Presentation to the IEDC
2017 FED Forum
Tuesday, April 11, 2017

National Institute of Standards and Technology
Advanced Manufacturing Programs

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Innovation and Industry Services

Figure 1: Manufacturing Employment, 1960–2016[5]

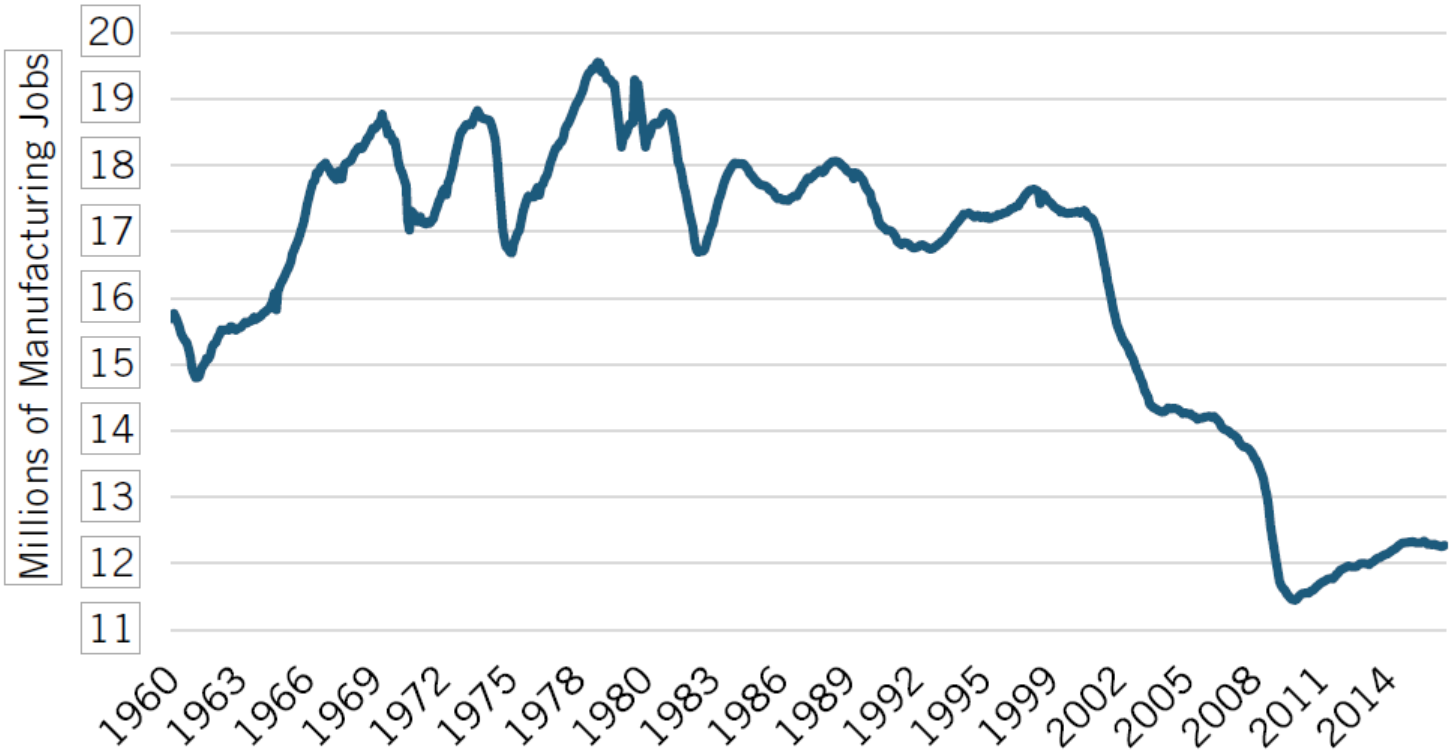


Figure 14: Manufacturing Employment in the United States, 1997–2016[59]

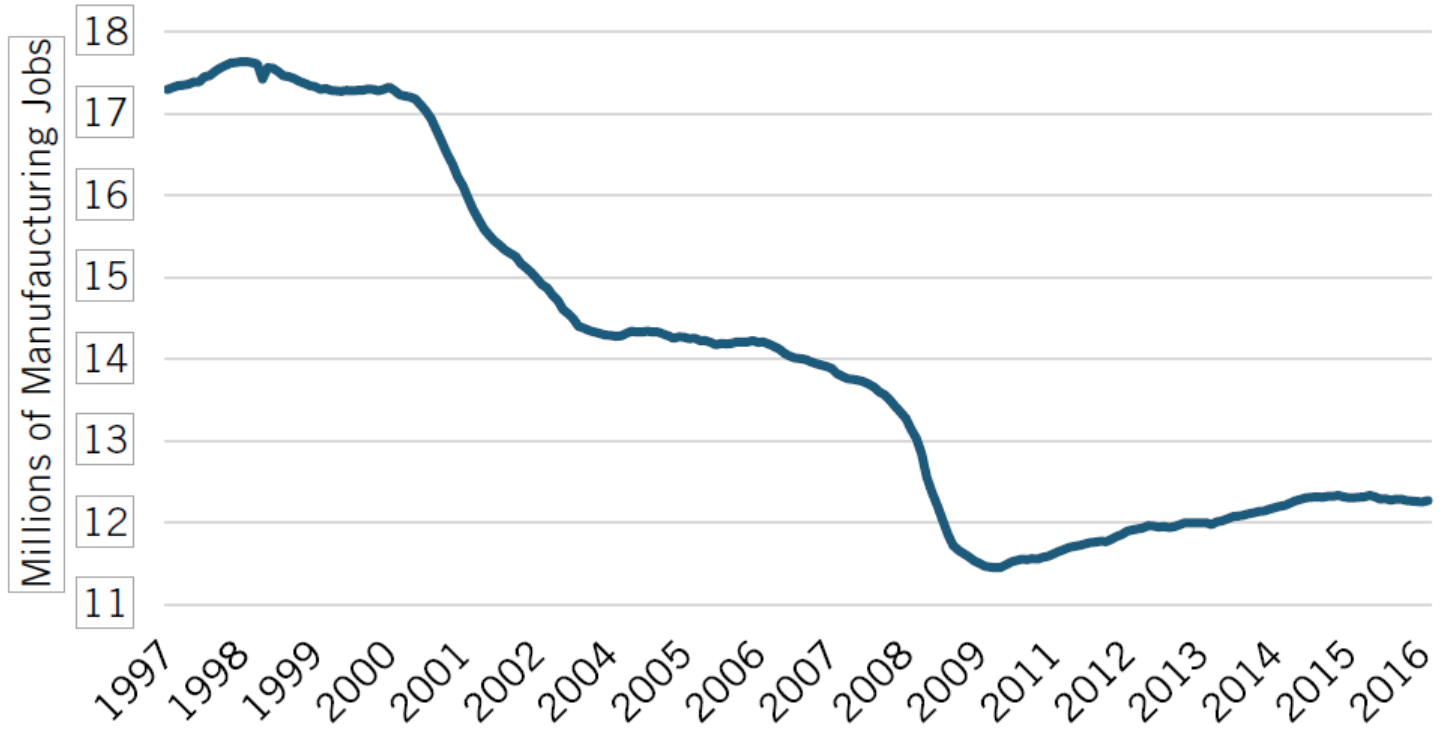


Figure 8: Real U.S. Manufacturing Output, 2007–2016[36]

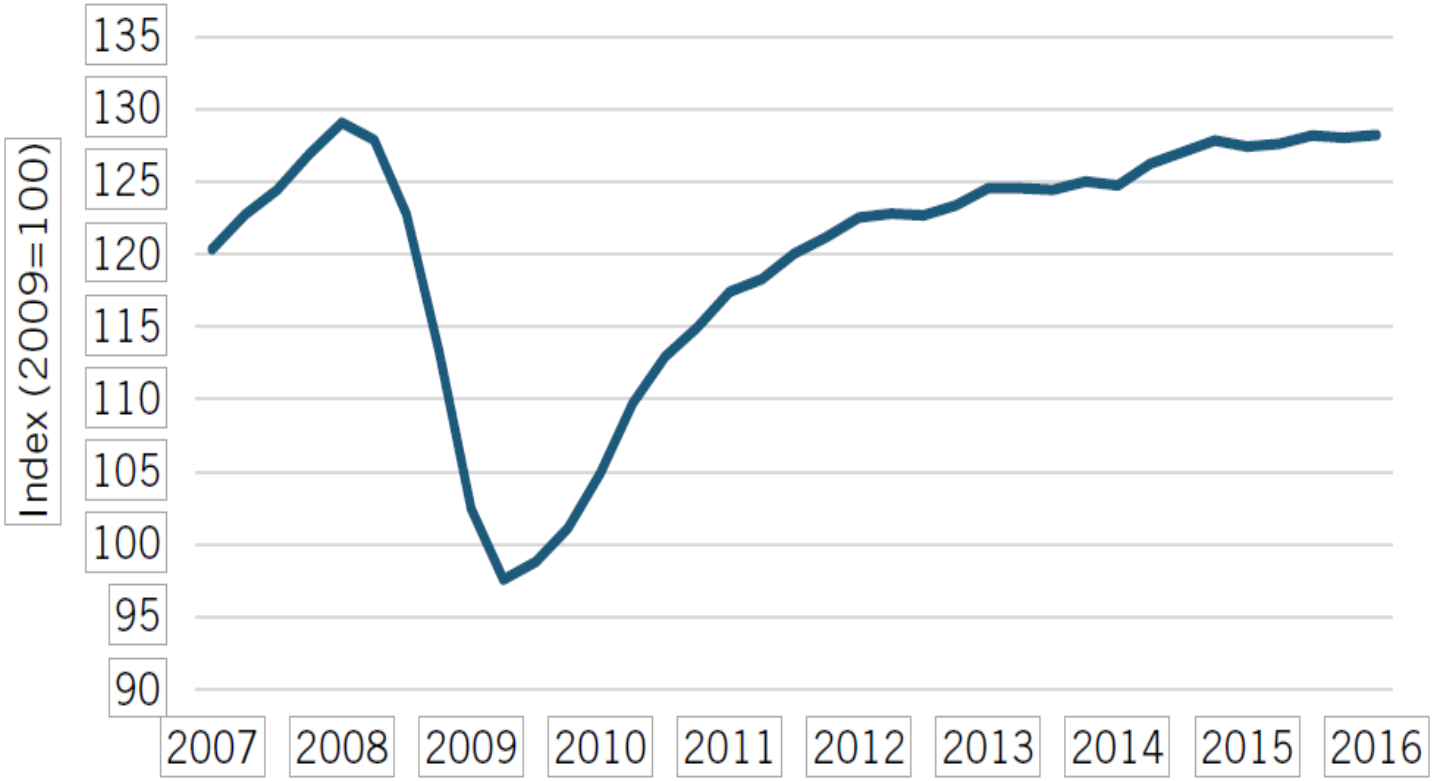


Figure 13: U.S. Imports and Exports of Advanced-Technology Products, 1996–2015[55]

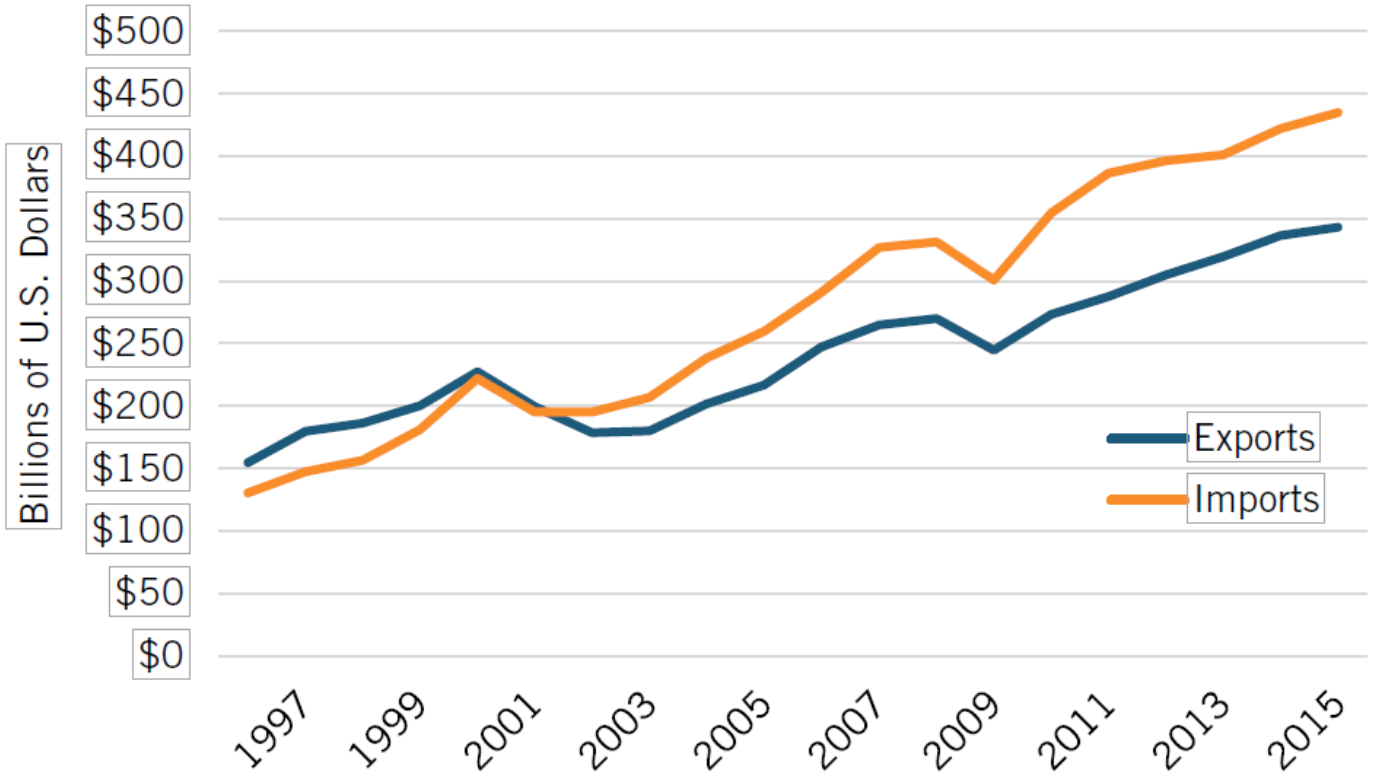
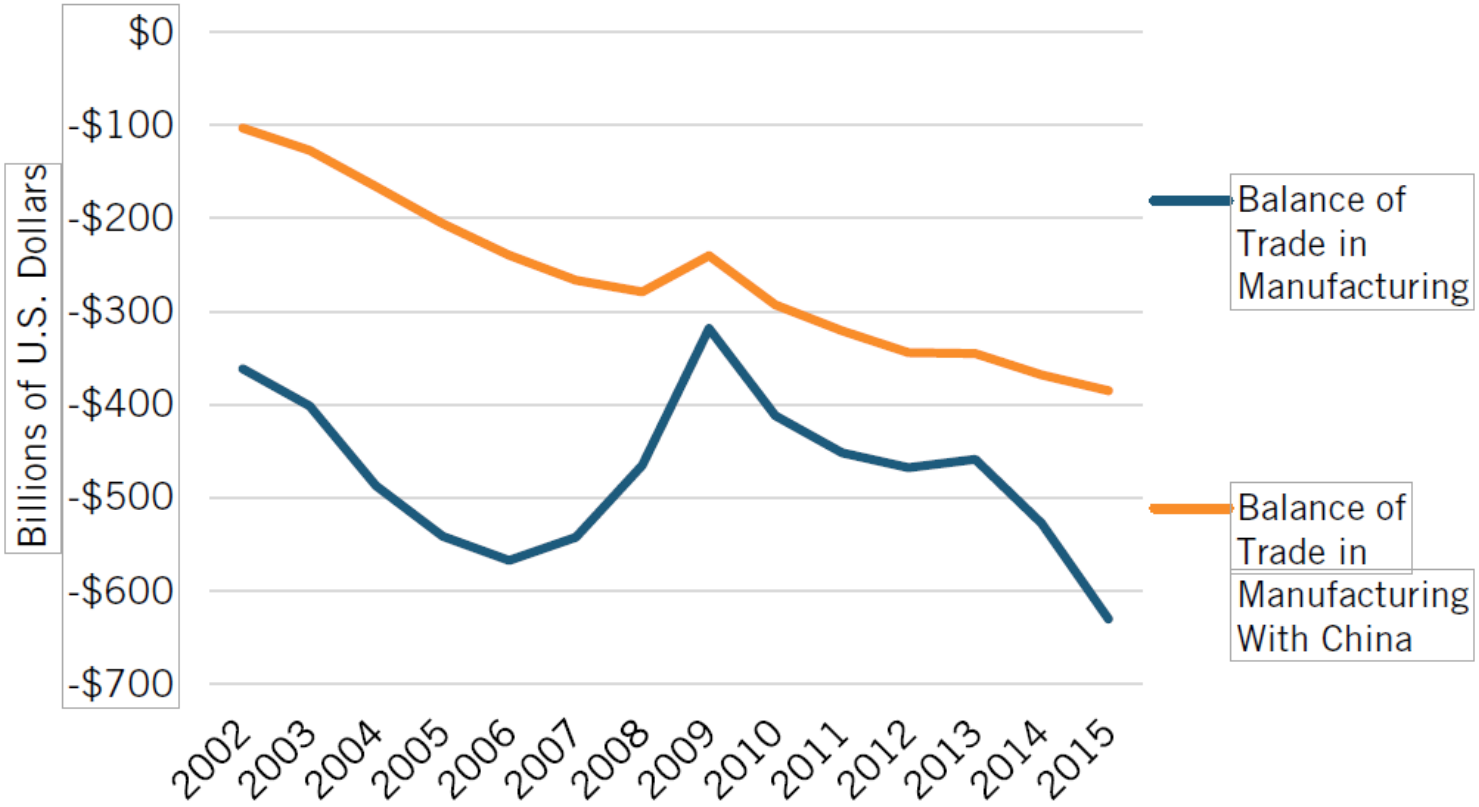


Figure 12: U.S. Trade Balance in Manufacturing, 2002–2015[53]



MISSION

"To enhance the productivity and technological performance of U.S. Manufacturing."

ROLE

MEP's state and regional centers facilitate and accelerate the transfer of manufacturing technology in partnership with industry, universities and educational institutions, state governments, and NIST and other federal and research laboratories and agencies.

MEP • MANUFACTURING EXTENSION PARTNERSHIP

MEP NATIONAL NETWORK

American Innovation & Competitiveness Act

January 6, 2017 - Became Public Law No: 114-329

- Makes 1:1 cost share permanent
- 3rd & 8th year panel reviews
- 5th year review to continue funding
- Recompetition after 10 years
- Community college representative on MEP Advisory Board
- Strengthened center oversight boards
- Reports about cost share changes – some require input from Board

NIST MEP Independent Survey Process

- MEP uses a third-party resource to survey clients.
- Surveys are conducted quarterly. Approximately 7500 to 8000 surveys done annually.
- Response rates typically around 75-80 percent.
- Client-based survey has been conducted since 2000.
- Survey consists of 12 questions focusing on:
  - Bottom-line client outcomes such as sales, capital investment, cost savings, and employment
  - Questions about challenges, reasons for using the MEP, use of other external resources, and customer satisfaction

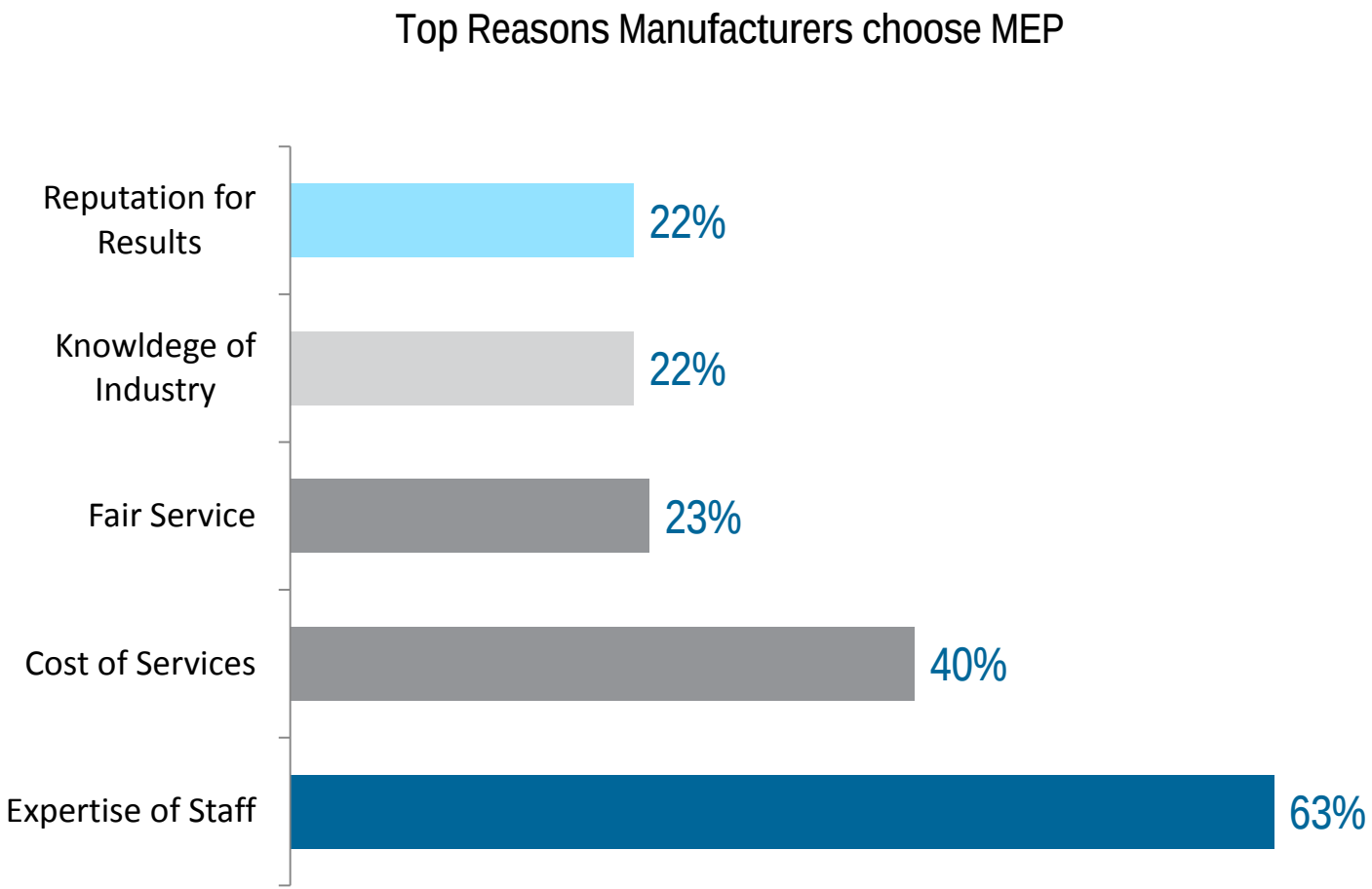
National Summary of Client-Reported Outcomes Resulting from MEP Center Activities: Q4 2015 to Q3 2016

Sales:	**+$9.33b**
o Increased:	$2.33b
o Retained:	$ 7b
Jobs:	**+86,541**
o Created:	19,653
o Retained:	66,888
Cost Savings:	**+$857m**
Investment Savings:	**+$514m**

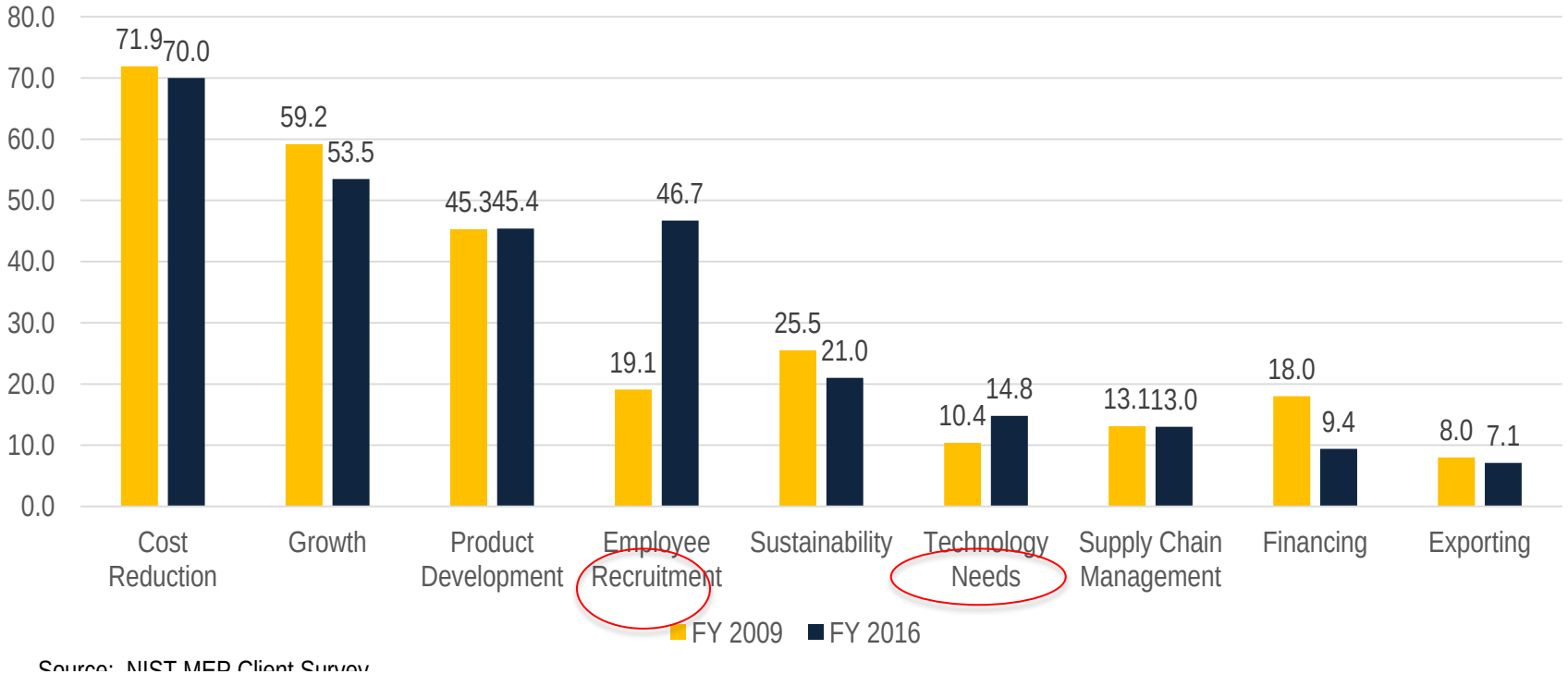
Total Investment:	**+$3.5b**
o Products & Process:	$1.07b
o Plant & Equipment:	$1.83b
o Systems & Software:	$134m
o Workforce Practices & Employee Skills	$210m
o Other Areas of Business:	$227m

Source: Manufacturing Extension Partnership and W.E. Upjohn Institute

Why MEP?

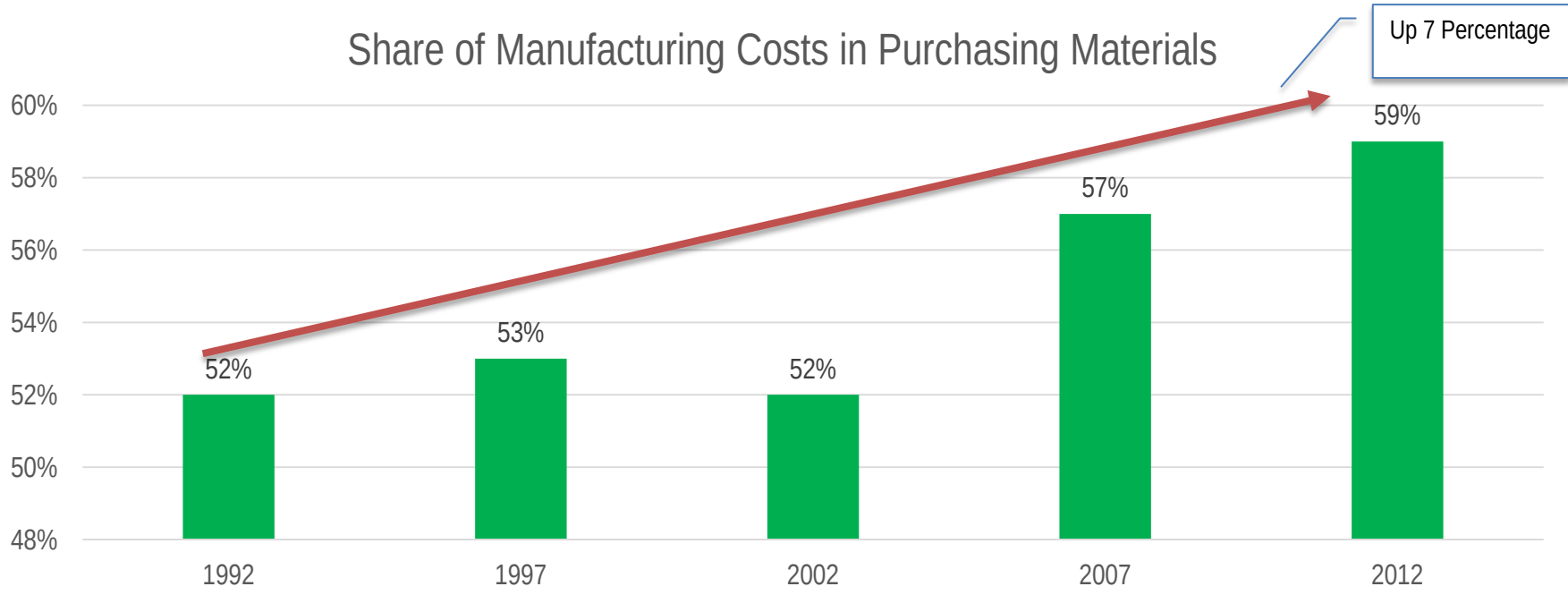

Top Reasons Manufacturers choose MEP
Reputation for Results
22%
Knowldege of Industry
22%
Fair Service
23%
Cost of Services
40%
Expertise of Staff
63%

Small Manufacturers Report a Host of Challenges



Source: NIST MEP Client Survey

A Majority of Manufacturing Costs Are in the Supply Chain



Source: Executive Office of the President and the Dept of Commerce (March 2015) Supply Chain Innovation: Strengthening America's Small Manufacturers.

MEP Supply Chain Services

- **Supply Chain Optimization** approaches supply chains from a systems perspective and helps manufacturers build dynamic supply chains through the use of strategy, risk management, total cost of ownership, supplier communication, and supplier assessments.

- **Supplier Improvement** works with individual suppliers to improve their position in supply chains.

- **Supplier Scouting** leverages MEP's unique, nationwide knowledge of local manufacturing capabilities and capacities to connect U.S. manufacturers with business opportunities tied to specific supply chain needs from OEMs and government agencies. This also includes supply chain re-shoring efforts.

- **Supply Chain Technology Acceleration** includes **Manufacturing Technology Acceleration Center** (M-TAC) Pilot Projects and other assistance that helps small U.S. manufacturers grow and compete within supply chains by focusing on the technological needs and trends of specific supply chains – and by providing technology acceleration, transition and commercialization tools and services.

- **Supply Chain Sustainability** includes multi-agency initiatives such as the Green Suppliers network, E3 (Economy, Energy, and Environment), and Energy Efficient Buildings Hub – to help reduce supplier impacts on the environment, provide manufacturers with sustainability assessments of production processes, and assist with the implementation of energy-saving projects.

Manufacturing USA Today

Shaded states have major participants in *Manufacturing USA* Institutes

MEP/Institute Embedding Pilot – Round 1 & 2 Awardees

California Manufacturing Technology Center	NextFlex, Flexible Hybrid Electronics
	Clean Energy Smart Manufacturing Innovation Institute
Illinois Manufacturing Excellence Center	Digital Manufacturing and Design Innovation Institute (DMDII)
New York State Department of Economic Development	American Institute for Manufacturing Integrated Photonics (AIM Photonics)
North Carolina State University	Power America
The University of Tennessee (Center for Industrial Services)	Institute for Advanced Composites Manufacturing Innovation (IACMI)
Massachusetts MEP	Advanced Functional Fabrics of America (AFFOA)
Pennsylvania MEP	America Makes
Michigan Manufacturing Technology Center	Lightweight Innovations for Tomorrow (LIFT)

EXECUTIVE SUMMARY: MEP Economic Impact Analysis

W.E. UPJOHN INSTITUTE

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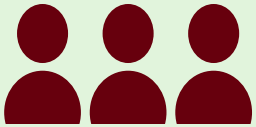
Source: Manufacturing Extension Partnership and W.E. Upjohn Institute

The Unconstrained Model Using Industry Variables

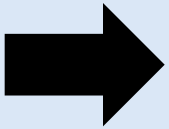


Jobs

575,870

GDP

$63.04*



Output

$130.15*

Personal Income

$34.64*

Returns to Treasury

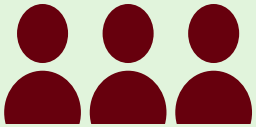
$4.66*

*Dollars in billions

The unconstrained model, assuming no competition or displacement between firms, adds 575,870 jobs to the United States that would not have been created or retained without the services and activities of the MEP centers. In addition to the annual increase in gross domestic product (GDP), output, and personal income, the MEP activities also increase personal income tax revenue by $4.66 billion, which far exceeds the $130 million cost of the program each year. These estimates of impacts set an upper bound on outcomes and are not entirely realistic and likely overestimate MEP impact.

Source: Manufacturing Extension Partnership and W.E. Upjohn Institute

The Constrained Model Using Firm Variables

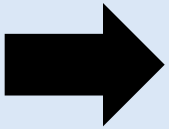


Jobs

142,381

GDP

$15.40*



Output

$29.89*

Personal Income

$8.44*

Returns to Treasury

$1.13*

*Dollars in billions

The constrained model, assuming competition or displacement between firms, adds 142,381 jobs to the U.S. economy, which would not have been created or retained without the services and activities of the MEP Centers. Under this more conservative and realistic approach, MEP activities add $1.13 billion to the U.S. Treasury through an increase in personal income taxes. The increase in tax revenue to the U.S. Treasury would be higher if the model included corporate income taxes. With the model counting only income taxes, the tax revenues far exceed the cost of the program.

Source: Manufacturing Extension Partnership and W.E. Upjohn Institute

Thank You

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