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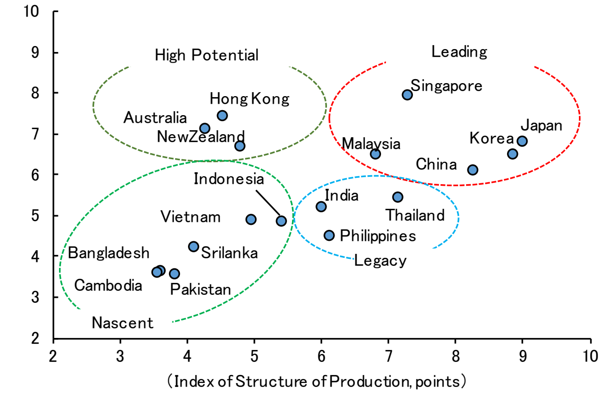
Topics *Singapore and the advancement of Asia's manufacturing industries*

Singapore is actively promoting efforts for the advancement of the manufacturing industry leveraging ICT technology, and is poised to become a driving force in the realization of Industry 4.0 in Asia.

■ Comparison of business environments in Asia for the realization of Industry 4.0

Initiatives are beginning to unfold in countries throughout the world for the realization of the concept of Industry 4.0, with the aim of upgrading manufacturing industries and making them more efficient through the use of robots and ICT technology. Against this backdrop, World Economic Forum issued its *Readiness for the Future of Production Report* in January of 2018, in which it reported the results of an international comparison conducted into the business environments in countries around the world in readiness for the advancement of the manufacturing industry, based on quantitative indices. The Report analyzes each country's business environment from the two aspects of Structure of Production, which looks at whether an economic environment possesses the conditions required for the production of creative and strongly competitive products, and Drivers of Production, an assessment of whether a country possesses the enablers of future industrial enhancement, such as the spread of ICT related technology, competent human capital and institutional frameworks, and so on.

<Readiness for the future of production assessment in Asia >



Source: World Economic Forum

<Singapore's ranking by category>

Category	Sub-category	Rank
Drivers of production	Global trade and investment	1
	Institutional framework	1
	Human capital	2
	Technology & innovation	6
	Demand environment	14
	Sustainable resources	56
Structure of production	Complexity	11
	Scale	22

Source: World Economic Forum

Of the 100 countries included in the study, 25 countries have been identified as *leading countries* in the move towards the realization of Industry 4.0, having scored relatively good assessments under both headings. Of these leading countries, five Asian countries, Singapore, Japan, South Korea, China and Malaysia, were selected.

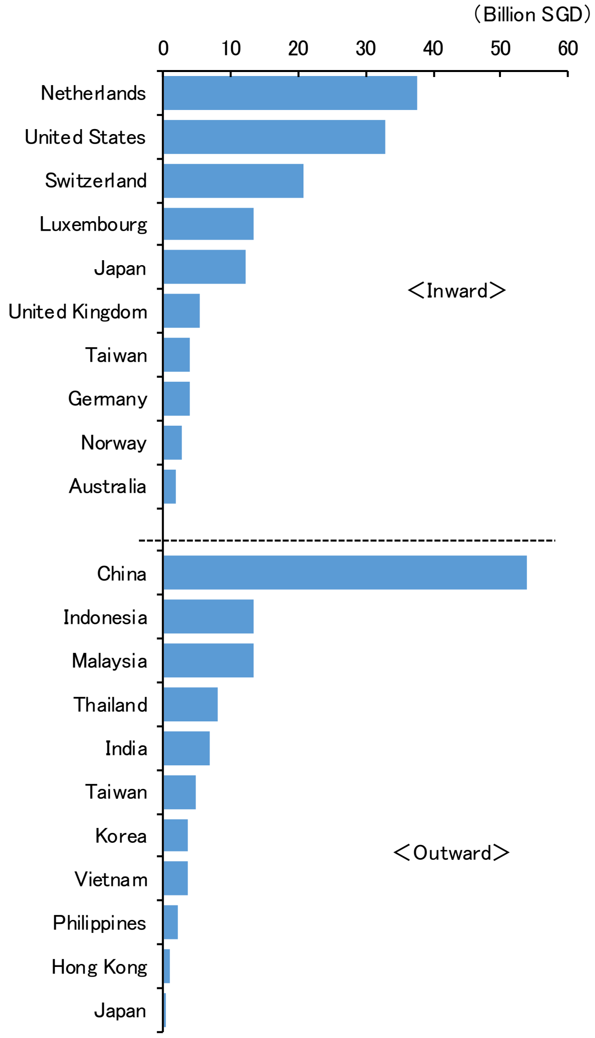
In terms of rankings by assessment items, Japan, South Korea and China were assessed fairly highly in items related to their current competitive strengths, such as the scale of the manufacturing industry and the diversity of export items, etc. On the other hand, while Singapore lags behind Japan, South Korea and China in these items, it was very highly praised for the important role that it is thought likely to play in the realization of industrial advancement in the future. Specifically, Singapore was ranked No. 1 in the world for its trade and investment environment and its institutional frameworks, and No. 2 and No. 6 for its human capital and technology and innovation, respectively. Incidentally, Thailand, which is pursuing industrial advancement with the keyword *Thailand 4.0*, and India, pushing ahead with industrial promotion with the catchphrases Make in India and Digital India, have been classified as legacy countries, along with the Philippines, meaning that they lag behind in terms of competent human capital, institutional factors and energy and environmental factors, and face the risk of being unable to develop their industries as hoped.

Singapore's domestically produced manufacturing industry added value worth is around US$53 billion, which is only about 5% of that of Japan, and less than 1% of that of China, and the upgrading of Singapore's manufacturing industry will have an extremely limited direct impact on Asia overall. Nevertheless, Singapore has a business environment that is suited to the research and development of advanced initiatives, including generous tax incentives for research and development, and multinational corporations from the industrialized nations are actively conducting verification tests in Singapore. As a result, the technologies cultivated by multinational corporations in Singapore could very well have a wide ranging impact, not only through the industrial advancement of Singapore but also that of other Asian emerging economies that are host to manufacturing plants. In actual fact, over half of inward direct investment in Singapore's manufacturing industry comes from mainly Western industrialized nations, while foreign direct investment is concentrated mainly on Asian emerging economies, such as China, Indonesia and Malaysia, a structure that facilitates the transfer of technologies developed by industrialized nations in Singapore to the emerging economies.

■ Developing implementation tools for Industry 4.0

With regard to recent specific initiatives carried out in Singapore with the aim of realizing Industry 4.0, in October of 2017, in advance of corporations' introduction of next generation manufacturing technologies, the Agency for Science, Technology and Research (A*STAR) opened a model factory for the implementation of trial production runs using new technologies and systems. Also, in November of that year, the Economic Development Board (EDB) developed and announced its Singapore Smart Industry Readiness Index, in order to encourage companies' efforts in the run up to Industry 4.0. The Index is a diagnostic tool for the assessment of companies' efforts to leverage ICT technologies in improving efficiency and to gain an objective understanding of the current state of progress, as well as encouraging gradual improvements. Specifically, under the three main headings of Process, Technology and Organization, there are 16 sub-headings against which companies' initiatives are scored in six stages, and the Index has been recognized as having been effective in trials conducted by state owned enterprises. The government has been promoting the utilization of the tool through workshops for businesses, and has set targets of an extra S$36 billion of manufacturing industry production by 2024, the creation of 22,000 extra jobs and a 30% increase in productivity. If this initiative is successful, it is possible that other countries will start to use similar kinds of implementation tools as Singapore. Also, many of the initiatives related to Singapore's Industry 4.0 implementation, including the operation of the model factory and the development of the readiness index were done in collaboration with a German organization.

＜SIngapore's foreign direct investment outstanding (Manufacturing, end of 2015)＞



Source: Department of Statistics

In addition, IE Singapore, a government international enterprise agency, is also working to promote the overseas expansion of initiatives developed in Singapore, such as by opening the Singapore Manufacturing Innovation Centre in Guangzhou, China. It is expected that this will help spread Singapore's success stories to other Asian countries, via China.

(Shotaro Kumagai)

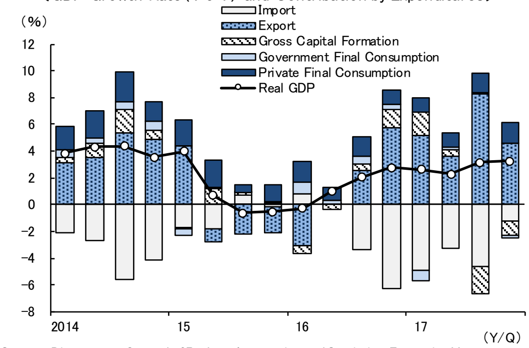
Taiwan *Growth continues, with external demand as the driver*

■ Pace of growth accelerates from previous period

Taiwan's real GDP in the October to December quarter of 2017 grew 3.3%, compared to the same period in the previous year, accelerating from the July to September quarter (3.2%, similarly). Both domestic and external demand are still performing strongly, and the trend of economic recovery is continuing.

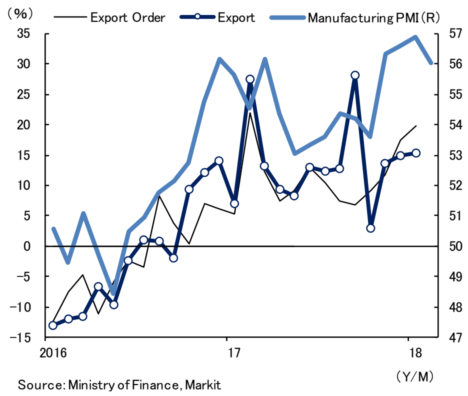
In terms of the contribution of individual demand items, a lull in plant and equipment investment by semiconductor related companies caused gross capital formation to contract -1.1% points in the same period. On the other hand, improvements in the employment and incomes situations grew 1.5% points, similarly, and exports grew 4.6% in the same period, as a result of the global mood of economic recovery, and this pushed up growth overall.

<GDP Growth Rate (Y o Y) and Contribution by Expenditures>



Source: Directorate-General of Budget, Accounting and Statistics, Executive Yuan

<Export (Y o Y) and PMI>



Source: Ministry of Finance, Markit

Examination of recent (US$ denominated) export trends shows that there was a 15.3% growth rate in January, compared to the same period in the previous year, and growth continues to be strong. In addition to a strong performance by electronic parts and components, a main export item, at 11.8% in the same period, recovery is continuing among a broad range of items, with exports of chemical products growing 21.8% in the same period, and basic metals 21.9%, similarly. Export orders received, an indication of the future performance of exports, grew an impressive 19.7% compared to the same period in the previous year. Exports continue to grow strongly, primarily among the industrialized countries that continue to enjoy an economic recovery, with exports to the US growing 16.3% in the same period, and those to Europe 15.3%, similarly. Against the backdrop of this favorable export situation, the manufacturers' PMI for February continued to stay at a strong 56.0, well above the benchmark 50 at which economic performance is judged to be improving or failing. The strong performance of the corporate sector is expected to continue to power economic growth.

In terms of the outlook for the future, it is expected that, as the global mood of economic recovery continues and exports continue to perform strongly, salary increases for public officials and military personnel, etc., and salary increases among strongly performing private sector companies will bolster continuing strong growth in consumption. Nevertheless, given the recent slump in smartphone demand, it would appear somewhat difficult to expect the same level of demand for semiconductors as was enjoyed in the previous year, and with the expected slowing of the economic growth rate in China, Taiwan's biggest export destination, the pace of acceleration in export growth looks likely to be modest. As a result, the growth rate for 2018 is expected to be in the mid 2% range, slowing from 2017 (2.9%).

■ The improvement of the intra-regional investment environment will be a challenge

Although the economy continues to improve, the Tsai Ing-wen administration's approval rating has stalled. Revisions to the Labor Standards Law in December of 2016 led to serious criticisms from industry and from workers. Attempts by the government to improve the approval rating, such as a second revision of the Labor Standards Law to include special measures such as a fiveday workweek, etc., have not delivered any concrete results. In the meantime, at the end of February, China announced fairly significant deregulation and tax incentives for Taiwanese companies and workers. The worry is that this will spur an increase in Taiwanese investment in China, as well as a drain of labor from Taiwan to China. For the Tsai administration, who want to be able to distance themselves from the political influence of China, the task will be to enhance Taiwan's appeal and competitiveness by improving its intra-regional investment environment, through tax system reform and industrial advancement.

(Kentaro Matsuda)

Indonesia *Economy maintains a modest pace of recovery*

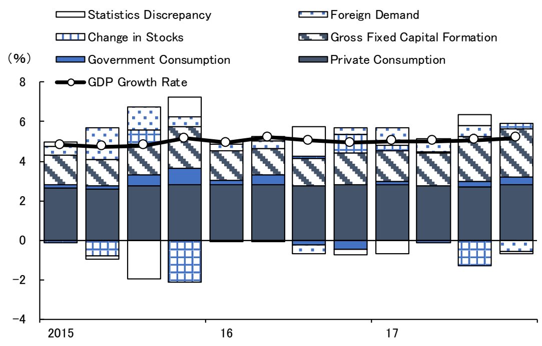
■ 5.1% growth for 2017

Indonesia's real GDP growth rate for the October to December quarter of 2017 was 5.2%, compared to the same period in the previous year, the highest growth rate in six consecutive quarters. As a result, the real GDP growth rate for the whole year 2017 was 5.1%, picking up speed slightly from 2016 (5.0%, similarly). Therefore, Indonesia's economy has been able to maintain a modest pace of recovery.

The major drivers of economic growth in the October to December quarter of 2017 were expansion of investment and government consumption. Gross fixed capital formation grew 7.3%, compared to the same period in the previous year, due to the progress of infrastructure related projects and the like, continuing with strong momentum for four consecutive quarters. In addition, reflecting the smooth implementation of the government's budget plans, growth in government consumption increased.

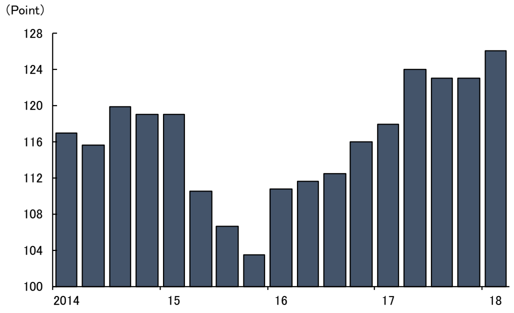
Further, the economy has been bolstered by solid export growth. A closer examination of exports reveals that volcanic activity in Mount Agung on the island of Bali caused a reduction in the number of tourists, which led to services exports growing negatively at -1.2%, falling below the previous year's level for the first time in 11 consecutive quarters. On the other hand, goods exports maintained a high level of growth at 9.7%, similarly, against the backdrop of global economic recovery.

＜Real GDP Growth and Contribution by Expenditures (YoY)＞



Source: GSO

＜Consumer Confidence Index＞



Source: Bank Indonesia
Note: 2018/1Q is January 2018.

■ Modest pace of recovery to continue for the time being

In terms of the outlook for the future, as a result of the progress being made in the implementation of infrastructure development projects and increased government consumption related to the regional elections slated to be held by 171 local authorities throughout the country, it is expected that, for the time being, the economy will be able to continue a modest pace of recovery.

However, this latest economic rally, which began in the October to December quarter of 2016, has been bolstered very significantly by government influenced factors, such as the infrastructure development projects and expanded government expenditure. In the future, the focus will be on whether the role of growth driver can be transferred from the government sector to the private sector.

One noteworthy point will be private sector consumption trends. A number of positive factors can be seen in the recent consumption environment, such as a comparatively low level of inflation and increased employment due to the implementation of infrastructure construction work. Also, reflecting this favorable environment, consumer sentiment is recently at a high level. However, the actual real private consumption level has been struggling to grow recently at only 5.0% or thereabouts, year on year, and it must be said that the strength of consumption recovery is rather poor when compared with the improved level of consumer sentiment. Part of the problem is a statistical one in that digital consumption that takes place on the Internet, as well as cross border EC transactions and the like, are not captured as part of GDP. At the same time, the consumers cannot feel confident that there will be a stable economic expansion over the mid to long term, or that their incomes will increase sustainably, and are therefore still hesitant when it comes to consumption. For the Joko administration, it will be important not only to point to achievements such as the start of infrastructure construction work, etc., but also to take time to explain carefully how a range of government policy measures will translate into stable growth over the mid to long term, and increases in the people's incomes.

(Yuta Tsukada)

China *Commitment to both sustained growth and structural reform*

■ Economic growth target set at "around 6.5%"

At the National People's Congress (NPC) on March 5, Premier Li Keqiang clarified the government's economic management policy for 2018 in the Government Work Report.

＜The Government Work Report(2018)＞

Points	Main Target or Policy
Economic Growth	・Around 6.5%
Reduce Over Production Capacity	・Approximately 30 million tons of steel production capacity and about 150 million tons of coal production capacity
	・Disposal / closure of coal-fired power generation equipment of 300 thousand kilowatts or less not meeting various criteria
Fiscal Policy	・Suppression of fiscal deficit in 2018 to 2.6% of GDP
	・As part of the reform of the local tax system, steadily promote the introduction of real estate tax (legislation)

Source: Chinese Government Official Website

Among the numerical targets given, that for economic growth was set at "around 6.5%", the same level as the previous year. In order to achieve the national target of doubling 2010's real GDP by 2020, it is going to be necessary to sustain annual economic growth in the 6% range. On the other hand, the target of high quality growth set by the administration of Xi Jinping also has to be met. In light of these two factors, the growth target would appear to have been set as one that enables both aims to be achieved at once.

The Government Work Report also contains targets and policies that are designed to contribute to high quality economic development. For example, in order to clear excess plant and equipment capacity, concrete targets for the reduction of steel and coal production have been set for 2018, following on from the previous year. It is presumed that these measures are not only for the purpose of enhancing corporate competitiveness, but also for the purpose of tackling environmental pollution.

On the fiscal and monetary policy front, in addition to tighter risk management, the promotion of institutional reform was also emphasized. However, there were also measures aimed at eliminating economic downside risk, such as easing individual and corporate tax burdens, and measures to resolve small businesses' capital procurement difficulties, and the content of the Report may be said to be aiming to achieve both sustainable growth and structural reform at the same time. Further in fiscal terms, a policy was proposed whereby the combined central and regional government fiscal deficit for 2018 will be kept to 2.6% of GDP (0.4% points lower than the previous year's budget proposal). Nevertheless, the deficit is the same size as that of 2017, and given that there are policies in place, for example, to promote the execution of public works projects by expanding the issue of local special bonds, the government may be said to be sticking firmly to its aggressive fiscal policy.

■ The attempt to further reform by centralizing power

At this latest National People's Congress, constitutional amendments were approved, such as the abolition of the term of office limits for the role of President, cementing the strength of Xi Jinping as General Secretary and President. The focus of attention will be to what extent the drive to sustain economic growth and promote structural reform will be affected by this centralization of power.

The positive impact will be that President Xi will be able to exercise strong leadership in order to drive forward the reforms that have been considered so difficult to implement. For example, it may be expected that there will be some advancement with the implementation of policies, like the real estate tax that is considered desirable from the perspective of curbing speculative investment and correcting wealth discrepancy, but has not been able to be fully put into practice because of opposition from those who would find themselves disadvantaged.

The negative impact will be a stronger tendency to follow the instructions and policies of the Xi administration without voicing any criticism, with the risk that the economic policy check function will cease to work. There are already some signs that that this is happening with, for example, the significantly negative impact on the lives of citizens and production activities resulting from a strictly literal interpretation of coal use restrictions.

As the concentration of power develops, domestic and foreign expectations and concerns over the Xi administration are intensifying. There will be an ever stronger need to restrain the negative impact while working to go ahead resolutely with reforms and maintain stable growth at the same time.

(Junya Sano)