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Background and Authorities

Erika Maynard



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Bureau of Industry and Security Office of Technology Evaluation (OTE)

- Divisions:
 - Data Analytics Division
 - Defense Industrial Base Division
- Focal point within BIS for analyzing:
 - Trade data
 - The impact of export controls on U.S. interests
 - The capabilities of the U.S. industrial base to support the national defense



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Office of Technology Evaluation (OTE)

- Industrial base surveys and assessments
 - Defense Production Act survey authority
 - Export Control Reform Act (ECRA) – Section 1752 & 1756
- Analysis on critical and emerging technologies
 - ECRA Section 1758
- Section 232 Investigations
 - Investigating effect of imports on national security
- Analyzing export licensing and trade data
- Conducting primary research and analysis on critical technologies and industrial sectors
- Gauging effect of dual-use export control system on U.S. interests
- Analyzing foreign availability of critical products and technologies; (79 FR 53166)
- Administers Technical Advisory Committees
- Administers the Section 232 Steel and Aluminum Exclusion Process

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Industrial Base Surveys & Assessments Collection Authorities



- **Enable industry and government agencies to:**
 - Share data and collaborate in order to ensure a healthy and competitive industrial base
 - Monitor trends and benchmark industry performance
 - Raise awareness of diminishing manufacturing and technological capabilities
- **Paperwork Reduction Act (PRA) Information Collection Authority**
 - **Section 705** [DPA, EO 13603]
 - OMB Control Number: 0694-0119
 - **Needs Assessment** [DPA, EO 13603]
 - OMB Control Number: 0694-0083
 - **Section 232** [TEA]
 - OMB Control Number: 0694-0120
 - **EAR 768/Foreign Availability** [ECRA]
 - OMB Control Number: 0694-0004

[Executive Order 13603](#)
[Section 705 Regulation](#)

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Industrial Base Surveys & Assessments Section 705

- **Under § 705 of the Defense Production Act of 1950 and § 104 of Executive Order 13603 (2012), BIS conducts studies that assess:**
 - The capabilities of the U.S. industrial base to support the national defense and essential civilian requirements
 - Economic health and competitiveness
 - Defense capabilities and readiness
- **Mandatory data collection authority under Section 705 of the DPA:**
 - To produce these studies, BIS may issue surveys to collect information related to the health and competitiveness of the U.S. industrial base from government sources and private individuals or organizations.
 - BIS deems the information supplied in response to surveys to be confidential and is prohibited by law from publishing or disclosing such information unless the Under Secretary for Industry and Security uses delegated authority to determine that withholding the information is contrary to the interest of the national defense.
 - OMB approved industry burden hours and surveys
 - Data exempt from Freedom of Information Act (FOIA) requests

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Industry Surveys & Assessments: Process – typically 12-18 months

- Partner with Federal Agencies and other Stakeholders
 - IAAs and funding
- Background research
- Site visits and survey field tests
- Cooperative survey instrument development
- OMB approval under the PRA
- Compliance process:
 - 30-day survey response deadline
 - Complete survey responses typically require 5-7 interactions per respondent
- Data cleaning and analytics
- Report writing and editing

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Industry Surveys & Assessments

Survey Overview

- Extensive survey instruments contain several thousand variables, customized by project, include quantitative and qualitative data
- Ongoing partnership with Census Bureau to host survey submission portal, provide automated data parsing, and develop future online survey instruments
- Key issues examined:
 - Economic health and competitiveness
 - Production capabilities and constraints
 - Supply chain network, customers and suppliers
 - Foreign competition, sourcing, and dependencies
 - Sales, exports, market share
 - Investment and R&D
 - Employment and core competencies
 - Cyber security and export controls
 - Financial performance
 - Other topics as needed

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Recent Industrial Base Surveys and Assessments

- **U.S. Air Force Sustainment Supply Chain – Air Force Sustainment Center**
 - Objectives:
 - Identify the structure and interdependencies of organizations that participate in U.S. Air Force sustainment operations, including maintenance, repair, and overhaul activities
 - Provide insight into supply chain deficiencies, such as diminishing manufacturing sources and material shortages (DMSMS), foreign sourcing and dependency, financial performance, cyber security incidents, use of critical minerals and other challenges facing the defense industrial base
- **Information and Communications Technology (ICT) Survey**
 - Objectives:
 - Allow the U.S. Government and industry to understand the extent to which certain types of information network technologies are employed in products sold by organizations operating in the United States
 - Benchmark industry practices and raise awareness of any issues of concern

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Ongoing Industrial Base Assessments

- Public Health Industrial Base (PHIB) Assessment
 - Partner: Health and Human Services (HHS), Office of the Assistant Secretary for Preparedness and Response (ASPR)
 - PHIB assessments include three consecutive surveys focusing on raw materials, advanced pharmaceutical ingredients (APIs), and other supplies required to produce:
 - 1) Influenza vaccine
 - 2) Food and Drug Administration-designated essential medicines
 - 3) High consequence biological medical countermeasures
- Civil Space Industrial Base Assessment
 - Partner: National Aeronautics and Space Administration (NASA), Office of the Administrator (OA), and the National Oceanic and Atmospheric Administration (NOAA), National Environmental Satellite, Data, and Information Service (NESDIS)
 - Multi-year collaboration will serve primarily to evaluate the current health and competitiveness of the civil segment of the U.S. space industrial base

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Section 232 Statute - Background

- **Authority:** Trade Expansion Act of 1962, as amended
- **Objectives:** Determine the effect of imports on the national security, and whether the importation of the article in question is in such quantities or under such circumstances as to threaten to impair the national security.
- **Initiation:** May be initiated based on an application from an interested party, a request from the head of any department or agency, or may be self-initiated by the Secretary of Commerce

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Section 232 Investigations

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Section 232 Investigation Process



1. Provide notice to the Secretary of Defense of any initiated investigations
2. Consult with DoD on methodology and policy questions raised in the investigation
3. Seek information/advice/consultation with USG interagency
4. If appropriate, hold public hearings or afford persons an opportunity to present relevant information and advice
5. By request, DoD will provide DOC with assessment of the defense requirements of any article subject to an investigation

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Section 232 Investigations - Criteria Studied

Section 232 recognizes the close relation of the economic welfare of the nation and our national security. Among the most relevant criteria are:

- Production needed to meet defense/other sector requirements
 - Consider both national defense and critical infrastructure needs
- Industry's capacity/growth to meet projected demands
- Requisite quantity, quality, and availability of imports
- Displacement of domestic products causing:
 - Substantial unemployment
 - Decrease in revenues
 - Loss of investment, specialized skills, and/or productive capacity
- Other factors relevant to unique circumstances

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Section 232 Investigation - Timeline

- The Secretary of Commerce has 270 days to present the Department's findings and recommendations to the President
- The President has 90 days to determine whether to agree with the Secretary's findings, and to determine whether to "adjust imports"
- If pursued, the President has 15 days to implement any adjustment to imports
- No later than 30 days after the President's 90-day determination period, the President shall submit to Congress a written statement of the reasons for deciding to take/refusing to take action

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Recent Section 232 Investigations

- **Steel (January 2018)**
 - Finding: Positive
 - Outcome: Trade Actions, with Exclusion Process
- **Aluminum (January 2018)**
 - Finding: Positive
 - Outcome: Trade Actions, with Exclusion Process
- **Automotive and Automotive Parts (February 2019)**
 - Finding: Positive (Investigation led by ITA)
 - Outcome: The President instructed USTR to negotiate agreement with Japan, the EU, and others to address the threat
- **Uranium (April 2019)**
 - Finding: Positive
 - Outcome: Nuclear Fuel Working Group
- **Titanium Sponge (November 2019)**
 - Finding: Positive
 - Outcome: Titanium Sponge Working Group
- **Transformer Components – GOES, Laminations, Cores (October 2020)**
 - Finding: Positive
 - Outcome: No action to adjust imports
- **Vanadium (February 2021)**
 - Finding: Negative
 - Outcome: No action to adjust imports

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Section 232 Investigation on Neodymium-Iron-Boron (NdFeB) Permanent Magnets

- Initiated by Secretary of Commerce Raimondo on September 21, 2021
- A Federal Register Notice was published on September 27, 2021 to solicit public comments
 - BIS received 41 comments from foreign businesses (5), foreign governments (4), individuals (3), industry associations (12), and U.S. businesses (17)
- BIS conducted a survey of the U.S. NdFeB magnet industry including all known and emerging players in the domestic supply chain, as well as a sampling of importers/finishers and key end users
- The report was sent to the President on June 18, 2022
 - The President has 90 days after the submission of the report (September 16, 2022) to determine whether he concurs with the Secretary's findings

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Foreign Availability Assessments

- At the request of industry, a Technical Advisory Committee, or the Secretary of Commerce, OTE determines whether an item controlled for national security reasons of comparable quality is available-in-fact from non-U.S. sources in sufficient quantities to render the control of that item ineffective
- Within six months of receipt of an industry petition, OTE gathers, coordinates and analyzes relevant information to determine if controls are effective
- Foreign availability assessments are conducted pursuant to Part 768 of the Export Administration Regulations (EAR). The authority to conduct these assessments is derived from sections 5(f) and 5(h) of the Export Administration Act of 1979, as amended (EAA)

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Data Analytics on the Effectiveness of Export Controls

- Controlled Trade Trend Analyses
 - OTE analyzes U.S. export data from the Automated Export System (AES) and BIS license application data to more fully inform export policy decisions on Commerce Control List (CCL) items which have both a civilian and military or proliferation-related use
 - This includes examining licensed, license exception, and unlicensed AES transactions subject to the Export Administration Regulations (EAR) and scrutinizing BIS approved, denied and returned license applications.
 - OTE also uses the findings from its analysis to educate industry at AES seminars on proper reporting of items subject to the EAR in the AES
- Competitiveness Evaluations
 - OTE analyzes the economic impacts that export controls are having on U.S. exporters and technology sectors
 - This involves determining the utilization rates of export licenses and the correlation between export control administration and shipments against licenses items

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Technical Advisory Committees (TACs)

- TACs advise the Department of Commerce on the technical parameters for export controls on items subject to the Export Administration Regulations
- Industry representatives are selected from firms producing a broad range of items that are controlled for national security, foreign policy, and nonproliferation reasons, or that are proposed for such controls, balanced to the extent possible among large and small firms
- BIS's seven TACs are composed of representatives from industry and the U.S. Government representing diverse points of view
 - Emerging Technology Technical Advisory Committee
 - Information Systems Technical Advisory Committee
 - Materials and Equipment Technical Advisory Committee
 - Regulations and Procedures Technical Advisory Committee
 - Sensors and Instrumentation Technical Advisory Committee
 - Transportation and Related Equipment Technical Advisory Committee

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Supply Chain Resiliency

Jason Bolton



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OTE's Approach to Supply Chain Analysis



Horizon Scanning (1)

Risk Identification (2)

Risk Categorization and Mitigation Criteria (3)

Option Evaluation (4)

Policy Recommendations (5)

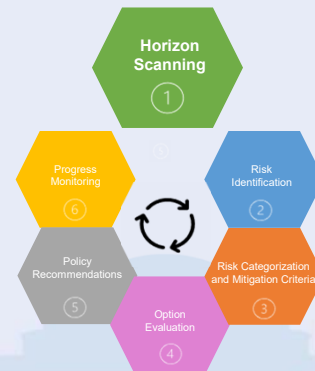
Progress Monitoring (6)

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Horizon Scanning

- Analysis across 16 critical infrastructure sectors as well as critical and emerging technologies (ECRA Section 1758)
- Interagency partnerships to evaluate potential supply chain risks
- Collect data; identify and assess supply chain risks
- Section 705 Surveys; Section 232 Investigations
- Strategic Engagements and Outreach



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Risk Identification

- Identify potential supply chain threats to U.S. national defense and critical infrastructure, including:
 - Lack of domestic capabilities
 - Over-reliance on non-U.S. sources
 - Chokepoint risks
- Utilize unique authorities to collect data and identify specific supply chain threats
 - Section 705 Surveys
 - Section 232 Investigations
 - Foreign Availability Assessments
 - Needs Assessments



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Risk Categorization and Mitigation Criteria

- Evaluate level of risk posed by identified threats
- Identify criteria for successfully mitigating threat



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Option Evaluation

- Evaluate supply chain risk mitigation options
- Determine potential for timely adoption and effectiveness



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Policy Recommendations

- Recommend specific policy actions and identify resources requirements
- Engage with relevant USG agencies to implement
- Establish evaluation criteria and monitoring



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Progress Monitoring

- Assess progress of policy implementation
- Determine if goals are being met
- Reevaluate metrics for success and policy actions as needed



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Building Supply Chain Resiliency & Industrial Base Awareness

- Executive Order 14017
 - ICT Supply Chain Report
 - 100 Day Report on Semiconductors
- Request for Information (RFI): Risks in the Semiconductor Supply Chain
- FY21 National Defense Authorization Act Microelectronics Assessment - Section 9904
- Ongoing Semiconductor Analysis

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Executive Order 14017
ICT Supply Chain Report & 100 Day Report on Semiconductors
Maura Weber

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Executive Order (EO) 14017, On America's Supply Chains
Excerpts of EO 14017, Published on February 24, 2021

One Year Review of the Information and Communications Technology Supply Chains:
Section 4(a)(iii): "Within 1 year of the date of this order, the specified heads of agencies shall submit the following reports to the President, through the APNSA and the APEP: The Secretary of Commerce and the Secretary of Homeland Security, in consultation with the heads of appropriate agencies, shall submit a report on supply chains for critical sectors and subsectors of the information and communications technology (ICT) industrial base (as determined by the Secretary of Commerce and the Secretary of Homeland Security), including the industrial base for the development of ICT software, data, and associated services."

100 Day Review of the Semiconductor Supply Chain:
Section 3(b)(i): "Within 100 days of the date of this order, the specified heads of agencies shall submit the following reports to the President, through the APNSA and the APEP: The Secretary of Commerce, in consultation with the heads of appropriate agencies, shall submit a report identifying risks in the semiconductor manufacturing and advanced packaging supply chains and policy recommendations to address these risks. "

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Executive Order 14017: ICT Supply Chain Assessment

Objective:
The objective of this assessment is to set forth an actionable strategy for the Biden-Harris Administration and industry to mitigate risk and build resilient and secure supply chains for critical sectors supporting the ICT industry.

Scope of the Assessment:
The ICT assessment includes a study of the supply chains supporting communications hardware, computing and data storage hardware, end-user devices as well as the critical software including open-source software and firmware.

Outline of the Report:

- ❖ Overview of ICT Industrial Base and Critical End Use Markets
- ❖ ICT Manufacturing and Related Risks
- ❖ ICT Software Sector and Related Risks
- ❖ ICT Workforce and Related Risks
- ❖ Cross-Cutting Supply Chain Vulnerabilities
- ❖ External Risks to the ICT Industrial Base Supply Chain
- ❖ Recommendations to Strengthen ICT Supply Chain Resiliency

[The ICT Supply Chain Assessment](#) was published on February 24, 2022

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Key Findings from the ICT Supply Chain Assessment

Manufacturing Base:

- The United States continues to lead in ICT development and innovation while maintaining a limited domestic manufacturing base. The production of many products such as printed circuit boards (PCBs) and displays has become increasingly concentrated in China, along with electronics assemblies.

Software Sector:

- The complexity of the ICT supply chain has led many Original Equipment Manufacturers (OEMs) to outsource firmware development to third party suppliers, which introduces product integrity and transparency risks.

Workforce Pipeline:

- The U.S. ICT industry face challenges finding qualified employees across occupations including manufacturing roles and software development roles.

Cross-Cutting Supply Chain Vulnerabilities:

- Structural vulnerabilities identified across the ICT supply chain include the lack of a domestic ecosystem for many segments of ICT production, overreliance on single-source and single-region suppliers, and the difficulty in maintaining product integrity due to complex supply chains.

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Strategy to Strengthen ICT Supply Chain Resiliency

Primary Objectives:

1. Revitalize the U.S. ICT Manufacturing Base
2. Build Resilience through Secure and Transparent Supply Chains
3. Collaborate with International Partners to Improve Supply Chain Security and Resiliency
4. Invest in Future ICT Technologies
5. Strengthen the ICT Workforce Pipeline
6. Ensure that Sustainability Remains a Cornerstone of ICT Development
7. Engage with Industry Stakeholders on Resiliency Efforts
8. Continue to Study the ICT Industrial Base

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Executive Order 14017:100 Day Report on Semiconductors

- Executive Order 14017, Issued February 24, 2021
 - “Within 100 days of the date of this order, the specified heads of agencies shall submit the following reports to the President...”:
 - The Secretary of Commerce, in consultation with the heads of appropriate agencies, shall submit a report identifying **risks in the semiconductor manufacturing and advanced packaging supply chains** and policy recommendations to address these risks.”
- Report structure:
 - Mapping of Supply Chain
 - Risk Assessment
 - Global Footprint
 - Opportunities and Challenges
 - Recommendations
- 100-day report [*Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth*](#), released June 8, 2021

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Executive Order 14017

Mapping of the Semiconductor Supply Chain

Segment	Bottom Line
Design	Chips designed by U.S.-based companies are often manufactured in Taiwan or China and require deep cooperation with these fabs. The value of proximity to customers and deep understanding of end use means that customer and application location matter for the long-term structure of the market.
Fabrication	The U.S. lacks sufficient capacity to manufacture semiconductors, with zero capacity at the leading edge. Rising costs of constructing and operating fabs make it difficult to run a fab without large volumes of orders, which have increasingly gone to facilities in Taiwan, South Korea, and China.
Assembly, Testing, and Packaging (ATP) and Advanced Packaging	Dependence on ATP production in Southeast Asia, Taiwan and China exposes the U.S. supply chain to disruptions. Furthermore, technological advances in advanced packaging raise the importance of packaging in the semiconductor value chain. While Intel and other U.S. integrated device manufacturers (IDMs) carry out advanced packaging, the U.S. lacks capabilities in advanced packaging substrates, with U.S. printed circuit board manufacturing technologies generally lagging years behind those in Asia.
Materials	U.S. production of semiconductor-grade polysilicon is at risk from China's actions to increase its dominance, both for semiconductors and solar supply chains. The U.S. lacks manufacturing capacity to transform polysilicon into polished, blank wafers, relying on Japan, Taiwan, Germany, and South Korea. Some specialty electronic grade gases have limited domestic sourcing.
Equipment	U.S. producers are dominant in several areas but are highly dependent on foreign sales. Chinese subsidies may distort the market as the country seeks increased domestic semiconductor capabilities without the same reliance on short-run profits that most market-based economies exhibit

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Executive Order 14017

Risks in the Semiconductor Supply Chain

1. Fragile Supply Chains: Many Inputs, Industry Concentration, Geographic Concentration
2. Malicious Supply Chain Disruptions: Insertions, Counterfeits
3. Legacy and Obsolete Products: National Defense, Critical Infrastructure
4. Customer Concentration and Geopolitical Factors: Dependence on China, Potential for International Conflict
5. Electronics Production Network Effect: Erosion of U.S. microelectronics ecosystem
6. Human Capital Challenges
7. Intellectual Property Theft
8. Challenges in Capturing the Benefits of Innovation, Aligning Private and Public Interests

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Executive Order 14017

100 Day Report on Semiconductors Policy Recommendations

- Provide Government Funding for the Domestic Semiconductor Industry
 - Fund legislation like CHIPS Act, Endless Frontier Act/USICA, Made in America tax plan
 - Increasing federal investments in semiconductor research
 - Creating incentives for new or expanded ecosystem of domestic semiconductor manufacturing facilities
- Strengthen Education/Workforce Training
 - Include with above federal incentives prerequisites for investments in training and education
 - Investing in community college infrastructure
 - Review and evaluation of current visa and green card categories and policies
- Promote Effective Supply Chain Management/Inventory Practices
 - Provide companies with assistance in creating resilient supply chains
- Engage with Allies and Partners on Semiconductor Supply Chain Resiliency
 - May include efforts to encourage foreign foundries and materials suppliers to invest in the United States and other regions to provide a diverse supplier base

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Request for Information (RFI)

Risks in the Semiconductor Supply Chain

Paula Espitia

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**Request for Information (RFI)
Risks in the Semiconductor Supply Chain**

- Issued September 24, 2021
- Objective:** To improve the exchange of information between semiconductor suppliers and end-users.

RFI Responses: 164 Total

- 55 Responses from Intermediate or End-Users
- 44 Responses from Semiconductor and Related Product Suppliers
- 21 Responses Material/Equipment Providers
- 44 Responses from Other Entities

Semiconductor Users by Primary Market Segment

Primary Market Segment	Percentage
Automotive	42%
Healthcare/Medical	18%
IT/Mobile Devices/Network Infrastructure	16%
Industrial	13%
Appliances/Consumer Goods	6%
All Other	5%

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**Risks in the Semiconductor Supply Chain RFI
Key Preliminary Findings**

- Production and Allocation**
 - Most major semiconductor producers submitted data
 - End users were primarily from the automotive, aerospace, and medical sectors
 - Shares of semiconductor sales for mobile device and servers increased from 2019 to 2021; shares for aerospace, automotive, and medical end uses decreased
- Lead Times**
 - Lead times increased significantly from 2019 to 2021, led by time required for acquisition of manufacturing inputs
 - Chips fabricated in the U.S. increased from a median lead time of 180 days in 2019 to 350 days in 2021
- Demand**
 - Rising book-to-bill ratios were largely driven by companies whose primary end use was automotive; most other major producers reported minimal increases in book-to-bill ratios
 - Demand has run an estimated 17-20% ahead of supply, with this level of mismatch expected to continue for the next 6 months
 - Inventories across the sectors are sharply down. The automotive sector was most significantly affected.
- Perspectives**
 - Many respondents pointed a lack of available production capacity, citing the need to fund the CHIPS Act to support longer term production in the U.S.
 - Several comments noted that expanded capacity should be broad, including investments in mature nodes, back-end services, and availability of production materials

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Risks in the Semiconductor Supply Chain RFI Actions and Recommendations

- Key Quotes:
 - *“Congress must ensure that the Commerce Department has the flexibility to provide incentives in the Section 9902 program for new and expanded facilities to produce [equipment] and semiconductor materials. This will ensure that expanded U.S. semiconductor production is not restrained by shortages of needed equipment and materials” – Trade Association*
 - *“Increased government R&D funding should be targeted toward areas that will bolster US fabrication capabilities and competitiveness, such as raw materials mining, packaging technologies, SRAM-replacement technologies, EUV lithography tooling, and methods to make U.S. fabrication of prototypes and smaller-volume chips more economically viable.” – Intermediate/End User*
- With chip suppliers operating at historically high-capacity utilization, most respondents indicated that the most appropriate long-term response was increased investment and expansion of production capabilities, which can be supported by government incentives
- Increased investment is necessary across the supply chain, from material inputs and production materials to manufacturing equipment to assembly and packaging capabilities
- Passing and implementation of the CHIPS Act (Bipartisan Innovation Act) to accelerate creation of additional semiconductor manufacturing capacity

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FY21 National Defense Authorization Act Microelectronics Assessment - Section 9904

Saiyara Khan

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FY 2021 National Defense Authorization Act (NDAA)
Section 9904

Section 9904 requires that the Secretary of Commerce undertake a review of the microelectronics industrial base, including a survey using authorities in section 705 of the Defense Production Act of 1950 (50 U.S.C. 4555)

- I. Geographic scope of operations
- II. Relevant cost structures
- III. Identification of types of development, manufacturing, assembly, test, and packaging equipment in operation
- IV. Identification of all relevant intellectual property, raw materials, semi-finished goods and components sourced domestically and abroad
- V. Specifications on the microelectronics manufactured or designed and description of end-uses and technical support provided to end users
- VI. Domestic and export sales
- VII. Including income and expenditures, financial performance
- VIII. List of domestic and foreign subsidies/incentives received in each market
- IX. List/Description of regulatory or other requests for information on operations, sales, proprietary info, by PRC entities at the direction of the PRC Communist Party
- X. List/Description of Joint Ventures, technology licensing arrangements, cooperative research and production arrangements
- XI. Efforts to evaluate supply chain risks
- XII. List/Description of sales, licensing arrangements, business relationships, partnerships with the PRC People's Liberation Army or People's Armed Police

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Section 9904 U.S. Microelectronics Industry Assessment
Timeline and Status

Phase 1 - Background and Scoping
Phase 2 - Survey Development
✓ Preliminary draft distributed to stakeholders for review
Phase 3 - Survey Compliance
Phase 4 - Data Cleaning and Analysis
Phase 5 - Report Drafting
Phase 6 - Finalization

Phase 1 Background and Scoping Phase 2 Survey Development Phase 3 Survey Compliance Phase 4 Data Cleaning and Analysis Phase 5 Report Drafting Phase 6 Finalization

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Section 9904 U.S. Microelectronics Industry Assessment

Survey Subject Areas:

- Supply chain deficiencies
- Manufacturing capabilities
- Foreign sourcing and dependencies
- Financial performance
- Critical inputs
- Workforce issues
- R&D
- Competitive challenges



Source: SIA

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Ongoing Semiconductor Analysis

Jason Bolton

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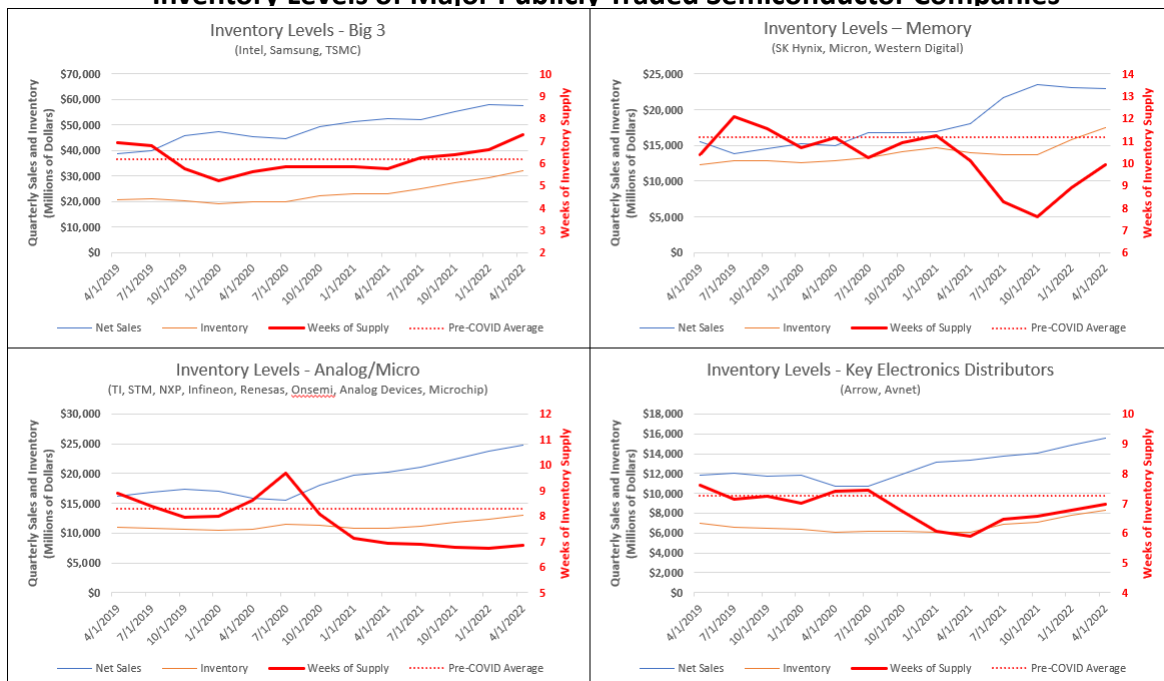
Ongoing Semiconductor Analysis

- BIS/OTE continues to support the Secretary's work addressing ongoing semiconductor supply/demand imbalances
- This work includes continued analysis of the results of recent RFIs as well as monitoring of publicly available information
- Staying on top of industry trends helps BIS/OTE respond appropriately to global events

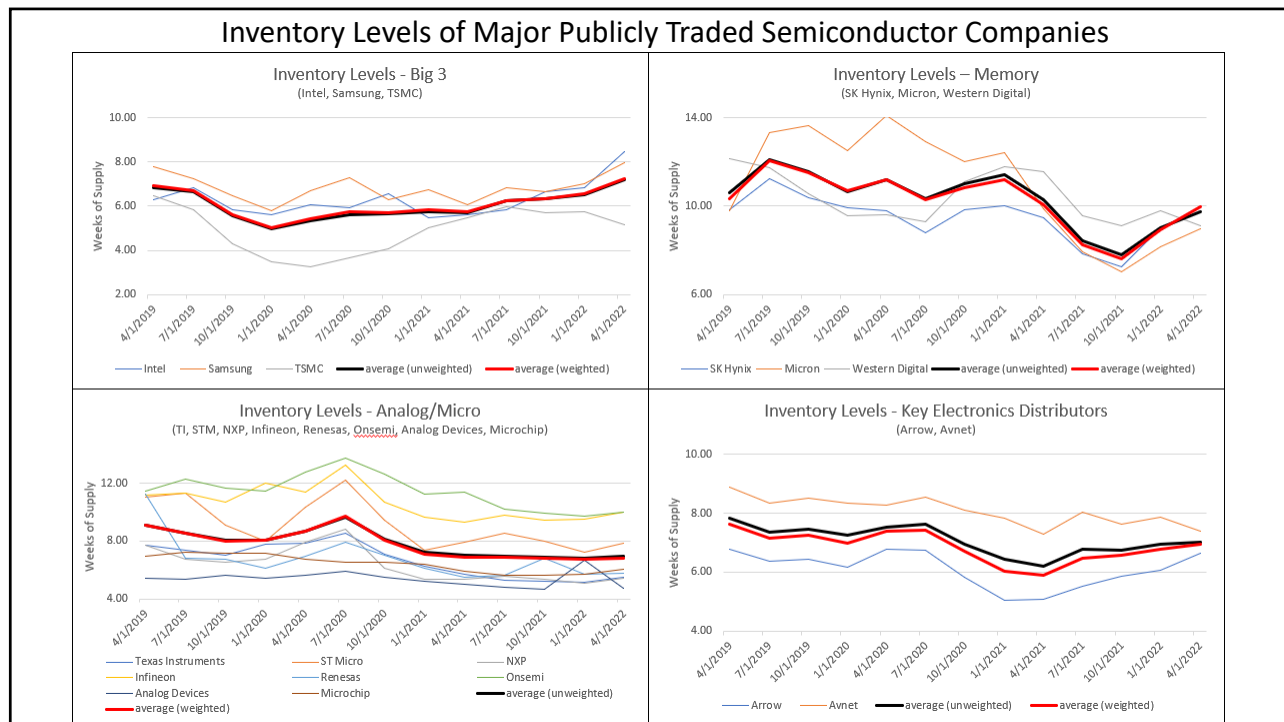
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Inventory Levels of Major Publicly Traded Semiconductor Companies



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Closing Remarks

- The United States needs resilient, diverse, and secure supply chains to ensure our economic prosperity and national security
- Both the public and private sector play critical roles in strengthening supply chains
- Close cooperation on resilient supply chains with allies and partners who share our values will foster collective economic and national security and strengthen the capacity to respond to international disasters and emergencies

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BIS/OTE Contact Information

Questions?

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