



MGSSI Japan Economic Quarterly

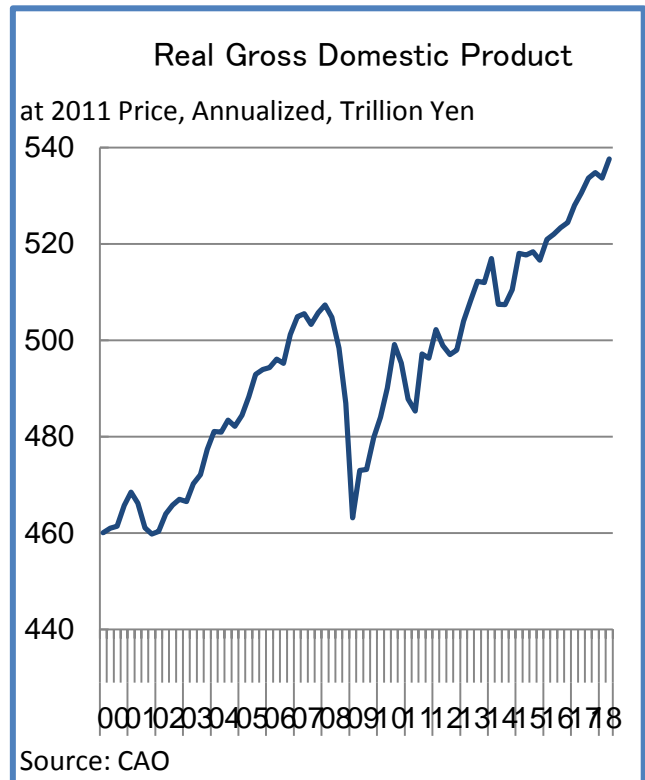
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High Growth of 3% Annualized

Real GDP in the second quarter of 2018 rose by 0.7% (3.0% annualized) from the previous quarter, returning to positive growth from the previous quarter when it posted negative growth. It is the highest growth in nine quarters since the first quarter of 2016. In this quarter, both private consumption* and private non-residential fixed investment, two major indicators of private-sector demand, contributed to the growth. There is concern that the intensifying trade friction due to U.S. trade policies could impact the Japanese economy, while many believe that the economic recovery trend that began in November 2012 has continued up until today, supported by the growth in private-sector demand at home. However, in the following third quarter of 2018, there were various events such as torrential rains in western Japan (July), a huge earthquake in Hokkaido (September), and typhoons and extremely hot days that affected various parts of the country. It will be necessary to closely monitor to what extent these natural disasters have had a negative impact on production, distribution, consumption and tourism. (*All subsequent references to GDP demand items are in real terms unless otherwise indicated.)



	Real Gross Domestic Product (GDP)			
	2017	at 2011 Price, Calendar year		
		2017	2018	
	y/y%	2017 10-12 q/q%	2018 1-3 q/q%	2018 4-6 q/q%
Real Gross Domestic Product	1.7%	0.2%	-0.2%	0.7%
Private Consumption	1.0%	0.3%	-0.2%	0.7%
Private Housing Investments	2.7%	-3.0%	-2.5%	-2.4%
Private Non-Resi. Fixed Investments	2.9%	0.9%	0.7%	3.1%
Public Investments	1.2%	-0.6%	-0.4%	0.0%
Government Consumption	0.4%	0.1%	0.0%	0.2%
Exports of Goods & Services	6.7%	2.1%	0.6%	0.2%
(less) Imports of Goods & Services	3.4%	3.3%	0.2%	0.9%

Source: CAO

Private consumption rose by 0.7% from the previous quarter. Spending on automobiles and services for individual consumers is believed to have increased. The number of employed people hit a record high of 66.66 million on average for the second quarter of 2018, and total compensation of employees grew by 1.8% from



the previous quarter in real terms. These and other factors apparently worked to boost personal consumption.

Private non-residential fixed investment rose by 3.1% from the previous quarter, posting positive growth for seven consecutive quarters. Nominal non-residential fixed investment reached a record high, surpassing the level recorded in the fourth quarter of 1997. According to the Financial Statements Statistics of Corporations, nominal non-residential fixed investment by the manufacturing sector and the non-manufacturing sector (excluding financial and insurance companies) rose 11.0% and 4.7% from the previous quarter, respectively. A look at the Bank of Japan's Short-Term Economic Survey of Enterprises in Japan ("Tankan" survey) reveals that planned capital spending for fiscal 2018 grew 7.9% year on year across all industries. In particular, the manufacturing sector will see large year-on-year growth of 16.0%. Manufacturing companies plan to invest in facilities for electric vehicles, self-driving cars, electronic components, materials for semiconductors and cosmetic items, while non-manufacturing companies have investment plans aimed at promoting urban development and attracting inbound foreign tourists. In addition, a wide range of companies have investment plans for business streamlining and labor-saving measures in order to deal with a shortage of workers. For these, private non-residential fixed investment is likely to increase throughout fiscal 2018.

Private residential investment fell 2.4% from the previous quarter, recording negative growth for four quarters in a row. New housing starts stood at 968,000 units annualized, increasing by 8.5% from the previous quarter. However, given that uncompleted construction contracts held by construction companies are on the rise ahead of the 2020 Tokyo Olympics, residential investment is likely to be sluggish for a while.

Public investment remained unchanged. The contract amount for public works projects, which reflects the trends of order placement, marked quarter-over-quarter growth of 17.7%. This is because the central government increased investment-related spending by 1.5 trillion yen in the fiscal 2017 supplementary budget passed in February 2018. In the latter half of fiscal 2018, the economy could slow down depending on whether the central government will compile a supplementary budget or not. Even so, public investment is likely to turn around going forward.

Exports of goods and services rose by 0.2% from the previous quarter, posting positive growth for eight straight quarters, while the amount of growth declined. According to exports in real terms calculated by the BOJ, exports related to information goods and capital goods increased, while those related to automobiles declined. By major region, exports to the European Union increased and those to the United States turned around. Imports recorded quarter-over-quarter growth of 0.9%, increasing for three quarters in a row thanks to the growth in imports of aircraft and services and for other reasons. Meanwhile, since the growth of imports surpassed that of exports, net exports worked to cut real GDP growth by 0.1% point from the previous quarter. According to the World Trade Organization (WTO), the world's trade will continue to expand in 2018 and 2019, following 2017 when it recovered significantly. In addition, given that the world's economy is likely to grow going forward, exports will continue to be on an upward trend. While the trade conflict has intensified due to U.S. trade policies, it is not serious enough to immediately affect the Japanese economy.

According to the ESP Forecast survey (September 2018), the average of forecasts of private economists on real GDP growth, real GDP will continue to grow by 1.1% year-over-year in 2018 and 1.2% year-over-year in 2019. While there are concerns over trade conflicts and the appreciation of the yen, the world's economy remains robust. If the economy continues to grow until 2019, it will achieve positive growth in eight consecutive years, which is the same as the period from 2000 to 2008 when the country benefited from economic booms in emerging countries, although the growth rate is smaller.



The Percentage of Japanese Students in STEM Majors Is Below the OECD Average

In Japan, the percentage of students enrolled in higher education institutions (universities/two-year colleges, Kosen (colleges of technology) and vocational schools) has been increasing each year, reaching 81.5% in fiscal 2018. University entrance ratio is 53.3%, with one in two students entering a university. However, due to the decline in the number of 18-year-olds, the actual number of students enrolled in universities has remained almost unchanged since around 2000.

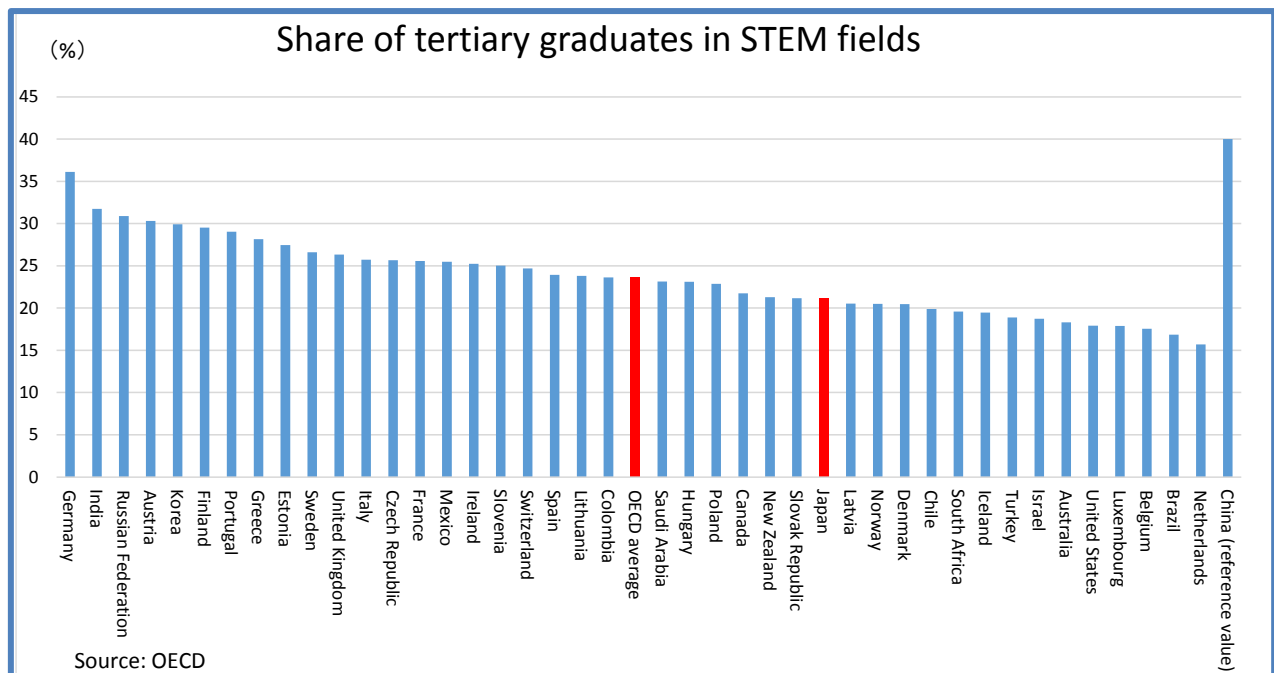
On the other hand, globally, the number of tertiary educated people is increasing, mainly in emerging countries. UNESCO estimates that the number of students enrolled in higher education will reach 414 million around the world by 2030, which is about four times that of 2000. The OECD anticipates that people from China and India will account for 40% of total tertiary graduates across the OECD and G20 countries by 2020.

Meanwhile, since the impact of science and technology, including information technology, on business has increased, the industry seeks people with science and engineering backgrounds, mainly in the fields of science, technology, engineering and mathematics (STEM), more than ever before.

According to a 2018 survey by the OECD, of tertiary graduates, over 30% majored in the STEM fields in Germany, India, Russia, Austria, South Korea and Finland. In Japan, the percentage was 20%. In China, 40% majored in STEM fields, according to a survey conducted by the government. The Chinese government itself believes that nations having advantages in STEM are also at an advantage in terms of economic development and diplomacy. So, it has promoted STEM education (human resource development) as well as research and development activities in these fields, and such efforts have produced the results.

Overseas Expansion of the Kosen Education Model

Kosen, or a college of technology, is a Japanese higher education institution which provides five-year practical engineering education starting when students are 15 years old. There are 51 national Kosen colleges, three public Kosen colleges and three private Kosen colleges across the country. At the request of the industry, 12 national Kosen colleges were founded in 1962. In addition to general education such as





mathematics, English and Japanese language, Kosen offers students high-level vocational education in machine, information, electrical and electronic, and materials engineering, etc. About 60% of the graduates directly enter the labor market and slightly less than 40% go on to universities or other advanced courses. The job opening-to-application ratio for the graduates is very high at 20 or 30.

The National Institute of Technology that manages national Kosen colleges has been implementing projects to introduce the Kosen education system in Mongolia, Thailand and Vietnam in cooperation with the Japan International Cooperation Agency (JICA). Since these countries consider that Japan's Kosen education model contributed to the high economic growth, they expect Kosen graduates will play a major role in the industrialization of their countries. As a country's economy develops, more and more people hope to enter universities, while engineers and technical workers required by the industry are in short supply. Educational institutions like Kosen are unique in the world, and so they are expected to serve as a catalyst to bring about changes to academia-oriented education systems. In addition, along with the aging population, securing good engineers is a challenge for Japanese companies, especially small and middle-sized enterprises. If Japanese companies operating in these countries and SMEs operating in Japan can hire skilled workers with Kosen education, it will bring benefits to Japan, too.

While employment practices have been changing, hiring new graduates all at once is still the mainstream in Japan. In addition, most people enter universities at age 18, and compared to foreign countries, the percentage of people studying at universities at age 25 or older is extremely low. Under such circumstances, there are not many opportunities for lifelong relearning. In order to strengthen industrial competitiveness, it is necessary to increase opportunities for existing workers to acquire new knowledge on STEM, in addition to attracting young talent to STEM education by utilizing Kosen colleges and other education institutions.

Selected Economic Indicators	Fiscal Year		2017		2018	
	2016	2017	7-9	10-12	1-3	4-6
	GDP at current prices (SAAR, Trillion Yen)	539.4	548.6	549.4	551.1	549.0
Real GDP at 2011 prices (SA, q/q%)	1.2%	1.6%	0.6%	0.2%	-0.2%	0.7%
Industrial Production Index (SA, 2010=100)	98.5	102.5	102.3	103.9	102.5	103.8
Exports (SA, Trillion Yen)	71.5	79.2	19.7	20.4	20.1	20.5
Imports (SA, Trillion Yen)	67.5	76.8	18.8	19.6	19.8	20.2
Balance on Current Account (SA, Trillion Yen)	21.0	21.8	5.8	5.9	4.7	5.5
Corporate Bankruptcies	8,381	8,367	2,032	2,106	2,041	2,107
Unemployment Rate (SA, %)	3.0%	2.7%	2.8%	2.7%	2.5%	2.4%
Wage Index (SA, 2010=100)	100.6	101.3	101.1	101.2	102.2	102.7
Consumer Prices (y/y%)	-0.1%	0.7%	0.6%	0.6%	1.3%	0.6%
Nikkei Stock Average	17,518	20,960	19,873	22,182	22,333	22,348
Japanese Government Bond Yields (%)	-0.05	0.05	0.05	0.05	0.06	0.04
Foreign Exchange Rate (Yen/ Dollar)	108.3	110.8	111.0	113.0	108.1	109.1
Note: SAAR means Seasonally Adjusted Annual Rate. SA means Seasonally Adjusted. q/q% means %change from a quarter earlier. y/y% means %change from a year earlier.						
Source: CAO, METI, MOF, Tokyo Shoko Research, MIC, MHLW, Nihon Keizai Shimbun, CEIC, BOJ						

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