japan is a major import source of machine tools with half of total imports.

Exports of machine tools from January - November 2012 was valued at US\$509 million, a 29% increase from 2007. Hand tools comprised US\$50 million of those exports.

Top three imports of machine tools exports were parts and accessories for machine tools (HS 8466), machine tools for lathes for removing metal (HS 8459) and machine tools for honing or finishing metal (HS 8460). Top export markets of Thailand are Japan and China.

**Machine Tools and Parts
Imports and Exports: 2007 – 2012 (Jan-Nov)**



Source: Machinery Intelligence Unit, Iron and Steel Institute of Thailand

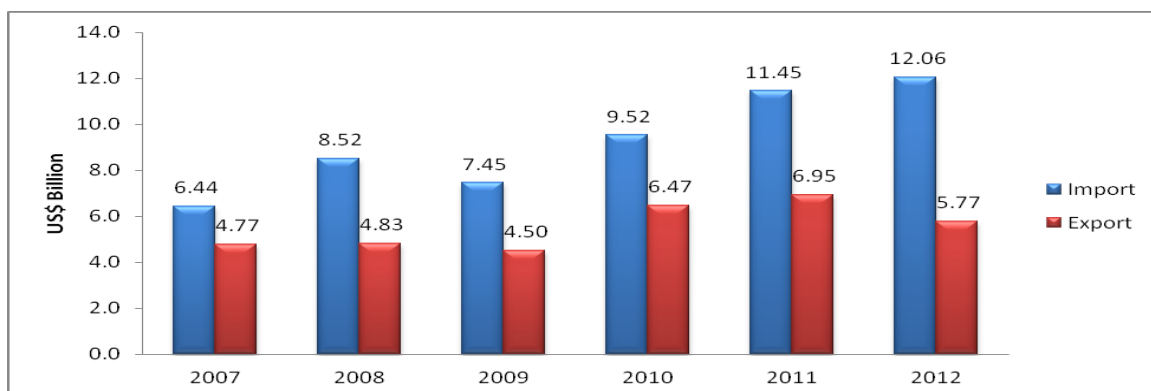
INDUSTRIAL MACHINERY

Trade value of industry machinery in the first 11 months of 2012 totaled US\$17.83 billion.

Thailand imported US\$12.06 billion of industrial machinery, January-November 2012, an 87% increase since 2007. Japan is a major source of imports, follow by China and the US. The largest importer of industrial machines was the construction industry, valued at US\$2.34 billion, accounting for 19% of the total. Others were rubber & plastic manufacturing importing US\$1.21 billion (10%), paper & printing manufacturing at US\$987 million (8%) and packaging manufacturing at US\$504 million (4%).

In 2012, Thailand’s exports of industrial machinery valued at US\$5.77 billion. Major export destinations were Japan, the US and Singapore. Top categories of industrial machinery exports were machines for paper & printing manufacturing with a value of US\$1.34 billion or 23% of total exports, machines for packaging manufacturing at US\$1.33 billion (23%) and machines for textile manufacturing at US\$250 million (4%)

**Industrial Machinery and Parts
Imports and Exports: 2007 – 2012 (Jan-Nov)**



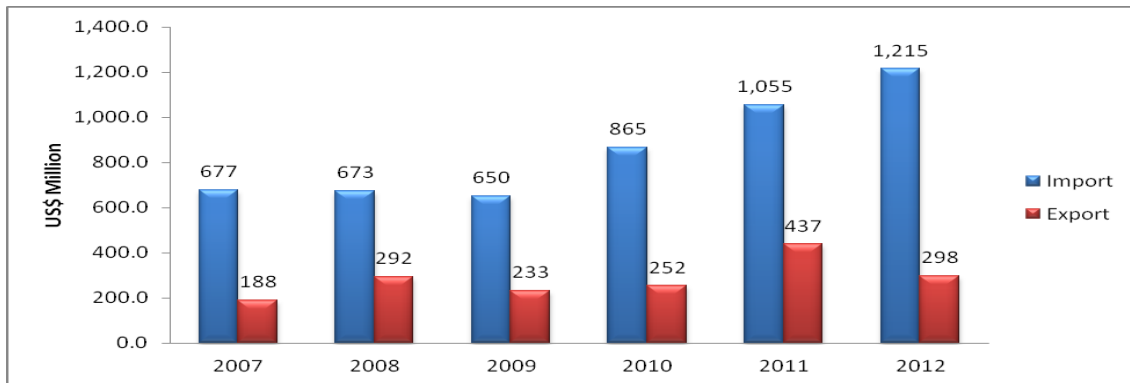
Source: Machinery Intelligence Unit, Iron and Steel Institute of Thailand

MOULD AND DIE

According to the Department of Industrial Works, there are approximately 1,200 mould and die factories in Thailand (as of Q4/2012). Of these, 37% produce moulds and dies for plastic

and 55% for metal. Six percent of those factories produce for rubber and 2% for glass and ceramics. A majority of moulds and dies are utilized by Thailand’s automotive and E&E industries.

**Mould and Die
Imports and Exports: 2007 – 2012 (Jan-Nov)**



Source: Mould and Die Industry Information of Thailand

January to November 2012, Thailand imported US\$1.22 billion worth of moulds and dies and exported US\$298 million of moulds and dies. Top source of mould and die imports was Japan, China, Korea and Taiwan; exports, Japan, the US and Indonesia.

Thailand Top Import and Export locations for Moulds and Dies, 2012 (Jan-Nov)

Import Sources			Export Destinations		
	Country	Value (US\$ million)		Country	Value (US\$ million)
1	Japan	694.71	1	Japan	133.19
2	China	149.60	2	The US	35.32
3	Korea	117.80	3	Indonesia	24.60
4	Taiwan	74.93	4	India	21.66
5	Germany	23.59	5	Vietnam	15.34
6	Singapore	23.14	6	China	14.91
7	Malaysia	20.17	7	Brazil	13.44
8	The US	7.08	8	Malaysia	11.25
9	Hong Kong	6.47	9	Korea	9.59
10	Italy	6.01	10	Taiwan	8.89

Source: The Customs Department of Thailand

Four main objectives of Thailand’s Mould and Die Industry Development Project 2010-2015:

1. Enhance the technical skills and improve educational institutes.
2. Promote R&D between researchers and industrialists, and its commercial production.
3. Expand investment in mould and die industries.
4. Create increasing value and opportunity for products manufactured in Thailand.

The Project supports 4 educational institutes, invested in the expansion of 250 mould factories, established excellence centers to train mould technicians with more than 2,000 technicians trained and helped 129 enterprises receive ISO 9001:2008 certification. 77 enterprises have developed programs for compliance with ISO 9001:2008 standards.

The Project foresees significant investments and demand from due to Japanese SMEs and automotive manufacturers. Largest auto mould and dies producers in Asia: Japan, Singapore and Thailand. In manufacturing for E&E Thailand is fourth.

Thailand also offers mould & die clusters, such as the Mould & Die Cluster of Thailand (MDCT), Thai Mould and Parts Cluster (TMPC), Thai Mould and Die Industry Association (TDIA), and the Nano Global Precision Cluster (NGPC).

“Due to automobile production, which continuously expanded from the last quarter of 2012, the need for moulds & dies grew. In 2012, Thailand imported US\$1.21 billion (THB36.4 billion) of mould & die and exported nearly US\$298 million (THB8.9 billion). The industry has opportunity for more investments in advanced mould & die manufacturing, such as multi components mould, advanced progressive and transfer die, to substitute and replace the demand for import.”

-Mr. Jirasak Yaovatsakul, Executive Director of Thai-German Institute-

WHY THAILAND

Strong Business Climate: Ranked 18th in World Bank Doing Business 2012.

Growing Domestic Demand:

- ◆ Automotive industry
 - Southeast Asia’s largest vehicle producer and world’s largest manufacturer of one-ton pick-up trucks.
 - Thailand is now the world’s 10th largest automobile manufacturing country
 - Vehicle production volume in the first 11 months of 2012 reached a record high of 2.23 million units, a 64% increase from 2011.
- ◆ Electronics and electrical appliances industry
 - World’s leading HDD manufacturing base: 40%-45% global share.
 - One of the world’s largest producers of air conditioning units and refrigerators.
- ◆ Food processing industry
 - Largest net food exporter in Asia.
 - One of the world’s largest producers of food products such as rice, canned tuna, frozen seafood, chicken and canned pineapple product.
- ◆ Construction industry
 - Thailand’s government budget for public investments in 2013 includes up to US\$15 billion planned for expanding roads and mass transit – Mass Rapid Transit (MRT) and Bangkok Mass Transit System (BTS).
 - The construction industry in Thailand is forecast to grow at 11-12.2% in 2016.

Access to Markets: Thailand has free trade agreements (FTAs) with Australia, New Zealand, India, Japan, member of ASEAN (AEC 2015), and others.

“There are a number of factors we take into consideration when selecting a location in which to invest. Thailand provides a strategic location within the ASEAN region with good access to the seaport. We recognize that with the current government policy direction to invest more in upgrading the country’s infrastructure and logistics system, Thailand could soon become a gateway connecting many ASEAN markets. Another factor is the access the supply chain network. With Caterpillar’s manufacturing presence in Thailand, we are focused on working

with our strategic supply chain partners and educational institutions to further enhance their capacity and skill set to support the manufacturing industry.

Advanced skilled labor development is critical for Thailand to remain competitive and have sustainable economic growth in the future. The Thailand Board of Investment (BOI) has also become a strategic partner for foreign investors for several decades. We appreciate the assistance the BOI has provided to help us become more competitive in the global marketplace and meet our business needs. The counseling service the BOI provides makes it easier for us to do business in Thailand and be successful."

- Ms. Anutra Sinchaipanich, Director – Government and Corporate Affairs of Caterpillar-

Excellent Institutional Support: Thailand offers many resources for research and development (R&D), technical training and industrial organization, 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)

"One of the reason why we chose to establish in Thailand is because we received many incentives and support from the Thai Government especially the Thailand Board of Investment (BOI) and the Industrial Estate Authority of Thailand (IEAT). Thailand is one of our main customer markets and we will continue to expand in the future."

-Mr. Hiroshi Takeo, Managing Director of Nagano Engineering (Thailand)-

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>