Brimming with the spirit of "moving a mountain," Korean machine tool industrialists are rallying behind the drive to create Manufacturing Renaissance, riding on the wave of Digital Transformation, which is characterized by the connectivity and convergence of future tech such as IoT, artificial intelligence and big data, etc.
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In 2018, global machine tool industry achieved remarkable progress, posting strong growth rates in all four major indicators—production, exports, imports and consumption, for two years in a row.

In particular, two trade-related indicators, i.e., a 9.4% expansion yoy in exports and 9.8% surge in imports, which are compared with 3.7% increase in terms of WTO-announced 2018 global trade increase rate, are enough to mirror the dynamo of the machine tool industry. The figures also showcase the value of machine tool industry as the mother of global future innovation.

Of course, considering the business cycle connected with the landscape of the global economy, we are well aware of the fact that we can not paint the future with only rosy color. Delivering us new challenge and dedication, global economic activity slowed down notably from the second half of last year.

We should not give up. Instead, we should be united to create unlimited value of machine tool industry under the motto "innovate innovation" for the better world of metal processing techs and solutions.

Together, we are tasked to create machine tool renaissance, riding on the wave of Digital Transformation, which is characterized by future tech such as IoT, artificial intelligence and big data, etc.

On this context, I would like to draw your attention to SIMTOS 2020, where exhibitors showcase their wealth of technologies and expertise to create unlimited value of their products. We vow to display our endless dedication and devotion under our new motto "Innovate Innovation for the Better World of Metal Processing Techs and Solutions."

Faithfully Yours,

Young-Doo, Kwon
Chairman of Korea Machine Tool Manufacturers' Association (KOMMA)
After an impressive growth in 2017, global machine tools market remained strong in 2018, riding on brisk facility investment demand, notably from such areas of semiconductor, display, etc.

According to a market intelligence report by Gardner Business Media, Inc., global machine tool production reached US$94.6 billion in 2017, a 4.6% expansion over a year earlier.

In addition, the global machine tool industry exhibited upward trends in other key sectors, i.e. exports with 9.4%, imports with 9.8% and consumption with 4.6%.

What makes 2018’s growth in machine tool consumption even more remarkable is what has happened in China. Since 2002, China has been the world’s leading machine tool consumer, and the country has consumed at least 33.7% of the world total since 2009.

This was the case until 2018, when China’s consumption dropped 5.9 % from US$30.7 billion to US$28.8 billion, and its share of global machine tool consumption fell to 31.4%.

**Production**

The value of machine tool production by top 10 nations reached US$83.2 billion, accounts for 8.8% of global total,

China, despite a 6.5% drop yoy, tops the chart followed by Germany, Japan, Italy, United States, Korea, etc. By continent, Asia accounted for 54.2% of global machine tools production with US$51.2 billion, Europe with 35.5 % (US$33.6 billion), America with 7.3% (US$6.8 billion).

**Exports**

The machine tool exports by top 10 nations amounted to US$42.7 billion, which accounts for 82.7% of global total valued at US$42.69 billion. Germany, registering US$10.4 billion, tops the list,
accounting for 20.1% of global machine tool exports. Japan came in runner-up, a head of China, Italy, Taiwan, Switzerland, United States, Korea, etc.

Imports

The value of top 10 importers reached US$30.3 billion in 2018, accounting for 62.1% of global total.

China, tops the chart with US$9.5 billion, followed by United States, Germany, Mexico, Italy, India, Belgium, Vietnam, Korea, etc. Korea’s imports of machine tool reached US$1.27 billion.

Consumption

Machine tool consumption by top 10 nations reached US$71.3 billion in 2018, accounting for 77.7% of the global total.

China has taken first place for 16 years in a row since 2002, consuming a combined US$28.8 billion worth of machine tools in 2018. Korea remained as the 6th largest machine tool consumption nation.

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<th>2018 Global Machine Tool Imports</th>
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<td>Others</td>
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<td>Global Total</td>
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Source: Gardner Business Media, Inc.

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<th>2018 Global Machine Tool Consumption</th>
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<td>Others</td>
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<td>Global Total</td>
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Korean Economic Performance

Focus on Invigoration, Innovation, Inclusiveness

Background

With global economic conditions worsening and semiconductor markets expected to remain weak, the economy, over the second half, will have to deal with uncertainties surrounding global trade, as well as slowing investment at home. Although employment continues to improve since February this year backed by the service sector, manufacturing jobs have yet to pick up and it appears that there should be an innovation in the country’s manufacturing sector. The economy also has to be prepared for demographic changes which will pose challenges in the future.

2019 Outlook

- Growth: Annual growth of 2.4~2.5% is expected, a downward revision from the original outlook made at the beginning of the year (2.6~2.7%). Exports and investment are projected to slow down, and growth will be supported by supplementary budgets, as well as by measures to boost exports and investment.

- Employment: A total of 200,000 jobs are expected to be added to the economy, the employment rate improving from 66.7% to 66.8%.

- Inflation: The annual consumer price inflation is projected to be 0.9% due to low oil and fresh food prices.

- Current account balance: Current account surpluses are expected to decline to US$60.5 billion amid slowing exports. Service balance is expected to improve somewhat.

<table>
<thead>
<tr>
<th>Category</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
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<tbody>
<tr>
<td>GDP growth (%)</td>
<td>2.7</td>
<td>2.4~2.5</td>
<td>2.6</td>
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<tr>
<td>Employment growth (thousand)</td>
<td>97</td>
<td>200</td>
<td>200</td>
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<tr>
<td>Employment rate, aged 15-64</td>
<td>66.6</td>
<td>66.8</td>
<td>67.0</td>
</tr>
<tr>
<td>Consumer price inflation (%)</td>
<td>1.5</td>
<td>0.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Current account (US $billion)</td>
<td>76.4</td>
<td>60.5</td>
<td>63.5</td>
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Framework for Economic Policies, H2 2019

The government will pursue the three pillars over the second half: Boosting the economy, restructuring industries and seeking inclusive growth. The framework is as follows:

- **Boost the Economy**
  - Promote investment
  - Increase domestic demand
  - Boost exports
  - Encourage local economies
  - Strengthen risk management

- **Restructure Industries**
  - Step up innovation-led growth efforts
  - Work on manufacturing innovation
  - Work on further developing the service sector
  - Prepare for demographic challenges

- **Seek Inclusive Growth**
  - Strengthen social safety nets
  - Expand support for young adults
  - Expand financial inclusion
  - Work on fair business practices
  - Improve the minimum wage system
Korea’s receipt of machine tool orders reached 2.87 trillion won in 2018, registering a slim 1.1% drop from 2.84 trillion won in the preceding year. Export order stood at 1.64 trillion won, accounting for 57.2% of the total order bill while domestic order amounted to 1.23 trillion won with 42.8% share. Domestic orders consisted of 1.09 trillion won from NC cutting machines, 80.9 billion won from non-NC cutting machines and 60.7 billion won from forming machines.

Export order broke down to 1.63 trillion won from NC cutting machines, 7.09 billion won from non-NC cutting machines and 2.30 billion won from forming machines. By domestic end-user industry, automobiles & parts remained the largest customer at 480.9 billion won, accounting for 39.1% of the total order volume. General machinery had the second largest order bill at 281.3 billion won (22.9% share), followed by electric & electronics/IT with 10.6 billion won (15.3%), ships/aerospace/other transport with 50.7 billion won (4.1%), steel/other metals with 46.5 billion won (3.5%), metal goods manufacturing with 33.6 billion won (2.7%), other manufacturing with 25.3 billion won (2.1%), precision machinery manufacturing with 2.9 billion won (2.9%), etc.

By product, machining center scored the largest amount with 1.12 trillion won (39.4%), followed by NC lathe with 102.3 billion won (36.0%), press with 85.5 billion won (3.0%), NC boring with 68.0 billion won (2.4%), etc.
Korea's machine tool production reached 5.65 trillion won in 2018, up 3% compared with 5.49 trillion won in 2017, according to a provisional mining & manufacturing tally of the Korea Statistics.

By segment, NC cutting machine production stood at 2.33 trillion won in 2018, shows the KOMMA tally based on a survey response from its member companies.

In the non-NC cutting machine and forming machine segments, Korean production recorded 69.8 billion won & 202 billion won in 2018, respectively, down 6.1% and 17% compared with the preceding year.

By product, NC lathes recorded the largest production amount with 1.01 trillion won, ahead of machining centers at 96.9 billion won and presses with 198.7 billion won.

Other items and production included boring machines with 40.2 billion won, grinding machines (including NC) at 13.2 billion won, milling machines (including NC) with 12.5 billion won and non-NC lathes at 19.9 billion won.

Meanwhile, Korea's machine tool shipments, evolving NC cutting machines, non-NC cutting machines and forming machines dwindled 2% to 2.90 trillion won in 2018.

In detail, domestic machine tool shipments reached 1.26 trillion won in 2018, while export shipments reached 1.64 trillion won.
Double-Digit Growth for Two Consecutive Years

Korean machine tool exports reached US$2.61 billion in 2018, an 11.2% expansion compared with the preceding year’s US$2.35 billion.

The figures broke down to US$1.90 billion from NC cutting machines, US$193.0 million from non-NC cutting machines and US$524.0 million from forming machines.

By country, China was the largest buyer of Korean machine tools in 2018 with US$490.8 million, ahead of runner-up USA with US$477.4 million. Vietnam was the third largest importer with US$272.5 million, followed by Germany with US$244.6 million, India with US$243.6 million, Japan US$73.4 million and United Kingdom with US$48.9 million.

By product, NC lathes recorded the largest export amount at US$872 million, followed by machining centers with US$683 million, presses with US$300 million, grinding machines with US$68 million, boring machines with US$40 million machines with US$15.6 million and Non-NC lathes with US$10 million.

In terms of export growth rate, boring machine (including NC) scored the highest rate of a 54.3% increase, followed by and NC lathes machine with 49.8%, machining center with 43.9%, Non-NC lathes with 17.3%, etc.
Korea's machine tool imports fell 5.6% to US$1.27 billion in 2018 compared with a 10.4% drop yoy in the preceding year.

The 2018 figure broke down to US$826.8 million in NC cutting machines, US$190.7 million in non-NC cutting machines and US$247.4 million in forming machines.

By product, machining centers held the largest share of machine tool imports with US$202 million, followed by grinding machines (including NC) with US$159.0 million, NC lathes with US$97 million, presses with US$62 million, milling machines with US$44 million, non-NC lathes with US$17 million and boring machines with US$12 million.

In terms of 2018 growth rate compared with the preceding year, milling machines topped the list with 21.8%, grinding machine with 18.2% and non-NC lathes with 6.9%.

Those in negative growth territory included boring machines (including NC) with -23.1%, machining center with -22.8%, presses with -8.8%, etc.

By country, Japan remained as Korea's largest import source for machine tools with US$540.7 million in 2018.

Germany was the second largest exporter to the Korean machine tool market with US$173.8 million. The two machine tool kingpins represented a combined 53.3% of Korea's machine tool imports last year.

China came in third in the machine tool market race in Korea with US$136.0 million, followed by Switzerland with US$108.8 million, Taiwan with US$81.1 million, Italy with US$40.6 million, Singapore with US$15.7 million, Austria with US$14.9 million, Turkey with US$11.8 million and Czech Republic with US$6.8 million.
Marginal Improvement Amid Uncertain Factors

Korea, surrounded by uncertain business climate at home and abroad, Korean machine tools industry sees marginal improvement this year.

Production

Korea’s machine tool production is forecast to reach 5.71 trillion won in 2019, up 1% yoy compared with 3% growth with 5.65 trillion won registered in 2018.

The marginal growth forecast is based on the lingering business recovery of end-user industries, especially in the bracket of small & medium businesses. The relevant business circles pin their expectation for large-scale facility investment projects evolving semiconductor, display, etc., as well as the government drive to invigorate the economy.

2019 Korean Industrial Outlook by KIET

<table>
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<tr>
<th>Industry Group</th>
<th>Exports</th>
<th>Production</th>
<th>Domestic Demand</th>
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Notes: ☁: Below -5~10%, ☁ ☁: -5~0%, ☁ ☁: 0~5%, ☁ ☁ ☁: 5~10%,
 Cooke: Over 10% (year-on-year change basis)
* KIET Stands for Korea Institute for Industrial Economics & Trade
Outlook for 2018

Exports

Korean machine tools exports are forecast at US$2.6 billion in 2019, a 3% rise yoy versus 7.5% expansion with US$2.53 billion recorded a year earlier.

The demand for Korea machine tools is expected to rise from the United States and Europe with the continuation of their bullish economies. On contrary, the rising uncertainty in the emerging countries due to US interest rate is unfavorable factor for Korean machine tools exports.

Imports

Korea’s machine tool imports, which recorded a 5.3% decrease yoy in 2018, is seen to dwindle 2% to US$1.24 billion this year. The lower demand outlook is associated with major Korean automakers’ pursuit of production shift out of Korea to overseas countries. Korean import demand is expected to rise in the areas of smart factories, robotics, new materials, etc.

Consumption

Korean consumption of machine tools is forecast to reach 4.19 trillion won in 2019, down 1.8% from 4.27 trillion won in 2018.

According to the Ministry of Economy and Finance, Korea’s annual economic growth is forecast at 2.4-2.5%, a downward revision from the original outlook made at the beginning of the year (2.6-2.7%).

On this context, restructuring industries has emerged as a key task of the nation’s economic policy makers.
Automobiles: Production Dips 2.1% to 4.03 Mil. Units in 2018

General Machinery: Production Rises 3.8% to W117.9 Tril. in 2018

Shipbuilding: Korea Accounts for 44.2% of Global Total Shipbuilding Orders in 2018

Robotics: World's Highest Industrial Robot Density Nation Since 2010

ICT: The Pride of Launching World's 1st 5G Service

Semiconductor: Beyond Semiconductors, New Chip Super Cycle

Displays: Exports Seen to Move Up 5.8 % in 2019

Steel: Sixth Largest Producer Ahead of Germany in 2018
Automobiles

Production Dips 2.1% to 4.03 Mil. Units in 2018

In 2018, a total of 4.03 million units of automobiles rolled off the domestic Korean production lines, posting a 2.1% decline yoy. The rate is 0.6 percentage lower than the 2.7% contraction registered in 2017 with 4.12 million units. The 2018 automobile production broke down to 3.66 million units of passenger cars (down 2% yoy) and 376,104 units of commercial vehicles (down 3.3% yoy).

Domestic sales by Korea's seven major automakers scored a marginal slide of 0.5% in 2018, ending with 1.55 million units compared with 1.56 million units in 2017.

Domestic sales of new passenger cars reached 1.3 million in 2018, scoring a thin 0.1% rise in 2018.

On contrary, commercial vehicles posted a 3.4% decline with 254,409 units.

Korean automobile exports tumbled 3.2% year-on-year to 2.45 million units in 2018, posting minus growth for six consecutive years.

The 2018 export decline rate, based on the number of car units is 2% percentage higher than the 1.2% slide in terms of the amount of 2018 Korean automobile exports, valued at US$64 billion.

Korean automakers' offshore production stood at 4.06 million units as of the end of 2018, a 0.4% expansion over the year earlier.

Slightly exceeding domestic production of 4.03 million units in 2018, the rise is the fruit of Korean automakers' pursuit of production shift out of China & U.S.A. to such emerging countries like India, Mexico, etc.
Korea’s general machinery production reached 117.9 trillion won in 2018, a 3.8% increase over 2017, according to an estimated by the Korea Development Bank (KDB). The moderate growth was thanks to a rise in demand in key markets China and the U.S. with the booming manufacturing and construction markets, as well as emerging markets such as India.

This year, the value of Korea’s general machinery production is estimated at 119 trillion won, registering a marginal 1.6% expansion versus the year earlier. Domestic demand for general machinery totaled 99.4 trillion won in 2018, down 2.3% yoy.

Korea’s general machinery exports, which exceeded US$50 billion for the first time in 2017, continued to score relatively high growth of 9.1% in 2018 at US$56 billion. General machinery has become the country’s fourth export item to mark the US$50 billion milestone after semiconductors in 2010, as well as petrochemicals and vessels each in 2011.

Korea’s general machinery imports in 2018 stood at 48.3 billion in 2018, up 0.1% compared with 2017.

The KDB estimate shows Korean domestic demand for general machinery will reach 101.6 trillion won in 2019, a 2.2% rise over the year earlier.

Korean general machinery exports and imports is forecast at US$56.9 billion and US$49.3 billion, respectively, this year, which represent the increase of 1.6% and 2.3% expansion.
**Shipbuilding**

**Korea Accounts for 44.2% of Global Total Shipbuilding Orders in 2018**

Korean shipbuilders regained the top spot in the global market share of shipbuilding orders last year, beating their Chinese counterparts for the first time in seven years due mainly to a surge in demand for liquefied natural gas carriers.

According to London-based offshore and energy tracker Clarkson Research, global orders of Korean shipbuilders stood at 12.6 million compensated gross tonnage last year, accounting for 44.2% of the total orders. The orders of Chinese shipbuilders were 9.1 million CGT, accounting for 32% of the total share Japan’s order receipts reached 3.59 million CGT, accounting for 12.6% of global total order at 28.59 million CGT.

The breakthrough by the Korean shipbuilding industry was mainly fueled by rising orders of LNG carriers for the nation’s big three shipbuilders — Hyundai Heavy Industries, Samsung Heavy Industries and Daewoo Shipbuilding & Marine Engineering.

They gained 66 LNG carrier orders last year out of the total 76 orders.

As of June 20 in 2018, Korea maintained the top spot in global shipbuilding orders, winning orders totaling 340,000 compensated gross tons (CGTs) to build six ships, accounting for more than half of the orders placed around the globe.

Chinese shipbuilders bagged 240,000 CGTs in orders to build seven vessels, followed by Japan with five ships amounting to 90,000 CGTs.

In the first half of the year, Korean shipbuilders secured orders totaling 3.17 million CGTs in 69 vessels for a 31% market share, the data showed. China topped the list with 4.32 million CGTs, or 176 ships, for 42% of the market, the data showed. Korean shipbuilders secured orders totaling 3.17 million CGTs in 69 vessels for a 31% market share, China topped the list with 4.32 million CGTs, or 176 ships, for 42% of the market, the data showed.

With the global shipping industry hit by the U.S.-China trade dispute, new shipbuilding orders in the first six months of the year dropped 42% from a year earlier to 10.26 million CGTs, the data showed. In terms of order backlog, China topped the list, with 28.7 million CGTs (36% of the market) followed by Korea with 20.62 million CGTs (26%), and Japan with 14.05 million CGTs (18%).
World’s Highest Industrial Robot Density Nation Since 2010

Worldwide, the Republic of Korea has by far the highest robot density in the manufacturing industry – a position the country has held since 2010. The country’s robot density exceeds the global average by a good eight-fold (631 units). This high growth rate is the result of continued installations of a high volume of robots particularly in the electrical/electronics industry and in the automotive industry.

The Korean government has set a goal of turning the nation’s robotics industry into the fourth-largest player in the world by 2023 with the aim of fostering 20 major robotics companies.

The Ministry of Trade, Industry and Energy (MOTIE) announced that it would finance the distribution of 7,560 manufacturing robots to replace human workforces in the areas of textiles, foods and beverages that have been losing workers due to hostile work environments and work intensity.

Korean Government to Provide 30,000 Smart Factories to SMEs by 2022

The Ministry of SMEs and Startups (MSS) will provide 30,000 smart factories by 2022 to accelerate manufacturing innovation.

The Ministry of SMEs and Startups (MSS) will provide 30,000 smart factories by 2022 to help SMEs innovate their manufacturing systems. The ministry believes that its smart factory supply project has contributed to stimulating manufacturing innovation at SMEs and establishing a win-win platform between SMEs and conglomerates.

The ministry had supplied a total of 7,903 smart factories to SMEs as of the end of 2018, which resulted in 30 percent productivity growth, 43.5 percent decline in defect ratio and 2.2 persons employment growth per company.

In particular, the ministry noted that the smart factory supply project has become a primer that promotes a win-win relationship between SMEs and conglomerates. “Samsung Electronics and Hyundai Motor, as well as LG Electronics, Samsung SDI and POSCO have announced that they will pursue the smart factory project with the ministry.

The ministry has agreed with Samsung Electronics to invest 10 billion won (US$8.82 million) each per year for the next five years to expand the supply of smart factories to a total of 2,500 SMEs.
Korea has been building up necessary infrastructure to position itself to better take advantage of the Fourth Industrial Revolution. Korea’s journey as an ICT leader has made meaningful strides such as launching the world’s first commercial 5G network service and in such areas as the big data market and research and development (R&D).

The Fourth Industrial Revolution refers to a highly connected economy supported by advances in such areas as 5G, artificial intelligence (AI), big data and Internet of Things. The merging of such know-how has the potential to stimulate the launch of new economic growth models.

In the area of 5G, which is an integral part of the fourth revolution, South Korea became the first country in the world to launch full-fledged commercial services on April 3 in 2019. The latest wireless communication network provides super fast connection speeds, low latency and the ability to connect many more devices without the system being bogged down.

The ministry said market analysts expect the 5G-related market will reach 1,161 trillion won (US$983 billion) worldwide in 2026, with South Korean production likely to stand at 180 trillion won, or some 15% of the total.

The country’s exports could hit US$73 billion in the sector to employ around 600,000 workers here.

On big data, the local market grew by a sharp 29% on-year to 580 billion won in 2018, with AI R&D surging to 270 billion won from 130 billion in 2016.

The Ministry of Trade, Industry and Energy also said that state R&D will rise by 4.4% this year from 2018, with the annual total surpassing 20 trillion won for the first time ever. In the past, state R&D expenditures usually grew in the 1% range each year.

It said R&D support for basic sciences will be increased by some 450 billion won, allowing scientists and engineers to carry out their work with the least amount of disruption and worries over funding.

Under the incumbent government, Seoul has also carried out a successful rocket engine test for its next space vehicle and placed the Chollian 2A weather satellite into orbit, both of which will help the country move forward, according to the ministry.
Korea's semiconductor production reached record-high 95 trillion won in 2017, a roaring 23.9% expansion over the year earlier. Korea's semiconductor exports in 2018 reached US$136.1 billion on the back of strong global demand, becoming the backbone of Asia's fourth-largest economy. The amount represented a 32% increase compared with 2017 annual record-high of US$97.8 billion, according to a tally of the Ministry of Trade, Industry and Energy (MOTIE).

It took 24 years to increase the amount by tenfold, with accumulated sales surpassing the $1 trillion mark after the government began compiling related trade data in 1977.

Samsung Electronics Co. and SK hynix Inc., the world's top two chipmakers, have posted robust earnings in 2018 on strong chip demand for mobile devices and servers, but the prospects going forward are not overly rosy amid a slowdown in growth in 2019.

The current decline in demand for memory chips will reverse at some point in the future as demand for memory grows with the increasing integration of services into products and deployment of 5G, and Samsung, SK hynix and their American counterpart Micron Group will increasingly see their dominance in the memory chip segment challenged.

The Moon administration and Samsung are both taking steps to address this challenge, diversify Korea's semiconductor industry and lessen the dependence on memory chips. The administration is looking to make Korea a more favorable environment for small fabless chipmakers.
**Displays: Exports Seen to Move Up 5.8 % in 2019**

In 2018, Korean display production posted a double-digit decrease rate of 10.1% yoy at 63.8 trillion won compared with 71 trillion won in 2017.

According to the forecast by Korea Development Bank (KDB), the production drop rate is forecast to bounce back by 1.4% to 64.7 trillion won in 2019 on the strength of enhanced production capacity and shipment of OLED (organic light-emitting diode) plants nationwide.

Korean display exports is expected to move up 5.8% this year, standing at US$28.7 billion.

Korean imports of display is estimated at US$7.2 billion, a 9.4% rise year-on-year in 2019.

Proactively responding to the 4th Industrial Revolution, Korean display enterprises have unveiled massive investment plan in the OLED sectors.

### Korean Display Industry Supply-Demand Trends & Forecasts

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2018(E)</th>
<th>2019(F)</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>”18/17“</td>
<td>”19/18“</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production (W Trillion)</td>
<td>71.0</td>
<td>63.8</td>
<td>64.7</td>
<td>△10.1</td>
</tr>
<tr>
<td>Imports (US$ Billion)</td>
<td>6.1</td>
<td>6.6</td>
<td>7.2</td>
<td>7.8</td>
</tr>
<tr>
<td>Domestic Demand (W Trillion)</td>
<td>43.7</td>
<td>41.2</td>
<td>40.5</td>
<td>△5.5</td>
</tr>
<tr>
<td>Exports (US$ Billion)</td>
<td>30.3</td>
<td>27.1</td>
<td>28.7</td>
<td>△10.6</td>
</tr>
</tbody>
</table>

Source: Institute for Information & Communications Technology Promotion (IITP), Korea Development Bank (KDB)

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**Steel: Sixth Largest Producer Ahead of Germany in 2018**

Korea was rated as the sixth largest crude steel producer in the world with 71 million tons in 2017, which was 0.3 million tons less than fifth-placer Russia's 71.3 million tons, according to a World Steel Association tally.

In 2018, Korea's domestic demand for steel sees a 1.0% drop due to sluggish production activities in automobile and shipbuilding areas, forecast the Korea Development Bank.

Korean steel exports are seen to score a thin 0.4% rise year-on-year with 32.4 million tons this year compared with 4% increase in 2017.

Meanwhile, Korean imports of crude steel in 2017 is forecast at 20.7 million tons, down 1.9% over the year earlier.

### Korean Steel Industry Supply-Demand Trends & Forecasts

<table>
<thead>
<tr>
<th>Category</th>
<th>2016</th>
<th>2017</th>
<th>2018(F)</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>”16/17“</td>
<td>”17/18“</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic Demand (1,000 Tons)</td>
<td>57,076</td>
<td>56,665</td>
<td>56,085</td>
<td>-0.7</td>
</tr>
<tr>
<td>Exports (1,000 Tons)</td>
<td>30,970</td>
<td>32,259</td>
<td>32,402</td>
<td>4.2</td>
</tr>
<tr>
<td>Production (1,000 Tons)</td>
<td>74,307</td>
<td>77,314</td>
<td>77,560</td>
<td>4.0</td>
</tr>
<tr>
<td>Imports (1,000 Tons)</td>
<td>23,717</td>
<td>21,079</td>
<td>20,680</td>
<td>-11.1</td>
</tr>
<tr>
<td>Semi-finished products excluded</td>
<td>13,739</td>
<td>11,610</td>
<td>10,927</td>
<td>-15.5</td>
</tr>
</tbody>
</table>

Source: Korea Iron & Steel Association, Korea Development Bank (KDB)

The World Steel Association-released 2018 Short Range Outlook (SRO) in April forecast that global steel demand will reach 1,661.1 million tons in 2018, an increase of 1.8% over 2017. In 2019, it is forecast that global steel demand will grow by 0.7% to reach 1,626.7 million.
Korea’s facility investment seen to shrink from a year earlier this 2019, a state-run bank here said in its latest projection, contradicting an earlier outlook from the country’s central bank that forecast a slight increase. The state-run Korea Development Bank (KDB) said facility investment is expected to come to 164.4 trillion won (US$139.5 billion) in 2019, down 2 percent from 167.7 trillion won in 2018.

The central bank earlier said the country’s facility investment plunged 17.4% on-year in the first quarter, apparently contributing to an unexpected 0.4% contraction of Asia’s fourth-largest economy from three months earlier.

The KDB report comes amid growing concerns over various woes facing the local economy, including a steady decline in exports that are widely expected to intensify amid the escalating trade tension between the world’s two largest economies — the United States and China — that are also the world’s two largest importers of Korean goods.

The country’s outbound shipments have dipped for six consecutive months, while its shipments to China have dwindled for seven consecutive months.

The KDB report said facility investment in the semiconductor industry is expected to fall 0.9% this year from a year earlier, while investment in the display industry was expected to dwindle 1.5% on-year.

Investment in the two key industries accounts for more than 30% of overall facility investment, it noted.

The auto industry will likely see the sharpest drop with the facility investment in the sector expected to tumble 11.5%, partly due to increased overseas production, the report said.

The BOK slashed its 2019 growth outlook to 2.5% in April from 2.6% projected three months earlier.
Facility Investment Outlook by 7 Major Industries

### Automobiles: 9.3 Trillion Won (2018) → 8.2 Trillion Won (2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
<th>Share</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>98,156</td>
<td>93,057</td>
<td>82,400</td>
</tr>
<tr>
<td>Production Capacity</td>
<td>56,790</td>
<td>57,414</td>
<td>48,943</td>
</tr>
<tr>
<td>New Products</td>
<td>33,754</td>
<td>39,935</td>
<td>34,641</td>
</tr>
<tr>
<td>Facility Expansion</td>
<td>23,036</td>
<td>17,479</td>
<td>14,302</td>
</tr>
<tr>
<td>Maintenance &amp; Repair</td>
<td>16,016</td>
<td>15,275</td>
<td>11,311</td>
</tr>
<tr>
<td>Automation</td>
<td>5,774</td>
<td>5,636</td>
<td>4,717</td>
</tr>
<tr>
<td>Energy &amp; Environment</td>
<td>964</td>
<td>963</td>
<td>885</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>7,607</td>
<td>4,743</td>
<td>5,213</td>
</tr>
<tr>
<td>Others</td>
<td>11,005</td>
<td>9,026</td>
<td>11,331</td>
</tr>
</tbody>
</table>

### Semiconductors: 41.9 Trillion Won (2018) → 41.5 Trillion Won (2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
<th>Share</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>376,821</td>
<td>418,899</td>
<td>414,994</td>
</tr>
<tr>
<td>Production Capacity</td>
<td>317,494</td>
<td>363,457</td>
<td>361,188</td>
</tr>
<tr>
<td>New Products</td>
<td>140,637</td>
<td>215,108</td>
<td>213,674</td>
</tr>
<tr>
<td>Facility Expansion</td>
<td>176,857</td>
<td>148,349</td>
<td>147,514</td>
</tr>
<tr>
<td>Maintenance &amp; Repair</td>
<td>33,949</td>
<td>22,451</td>
<td>21,625</td>
</tr>
<tr>
<td>Automation</td>
<td>126</td>
<td>58</td>
<td>69</td>
</tr>
<tr>
<td>Energy &amp; Environment</td>
<td>58</td>
<td>15</td>
<td>48</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>24,118</td>
<td>30,225</td>
<td>29,975</td>
</tr>
<tr>
<td>Others</td>
<td>1,076</td>
<td>2,693</td>
<td>2,089</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
<th>Share</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>201,708</td>
<td>90,153</td>
<td>88,843</td>
</tr>
<tr>
<td>Production Capacity</td>
<td>161,630</td>
<td>73,831</td>
<td>71,253</td>
</tr>
<tr>
<td>New Products</td>
<td>30,170</td>
<td>9,327</td>
<td>9,366</td>
</tr>
<tr>
<td>Facility Expansion</td>
<td>131,460</td>
<td>64,504</td>
<td>61,887</td>
</tr>
<tr>
<td>Maintenance &amp; Repair</td>
<td>16,840</td>
<td>7,557</td>
<td>8,358</td>
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<tr>
<td>Automation</td>
<td>1,293</td>
<td>1,475</td>
<td>1,417</td>
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<tr>
<td>Energy &amp; Environment</td>
<td>326</td>
<td>436</td>
<td>475</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>10,615</td>
<td>272</td>
<td>452</td>
</tr>
<tr>
<td>Others</td>
<td>11,004</td>
<td>3,730</td>
<td>4,365</td>
</tr>
</tbody>
</table>

### Oil Refinery: 3.8 Trillion Won (2018) → 3.7 Trillion Won (2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
<th>Share</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>39,072</td>
<td>38,424</td>
<td>37,457</td>
</tr>
<tr>
<td>Production Capacity</td>
<td>27,849</td>
<td>26,096</td>
<td>22,925</td>
</tr>
<tr>
<td>New Products</td>
<td>725</td>
<td>1,062</td>
<td>186</td>
</tr>
<tr>
<td>Facility Expansion</td>
<td>27,124</td>
<td>25,034</td>
<td>22,109</td>
</tr>
<tr>
<td>Maintenance &amp; Repair</td>
<td>7,150</td>
<td>9,200</td>
<td>11,288</td>
</tr>
<tr>
<td>Automation</td>
<td>257</td>
<td>350</td>
<td>520</td>
</tr>
<tr>
<td>Energy &amp; Environment</td>
<td>830</td>
<td>681</td>
<td>1,266</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>625</td>
<td>272</td>
<td>452</td>
</tr>
<tr>
<td>Others</td>
<td>2,361</td>
<td>1,825</td>
<td>1,636</td>
</tr>
</tbody>
</table>
**Petrochemical: 4.8 Trillion Won (2018) → 5.2 Trillion Won (2019)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
<th>Share</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>62,199</td>
<td>58,767</td>
<td>55,032</td>
</tr>
<tr>
<td>Production Capacity</td>
<td>38,394</td>
<td>29,707</td>
<td>31,423</td>
</tr>
<tr>
<td>New Products</td>
<td>3,685</td>
<td>8,796</td>
<td>10,345</td>
</tr>
<tr>
<td>Facility Expansion</td>
<td>34,709</td>
<td>20,911</td>
<td>21,078</td>
</tr>
<tr>
<td>Maintenance &amp; Repair</td>
<td>11,646</td>
<td>10,470</td>
<td>11,838</td>
</tr>
<tr>
<td>Automation</td>
<td>492</td>
<td>367</td>
<td>242</td>
</tr>
<tr>
<td>Energy &amp; Environment</td>
<td>2,593</td>
<td>2,133</td>
<td>1,933</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>4,659</td>
<td>2,183</td>
<td>2,053</td>
</tr>
<tr>
<td>Others</td>
<td>4,415</td>
<td>3,592</td>
<td>4,686</td>
</tr>
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</table>

**Steel: 2.3 Trillion Won (2018) → 2.2 Trillion Won (2019)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
<th>Share</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>22,775</td>
<td>23,141</td>
<td>22,217</td>
</tr>
<tr>
<td>Production Capacity</td>
<td>5,382</td>
<td>5,509</td>
<td>4,890</td>
</tr>
<tr>
<td>New Products</td>
<td>1,996</td>
<td>1,717</td>
<td>1,619</td>
</tr>
<tr>
<td>Facility Expansion</td>
<td>3,386</td>
<td>3,792</td>
<td>3,271</td>
</tr>
<tr>
<td>Maintenance &amp; Repair</td>
<td>15,697</td>
<td>15,337</td>
<td>14,171</td>
</tr>
<tr>
<td>Automation</td>
<td>222</td>
<td>507</td>
<td>535</td>
</tr>
<tr>
<td>Energy &amp; Environment</td>
<td>263</td>
<td>480</td>
<td>559</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>284</td>
<td>453</td>
<td>482</td>
</tr>
<tr>
<td>Others</td>
<td>927</td>
<td>855</td>
<td>1,580</td>
</tr>
</tbody>
</table>

**Communication Service: 5.9 Trillion Won (2018) → 5.5 Trillion Won (2019)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
<th>Share</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>63,504</td>
<td>58,767</td>
<td>55,032</td>
</tr>
<tr>
<td>Production Capacity</td>
<td>60,641</td>
<td>53,387</td>
<td>50,007</td>
</tr>
<tr>
<td>New Products</td>
<td>996</td>
<td>5,304</td>
<td>5,304</td>
</tr>
<tr>
<td>Facility Expansion</td>
<td>59,645</td>
<td>48,083</td>
<td>44,703</td>
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<td>Maintenance &amp; Repair</td>
<td>870</td>
<td>1,374</td>
<td>1,250</td>
</tr>
<tr>
<td>Automation</td>
<td>0</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Energy &amp; Environment</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>376</td>
<td>3,725</td>
<td>3,553</td>
</tr>
<tr>
<td>Others</td>
<td>1,617</td>
<td>279</td>
<td>220</td>
</tr>
</tbody>
</table>

**Korea's Overseas Direct Investment Hits Record High in Q1**

Korea's overseas direct investment hit a record level in the first quarter due mainly to a high base effect.

Investments made by South Korean companies came to US$14.11 billion in the January-March period, up 44.9 percent from US$9.74 billion in the same period last year, according to the data compiled by the Ministry of Economy and Finance. The figure is the highest for any first quarter since 1981, when the government began to release data on investments made by local companies.

"The record investment was driven by a high base effect and a large-scale merger and acquisition in the U.S. by a South Korean firm as well as increased investment in the semiconductor sector in China," said a ministry official handling the issue.
Korea Envisions Manufacturing Renaissance

To Become a Global Top 4 Manufacturing Powerhouse

Korea has unveiled its manufacturing renaissance vision and strategies, aimed at joining the rank of global top 4 manufacturing powerhouse over the next decade.

The blueprint, prepared by the Ministry of Trade, Industry and Energy (MOTIE) at the order of President Moon Jae-in, seeks to raise the current value-added ratio of 25% to 30% in manufacturing sectors by 2030. Proactively responding to the wave of 4th Industrial Revolution, it also seeks to increase the portion of new industries and new items out of total manufacturing production from the current 16% to 30%.

To create a manufacturing renaissance, the government will focus on four main strategies:

**Change in Manufacturing Portfolio: Growth of New Industries**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Ind. Category</th>
<th>Value-Added Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Memory Semiconductor</td>
<td>10.2</td>
</tr>
<tr>
<td>2</td>
<td>Metal Products</td>
<td>5.5</td>
</tr>
<tr>
<td>3</td>
<td>OLED &amp; Next-Gen. Display</td>
<td>5.3</td>
</tr>
<tr>
<td>4</td>
<td>Internal Combustion Vehicle &amp; Parts</td>
<td>5.1</td>
</tr>
<tr>
<td>5</td>
<td>Communication Appliance</td>
<td>4.5</td>
</tr>
<tr>
<td>6</td>
<td>System Semiconductor</td>
<td>4.4</td>
</tr>
<tr>
<td>7</td>
<td>General-Purpose Steel</td>
<td>4.0</td>
</tr>
<tr>
<td>8</td>
<td>Bio·Health</td>
<td>3.9</td>
</tr>
<tr>
<td>9</td>
<td>High-Tech Processing Equipment</td>
<td>3.7</td>
</tr>
<tr>
<td>10</td>
<td>Future Car and Component</td>
<td>3.7</td>
</tr>
<tr>
<td>11</td>
<td>Eco-Ship</td>
<td>3.3</td>
</tr>
<tr>
<td>12</td>
<td>General-Purpose Rubber &amp; Plastic Products</td>
<td>3.0</td>
</tr>
<tr>
<td>13</td>
<td>High Value-Added Steel</td>
<td>2.6</td>
</tr>
<tr>
<td>14</td>
<td>Foodstuff</td>
<td>2.5</td>
</tr>
<tr>
<td>15</td>
<td>Apparel</td>
<td>2.5</td>
</tr>
<tr>
<td>16</td>
<td>Bio·Health</td>
<td>2.5</td>
</tr>
<tr>
<td>17</td>
<td>Future Car and Component</td>
<td>2.3</td>
</tr>
<tr>
<td>18</td>
<td>Precision Instrument</td>
<td>2.0</td>
</tr>
<tr>
<td>19</td>
<td>Industrial Textile</td>
<td>1.8</td>
</tr>
<tr>
<td>20</td>
<td>Glass &amp; Glass Products</td>
<td>1.7</td>
</tr>
<tr>
<td>21</td>
<td>Secondary Battery</td>
<td>1.6</td>
</tr>
<tr>
<td>22</td>
<td>High Value-Added Steel</td>
<td>1.4</td>
</tr>
<tr>
<td>23</td>
<td>Industrial Textile</td>
<td>1.4</td>
</tr>
<tr>
<td>24</td>
<td>Other Electronic Parts</td>
<td>1.3</td>
</tr>
<tr>
<td>25</td>
<td>Computer &amp; Office Products</td>
<td>1.4</td>
</tr>
<tr>
<td>26</td>
<td>Other Nonferrous Mineral Products</td>
<td>1.3</td>
</tr>
<tr>
<td>27</td>
<td>High Value-Added Steel</td>
<td>1.4</td>
</tr>
<tr>
<td>28</td>
<td>Computer &amp; Office Products</td>
<td>1.4</td>
</tr>
<tr>
<td>29</td>
<td>Secondary Battery</td>
<td>1.6</td>
</tr>
<tr>
<td>30</td>
<td>Future Car and Component</td>
<td>2.3</td>
</tr>
<tr>
<td>31</td>
<td>Bio·Health</td>
<td>3.9</td>
</tr>
<tr>
<td>32</td>
<td>High-Tech Processing Equipment</td>
<td>2.6</td>
</tr>
<tr>
<td>33</td>
<td>Precision Instrument</td>
<td>2.0</td>
</tr>
<tr>
<td>34</td>
<td>Future Car and Component</td>
<td>2.3</td>
</tr>
<tr>
<td>35</td>
<td>High Value-Added Steel</td>
<td>1.4</td>
</tr>
<tr>
<td>36</td>
<td>Industrial Textile</td>
<td>1.4</td>
</tr>
<tr>
<td>37</td>
<td>Computer &amp; Office Products</td>
<td>1.4</td>
</tr>
<tr>
<td>38</td>
<td>Secondary Battery</td>
<td>1.6</td>
</tr>
<tr>
<td>39</td>
<td>Industrial Textile</td>
<td>1.4</td>
</tr>
<tr>
<td>40</td>
<td>Future Car and Component</td>
<td>2.3</td>
</tr>
<tr>
<td>41</td>
<td>Bio·Health</td>
<td>3.9</td>
</tr>
<tr>
<td>42</td>
<td>High-Tech Processing Equipment</td>
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</tr>
<tr>
<td>43</td>
<td>Precision Instrument</td>
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<tr>
<td>45</td>
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<td>46</td>
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<td>47</td>
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<td>Secondary Battery</td>
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<td>53</td>
<td>Precision Instrument</td>
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<td>58</td>
<td>Secondary Battery</td>
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</tr>
<tr>
<td>59</td>
<td>Industrial Textile</td>
<td>1.4</td>
</tr>
<tr>
<td>60</td>
<td>Future Car and Component</td>
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<tr>
<td>61</td>
<td>Bio·Health</td>
<td>3.9</td>
</tr>
<tr>
<td>62</td>
<td>High-Tech Processing Equipment</td>
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</tr>
<tr>
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<td>2.0</td>
</tr>
<tr>
<td>64</td>
<td>Future Car and Component</td>
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</tr>
<tr>
<td>65</td>
<td>High Value-Added Steel</td>
<td>1.4</td>
</tr>
<tr>
<td>66</td>
<td>Industrial Textile</td>
<td>1.4</td>
</tr>
<tr>
<td>67</td>
<td>Computer &amp; Office Products</td>
<td>1.4</td>
</tr>
<tr>
<td>68</td>
<td>Secondary Battery</td>
<td>1.6</td>
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<tr>
<td>69</td>
<td>Industrial Textile</td>
<td>1.4</td>
</tr>
<tr>
<td>70</td>
<td>Future Car and Component</td>
<td>2.3</td>
</tr>
<tr>
<td>71</td>
<td>Bio·Health</td>
<td>3.9</td>
</tr>
<tr>
<td>72</td>
<td>High-Tech Processing Equipment</td>
<td>2.6</td>
</tr>
<tr>
<td>73</td>
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<td>74</td>
<td>Future Car and Component</td>
<td>2.3</td>
</tr>
<tr>
<td>75</td>
<td>High Value-Added Steel</td>
<td>1.4</td>
</tr>
<tr>
<td>76</td>
<td>Industrial Textile</td>
<td>1.4</td>
</tr>
<tr>
<td>77</td>
<td>Computer &amp; Office Products</td>
<td>1.4</td>
</tr>
</tbody>
</table>
innovating the industrial structure with smartification, eco-friendliness and convergence; replacing conventional industries with new industries through innovation; reshuffling industrial eco-system centering on challenges; strengthening roles of the government in supporting investment and innovation.

One of the highlights is that the ministry will push ahead with artificial intelligence-based industrial intelligence across all manufacturing sectors.

This year, it plans to develop a national AI strategy. By 2030, it intends to build 2,000 AI-based factories, which are a more advanced version of smart factories, and enact manufacturing innovation laws.

By collecting data from smart factories, the government will build a data center to support AI-based services and foster smart manufacturing facilities such as key software, robots, sensors and equipment.

The ministry will also unify national capacity and resources to foster new vital industries.

It plans to inject 8.4 trillion won (US$7.1 billion) in research and development of the nation's three key industries, non-memory chips, future mobility and bio. Currently, feasibility studies are being implemented for budget funding. This will back a combined 180 trillion won of investment made by the private sector.

Korea also aims to lead the eco-friendly market by making products and manufacturing greener. The government plans to support technology development, infrastructure and demand creation for eco-friendly cars and vessels, air industry and energy industry.

As for electric and hydrogen cars, the government plans to inject 385 billion won in R&D from 2020 to 2025 and to distribute 430,000 electric vehicles by 2022 and 850,000 hydrogen cars by 2030.

It also plans to inject 600 billion won in R&D in liquefied natural gas vessels from 2021 to 2030 with an aim to produce 140 LNG vessels by 2025.

Korea Launches Future Tech "Alchemist" Project

As a follow-up project to the "Manufacturing Renaissance Vision & Strategies," Ministry of Trade, Industry & Energy (MOTIE) has worked out an action plan for future tech "Alchemist" project, scaled at US$136 million, to develop disruptive technologies, including technologies to produce electric vehicles capable of traveling more than 600 kilometers after just one minute of charging.

According the Ministry of Trade, Industry and Energy (MOTIE), the seven-year project, called "Alchemist," will cover six categories of products, including the new EVs. The others are robot suits, transparent solar cells, high-efficiency solar cells, air-purifying cars and high-efficiency heat pumps.

At the center of the project are plans to develop long-range EVs that can run more than 600 kilometers on a single charge, after only a minute of charging time. Currently, it takes at least 30 minutes to charge an EV. The ministry believes the battery-driven cars would transform the auto industry and could also have an impact on other transportation industries, including the electric aircraft industry.
Korea Machine Tool Industry
Statistics & Beyond

Korean Machine Tool Industry Supply and Demand Overview
  Machine Tool Orders by Year
  Machine Tool Orders by Product
  Machine Tool Orders by User Industry
  Production by Product and Year
  Production by Industry
  Exports by Product and Year
  Imports by Product and Year
  Top-Three Imported Products by Major Country
  Top-Three Importing Countries by Major Product
## Korean Machine Tool Industry Supply and Demand Overview

(Unit: W Million)

| Year | Supply | | Demand | | Export Ratio (%) | Import Dependence Ratio (%) |
|------|--------|----------------------------|--------|-------------------|-----------------------------|
|      | Production | Imports | Total | Domestic | Export |                  |                    |
| 2008 | 4,831,000 | 1,474,070 | 6,305,070 | 4,194,520 | 2,110,550 | 43.7 | 35.1 |
| 2009 | 3,519,696 | 1,445,788 | 4,965,484 | 3,418,417 | 1,547,067 | 44.0 | 42.3 |
| 2010 | 5,327,795 | 1,668,861 | 6,996,656 | 5,056,865 | 1,939,791 | 36.4 | 33.0 |
| 2011 | 6,375,265 | 1,984,276 | 8,359,541 | 5,809,551 | 2,549,990 | 40.0 | 34.2 |
| 2012 | 6,176,246 | 1,679,992 | 7,856,238 | 4,983,812 | 2,872,426 | 46.5 | 33.7 |
| 2013 | 5,639,077 | 1,517,670 | 7,156,747 | 4,730,227 | 2,426,520 | 43.0 | 32.1 |
| 2014 | 5,809,605 | 1,575,288 | 7,384,893 | 5,030,385 | 2,354,508 | 40.5 | 31.3 |
| 2015 | 5,929,753 | 1,592,724 | 7,522,477 | 4,871,333 | 2,651,144 | 44.7 | 32.7 |
| 2016 | 5,149,325 | 1,409,079 | 6,558,404 | 4,213,184 | 2,345,220 | 45.5 | 33.4 |
| 2017 | 5,654,407 | 1,516,149 | 7,170,556 | 4,511,006 | 2,659,550 | 47.0 | 33.6 |

Source: Statistics Korea, Korea Customs Service

## Yearly Machine Tool Orders

(Unit: W Million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cutting Machine Tools Orders</th>
<th>Forming Machine Tools Orders</th>
<th>Total</th>
<th>Change(%)</th>
<th>Domestic Orders</th>
<th>Export Orders</th>
<th>Total</th>
<th>Change(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>2,378,819</td>
<td>332,252</td>
<td>2,711,071</td>
<td>10.7</td>
<td>1,268,800</td>
<td>-1</td>
<td>1,442,271</td>
<td>23.5</td>
</tr>
<tr>
<td>2009</td>
<td>1,665,406</td>
<td>246,911</td>
<td>1,912,317</td>
<td>-29.5</td>
<td>1,107,832</td>
<td>-12.7</td>
<td>804,485</td>
<td>-44.2</td>
</tr>
<tr>
<td>2010</td>
<td>3,059,201</td>
<td>432,314</td>
<td>3,491,515</td>
<td>82.6</td>
<td>2,081,163</td>
<td>87.9</td>
<td>1,410,352</td>
<td>75.3</td>
</tr>
<tr>
<td>2011</td>
<td>3,855,032</td>
<td>471,594</td>
<td>4,326,626</td>
<td>23.9</td>
<td>2,394,781</td>
<td>15.1</td>
<td>1,931,845</td>
<td>37.0</td>
</tr>
<tr>
<td>2012</td>
<td>3,020,552</td>
<td>483,505</td>
<td>3,504,507</td>
<td>-19.0</td>
<td>1,728,133</td>
<td>-27.8</td>
<td>1,775,924</td>
<td>-8.1</td>
</tr>
<tr>
<td>2013</td>
<td>3,267,253</td>
<td>431,227</td>
<td>3,698,480</td>
<td>-14.5</td>
<td>1,768,244</td>
<td>2.3</td>
<td>1,930,236</td>
<td>8.7</td>
</tr>
<tr>
<td>2014</td>
<td>3,269,376</td>
<td>416,690</td>
<td>3,686,066</td>
<td>5.2</td>
<td>1,814,542</td>
<td>2.6</td>
<td>1,871,524</td>
<td>-3.0</td>
</tr>
<tr>
<td>2015</td>
<td>2,883,661</td>
<td>294,766</td>
<td>3,178,427</td>
<td>-13.8</td>
<td>1,681,153</td>
<td>-7.4</td>
<td>1,497,274</td>
<td>-20.0</td>
</tr>
<tr>
<td>2016</td>
<td>2,387,618</td>
<td>130,158</td>
<td>2,517,776</td>
<td>-20.8</td>
<td>1,383,539</td>
<td>-17.7</td>
<td>1,134,237</td>
<td>-24.2</td>
</tr>
<tr>
<td>2017</td>
<td>2,737,100</td>
<td>103,403</td>
<td>2,840,503</td>
<td>12.8</td>
<td>1,528,738</td>
<td>10.5</td>
<td>1,311,765</td>
<td>15.7</td>
</tr>
<tr>
<td>2018</td>
<td>2,809,632</td>
<td>63,015</td>
<td>2,872,647</td>
<td>1.1</td>
<td>1,230,477</td>
<td>-19.5</td>
<td>1,642,170</td>
<td>25.2</td>
</tr>
<tr>
<td>1</td>
<td>241,970</td>
<td>10,714</td>
<td>252,684</td>
<td>40.3</td>
<td>113,396</td>
<td>7.4</td>
<td>139,288</td>
<td>86.9</td>
</tr>
<tr>
<td>2</td>
<td>249,827</td>
<td>14,037</td>
<td>263,864</td>
<td>16.4</td>
<td>140,652</td>
<td>7.4</td>
<td>123,212</td>
<td>28.6</td>
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<td>130,298</td>
<td>-19.8</td>
<td>134,042</td>
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<tr>
<td>4</td>
<td>236,589</td>
<td>3,226</td>
<td>239,815</td>
<td>1.8</td>
<td>115,844</td>
<td>-8.2</td>
<td>123,971</td>
<td>13.4</td>
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<tr>
<td>5</td>
<td>222,917</td>
<td>4,931</td>
<td>227,848</td>
<td>-16.5</td>
<td>95,744</td>
<td>-42.0</td>
<td>132,104</td>
<td>22.6</td>
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</tbody>
</table>

Source: KMTI (Korean Machine Tool Industry) _ 2019~2020 KMTI (Korean Machine Tool Industry) _ 27
### Yearly Machine Tool Orders

<table>
<thead>
<tr>
<th>Year</th>
<th>Steel/Other Metal</th>
<th>Metal Goods</th>
<th>General Machinery</th>
<th>Electric &amp; Electronics</th>
<th>Automobile</th>
<th>Shipbuilding</th>
<th>Precision Machinery</th>
<th>Other Manufacturing</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>69,689</td>
<td>109,331</td>
<td>201,297</td>
<td>127,984</td>
<td>308,116</td>
<td>148,331</td>
<td>59,536</td>
<td>54,463</td>
<td>29,085</td>
<td>1,107,832</td>
</tr>
<tr>
<td>2010</td>
<td>134,234</td>
<td>213,169</td>
<td>336,347</td>
<td>741,276</td>
<td>64,552</td>
<td>91,178</td>
<td>88,891</td>
<td>2,081,163</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>153,895</td>
<td>182,915</td>
<td>287,037</td>
<td>140,876</td>
<td>623,613</td>
<td>81,860</td>
<td>39,674</td>
<td>132,684</td>
<td>85,579</td>
<td>1,728,133</td>
</tr>
<tr>
<td>2013</td>
<td>127,220</td>
<td>161,796</td>
<td>322,606</td>
<td>592,036</td>
<td>104,775</td>
<td>43,771</td>
<td>90,180</td>
<td>115,462</td>
<td>1,768,244</td>
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</tr>
<tr>
<td>2014</td>
<td>107,301</td>
<td>162,265</td>
<td>354,164</td>
<td>245,017</td>
<td>627,686</td>
<td>91,864</td>
<td>40,212</td>
<td>75,717</td>
<td>110,316</td>
<td>1,814,542</td>
</tr>
<tr>
<td>2015</td>
<td>95,284</td>
<td>131,798</td>
<td>325,659</td>
<td>209,742</td>
<td>625,080</td>
<td>91,121</td>
<td>34,267</td>
<td>74,391</td>
<td>93,811</td>
<td>1,681,153</td>
</tr>
<tr>
<td>2016</td>
<td>117,099</td>
<td>93,626</td>
<td>279,226</td>
<td>171,363</td>
<td>496,566</td>
<td>62,534</td>
<td>27,250</td>
<td>57,714</td>
<td>78,161</td>
<td>1,383,539</td>
</tr>
<tr>
<td>2017</td>
<td>66,147</td>
<td>61,173</td>
<td>360,547</td>
<td>249,598</td>
<td>573,544</td>
<td>70,717</td>
<td>26,831</td>
<td>42,928</td>
<td>77,253</td>
<td>1,528,738</td>
</tr>
<tr>
<td>2018</td>
<td>46,539</td>
<td>33,630</td>
<td>281,300</td>
<td>190,579</td>
<td>480,932</td>
<td>50,772</td>
<td>36,256</td>
<td>25,352</td>
<td>85,117</td>
<td>1,230,477</td>
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</tbody>
</table>

Source: KOMMA
## Production by Product and Year

(Unit: ¥ Million)

<table>
<thead>
<tr>
<th>Product</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electronics Applied Machines</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laser Processing M/C</td>
<td>318,278</td>
<td>240,347</td>
<td>382,249</td>
<td>347,823</td>
<td>383,747</td>
</tr>
<tr>
<td>Discharge Processing M/C</td>
<td>59,784</td>
<td>61,539</td>
<td>52,156</td>
<td>46,450</td>
<td>48,948</td>
</tr>
<tr>
<td>Other Electronics Applied M/C</td>
<td>73,031</td>
<td>105,498</td>
<td>133,345</td>
<td>118,206</td>
<td>92,916</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td>451,093</td>
<td>407,384</td>
<td>567,750</td>
<td>512,479</td>
<td>525,611</td>
</tr>
<tr>
<td><strong>Cutting Machines</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machining Center</td>
<td>1,063,033</td>
<td>1,243,402</td>
<td>1,276,817</td>
<td>1,212,529</td>
<td>1,782,598</td>
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<tr>
<td>Special Purpose M/C</td>
<td>581,409</td>
<td>570,356</td>
<td>696,041</td>
<td>588,806</td>
<td>585,722</td>
</tr>
<tr>
<td>NC Lathe</td>
<td>1,492,722</td>
<td>1,448,353</td>
<td>1,205,818</td>
<td>1,015,096</td>
<td>1,062,629</td>
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<tr>
<td>General Purpose Lathe</td>
<td>77,025</td>
<td>97,445</td>
<td>94,701</td>
<td>54,560</td>
<td>50,899</td>
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<tr>
<td>Drilling M/C</td>
<td>26,649</td>
<td>19,724</td>
<td>23,673</td>
<td>30,136</td>
<td>36,241</td>
</tr>
<tr>
<td>Boring M/C</td>
<td>83,058</td>
<td>99,110</td>
<td>28,766</td>
<td>17,053</td>
<td>20,390</td>
</tr>
<tr>
<td>NC Milling M/C</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>General Purpose Milling M/C</td>
<td>115,729</td>
<td>116,589</td>
<td>69,004</td>
<td>59,799</td>
<td>48,804</td>
</tr>
<tr>
<td>Tapping M/C</td>
<td>51,644</td>
<td>30,438</td>
<td>39,790</td>
<td>19,018</td>
<td>19,416</td>
</tr>
<tr>
<td>Grinding M/C</td>
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<td>79,036</td>
<td>140,951</td>
<td>92,795</td>
<td>105,932</td>
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<tr>
<td>Gear Grinding M/C</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>Saw M/C</td>
<td>44,606</td>
<td>35,161</td>
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<td>22,794</td>
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<tr>
<td>Other Cutting M/C</td>
<td>104,831</td>
<td>86,180</td>
<td>97,862</td>
<td>127,902</td>
<td>126,093</td>
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<tr>
<td><strong>Sub Total</strong></td>
<td>3,718,850</td>
<td>3,825,794</td>
<td>3,706,944</td>
<td>3,239,791</td>
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<tr>
<td><strong>Forming Machines</strong></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Hydraulic Press</td>
<td>46,167</td>
<td>40,839</td>
<td>59,138</td>
<td>41,557</td>
<td>32,179</td>
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<tr>
<td>Mechanical Press</td>
<td>781,559</td>
<td>956,382</td>
<td>983,567</td>
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<td>201,355</td>
<td>191,607</td>
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<td>111,745</td>
<td>98,423</td>
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<td>69,595</td>
<td>53,993</td>
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<tr>
<td>Punching/Notching M/C</td>
<td>37,887</td>
<td>37,336</td>
<td>33,683</td>
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<td>23,709</td>
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<tr>
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<td>13,165</td>
<td>22,723</td>
<td>16,804</td>
<td>14,082</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
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<td>84,070</td>
<td>99,074</td>
<td>83,083</td>
<td>75,990</td>
<td>77,165</td>
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<td>68,775</td>
<td>77,989</td>
<td>77,541</td>
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<td>57,113</td>
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<td>Other Forming M/C</td>
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<td>128,935</td>
<td>134,272</td>
<td>123,152</td>
<td>138,601</td>
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<td>1,469,134</td>
<td>1,643,750</td>
<td>1,655,059</td>
<td>1,397,055</td>
<td>1,267,278</td>
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<tr>
<td><strong>Total</strong></td>
<td>5,639,077</td>
<td>5,876,928</td>
<td>5,929,753</td>
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Source: Statistics Korea
### Production by Industry

(Unit: ₩100 Million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Machinery Industry Total</th>
<th>Metal Goods</th>
<th>General Machinery</th>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Year</td>
<td>Manufacturing</td>
<td>Total</td>
</tr>
<tr>
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<td>11,219,731</td>
<td>3,835,331</td>
<td>538,341</td>
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<tr>
<td>2010</td>
<td>13,348,333</td>
<td>4,596,246</td>
<td>627,297</td>
</tr>
<tr>
<td>2011</td>
<td>15,023,527</td>
<td>5,074,167</td>
<td>692,526</td>
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<tr>
<td>2012</td>
<td>15,114,951</td>
<td>5,079,347</td>
<td>709,864</td>
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<tr>
<td>2013</td>
<td>14,957,302</td>
<td>5,080,538</td>
<td>700,233</td>
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<tr>
<td>2014</td>
<td>14,892,128</td>
<td>5,236,930</td>
<td>722,448</td>
</tr>
<tr>
<td>2015</td>
<td>14,428,028</td>
<td>5,073,726</td>
<td>699,934</td>
</tr>
<tr>
<td>2016</td>
<td>14,158,095</td>
<td>4,978,802</td>
<td>686,839</td>
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<tr>
<td>2017</td>
<td>15,176,828</td>
<td>5,337,047</td>
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Source: Statistics Korea, Korea Association of Machinery Industry

### Production by Industry

(Unit: ₩100 Million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Electric Machinery</th>
<th>Transportation Equipment</th>
<th>Precision Machinery</th>
<th>Machine Tool Ratio</th>
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<tr>
<td></td>
<td>(Machinery Industry)</td>
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<td></td>
<td>General Machinery</td>
</tr>
<tr>
<td></td>
<td>Year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>500,658</td>
<td>1,952,225</td>
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</tr>
<tr>
<td>2010</td>
<td>614,881</td>
<td>2,283,256</td>
<td>147,990</td>
<td>1.2%</td>
</tr>
<tr>
<td>2011</td>
<td>628,095</td>
<td>2,574,258</td>
<td>160,222</td>
<td>1.3%</td>
</tr>
<tr>
<td>2012</td>
<td>672,772</td>
<td>2,510,116</td>
<td>165,560</td>
<td>1.2%</td>
</tr>
<tr>
<td>2013</td>
<td>647,512</td>
<td>2,557,054</td>
<td>180,216</td>
<td>1.1%</td>
</tr>
<tr>
<td>2014</td>
<td>676,244</td>
<td>2,632,161</td>
<td>182,291</td>
<td>1.1%</td>
</tr>
<tr>
<td>2015</td>
<td>655,169</td>
<td>2,550,132</td>
<td>176,610</td>
<td>1.2%</td>
</tr>
<tr>
<td>2016</td>
<td>642,912</td>
<td>2,502,422</td>
<td>173,306</td>
<td>1.0%</td>
</tr>
<tr>
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<td>689,172</td>
<td>2,682,481</td>
<td>185,776</td>
<td>1.1%</td>
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</table>

Source: Statistics Korea, Korea Association of Machinery Industry
## Exports by Product and Year

(Unit : US$1,000)

<table>
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<tr>
<th>Product</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td><strong>Cutting Machines</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC Lathe</td>
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<td>364,111</td>
<td>691,695</td>
<td>772,010</td>
<td>691,778</td>
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<td>19,957</td>
<td>7,380</td>
<td>13,083</td>
<td>16,959</td>
<td>17,589</td>
</tr>
<tr>
<td>Machining Center</td>
<td>215,329</td>
<td>339,282</td>
<td>441,653</td>
<td>606,232</td>
<td>525,156</td>
</tr>
<tr>
<td>NC Drilling M/C</td>
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<td>7,313</td>
<td>7,942</td>
<td>13,815</td>
<td>9,016</td>
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<tr>
<td>NC Boring M/C</td>
<td>25,222</td>
<td>46,524</td>
<td>99,052</td>
<td>82,884</td>
<td>60,481</td>
</tr>
<tr>
<td>NC Gear Cutting M/C</td>
<td>1,304</td>
<td>1,676</td>
<td>7,881</td>
<td>5,226</td>
<td>11,482</td>
</tr>
<tr>
<td>NC Grinding M/C</td>
<td>9,034</td>
<td>9,383</td>
<td>13,655</td>
<td>17,721</td>
<td>11,409</td>
</tr>
<tr>
<td>Lathe</td>
<td>18,167</td>
<td>16,113</td>
<td>24,490</td>
<td>16,128</td>
<td>9,854</td>
</tr>
<tr>
<td>Milling M/C</td>
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<td>40,817</td>
<td>17,768</td>
<td>14,256</td>
<td>8,084</td>
</tr>
<tr>
<td>Boring M/C</td>
<td>30,435</td>
<td>44,402</td>
<td>441</td>
<td>963</td>
<td>700</td>
</tr>
<tr>
<td>Grinding M/C</td>
<td>58,883</td>
<td>58,547</td>
<td>25,227</td>
<td>33,713</td>
<td>27,280</td>
</tr>
<tr>
<td>Gear Cutting M/C</td>
<td>1,208</td>
<td>2,913</td>
<td>10,709</td>
<td>3,493</td>
<td>777</td>
</tr>
<tr>
<td>Discharge Processing M/C</td>
<td>2,165</td>
<td>2,496</td>
<td>18,931</td>
<td>13,817</td>
<td>16,656</td>
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<td>21,497</td>
<td>18,493</td>
<td>27,362</td>
<td>26,096</td>
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<td>8,926</td>
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<td>7,781</td>
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<td>207,504</td>
<td>156,835</td>
<td>172,959</td>
<td>117,796</td>
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<td><strong>Forming Machines</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press</td>
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<td>243,583</td>
<td>415,140</td>
<td>373,560</td>
<td>390,617</td>
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<td>53,440</td>
<td>22,252</td>
<td>8,548</td>
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<td>4,044</td>
<td>9,495</td>
<td>6,419</td>
<td>9,133</td>
<td>11,219</td>
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<tr>
<td>Shearing M/C</td>
<td>61,919</td>
<td>83,834</td>
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<td>76,733</td>
<td>73,846</td>
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<td>86,542</td>
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<td>2,014</td>
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<td>2,226</td>
</tr>
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<td>31,548</td>
<td>72,769</td>
<td>61,323</td>
<td>21,411</td>
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<tr>
<td><strong>Total</strong></td>
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<td>1,678,020</td>
<td>2,301,435</td>
<td>2,550,745</td>
<td>2,216,117</td>
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</tbody>
</table>

Source: Korea Customs Service
## Exports by Product and Year

(Unit: US$1,000)

<table>
<thead>
<tr>
<th>Product</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting Machines</td>
<td>1,620,341</td>
<td>1,651,695</td>
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<td>1,724,242</td>
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<td>577,712</td>
<td>458,545</td>
<td>582,288</td>
<td>871,987</td>
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<td>27,428</td>
<td>22,840</td>
<td>13,598</td>
<td>15,273</td>
</tr>
<tr>
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<td>569,422</td>
<td>444,662</td>
<td>474,790</td>
<td>683,286</td>
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<td>4,961</td>
<td>5,512</td>
<td>9,129</td>
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<td>38,988</td>
<td>18,599</td>
<td>23,584</td>
<td>36,164</td>
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<td>NC Gear Cutting M/C</td>
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<td>9,093</td>
<td>12,513</td>
<td>11,075</td>
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<tr>
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<td>481</td>
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<td>3,902</td>
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<tr>
<td>Grinding M/C</td>
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<td>44,485</td>
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<td>11,830</td>
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<td>Discharge Processing M/C</td>
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<td>25,386</td>
<td>22,768</td>
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<td>15,469</td>
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<tr>
<td>Saw M/C</td>
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<td>17,402</td>
<td>37,595</td>
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<td>2,614,906</td>
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</table>

Source: Korea Customs Service
### Imports by Product and Year

(Units: US$1,000)

<table>
<thead>
<tr>
<th>Product</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting Machines</td>
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<td>1,185,480</td>
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<tr>
<td>NC Lathe</td>
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<td>160,669</td>
<td>154,707</td>
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<td>97,595</td>
</tr>
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<td>39,144</td>
<td>28,866</td>
<td>43,611</td>
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<td>Machining Center</td>
<td>133,485</td>
<td>258,988</td>
<td>327,233</td>
<td>247,578</td>
<td>249,616</td>
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<td>NC Drilling M/C</td>
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<td>5,548</td>
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<td>56,659</td>
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<td>124,801</td>
<td>181,382</td>
<td>142,125</td>
<td>126,589</td>
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<tr>
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<td>266,189</td>
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<td>13,460</td>
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<td>7,438</td>
<td>6,511</td>
<td>6,669</td>
<td>11,578</td>
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<tr>
<td>Saw M/C</td>
<td>23,145</td>
<td>35,672</td>
<td>42,335</td>
<td>35,773</td>
<td>35,614</td>
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<tr>
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<td>14,445</td>
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<td>13,460</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>(semiconductor facility)</td>
<td></td>
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<tr>
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<td>196,368</td>
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<td>306,973</td>
<td>270,624</td>
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<td>86,893</td>
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<td>103,534</td>
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Source: Korea Customs Service
## Imports by Product and Year

(Unit: US$1,000)

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<th>2016</th>
<th>2017</th>
<th>2018</th>
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<td>Cutting Machines</td>
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<td>939,765</td>
<td>1,108,447</td>
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<td>126,033</td>
<td>103,519</td>
<td>96,525</td>
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<td>28,817</td>
<td>21,270</td>
<td>27,003</td>
<td>25,363</td>
</tr>
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<td>290,543</td>
<td>249,698</td>
<td>261,437</td>
<td>201,885</td>
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<td>7,078</td>
<td>5,656</td>
<td>8,090</td>
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<td>NC Boring M/C</td>
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<td>21,980</td>
<td>15,798</td>
<td>13,712</td>
<td>11,016</td>
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<td>29,940</td>
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<td>119,929</td>
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<td>3,570</td>
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<td>15,650</td>
<td>16,733</td>
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<td>9,214</td>
<td>18,744</td>
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<tr>
<td>Boring M/C</td>
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<td>499</td>
<td>123</td>
<td>1,746</td>
<td>871</td>
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<td>Grinding M/C</td>
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<td>35,450</td>
<td>23,462</td>
<td>40,141</td>
<td>39,063</td>
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<td>Gear Cutting M/C</td>
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<td>5,798</td>
<td>9,388</td>
<td>4,830</td>
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<td>11,172</td>
<td>9,505</td>
<td>6,833</td>
<td>8,464</td>
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<td>34,260</td>
<td>35,417</td>
<td>34,606</td>
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<td>10,325</td>
<td>7,979</td>
<td>8,941</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
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<td>107,177</td>
<td>434,038</td>
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<td>274,434</td>
<td>232,139</td>
<td>247,371</td>
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<td>92,645</td>
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<td>6,209</td>
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<td>19,479</td>
<td>28,970</td>
<td>23,827</td>
<td>25,825</td>
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<td>71,325</td>
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<td>4,144</td>
<td>6,003</td>
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<tr>
<td>Bending M/C</td>
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<td>66,227</td>
<td>80,365</td>
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<td>39,587</td>
<td>27,434</td>
<td>21,221</td>
<td>29,451</td>
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<td>42,961</td>
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<td>1,214,199</td>
<td>1,340,586</td>
<td>1,264,861</td>
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Source: Korea Customs Service
## Top-Three Imported Products by Major Country

(Unit: US$1,000)

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<tr>
<th>Country</th>
<th>2015 Product Value</th>
<th>2016 Product Value</th>
<th>Product</th>
<th>Ratio</th>
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<td>Japan</td>
<td>158,115</td>
<td>137,928</td>
<td>Machining Center</td>
<td>23.2%</td>
</tr>
<tr>
<td></td>
<td>104,887</td>
<td>91,920</td>
<td>NC Lathe</td>
<td>15.4%</td>
</tr>
<tr>
<td></td>
<td>61,049</td>
<td>60,678</td>
<td>NC Grinding M/C</td>
<td>8.9%</td>
</tr>
<tr>
<td>Germany</td>
<td>59,952</td>
<td>51,119</td>
<td>Machining Center</td>
<td>27.8%</td>
</tr>
<tr>
<td></td>
<td>35,291</td>
<td>32,842</td>
<td>NC Gear Cutting M/C</td>
<td>16.4%</td>
</tr>
<tr>
<td></td>
<td>16,072</td>
<td>24,272</td>
<td>NC Grinding M/C</td>
<td>7.5%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>39,980</td>
<td>9,207</td>
<td>NC Gear Cutting M/C</td>
<td>48.8%</td>
</tr>
<tr>
<td></td>
<td>8,983</td>
<td>8,534</td>
<td>NC Grinding M/C</td>
<td>11.0%</td>
</tr>
<tr>
<td></td>
<td>3,065</td>
<td>3,403</td>
<td>Press</td>
<td>3.7%</td>
</tr>
<tr>
<td>Italy</td>
<td>6,147</td>
<td>11,879</td>
<td>Bending M/C</td>
<td>19.3%</td>
</tr>
<tr>
<td></td>
<td>5,485</td>
<td>6,950</td>
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<tr>
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<td>32</td>
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<td>Press</td>
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<td>China</td>
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<td>7,132</td>
<td>Bending M/C</td>
<td>21.2%</td>
</tr>
<tr>
<td></td>
<td>15,678</td>
<td>6,920</td>
<td>Machining Center</td>
<td>15.5%</td>
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<tr>
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<td>4,969</td>
<td>6,219</td>
<td>NC Lathe</td>
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</tr>
<tr>
<td>Austria</td>
<td>11,043</td>
<td>8,592</td>
<td>Bending M/C</td>
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<tr>
<td></td>
<td>905</td>
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<td>Non-Grinding M/C</td>
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<td>U.S.A.</td>
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<td>6,976</td>
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<tr>
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<td>7,901</td>
<td>5,817</td>
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<tr>
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<td>1,291</td>
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<tr>
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<td>7,542</td>
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<td>4,733</td>
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<tr>
<td>Singapore</td>
<td>14,896</td>
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<tr>
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<td>87</td>
<td>410</td>
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Source: Korea Customs Service
### Top-Three Imported Products by Major Country

(Units: US$1,000)

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<thead>
<tr>
<th>Country</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<td><strong>Country</strong></td>
<td><strong>Value</strong></td>
<td><strong>Ratio</strong></td>
<td><strong>Product</strong></td>
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<td>Japan</td>
<td>124,913</td>
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<tr>
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<td>74,610</td>
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</tr>
<tr>
<td></td>
<td>46,468</td>
<td>8.3%</td>
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</tr>
<tr>
<td>Germany</td>
<td>51,423</td>
<td>26.4%</td>
<td>Machining Center</td>
</tr>
<tr>
<td></td>
<td>18,695</td>
<td>9.6%</td>
<td>NC Gear Cutting M/C</td>
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<td>13,505</td>
<td>6.9%</td>
<td>NC Milling M/C</td>
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<tr>
<td>Switzerland</td>
<td>10,839</td>
<td>9.0%</td>
<td>Machining Center</td>
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<td>1,923</td>
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<tr>
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<td>4,423</td>
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<td>1,140</td>
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Source: Korea Customs Service
### Top-Three Importing Countries by Major Product

(Unit: US$1,000)

<table>
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<th>2015</th>
<th>2016</th>
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</thead>
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<td>Country</td>
<td>Value</td>
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</tr>
<tr>
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<td>Germany</td>
<td>59,952</td>
</tr>
<tr>
<td></td>
<td>Taiwan</td>
<td>37,972</td>
</tr>
<tr>
<td>Laser Processing M/C</td>
<td>Thailand</td>
<td>14,587</td>
</tr>
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<td>Japan</td>
<td>12,600</td>
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<tr>
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<td>NC Lathe</td>
<td>Japan</td>
<td>104,887</td>
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<td>4,064</td>
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<td>Japan</td>
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<td>3,120</td>
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<td>China</td>
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<tr>
<td>Press</td>
<td>Japan</td>
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<td>Germany</td>
<td>6,256</td>
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<tr>
<td></td>
<td>U.S.A.</td>
<td>5,120</td>
</tr>
<tr>
<td>Bending M/C</td>
<td>Japan</td>
<td>24,045</td>
</tr>
<tr>
<td></td>
<td>Italy</td>
<td>6,147</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>2,269</td>
</tr>
<tr>
<td>Forging M/C</td>
<td>Japan</td>
<td>11,987</td>
</tr>
<tr>
<td></td>
<td>Switzerland</td>
<td>3,065</td>
</tr>
<tr>
<td></td>
<td>Taiwan</td>
<td>4,639</td>
</tr>
<tr>
<td>Punching/Notching M/C</td>
<td>Japan</td>
<td>19,425</td>
</tr>
<tr>
<td></td>
<td>Italy</td>
<td>1,388</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>1,788</td>
</tr>
<tr>
<td>NC Gear Cutting M/C</td>
<td>Germany</td>
<td>35,291</td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td>6,633</td>
</tr>
<tr>
<td></td>
<td>Switzerland</td>
<td>3,360</td>
</tr>
</tbody>
</table>

Source: Korea Customs Service
## Top-Three Importing Countries by Major Product

(Unit: US$1,000)

<table>
<thead>
<tr>
<th>Product</th>
<th>Country</th>
<th>Value</th>
<th>Ratio</th>
<th>Country</th>
<th>Value</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machining Center</td>
<td>Japan</td>
<td>124,913</td>
<td>47.8%</td>
<td>Japan</td>
<td>98,972</td>
<td>49.0%</td>
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<tr>
<td></td>
<td>Taiwan</td>
<td>63,654</td>
<td>24.3%</td>
<td>Taiwan</td>
<td>42,724</td>
<td>21.2%</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>51,423</td>
<td>19.7%</td>
<td>Germany</td>
<td>42,106</td>
<td>20.9%</td>
</tr>
<tr>
<td></td>
<td>Thailand</td>
<td>12,012</td>
<td>32.0%</td>
<td>Thailand</td>
<td>11,968</td>
<td>36.4%</td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td>8,992</td>
<td>23.9%</td>
<td>Japan</td>
<td>8,394</td>
<td>25.6%</td>
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<tr>
<td></td>
<td>Switzerland</td>
<td>4,843</td>
<td>12.9%</td>
<td>Switzerland</td>
<td>3,292</td>
<td>10.0%</td>
</tr>
<tr>
<td>NC EDM</td>
<td>Japan</td>
<td>46,468</td>
<td>49.3%</td>
<td>Japan</td>
<td>55,856</td>
<td>46.6%</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>11,450</td>
<td>12.1%</td>
<td>Germany</td>
<td>15,694</td>
<td>13.1%</td>
</tr>
<tr>
<td></td>
<td>Switzerland</td>
<td>10,839</td>
<td>11.5%</td>
<td>Switzerland</td>
<td>13,034</td>
<td>10.9%</td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td>74,610</td>
<td>72.1%</td>
<td>Japan</td>
<td>62,696</td>
<td>65.0%</td>
</tr>
<tr>
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<td>Germany</td>
<td>6,610</td>
<td>6.4%</td>
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<td>11,661</td>
<td>12.1%</td>
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<tr>
<td></td>
<td>Thailand</td>
<td>6,414</td>
<td>6.2%</td>
<td>China</td>
<td>7,787</td>
<td>8.1%</td>
</tr>
<tr>
<td>NC Lathe</td>
<td>Japan</td>
<td>20,107</td>
<td>50.1%</td>
<td>Japan</td>
<td>24,301</td>
<td>62.2%</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>4,388</td>
<td>10.9%</td>
<td>Switzerland</td>
<td>4,658</td>
<td>11.9%</td>
</tr>
<tr>
<td></td>
<td>Taiwan</td>
<td>4,293</td>
<td>10.7%</td>
<td>Taiwan</td>
<td>3,165</td>
<td>8.1%</td>
</tr>
<tr>
<td>Grindering M/C</td>
<td>Japan</td>
<td>39,184</td>
<td>57.6%</td>
<td>Japan</td>
<td>29,791</td>
<td>48.0%</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>8,529</td>
<td>12.5%</td>
<td>China</td>
<td>14,007</td>
<td>22.6%</td>
</tr>
<tr>
<td></td>
<td>U.S.A.</td>
<td>6,055</td>
<td>8.9%</td>
<td>Germany</td>
<td>9,479</td>
<td>15.3%</td>
</tr>
<tr>
<td>Press</td>
<td>Italy</td>
<td>16,700</td>
<td>25.2%</td>
<td>Japan</td>
<td>15,817</td>
<td>19.7%</td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td>15,082</td>
<td>22.8%</td>
<td>Austria</td>
<td>12,471</td>
<td>15.5%</td>
</tr>
<tr>
<td></td>
<td>China</td>
<td>10,386</td>
<td>15.7%</td>
<td>Germany</td>
<td>12,047</td>
<td>15.0%</td>
</tr>
<tr>
<td>Bending M/C</td>
<td>Japan</td>
<td>10,617</td>
<td>50.0%</td>
<td>Switzerland</td>
<td>6,677</td>
<td>22.7%</td>
</tr>
<tr>
<td></td>
<td>Switzerland</td>
<td>2,585</td>
<td>12.2%</td>
<td>Japan</td>
<td>6,106</td>
<td>20.7%</td>
</tr>
<tr>
<td></td>
<td>Taiwan</td>
<td>2,272</td>
<td>10.7%</td>
<td>U.S.A.</td>
<td>4,367</td>
<td>14.8%</td>
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<tr>
<td>Forging M/C</td>
<td>Japan</td>
<td>18,225</td>
<td>65.2%</td>
<td>Japan</td>
<td>16,592</td>
<td>52.1%</td>
</tr>
<tr>
<td></td>
<td>China</td>
<td>3,124</td>
<td>11.2%</td>
<td>China</td>
<td>4,942</td>
<td>15.5%</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>2,103</td>
<td>7.5%</td>
<td>Italy</td>
<td>3,866</td>
<td>12.1%</td>
</tr>
<tr>
<td>Punching/Notching M/C</td>
<td>Germany</td>
<td>18,695</td>
<td>42.6%</td>
<td>Switzerland</td>
<td>10,561</td>
<td>35.3%</td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td>10,681</td>
<td>24.3%</td>
<td>Germany</td>
<td>8,193</td>
<td>27.4%</td>
</tr>
<tr>
<td></td>
<td>Switzerland</td>
<td>9,004</td>
<td>20.5%</td>
<td>Japan</td>
<td>7,132</td>
<td>23.8%</td>
</tr>
</tbody>
</table>

Source: Korea Customs Service
Since it was established in 1979, the Korea Machine Tool Manufacturers’ Association (KOMMA) has played a pivotal role in the dynamic development of the Korean machine tool industry.

Navigating the global economic and industrial paradigm, KOMMA consistently, innovatively has been engaged in a full range of support to expand market accessibility at home and abroad, develop cutting-edge technologies and human resources, pursue standardization, etc. This broad spectrum of activities more recently has been adapted with a global focus under the principle of bringing common prosperity to all the peoples on the planet.

Armed with a firm dedication and commitment to advance Korean machine tool enterprises and beyond, KOMMA has declared Global Vision 2020, aiming to support Korea to become a world top-four machine tool industry nation with annual production of US$18 billion, US$5 billion of which to come from overseas production, by 2020.
# About KOMMA

## Promoting Market Opportunities at Home and Abroad

Designed to expand market accessibility and sales opportunities, KOMMA designs and executes sales promotion programs embracing exhibitions as well as overseas trade missions.

- Organizing SIMTOS Korea, World Top 4 Machine Tool Marketing Platform
- Organizer of Korea Pavilions at Overseas Machine Tool-Related Exhibitions
- Planning and Leading Trade Missions to Tap Overseas Markets

## Umbrella for International Cooperation & Collaboration

KOMMA plays the role of shepherd for engaging in international cooperation activities for common benefit, generating opportunities for exchanges of information related to technology, management strategies, etc. Major ongoing activities in these directions include:

- The annual meeting of Korean-Japanese Committee for Cooperation of Machine Tool Associations
- Korean-Chinese Machine Tool Manufacturers' Associations Meeting
- Coordinating Conference of Asian Machine Tool Builders Associations (Korea, Japan, China, Taiwan, India)
- International conferences: The annual Executive Board & General Assembly Meeting of International Federation of Robotics, IFR, and International Symposium on Robots, ISR
- Regular machine tool statistics exchanges with international associations (CECIMO, GARDNER Publications Inc, AMT, JMTBA, VDW)

## Building & Operating Networks for Information Exchange and Policy Development

KOMMA is operating and maintaining networks designed to facilitate information exchanges among member companies and to pool available knowledge and expertise to improve machine tool industry environments.

- Ad Hoc Committee Management
- Meeting Management Among Government, Industry, Academia & Research Institutes
- Value Networking Events

## Generating Opportunities to Upgrade Technical Competitiveness

KOMMA provides a variety of opportunities for member companies to sharpen their competitive edge with technological innovations and upgrades.

- Spreading the Benefits of Standardization
- Operation of Standards Development Cooperation Institute
- Other Services Supporting Greater Technical Competitiveness

## Publicity & Publications Related to Machine Tool Industry

To facilitate creative communication with related individuals and organizations, KOMMA consistently carries out publicity and publication projects related to the machine tool industry at home and abroad. It also surveys and publicizes analyses of trends in machine tool industry orders, production, inventories, and trade (export-import) by machine type and country.

KOMMA’s regular publications are

- Monthly publication, 'Machine Tools'
- Annual publication, Korean Machine Tool Industry (KMTI)
- KOMMA's Activity Report and KOMMA Members Directory
- English version of publications to aid member companies’ exports
SIMTOS 2020 Secretariat officials and staff are pleased to cordially invite exhibitors and visitors to experience the inspiring value of connectivity and opportunities, connected with digital manufacturing transformation.

- **Title:** SIMTOS 2020
- **Organizer:** Korea Machine Tool Manufacturers' Association (KOMMA)
- **Subject:** Capture the future: 4th Industrial Revolution
- **Date:** March 31 ~ April 4, 2020 (5 days)
- **Venue:** KINTEX 1, 2 (102,431 m²)
- **Scale:** Exhibitors: 1,100 Companies, 6,000 Booths
  Buyers/Visitors: 100,000
- **Exhibit Products & Services:** Exhibited items will cover the full range of the industry, from metal processing machinery to process control & processing technologies, automation, robots, tools & peripheral devices, SW, element parts, etc.