

# 6.1 Manufacturing

## OVERVIEW

The manufacturing sector expanded by 11 per cent in the fourth quarter of 2016, underpinned by robust growth in the electronics and biomedical manufacturing clusters.

For the whole of 2016, the manufacturing sector grew by 3.6 per cent, a reversal from the 5.1 per cent contraction in the previous year. Growth was supported by a rebound in electronics and biomedical manufacturing output, even as a decline in the output of the transport engineering cluster weighed heavily on growth.

## OVERALL MANUFACTURING PERFORMANCE

In the fourth quarter, manufacturing output rose by 11 per cent, supported largely by robust growth in the electronics and biomedical manufacturing clusters (Exhibit 6.1).

For the whole of 2016, manufacturing output increased by 3.6 per cent, reversing the contraction of 5.1 per cent in 2015. Growth was supported by higher levels of output in the electronics and biomedical manufacturing clusters, which accounted for 122 per cent and 74 per cent of the overall expansion. By contrast, a decline in the output of the transport engineering cluster placed the largest drag on growth (Exhibit 6.2).

Exhibit 6.1: Manufacturing Growth Rates

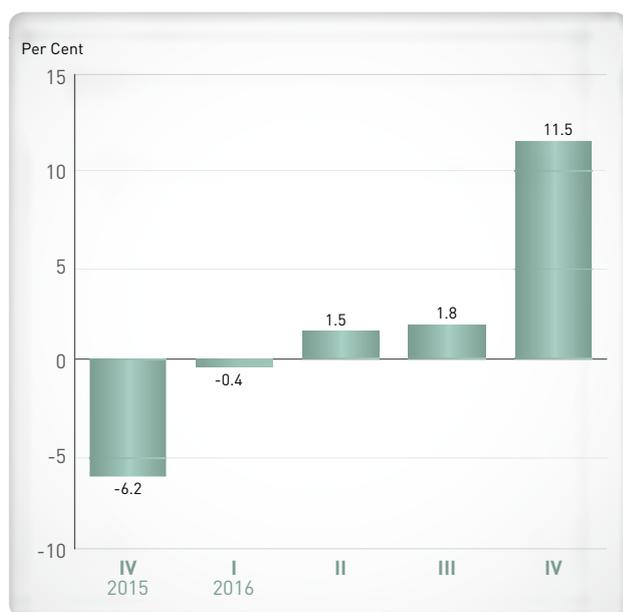
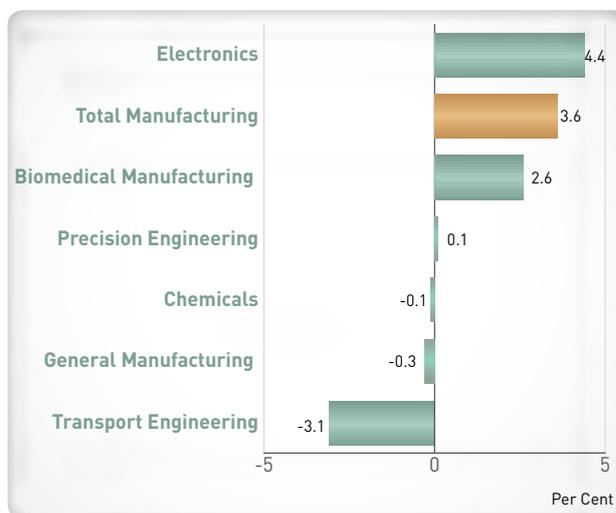


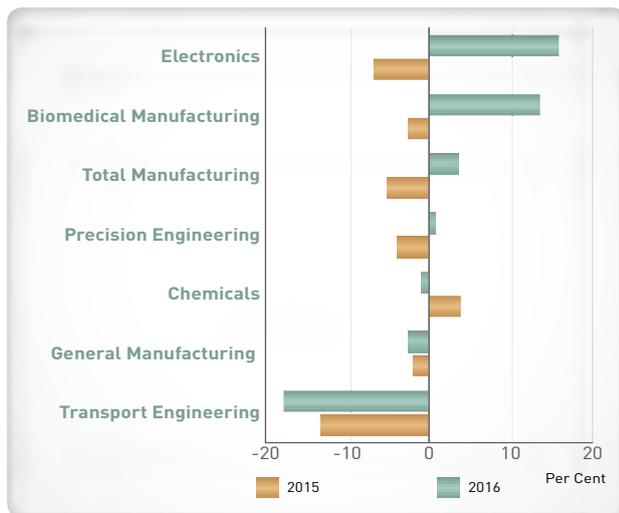
Exhibit 6.2: Percentage-Point Contribution to Manufacturing Sector's Growth in 2016



## PERFORMANCE OF CLUSTERS

The electronics cluster grew by 33 per cent in the fourth quarter, supported primarily by the semiconductors segment, which expanded by 62 per cent. The robust performance of the semiconductors segment came on the back of a strong recovery in global semiconductors demand. On the other hand, output in the data storage and infocomms & consumer electronics segments declined by 12 per cent and 19 per cent respectively, amidst a continued softening of the PC devices market. For the full year, the electronics cluster expanded by 16 per cent, as the strong performance of the semiconductors segment more than offset the weakness seen in the data storage, computer peripherals and infocomms & consumer electronics segments (Exhibit 6.3).

Exhibit 6.3: Manufacturing Clusters' Growth



The output of the biomedical manufacturing cluster increased by 30 per cent in the fourth quarter. Within the cluster, the pharmaceuticals segment expanded by 33 per cent on the back of a higher level of output in active pharmaceutical ingredients and biological products. At the same time, the medical technology segment recorded robust growth of 19 per cent as a result of higher export demand for medical devices. For 2016 as a whole, the biomedical manufacturing cluster expanded by 14 per cent, with both the pharmaceuticals and medical technology segments supporting growth.

The precision engineering cluster expanded by 5.6 per cent in the fourth quarter, supported mainly by the machinery & systems (M&S) segment. Output in the M&S segment grew by 8.7 per cent in tandem with healthy export demand for semiconductor manufacturing equipment. Output in the precision modules & components segment inched up by 0.7 per cent due to an increase in the production of dies, moulds, tools, jigs & fixtures and metal precision components. For the whole of 2016, the precision engineering cluster's output rose by 0.8 per cent. While the M&S segment contributed positively to growth in the cluster, output was weighed down by firms supporting the oil & gas industry, which had remained weak amidst the low oil price environment.

The output of the chemicals cluster grew by 2.2 per cent in the fourth quarter, supported by growth in all segments. The specialty chemicals segment, which expanded by 3.1 per cent on the back of a higher level of production of mineral oil additives, was the largest contributor to growth. For the full year, the chemicals cluster contracted by 0.9 per cent. This was due to a decline in the output of the petrochemicals segment arising from major plant maintenance shutdowns, even as the output of all other segments expanded.

The general manufacturing industries shrank by 7.6 per cent in the fourth quarter, with all segments within the cluster posting declines in output. In particular, the miscellaneous industries segment contracted by 9.6 per cent on account of a lower production of fibre glass products and construction-related products & materials. The printing segment shrank by 16 per cent, due to weak demand for commercial printing. In addition, output of the food, beverage & tobacco segment fell by 2.7 per cent. For the full year, the general manufacturing industries contracted by 2.5 per cent on the back of output declines in the printing and miscellaneous industries segments.

Output of the transport engineering cluster declined by 18 per cent in the last quarter of 2016, weighed down by continued weakness in the marine & offshore engineering (M&OE) segment. The M&OE segment contracted by 33 per cent, the ninth consecutive quarter of contraction as sluggish global capital expenditure for offshore production and exploration amidst the weak oil price environment continued to place a drag on rig-building activities and the demand for oilfield & gasfield equipment. On the other hand, the land transport and aerospace segments grew by 13 per cent and 6.9 per cent respectively, with the latter supported by higher demand for aircraft and engine maintenance work. For the whole of 2016, the transport engineering cluster contracted by 18 per cent, largely due to the M&OE segment.