

Production Activities — When Is the Bottoming-Out?



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What is IIP?

Indices of Industrial Production (IIP) measures the progress in production of Japanese domestic businesses. Much attention has been given to the Production Index, but it also measures the trends in shipments and inventories. It also gives data for Operating Ratio and Production Capacity.

Like the Consumer Price Index which was introduced in this column in the previous issue, the IIP does not cover all of the production activities of industrialized goods in Japan. For the current Production and Shipment indices, where the base year is 2010, 487 items are covered and analyzed. The progress of activities for each item is converted using indices of the base year as 100, and the weighted average is calculated using such ratios as its proportion to all industrialized goods' value added and others. In other words, if production activities fluctuate for items and sectors where contributions to producing added value in Japan are large, it has an impact on Japan's overall production activities. For the Production Index, the percentage of the transport machinery industry such as automobiles is at 19%, which is relatively high.

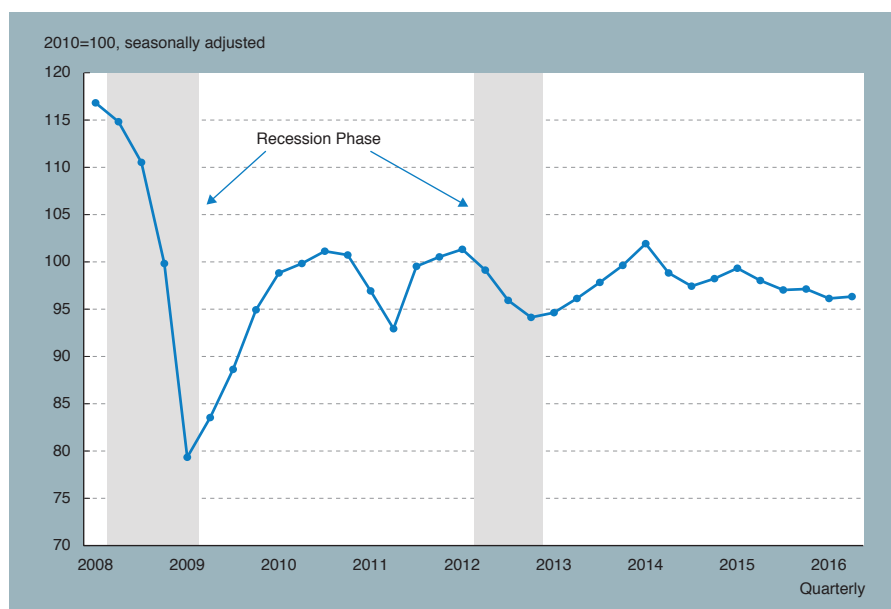
The data is released twice: the preliminary results are released at the end of the following month (for example, August 2016 figures were released on Sept. 30), and the revised results are released mid-month two months later (for example, August 2016 figures were released on Oct. 17). Operation Ratio and Production Capacity results are released with the revised results. For those items that are overseen by ministries other than the Ministry of Economy, Trade, and Industry (40 items, such as food industry and pharmaceuticals, under the current

base year), production, shipment, and inventory activities are released with the revised results. Taking July 2016 figures as an example, preliminary figures for production were flat compared to the previous month (an increase of 0.0%), but actual figures showed a decline of 0.4% compared to the previous month.

Main Engine of Business Cycle

As previously stated, much attention is given to the Production Index. This is because the Production Index plays a core role in calculating the Indexes of Business Conditions, which is an important indicator of whether the Japanese economy is entering an expansion or a recession. As *Chart 1* shows, the period when the Production Index remains low matches the period when the government acknowledged the Japanese economy had entered a recession.

CHART 1
Trend in IIP



Source: Indices of Industrial Production, METI

This is not unrelated to the fact that the inventory cycle is the key driver of the business cycle. If sales are more than expected and inventory decreases, companies will increase production, or companies will slow production if vice versa. This relationship is shown in the form of a Shipment-Inventory Balance, and the number of economists who use this as a business cycle indicator is increasing. The Shipment-Inventory Balance is calculated by subtracting the year-on-year inventory growth ratio from the year-on-year shipment growth ratio. If the Shipment-Inventory Balance is positive, inventory adjustments will proceed and businesses will seek to increase production, but if the number is negative we can assume it is the other way round. In fact, as *Chart 2* shows, we can see a pattern in which when the balance turns positive, production increases in the following quarter, and production falls when the balance turns negative.

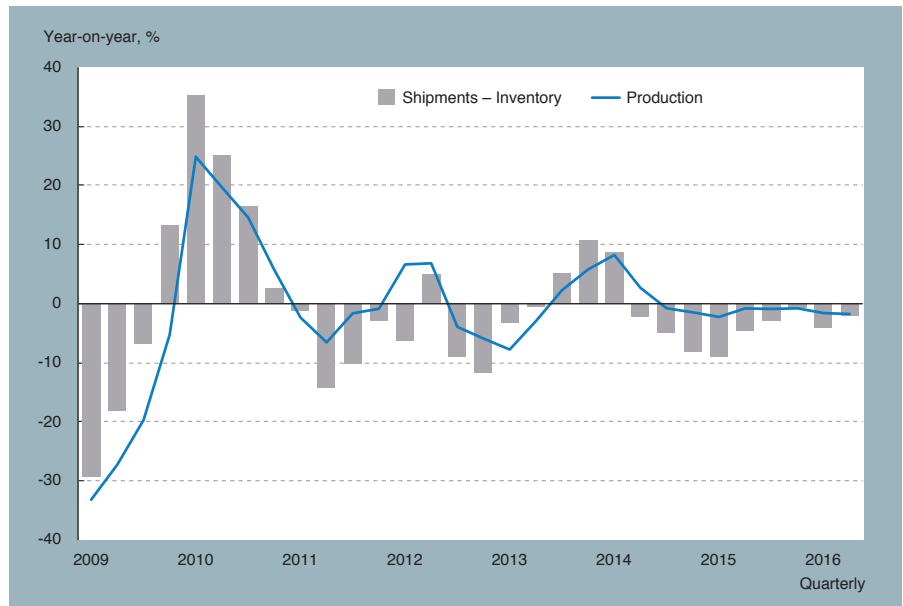
Survey of Production Forecast – Higher than Actual Results

The Production Index in Japan has been gradually declining since the January-March 2014 period, immediately before the consumption tax rate was raised to 8%. Looking at the Shipment-Inventory Balance, it was negative immediately after the consumption tax raise, which indicates that the increase in inventory exceeded shipments, and the year-on-year growth in production has not been able to exit negative territory.

When will Japanese production be able to exit such economic stagnation? What can be useful in forecasting this is the Survey of Production Forecast in Manufacturing, which is also released at the same time as the preliminary results of the IIP. Only 195 items are used to calculate this index, which is only 40% of the Production Index, but production forecasts for two months ahead are surveyed among companies. In the Survey of Production Forecast which was released on Sept. 30, September production went up by 2.2% compared to the previous month, and October production was up by 1.2% compared to the previous month. If the Production Index were to follow this trend, production for the period between July and September would be an upward 2.0% compared to the previous term, and would look like production is finally bottoming out.

CHART 2

Shipments: inventory, balance & production fluctuations



Source: Indices of Industrial Production, METI

Unfortunately, however, this survey forecast tends to be higher than the actual figures in most cases. For example, the August survey forecast was predicted to be an upward 4.1% compared to the previous month, but the preliminary figure was a growth of 1.5%. Economists forecast the production outlook by adjusting any bias towards higher figures and also the difference in the items being surveyed for the Survey of Production Forecast and the Production Index. In addition, METI has begun releasing its own “Forecasted Calculation Figures for the Indices of Industrial Production” since February 2016. According to its survey, September production is predicted to show an increase of 1.5% compared to the previous month, lower than the survey forecast. The preliminary figures for September will have been released by the date of the publication of this issue of *Japan SPOTLIGHT*. I ask the readers to examine these figures and determine their level of accuracy.

Note: This article is based on publicly available information as of Sept. 30, 2016. **JS**

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ECONOMIC INDICATORS FOR JAPAN

Calendar year, Quarter and Month	Real GDP		Nominal GDP		IIP rate of increase over previous year/term (month) (%)	CPI (All terms, less fresh food) rate of increase over previous year/the same term (month) of the previous year (%)
	Amount (trillion yen)	Rate of increase over previous year/term (%)	Amount (trillion yen)	Rate of increase over previous year/term (%)		
2007	523.7	2.2	513.0	1.2	2.8	0.0
2008	518.2	-1.0	501.2	-2.3	-3.4	1.5
2009	489.6	-5.5	471.1	-6.0	-21.9	-1.3
2010	512.7	4.7	482.7	2.4	15.6	-1.0
2011	510.3	-0.5	471.6	-2.3	-2.8	-0.3
2012	519.2	1.7	475.3	0.8	0.6	-0.1
2013	526.3	1.4	479.1	0.8	-0.8	0.4
2014	526.1	0.0	486.9	1.6	2.1	2.6
2015	529.0	0.5	499.2	2.5	-1.2	0.5
2015/3rd Qtr.	530.2	0.5	501.1	0.6	-1.0	-0.2
4th Qtr.	528.0	-0.4	499.7	-0.3	0.1	-0.1
2016/1st Qtr.	530.8	0.5	503.8	0.8	-1.0	-0.1
2nd Qtr.	531.7	0.2	505.4	0.3	0.2	-0.4
2016/Mar.	—	—	—	—	3.8	-0.3
Apr.	—	—	—	—	0.5	-0.4
May.	—	—	—	—	-2.6	-0.4
Jun.	—	—	—	—	2.3	-0.4
Jul.	—	—	—	—	-0.4	-0.5
Aug.	—	—	—	—	1.3	-0.5
Sources	"SNA (National Accounts of Japan)", Cabinet Office				"Indices of Industrial Production", Ministry of Economy, Trade and Industry	"Consumer Price Index", Statistics Bureau, Ministry of Internal Affairs and Communications

Calendar year, Quarter and Month	Foreign Trade Statistics									
	Exports amount (trillion yen)	Exports rate of increase over previous year/ the same term (month) of the previous year (%)	Imports amount (trillion yen)	Imports rate of increase over previous year/ the same term (month) of the previous year (%)	Exports amount to US (trillion yen)	Exports to US rate of increase over previous year/ the same term (month) of the previous year (%)	Imports amount from US (trillion yen)	Imports from US rate of increase over previous year/ the same term (month) of the previous year (%)	Exports amount to EU (trillion yen)	Exports to EU rate of increase over previous year/ the same term (month) of the previous year (%)
2007	83.9	11.5	73.1	8.6	16.9	-0.2	8.3	5.5	12.4	13.6
2008	81.0	-3.5	79.0	8.0	14.2	-15.9	8.0	-3.7	11.4	-7.8
2009	54.2	-33.1	51.5	-34.8	8.7	-38.6	5.5	-31.4	6.7	-41.0
2010	67.4	24.4	60.8	18.0	10.4	18.8	5.9	7.2	7.6	12.8
2011	65.5	-2.7	68.1	12.1	10.0	-3.4	5.9	0.3	7.6	0.0
2012	63.7	-2.7	70.7	3.8	11.2	11.7	6.1	2.5	6.5	-14.7
2013	69.8	9.5	81.2	14.9	12.9	15.6	6.8	12.0	7.0	7.7
2014	73.1	4.8	85.9	5.7	13.6	5.6	7.5	10.7	7.6	8.4
2015	75.6	3.4	78.4	-8.7	15.2	11.5	8.1	6.9	8.0	5.3
2015/3rd Qtr.	19.0	3.7	19.9	-5.9	3.8	13.5	2.0	4.5	2.0	5.1
4th Qtr.	18.9	-4.6	19.0	-13.9	3.9	1.5	1.9	-1.0	2.1	5.8
2016/1st Qtr.	17.5	-7.9	17.2	-15.7	3.7	-3.5	1.8	-9.4	2.1	6.0
2nd Qtr.	17.0	-9.5	15.5	-18.8	3.4	-9.6	1.8	-14.7	1.9	1.9
2016/Mar.	6.5	-6.8	5.7	-14.9	1.3	-5.1	0.6	-20.0	0.8	12.1
Apr.	5.9	-10.1	5.1	-23.3	1.2	-11.8	0.6	-18.1	0.7	9.9
May.	5.1	-11.3	5.1	-13.7	1.0	-10.7	0.6	-8.5	0.6	-4.0
Jun.	6.0	-7.4	5.3	-18.7	1.2	-6.5	0.6	-17.1	0.7	-0.4
Jul.	5.7	-14.0	5.2	-24.6	1.2	-11.8	0.6	-15.2	0.7	-6.5
Aug.	5.3	-9.6	5.3	-17.2	1.0	-14.5	0.6	-9.5	0.6	-0.7
Sources	"Trade Statistics of Japan", Ministry of Finance									

Calendar year, Quarter and Month	Cash salary amount rate of increase over previous year/ the same term (month) of the previous year (%)	Active job openings-to-applicants ratio (time(s))	Unemployment rate (%)	M2 rate of increase over previous year/ the same term (month) of the previous year (%)	Balance of payments		Yen/\$ rate (averaged during the term)
					Trade balance (trillion yen)	Current balance (trillion yen)	
2007	-1.0	1.04	3.9	1.6	14.2	24.9	117.8
2008	-0.3	0.88	4.0	2.1	5.8	14.9	103.3
2009	-3.9	0.47	5.1	2.7	5.4	13.6	93.5
2010	0.5	0.52	5.1	2.8	9.5	19.4	87.8
2011	-0.2	0.65	4.6	2.7	-0.3	10.4	79.8
2012	-0.9	0.80	4.3	2.5	-4.3	4.8	79.8
2013	-0.4	0.93	4.0	3.6	-8.8	4.5	97.6
2014	0.4	1.09	3.6	3.4	-10.5	3.9	105.8
2015	0.1	1.20	3.4	3.7	-0.6	16.4	121.0
2015/3rd Qtr.	0.5	1.22	3.4	4.0	-0.3	4.9	122.2
4th Qtr.	0.2	1.26	3.3	3.4	0.1	3.4	121.5
2016/1st Qtr.	0.7	1.29	3.2	3.2	0.9	6.0	115.4
2nd Qtr.	0.6	1.36	3.2	3.4	1.5	4.6	108.1
2016/Mar.	1.5	1.30	3.2	3.2	0.9	3.0	113.1
Apr.	0.0	1.34	3.2	3.4	0.7	1.8	109.7
May.	-0.1	1.36	3.2	3.4	0.0	1.8	109.2
Jun.	1.4	1.37	3.1	3.5	0.8	1.0	105.4
Jul.	1.2	1.37	3.0	3.4	0.6	1.9	104.0
Aug.	-0.1	1.37	3.1	3.3	0.2	2.0	101.3
Sources	"Monthly Labour Survey", Ministry of Health, Labour and Welfare	"Employment Referrals for General Workers", Ministry of Health, Labour and Welfare	"Labour Force Survey", Statistics Bureau, Ministry of Internal Affairs and Communications	"Money Stock", Bank of Japan	"Balance of Payments", Ministry of Finance		Bank of Japan

Calendar year, Quarter and Month	Foreign Trade Statistics									
	Imports amount from EU (trillion yen)	Imports from EU rate of increase over previous year/ the same term (month) of the previous year (%)	Exports amount to Asia (excluding China) (trillion yen)	Exports to Asia (excluding China) rate of increase over previous year/ the same term (month) of the previous year (%)	Imports amount from Asia (excluding China) (trillion yen)	Imports from Asia (excluding China) rate of increase over previous year/ the same term (month) of the previous year (%)	Exports amount to China (trillion yen)	Exports to China rate of increase over previous year/ the same term (month) of the previous year (%)	Imports amount from China (trillion yen)	Imports from China rate of increase over previous year/ the same term (month) of the previous year (%)
2007	7.7	10.2	27.6	10.3	16.5	6.1	12.8	18.9	15.0	9.1
2008	7.3	-4.8	27.0	-2.0	17.2	4.1	12.9	0.9	14.8	-1.4
2009	5.5	-24.3	19.1	-29.3	11.6	-32.8	10.2	-21.0	11.4	-22.9
2010	5.8	5.5	24.7	29.5	14.1	22.0	13.1	27.8	13.4	17.3
2011	6.4	10.1	23.8	-3.9	15.7	11.7	12.9	-1.4	14.6	9.2
2012	6.6	3.6	23.3	-1.8	16.3	3.3	11.5	-10.8	15.0	2.7
2013	7.6	15.2	25.2	8.1	18.3	12.6	12.6	9.7	17.7	17.4
2014	8.2	6.8	26.1	3.5	19.4	6.2	13.4	6.0	19.2	8.6
2015	8.6	5.6	27.1	3.7	18.9	-2.6	13.2	-1.2	19.4	1.3
2015/3rd Qtr.	2.2	10.3	6.8	3.8	4.7	-0.1	3.4	-1.4	5.1	9.0
4th Qtr.	2.3	13.3	6.5	-8.0	4.6	-9.6	3.4	-6.8	4.9	-6.5
2016/1st Qtr.	2.1	5.2	6.0	-13.1	4.3	-14.4	2.9	-7.1	4.5	-7.5
2nd Qtr.	1.9	-5.5	6.0	-11.9	3.8	-17.2	3.0	-10.8	4.0	-13.0
2016/Mar.	0.7	-3.6	2.2	-11.0	1.4	-14.7	1.1	-7.1	1.5	6.4
Apr.	0.6	-8.3	2.0	-12.8	1.2	-21.6	1.0	-7.7	1.3	-16.7
May.	0.7	-1.5	1.9	-12.1	1.3	-11.5	0.9	-14.9	1.3	-9.7
Jun.	0.7	-6.6	2.1	-10.9	1.3	-17.8	1.0	-10.0	1.4	-12.3
Jul.	0.7	-15.6	2.0	-14.4	1.3	-24.2	1.0	-12.7	1.3	-21.6
Aug.	0.7	-12.4	2.0	-9.7	1.3	-12.0	1.0	-8.8	1.3	-15.4
Sources	"Trade Statistics of Japan", Ministry of Finance									