Section I. Summary

Japan hailed the fifth-largest semiconductor manufacturing equipment market\(^1\) in the world in 2014, capturing an 11 percent share. Its domestic market has grown modestly in the past several years, and that trend is expected to continue into 2016. In particular, a domestic shift toward smart cars and robotics will help maintain demand.\(^2\) Opportunities for U.S. enterprises could grow if the World Trade Organization (WTO) passes an expansion of IT items excluded from tariff schedules under the Information Technology Agreement (ITA) of 1997.\(^3\)

Section II. Market Demand

Strong demand in the capital equipment market caused growth to jump 24 percent from 2013 to 2014,\(^4\) well above the world average growth rate of 18 percent.\(^5\) SEMI projected that the growth rate in Japan would stabilize at about 6.5 percent from 2014-2015 and 6.8 percent from 2015-2016.\(^6\) Moreover, SEMI predicts that in 2016, Japan will reclaim the number four spot from China that it lost in 2015, expanding to $4.71 billion; China’s estimated size will be $4.62 billion.\(^7\) These data signal a promising future for U.S. companies interested in entering the Japanese market.

Japan has the second-largest semiconductor materials market by revenue after Taiwan, accounting for 17 percent of the $44.7 billion global revenue. This is because Japan hosts a very large fab facility that heavily contributes to its share.\(^8\) In addition, five of the top ten semiconductor manufacturing equipment vendors by revenue in 2014 have their headquarters in Japan. They include Tokyo Electron (third), Dainippon Screen Group (sixth), Advantest Corporation (seventh), Hitachi High-Technologies (ninth), and Nikon Corporation (tenth).\(^9\)

Semiconductor Capital Equipment Market Share by World Region in 2014

![Semiconductor Capital Equipment Market Share by World Region in 2014](chart.png)

Source: SEMI/SEAJ, March 2015
Section III. Best Prospects

A 2014 KPMG report showed that 54 percent of companies surveyed believe that robotics will serve as the principal revenue driver of semiconductors in the next three years. Because Japan is shifting toward developing more robotic technologies, U.S. firms may discover more chances to supply parts. Prime Minister Shinzo Abe expressed his commitment to the idea of robots at the May 15 opening of Japan’s Robot Revolution Initiative Council, at which he encouraged companies to “spread the use of robotics from large-scale factories to every corner of our economy and society.” The government-led Council seeks to raise sales in robotics from $6 billion annually to $24 billion annually by 2020. Japan’s declining population may stimulate demand for service robots in particular, and U.S. firms have the potential to contribute to their development through the production of advanced microchips.

In addition, electronics used in smart cars are on the rise. Pedestrian-detection radar and crash-prevention mechanisms, for example, present excellent opportunities for U.S. manufacturers to capitalize on this movement. Global demand for the most advanced parts could grow as much as 13-fold through 2020. The upcoming Tokyo Olympics will further stimulate investment as electronics companies prepare to showcase the city and their products for the games.

Section IV. Key Suppliers

In 2013, the American company Applied Materials held the greatest worldwide market share at 16.2 percent, in large part due to its comparative advantage in deposition and etch. ASML of the Netherlands nearly matched that with 15.7 percent of the global market, followed by Lam Research and Tokyo Electron. The top five vendors, one of which is Japanese, commanded more than 55 percent of the global market, a 5-point increase from 2012. This indicates a shift toward a more concentrated market dominated by fewer players. All Japanese companies in the top 10 markets suffered from the changing yen-to-dollar exchange rate, as the yen became more expensive abroad. While these data reflect the current global climate, the situation is likely similar in Japan.

Applied Materials and Tokyo Electron announced their intention to merge in a deal last July worth $29 billion, but the arrangement collapsed after the U.S. Department of Justice and others raised antitrust concerns; the government believed that the merger would stymie innovation of computer chips and allow the new company Eteris to hike prices for its services. The deal was pending for 580 days before both companies finally scrapped negotiations.

Section V. Prospective Buyers

Any firm that uses semiconductors in its products could potentially purchase manufacturing equipment. Specifically, automobile entertainment systems, robotics, and a tendency toward larger TV monitors may present special openings.
Section VI. Market Entry

To enter the Japanese market, U.S. firms should establish a direct presence in Japan. Small or medium-sized companies may wish to consider partnering with Japanese distributors, but all companies should seek to cultivate strong long-term relationships with Japanese affiliates. Moreover, American firms must prioritize excellent customer service and after-sales support in order to succeed in this market.

Section VII. Market Issues & Obstacles

No significant regulatory obstacles currently exist that would hinder the entry of semiconductor equipment firms, but the firms must place a high value on good support and service for their customers. The WTO ITA 2 negotiations, which seek to expand the list of eligible tariff-free IT products, could offer companies a new source of revenue to potential U.S. firms producing advanced electronic chips. Cutting-edge microchips fall out of the scope of the current ITA provisions. Negotiations on ITA 2 stalled in December 2014 when China balked at reducing tariffs on advanced lithium batteries.  

Section VIII. Trade Events

SEMICON Japan 2015
Date: December 16-18, 2015
Venue: Tokyo Big Sight
Exhibition website: http://www.semiconjapan.org/en/

The 45th INTERNEPCON JAPAN
Date: January 13-15, 2016
Venue: Tokyo Big Sight

JPCA Show 2016
Date: June 1-3, 2016
Venue: Tokyo Big Sight

Section IX. Resources & Contacts

SEMI Market Data Information
SEMI is a global industry association that serves the manufacturing supply chain for the micro- and nano-electronics industries, including: semiconductors, photovoltaics (PV), High-Brightness LED, Flat Panel Display (FPD), and others.
Data on semiconductor equipment sales forecast: http://www.semi.org/node/52451
Data on global semiconductor equipment sales: http://www.semi.org/node/55306
Semiconductor Equipment Association of Japan (SEAJ)
SEAJ has functioned as a private organization since 2012 to promote the development of the semiconductor manufacturing equipment industry. The group holds cooperative exchanges with related organizations at home and abroad in order to assist semiconductor manufacturing equipment and related equipment companies in improving their business operations and technologies.
http://www.seaj.or.jp/english/about/index.html

Japan External Trade Organization (JETRO)
JETRO is an independent administrative agency that provides information and support to foreign companies entering the Japanese market. The organization has six offices in the United States.
http://www.jetro.org

Section X. For More Information

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Comments and Suggestions: We welcome your comments and suggestions regarding this market research. You can e-mail us your comments/suggestions to: Customer.Care@mail.doc.gov. Please include the name of the applicable market research in your e-mail. We greatly appreciate your feedback.

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In this report, semiconductor equipment includes: wafer processing, assembly and packaging, and other front-end equipment related to fab facilities, wafer manufacturing, and mask/reticle manufacturing.


All converted figures assume an exchange rate of 1USD=100 Japanese yen.


