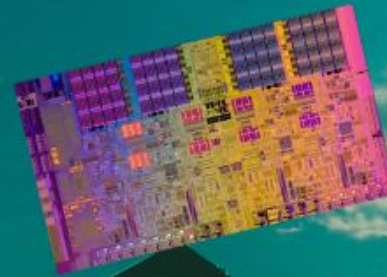




Have Semiconductor s Peaked?

Macro Overview



2018 Critical Materials Conference

KPMG Global Semiconductor Practice



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Audit

Over 150 professionals
in the global
semiconductor practice

Key members in the
US, UK, Germany,
China, Japan,
Singapore and Korea

KPMG serves over 100
Semiconductor Clients
and 85% of the Top 20



Strategy



**Management
Consulting**



Tax



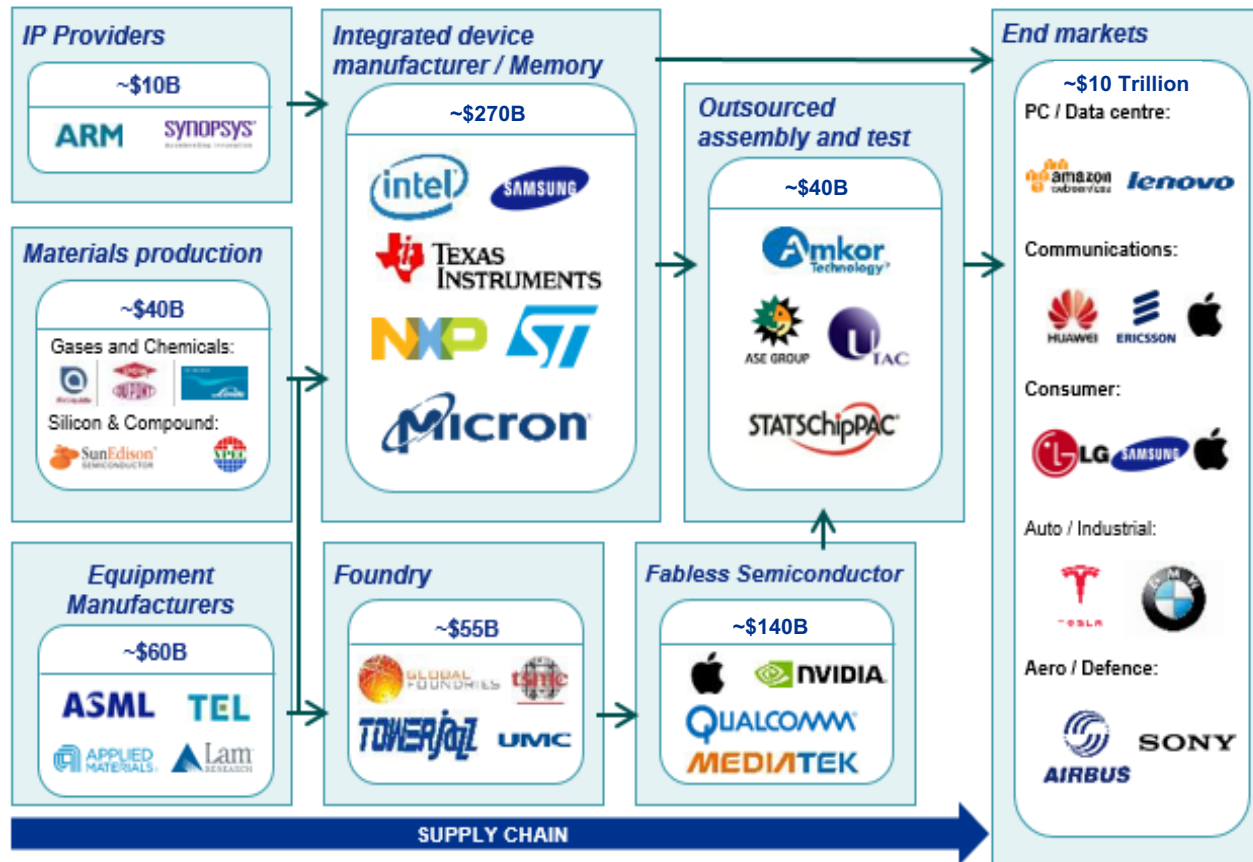
Deal Advisory



**Risk
Management**

Introduction

2017 saw growth across the semiconductor value chain



Key Themes

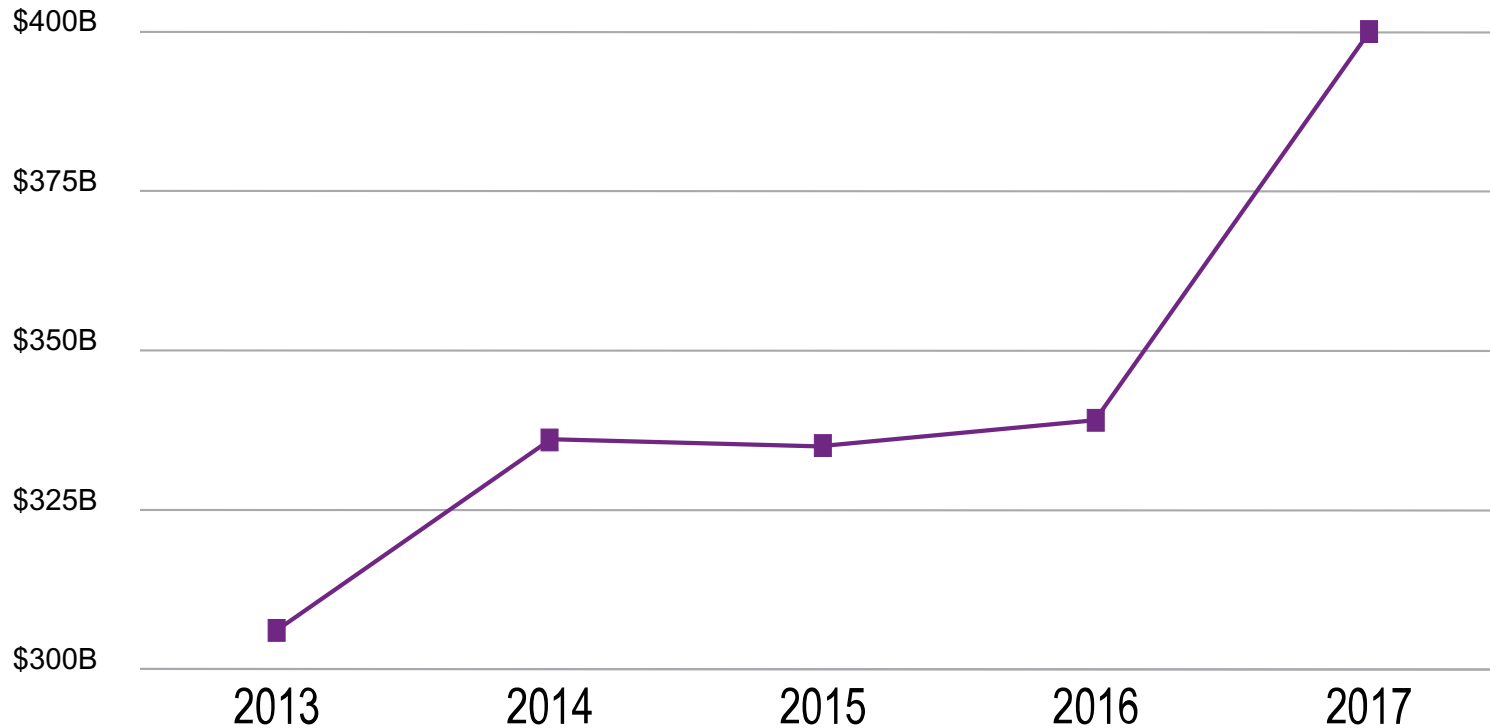
- Memory market is hot, hot, hot...
- PC's bounce back - flat is the new up!
- Smartphones are the new PC's
- Everyone is waiting on 5G
- AI may be the new investment bubble
- GPU's riding wave of blockchain hype
- Regulatory concerns pick up
- Tax reform delivers a late gift in 2017



Macro Overview

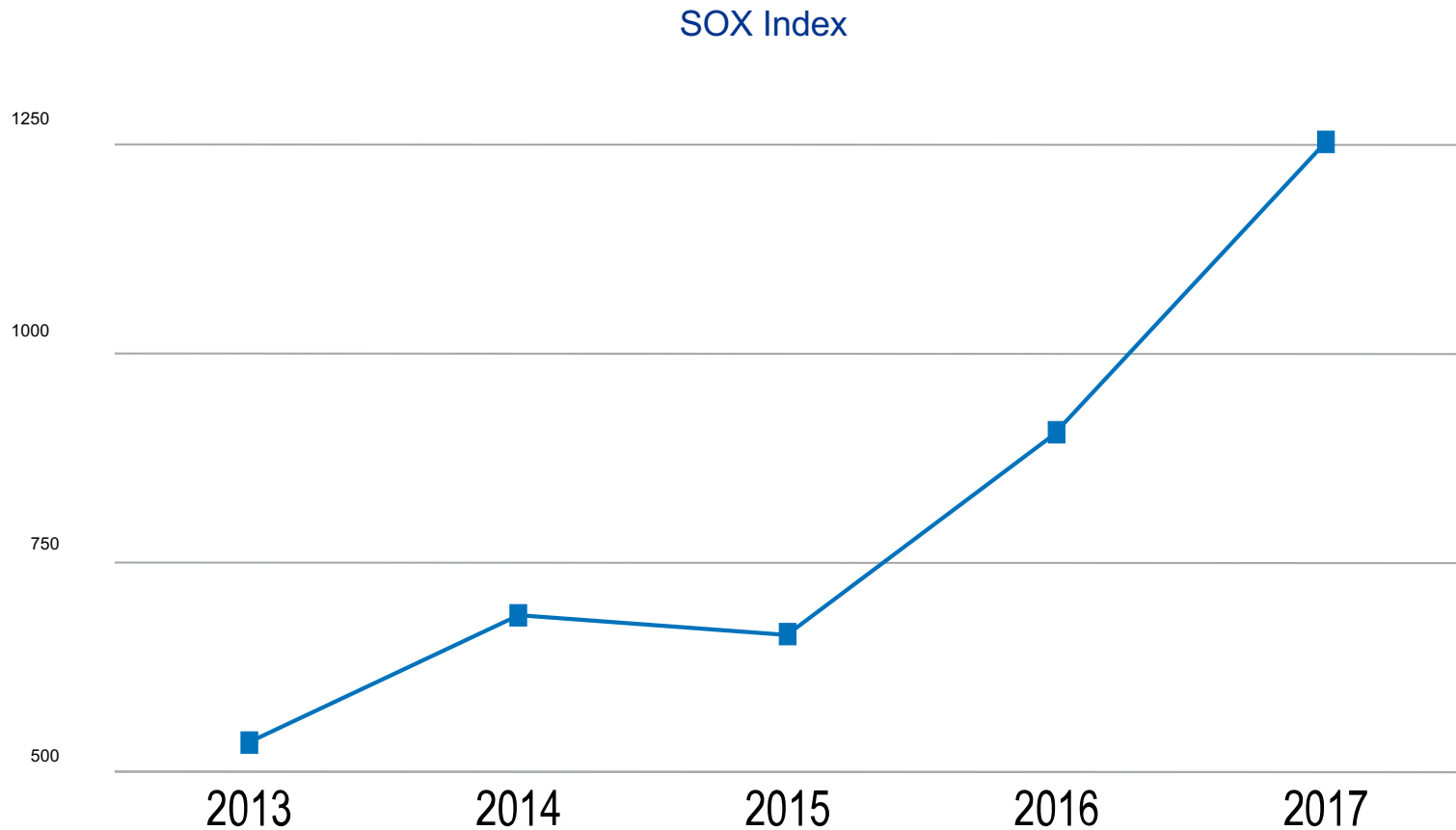
Industry Trends: Semiconductor Revenue

Semiconductor Global Sales



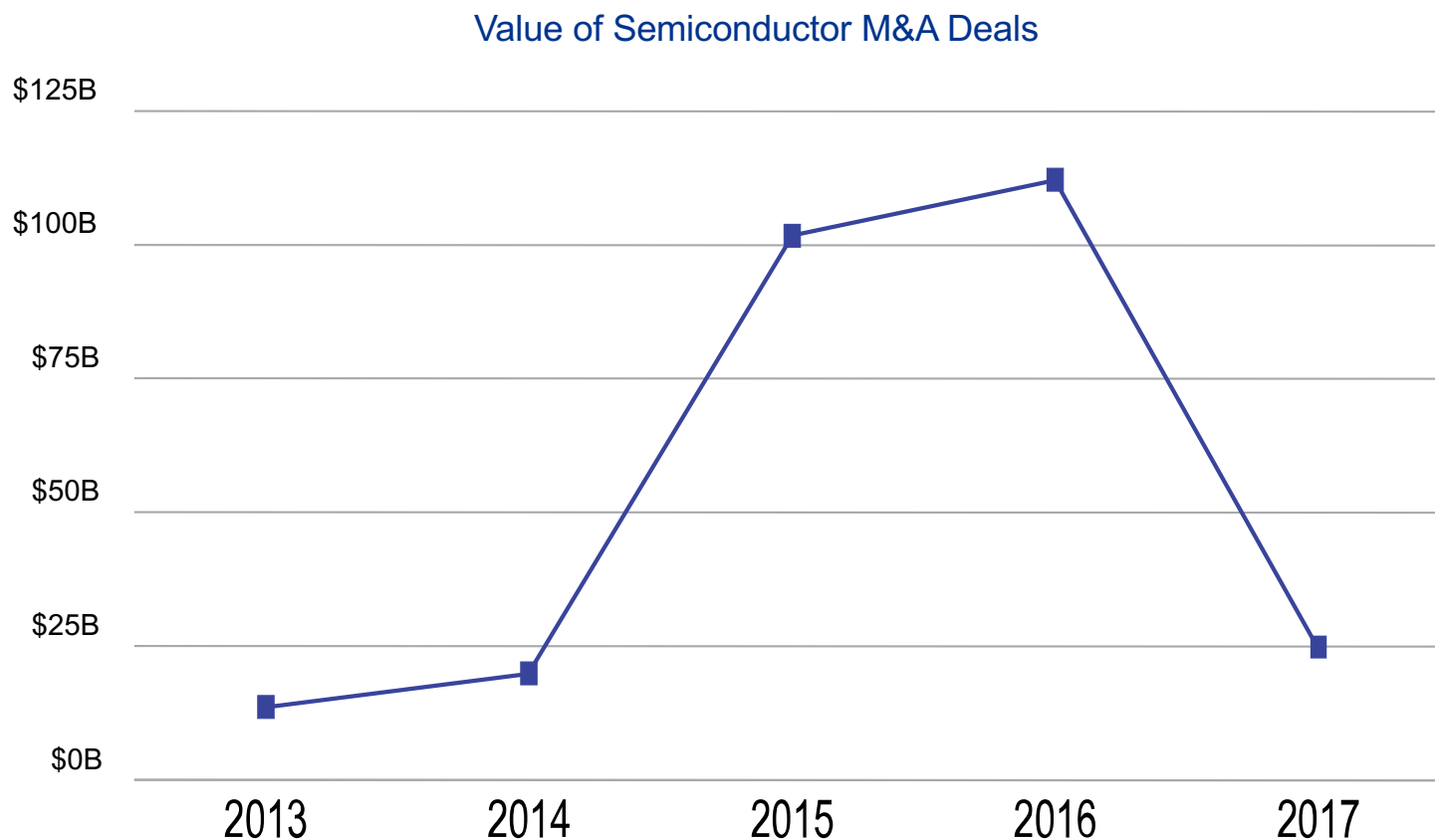
Source: World Semiconductor Trade Statistics (WSTS) and Semiconductor Industry Association (SIA)

Industry Trends: Semiconductor Stock Index



Source: Nasdaq

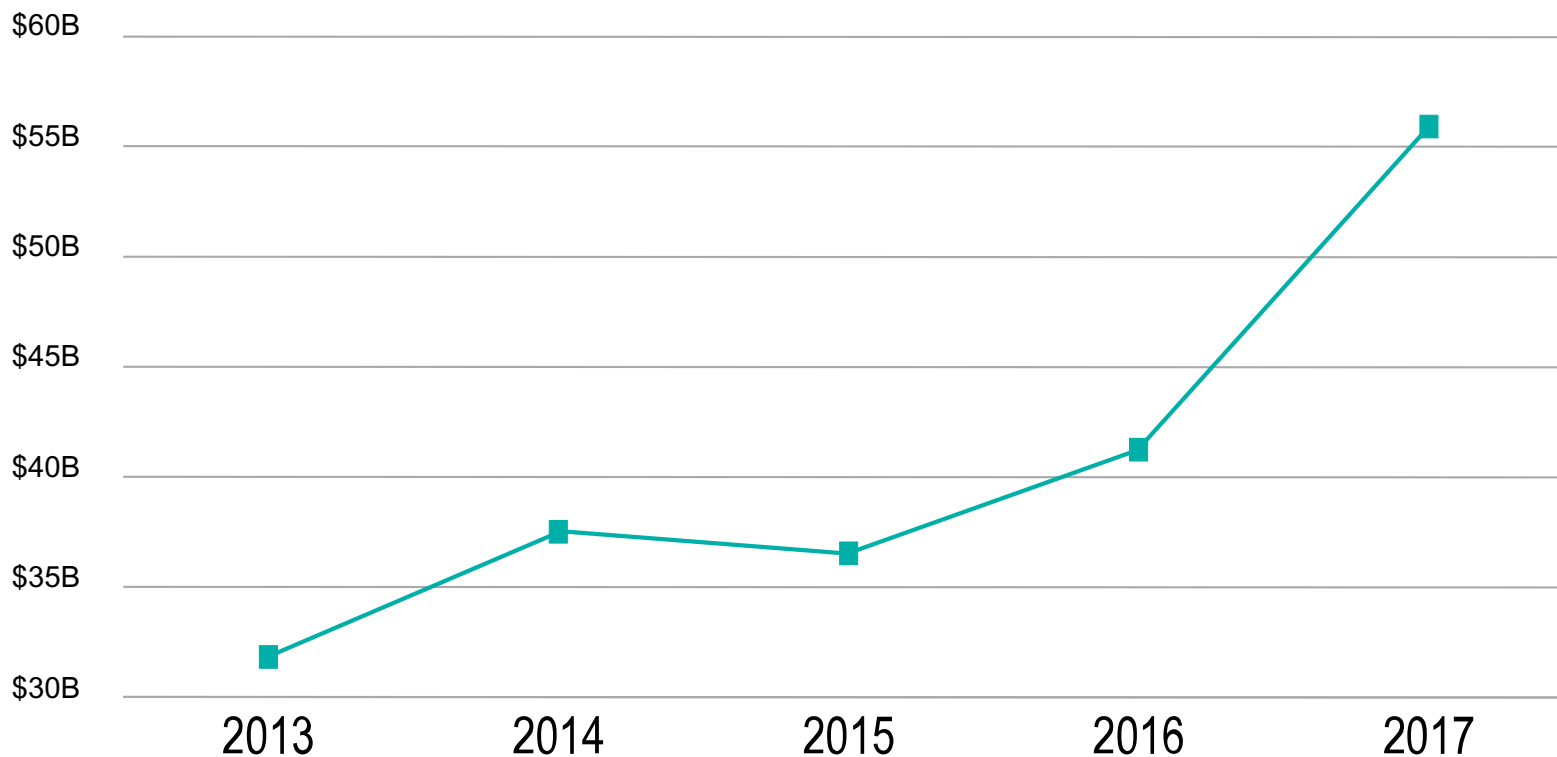
Industry Trends: M&A Value



Source: Global Semiconductor Alliance (GSA) Market Watch reports

Industry Trends: Semi Capital Equipment Revenue

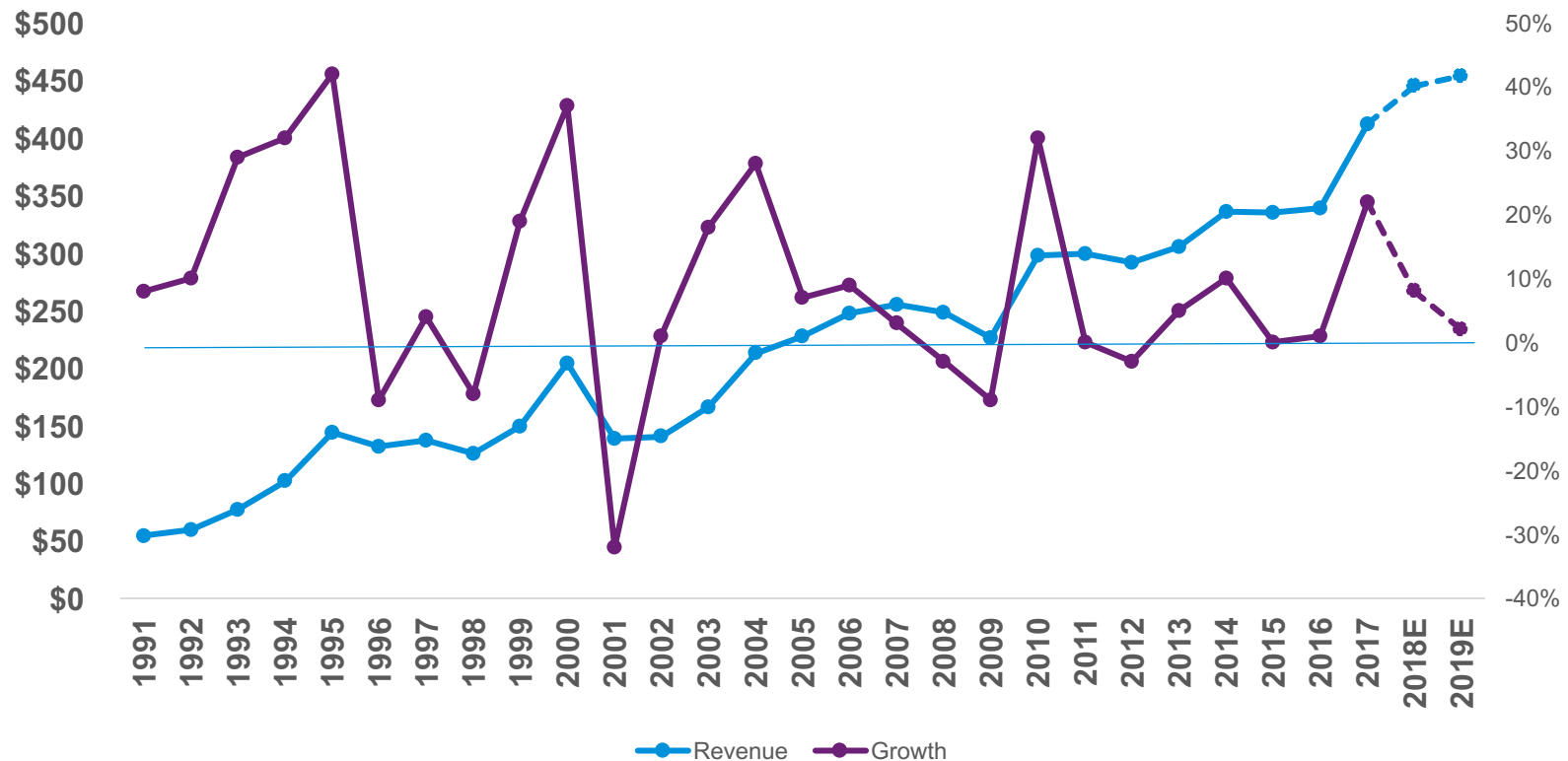
Semiconductor Equipment Sales



Source: SEMI Year-End Semiconductor Equipment Forecast, December 2017

Market Growth

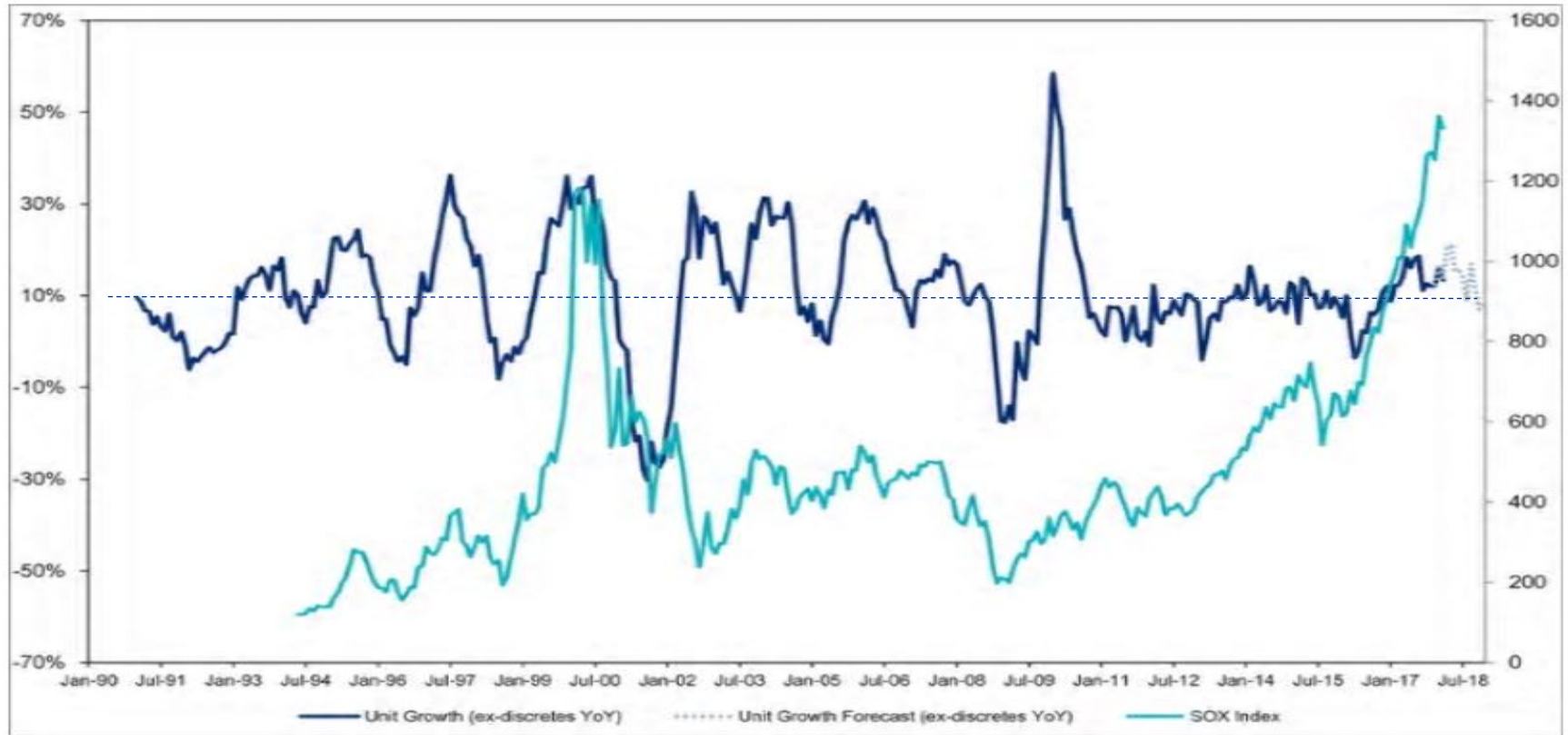
Semiconductor Revenue (\$B) and Growth (%)



2018 should bring another year of robust, albeit lower, growth. We expect the market to begin a correction in the second half of the year that will last through the first half of 2019

Unit Growth Hitting Recent Peaks

YoY Unit Growth

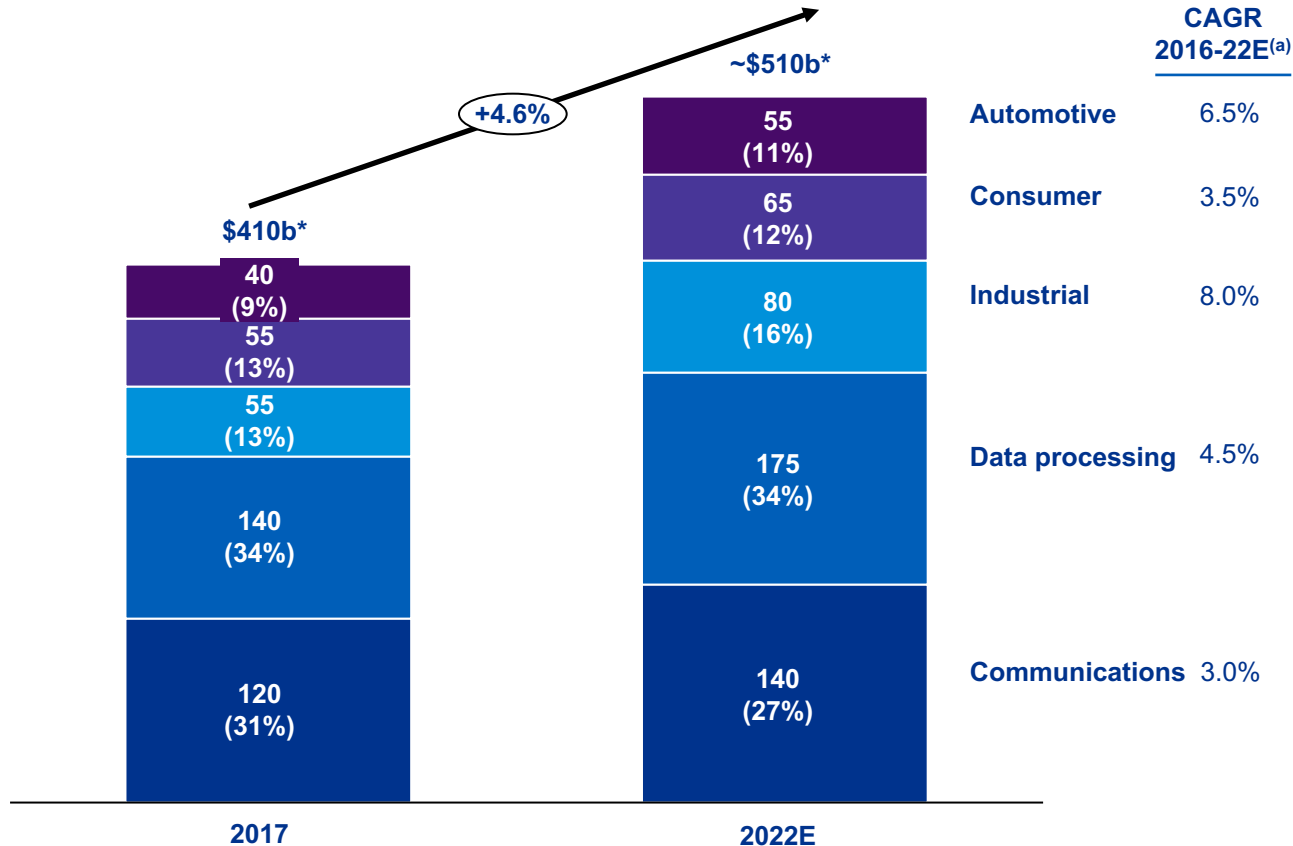


Source: Citi Research

Unit growth above 10% for an extended period of time has usually signaled that an inventory correction is likely in the next few quarters

Global Semiconductor Market Forecast

Semiconductor market by end-markets, \$b, 2017-22E^(a)



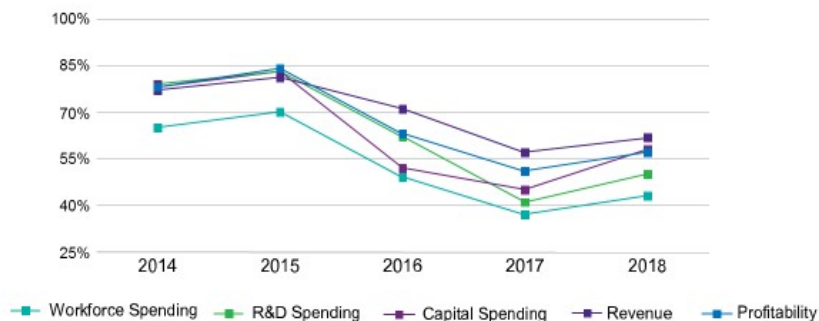
Semiconductors saw the highest growth in 2017 since the bounce back year of 2010 and expect to experience growth in the 5% to 10% range in 2018.

Note: (a) Based on a conservative estimate that 2016 to 2020E CAGR will extend to 2022
Forecast based on KPMG Research

Survey Overview

- Survey conducted in October 2017
- 150 Respondents at CEO or VP/Director level
- ~20% of respondents from companies below \$1B in revenue
- 50% of respondents from the US, 40% from APAC and 10% from EMEA

Financial and investment | Respondents expecting an increase



Source: KPMG Global Semiconductor Industry Survey 2017

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Survey Summary of Findings

- All financial and investment responses are up YOY
- 27% believe the industry is in an early expansion stage
- 51% said that total M&A valuations will increase in 2018 compared to 2017
- Several emerging technologies are climbing as “very important” to future industry revenues
- Global economic factors are expected to have the biggest impact on company growth in the next three years
- ASP erosion is still cited as the biggest industry issue in the next three years
- The #1 strategic priority is still “diversifying into a new business area”
- There is significant opportunity to become more efficient with R&D spending

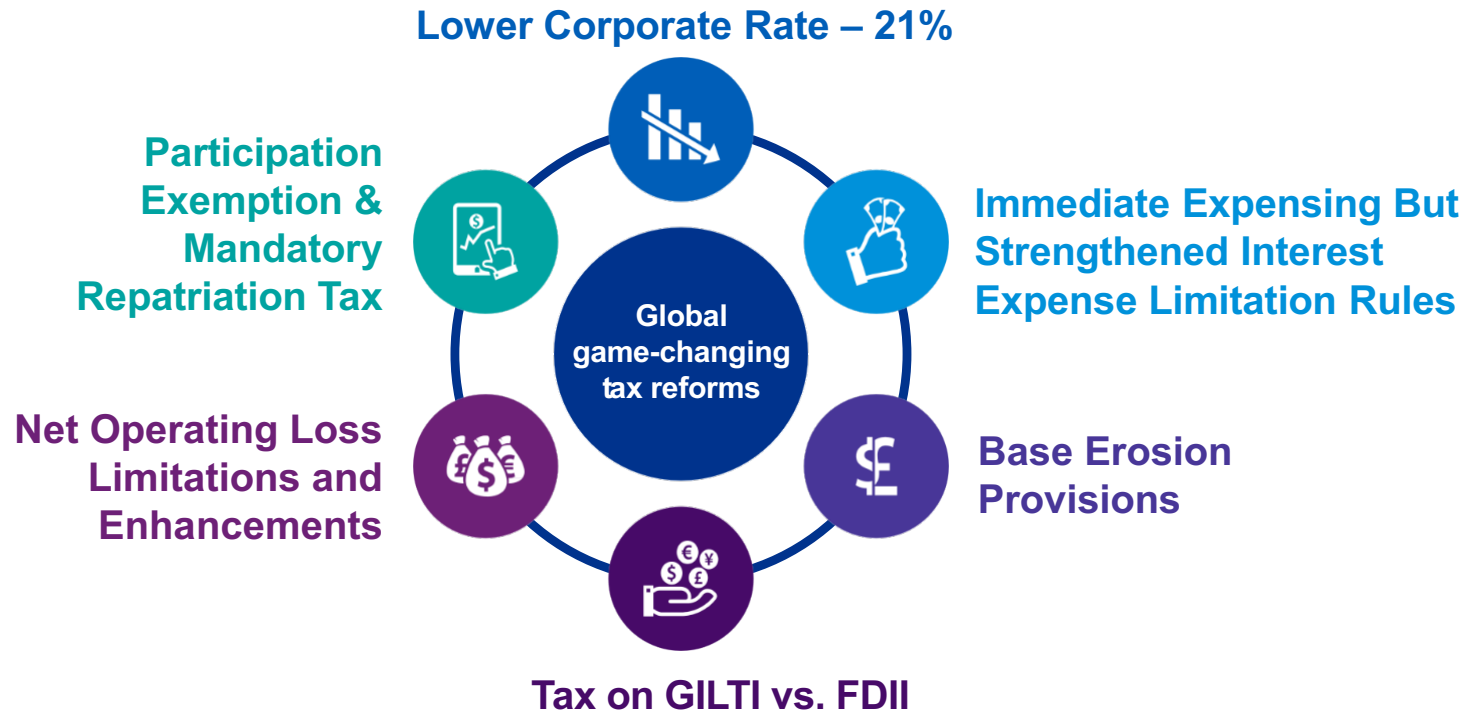


Regulatory Environment

Regulatory Landscape

- Tax Reform - expected to be a positive for the domestic market through lower tax rate and repatriation
- Tariffs and risk of a trade war – Bans on sales to ZTE. Limits on Huawei access to the US market.
- CFIUS and Federal Trade Commission – US blocking of Broadcom bid for QCOM. Numerous other deals blocked by the US or European Competition Committee.
- MOFCOM – Chinese regulatory body that is currently evaluating the QCOM – NXP Transaction
 - Similar implications for other deals such as Microsemi/Microchip

Tax Reform - Key Provisions



Impact of Tax Reform



R&D Impacts

- Movement of IP back on shore
- Amortization of R&D costs over a 5-year period



Capital Spending- could be a boost to investment in manufacturing but tariffs and need to on-shore more production may be more of a factor



M&A- bringing cash back on shore could boost M&A in the US market



Largest impact- increased distribution to shareholders through share buy backs and dividends

Conclusion

- We expect continued growth in 2018 after a year of massive growth in 2017 although we expect softness in demand in 2H 2018 and overall growth of ~8% for the year
- Enterprise strength driving PC and data center sales. Smartphone sales are the weakest end-market
- After roughly 12 months of unit growth above historical averages, lead times are starting to come in, signaling that an inventory correction may be near
- Semi-Cap equipment sales expected to peak in 2018 and decrease in 2019
- The M&A market hangs in the balance with government regulation being the main swing factor
- Tariffs and relations with China will be in focus with M&A and access to markets at risk
- Tax Reform – most companies are using the funds to increase buy backs and dividends



Questions?



kpmg.com/socialmedia

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