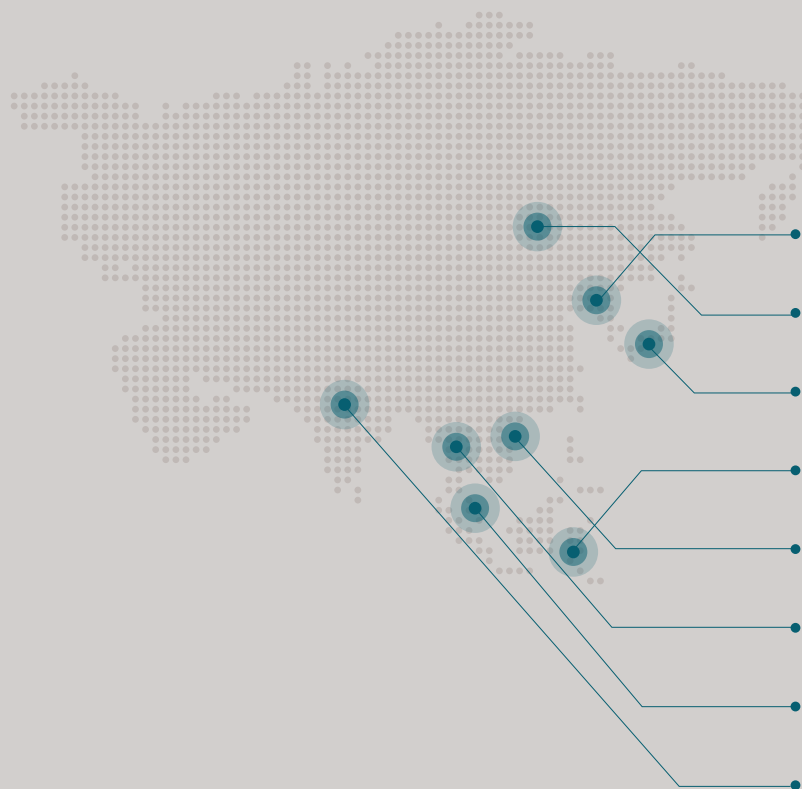




**MARKET TREND &
ANALYSIS**

ASIAN STEEL MARKET OUTLOOK NEXT TEN YEARS

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The ASEAN Economy:

Assessment and Outlook

The launch of the ASEAN Economic Community

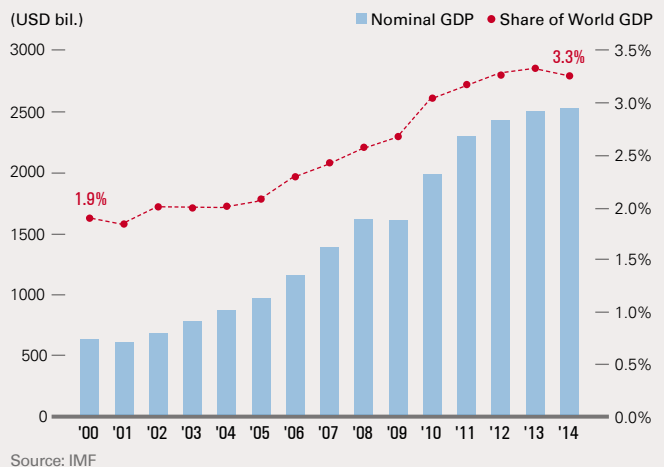
With the launch of the ASEAN Economic Community (AEC) in December 2015, global attention is being paid to the Association of Southeast Asian Nations (ASEAN). In 2007, 40 years after the formation of the ASEAN in 1967, ASEAN leaders agreed to move up the launch of the AEC from 2020 to 2015, and adopted the AEC Blueprint. They agreed that the accelerated integration of ASEAN nations is critical for each of their countries' economic development in the ever-changing global economic environment. Since then, ASEAN member countries have implemented key agendas under the AEC Blueprint, such as tariff reduction. There is a long way to go before the completion of the AEC. However, the emergence of the AEC is a giant step toward the economic integration of ASEAN nations.

With the establishment of a unified economic bloc through the AEC, the ASEAN has become the world's seventh largest economy, with a GDP of USD 2.5 trillion. Steel demand in the six major ASEAN countries (ASEAN-6)—Indonesia, Malaysia, Singapore, Thailand, Philippines, and Vietnam—totaled 65.9 Mt in 2014, close to Japan's 67.7 Mt and far higher than Korea's 55.5 Mt.

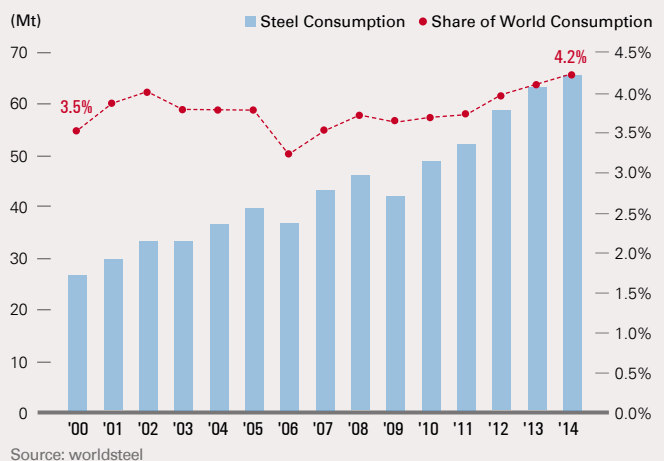
Surging demand for infrastructure expected due to an increase in working-age population and urbanization

The ASEAN has high growth potential, due in part to its

ASEAN-10: Nominal GDP, Share of World GDP



ASEAN-6: Finished Steel Consumption, Share of World Consumption



AEC

ASEAN ECONOMIC COMMUNITY

LAOS
MYANMAR
THAILAND
VIETNAM
CAMBODIA
PHILIPPINES
BRUNEI
MALAYSIA
SINGAPORE
INDONESIA

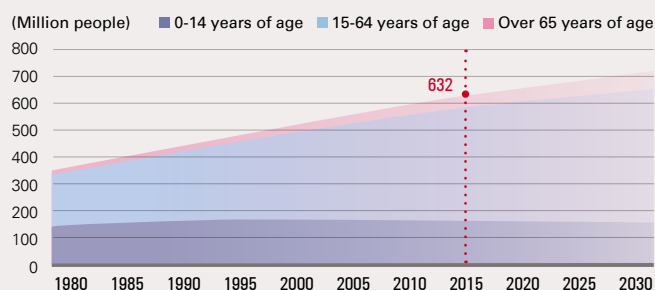
strong demand for infrastructure from a growing population and urbanization, and a solid manufacturing base with cheap labor costs. The ASEAN's economic future is promising.

The ten ASEAN nations (ASEAN-10) have a combined population of 632 million people, much larger than the EU (505 million people) and North America (474 million people). They have the third largest labor force in the world, behind China and India. The United Nations (UN) forecasts that the population of the ASEAN-10 will increase from 632 million in 2015 to 721 million in 2030. While advanced countries face deepening labor shortages due to low birth rates and aging populations, the ASEAN's working-age population (15-64 years old) is expected to increase from 426 million in 2015 to 489 million in 2030.

Along with population, the ASEAN's urbanization rate is expected to rise continuously. According to UN statistics, the average urbanization rate of the ASEAN-10 will increase from 47.1% in 2014 to 55.8% by 2030, and 64.5% by 2050. The urbanization rates of Vietnam, Thailand, Indonesia, and Malaysia will increase faster than those of other ASEAN countries.

Along with rapid urbanization, the ASEAN is projected to see massive investments in infrastructure, including roads, ports, railroads, energy, and communications, which will serve as the driving force for economic and industrial development. Global accounting and consulting firm KPMG forecasts that the ASEAN's total infrastructure

ASEAN-10: Population Trend and Forecast



	2000	2015	2030	'00-'15	'15-'30
(Million people)					
Under 15 years of age	166	168	159	2	-9
15-64 years of age	332	426	489	94	63
Over 65 years of age	26	38	74	12	36
Total	524	632	721	108	89
(Share)					
Under 15 years of age	31.6%	26.5%	22.0%	-5.1%p	-4.5%p
15-64 years of age	63.5%	67.5%	67.7%	4.0%p	0.3%p
Over 65 years of age	4.9%	6.0%	10.3%	1.1%p	4.3%p

Source: World Population Prospects The 2014 Revision, UN

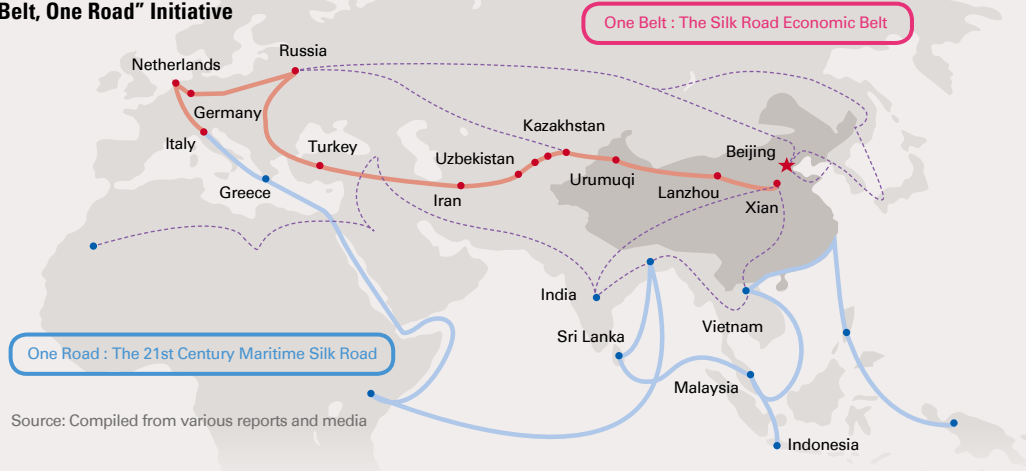
ASEAN-6: Urbanization Rate Trend and Forecast

(%)

	1980	1990	2000	2014	2020	2030	2040	2050
Indonesia	22.1	30.6	42.0	53.0	57.2	63.0	67.2	70.9
Malaysia	42.0	49.8	62.0	74.0	77.7	81.9	84.2	85.9
Philippines	37.5	48.6	48.0	44.5	44.3	46.3	51.1	56.3
Singapore	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Thailand	26.8	29.4	31.4	49.2	55.8	63.9	68.2	71.8
Vietnam	19.2	20.3	24.4	33.0	36.8	43.0	48.4	53.8
World Average	39.3	42.9	46.6	53.6	56.2	60.0	63.2	66.4

Source: World Urbanization Prospects The 2014 Revision, UN

China's "One Belt, One Road" Initiative



needs will surpass USD 1 trillion by 2020, including USD 235 billion in Indonesia, USD 170 billion in Vietnam, and USD 105 billion in Thailand.

The ASEAN benefits from China's "One Belt, One Road" and AIIB

The ASEAN will benefit from China's "One Belt, One Road" (OBOR) initiative and the Asian Infrastructure Investment Bank (AIIB). China's Xi Jinping administration is actively implementing the OBOR initiative to counter U.S. strategy to restrain China, such as the Trans-Pacific Partnership (TPP), and create new growth momentum to overcome economic slowdown.

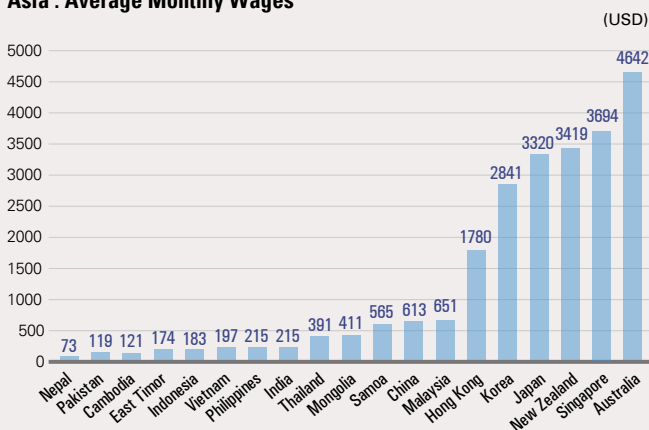
Furthermore, to support the OBOR initiative, China has launched the Asia Infrastructure Investment Bank, which has 57 founding member countries, including developing Asian countries as well as advanced European countries such as Germany, France, and Italy. The USA and Japan, which are two TPP member countries, did not participate in the AIIB, while the ASEAN-10 have all joined. Because the ASEAN is important to both the USA and China, the region will be the biggest beneficiary of the US-led TPP and the China-led OBOR and AIIB in terms of trade and infrastructure investment. One benefit will be that the Trans Asian Railway (TAR), a large-scale infrastructure project participated in by most ASEAN countries, will accelerate the development of routes

ASEAN-10: Infrastructure Competitiveness and Needs

Country	Ranking (Out of 144)	Score (1 - 7)	Infrastructure needs (USD bil.)
Singapore	2	6.5	15 (2014)
Malaysia	24	5.5	100 (2013-2020)
Thailand	44	4.6	105 (2013-2020)
Indonesia	62	4.2	235 (2013-2020)
Vietnam	76	3.8	170 (2013-2020)
Philippines	90	3.4	110 (2013-2020)
Laos	98	3.2	-
Cambodia	101	3.1	15 (2013-2020)
Myanmar	134	2.1	320 (-2030)
Brunei	136	2.0	-

Source: *The Global Competitiveness Index in Infrastructure*, WEF, 2015-2016;
An Overview of Infrastructure Opportunities in ASEAN, KPMG, 2014

Asia : Average Monthly Wages



Note: The year of data is 2008 for Nepal, 2010 for East Timor, 2012 for Cambodia, Mongolia, and Samoa, and 2011-12 for India. The rest are 2013 data.

Source: *Global Wage Report 2014/2015, Asia and Pacific Supplement*, ILO

With the establishment of a unified economic bloc through the AEC, the ASEAN has become the world's seventh largest economy. The accelerated integration of ASEAN nations is critical for each of their countries' economic development in the ever-changing global economic environment.

through the ASEAN region. Moreover, it is anticipated that investment projects related to the ASEAN will be included in the implementation of the OBOR initiative over the long-term.

Abundant cheap labor and a strong manufacturing base are highly attractive to foreign investors

Other reasons for the ASEAN's bright prospects are its abundance of low-cost labor and its strong manufacturing base. As Chinese wages have soared amidst an economic slowdown, the ASEAN has garnered the attention of foreign investors. All ASEAN countries, except Singapore and Malaysia, have lower average monthly wages than China. In particular, wages in Indonesia, Vietnam, and Philippines are only 30-35% of China's, and Thailand's average monthly wage, although relatively high, is only two-thirds of China's.

Because of the ASEAN's strong manufacturing base, Japan has used it as a major production base for automobiles and home appliances. In major ASEAN countries, the share of manufacturing and construction in GDP exceeds 30%, except in Singapore (24.9%). This figure is particularly high in Indonesia and Malaysia, which have shares of over 40%, and in Vietnam and Thailand, which have shares of 38.5% and 36.8%, respectively.

With the advantages of low labor costs and a strong manufacturing base, the ASEAN is witnessing a surge in

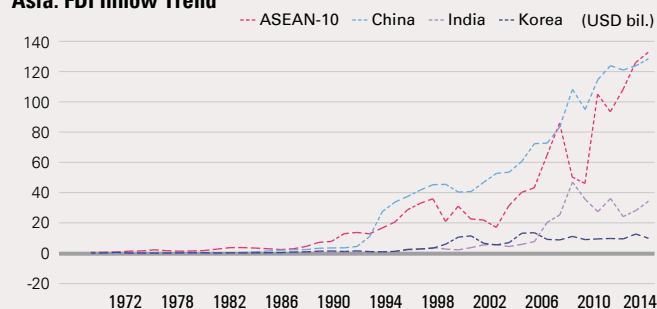
ASEAN: Industry's Share of GDP (2014)

(%)

	Indonesia	Malaysia	Thailand	Singapore	Philippines	Vietnam	Myanmar
Agriculture	13.7	9.0	10.5	0.0	11.3	18.1	27.9
Manufacturing & Construction	42.9	40.4	36.8	24.9	31.4	38.5	34.4
Service	43.3	50.6	52.7	75.0	57.3	43.4	37.7

Source: ADB, Key Indicators for Asia and the Pacific 2015

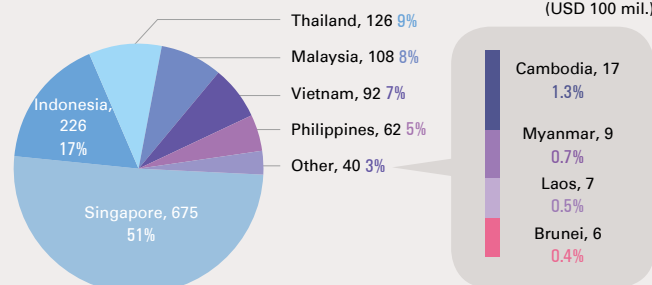
Asia: FDI Inflow Trend



Source: UNCTAD

ASEAN-10: Country Breakdown of FDI Inflow (2014)

(USD 100 mil.)



Source: UNCTAD

The ASEAN has a tremendous potential to grow, due largely to its growing working-age population, fast urbanization, abundant cheap labor, and a strong manufacturing base. Most ASEAN countries look poised to maintain higher economic growth than the global average over the next decade.

foreign investment. According to the United Nations Conference on Trade and Development (UNCTAD), FDI inflow to the ASEAN-10 surpassed that to China in 2013, and totaled USD 132.8 billion in 2014. This is far higher than those to India (USD 34.4 billion) and Korea (USD 9.9 billion). By country, Singapore accounted for 51% of total FDI inflow to the ASEAN in 2014. It was followed by Indonesia, Thailand, Malaysia, Vietnam, and the Philippines.

Economic growth to continue for the ASEAN

The ASEAN has a tremendous potential to grow, due largely to its growing working-age population, fast urbanization, abundant cheap labor, and a strong manufacturing base. Most ASEAN countries look poised to maintain higher economic growth than the global average over the next decade. The Philippines and Vietnam are expected to maintain GDP growth of over 6% until 2025, and Indonesia will grow at just below 6%. However, Singapore, which has high per capita income and a mature economic structure, and Thailand, with its persisting political instability, are projected to have low GDP growth of just above 3%.

As for Asian countries outside of the ASEAN, India, with projected GDP growth of over 7% for the next ten years, will overtake China in terms of growth rate. Korea and Japan are projected to have GDP growth of below 3% and 1%, respectively.

Asia: GDP Growth Trend and Forecast

(%)

	1981-1990	1991-2000	2001-2010	2011-2015	2016-2020	2021-2025
Indonesia	6.4	4.4	5.4	5.5	5.7	5.8
Malaysia	6.1	7.2	4.6	5.2	4.9	4.8
Philippines	1.8	2.9	4.8	5.9	6.5	6.0
Singapore	7.8	7.2	5.9	3.8	3.2	3.4
Thailand	7.9	4.7	4.6	2.9	3.3	3.6
Vietnam	5.9	7.6	6.8	5.9	6.1	6.0
World Average	3.4	3.3	3.9	3.5	3.8	3.7
China	9.3	10.4	10.5	7.8	6.2	5.8
Japan	4.6	1.1	0.8	0.7	0.7	0.5
India	5.6	5.6	7.6	6.6	7.6	7.1
Korea	9.9	7.0	4.4	3.0	2.8	2.5

Note: Prospects for 2021-2025 are made by POSRI
Source: IMF, October 2015, POSRI, November 2015

Steady rise in steel demand

The ASEAN's economic growth will lead to an increase in steel demand. Vietnam, Indonesia, and the Philippines, which had per capita crude steel consumption below the global average of 233.7 kg in 2014, will enjoy a notable rise in steel consumption. Because the construction industry accounts for the lion's share of steel consumption, demand for long products will increase significantly.

Moreover, the rise in household income due to eco-

Asia: Finished Steel Demand Forecast

	Finished Steel Consumption Forecast (Mt)						(CAGR)	
	2014	2015(e)	2016	2018	2020	2025	2016-2020	2021-2025
Indonesia	12.9	12.6	13.3	15.1	16.9	21.7	6.0%	5.1%
Malaysia	10.1	10.3	10.7	11.7	12.8	15.7	4.4%	4.1%
Philippines	7.3	7.7	8.1	8.9	9.8	12.1	4.9%	4.5%
Singapore	3.8	4.2	4.4	4.6	4.8	5.2	2.6%	1.8%
Thailand	17.3	17.3	17.9	19.4	21.0	24.8	4.0%	3.3%
Vietnam	14.4	16.5	17.4	19.3	21.4	28.2	5.4%	5.6%
ASEAN-6	65.9	68.6	71.9	78.9	86.7	107.7	4.8%	4.4%
China	710.8	674.9	664.8	652.8	643.2	624.0	-1.0%	-0.6%
Japan	67.7	63.1	63.6	63.9	65.3	67.1	0.7%	0.5%
India	75.9	81.5	87.4	99.8	113.6	155.3	6.9%	6.5%
Korea	55.5	55.5	55.8	56.0	56.6	58.8	0.4%	0.8%

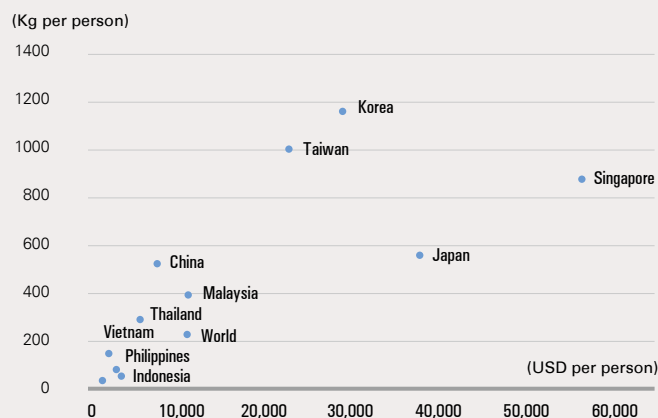
Source: POSRI

economic growth will trigger an increase in demand for automobiles in the ASEAN. The number of motor vehicles per 1,000 people in Indonesia, the Philippines, and Vietnam was 78, 35, and 4 units, respectively, in 2013, suggesting high growth potential. The expansion of investment in infrastructure will allow road improvements, which will speed up motorization.

Based on outlook for GDP growth and steel-consuming industries and the analysis of steel intensity of steel products, steel demand in the ASEAN-6 is projected to increase from 68.6 Mt in 2015 to 107.7 Mt in 2025, a compound average growth rate (CAGR) of 4.6% for the next ten years. By country, steel demand in Vietnam, bolstered by high growth in the construction sector, is expected to maintain robust growth, at a CAGR of 5.5% over the next decade. Indonesia's steel demand, backed by stable growth of the construction and automotive industries, is projected to grow at a CAGR of 5.5% during the same period. Vietnam and Indonesia's finished steel consumption will reach 28.2 Mt and 21.7 Mt, respectively, by 2025. Malaysia's steel demand will grow at a CAGR of over 4%, influenced by stable growth in steel demand for construction and automobiles, while Thailand's steel demand will grow stably at a CAGR of 3.6% until 2025, thanks to expanded investment in infrastructure and steady growth of the automotive sector.

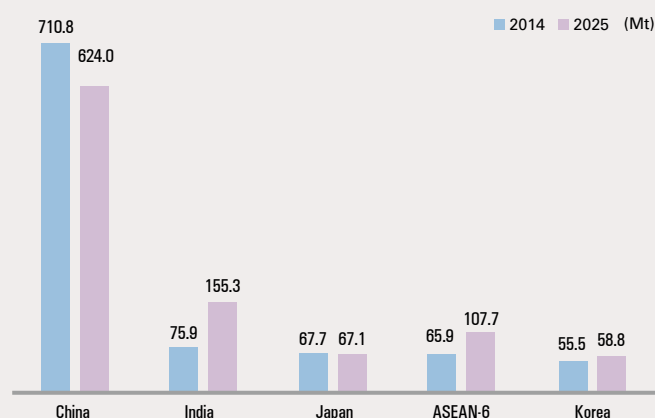
As for Asian countries outside of the ASEAN, China's steel demand is projected to decline from 710.8 Mt in 2014

Asia: GDP Per Capita and Crude Steel Consumption Per Capita (2014)



Source: IMF, worldsteel

Asia: Finished Steel Consumption Forecast Until 2025



Source: POSRI

ASEAN's growth potential and economic integration will lead to continuous economic growth and increasing steel demand. The ASEAN looks poised to play an important role in the global economy and steel industry.

to 624 Mt in 2025. This decline is mainly attributed to the slowdown of the construction and manufacturing industries. India's steel demand, supported by high economic growth, is expected to grow at a CAGR of 6.7% until 2025 doubling from 75.9 Mt in 2014 to 155.3 Mt in 2025. Japan's steel demand will be 67.1 Mt in 2025, close to the 2014 figure, while steel demand in Korea will increase modestly from 55.5 Mt in 2014 to 58.8 Mt in 2025. Notably, India and the ASEAN will lead the increase in steel demand in Asia over the next decade.

ASEAN must consider disparities among nations and the risks for each country

Although the ASEAN economy has many positive factors for a bright future, the region is not without risk. Above all, severe disparities in population, income, economic development, and industrial structure among ASEAN countries will work against the economic integration of the region. For example, there is a fifty-fold difference between the per capita income of Singapore (USD 56,287), which has the highest per capita income among the ASEAN-10, and that of Cambodia (USD 1,081), which has the lowest. In fact, a key agenda item for the AEC is to narrow the development gap between early members and less-developed, later-joining countries (Myanmar, Laos, Cambodia, and Vietnam).

Disparity inevitably leads to differences in opinion and

position on policies. If this disparity hinders the integration of the ASEAN, the benefits of integration will be reduced and growth potential will be diminished.

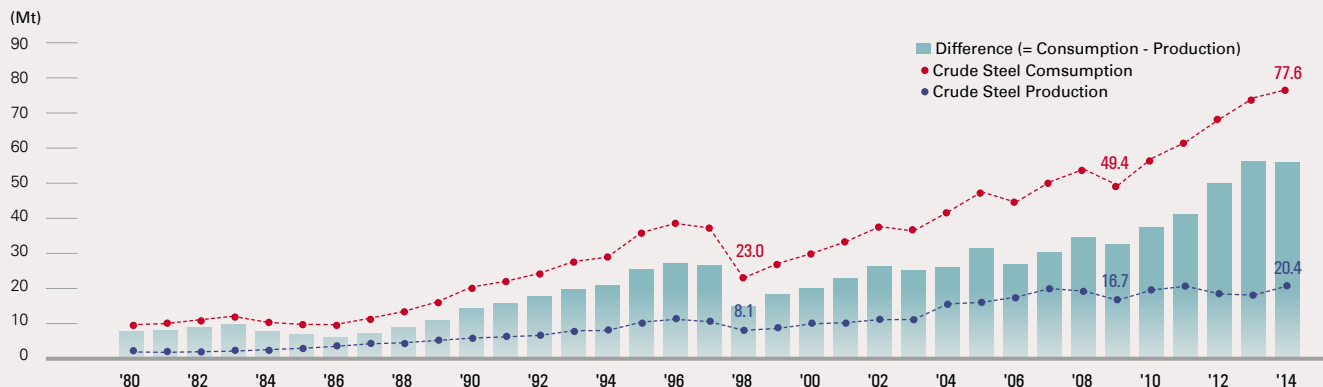
Moreover, the political and economic risks of each country should not be neglected. Thailand is still hampered by sluggish domestic demand after a military coup d'état in May 2014. Since the 1930s, there have been 18 coups in Thailand, and the country is suffering from chronic political instability. It is a distinct possibility that political instability will continue to drag down the Thai economy.

Countries bear varying degrees of risks from external shocks, such as US interest rate hikes, China's economic slowdown, and the decline in global raw materials prices. For example, the economies of Indonesia and Malaysia have recently shown instability, including surging foreign

Asia: Long-term Sovereign Credit Rating

	Indonesia	Malaysia	Thailand	Singapore
Moody's	Baa3	A3	Baa1	Aaa
S&P	BB+	A-	BBB+	AAA
Fitch	BBB-	A-	BBB+	AAA

	Philippines	Vietnam	Korea	China
Moody's	Baa2	B1	Aa2	Aa3
S&P	BBB	BB-	AA-	AA-
Fitch	BBB-	BB-	AA-	A+

ASEAN-6: Steel Consumption and Production Trend (1980-2014)

Source: worldsteel

exchange rates and plunging stock prices, because the two countries are vulnerable to foreign exchange fluctuations and a high dependence on natural resource exports. Standard & Poor's gave two of the ASEAN-6, Indonesia (BB+) and Vietnam (BB-), speculative grades in its sovereign credit ratings.

A close look at the ASEAN steel industry shows that despite a steady increase in steel demand, domestic markets are occupied by steel imports because of weak domestic steel production bases, and subsequently the operation rate is very low. As shown in the graph above, domestic steel production is far short of domestic steel consumption. The gap is widening, and steel imports are filling the gap. In 2014, steel imports by the ASEAN-6 totaled 46 Mt, accounting for about 70% of steel demand. Meanwhile, the average capacity utilization rate of the ASEAN-6 is estimated to stand at only 41.6%, having declined continuously since 2008.

Under these circumstances, ASEAN countries are strengthening restrictions on the import of steel products to protect their steel industries. This is one of the key issues for the Asian steel industry.

The ASEAN steel industry faces a serious challenge to secure competitiveness, responding to steel imports. However, ASEAN's growth potential and economic integration will lead to continuous economic growth and steel demand increase. The ASEAN looks poised to play an important role in the global economy and steel industry. 🌐

Asia: Summary of Economic and Steel Industry Indicators (2014)

Country	Population (100 mil. people)	GDP (USD bil.)	GDP per capita (USD)	Crude steel consumption (Mt)	Crude steel consumption per capita (kg)
Indonesia	252.2	888.6	3,524	15.5	60.8
Malaysia	30.6	338.1	11,049	11.7	391.9
Thailand	68.7	404.8	5,896	20.1	297.4
Singapore	5.5	307.9	56,287	4.9	889.8
Philippines	99.4	284.6	2,862	8.5	85.9
Vietnam	90.6	185.9	2,051	16.8	181.7
Myanmar	51.4	63.1	1,228	2.3	43.4
Laos	6.9	11.7	1,693	-	-
Brunei	0.4	17.1	41,460	-	-
Cambodia	15.3	16.6	1,081	-	-
ASEAN	621.0	2,518.4	4,056	79.9	133.5
(% of World)	8.7%	3.3%	37.4%	4.8%	57.1%
China	1,367.8	10,356.5	7,572	740.4	540.6
India	1,275.9	2,051.2	1,608	80.5	65.0
Japan	127.1	4,602.4	36,222	70.9	574.9
Korea	50.4	1,410.4	27,970	53.9	1,155.0
World Total	7,121.8	77,269.2	10,850	1,662.9	233.7

Source: IMF, worldsteel

KOREA

- Korea's GDP growth is projected to stay below 3% in 2016, as it did in 2015, due to sluggish exports and manufacturing. There is concern that growth will dwindle in the medium term.
- The construction industry will grow moderately by 2025, while the manufacturing industry is likely to stagnate due to saturated domestic demand and transfer of production facilities overseas.
 - The construction market will grow at a mere 2% by 2025, as construction investment slows down due to aging population and low GDP growth.
 - Domestic demand for automobiles will witness a modest increase, but domestic automobile produc-

tion is expected to remain its current level of 4.6 million units due to expansion of overseas production capacity by Korean automakers.

- Shipbuilding deliveries will begin to grow modestly after 2020, thanks to an increase in new orders for energy vessels resulting from a recovery in oil prices.
- Steel demand is expected to remain low until 2025, with a CAGR of 0.6%, due to limited growth in the automotive and other manufacturing industries.
 - With a slight increase in construction investment, demand for long products will grow at a CAGR of about 1%. However, steel demand for automobiles and other manufacturing will hit its growth limit.

01 DOMESTIC ECONOMY

Korea's GDP growth is projected to stay below 3% in 2016, as it did in 2015, due to falling exports resulting from sluggish global demand, and a weak manufacturing sector.

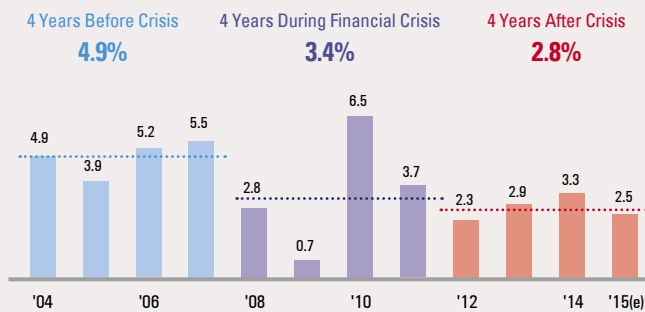
[For mid-term outlook for the Korean economy, refer to the table on page 90, "Asia's GDP Growth Trend and Forecast."]

- Amidst sluggish private consumption, slowing investment in construction, and the burden of household debt, Korea's economic recovery has been delayed. Exports have been

hit hard by contracting global demand, due to the end of the "consumption boom" in advanced countries and the "investment boom" in emerging countries. Korea's GDP growth is projected to reach no higher than 2.8% in 2016.

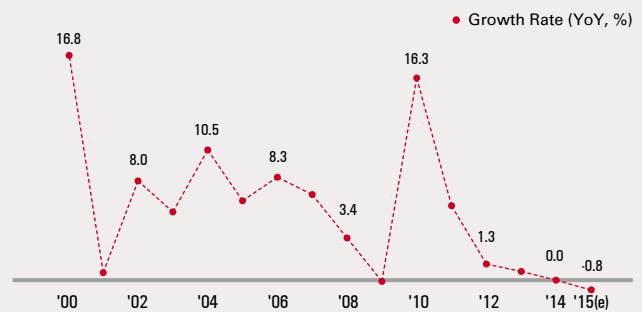
- Industrial production has been low for the last three years, because domestic demand stagnated despite the expansion of manufacturing capacity after the financial crisis.

GDP Growth Trend



Source: Bank of Korea, POSRI

Industrial Production Growth



Source: Bank of Korea, POSRI

02 STEEL-CONSUMING INDUSTRIES

Construction Despite a recovery over the last two years, there is a possibility that the construction market will slow down, due to various risks, such as reduced construction investment, including in SOC, and an oversupply of new housing.

- The Construction Business Survey Index (CBSI) began a slow recovery in 2014, and reached 101.3 in July 2015, hovering above 100 for the first time in 13 years.

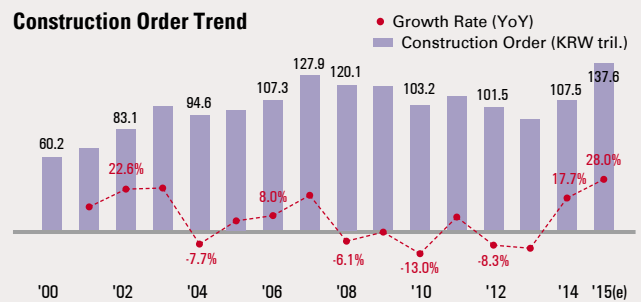
Construction Business Sentiment Index (CBSI)



Source: Construction Economy Research Institute of Korea (CERIK)

- Construction orders increased for two consecutive years, thanks to the recovery of the private-sector. In 2015, construction orders are estimated to hit a record high of KRW 137.6 trillion. However, they will decline in 2016 for the first time in three years, because of oversupply of new housing, and shrinking new orders for civil engineering works due to a reduced SOC budget.

Construction Order Trend



Source: Construction Association of Korea (CAK), CERIK

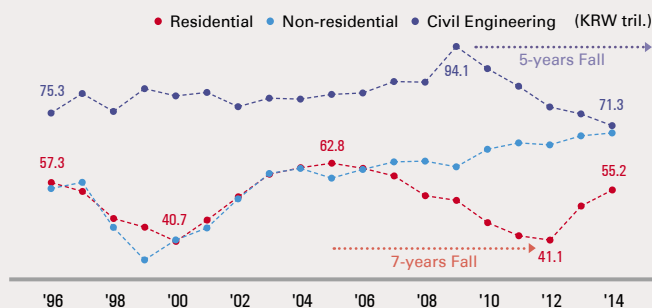
Construction investment will maintain a modest upward trend in 2016, thanks to robust private investment in residential construction. Due to protracted sluggish public investment, however, it will increase by a CAGR of below 2% in the medium term.

- Domestic construction investment grew 5.5% in 2013, bolstered by a rebound in investment in residential con-

struction after a seven-year fall, and has continued to grow modestly.

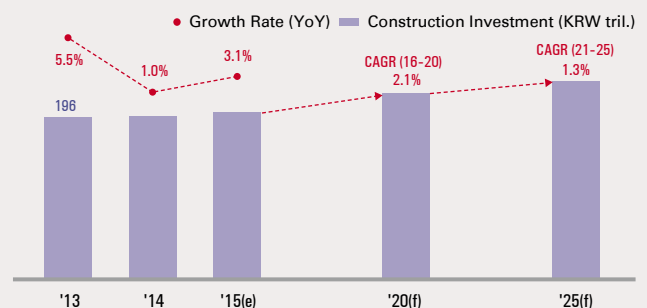
- Recovery of construction investment has been limited because investment in civil engineering has declined for five consecutive years. Construction investment is expected to slow down in the next ten years.

Construction Investment Amount Trend



Source: Bank of Korea, CERIK

Construction Investment Forecast

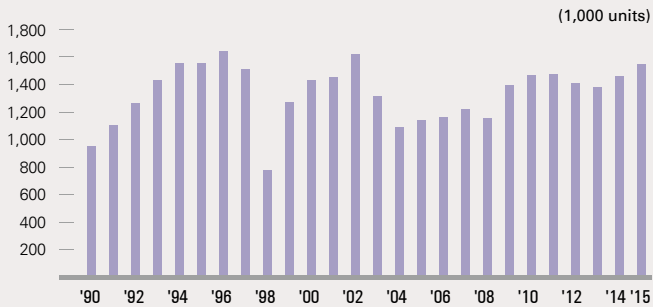


Source: Bank of Korea, POSRI

Automotive Domestic demand for automobiles has fluctuated around 1.5 million units since hitting a record high in 1996. Automobile production showed an upward trend until the 2010s.

- Korea's motorization rate increased continuously from 1986 to 1996, resulting in an eight-fold rise in domestic

Domestic Demand for Automobiles

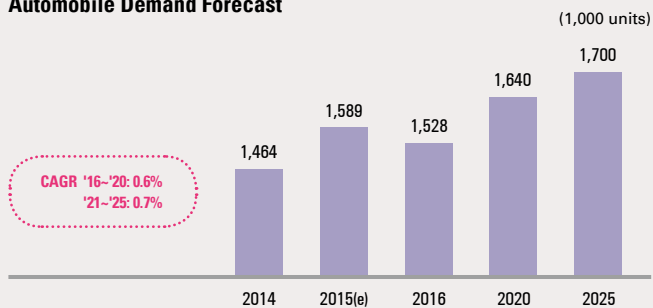


Source: Korea Automobile Manufacturers Association (KAMA)

Domestic demand for automobiles will increase to about 1.7 million units by 2025, while automobile production is expected to maintain the current level of 4.6 million units.

- Automobile demand will grow modestly thanks to increases in the number of vehicles owned per household and the number of one-person households, despite slowing popu-

Automobile Demand Forecast



Source: KAMA, POSRI

demand for automobiles, from 200,000 units to 1.6 million units.

- Automobile production maintained an upward trend thanks to a rapid rise in exports from the year 2000, led by major automakers, including Hyundai, Kia, and GM Daewoo. It hit a record high of 4.7 million units in 2011.

Car Production by Automaker

(1,000 units)

	'10	'11	'12	'13	'14
Hyundai	1,743	1,892	1,905	1,852	1,876
Kia	1,417	1,584	1,586	1,599	1,712
GM	744	811	786	783	629
Renault Samsung	275	244	154	130	152
Mahindra (Ssangyong)	80	113	119	144	140
Tata	9	9	9	10	11
Daewoo Bus	3	3	3	4	3
Total	4,272	4,657	4,562	4,521	4,525

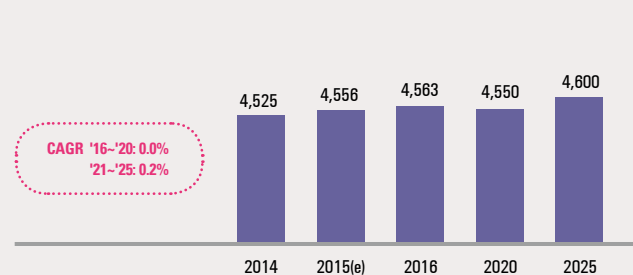
Source: KAMA

lation growth.

- Domestic automobile production is expected to remain at current levels due to expansion of overseas production by Korean automakers. In particular, Hyundai Motor Company, which is actively expanding overseas production, will see a decline in production at home.

Automobile Production Forecast

(1,000 units)

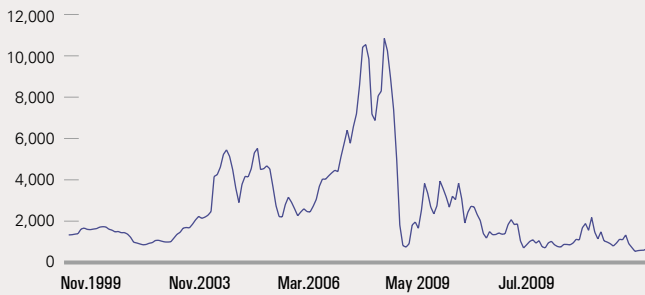


Source: KAMA, POSRI

Shipbuilding Since 2011, the Korean shipbuilding industry has stagnated, dragged down by the sluggish global shipbuilding market following the global financial crisis, as exemplified by a decline in the Baltic Dry Index (BDI).

- Before the financial crisis, the BDI remained high, staying above 10,000 points, but the index plunged to around 1,500 points after the financial crisis.

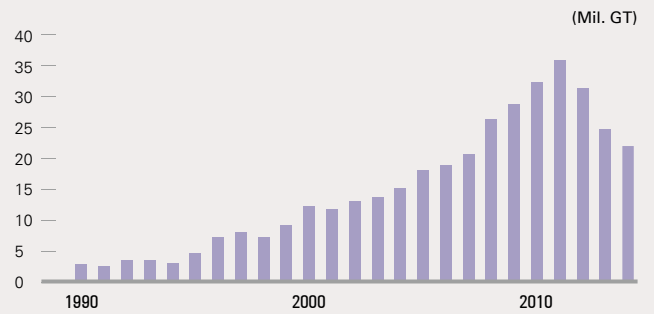
Baltic Dry Index (BDI)



Source: Clarkson

- New shipbuilding orders and shipbuilding deliveries have plunged since 2010, for many reasons such as the falling BDI, the contracting volume of global freight, and an over-supply of new ships.
- New orders for ships continue to decline due to slack orders for energy vessels caused by plunging oil prices.

Shipbuilding Deliveries



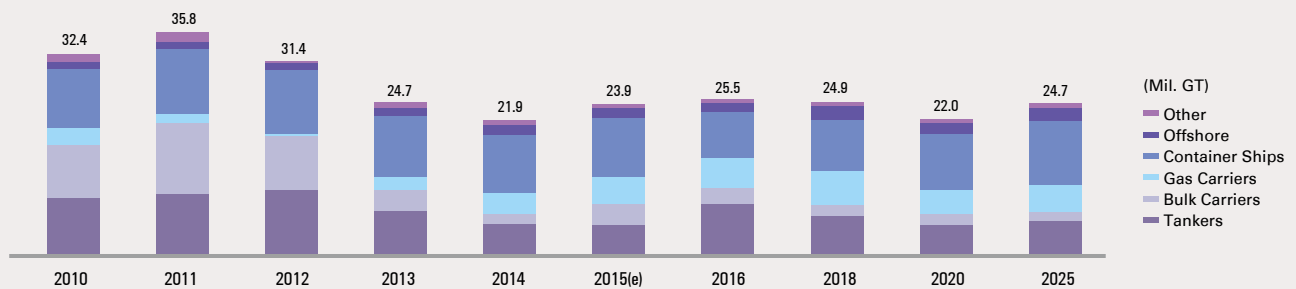
Source: Clarkson

Shipbuilding deliveries are expected to continue a downward trend until 2020, but increase modestly thereafter.

- Shipbuilding deliveries stood at 23.9 million GT in 2015, a 33% fall from a record high in 2011.

- Shipbuilding deliveries will begin to grow modestly after 2020, thanks to an increase in new orders for energy vessels resulting from a recovery in oil prices.

Shipbuilding Deliveries by Ship Type



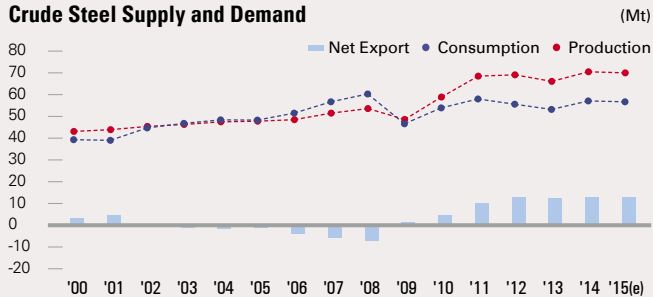
Source: Clarkson, POSRI

03 STEEL DEMAND OUTLOOK

Since 2011, crude steel demand has stagnated at around 58 Mt, and crude steel production has remained at a plateau, hovering below 70 Mt.

- Net exports of crude steel have stayed around 13 Mt since

Crude Steel Supply and Demand



2012.

- Exports declined in 2015, while imports remained high, at around 22 Mt, due to an excessive inflow of low-price Chinese steel.

Finished Steel Supply and Demand

	2012	2013	2014	2015(e)
Domestic demand	54.1 (-4.1%)	51.8 (-4.3%)	55.5 (7.3%)	55.5 (-0.1%)
Export	30.5 (4.8%)	29.2 (-4.2%)	32.3 (10.5%)	31.6 (-2.2%)
Production	72.1 (-0.3%)	69.1 (-4.0%)	74.1 (7.2%)	73.8 (-0.4%)
Import	20.7 (-10.4%)	19.4 (-6.3%)	22.7 (17.3%)	22.1 (-3.0%)

Note: Imports include semi-finished products
Source: KOSA, POSRI

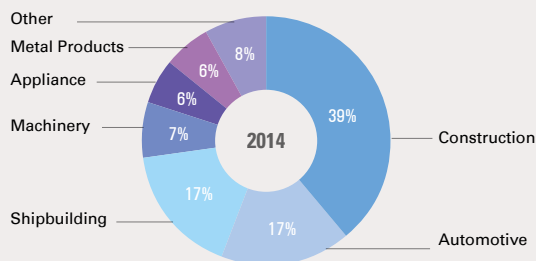
Steel demand is expected to remain low until 2025, with a CAGR of 0.6%, due to limited growth in the automotive and other manufacturing industries.

- Korea's steel demand is accounted for by the manufacturing (61%) and construction (39%) industries. More than half of demand for manufacturing comes from the automotive and shipbuilding industries.
- With a slight increase in construction investment, demand for long products will grow at a CAGR of about 1%. However, steel demand for automobiles and other manufactur-

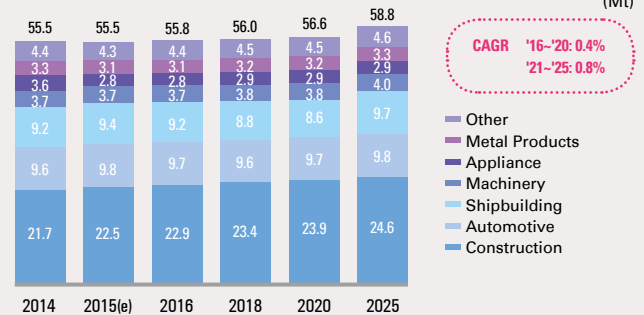
ing will hit its growth limit.

- With domestic automobile production staying at around 4.6 million units, steel demand for automobiles is expected to remain around 9.7 Mt.
- With the recovery of shipbuilding deliveries after 2020, steel demand for shipbuilding will recover to 9.7 Mt by 2025, slightly higher than the level of 2014.
- With the transfer of production bases overseas, steel demand for home appliances and fabricated metal products is unlikely to increase further.

Steel Demand by End-Use



10-Year Steel Demand Outlook



CHINA

- China's GDP growth is projected to decline gradually until 2025, due to a major slowdown of the Chinese economy during reform, including restructuring and a changed growth model.
- The construction and automotive industries will inevitably slow down, while the shipbuilding industry is expected to improve gradually in the medium term, thanks to cost competitiveness.
 - Construction investment growth is projected to dwindle to below 5% in the medium term, caused by a decrease in the floor space started due to the burden of high housing inventory.
 - Automobile demand and production are projected to grow at a CAGR of about 4% until 2020, then slow down until 2025.
- Shipbuilding deliveries will increase modestly until 2025, despite a slowdown in the global shipbuilding market, as cost-competitive Chinese shipyards receive increased orders.
- China's steel demand will decrease by a CAGR of 0.8% until 2025 due to the slowdown of the construction and manufacturing industries, despite increased steel demand for automobiles.
 - Steel demand for construction is projected to decline due to shrinking fixed-asset investment, while steel demand for automobiles will grow stably at a CAGR of just above 3%.

01 DOMESTIC ECONOMY

China's economy is slowing due to lower investment and exports. The Chinese government, in late 2015, suggested that China's GDP growth rate will not be less than 6.5% in the five years to 2020.

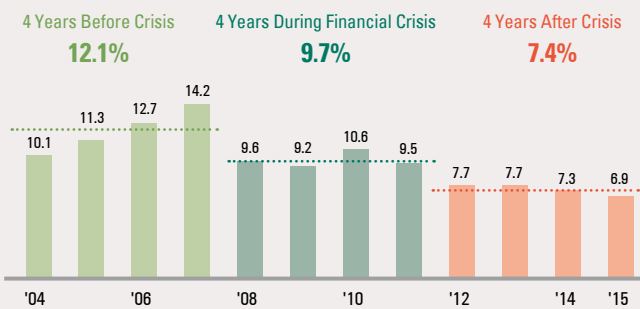
[For mid-term outlook for the Chinese economy, refer to the table on page 90, "Asia's GDP Growth Trend and Forecast."]

- China's GDP growth hit a 25-year low of 6.9% in 2015 and is expected to slow further in the medium term. With

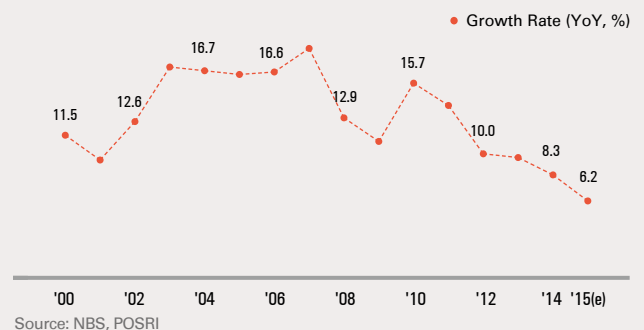
its changed growth structure and lack of growth engine, China enters an era of slow growth.

- Industrial production growth has declined for five consecutive years, because manufacturing industry conditions have deteriorated due to restructuring to resolve obsolete facilities and overcapacity. The growth rate is estimated to hit a record low of 6.2% in 2015 and will decline thereafter.

GDP Growth Trend



Industrial Production Growth



02 STEEL-CONSUMING INDUSTRIES

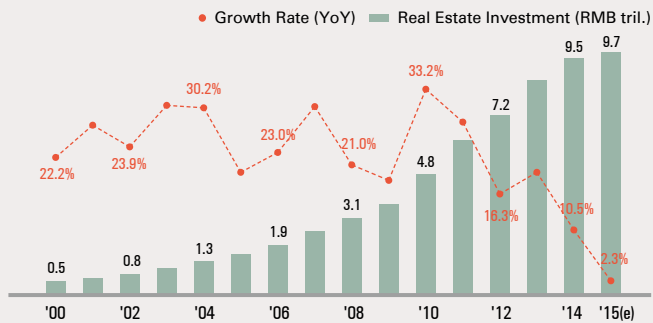
Construction China's construction market is showing clear signs of slowdown in 2015. Due to an oversupply of new housing, it will take time for the construction market to get on track.

- The construction market has declined for the last four years due to falling GDP growth, low real estate investment, and strengthened government regulations. Recov-

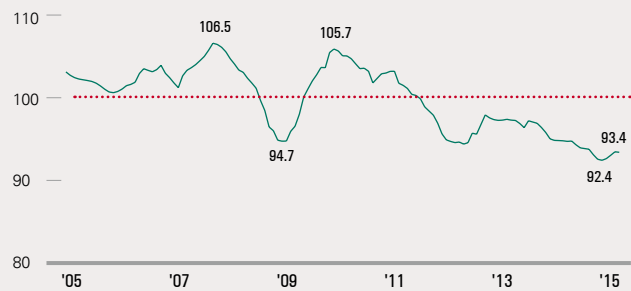
ery within 2-3 years will not be easy.

- China's real estate climate index has remained below 100 for four consecutive years, dragged down by a plunge in investment in real estate development. In 2015, the floor space of real estate started declined for the second consecutive year.

Real Estate Investment Trend



Real Estate Climate Index

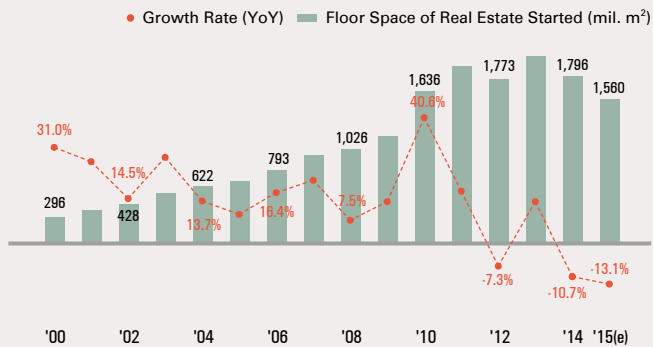


Construction investment growth is projected to dwindle to below 5% in the medium term, as the floor space of real estate started decreases because of high housing inventory.

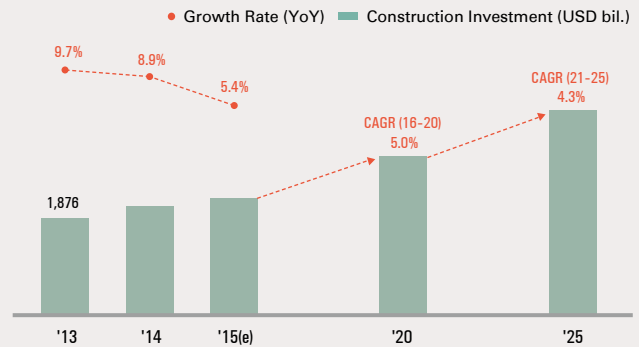
- Construction investment will inevitably weaken due to an economic slowdown in the “new normal” era and a sluggish real estate market.

- Construction investment, however, is anticipated to maintain at a certain level thanks to potential demand for new housing, the National New-type Urbanization Plan, and rising investment in infrastructure, following initiatives such as One Belt One Road and China Western Development.

Floor Space of Real Estate Started



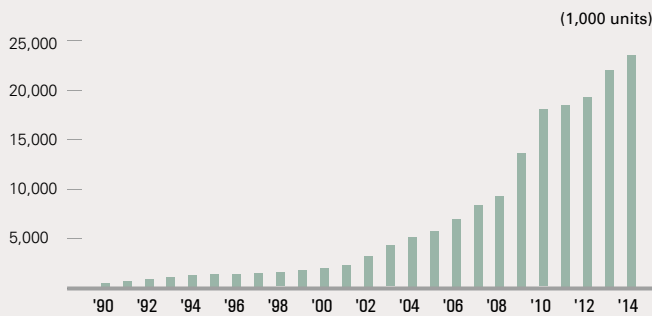
Construction Investment Forecast



Automotive Domestic demand for automobiles increased sharply, by a CAGR of 17% from 1990 to 2014, and notably led the expansion of global automobile production following the global financial crisis.

- China has emerged as the world's largest automobile market, with its demand for automobiles reaching 23.5 million units in 2014.

Domestic Demand for Automobiles



Source: CEIC

- Domestic automobile demand slowed to a CAGR of 7% after 2011, caused by an economic slowdown and policies to restrict vehicle sales in major cities.
- China's local automakers account for 32% of total production, while European companies account for 20%, and Japanese companies 14%.

Car Production by Automaker

(1,000 units)

	'12	'13	'14	Share
Local	6,537	7,261	7,643	32%
Japanese	2,517	2,957	3,195	14%
EU	3,336	4,047	4,810	20%
American	1,793	2,232	2,538	11%
Korean	1,341	1,589	1,761	7%
Other	3,748	4,032	3,776	16%
Total	19,272	22,117	23,723	100%

Source: CEIC

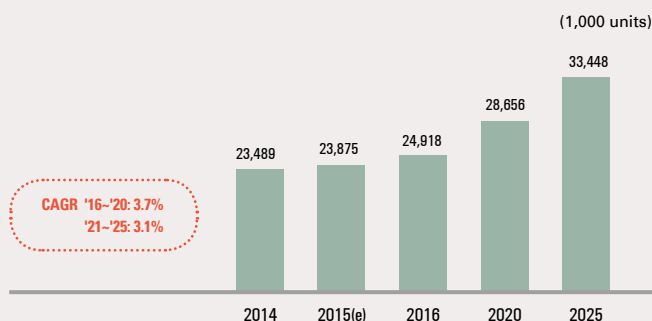
China's demand for automobiles is projected to grow at a CAGR of 3.7% until 2020, and slow down thereafter. Automobile production is expected to show a similar trend.

- Automobile demand is expected to reach 29 million units by 2020, and 33 million units by 2025.
- In China, the number of motor vehicles per 1,000 people

is 86, which is still much lower than Korea's 386 and Japan's 603 in 2013.

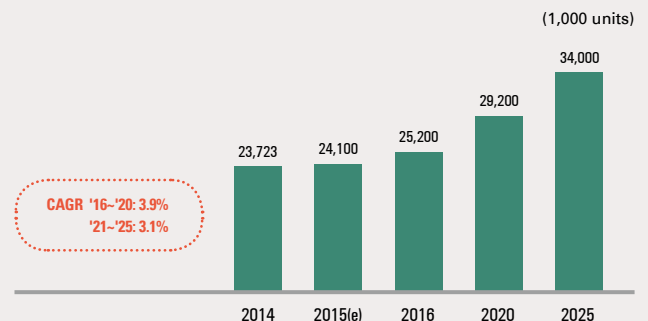
- With a gradual increase in exports, automobile production is expected to outpace domestic demand for automobiles, reaching 34 million units by 2025.

Automobile Demand Forecast



Source: CEIC, POSRI

Automobile Production Forecast

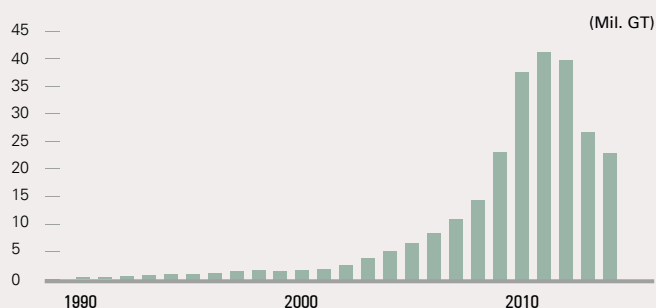


Source: CEIC, POSRI

Shipbuilding China's shipbuilding industry grew rapidly in the 2000s, but its growth plummeted after 2011, on the heels of the global financial crisis.

- Shipbuilding deliveries hit a record high of 41 million GT in 2011, but fell thereafter, as new orders decreased amidst a market slump.

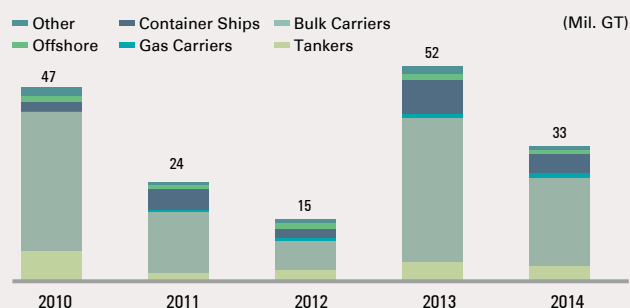
Shipbuilding Deliveries



Source: Clarkson

- New orders dropped during 2011-12. After a short rebound in 2013, they declined again.
- With orders for bulk carriers declining due to the falling Baltic Dry Index (BDI), the share of bulk carriers decreased gradually, while the share of containers increased from 5% in 2012 to 22% in 2014.

New Shipbuilding Orders



Source: Clarkson

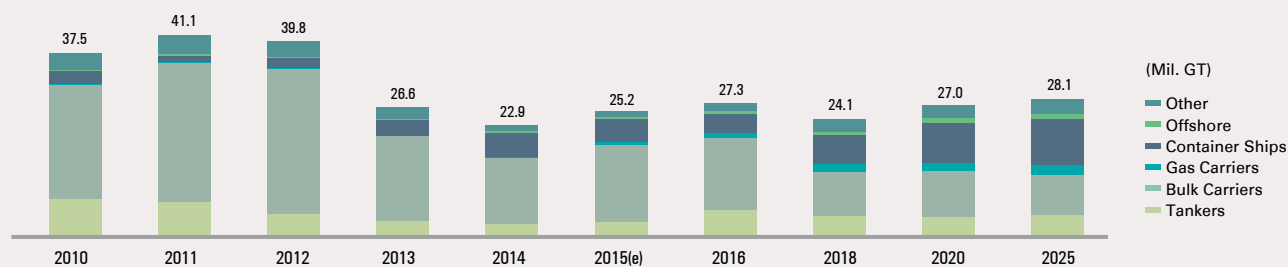
Despite a prolonged recession in the global shipbuilding market, China's shipbuilding industry is projected to improve gradually from 2018 until 2025, as cost-competitive Chinese shipyards receive increased orders.

- The share of orders for bulk carriers, China's major type of ship, is projected to decline continuously, whereas the shares of container ships, tankers, and gas carriers will

climb thanks to their increased competitiveness in cost and technology.

- The share of container ships in deliveries is expected to increase from 12% in 2013 to 30% in 2020, and the share of gas carriers is expected to rise from 0% to 7% during the same period.

Shipbuilding Deliveries by Ship Type

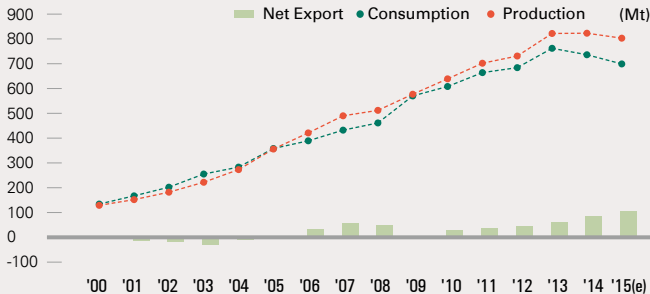


Source: Clarkson, POSRI

03 STEEL DEMAND OUTLOOK

Crude steel demand maintained a high growth trend in the 2000s, but declined for two consecutive years after peaking in 2013, leading crude steel production to decline in 2015.

Crude Steel Supply and Demand



Source: worldsteel, POSRI

As China increased steel exports to overcome its sluggish domestic market, steel exports reached an unprecedented high of more than 100 Mt in 2015.

Steel Supply and Demand

(Mt)

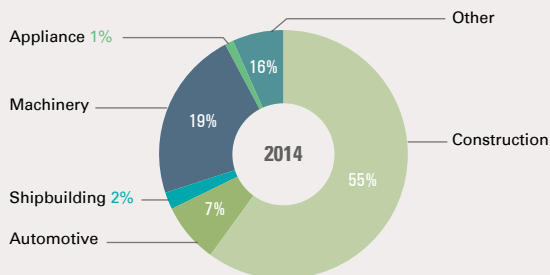
	2012	2013	2014	2015(e)
Crude steel production	731 (4.1%)	822 (12.4%)	823 (0.1%)	804 (-2.3%)
Crude steel demand	688 (2.9%)	766 (11.4%)	740 (-3.3%)	703 (-5.0%)
Steel export	56 (14.0%)	62 (11.9%)	94 (50.4%)	112 (19.9%)
Steel import	14 (-12.3%)	14 (3.1%)	14 (2.5%)	13 (-11.4%)

Note: Steel export and import are based on the General Administration of Customs.
Source: worldsteel, POSRI

China's steel demand will decrease by a CAGR of 0.8% until 2025 due to slowing construction and manufacturing industries, despite increased steel demand for automobiles.

- China's steel demand is accounted for by the manufacturing (45%) and construction (55%) industries. The machinery industry accounts for 19% of steel demand, the largest share in manufacturing, while the automotive and shipbuilding industries combined account for 9%.
- The recent slowdown in demand is attributed to a weak construction sector, including real estate. Steel demand for construction is expected to fall slowly until 2025.

Steel Demand by End-Use

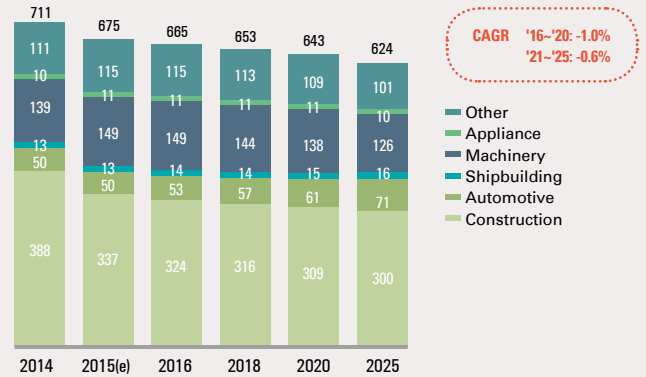


Source: MPI

- Steel demand for automobiles is expected to reach 71 Mt by 2025, with automobile production projected to exceed 30 million units after 2020.
- Steel demand for shipbuilding is expected to increase slightly after 2020, growing at a CAGR of 0.8%.
- Steel demand for machinery and other industries is expected to fall slightly due to reduced investment in construction and facilities.

10-Year Steel Demand Outlook

(Mt)



Source: POSRI

JAPAN

- Japan's GDP growth will remain low, at around 1%, in 2015-16, rebounding slightly thanks to improved exports backed by the weak yen, and will remain low for the medium term.
- Amidst feeble growth in construction, steel demand is expected to lose momentum due to sluggish manufacturing.
 - The ratio of construction investment to GDP continues to fall due to Japan's aging population, and construction investment will grow slowly, at a CAGR of about 1.8%, until 2025.
 - Japan's domestic demand for automobiles is expected to fluctuate very little until 2020, remaining at around 5.5 million units, while automobile production will slow to below 9 million units.
- Amidst a prolonged market slowdown, shipbuilding deliveries will decline moderately until 2020, and remain stable at around 12 million GT until 2025.
- Japan's steel demand is expected to show meager growth, with a CAGR of 0.6%, until 2025, due to Japan's saturated automotive market and sluggish shipbuilding industry.
 - Steel demand for construction is projected to grow low, at a CAGR of 0.9%, due to slowing construction investment, while steel demand for automobiles is expected to remain at around 18 Mt.

01 DOMESTIC ECONOMY

The Japanese economy is projected to grow at around 1% in 2015-16, recovering slightly thanks to improved exports backed by the weak yen, and will slow to 0.5% for the medium term.

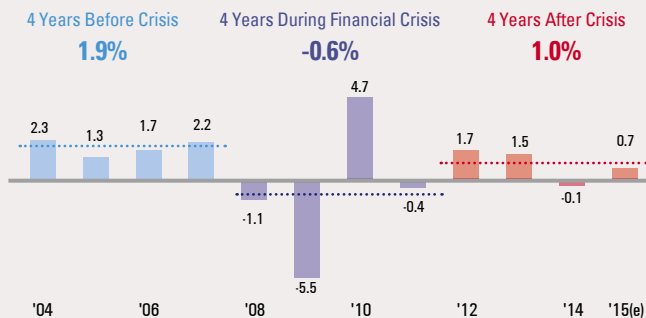
[For mid-term outlook for the Japanese economy, refer to the table on page 90, "Asia's GDP Growth Trend and Forecast."]

- Japan's GDP growth is expected to increase modestly in 2016, because gradual improvements in employment

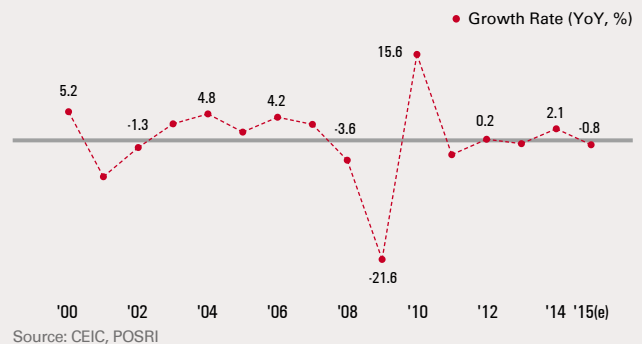
conditions will lead to adequate private consumption, and good corporate performance will increase facility investment.

- The Tankan manufacturing index fell again in Q4 2015, influenced by the decline in Japan's exports due to China's falling imports, showing that the manufacturing industry remains sluggish.

GDP Growth Trend



Industrial Production Growth



02 STEEL-CONSUMING INDUSTRIES

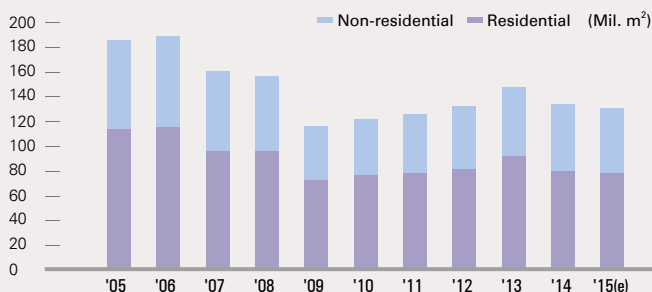
Construction Japan's construction market is projected to remain sluggish, as major indicators, such as construction investment and the building construction started have declined since 2013.

- In 2015, the building construction started fell below the

level of 2012. In particular, the floor space of housing construction started appears to decrease hard due to an aging population.

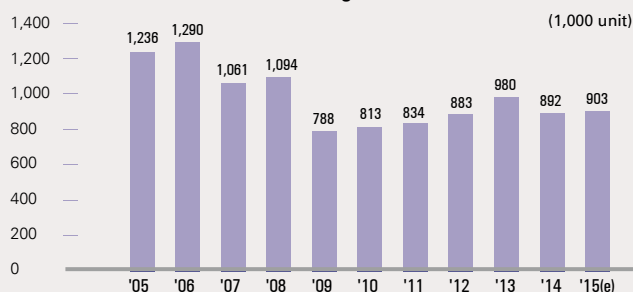
- New construction starts of dwellings increased slightly in 2015, but still remained low.

Building Construction Started



Source: Ministry of Land, Infrastructure, Transport and Tourism (MLIT), POSRI

New Construction Starts of Dwellings



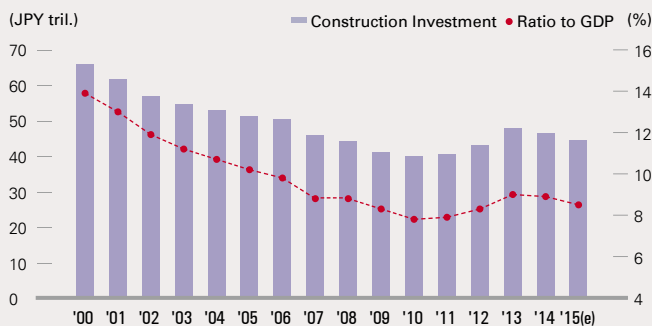
Source: MLIT, POSRI

The ratio of construction investment to GDP will continue to dwindle due to an aging population. Construction investment is projected to grow at a CAGR of about 1.8% until 2025.

- Residential construction investment will hit its growth limit due to decreasing population.

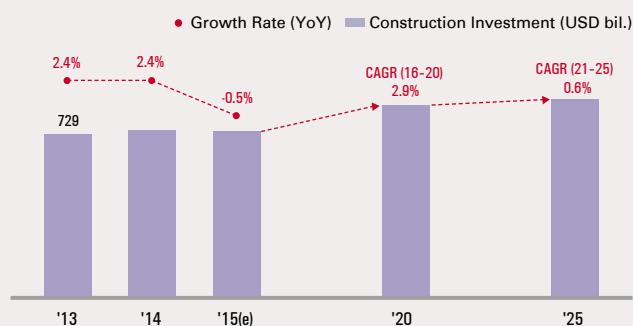
- Infrastructure investment is expected to rebound to some extent thanks to new investment in and renovation of facilities for the 2020 Tokyo Olympic Games. However, industrial investment will be insignificant due to a weak manufacturing sector.

Construction Investment Trend



Source: Research Institute of Construction and Economy (RICE)

Construction Investment Forecast



Source: POSRI

Automotive After hitting a record high of 7.8 million units in 1990, Japan's domestic demand for automobiles declined steadily, then remained stable, at around 5.5 million units, through the 2000s.

- Japan's domestic demand for automobiles skyrocketed, from 1.67 million units in 1965 to 4 million units in 1970, then increased modestly until 1990, when it reached its peak.

Domestic Demand for Automobiles

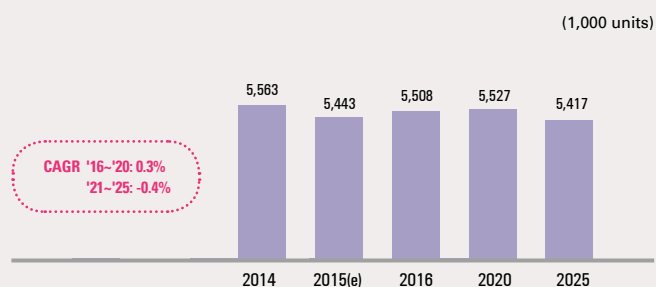


Source: International Organization of Motor Vehicle Manufacturers (OICA), Japan Automobile Manufacturers Association (JAMA)

Domestic demand for automobiles is expected to fluctuate very little until 2020, remaining at around 5.5 million units, while automobile production will slow to below 9 million units.

- Domestic automobile demand is projected to fluctuate slightly, driven by the effects of government policies to

Automobile Demand Forecast



Source: JAMA, POSRI

- Automobile production has a growth trajectory similar to that of demand. After hitting an unprecedented high of 13.5 million units in 1990, production stabilized at around 10 million units in the 2000s.

- Looking into car production by automaker, Toyota accounts for 35% of total automobile production, followed by four automakers with annual production capacities of 1 million units.

Car Production by Automaker

(1,000 units)

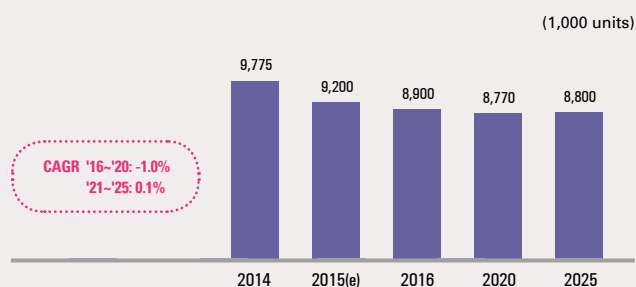
	'11	'12	'13	'14
Toyota	3,283	2,760	3,493	3,357
Suzuki	1,078	950	1,062	975
Mazda	913	813	846	967
Nissan	1,134	1,113	1,148	965
Honda	993	711	1,029	841
Daihatsu	665	610	774	775
Fuji	492	419	569	640
Mitsubishi	660	604	517	592
Other	412	420	505	520
Total	9,629	8,399	9,943	9,630

Source: Fourin

support the market and green cars.

- Automobile production, which is affected more by exports than domestic demand, is expected to remain at around 8.9 million units, unless there are fluctuations in foreign exchange rates and economic conditions.

Automobile Production Forecast

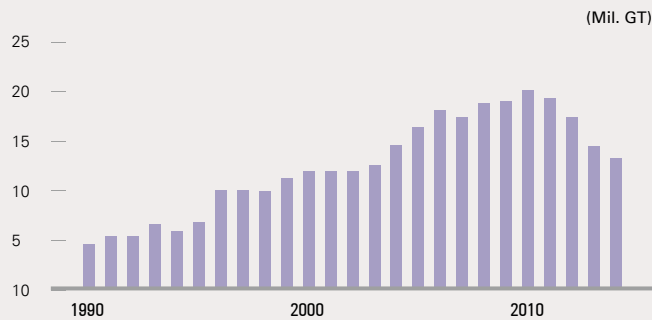


Source: JAMA, POSRI

Shipbuilding Since 2010, Japan's shipbuilding industry has contracted, dragged down by plunging oil prices and restructuring of the industry resulting from the global financial crisis.

- Shipbuilding deliveries peaked at 20 million GT in 2010, and declined thereafter as new orders fell due to the sluggish shipbuilding market and the decline in the Baltic Dry

Shipbuilding Deliveries

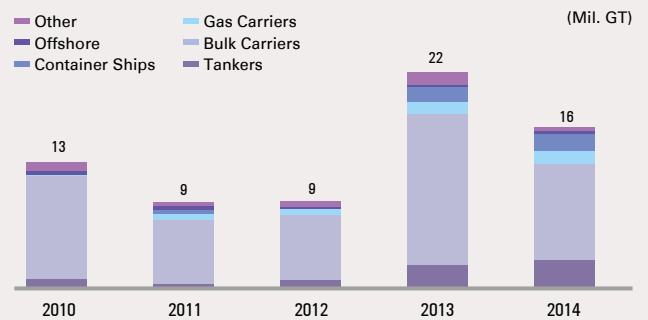


Source: Clarkson

Index (BDI).

- New orders remained low during 2010-12. They have been declining since a short rebound to 22 million GT in 2013.
- Orders for tankers climbed in 2013-14, while orders for bulk carriers, Japan's major type of ship, decreased due to the falling BDI.

New Shipbuilding Orders



Source: Clarkson

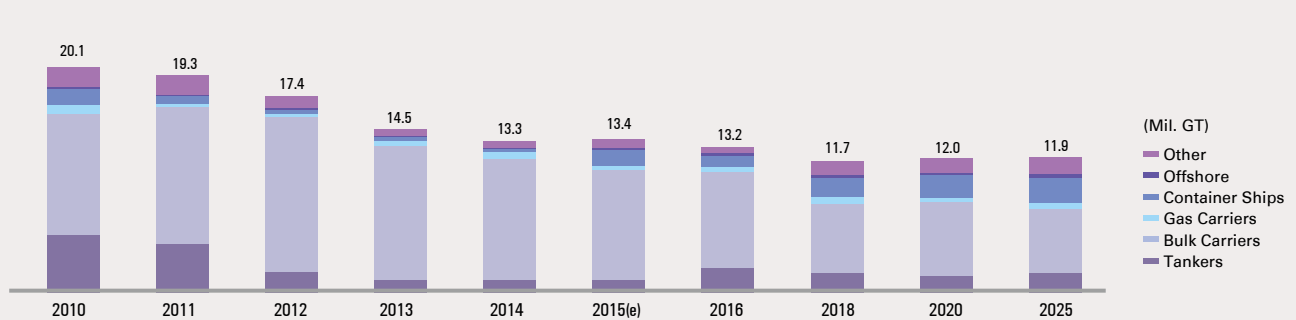
Due to a prolonged recession in the shipbuilding market, shipbuilding deliveries will drop moderately until 2020, then stay at around 12 million GT until 2025.

- Thanks to a recovery in new shipbuilding orders in 2013-14, deliveries are estimated to remain at 13 million GT in

2015, but will soon decline due to plunging new orders.

- Japan's shipbuilding industry will enter a prolonged recession, with falling orders for bulk carriers and other ship types.

Shipbuilding Deliveries by Ship Type



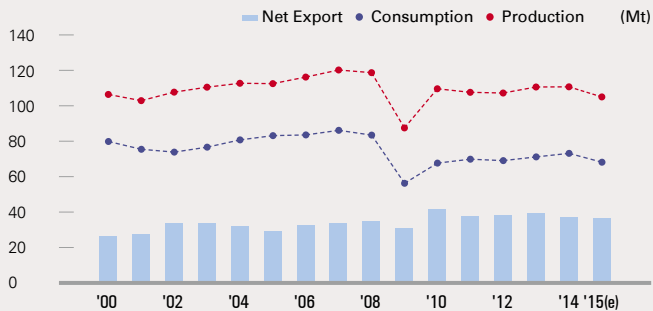
Source: Clarkson, POSRI

03 STEEL DEMAND OUTLOOK

Since 2010, Japan's crude steel demand and production have stabilized at around 70 Mt and 110 Mt, respectively.

- Net exports of crude steel have been around 38-40 Mt annually over the last decade due to sluggish domestic

Crude Steel Supply and Demand



demand.

- Steel demand declined by 6.8% in 2015, hitting its lowest level since 2010, due to a slump in steel-consuming industries.

Steel Supply and Demand

(Mt)

	2012	2013	2014	2015(e)
Crude steel production	107.2 (-0.3%)	110.6 (3.1%)	110.7 (0.1%)	105.4 (-4.8%)
Crude steel demand	68.8 (-1.1%)	70.9 (3.1%)	72.9 (2.8%)	67.9 (-6.8%)
Steel export	42.5 (3.1%)	43.5 (2.3%)	42.1 (-3.2%)	41.9 (-0.5%)
Steel import	8.0 (-3.1%)	7.7 (-3.8%)	9.3 (20.0%)	7.9 (-14.5%)

Source: The Japan Iron and Steel Federation (JISF), worldsteel, POSRI

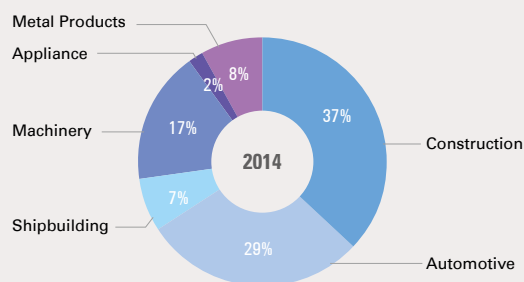
Japan's steel demand is expected to show meager growth, with a CAGR of 0.6%, until 2025, due to Japan's saturated automobile market and sluggish shipbuilding.

- Steel demand for automobiles accounted for 29% of Japan's total steel demand in 2014, the highest among Asian countries.
- Steel demand for construction is projected to show meager growth, with a CAGR of 0.9%, due to slowing con-

struction investment.

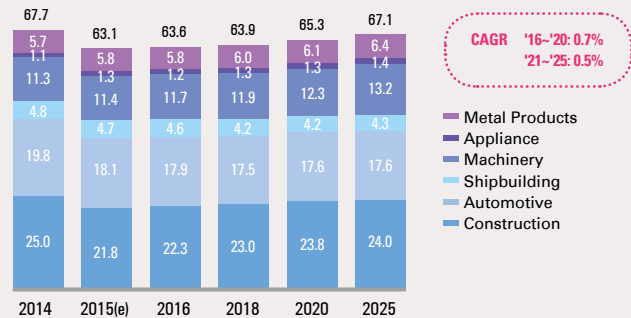
- With automobile production remaining at around 8.8 million units per year after 2020, steel demand for automobiles is expected to stall at around 17.6 Mt.
- Steel demand for shipbuilding will stay at around 4.3 Mt, because Japan's shipbuilding industry has lost competitiveness to Korea and China.

Steel Demand by End-Use



10-Year Steel Demand Outlook

(Mt)



INDONESIA

- Indonesia's GDP growth is estimated to fall below 5% in 2015, due to deteriorating external conditions, but economic growth will pick up from 2016, with continuous reform under the Jokowi administration.
- The construction industry is expected to grow thanks to the expansion of infrastructure in the medium term. The automotive industry is projected to grow modestly based on the construction of infrastructure such as industrial roads.
- Construction investment is projected to grow at a CAGR of over 5% until 2020, bolstered by accelerated infrastructure development and active real estate development.
- Domestic demand for automobiles is expected to increase to 1.5 million units by 2020, and 2 million units by 2025. Automobile production is expected to show a similar trend.
- Steel demand is expected to increase at a CAGR of 5.5%, to 21.7 Mt, by 2025, bolstered by stable growth of the construction and automotive industries.
- Steel demand for construction is projected to grow steadily at a CAGR of 6%, and steel demand for automobiles is expected to grow at a CAGR of 5%, to 3.5 Mt.

01 DOMESTIC ECONOMY

The Indonesian economy is estimated to have grown at below 5% in 2015, influenced by deteriorating external conditions such as G2 risks—a US interest rate rise and China's economic slowdown. However, Indonesia, with its government's strong reform, is projected to grow at over 5.5% per year on average in the next decade, due to abundant cheap labor and infra-investment potential.

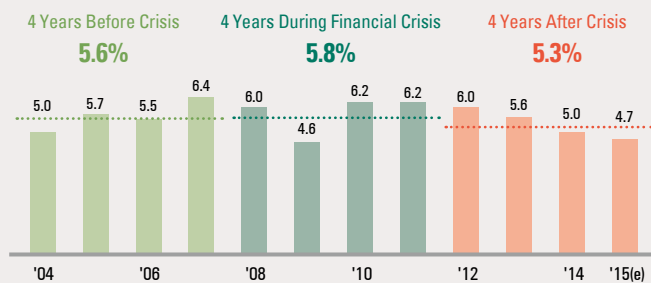
[For mid-term outlook for the Indonesian economy, refer to the table on page 90, "Asia's GDP Growth Trend and Forecast."]

- Indonesia's GDP growth, having hit its highest level in

2011, has declined for four consecutive years, caused mainly by natural resources exports suffering from plunging raw materials prices, China's economic slowdown, and Indonesia's ban on raw ore exports.

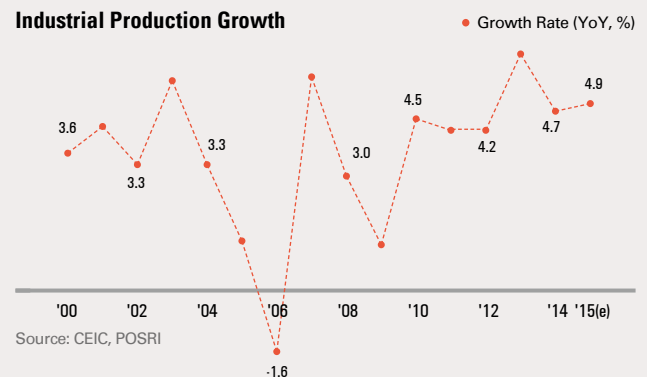
- Industrial production growth remained subdued at below 4% in the 2000s due to delayed improvement of the vulnerable industrial structure, which is heavily dependent on natural resources. It has picked up since 2010 and will continue to increase as GDP rebounds with Jokowi's reform.

GDP Growth Trend



Source: CEIC, POSRI

Industrial Production Growth



Source: CEIC, POSRI

02 STEEL-CONSUMING INDUSTRIES

Construction The infrastructure construction sector remains weak due to low investment over the last decade. However, real estate construction, including residential and commercial buildings, continues to grow moderately thanks to the increase in household income and incoming foreign companies.

- The Housing Price Index (IHPR) rose sharply after 2012, bolstered by active real estate development, mainly in the

Housing Price Index (IHPR)

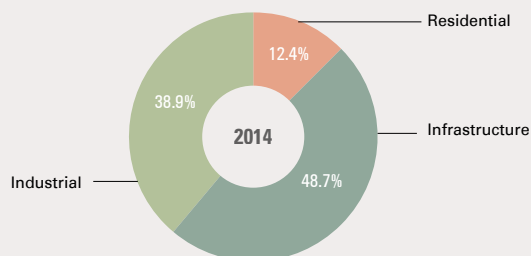


Source: Bank Indonesia

Construction investment is expected to grow at a CAGR of about 5% until 2020, bolstered by accelerated infrastructure development and active real estate development following the implementation of the first phase of the government's policy package.

- Under its Medium-term Development Plan, Indonesia will

Construction Industry Structure



Source: CEIC

capital, Jakarta, but has recently begun to plateau.

- Due to high logistics costs, Indonesia is in great need of infrastructure renovation. The government is implementing the Central Java Toll Road and Southern Java Highway projects as part of its national logistics network development, which will connect more than 16,000 islands.

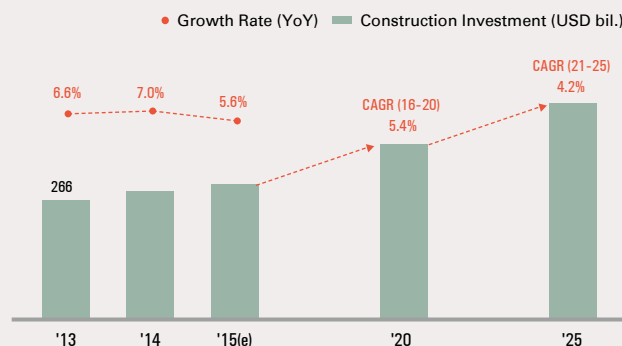
Major Infrastructure Projects

		Project	Progress
Transportation	Road	Southern Java Highway	Planned
		Central Java Toll Road	Planned
		Bridge Connecting Java and Sumatra	'12-'25
		Western Indonesia National Roads Improvement	'11-'17
Industry	Airport	Karawang International Airport	'15-'19
	Automotive	Hino Engine Plant	Planned
		Isuzu CV & Honda Jakarta Plant	- '14
	Steel-making	Pertamina Refinery Plant	- '20
		Hemoco Selayar Refinery Plant	- '20
	Power plant	Asahan No.3 Hydroelectric Power Plant	'06-'14
		Nuclear Power Plant	'08-'17

Source: Compiled from various reports and media

improve infrastructure by refurbishing 92 ports by 2025, building and refurbishing 2,000 km of roads by 2019, and building 45 new airports by 2022. It will also increase caps on foreign investment. For these reasons, construction investment is expected to grow at mid-5% until 2020 and moderate to 4% thereafter.

Construction Investment Forecast



Source: CEIC, POSRI

Automotive Indonesia's domestic demand for automobiles stayed at around 300,000 units from 1990 to the early 2000s, and began to grow rapidly after the financial crisis.

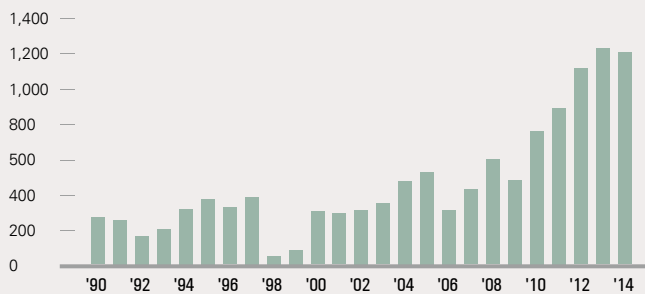
- Domestic demand for automobiles has continued to grow due to the expansion of the middle class except for the

periods of the Asian financial crisis and the global financial crisis.

- Japanese automakers account for 95% of total car production, about 40% of which is occupied by Toyota affiliate Daihatsu Motor.

Domestic Demand for Automobiles

(1,000 units)



Source: OICA

Car Production by Automaker

(1,000 units)

	'11	'12	'13	'14
Daihatsu	334	422	488	503
Toyota	105	155	163	210
Suzuki	106	133	180	172
Honda	41	56	82	159
Mitsubishi	54	60	66	62
Mitsubishi Fuso	61	61	65	57
Nissan	55	66	60	49
Hino	42	65	51	45
Other	41	47	53	43
Total	838	1,066	1,208	1,299

Source: Fourin

Automobile demand is projected to increase to 1.5 million units by 2020, and 2 million units by 2025. Automobile production is expected to show a similar trend.

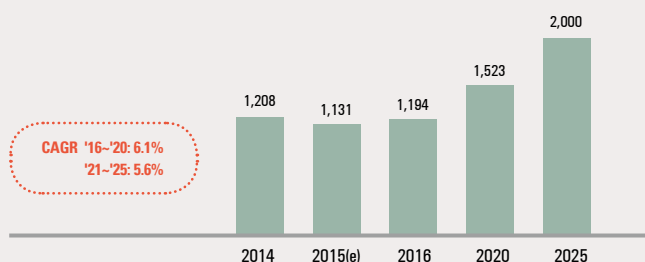
- Domestic demand for automobiles will possibly grow more than expected, if the government's economic devel-

opment plan, including investment in roads, railroads, and other infrastructure, is implemented as scheduled.

- Automobile production capacity is expected to rise from about 1.9 million units in 2014 to 2.3 million units in 2020, leading to an increase in automobile production.

Automobile Demand Forecast

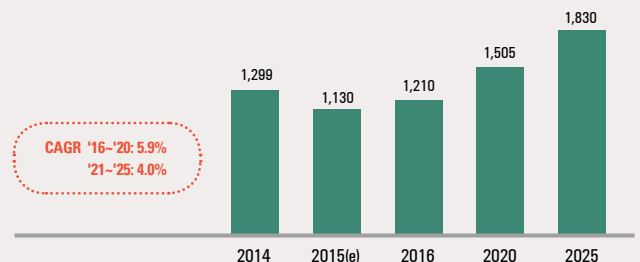
(1,000 units)



Source: OICA, POSRI

Automobile Production Forecast

(1,000 units)



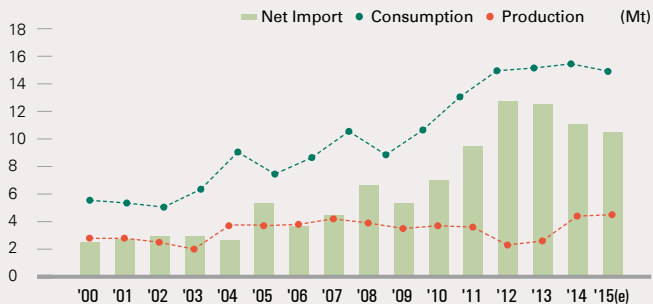
Source: Fourin, POSRI

03 STEEL DEMAND OUTLOOK

Crude steel demand has slowed drastically since 2012, while crude steel production has expanded following the operation of new facilities. Thus, supply shortages are diminishing.

- Net imports of crude steel have declined since their peak in 2012, but still remain around 10 Mt.
- Import surged in 2015, because Indonesia was vulnerable to low-priced steel imports from China.

Crude Steel Supply and Demand



Source: worldsteel, POSRI

Finished Steel Supply and Demand

(Mt)

	2012	2013	2014	2015(e)
Domestic demand	12.5 (14.1%)	12.7 (1.5%)	12.9 (1.6%)	12.6 (-2%)
Export	0.9 (-28.1%)	0.6 (-27.7%)	1.0 (59.2%)	1.8 (81%)
Production	5.4 (-0.6%)	5.1 (-5.6%)	6.5 (26.6%)	5.3 (-18%)
Import	7.9 (18.6%)	8.2 (3.3%)	7.4 (-9.6%)	9.1 (23%)

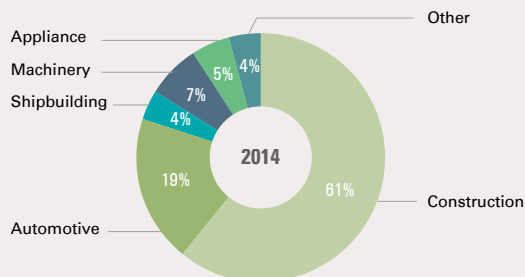
Source: South East Asia Iron & Steel Institute (SEAISI), POSRI

Steel demand is expected to increase steadily, at a CAGR of 5.5%, to 22 Mt until 2025, bolstered by stable growth of the construction and automotive industries.

- Steel demand is accounted for by the construction (61%) and manufacturing (39%) industries. The automotive industry accounts for about half of steel demand for manufacturing.

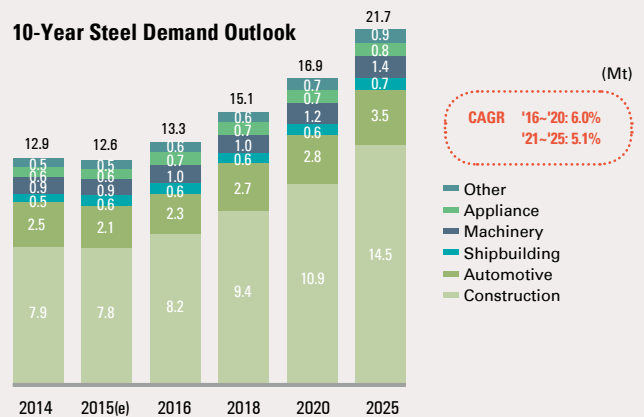
- Steel demand for construction is anticipated to lead total steel demand, with a robust CAGR of 6%, thanks to accelerated infrastructure and real estate development.
- With domestic automobile production surpassing 1.8 million units, steel demand for automobiles is expected to increase at a CAGR of 5%, to 3.5 Mt, by 2025.

Steel Demand by End-Use



Source: POSRI

10-Year Steel Demand Outlook



Source: POSRI

VIETNAM

- Vietnam's GDP growth is projected to remain just above 6% in the medium term, higher than average for ASEAN countries, bolstered by an inflow of foreign capital and increased investment in infrastructure.
- The construction industry will continue to grow rapidly, while the manufacturing industry will begin to pick up following the introduction of new facilities by foreign home appliance manufacturers and automakers.
- Construction investment is projected to grow sharply, at a CAGR of about 6%, in the medium term, influenced by government policies to attract foreign investors and companies, and a flourishing real estate market.
- Automobile demand is expected to grow at a CAGR of about 7% until 2025, and automobile production is expected to increase to 218,000 by 2020, and 260,000 units by 2025.
- Steel demand is forecasted to grow steadily, at a CAGR of about 5.5%, reaching 28.2 Mt by 2025, thanks to high growth in the construction sector.
- Steel demand for construction will maintain high growth, at a CAGR of 5.5%, backed by increased investment in construction following substantial FDI inflows. Despite steep growth in the automotive industry, steel demand for automobiles will be affected only slightly because the market itself is small in size.

01 DOMESTIC ECONOMY

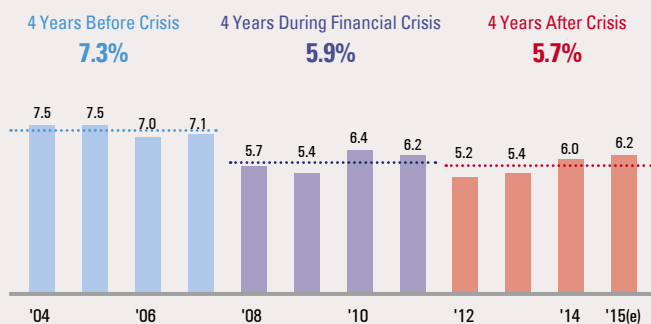
Vietnam's GDP growth is estimated to be 6.2% in 2015, surpassing 6% for the second consecutive year, as an inflow of foreign capital continues and investment in infrastructure increases steadily. GDP growth is expected to remain high, at above 6%, in the medium term.

- Vietnam's GDP growth hit a 13-year low in 2012 due to deteriorating conditions at home and abroad. However, it is

estimated to be 6.2% in 2015, thanks to the government's efforts to attract foreign investment, aimed at building infrastructure and developing technology-intensive industries.

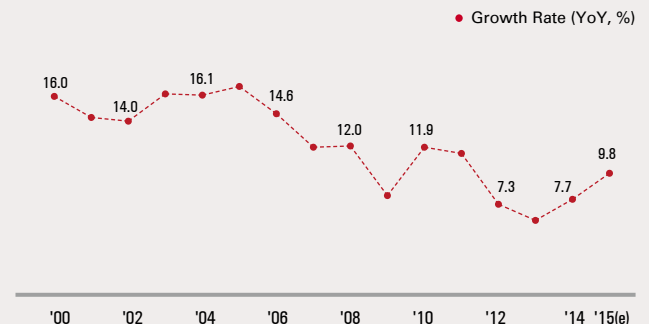
- Industrial production growth will remain high as Vietnam receives more FDI and the manufacturing sector flourishes, thanks to cheap wages, market opening through agreements such as the TPP, and political stability.

GDP Growth Trend



Source: CEIC

Industrial Production Growth



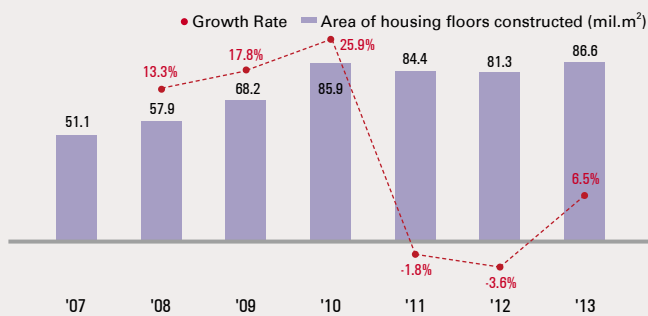
Source: CEIC

02 STEEL-CONSUMING INDUSTRIES

Construction The construction market is showing signs of recovery thanks to policy reform, increasing FDI, and high economic growth. It will continue to thrive in 2016, driven by the accelerated expansion of infrastructure.

- The real estate market has broken out of a 5-year slump, following amendments to real estate-related laws and regulations, and policies to attract foreign investment.

Area of Housing Floors Constructed

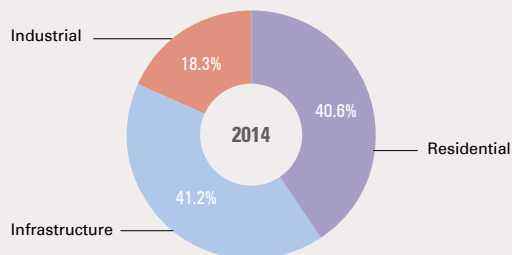


Source: General Statistics Office of Vietnam (GSO)

Construction investment is projected to grow sharply, at a CAGR of about 6%, in the medium term, influenced by government policies to attract foreign investors and companies, and a flourishing real estate market.

- Construction investment is booming, because Vietnam has garnered considerable attention as a global produc-

Construction Industry Structure



Source: GSO

The real estate market appears to be regaining vitality, as exemplified by foreign investment in the real estate sector increasing by 49.5% in the first half of 2015.

- Some of the many transportation infrastructure projects that are backed by foreign capital, including highways, ports, airports, and railroads, are facing delays because of budget issues and conflicts concerning surrounding land.

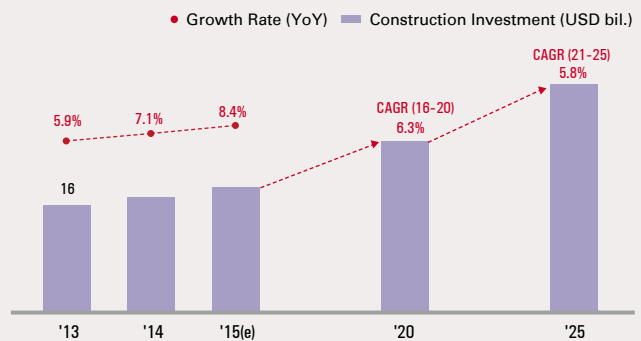
Major Infrastructure Projects

		Project	Progress
Transportation	Road	The Bac Giang-Lang Son City Expressway	'15-'17
		Dau Giay-Phan Thiet Expressway Project (DPEP)	'15-
	Water-works	Water Sector Investment Program	'11-'20
	Railroad	Ho Chi Minh City Metro Master Plan	'12-'20
		The Cat Linh-Ha Dong Railway Project	'11-'16
	Airport	Long Thanh Airport	'15-'20
Industry	Steel-making	Nghi Son Refinery Plant (NSRP)	-'20
		PetroVietnam/Other Refinery Plant	-'20
	Power Plant	Nghi Son: Coal-Fired Thermal Power Plant	'15-'19
		The Ninh Thuan Nuclear Power Plant	-'23

Source: Compiled from various reports and media

tion base thanks to its cheap labor costs, and the government is incentivizing infrastructure investment. Consequently, construction investment is estimated to increase 8.4% in 2015. Due to accelerated industrialization, it will maintain high growth until 2025.

Construction Investment Forecast



Source: CEIC, POSRI

Automotive Vietnam's domestic demand for automobiles grew at a CAGR of 18% from 2000 to 2014, but its total demand stands at only 130,000 units.

- Vietnam is presumably in the initial phase of motorization, in which the number of motor vehicles per capita rises dramatically, helped by high economic growth.

- The number of new vehicle sales per 1,000 people is only 1.4, suggesting high growth potential.
- Automobile production remains at only 120,000 units, about half of which are produced by Japanese automakers, including Toyota and Honda.

Domestic Demand for Automobiles



Source: OICA, KAMA

Car Production by Automaker

	'11	'12	'13	'14
Toyota	30	25	30	36
Truong Hai	32	24	26	28
Ford	9	5	8	14
Mazda	0	0	4	9
Honda	3	2	5	6
GM	10	6	5	5
Other	28	19	16	22
Total	111	80	94	121

Source: Fourin

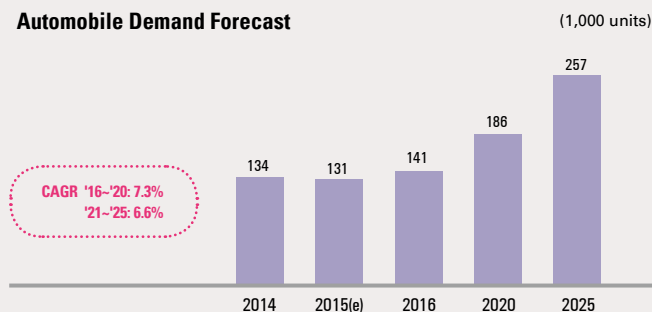
Automobile demand is projected to increase at a CAGR of about 7% until 2025. Automobile production is expected to rise to 218,000 units by 2020, and 260,000 units by 2025.

- Based on active investment from foreign investors and companies, Vietnam's automotive production facilities will continue to expand. The resulting economic vitality and rising incomes will push the automobile demand growth

rate to 7-8%.

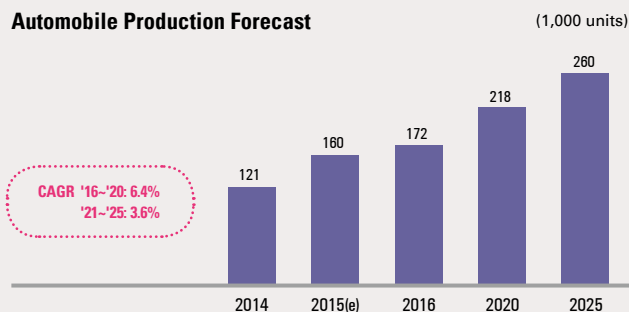
- Automobile production is expected to grow continuously thanks to expanding domestic demand. However, the impact of increased production on other industries, including the steel industry, will not be significant, as most production is based on complete knock down (CKD) or knock down (KD).

Automobile Demand Forecast



Source: OICA, POSRI

Automobile Production Forecast



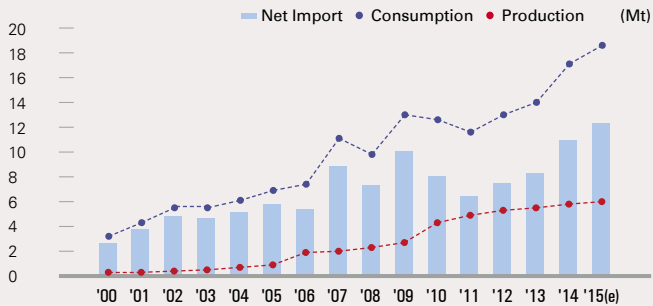
Source: Fourin, POSRI

03 STEEL DEMAND OUTLOOK

Since 2011, Vietnam's crude steel demand has grown high, at a CAGR of over 10%, backed by strong economic growth. Despite a steady increase in crude steel production, supply shortages will continue.

- Net imports of crude steel have exceeded 10 Mt from

Crude Steel Supply and Demand



2014, thanks to strong demand.

- Despite the operation of new facilities, including Formosa, their operation rates are extremely low. Heavy inflows of steel imports will continue due to the imbalance of supply and demand.

Finished Steel Supply and Demand

(Mt)

	2012	2013	2014	2015(e)
Domestic demand	11.0 (13.0%)	11.8 (7.4%)	14.4 (22.7%)	16.5 (14%)
Export	1.7 (-5.3%)	2.1 (29.1%)	2.3 (5.9%)	2.8 (21%)
Production	5.0 (-7.7%)	5.1 (1.5%)	5.7 (10.4%)	5.9 (5%)
Import	7.6 (26.5%)	8.8 (16.2%)	11.1 (25.8%)	13.3 (20%)

Source: SEAISI, POSRI

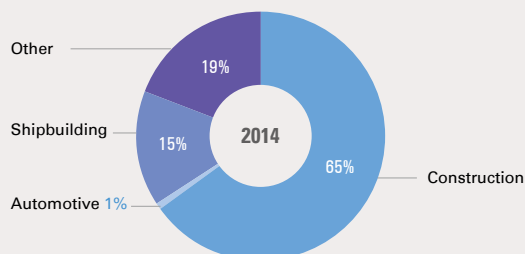
Steel demand is expected to increase steadily, at a CAGR of 5.5%, bolstered by high growth in the construction sector, reaching 28 Mt by 2025.

- Vietnam's steel demand is accounted for by the construction (65%) and manufacturing (35%) industries. The shipbuilding industry accounts for the lion's share of steel demand for manufacturing.
- Steel demand for construction will maintain high growth,

at a CAGR of about 6%, backed by increased investment in construction following massive FDI inflows.

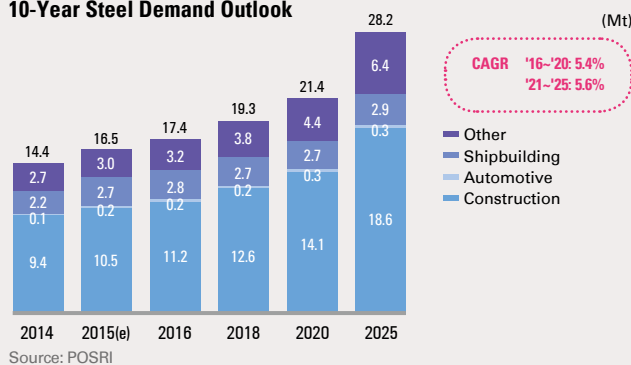
- Despite the anticipation of high growth in the domestic automotive industry, steel demand for automobiles will be affected only slightly because the market itself is small in size.
- With the recovery of shipbuilding deliveries after 2020, steel demand for shipbuilding is projected to reach 3 Mt by 2025.

Steel Demand by End-Use



10-Year Steel Demand Outlook

(Mt)



THAILAND

- Thailand's GDP growth has fallen to around 3% since the global financial crisis. Trapped by political instability, Thailand is unlikely to achieve high growth in the medium term.
- The construction industry is expected to grow stably, bolstered by the government's expansion of infrastructure. The automobile industry is projected to recover after 2018 with rising exports.
- Construction investment is expected to accelerate until 2025, influenced by the expansion of infrastructure for transportation and logistics after the launch of the ASEAN Economic Community (AEC) and for strengthening relations with neighboring countries.
- Automobile production is projected to return to its highest level, 2.4 million units, in 2018, and to reach 3.2 million units by 2025.
- Steel demand is expected to grow stably, at a CAGR of 3.6%, until 2025, backed by robust growth in the automotive industry and expanded investment in infrastructure.
- Steel demand for construction is projected to grow at a CAGR of 3.6% thanks to infrastructure construction, while steel demand for automobiles is expected to reach 5.5 Mt by 2025.

01 DOMESTIC ECONOMY

Thailand's GDP growth is estimated to be below 3%, in 2015, despite some favorable conditions such as expanded public investment, and a flourishing tourism industry. However, trapped by political instability, it would be difficult to achieve high growth in the medium term, without overcoming recurring political instability.

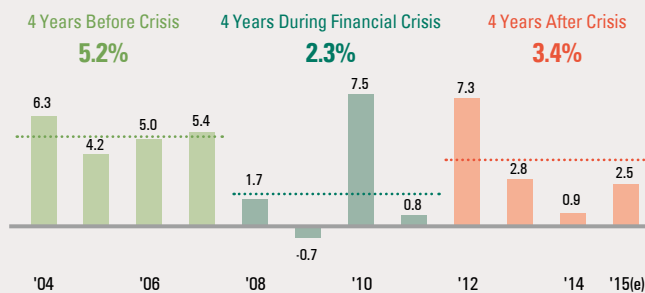
[For mid-term outlook for the Thai economy, refer to the table on page 90, "Asia's GDP Growth Trend and Forecast."]

- Thailand's economy grew 2.3% on average during the four

years of the global financial crisis. The low growth rate persisted thereafter, because the country lost growth engines due to sluggish consumption, investment, and tourism, caused by political instability.

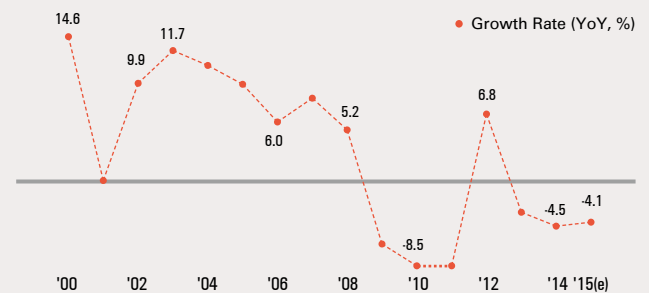
- Industrial production growth is projected to decline for the second year in 2015, because of a loss of economic momentum, as evidenced by reduced foreign investment, the sluggish automotive and auto parts industries, and deteriorating conditions for exports.

GDP Growth Trend



Source: Bank of Thailand, POSRI

Industrial Production Growth

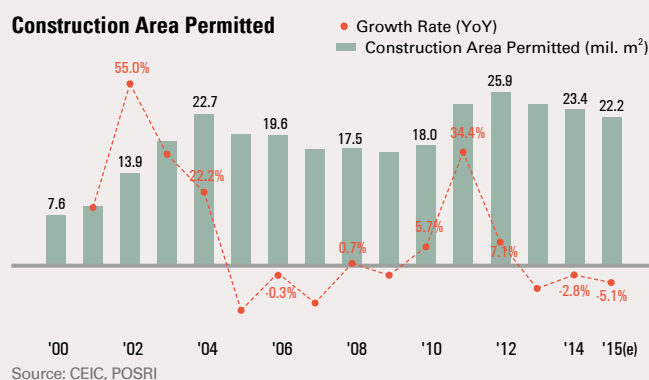


Source: CEIC, POSRI

02 STEEL-CONSUMING INDUSTRIES

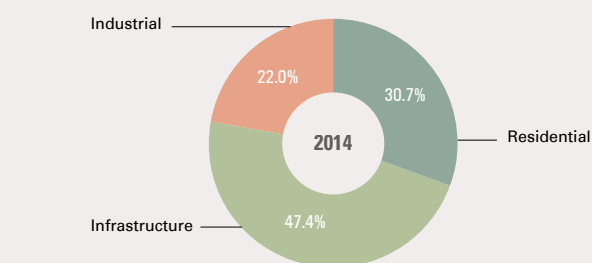
Construction The construction market began to show signs of recovery in late 2014, thanks to expanded investment in infrastructure as part of aggressive stimulus packages by the transition government. However, recovery is being delayed due to changes in public investment plans and a sluggish real estate market.

- The real estate market is sluggish, as exemplified by a two-year decline in the construction area permitted. However, it is expected to recover gradually with increasing



Construction investment is expected to accelerate until 2025, influenced by the expansion of infrastructure for transportation and logistics after the launch of the ASEAN Economic Community (AEC) and for strengthening relations with neighboring countries.

Construction Industry Structure



demand for residential and commercial buildings, thanks to the improvement of the tourism industry and the launch of the AEC.

- In July 2014, Thailand's ruling junta approved the Infrastructure Development Plan 2015-2022, with a budget of USD 75 billion for overhauling and refurbishing roads, double-track railways, and maritime and aviation infrastructure.

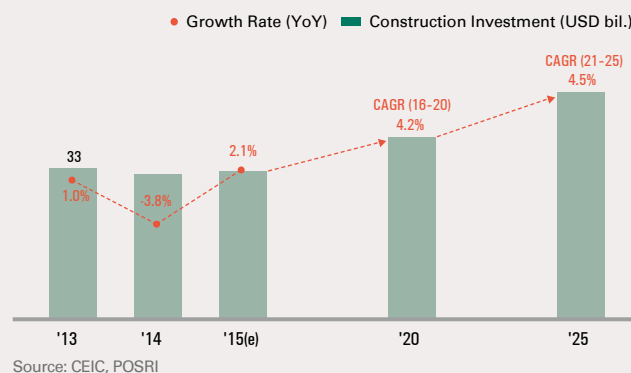
Major Infrastructure Projects

		Project	Progress
Transportation	Road	Expanding Inter-City Motorway	Planned
	Railway	MRTA Purple Line (Bang Yai-Rat Burana)	'19
	Highway	Singapore-Kunming Rail Link (SKRL)	'08-'15
		Chiang Khong-Ban Phachi railways (655km)	'15-'21
Industry	Energy	Nong Kha-Map Ta Phut railways (737km)	'15-'21
		Ayudhaya Natural Gas Plant	'15
	Steel-making	Nuclear Power Plant	'14-'20
		Thai Oil CL Refinery Plant	'16
		IRPC Refinery Plant	'18
Plant		IRPC Refinery Plant	'18
		Thai Bridgeston Tire Factory	'19

Source: Compiled from various reports and media

- However, there is the possibility that Thailand's construction investment, which is heavily dependent on public investment, might decline, if political instability escalates again.

Construction Investment Forecast



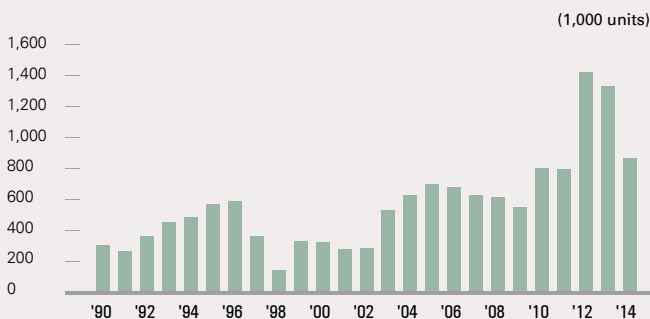
Automotive Thailand's domestic demand for automobiles increased rapidly in 2012-13, but plunged in 2014 due to economic slowdown caused by political unrest.

- Domestic demand for automobiles dropped by 35% YoY to 870,000 units in 2014, when a military coup occurred,

and fell by 19% YoY in the first half of 2015.

- Automobile production also showed a downward trend. However, with exports reaching 1 million units, the decline in production is slightly less than that in domestic demand.

Domestic Demand for Automobiles



Source: OICA, KAMA

Car Production by Automaker

(1,000 units)

	'11	'12	'13	'14
Toyota	516	887	860	732
Mitsubishi	208	357	358	323
Isuzu	152	288	288	235
AAT(Mazda)	193	242	216	173
Honda	113	222	273	144
Nissan	185	251	240	127
Other	91	207	224	148
Total	1,458	2,454	2,458	1,881

Source: Fourin

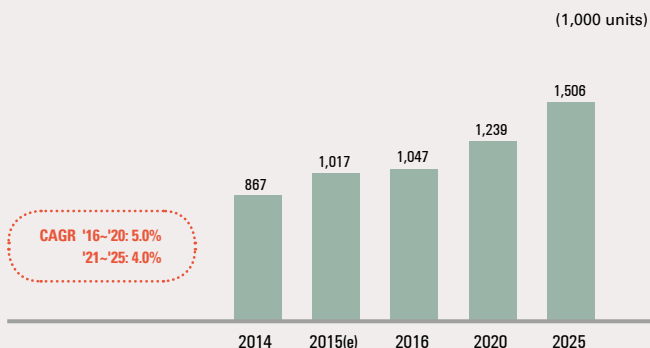
Automobile demand is projected to grow at a CAGR of 5% until 2020, and then at a CAGR of 4% until 2025. Automobile production is forecasted to grow faster than demand.

- Domestic demand will return to the level of 2013 in 2020, when political instability has eased and global demand has recovered. It is expected to reach 1.5 million units by 2025.

- Automobile production is projected to reach its previous high of 2.4 million units in 2018, and to reach 3.2 million units in 2025.

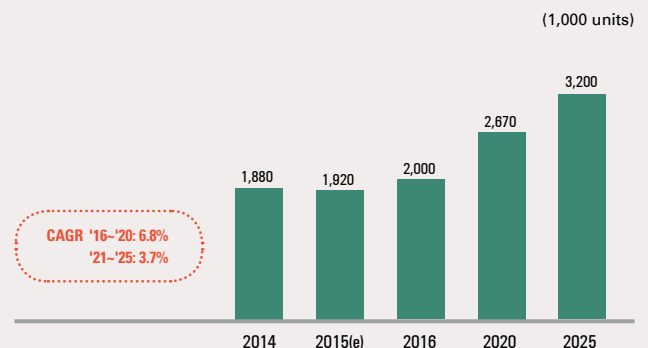
- Japanese automakers are expected to expand exports of vehicles manufactured in Thailand due to the weak baht. Under this strategy, production will increase moderately.

Automobile Demand Forecast



Source: OICA, POSRI

Automobile Production Forecast



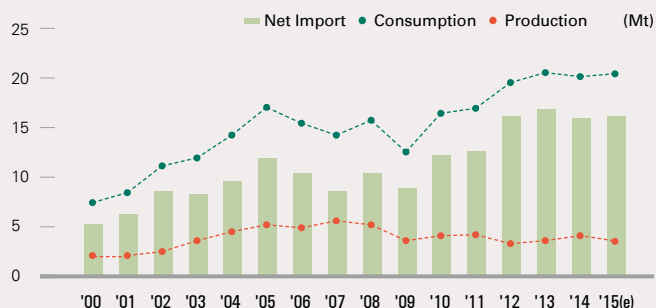
Source: Fourin, POSRI

03 STEEL DEMAND OUTLOOK

Crude steel demand has decreased since its peak in 2013 due to an economic slowdown caused by political unrest. Crude steel production remains subdued at around 4 Mt.

- Net imports of crude steel reached a record high of 17 Mt in 2013, and declined thereafter due to slack domestic de-

Crude Steel Supply and Demand



mand.

- Despite domestic supply shortages, Thailand has an import-dependent structure because of stagnant crude steel production capacity and a low operation rate.

Finished Steel Supply and Demand

(Mt)

	2012	2013	2014	2015(e)
Domestic demand	16.4 (12.6%)	17.6 (7.5%)	17.3 (-1.6%)	17.3 (0.0%)
Export	1.2 (-4.2%)	1.2 (4.4%)	1.1 (-5.1%)	1.1 (-4.5%)
Production	6.7 (-3.1%)	6.8 (1.9%)	6.8 (-0.4%)	6.4 (-6.0%)
Import	10.8 (22.6%)	12.0 (10.6%)	11.6 (-2.6%)	12.0 (3.0%)

Source: SEAISI, POSRI

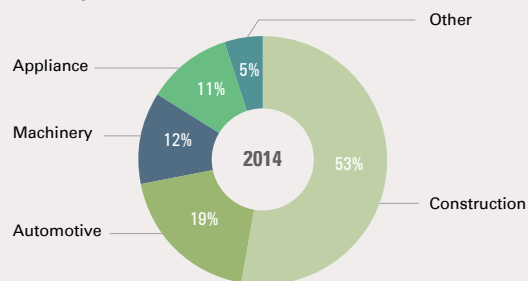
Steel demand is expected to grow stably, at a CAGR of 3.6%, until 2025, mostly driven by robust growth in the automotive industry and expanded investment in infrastructure.

- Steel demand is accounted for by the construction (53%) and manufacturing (47%) industries. The share of automobiles is higher than anywhere else in Southeast Asia, showing a strong demand base for steel.
- With the expansion of government investment in infrastruc-

ture, steel demand for construction is expected to grow stably at a CAGR of 3.6%, but the likelihood of dramatic change is high due to ever-present political instability.

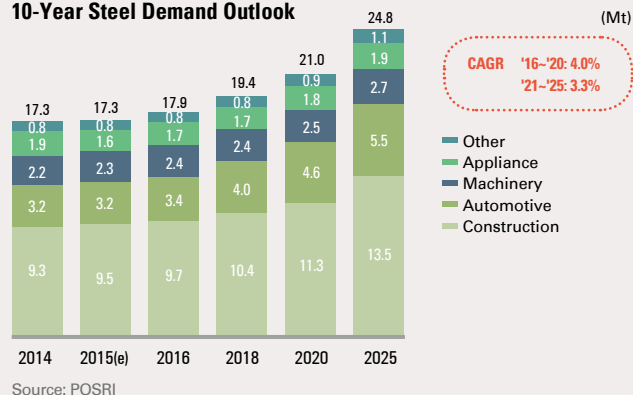
- Steel demand for automobiles is expected to surpass 4 Mt in 2018, and reach 5.5 Mt in 2025, with automobile production reaching its previous high.
- Steel demand for machinery and home appliances is projected to rise modestly at a CAGR of about 2%.

Steel Demand by End-Use



10-Year Steel Demand Outlook

(Mt)



MALAYSIA

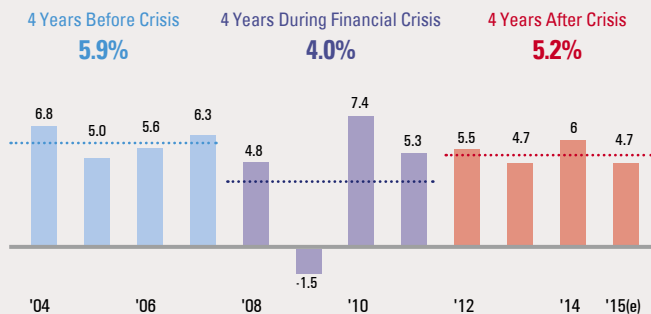
- Malaysia's GDP is projected to grow modestly in the medium term, based on increased private investment, steady investment in infrastructure, and robust domestic demand.
- The construction industry will maintain robust growth thanks to the expansion of infrastructure. The manufacturing industry is anticipated to grow stably, mainly in the automotive sector.
- Construction investment will continue to grow at a CAGR of more than 4% until 2020, influenced by the government's initiatives to transform Malaysia into a high-income country, and increasing investment in infrastructure.
- Automobile production is projected to increase to 810,000 units by 2020, and 1 million units by 2025.
- Steel demand is expected to increase at a CAGR of 4.3%, to 15 Mt, by 2025, as steel-consuming industries continue to grow steady.
- Steel demand for construction is expected to increase to 11 Mt in 2025, driven by government-led projects. Steel demand for automobiles is expected to rise to 2 Mt, with domestic automobile production reaching 1 million units.

01 DOMESTIC ECONOMY

Malaysia's GDP growth is expected to slow down temporarily during 2015-16, due to falling raw materials prices, the burden of government debt, and political instability. However, the economy is projected to increase modestly in the medium term, based on increased private investment, steady investment in infrastructure, and robust domestic demand.

[For mid-term outlook for the Malaysian economy, refer to the table on page 90, "Asia's GDP Growth Trend and Forecast."]

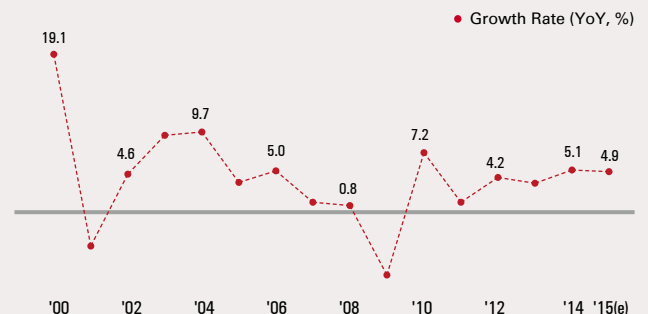
GDP Growth Trend



Source: CEIC, POSRI

- Amidst brewing political instability caused by widespread calls for the resignation of the Prime Minister and a divided ruling party, financial instability is deepening due to falling raw materials prices and a US interest rate hike. Malaysia's GDP growth is expected to slow to below 5%.
- Major industries, such as automotive and palm oil, continue to do well based on the low-cost labor market structure. Thus, industrial production is estimated to maintain a growth rate of around 5%.

Industrial Production Growth



Source: CEIC, POSRI

02 STEEL-CONSUMING INDUSTRIES

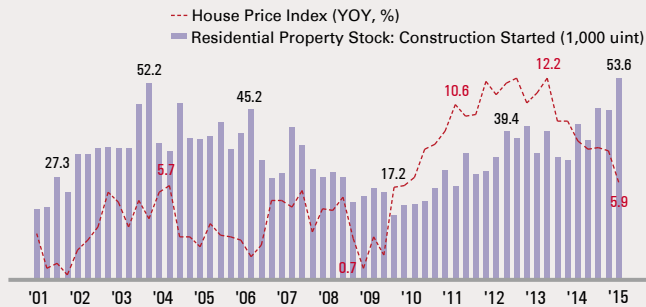
Construction The construction industry appears to be slowing down more than expected, due to a sluggish real estate market and the delay of orders for large-scale projects. However, growth will be adequate thanks to expansion of infrastructure, such as roads, railways, and Light Rail Transit (LRT).

- The house price index (HPI) growth has been slowing drastically due to delays in real estate development since 2013, following political instability caused by delayed

general elections and calls for the resignation of the Prime Minister. With an increase in the construction started, the HPI has the potential to rebound in the future.

- The Malaysian government plans to increase investment in infrastructure through large-scale projects, including construction of long-distance railways, and construction of Mass Rail Transit (MRT) and extension of Light Rail Transit (LRT) in the Greater Kuala Lumpur region, which has a large population and a high concentration of economic activity.

Housing Market Indicators



Source: CEIC

Major Infrastructure Projects

		Project	Progress
Transportation	Road, railroad	West Coast Expressway (WCE)	Delayed
		Klang Valley Mass Rapid Transit Line 2 (MRT)	'15-
		Kinrara Damansara Expressway (Kidex)	'14-
	Port	Penang Tunnel	'14-
Industry	Palm oil	Phase II Tanjung Langsat Port	Planned
		Palm Oil Refinery	'09-
	Steel-making	Refinery & Petrochemical Integrated Development	Delayed
		MCPC/Chinese Consortium Refinery Plant	'19-
	Plant	Project 3B : 2,000MW Coal-fired Plant	'15-

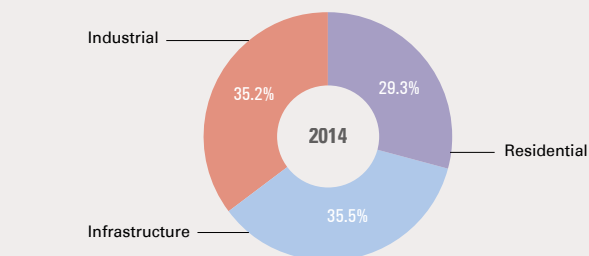
Source: Compiled from various reports and media

Construction investment is expected to grow modestly in the medium term, thanks to the continuous implementation of government-led infrastructure projects and new demand for high-end residential properties and mega shopping centers.

- Construction investment is expected to grow at a CAGR

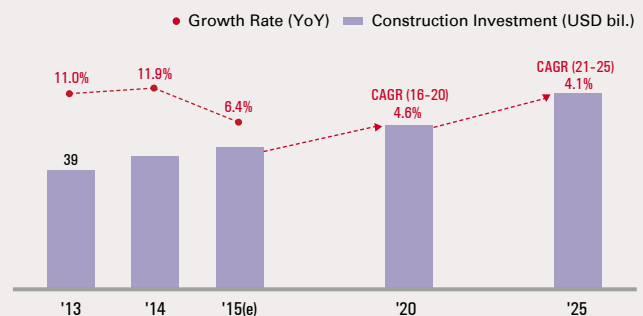
of more than 4% until 2020, influenced by the government's initiatives to transform Malaysia into a high-income country, and increasing investment in infrastructure under the Construction Industry Transformation Program (CITP) 2016-2020.

Construction Industry Structure



Source: CEIC

Construction Investment Forecast



Source: CEIC, POSRI

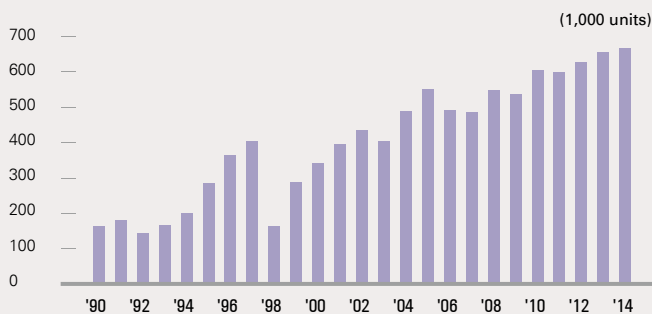
Automotive Malaysia's domestic demand for automobiles increased steadily after the Asian financial crisis, but has recently slowed down due to falling GDP growth, caused by political instability.

- Domestic demand was estimated at 660,000 units in 2014, with its growth rate falling below 3%.
- Increased household income and private consumption,

expanded industrial production, and expansion of infrastructure, including high-end residences, are expected to lead growth of domestic demand for automobiles.

- Local automakers, including Perodua and Proton, account for 52% of total production. Most foreign automakers in Malaysia are Japanese.

Domestic Demand for Automobiles



Source: OICA, KAMA

Car Production by Automaker

(1,000 units)

	'11	'12	'13	'14
Perodua	192	195	207	196
Proton	166	161	140	112
Toyota	64	74	81	88
Honda	23	29	48	74
Nissan	25	41	50	40
Isuzu	7	10	13	11
Mazda	2	3	5	10
Other	54	57	57	65
Total	534	570	601	596

Source: Fourin

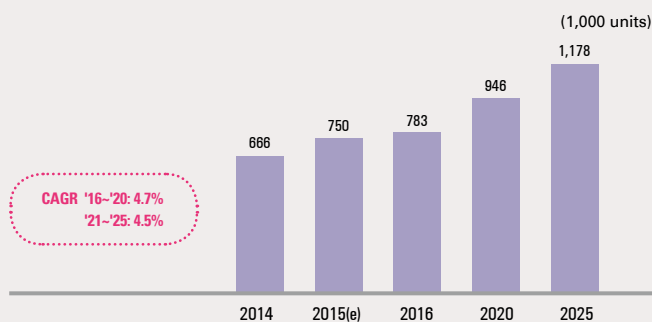
Automobile demand is expected to increase at a CAGR of 4%, to 950,000 units, in 2020, and reach 1.18 million units in 2025.

- The number of motor vehicles per 1,000 people in Malaysia was still low in 2014, at 22 units. Domestic demand for

automobiles is expected to grow, bolstered by economic growth.

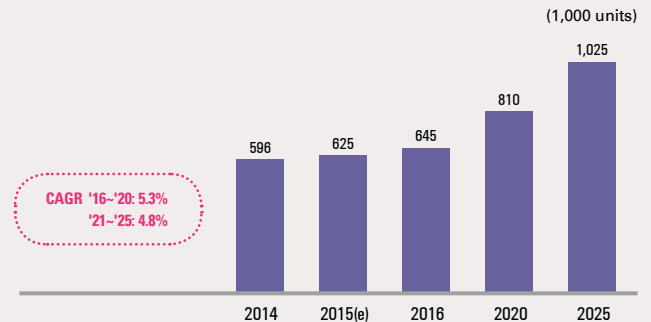
- Automobile production is projected to reach 810,000 units in 2020, and 1 million units in 2025.

Automobile Demand Forecast



Source: OICA, POSRI

Automobile Production Forecast



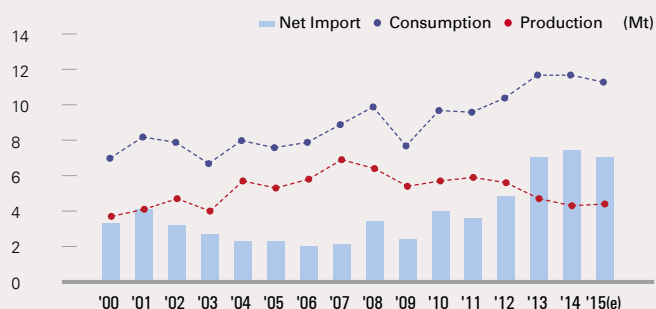
Source: Fourin, POSRI

03 STEEL DEMAND OUTLOOK

Crude steel demand has been stagnant since 2014 due to political instability and falling raw materials prices, while crude steel production has declined since peaking in 2007.

- Net imports of crude steel began to surge in 2013, and are currently around 70 Mt.

Crude Steel Supply and Demand



Source: worldsteel, POSRI

- Despite anti-dumping (AD) and other protection measures, Malaysia continues to face heavy inflows of Chinese and Japanese imports in 2015 due to domestic supply shortages.

Finished Steel Supply and Demand

(Mt)

	2012	2013	2014	2015(e)
Domestic demand	8.9 (8.3%)	10.0 (12.6%)	10.1 (0.3%)	10.3 (2.0%)
Export	1.4 (-7.0%)	1.2 (-17.1%)	1.7 (43.0%)	2.0 (15.5%)
Production	5.0 (-3.1%)	5.0 (0.5%)	4.8 (-4.4%)	4.5 (-5.0%)
Import	5.4 (15.6%)	6.3 (15.7%)	7.0 (12.2%)	7.7 (10.0%)

Source: SEAISI, POSRI

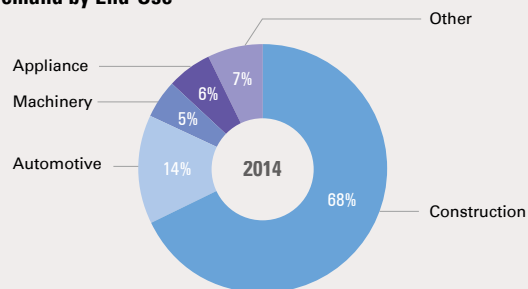
Steel demand is projected to increase at a CAGR of 4.3%, to 16 Mt, until 2025, as steel-consuming industries continue to grow steady.

- Steel demand is accounted for by the construction (68%) and automotive (14%) industries.
- With the continuous implementation of government-led

infrastructure projects, steel demand for construction is expected to grow at a CAGR of 4.8%, to 11 Mt, until 2025.

- Steel demand for automobiles is projected to increase to 2 Mt, with automobile production reaching 1 million units.
- Steel demand for machinery and home appliances is expected to grow slowly, at a CAGR of 2-3%.

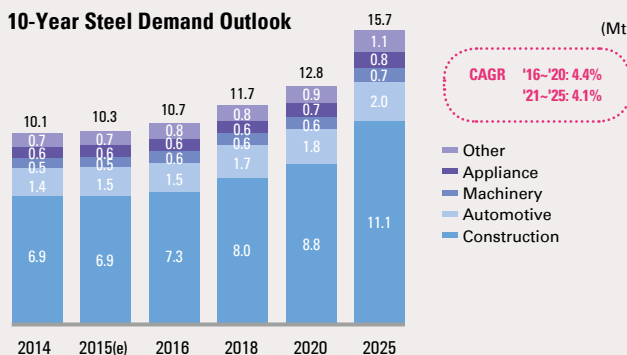
Steel Demand by End-Use



Source: POSRI

10-Year Steel Demand Outlook

(Mt)



Source: POSRI

CAGR '16-'20: 4.4%
'21-'25: 4.1%

INDIA

- India is estimated to record GDP growth of over 7% in 2015, thanks to steady reform and low oil prices. India will continue to enjoy stable growth of 7-8% in the medium term.
- The construction industry will grow rapidly, due to government-led construction projects and attraction of private investment. The automotive industry is projected to grow, bolstered by rising exports and domestic demand.
- Construction investment is projected to grow at a CAGR of 8% in the medium term. This is attributed to government initiatives for construction projects, aggressive attraction of private investment, and requests that foreign companies increase investment in infrastructure.
- Automobile demand is projected to reach 5.4 million units by 2020, and 7.5 million units by 2025. Bolstered by rising exports, automobile production will outpace domestic demand by 1 million units, reaching 8.5 million units.
- Steel demand will maintain high growth, with a CAGR of 6.7%, backed by the expansion of investment in infrastructure and a robust manufacturing sector. It is expected to surpass 150 Mt in 2025.
- Steel demand for both construction and automobiles will maintain robust growth, with a CAGR of over 7%, and is anticipated to lead total steel demand.

01 DOMESTIC ECONOMY

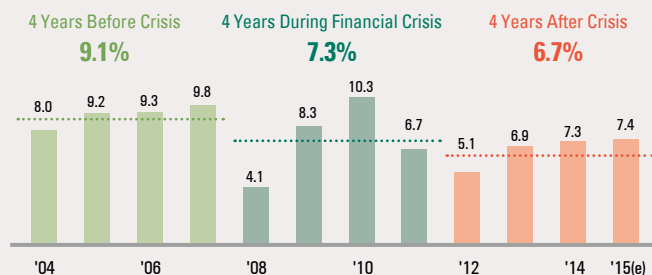
India is estimated to grow over 7% in 2015, the only emerging country projected to do so, thanks to steady reform under the Modi administration and low oil prices. With reform measures beginning to bear fruit, India will continue to enjoy stable growth of 7-8% in the medium term.

- The Indian economy has high potential for growth, thanks to robust domestic demand and the nurturing of manu-

facturing. India's GDP growth is expected to be 7.6% in 2016, because it is the largest beneficiary of falling oil prices, with chronic inflation in control and improvement in current account deficits.

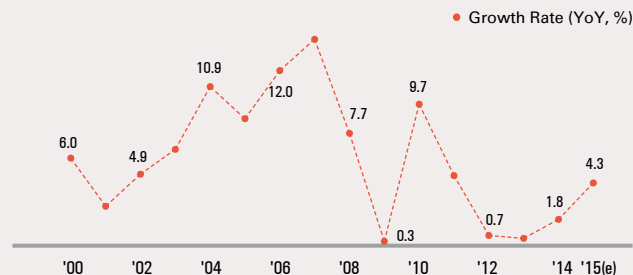
- Industrial production is projected to show modest growth, due to an increase in FDI resulting from optimism surrounding the Modi administration and nurturing of the manufacturing sector under the "Made in India" initiative.

GDP Growth Trend



Source: CEIC, POSRI

Industrial Production Growth



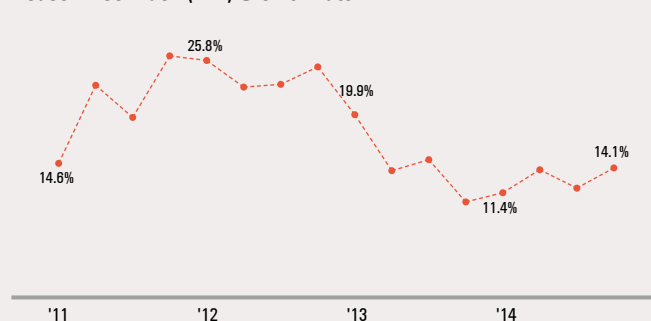
Source: CEIC, POSRI

02 STEEL-CONSUMING INDUSTRIES

Construction The construction market is healthy, as exemplified by the expansion of infrastructure through the attraction of foreign investment by the government, and the double-digit growth of the house price index (HPI).

- HPI growth has been slowing since 2013, but remains in the double-digits.

House Price Index (HPI) Growth Rate

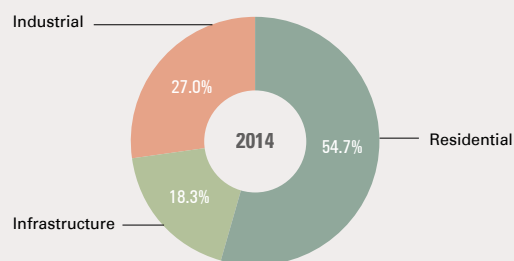


Source: CEIC

Construction investment is projected to grow at a CAGR of 8% in the medium term, due to government initiatives for construction projects, aggressive attraction of private investment, and investment of foreign companies.

- Construction investment is expected to grow at a CAGR of about 8% until 2020, due to the implementation of govern-

Construction Industry Structure



Source: CEIC

- The Modi government is implementing five industrial corridor projects to introduce high-speed railways, nurture the manufacturing sector, and support urbanization. It plans to continue infrastructure improvements, including port modernization, and power infrastructure.

Major Infrastructure Projects

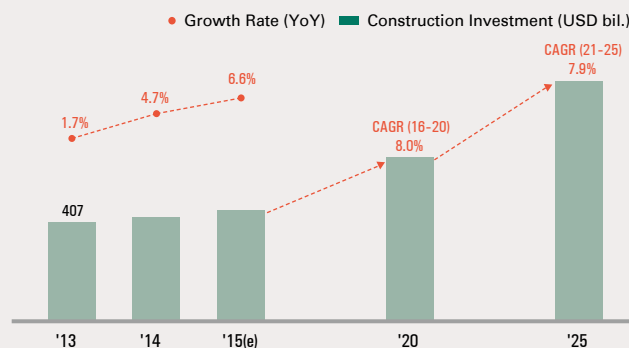
		Project	Progress
Transportation	Road	Second Tamil Nadu Road Sector Project	'15-'21
	Railway	Diamond Quadrilateral Network	'15-
	Energy	Vishnugad Pipalkoti Hydro Electric Project	'11-'17
	Logistics	Eastern-Dedicated Freight Corridor (DFC)	'15-'21
		Western-Dedicated Freight Corridor (DFC)	'15-'21
Industry	Port	Sagar Mala Project	'15-'35
	Car	Isuzu Production Plant	'14-'16
		PSA Peugeot-Citroën Manufacturing Plant	'14-
	Power plant	Nghi Son: Coal-Fired Thermal Power Plant	'15-'19
		The Ninh Thuan Nuclear Power Plant	'-23

Source: Dedicated Freight Corridor Corporation of India (DFCCIL), High Speed Rail Corp of India (HSRC)

ment-led construction projects and large-scale investment by global companies.

- The expansion of construction investment will be dependent on whether the government eases FDI regulations to improve the investment environment, and takes swift and effective action to improve the business environment.

Construction Investment Forecast

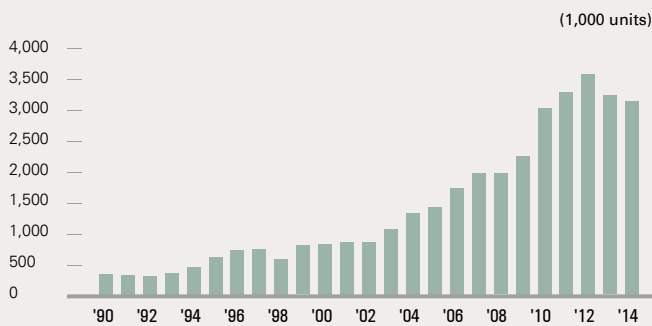


Source: CEIC, POSRI

Automotive India's domestic demand for automobiles maintained high growth, with a CAGR of 9.5%, from 1990 to 2014. With an increase in exports, automobile production grew by 9.9% during the same period.

- With domestic demand staying at around 3.5 million units, India was the world's sixth largest automobile market as of 2014. India's automotive market appears to have the high-

Domestic Demand for Automobiles

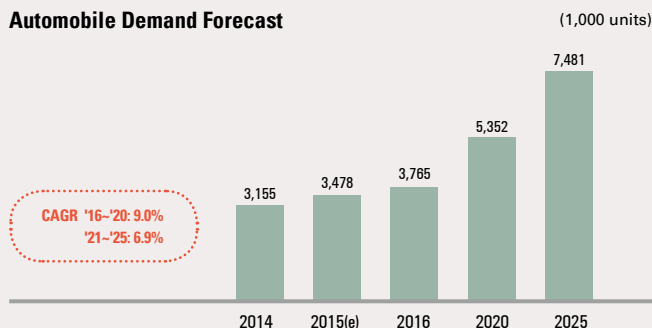


Source: OICA, KAMA

Domestic demand for automobiles is projected to reach 5.4 million units by 2020, and 7.5 million units by 2025. Bolstered by rising exports, automobile production will outpace domestic demand by 1 million units, reaching 8.5 million units.

- There is a possibility that automobile demand will exceed projections, if the government's initiatives for increasing investment in transportation infrastructure (i.e. road ex-

Automobile Demand Forecast



Source: SIAM, POSRI

est growth potential in the world.

- Looking into car production by automaker, Maruti-Suzuki, a joint venture between India and Japan, accounts for 33% of total production, while local automakers including Tata and Mahindra & Mahindra, account for 24%, and Japanese and Korean automakers account for 16% each.

Car Production by Automaker

(1,000 units)

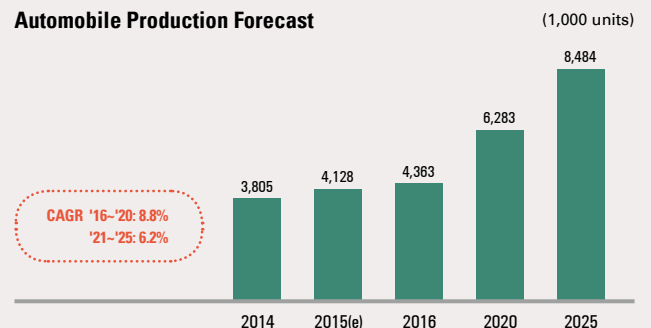
	'11	'12	'13	'14
Maruti-Suzuki	1,124	1,183	1,172	1,269
Hyundai	620	639	633	611
Tata	894	868	625	488
M & Mahindra	387	488	455	413
Honda	45	75	115	171
Nissan	125	143	144	167
Ford	119	116	123	151
Toyota	136	192	174	148
Other	483	497	492	462
Total	3,933	4,201	3,933	3,878

Source: Society of Indian Automobile Manufacturers (SIAM)

pansion) are implemented as planned.

- Local automakers, including Tata and Mahindra & Mahindra, are expanding their production capacities. Foreign automakers, including Ford, have plans to turn India into a production base for compact cars. Consequently, automobile production is projected to grow at a CAGR of over 8% until 2020.

Automobile Production Forecast



Source: SIAM, POSRI

03 STEEL DEMAND OUTLOOK

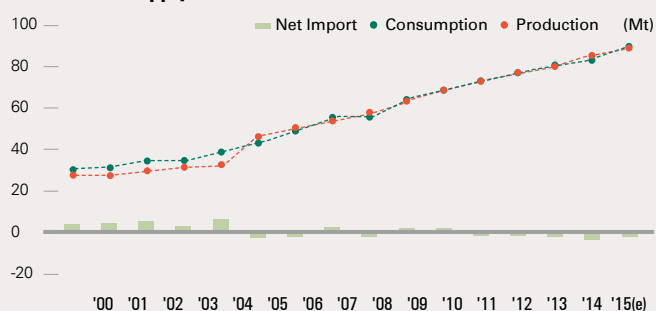
Crude steel production maintained high growth, with a CAGR of 7.5%, in the 2000s. With the operation of new facilities, crude steel production has increased, resulting in a balance of supply and demand since 2005.

- India saw positive growth in both crude steel demand and

production in 2015, the only country to do so, despite the sluggishness of the global steel industry.

- With heavy inflows of cheap Chinese steel, imports exceeded 10 Mt in 2015.

Crude Steel Supply and Demand



Steel Supply and Demand

(Mt)

	2012	2013	2014	2015(e)
Crude steel production	77.3 (5.2%)	81.3 (5.2%)	87.3 (7.4%)	89.8 (2.9%)
Crude steel demand	77.8 (6.3%)	80.5 (3.5%)	84.1 (4.5%)	90.3 (7.3%)
Steel export	8.2 (-7.9%)	10.1 (22.4%)	10.4 (3.0%)	9.0 (-13.3%)
Steel import	9.3 (1.4%)	7.4 (-20.9%)	9.5 (28.2%)	12.6 (33.0%)

Source: worldsteel, POSRI

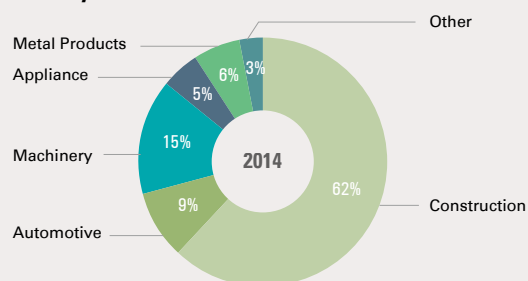
Steel demand will maintain high growth, with a CAGR of 6.7%, backed by the expansion of investment in infrastructure and a robust manufacturing sector. It is expected to surpass 150 Mt in 2025.

- Steel demand is accounted for by the construction (62%) and manufacturing (38%) industries. The automotive and machinery industries account for more than 60% of steel

demand for manufacturing.

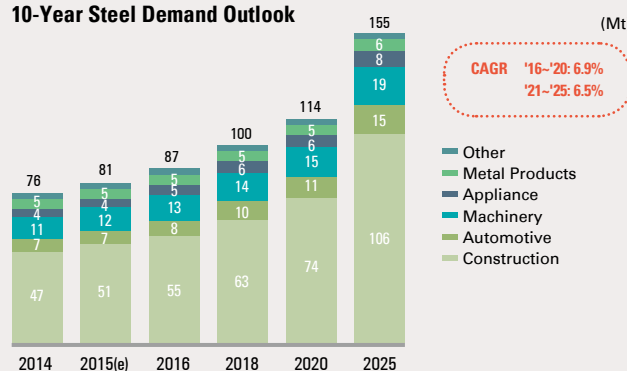
- Steel demand for construction, backed by the expansion of investment in infrastructure, is expected to maintain high growth, with a CAGR of 7.6%, reaching 100 Mt in 2025.
- With domestic automobile production projected at 8.5 million units, steel demand for automobiles is expected to increase at a CAGR of 7.5%, to 15 Mt, by 2025.

Steel Demand by End-Use



10-Year Steel Demand Outlook

(Mt)



CAGR '16~'20: 6.9%
'21~'25: 6.5%