

## Small and Medium-Sized Manufacturers are Actually Showing Robust Growth

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### An unusual gap in the manufacturing sector

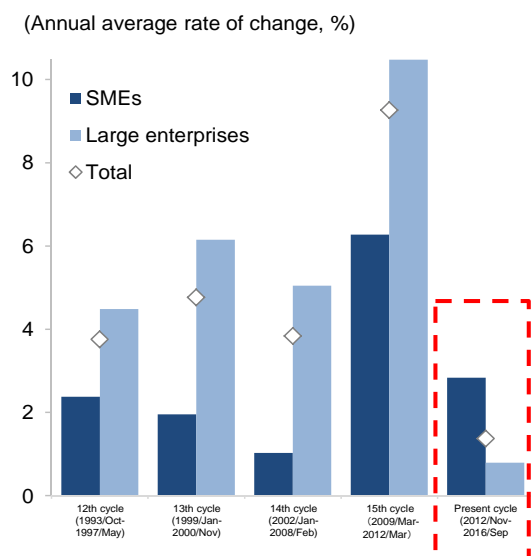
Japan's industrial production has been stagnating. The production index in the present economic recovery phase (from November 2012) rose at an annual rate of +1.4% (a cumulative rate of +5.4%), the lowest recovery phase growth since the collapse of the bubble economy.

In addition to the overall sluggish recovery, the "reverse gap" between large enterprises and small and medium-sized enterprises (SMEs) also stands out in the present phase. In the past, it was common for SMEs to be lacking in strength, in contrast to the resilience of large enterprises. Take for example the 2000s: As the Japanese economy achieved its longest expansion in the post-war period, production of large enterprises surged by around +5% annually, whereas production of SMEs increased only by a meager +1%. However, large enterprises this time are suffering a sharp slowdown at an annual rate of approximately +0.8% (a cumulative rate of +3%), while SMEs are experiencing a high growth of almost +3% (cumulatively +11%) (**Chart 1**). This is the first time since the burst of the bubble economy that SMEs have shored up Japan's manufacturing industry. What is the cause of this unusual gap?

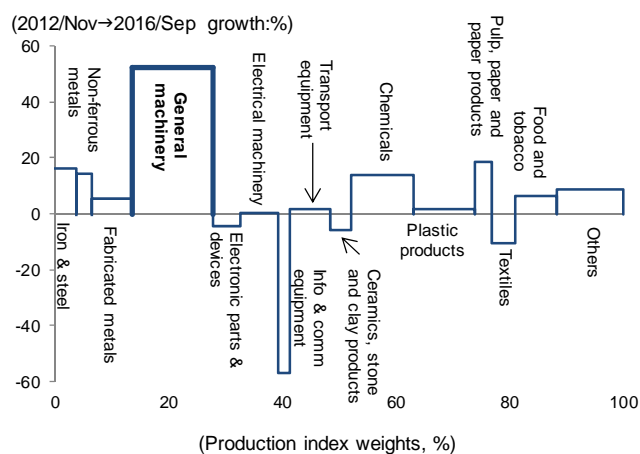
### General machinery drives SME production

Looking at SME production by industry in the present recovery phase (**Chart 2**), we notice that general machinery (general-purpose, production and business oriented machinery) is recording an outstanding growth (vertical axis), exceeding +50% in cumulative terms. Due to its large production weights (horizontal axis), the contribution (area of the chart) of general machinery accounted for roughly 70% of the increase in total SMEs' production. On the other hand, large enterprises in the general machinery industry slumped to a mere +7%. This suggests that general machinery is a major factor in generating the unusual gap.

[ Chart 1: Production by size of enterprise in the recovery phase ]



[ Chart 2: SME production by industry in the present recovery phase ]



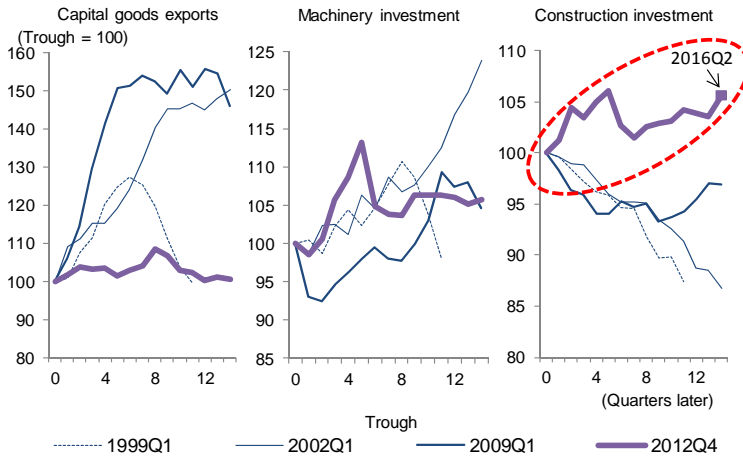
Note: Small and medium-sized enterprises (SMEs) represent businesses with capital of 300 million yen or less or with 300 employees or less. As small enterprises are often excluded in the source statistic (Current Survey of Production), a large proportion of SMEs is likely to be medium-sized enterprises. In **Chart 2**, the foods and tobacco industries are based on data up to August 2016.

Source: Made by MHRI based upon Ministry of Economy, Trade and Industry, *Indices of Industrial Production*, and the Small and Medium Enterprise Agency, *Manufacturing Production Indices by Size of Enterprise*.

The production index of general machinery consists of a wide range of items, but the industry is basically susceptible to domestic and foreign investments in tangible fixed assets. **Chart 3** shows the changes during the recovery phases in capital goods exports from Japan, which represent the demand for foreign capital investment, and domestic fixed capital investments (divided into machinery and construction investments). In the current phase (trough: 2012Q4), capital goods exports remained stagnant, compared with the economic expansion before the global financial crisis. Meanwhile, machinery investment was on a recovery track until the consumption tax hike in the spring of 2014 (five quarters from the trough), but lost steam in the following quarters. Construction investment, however, reversed its negative trend and continues to rise, most likely because of the series of active public investment programs introduced under Abenomics.

Increasing construction investment driven by public works does benefit large enterprises as well, but tends to have a more positive effect on SMEs. In **Chart 4**, estimation results from a vector autoregressive (VAR) model show the responses of general machinery production to an exogenous increase in the demand for construction investment. The result reveals that within the general machinery industry, construction investment exerts a quantitatively larger and a more sustainable impact on SMEs. In light of these structural differences, we may conclude that the surge in construction investment is leading to a discrepancy between large enterprises and SMEs in the general machinery industry, and subsequently in the entire manufacturing sector.

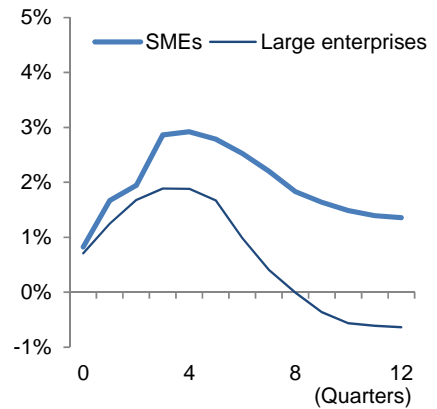
**[ Chart 3: Machinery-related demand (by recovery phase) ]**



Note: Capital goods exports were calculated by deflating capital goods exports with the corresponding export price index (seasonally adjusted by MHRI). Machinery and construction investments are based on the System of National Accounts (SNA).

Source: Made by MHRI based on the Ministry of Finance, *Trade Statistics of Japan*, the Bank of Japan, *Corporate Goods Price Index*, and the Cabinet Office, *System of National Accounts*.

**[ Chart 4: Impact of construction investment in the general machinery industry ]**



Note: A VAR model was estimated (with four lags) using three variables – construction investment, general machinery production of large enterprises, and general machinery production of SMEs – to illustrate the impulse responses of production to a one standard deviation construction shock.

Source: Made by MHRI.

**Steady progress expected for the time being**

Looking ahead, public investment is expected to increase gradually as the supplementary budget for FY 2016 makes progress. Based on the above analyses, industrial production primarily in the general machinery industry should follow a steady pattern. On the other hand, SMEs on the whole are unlikely to expand at a faster pace since foreign and domestic private-sector demand remain weak and additional public investment as seen during the initial period of Abenomics seems unlikely. Whether SMEs will be able to sustain overall production is a question worth further examination.

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