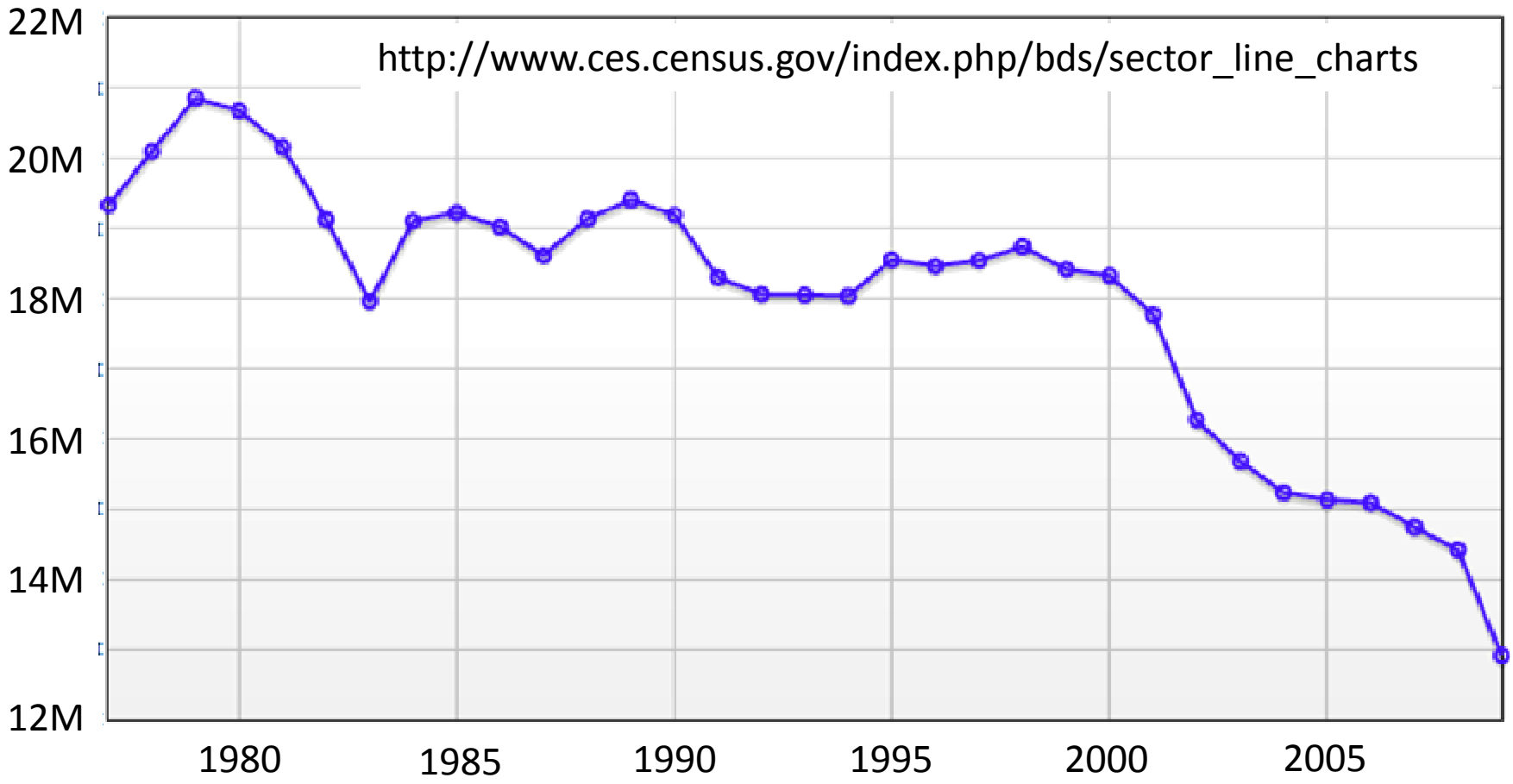
Repositioning the MEP System to Meet the Global Manufacturing Challenge

Mark Rice, Maritime Applied Physics Corporation and Chair, MEP Advisory Board

OUTLINE

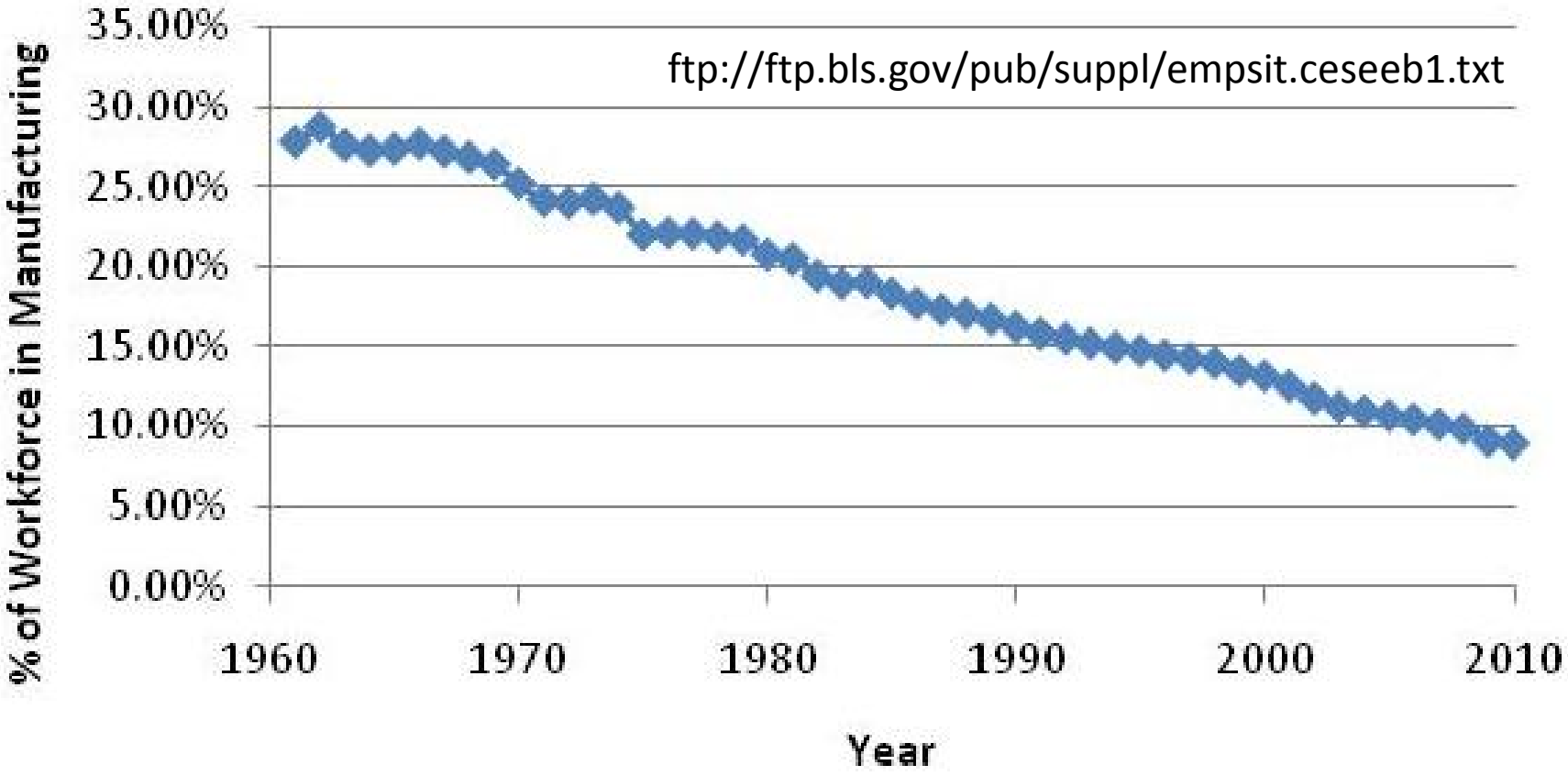
- Context data
  - Manufacturing in general
  - Exporting
- ExporTech – an MEP example
- Observations
- Repositioning Recommendations

U.S. Manufacturing Employment by Year



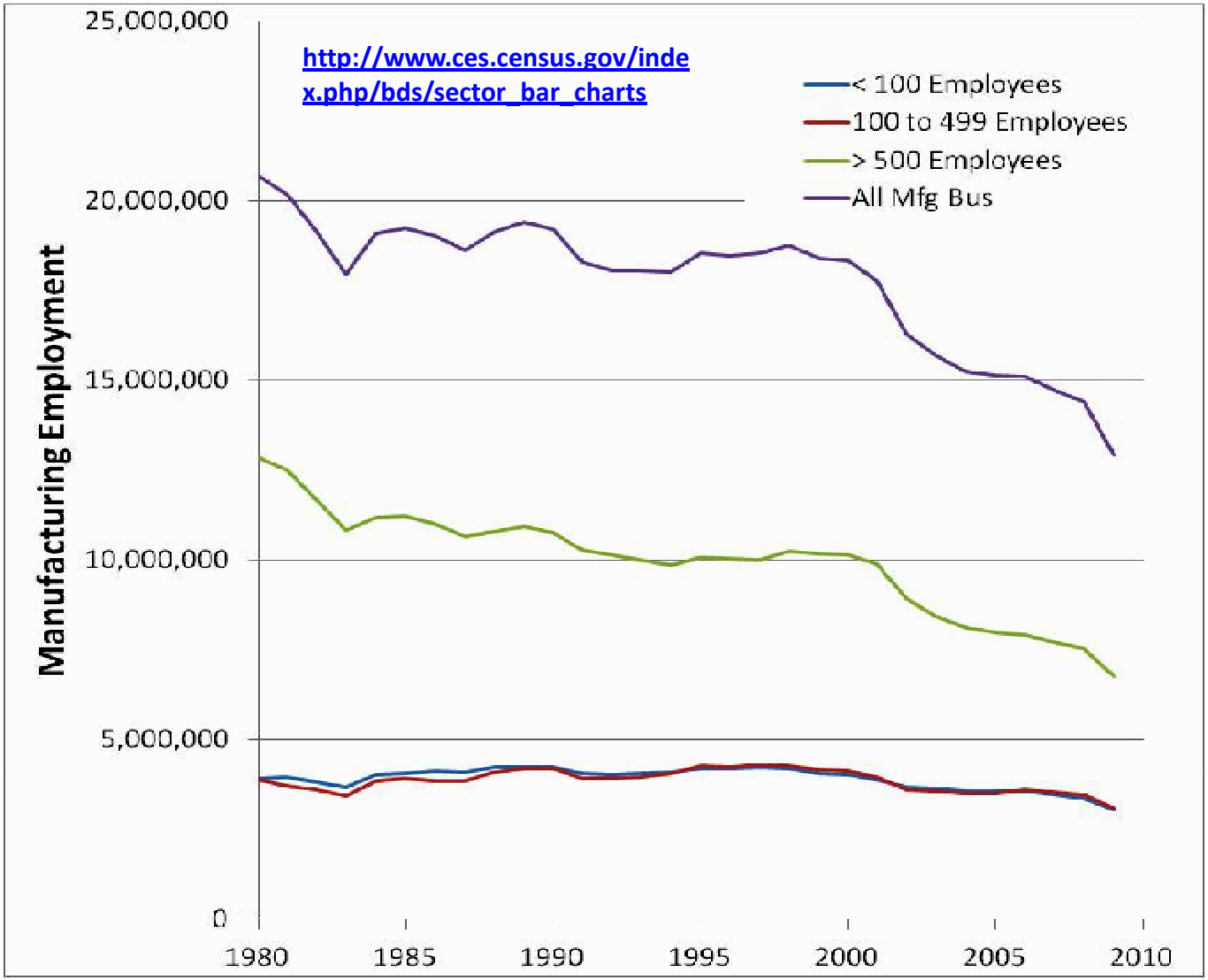
8 Million Jobs Lost Over 26 Years

Manufacturing as a Percentage of Total U.S. Workforce



From 29% to 9% over 50 Years

Manufacturing Employment by Company Size

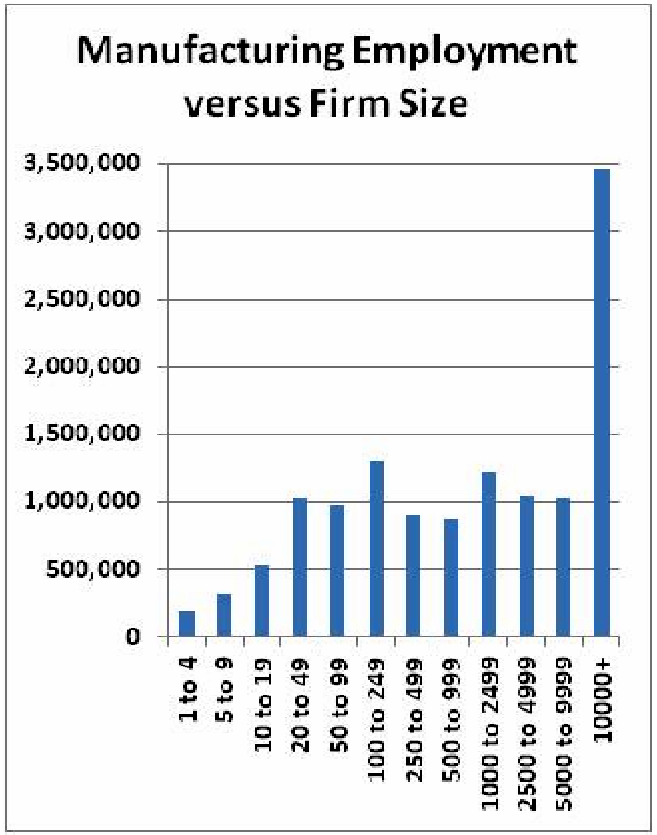


3 Decades of Job Losses Primarily In Firms With More Than 500 Employees

Manufacturing Sector - 2009

Number of employees	Number of manufacturing establishments	Percentage of manufacturing establishments in U.S.
ALL	331,355	100.0
1–4	119,182	36.0
5–9	57,779	17.4
10–19	51,422	15.5
20–49	50,094	15.1
50–99	24,359	7.4
100–249	18,943	5.7
250–499	6,172	1.9
500–999	2,384	0.7
1,000+	1,020	0.3

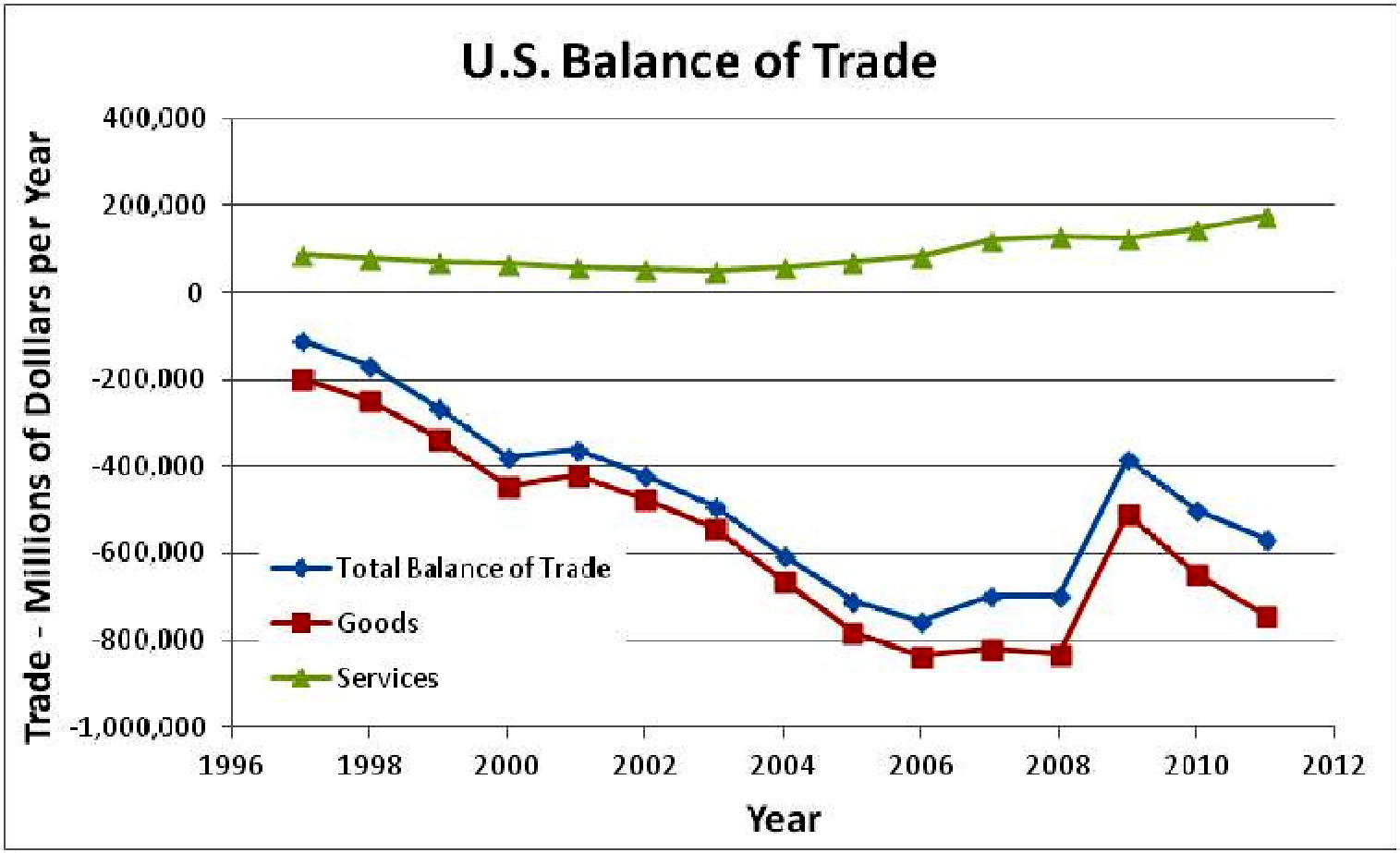
Mistry, N, Byron, J, "The Federal Role in Supporting Urban Manufacturing", Pratt Center for Community Development, April 2011



http://www.ces.census.gov/index.php/bds/sector_line_charts

99% of US Manufacturing Firms Have Less Than 500 Employees
40% of Manufacturing Employees Work for a Firm with Less than 500 Employees

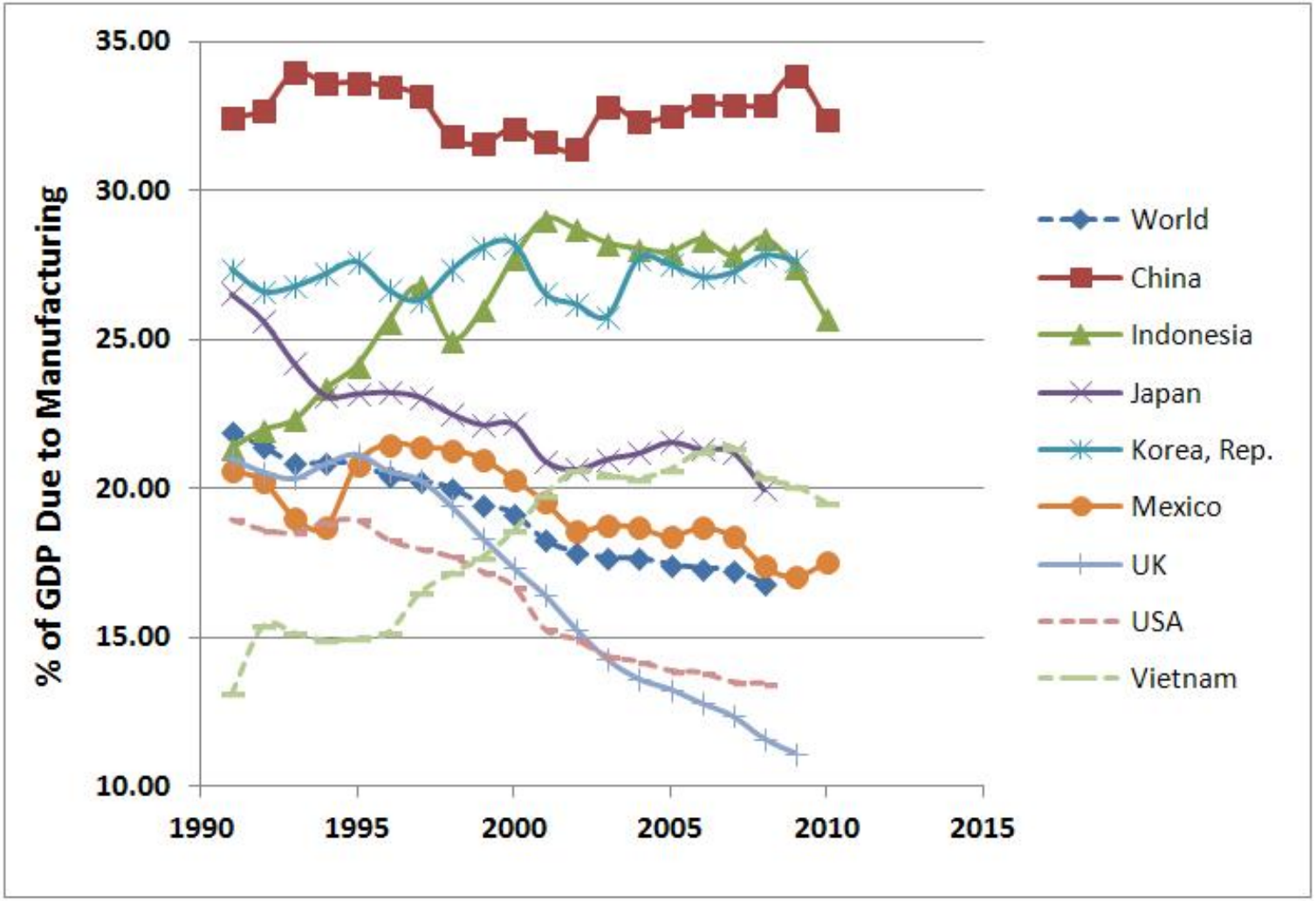
US Trade Balance in Goods



http://www.bea.gov/international/index.htm#trade

1992 to 2010: Net Cumulative deficit of $7T
Due Almost Entirely To the Deficit in Goods

Manufacturing as a % of GDP



http://search.worldbank.org/quickview?name=%3Cem%3EManufacturing%3C%2Fem%3E%2C+value+added+%28%25+of+%3Cem%3EGDP%3C%2Fem%3E%29&id=NV.IND.MANF.ZS&type=Indicators&cube_no=2&qterm=manufacturing+GDP

2009 Exports by Company Type and Employment Size

Company Type and Employment Size	Known Value (1)	% of Known Value	Cum. % of Known Value	Cum. % of Company Type Value (2)	Number of Identified Exporters	% of Number of Identified Exporters	Cum. % of Number of Identified Exporters	Cum. % of Company Type Exporters (2)
All identified companies	**938,794**	**100.0**	**100.0**	**100.0**	**275,843**	**100.0**	**100.0**	**100.0**
no. employees unknown (3)	83,161	8.9	8.9	8.9	99,305	36.0	36.0	36.0
1 to 19 employees	68,360	7.3	16.1	16.1	107,482	39.0	75.0	75.0
20 to 49 employees	37,633	4.0	20.1	20.1	30,582	11.1	86.1	86.1
50 to 99 employees	32,572	3.5	23.6	23.6	15,603	5.7	91.7	91.7
100 to 249 employees	51,186	5.5	29.1	29.1	11,910	4.3	96.0	96.0
250 to 499 employees	35,111	3.7	32.8	32.8	4,387	1.6	97.6	97.6
500 or more employees	630,770	67.2	100.0	100.0	6,574	2.4	100.0	100.0
Manufacturers	**562,464**	**59.9**	**59.9**	**100.0**	**70,331**	**25.5**	**25.5**	**100.0**
no. employees unknown (3)	24,462	2.6	2.6	4.3	15,127	5.5	5.5	21.5
1 to 19 employees	5,782	0.6	3.2	5.4	23,127	8.4	13.9	54.4
20 to 49 employees	8,716	0.9	4.1	6.9	13,397	4.9	18.7	73.4
50 to 99 employees	14,247	1.5	5.7	9.5	7,788	2.8	21.5	84.5
100 to 249 employees	23,368	2.5	8.2	13.6	6,202	2.2	23.8	93.3
250 to 499 employees	20,117	2.1	10.3	17.2	2,133	0.8	24.6	96.4
500 or more employees	465,772	49.6	59.9	100.0	2,557	0.9	25.5	100.0

(1) Known value is defined as the portion of U.S. total exports that could be matched to specific companies.
(2) Cumulative percents are cumulative proportions relative to a particular sector's totals, e.g., wholesalers with less than 50 employees account for 42.3 percent of the total wholesalers known value and 91.4 percent of the total number of all wholesalers.

In 2009, 82% of Manufacturing Exports were by Companies Employing More Than 500 People

http://**www.census.gov/foreign-trade/PressRelease/edb/2009/exh1a.pdf**

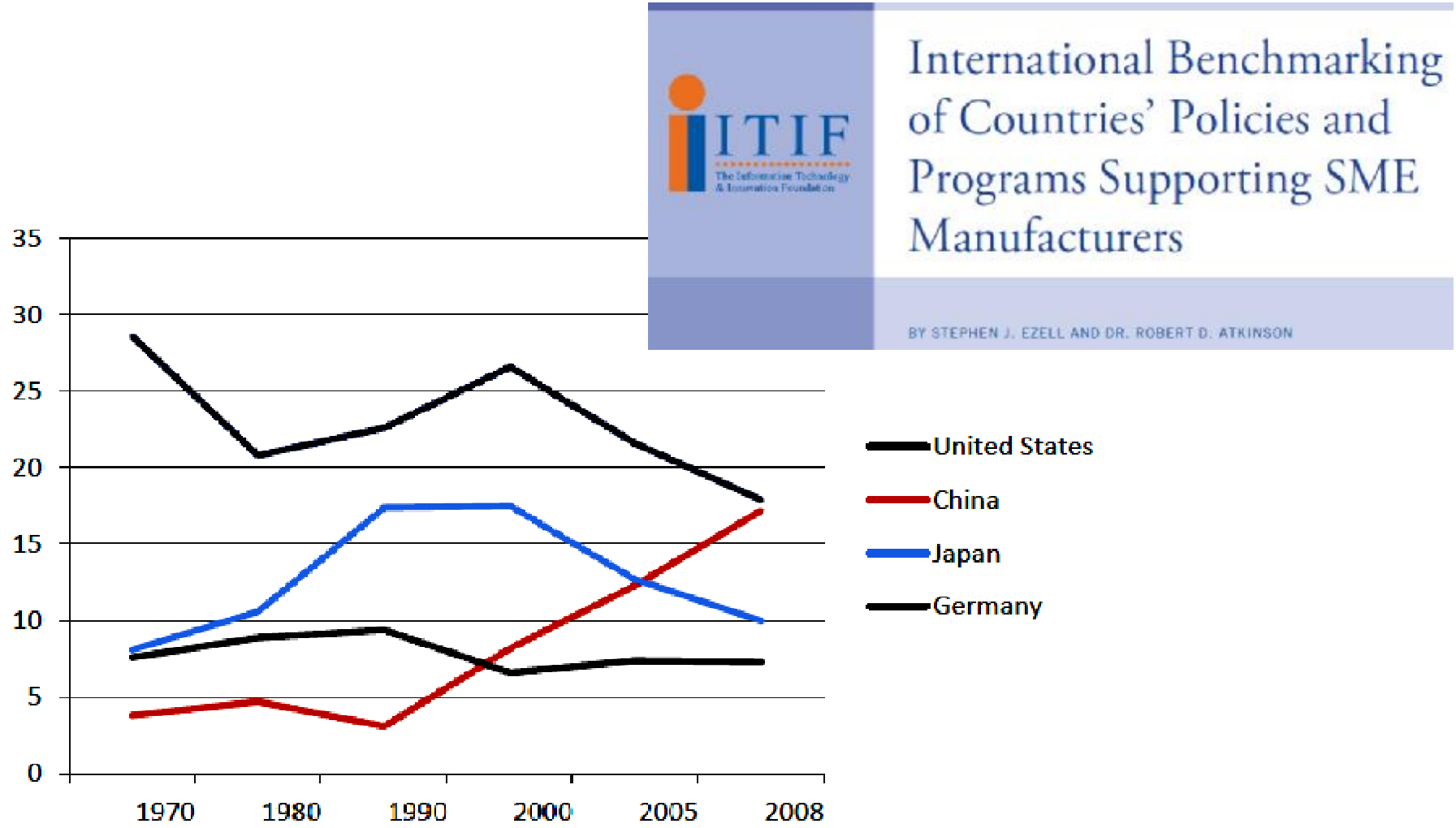


Figure 7: Select Country Share of World Manufacturing Output, 1970-2008[160]

..Germany's and Japan's experience belies the received wisdom that manufacturing as a share of GDP is falling in most advanced economies over time. ……. Clearly, Germany and Japan's SME manufacturing support programs have played an important role in sustaining the strength and vitality of their nations' manufacturing sectors over the past forty years.

ITIF
The Information Technology & Innovation Foundation

International Benchmarking of Countries' Policies and Programs Supporting SME Manufacturers

BY STEPHEN J. EZELL AND DR. ROBERT D. ATKINSON

Country	Agency	# Centers/Regional Offices	Total Staff	Year Founded
United States	Manufacturing Extension Partnership (MEP)	60 State and Regional Centers	1,300+[1]	1988
Australia	Enterprise Connect	12 Centers	250	2008
Canada	Industrial Research Assistance Partnership (IRAP)	150 Offices in 90 Communities	220	1962
Germany	Fraunhofer Institutes	57 Fraunhofer Institutes	18,000	1949
Germany	Steinbeis Centers	750 Steinbeis Centers	4,600	1971
Japan	Public Industrial Technology Research Institutes (Kohsetsushi Centers)	262 Offices (182 Kohsetsushi Centers)	6,000+	1902
United Kingdom	Manufacturing Advisory Service (MAS)	9 Regional Centers	150	2002

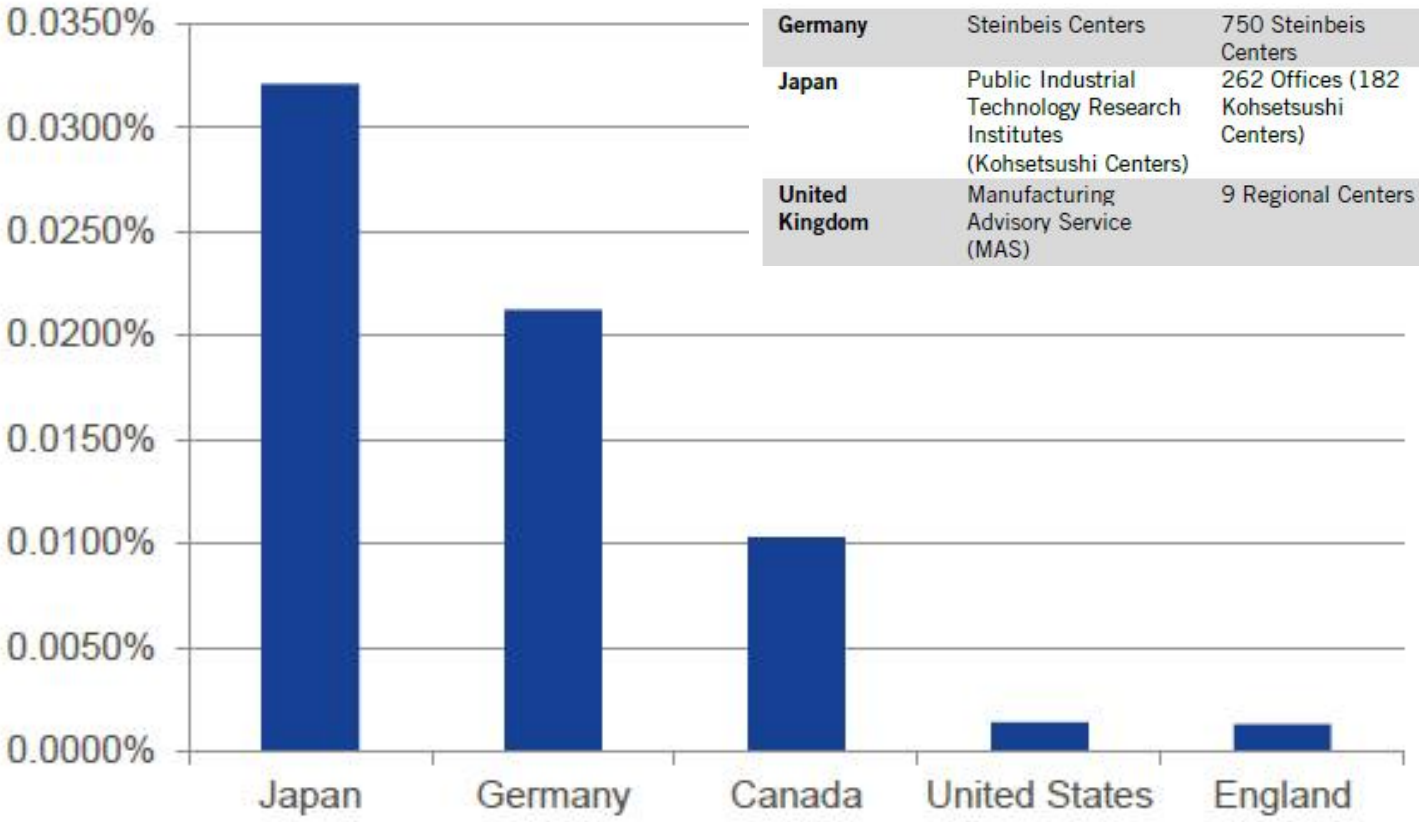
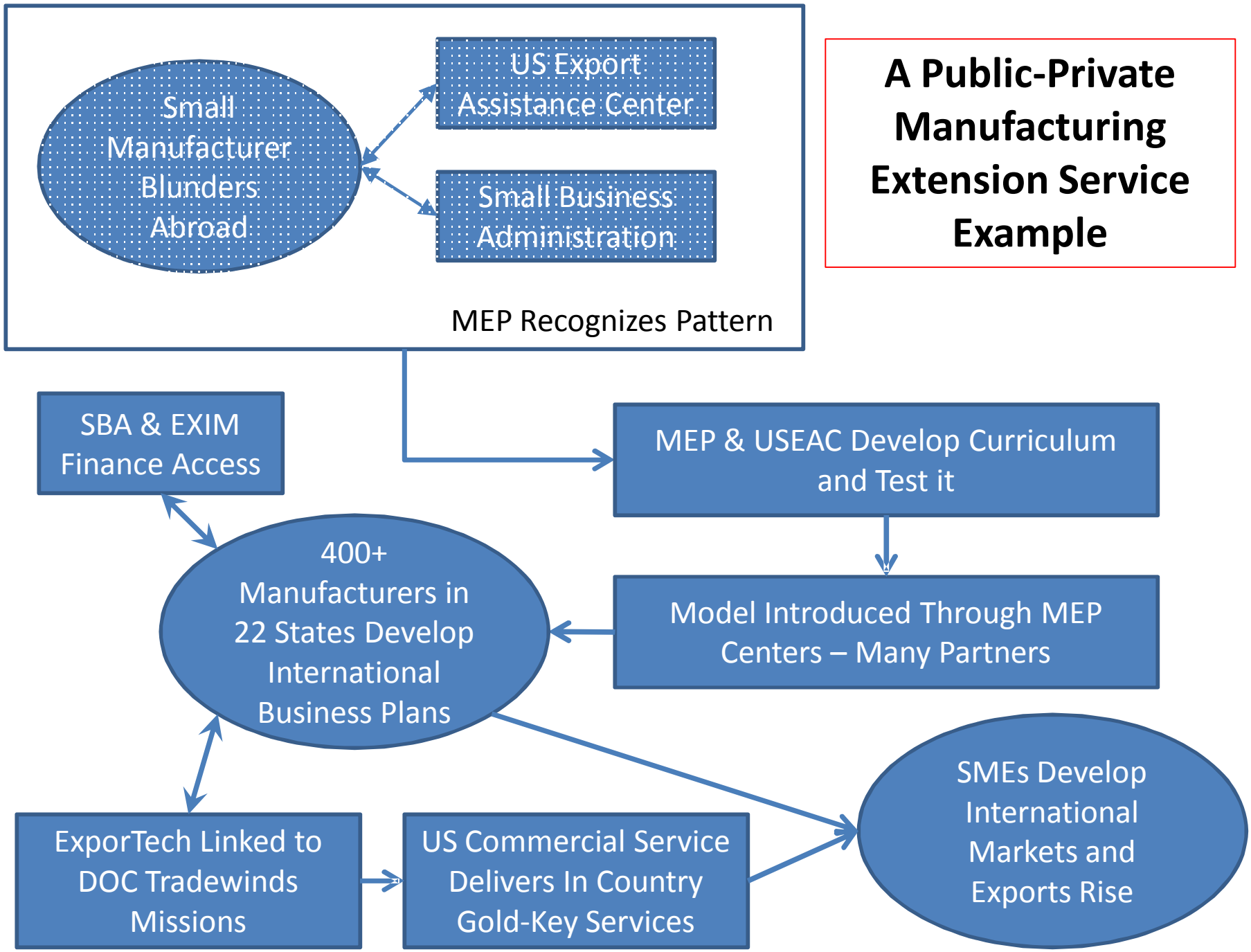


Figure ES-1: Country Investment in Manufacturing Extension Services/Programs as a Percentage of GDP[12]

A Public-Private Manufacturing Extension Service Example



MEP Observations

- Public-Private Partnerships – diversity across 50 states
  - Commercial, State, Federal funding mixed
  - No one entity has full control
  - Wide variations with manufacturing sector and location
  - U.S. Government oversight role requires exceptional management talent – NIST has it
  - Periodic disputes are part of the landscape
- MEP has an exceptional capability to adapt to the needs of manufacturers
  - Local centers are for-fee service providers that must meet client needs
  - Strong feedback mechanisms to influence national program
  - National and local Boards provide high-level oversight
  - Diverse State “flavors” and MEP center structures are allowed
- The system is difficult to fully appreciate – it works

Repositioning

- Continue to broaden the role of MEP centers
  - Grow the interagency links – but don't dilute the program focus
  - Grow the Federal funding line to $500M
  - Continue to require State and Commercial match ($1.5B total program)
  - Continue to increase the professional capabilities of Center staffs
- Create regular mechanisms for personnel exchange between Federal, State, and Center roles
- Evolve MEP centers to become facilitators of technology transfer
  - Find a U.S. version of the German Fraunhofer business model
  - Strengthen service role between Federal labs and manufacturers
  - Foster and strengthen consortia (e.g. AMTECH)
  - Explore roles in contract negotiation with corresponding FAR changes
  - Grow the role in linking SMEs to larger manufacturers
- Grow the MEP focus on exporting
- Develop a national manufacturing strategy and link MEP functions to it

Innovation comes from the producer - not from the customer.

W. Edwards Deming

Recent Manufacturing Publications

Information Technology and Innovation Foundation – The Case for a National Manufacturing Strategy
White House – A Framework for Revitalizing American Manufacturing
President's Council of Advisors on Science and Technology – Ensuring American Leadership in Advanced Manufacturing
IDA Science & Technology Policy Institute – White Papers on Advanced Manufacturing Questions
National Association of Manufacturers – Manufacturing Strategy For Jobs and a Competitive America
National Association of Manufacturers – Manufacturing Resurgence
The Association for Manufacturing Technology - The Manufacturing Mandate: A National Manufacturing Strategy to Help Rebuild and Strengthen the U.S. Manufacturing Sector
Alliance for American Manufacturing – Our Plan for American Manufacturing
Council on Competitiveness – Ignite 1.0: Voice of American CEOs on Manufacturing Competitiveness
Council on Competitiveness – Global Manufacturing Competitiveness Index
MIT – Survey of Federal Manufacturing Efforts
MIT – Roundtable Report Out on The Future of Manufacturing Innovation–Advanced Technologies; Video from Roundtable on The Future of Manufacturing Innovation
AFL-CIO, Industrial Union Council – Manufacturing Insecurity (by Joel Yudken)
AFL-CIO – Manufacturing Renewal is Central to U.S. Economic Recovery (Organization's Official Manufacturing Statement)
AFL-CIO – Manufacturing Our Way to a Stronger Economy (Testimony of Leo Gerard to Senate Commerce)
Greg Tassey – Rationales and mechanisms for revitalizing US manufacturing R&D strategies (Journal of Technology Transfer)
NDIA – Maintaining a Viable Defense Industrial Base
McKinsey Global Institute – Translating innovation into US growth: An advanced-industries perspective (Requires free registration).
Athena Alliance – Intellectual Capital and Revitalizing Manufacturing - Intellectual Capital and Revitalizing Manufacturing
Accenture – What's Your Plan for 2025?
Milken Institute – Jobs for America
McKinsey – Growth and Competitiveness in the U.S.–The Role of Multinational Companies
McKinsey – Building the Supply Chain of the Future
Conexus – Manufacturing and Logistics 2010 National Report