



## INVESTMENT UPDATE

# Opportunities in Semiconductor Equipment Suppliers

Semiconductor equipment suppliers are poised to benefit from two strong growth opportunities over the next several years that may likely shift investor perceptions that this is a “boom-bust”, highly cyclical part of the broader semiconductor industry. If so, this could have favorable implications for the valuations investors put on these companies. Semiconductor equipment suppliers provide tools for the manufacturing of semiconductors, including lithography tools, deposition and etch tools, and packaging and testing supplies and equipment. They can be thought of as the “arms dealers” in the push for chip technological leadership, as they sell new product to the chip manufacturers (in the industry, the manufacturers are referred to as foundries). The foundries, such as TSMC (Taiwan Semiconductor Manufacturing), Samsung, and Intel, sell their products—highly customized in collaboration with their customers—to Qualcomm, Nvidia, Apple, and AMD, among many others. Semiconductors are tied to economic growth, with strong demand trends linked to 5G, security, artificial intelligence, machine learning, autos (e.g., electric vehicles and autonomous driving), factory automation, and the Internet of Things, just to name a few. In addition, consumer-driven “need” for faster smartphones, better battery life, and new features provides additive growth opportunities. The higher demand for all things electronic fuels growth for semiconductor companies that feeds into the foundries and ultimately provides the tailwind for semiconductor equipment suppliers.

The COVID pandemic created semiconductor shortages and capacity constraints, a trend that will plague the chip manufacturers for at least the next year or so. Industry players have reaffirmed their commitment to sustain or gain leadership in semiconductor chip manufacturing, which should help propel the sustained growth in semiconductor equipment sales overall. Company announcements in 2021 on this front include:

- TSMC has pledged to spend \$100 billion in capex over the next three years.
- South Korea has announced plans to invest \$450 billion over the next decade (mostly tied to SK Hynix and Samsung expansion plans).
- Intel Corp. is expecting to increase its capital intensity by ramping its capex as a percent of revenue from 20% to 27% over the next three years (or \$20 billion per annum).

In our opinion, the demand for more and more computational power in more and smaller places (what semiconductors provide) would represent a growth opportunity that should run for several years. But there is a second factor at work

now: geopolitical forces that have not been present previously. The rupturing of complex supply chains in the semiconductor industry, built on years of experience with just-in-time inventory practices that placed a high level of importance on streamlining and speed, has been sobering to semiconductor managements. Second, the largest concentration of semiconductor manufacturing around the globe has evolved, largely in Southeast Asia. Many countries, let alone manufacturers, are concluding that there is a serious risk to their local economies from having such concentration of raw material production in one region of the world. It is almost as if the South China Sea is becoming the 21<sup>st</sup> century equivalent of the Strait of Hormuz in the Middle East, through which much global oil production flows. To that end, the Biden administration is proposing \$50 billion for semiconductor manufacturing and research to be in the U.S., and the EU has suggested funding of ~\$35 billion for similar ends.

As these different sources drive the spend on capital, we believe these investment dollars will add up to a significant amount of revenue for the semiconductor equipment suppliers. The rule of thumb is ~50% of spending by foundries for new capacity would be for actual production equipment while the remainder would be for buildings, clean room space, and R&D. The U.S. accounts for 12% of global chip production capacity today while Europe accounts for 9%. Intel's CEO has said he would like to see the U.S. at 30% of global capacity within the next 10 years and see Europe at 20%.<sup>1</sup>

### **So why do the customers of the foundries continue to spend so heavily on chip manufacturing?**

Semiconductors are becoming ubiquitous in everyday life – smartphones, cars, everyday appliances, etc. Better and faster electronics drive more complexity and Moore's Law (smaller chip geometries) continues to be one of the primary drivers of manufacturing and innovation to gain scale and drive down costs to win new customers or enter new segments. Capital intensity on wafer fabrication equipment spend, the total annual spending by all chip manufacturers on semiconductor equipment, has increased from \$30 billion in 2014 to more than \$80 billion today, a +15% compound annual growth rate. On the other hand, capital intensity as a percent of industry EBITDA (earnings before interest, taxes, depreciation, and amortization) is down 40% over the last decade. In other words, incremental spending has become much more profitable than it's ever been.<sup>2</sup> It's not a surprise that the foundries continuously push to be on the leading edge and a significant portion of their investments directly benefits the semiconductor tool suppliers.

Finally, while the broad-based global spend across the semiconductor equipment suppliers is a strong tailwind, the industry has also undergone significant change over the past decade, with increased consolidation that has given companies better visibility, more muted cycles, and significantly higher profitability and free cash flows. All these factors provide tailwinds to the growth and continued profitability of the semiconductor equipment industry.

In summary, there's a lot to like in the semiconductor equipment supplier segment given the multiple catalysts for growth and opportunity. The suppliers' customers (the foundries) will experience strong secular demand to build capacity. As a result, they will need more from their suppliers, which find themselves in the early innings of a long secular demand game. Layer it all together with the overall desire for more technology sovereignty and the semiconductor equipment suppliers should see strong, sustainable growth into the foreseeable future.

**For more information on this topic, please email us at [contactus@sbhic.com](mailto:contactus@sbhic.com).**

<sup>1</sup> Source: WSJ, 8/17/21, "Intel CEO Pitches Pricey Chip Plants to Officials at Home and Abroad". <sup>2</sup> Source: Cited from Dan Durn, CFO of Applied Materials, 3Q21 earnings call, 8/19/21. This information has been prepared solely for informational purposes and is not intended to provide or should not be relied upon for investment, accounting, legal, or tax advice. The factual statements herein have been taken from sources we believe to be reliable, but such statements are made without any representation as to accuracy or completeness. These materials are subject to change, completion, or amendment from time to time without notice, and Segall Bryant & Hamill is not under any obligation to keep you advised of such changes. This document and its contents are proprietary to Segall Bryant & Hamill and no part of this document, or its subject matter should be reproduced, disseminated, or disclosed without the written consent of Segall Bryant & Hamill. Any unauthorized use is prohibited. Last updated 3Q21.