

## Technology Sector

**Maintain NEUTRAL**

### Demand for semiconductor products remains upbeat

- **December 2016 semiconductor sales accelerated at a higher pace of +12.3%yoy to USD31.0b**
- **Full year 2016 sales performed better than WSTS' expectation, growing by +1.1%yoy**
- **In 2016, higher demand of semiconductor products was seen from China and Japan, while the Americas, Europe and Asia Pacific (ex-China) regions recorded lower sales**
- **December 2016 BTB ratio reverted to above parity at 1.06x after two consecutive months of decline**
- **Maintain NEUTRAL stance on the sector**

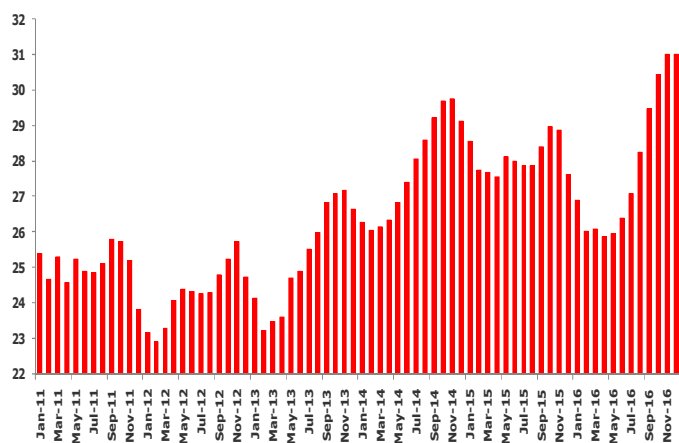
### A. STATE OF GLOBAL SEMICONDUCTOR INDUSTRY

#### i. Global Semiconductor Sales (December 2016)

**Ending 2016 on a high note.** The December 2016 worldwide sales of semiconductors came in strongly at USD31.0b, growing at a faster rate of +12.3%yoy. Such a pace was last recorded in February 2014 when the global semiconductor sales (GSS) grew by +12.1%yoy. Inclusive of this, GSS has been growing on a year-over-year basis for the past five consecutive months since August 2016. According to the Semiconductor Industry Association (SIA), the demand for semiconductor was driven mainly by macroeconomic factors, industry trends, as well as higher content of semiconductor technology in devices which are meant for working, communication, manufacturing, treating illness and other countless applications.

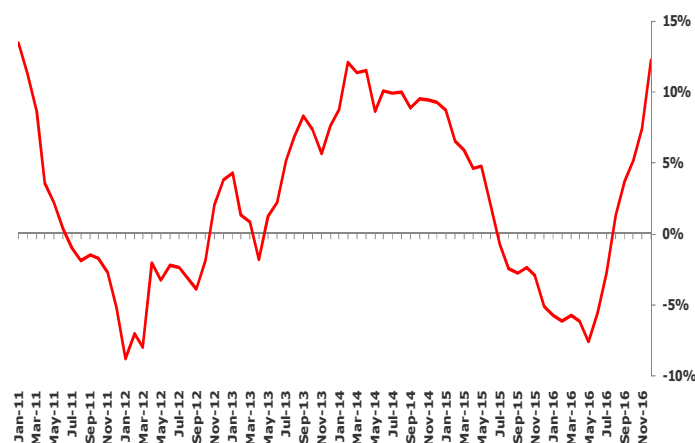
**Despite a slow start,** the global semiconductor market picked up pace towards the middle of the year. This led to full year 2016 global semiconductor sales of USD338.9b, the industry's highest-ever annual sales. The sales translate into a full year increase of +1.1%yoy, which surpassed the World Semiconductor Trade Statistics (WSTS) 2016 sales projection of USD335.8b. Several semiconductor product segments stood out in 2016. Logic was the largest contributor, accounting for 27% of the total semiconductor market, followed by Memory and micro-ICs. Nonetheless, sensors and actuators segment recorded the fastest year-over-year growth of +22.7%yoy. Other product segments that posted increased sales in 2016 include NAND flash memory (+11.0%yoy), digital signal processors (+12.5%yoy), diodes (+8.7%yoy), small signal transistors (+7.3%yoy), and analog (5.8%yoy).

**Chart 1: Monthly global semiconductor sales (USD billion)**



Sources: SIA, MIDFR

**Chart 2: Monthly Global semiconductor sales (%yoy)**



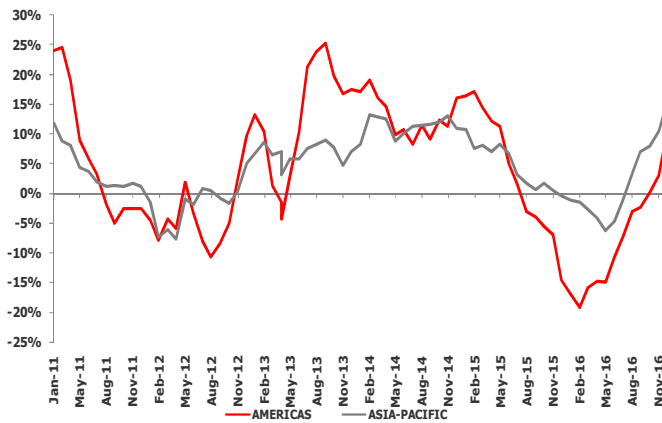
Sources: SIA, MIDFR

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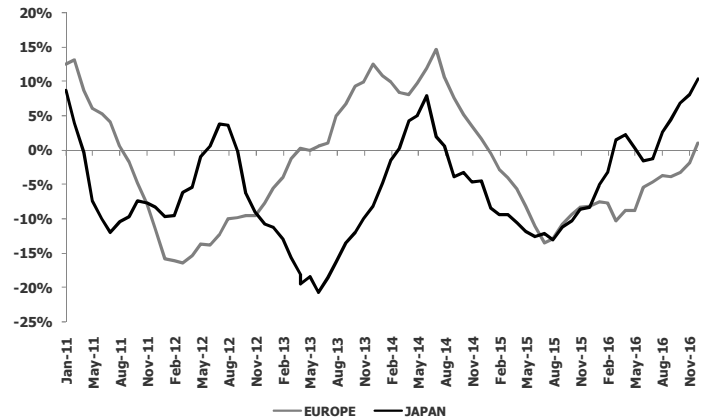
**Mixed market performance.** Regionally, annual sales increase was observed in China (+9.2%yoy) and Japan (+3.8%yoy). Meanwhile, the other regional markets posted a decline in sales as compared to 2015. The Americas region dropped at the fastest pace (-4.7%yoy), followed by Europe (-4.5%yoy) and Asia Pacific ex-China (-1.7%yoy)

**Chart 3: Americas and Asia Pacific\* sales (%yoy)**



Sources: SIA, MIDFR  
\*Includes China

**Chart 4: Europe and Japan sales (%yoy)**



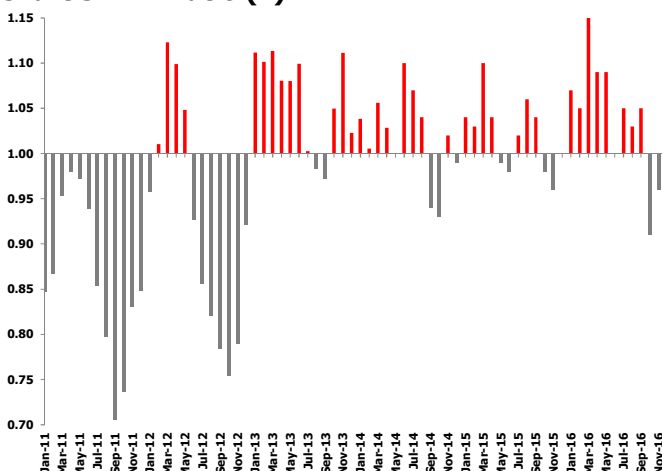
Sources: SIA, MIDFR

## ii. Capital Spending: Book-To-Bill (BTB) ratio (December 2016)

**BTB ratio reverts to above parity.** The North America-based manufacturers of semiconductor equipment posted a BTB ratio of 1.06x for the month of December 2016. The BTB ratio reverted to the positive territory after it fell below parity for the past two months. A BTB ratio of 1.06x indicates that USD106 worth of orders was received for every USD100 of products billed for the month. According to the Semiconductor Equipment and Materials International (SEMI), "2016 ended the year with bookings levels approaching USD2b. This combined with a significant increase in billings put 2016 equipment sales of North American manufacturers well above 2015 levels and well positioned for 2017".

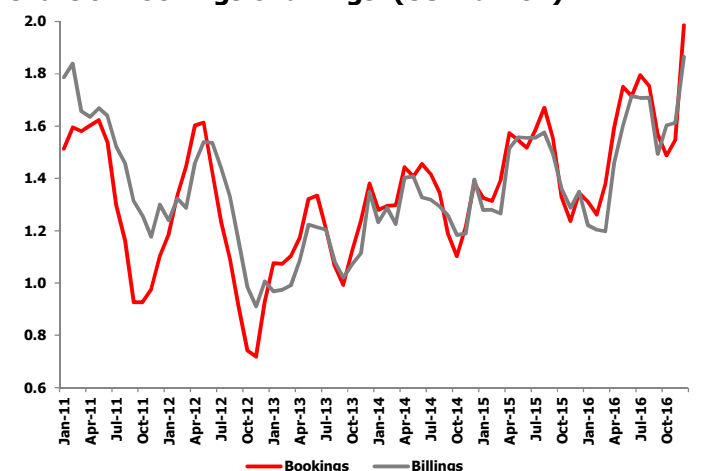
**Higher bookings and billings.** Both bookings and billings remain at elevated levels in comparison to the previous year corresponding period. Bookings for the month of December 2016 posted an increase of +47.8%yoy to USD1,985.4m in comparison to December 2015 order level of USD1,343.5m. Bookings have been growing for nine consecutive months since April 2016. We attributed this to the strong purchasing activity in China. Meanwhile, billings for the month of December 2016 improved at a faster rate of +38.2%yoy to USD1,8653.8m.

**Chart 5: BTB ratio (x)**



Sources: SEMI, MIDFR

**Chart 6: Bookings & billings (USD billion)**




Sources: SEMI, MIDFR

**B. INDUSTRY UPDATE**

**Higher iPhone sales.** Apple's latest 1QFY17 earnings results stated that 78.3m units of iPhone were sold. This was iPhone's biggest quarter, surpassing the market expectations of 76.3m units. Higher demand was seen for the iPhone 7 Plus line-up. In addition, the average selling price for iPhone has also increased to USD694.6 from USD691.0 per unit in 1QFY16. On the contrary, iPad unit sales fell to 13.1m units from 16.1m units a year ago.

**Outlook for the PC segment remains depressed.** Intel has a more cautious view of PC consumption trends than third-party market watchers, especially in emerging markets like Russia, China and Latin America. It expects PC unit shipments to decline by a mid-single digit percentage in the first quarter following a strong fourth quarter in which the company enjoyed strong sales for its core i7 microprocessor.

**Maintain NEUTRAL.** China has been spearheading the growth in semiconductor sales, registering double digit growth in recent months. As a result, sales from China currently constitutes approximately one third of the monthly semiconductor sales. On the other hand, we are concerned with the slower demand of semiconductor products, mainly from the Americas and Europe region. We view that the change in US administration could create some uncertainty subsequent to its withdrawal from the TPPA. To recall, the SIA was supportive of the agreement as it is expected to strengthen digital economy and promoted semiconductor trade. In the near term, we expect the possible cut in the production of iPhone to negatively impact the earnings of semiconductor companies who fall within Apple's value chain. Nonetheless, recovery in volume could be seen towards the end of 2Q17 in anticipation of the announcement of Apple's next generation iPhone in 3Q17. Coupled with the expectation of a modest semiconductor sales growth of +3.3%yoy for 2017, we reiterate our **NEUTRAL** stance on the sector. 

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BUY	Total return is expected to be >15% over the next 12 months.
TRADING BUY	Stock price is expected to <i>rise</i> by >15% within 3-months after a Trading Buy rating has been assigned due to positive newsflow.
NEUTRAL	Total return is expected to be between -15% and +15% over the next 12 months.
SELL	Total return is expected to be <-15% over the next 12 months.
TRADING SELL	Stock price is expected to <i>fall</i> by >15% within 3-months after a Trading Sell rating has been assigned due to negative newsflow.

#### SECTOR RECOMMENDATIONS

POSITIVE	The sector is expected to outperform the overall market over the next 12 months.
NEUTRAL	The sector is to perform in line with the overall market over the next 12 months.
NEGATIVE	The sector is expected to underperform the overall market over the next 12 months.