

January 11, 2012

Revitalizing Manufacturing in Pennsylvania/The United States

Presentation to

PA Governor's Manufacturing Advisory Council
Harrisburg, Pennsylvania

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The Information Technology and Innovation Foundation (ITIF) is a Washington, D.C.-based think tank at the cutting edge of designing innovation policies and exploring how advances in technology will create new opportunities to boost economic growth and improve quality of life. ITIF focuses on:

- National economic competitiveness
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- E-transformation (e.g., health, commerce, e-government)
- IT and economic productivity
- Science, technology, and innovation policy
- Manufacturing and trade policy

■ Today's Presentation

1

Where Does U.S. Manufacturing Stand?

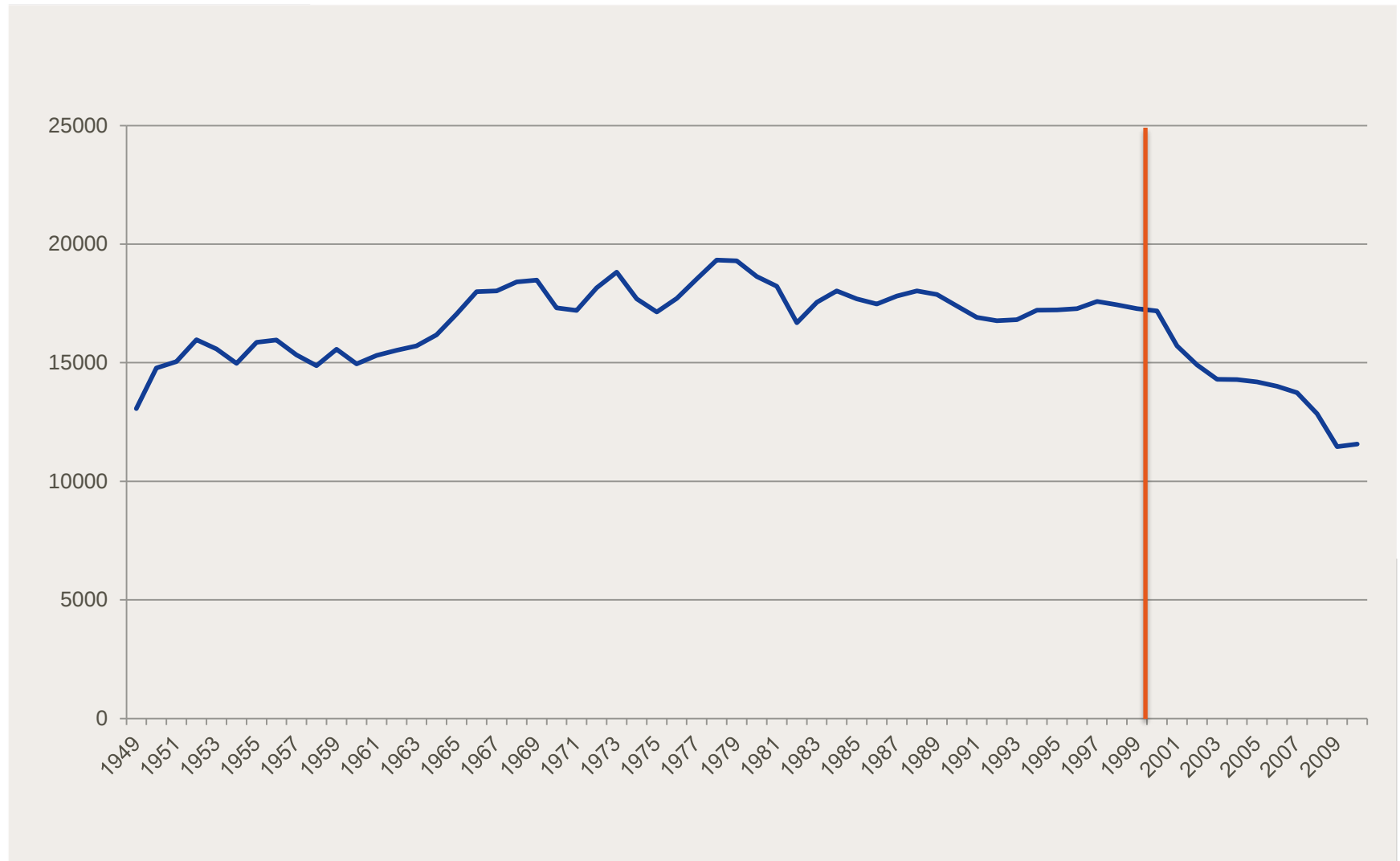
2

Where Does Pennsylvania's Economy Stand?

3

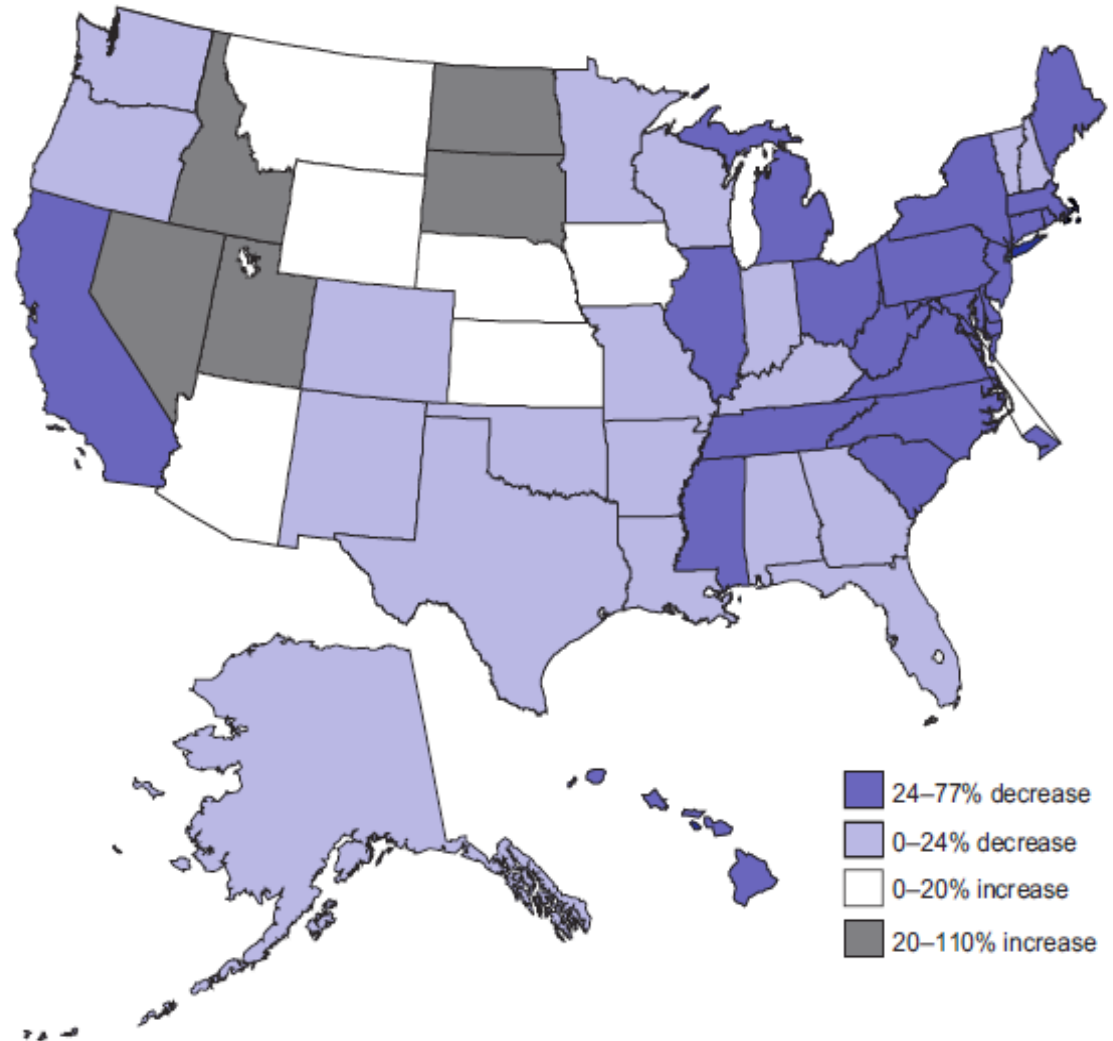
Policies to Revitalize Pennsylvania and U.S. Manufacturing

■ U.S. Manufacturing Jobs Fell Precipitously in the Last Decade

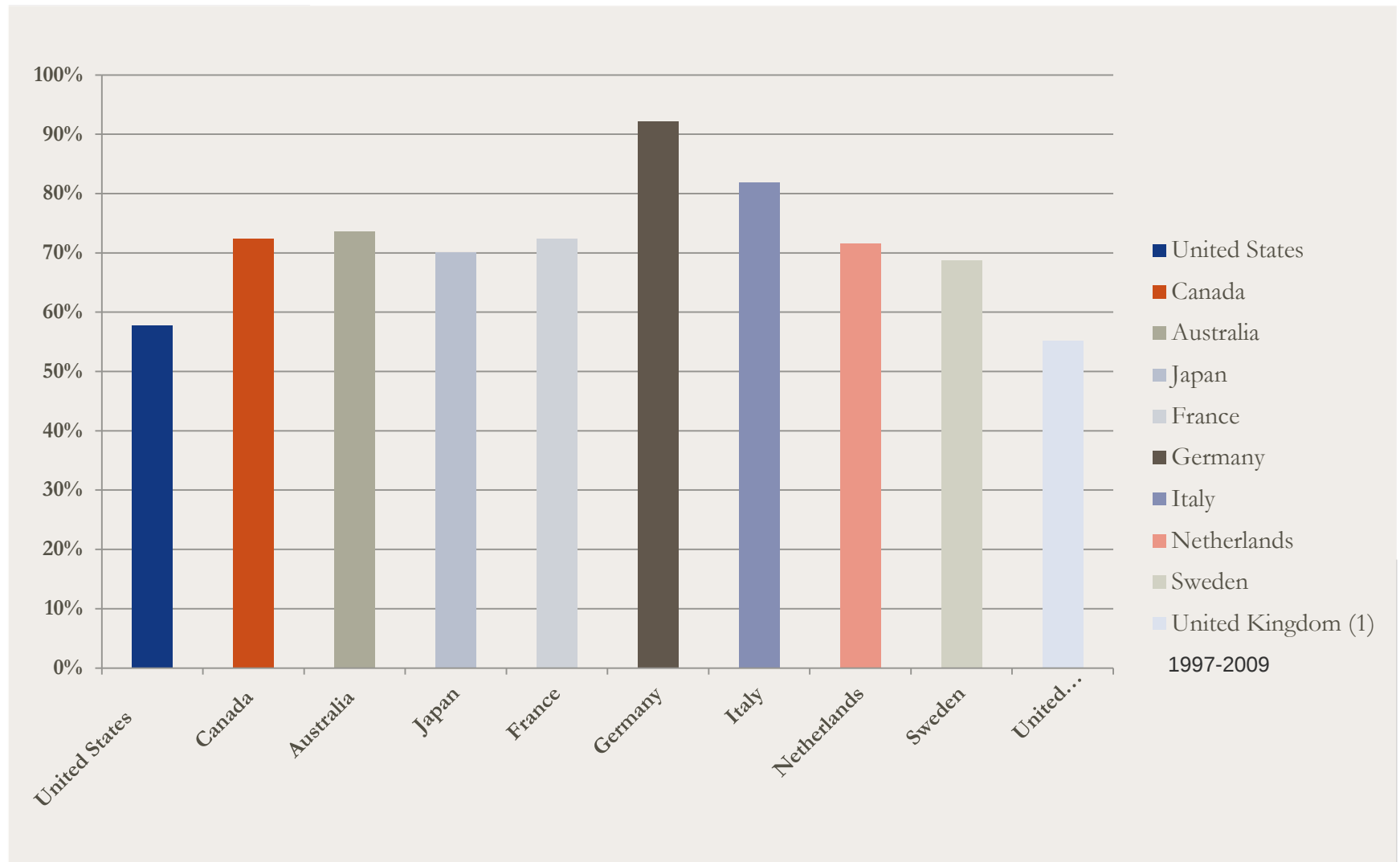


■ Percent Change in Manufacturing Employment

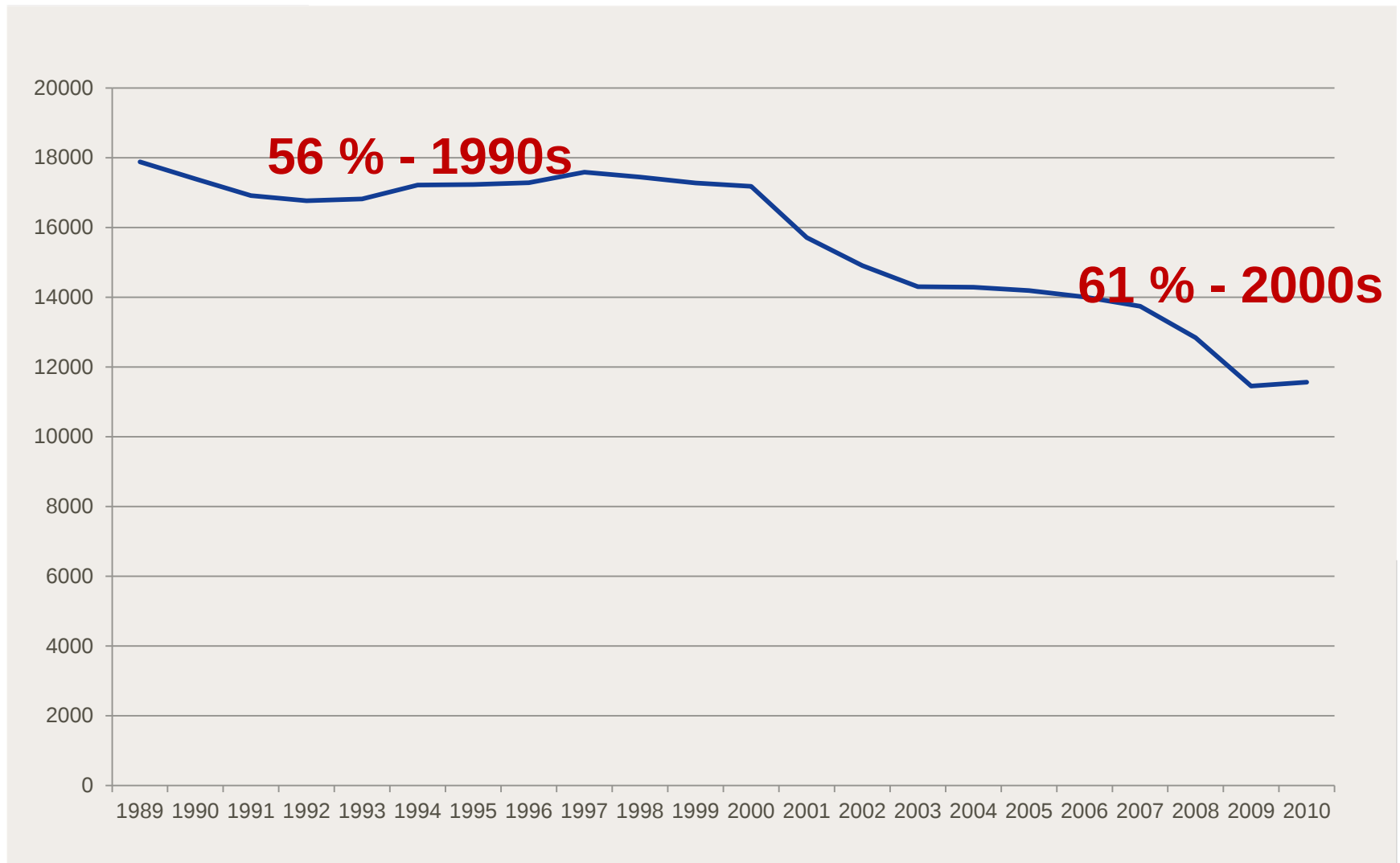
Percent Change in
Manufacturing
Employment,
1990–2007



■ U.S. Manufacturing Job Growth Was the Worst of A Sample of OECD Nations



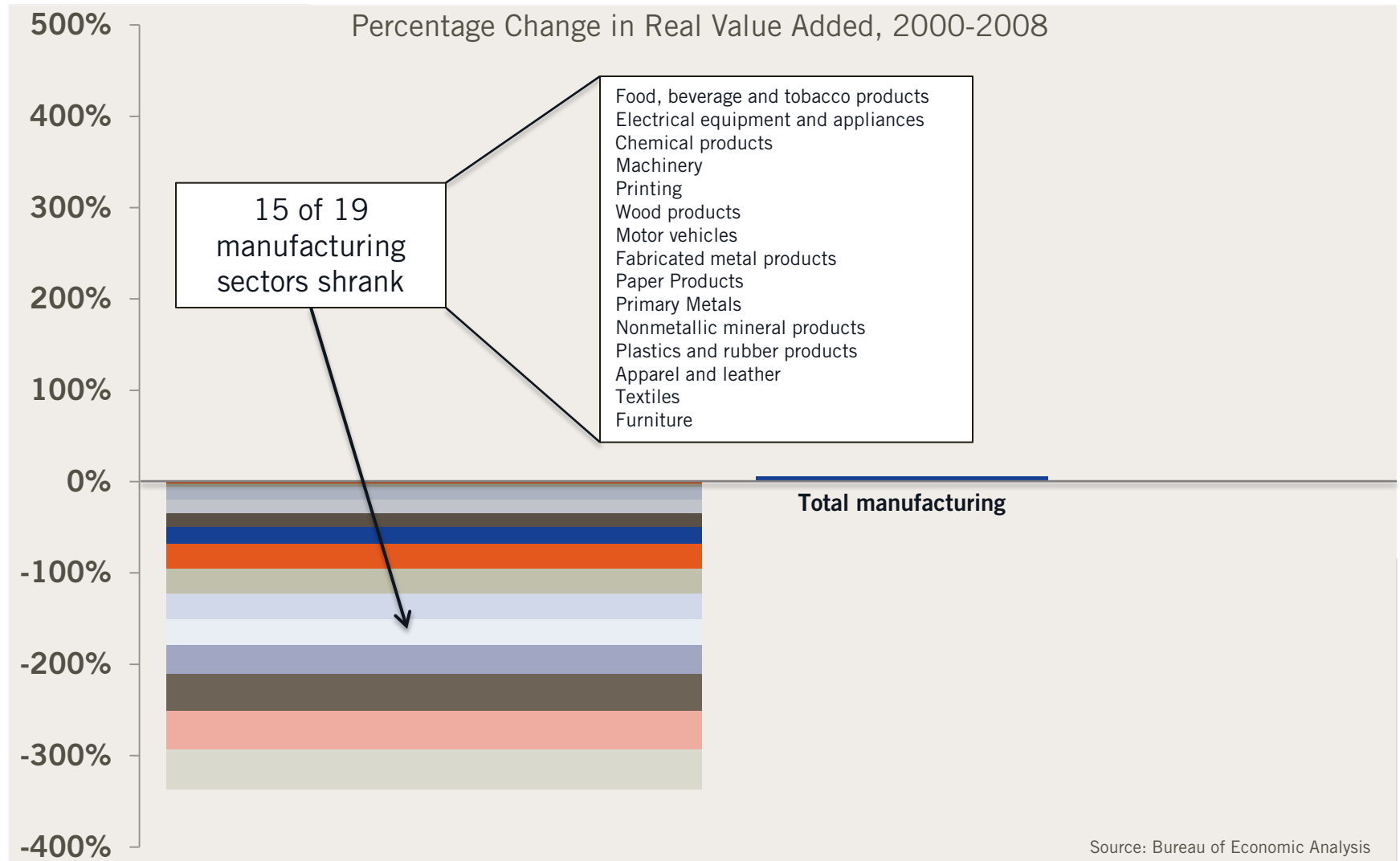
■ But *Not* Principally Because of Productivity Gains



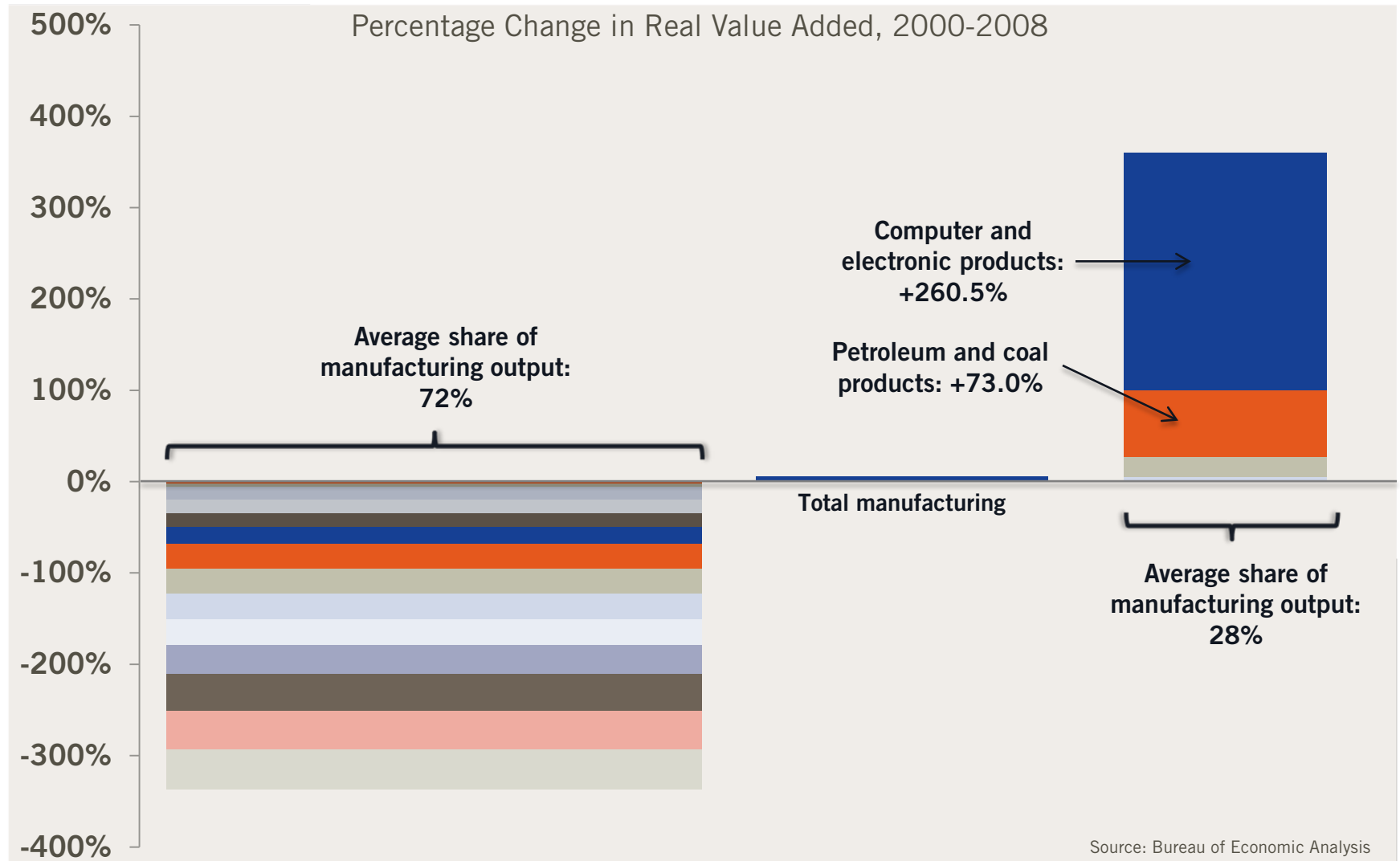
■ Overall Manufacturing Grew Slower than GDP



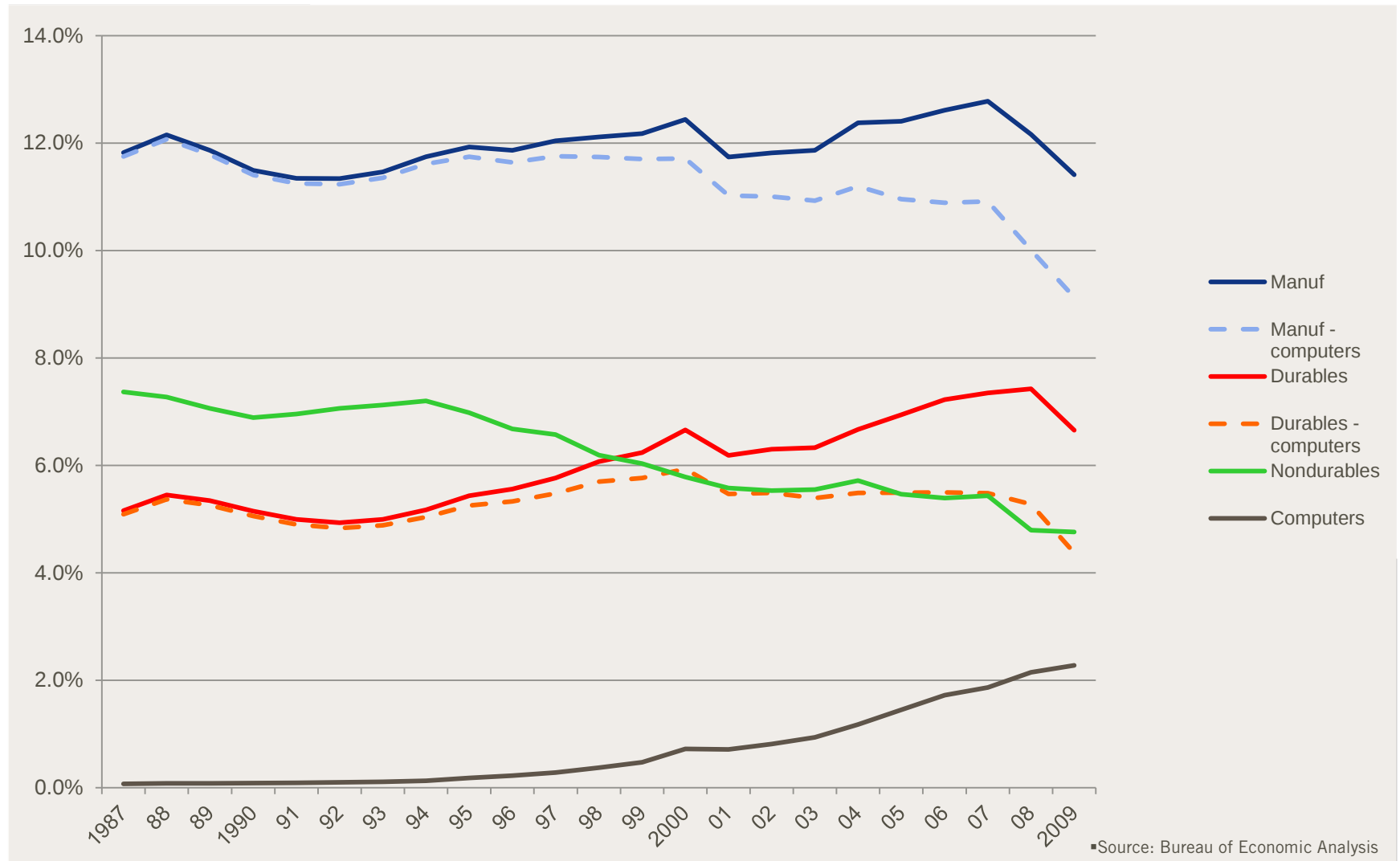
■ While Most Manufacturing Sectors Shrank



■ And Only Four Over-stated Sectors Grew



■ Real Manufacturing Value-Added As Share of GDP



■ Today's Presentation

1

Where Does U.S. Manufacturing Stand?

2

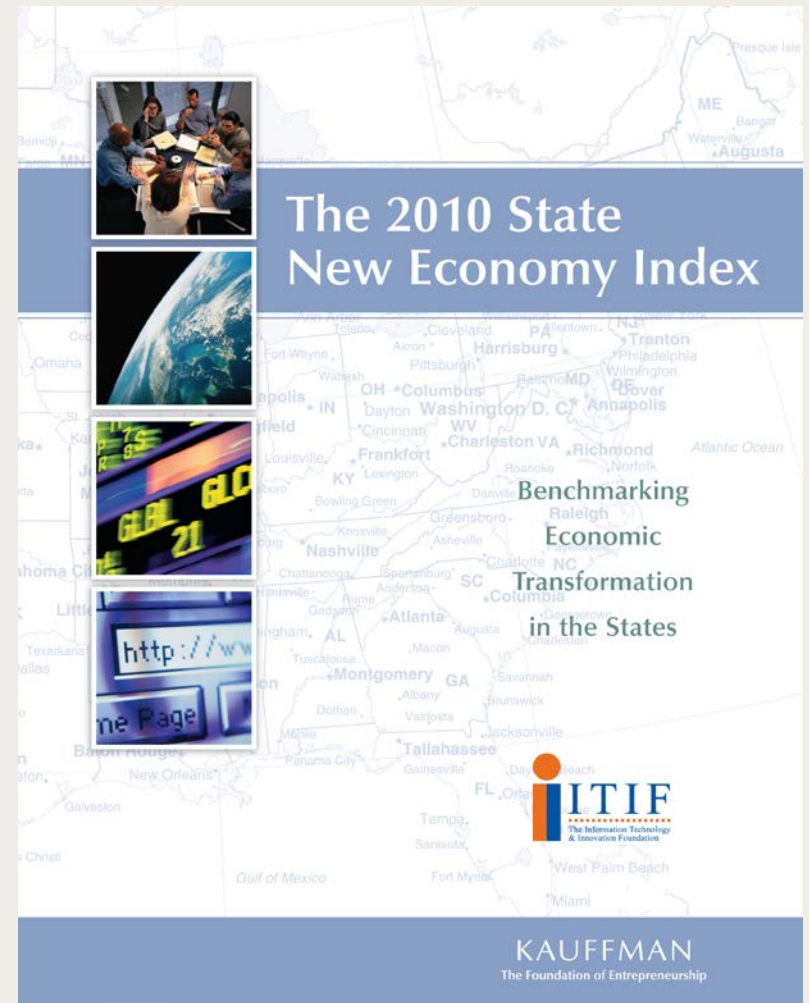
Where Does Pennsylvania's Economy Stand?

3

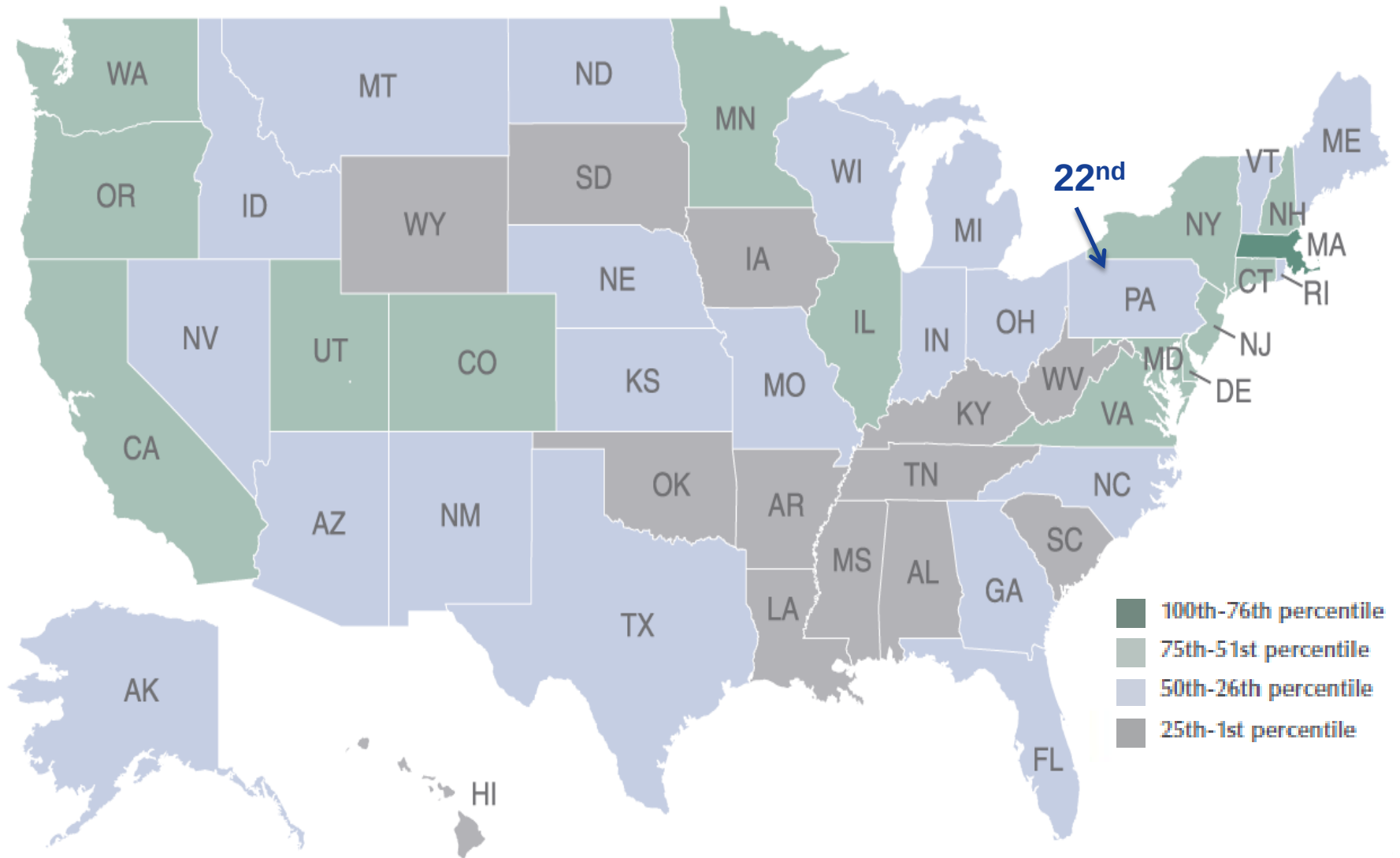
Policies to Revitalize Pennsylvania and U.S. Manufacturing

■ The *2010 State New Economy Index* uses 5 groups of 26 indicators to map how well states are adapting to the New Economy:

- Knowledge Jobs
- Globalization
- Economic Dynamism
- Digital Economy
- Technological Innovation



Overall Scores



■ Pennsylvania in the State New Economy Index

Scores Best:

- E-government (7th)
- Alternative Energy Use (10th)
- Industry Investment in R&D (11th)

Scores Worst:

- Entrepreneurial Activity (50th)
- Online Population (37th)
- Workforce Education (32nd)

Manufacturing-Related:

- Manufacturing Value-Added (16th)
- High-Tech Jobs (16th)
- Foreign Direct Investment (17th)
- Export Focus of Manufacturing and Services Firms (31st)

■ Today's Presentation

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Where Does U.S. Manufacturing Stand?

2

Where Does Pennsylvania's Economy Stand?

3

Policies to Revitalize Pennsylvania and U.S. Manufacturing

■ A Charter for Revitalizing American Manufacturing

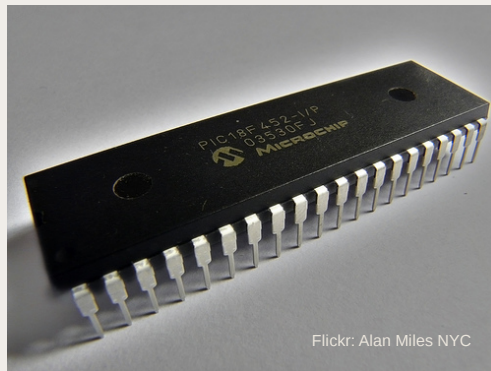
Tax



Talent

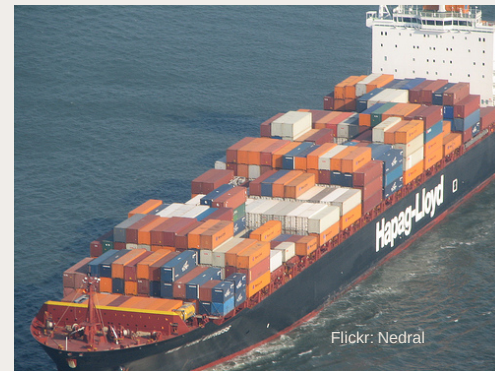


Tech



Flickr: Alan Miles NYC

Trade



Flickr: Nedral

■ Signatories to the Charter

Individual	Organization
Signatories to the Charter	
Bob Baugh	Executive Director, AFL-CIO Industrial Union Council
Scott Boos	Deputy Director, Alliance for American Manufacturing
Doug Woods	President, AMT – The Association For Manufacturing Technology
Howard Wial*	Fellow, The Brookings Institution
Michael Stumo	CEO, Coalition for a Prosperous America
Jack McDougle*	Senior Vice President, Council on Competitiveness
Clyde Prestowitz	President, Economic Strategy Institute
Robert Atkinson	President, Information Technology and Innovation Foundation
Jeff Finkle	President and CEO, International Economic Development Council
Stephen Gold	President and CEO, Manufacturers Alliance/MAPI
Mark Rice	President, Maritime Applied Physics Corporation
Lenny Mendonca	Director of Firm Knowledge, McKinsey Global Institute
Fred Wentzel	Vice President, National Council for Advanced Manufacturing
Emily DeRocco	President, NAM—The Manufacturing Institute
Drew Greenblatt	Chairman of the Board, Regional Manufacturing Institute; President, Marlin Steel Wire Products
Harry Moser	Founder, Reshoring Initiative
Mark Tomlinson	Executive Director/CEO, Society of Manufacturing Engineers
Jerry Jasinowski	Former President, NAM and NAM – The Manufacturing Institute
Advisory Contributors to the Charter	
Bill Bonvillian	Director, MIT Washington Office

■ State Tax Policies to Revitalize Manufacturing

- Expand state R&D tax credit and sync with federal R&D tax credit.
 - Allow tax credit to cover *process* as well as *product* R&D.
 - LA: 40% refundable tax credit for R&D expenses and for investments involved in commercialization of LA technology.
- Provide *more generous collaborative R&D tax credits to SMEs* working with universities or national laboratories.
 - VA: 20% credit for research done in partnership with VA university.
- Implement a quasi-incremental *Manufacturing Investment Tax Credit*.
- Expand *sales tax exemption for computer purchases* to cover uses beyond the shop floor.
 - WY: Provides sales/use tax exemption for all mfg. equipment.

■ State Technology Policies to Revitalize Manufacturing

- Expand mfg. technology programs at community colleges.
 - CT: \$20M bond program to establish three such programs.
- Attract advanced manufacturers by developing PPPs supporting them through R&D conducted by local university researchers.
 - E.g. Virginia's Commonwealth Center for Advanced Manufacturing.
 - Create a robotics center clustered around Carnegie Mellon.
- Fully fund state MEP centers (e.g. Industrial Research Centers).
- Develop a common university-firm technology licensing agreement; create technology transfer incentives.

■ State Talent Policies to Revitalize Manufacturing

- Fund six-month engineering co-op programs between universities, community colleges, and local businesses.
- Provide funds for SMEs to employ recent Masters/PhD graduates.
- Support the establishment of innovative STEM high schools (such as charter MSHSs).
- Reform university engineering curriculum towards more project-based learning and entrepreneurship (e.g. Olin College in MA).
- Increase adoption of industry-recognized, nationally portable credentials, such as those produced by the NMSSC.
 - Reinvent TCE Programs, in part by reprioritizing WIA and Perkins \$ into programs that result in portable skills credentials.
- Rebrand manufacturing as a high-tech activity that transitions innovation to product development.

■ Finance/Investment Policies to Revitalize Manufacturing

- Create a 401(K)-like tax deferred investment account for manufacturers to invest in machines/equipment or workforce training.
 - CT: Manufacturing Reinvestment Accounts up to \$100K.
- Introduce Innovation Vouchers that allow SMEs to purchase technical assistance from universities/community colleges.
 - Implemented by almost a dozen European countries;
 - Alberta: Routes 10% of state's university R&D funding through SMEs.
- Provide funds SMEs can bid on in collaborative research format to support their R&D, new product development, and innovation efforts.
 - Germany: ZIM (Central Innovation Program for SMEs) - \$1.4B
 - VA: Commonwealth Research Commercialization Fund

■ Additional Policy Ideas to Revitalize Manufacturing

- Encourage manufacturers to consider reshoring, especially by informing them about total cost of ownership calculation (TCO) tools.
- Create a program that provides design assistance to manufacturers.
 - UK Designing Demand; Ontario Design Advisory Committee.
- Tap into the \$500M Goldman Sachs *10,000 Small Businesses* initiative anchored at local community colleges.
- Help bring a stronger state voice to the Washington policy debate; state actions alone won't be enough to revitalize U.S. manufacturing.

Thank You

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