

Winning in the New Innovation-Based Global Economy: Is Boosting the Supply Side Enough?

Presentation at the 2006 Accelerating Innovation Conference
Washington, DC

Robert Atkinson

President
Information Technology and Innovation
Foundation

The Information Technology and Innovation Foundation

ITIF is a non-partisan public policy think tank committed to articulating and advancing a pro-innovation and public policy agenda internationally, in Washington and in the states. Recognizing the vital role of technology in ensuring American prosperity, ITIF focus exclusively on innovation, productivity, and digital economy issues.

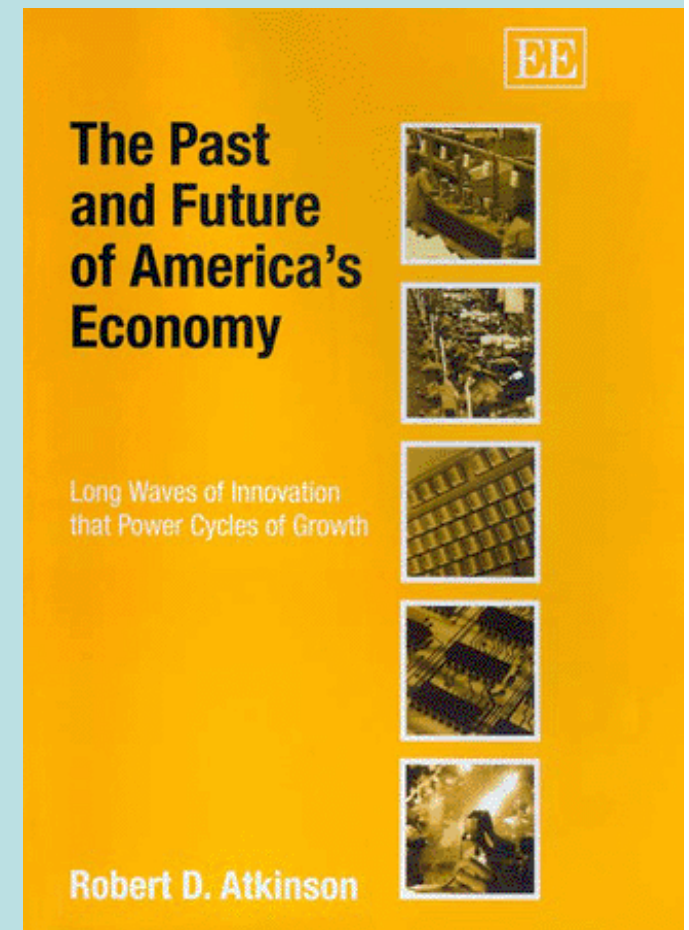


Waves of Innovation Drive Cycles of Growth & Change

Robert D. Atkinson

*The Past and Future of
America's Economy:
Long Waves of
Innovation that Power
Cycles of Growth*

(Northampton, MA: Edward Elgar, 2005)



Technology Transformations and Growth

Old Technology System

New Technology System

Takeoff
1945-58

Installation
59-74

Slowdown
74-93

Takeoff
94-2000

Installation
2001-?-

Slowdown
??

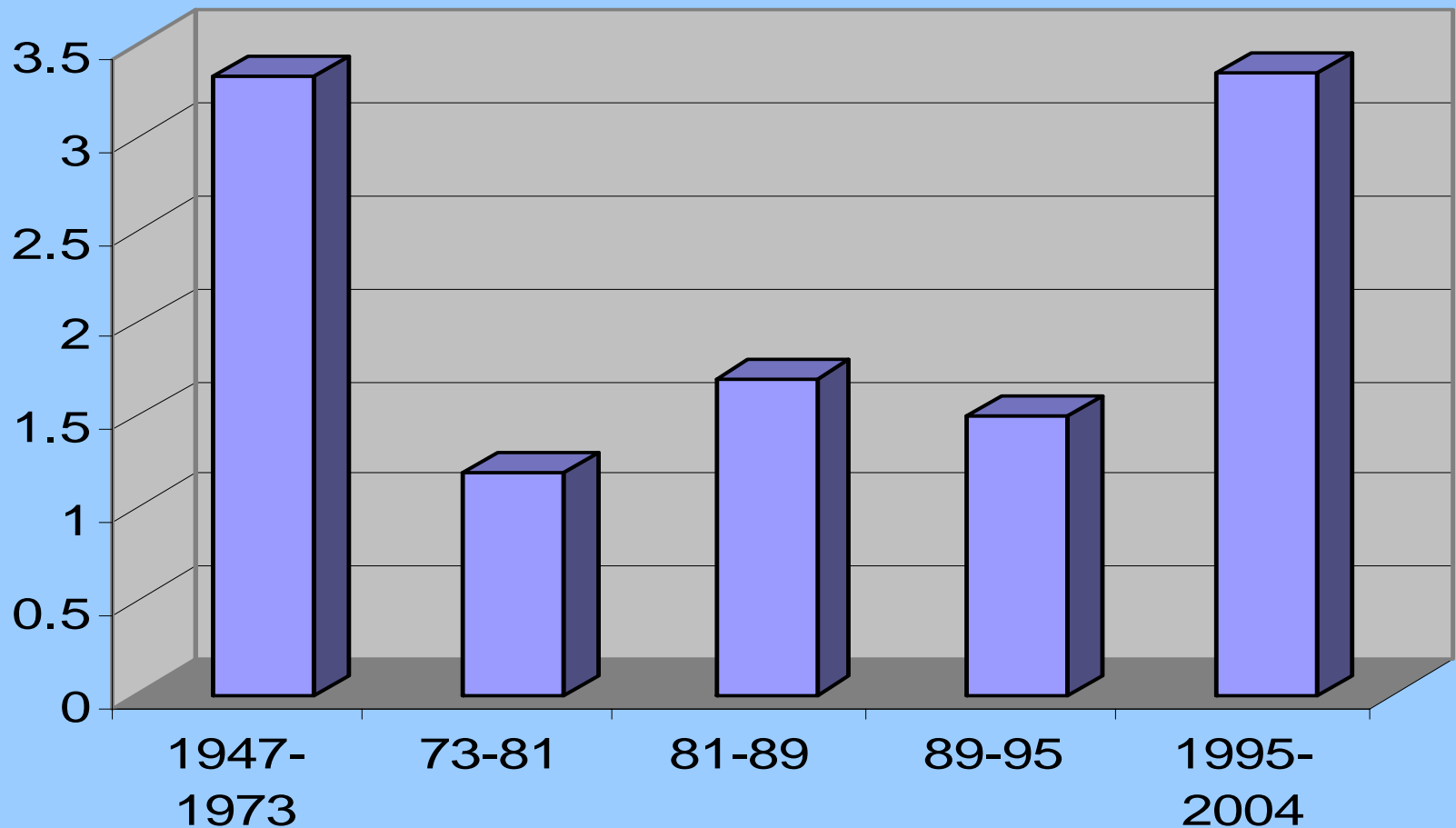
Time

Periods in American Economic History

Period	Years
Mercantile/craft	1840s to 1890s
Factory-based industrial	1890s to 1940s
Corporate mass production	1940s to 1990s
Entrepreneurial, knowledge-based	1990s to – ??

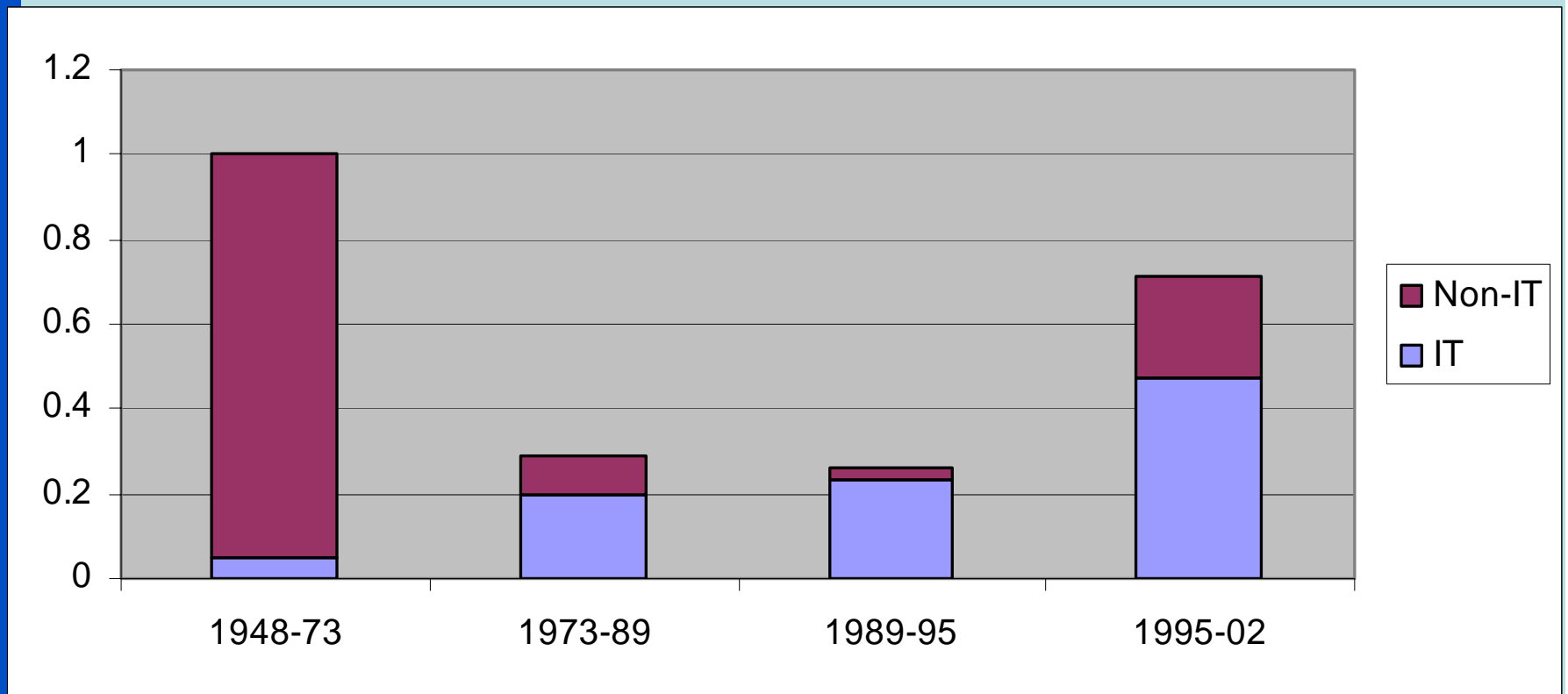
Transformations Drive Growth

Annual Change in Labor Productivity Growth



IT is the Major Engine of Growth Today

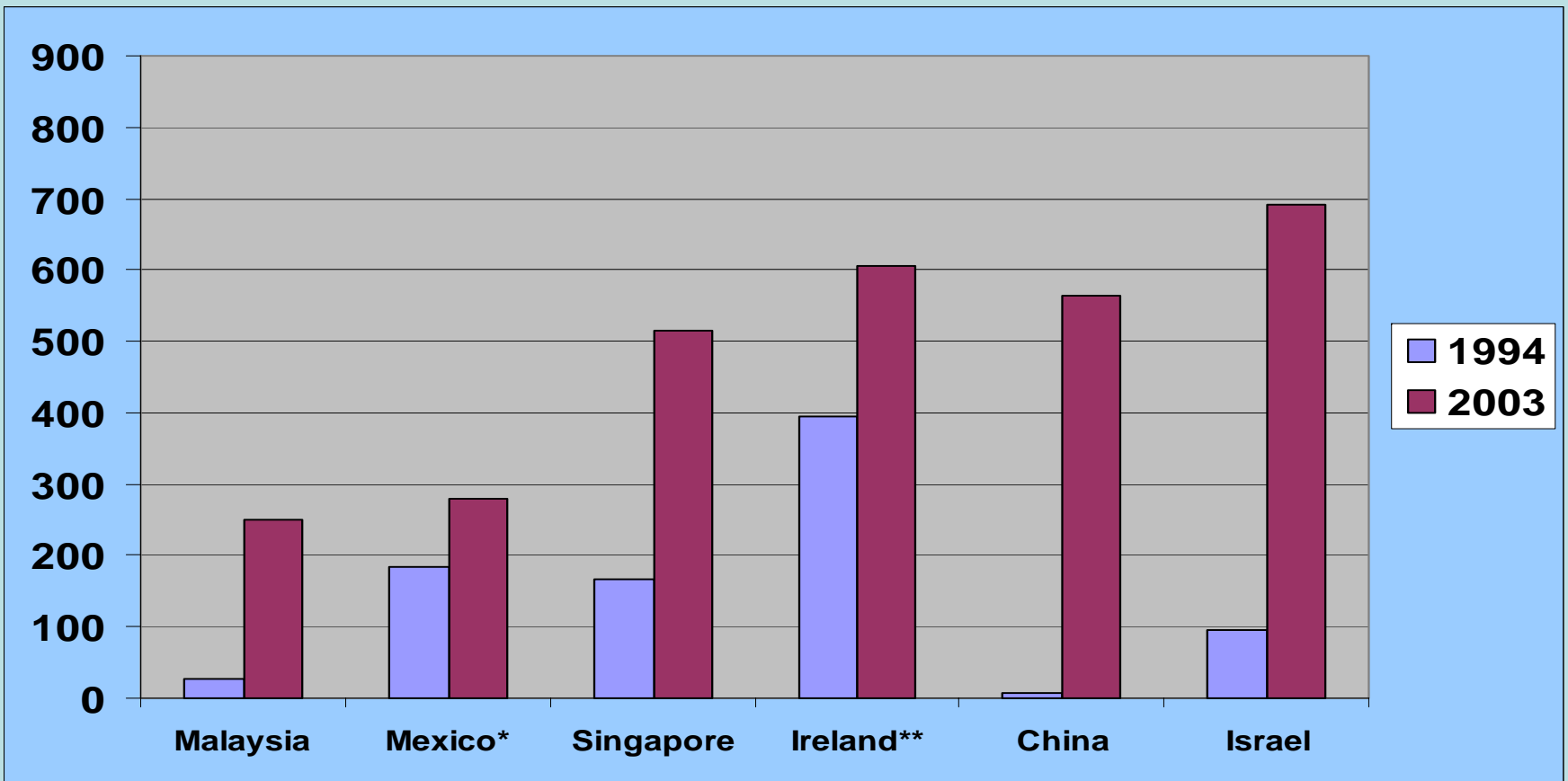
Sources of Total Factor Productivity Growth



Source: Jorgenson, *Information Technology and the American Growth Resurgence*

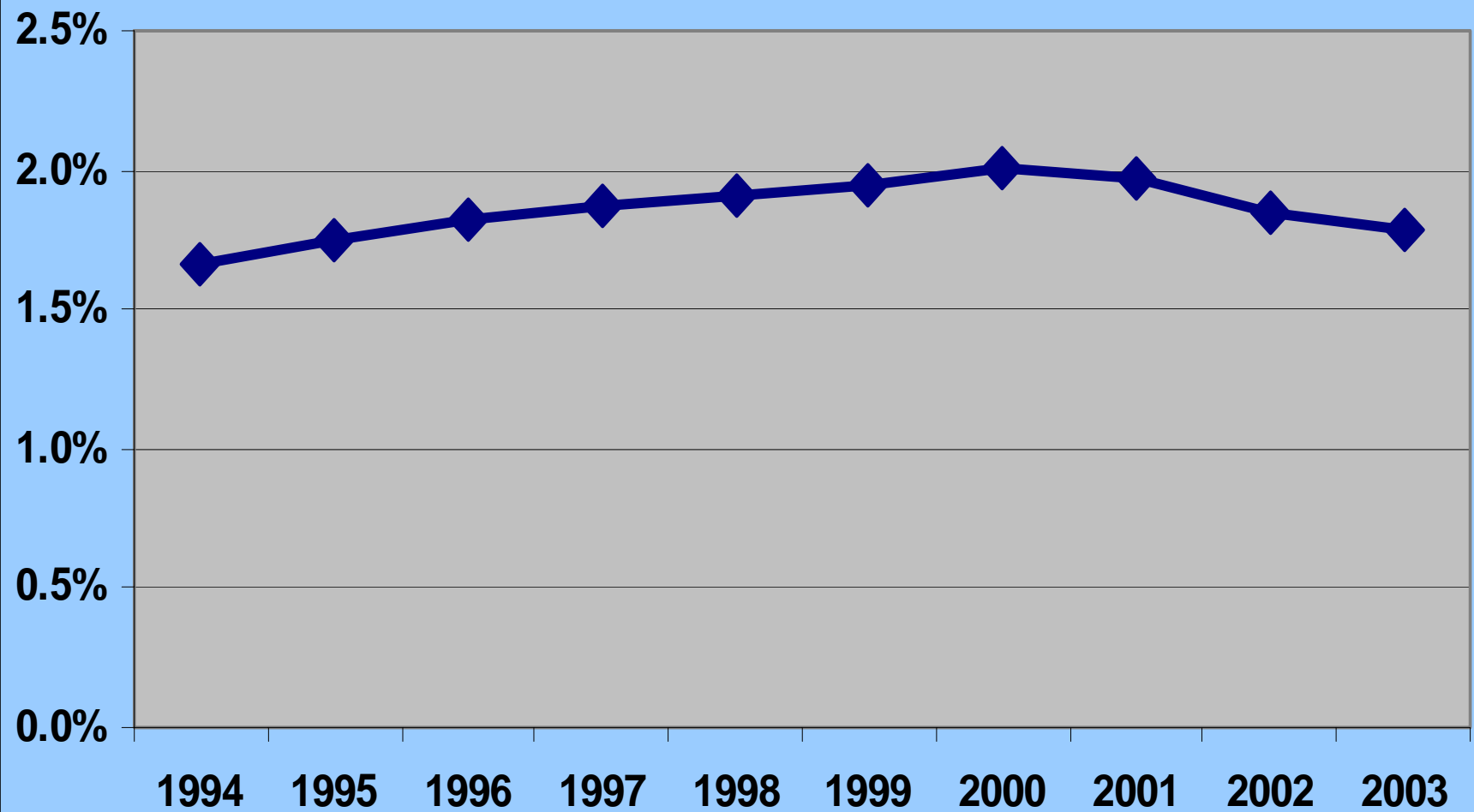
Transformations Also Drive Regional Restructuring

R&D Performed Overseas by Majority-Owned Foreign Affiliates of U.S. Companies (in \$millions)

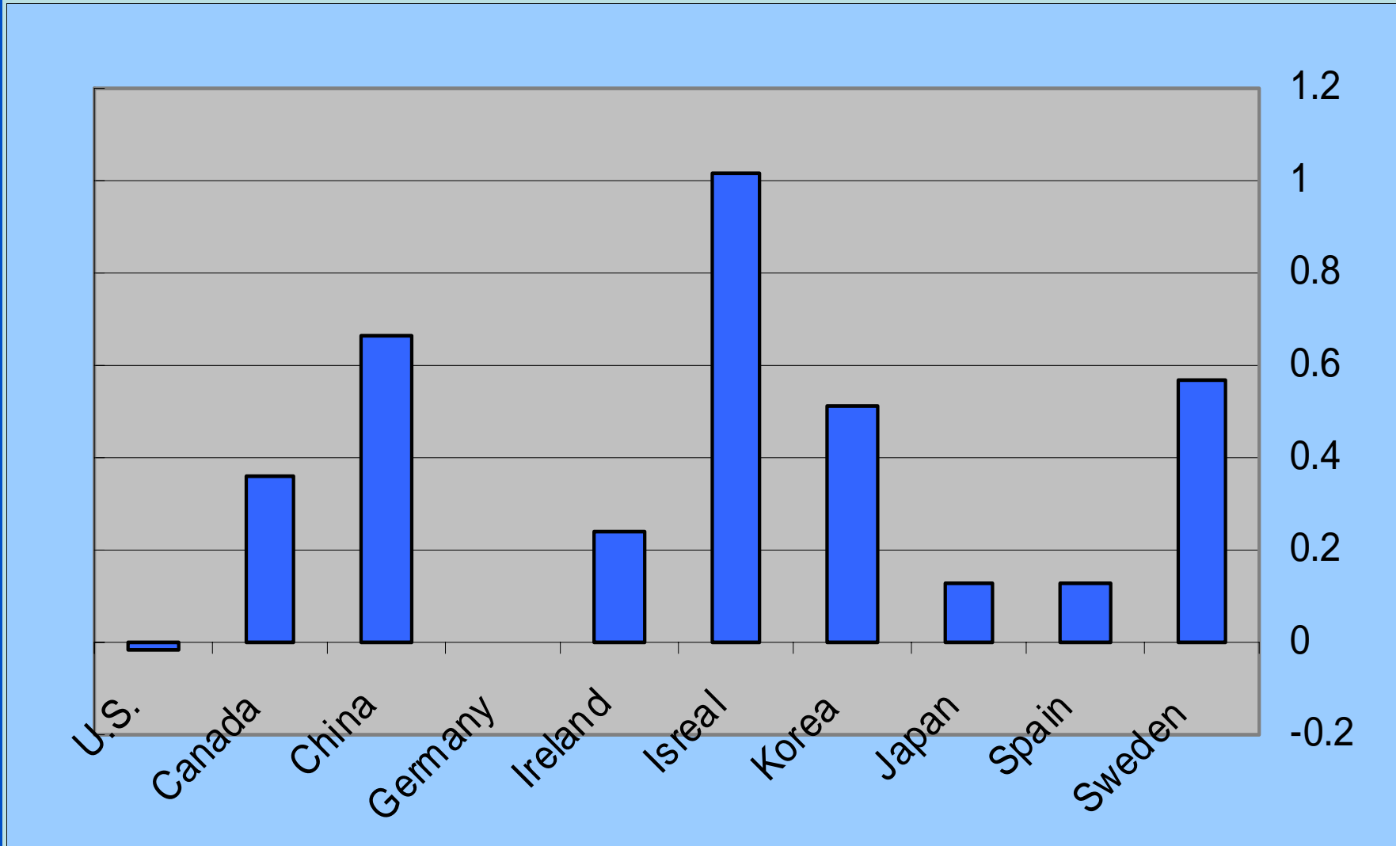


*2000 **2001; Source: U.S. Bureau of Economic Analysis

Industry R&D as a Share of GDP

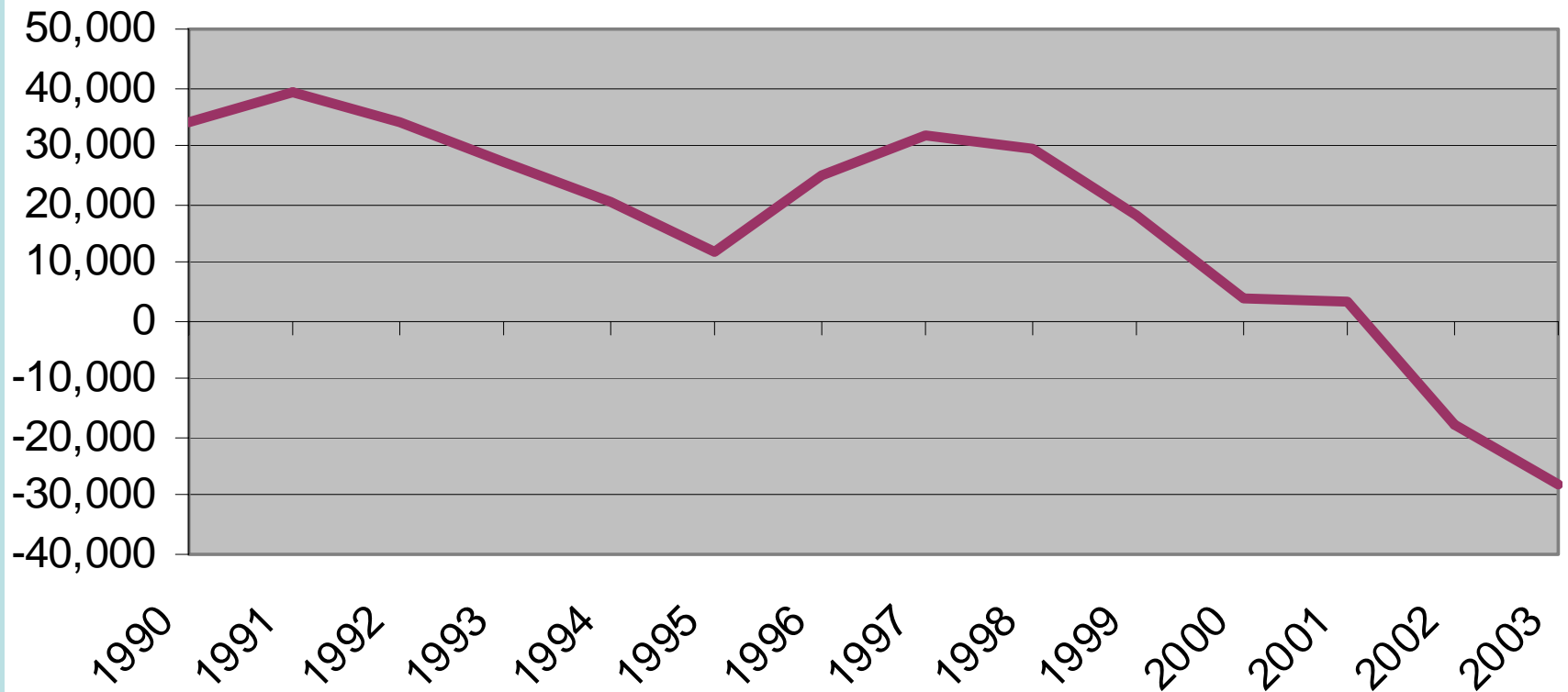


Change in R&D/GDP Ratio, 1991-2003



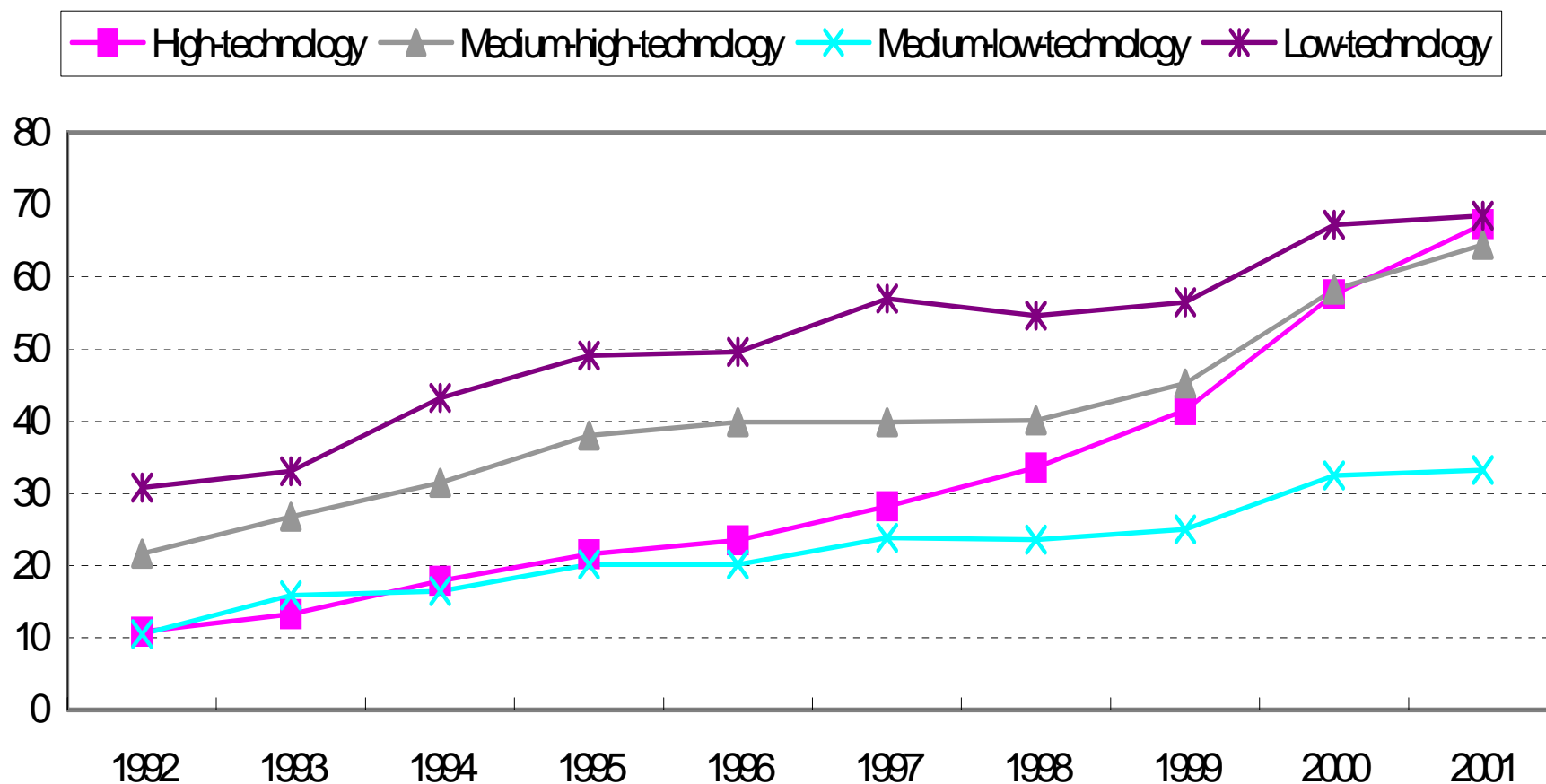
Source: OECD

U.S. Trade Balance in High-Tech Products



Source: U.S. Census Bureau Foreign Trade Statistics, U.S. International Trade in Goods and Services.

Chinese Trade by Technological Intensity



Source: Andrew Wyckoff, OECD.

Why Does Innovation and Competitiveness Matter?

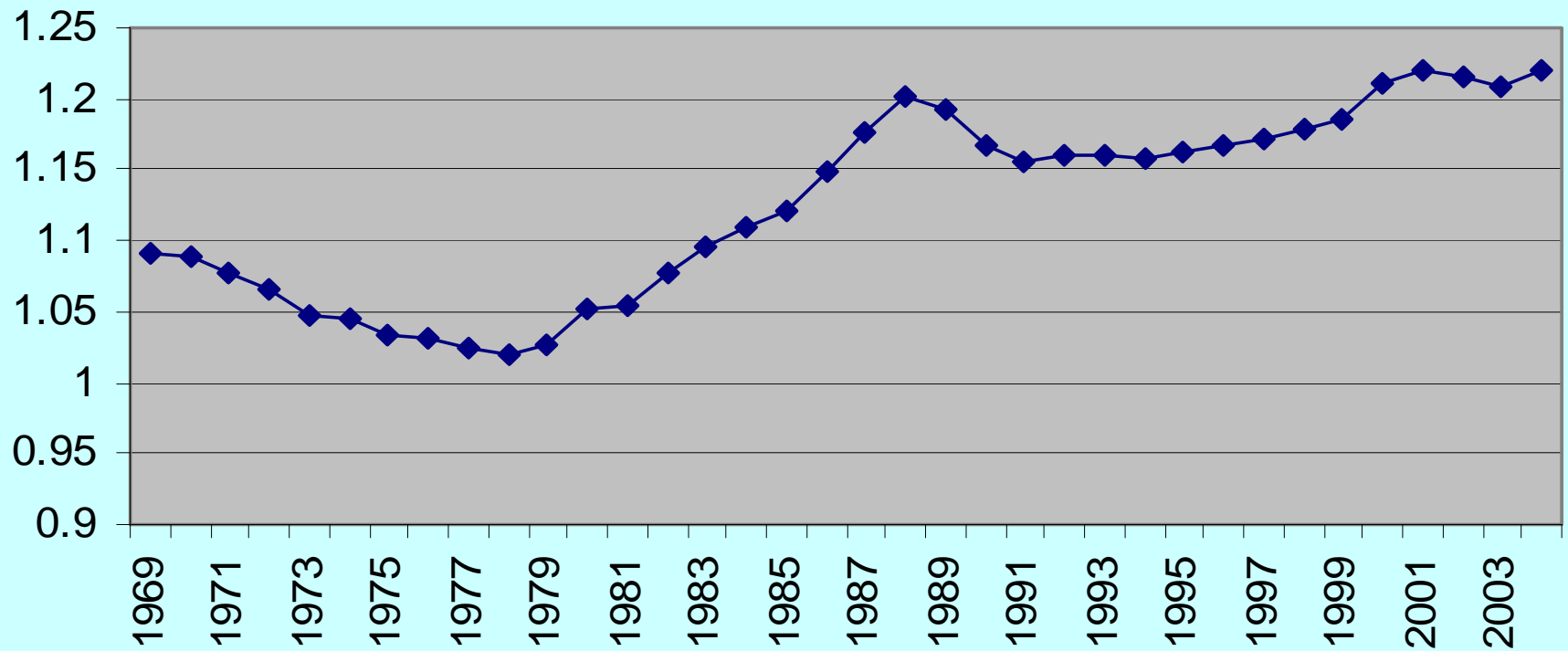
Economic growth comes from either boosting productivity in all sectors or shifting to higher-value added sectors.

In the twenty-first-century global economy, nations can no longer be indifferent to the industrial and value added mix of their economy.

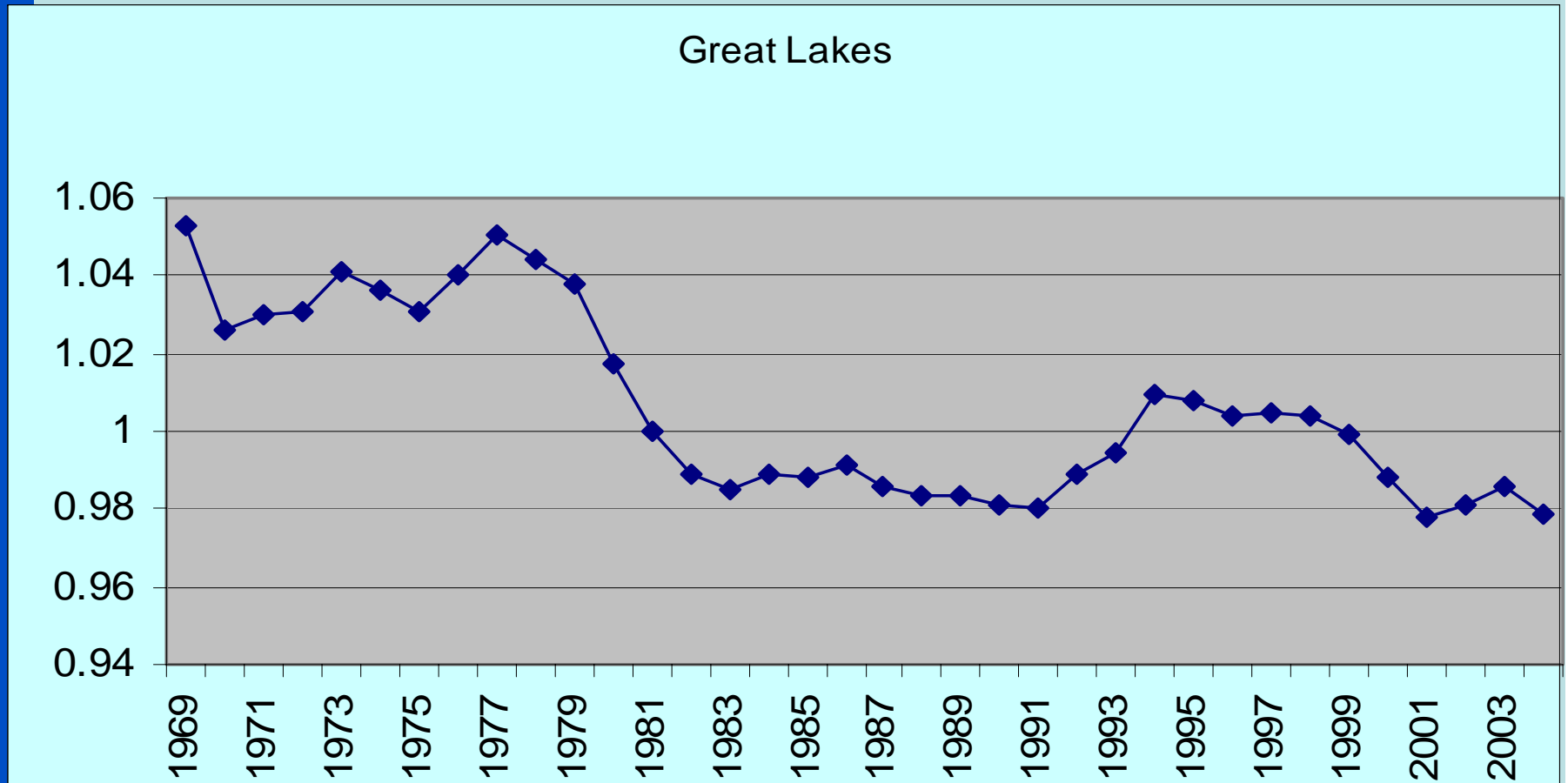
Which Future For America?

Renewal Through Innovation

New England



Relative Decline?



So, What Should We Do?

- One side says, “Not much, everything is fine.”
- Another side says rightly, “We need to act now.”

So, What Should We Do?

We Need to Act Now

Boost the Supply of
Innovation Production
Factors (e.g., scientists,
basic research)

Boost the demand from
companies for innovating
in the United States.

Why Is So Much of the Policy Focus on Supply-Side Factors?

- According to the conventional neo-classical economics' view, firms compete, nations do not.
- According to this view, the task is to ensure that factors of production are mobile and quickly redeployed in case of firm failure. When you lose, it the job is to quickly reuse it.

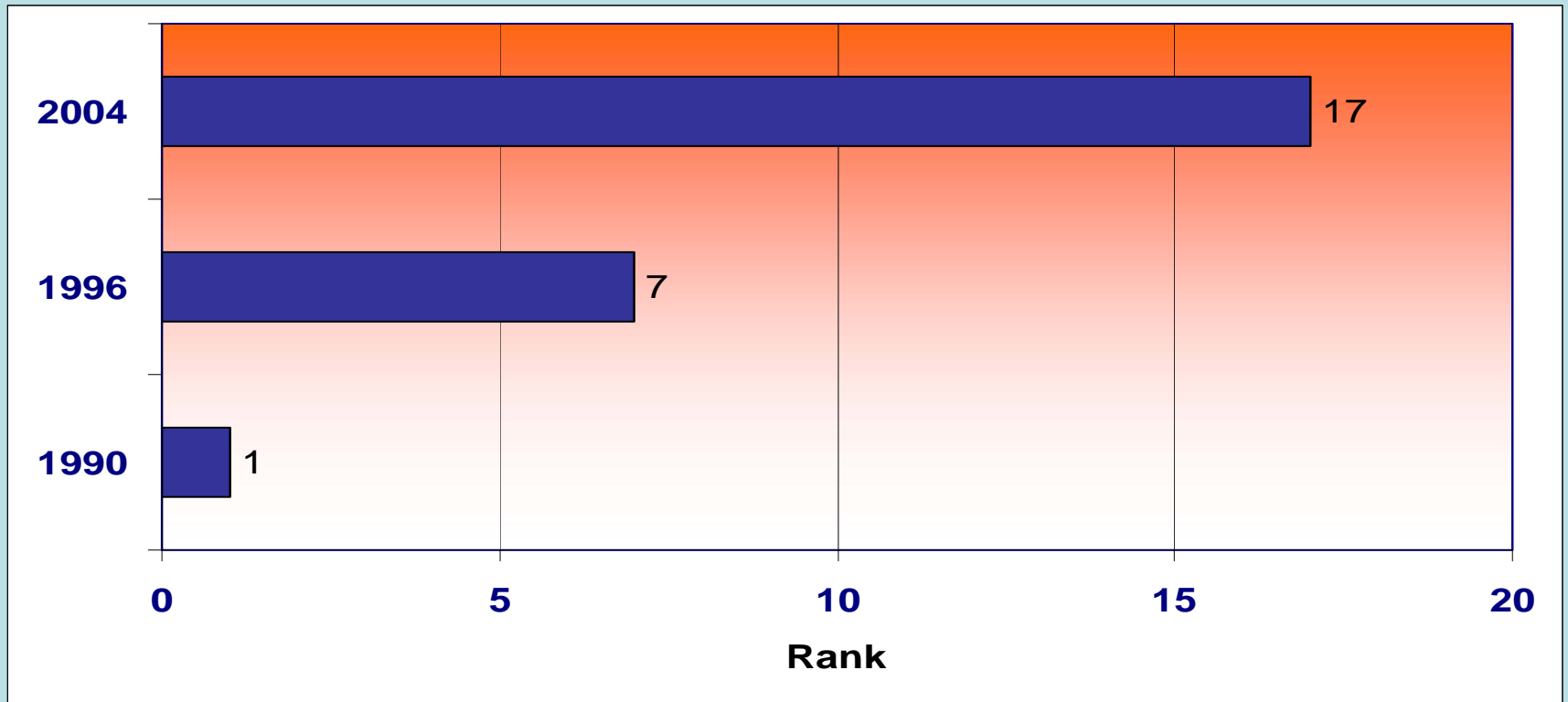
While Some Companies Compete Internationally, All Countries Do

- Workers have context-specific knowledge whose value declines significantly when the context is lost.
- Significant spillovers from firm activities and significant first-mover advantages, including learning effects, which let firms translate early leads into dominant positions.
- There are also significant network effects that mean that advancement in one industry (e.g., broadband telecommunications) can lead to advancement in a host of others (e.g., Internet video).
- If you lose it, you can't easily reuse it.

Outlines of a Comprehensive Innovation and Competitiveness Strategy

1. Don't ignore the demand side (e.g., research funding, skills, STEM workforce).
2. But also create incentives for organizations to invest in innovation and innovation-based production in the United States (e.g., knowledge tax credit, health care restructuring).

U.S. Rank in R&D Tax Credit Generosity Has Fallen Significantly



Outlines of a Comprehensive Innovation and Competitiveness Strategy

1. Don't ignore the demand side (e.g., research funding, skills, STEM workforce)
2. Create incentives for organizations to invest in innovation and innovation-based production in the United States (e.g., knowledge tax credit, health care restructuring).
3. Fight foreign technology mercantilism.

www.innovationpolicy.org

ratkinson@itif.org