

Firm Dynamics and Productivity Growth in the U.S. Manufacturing Sector

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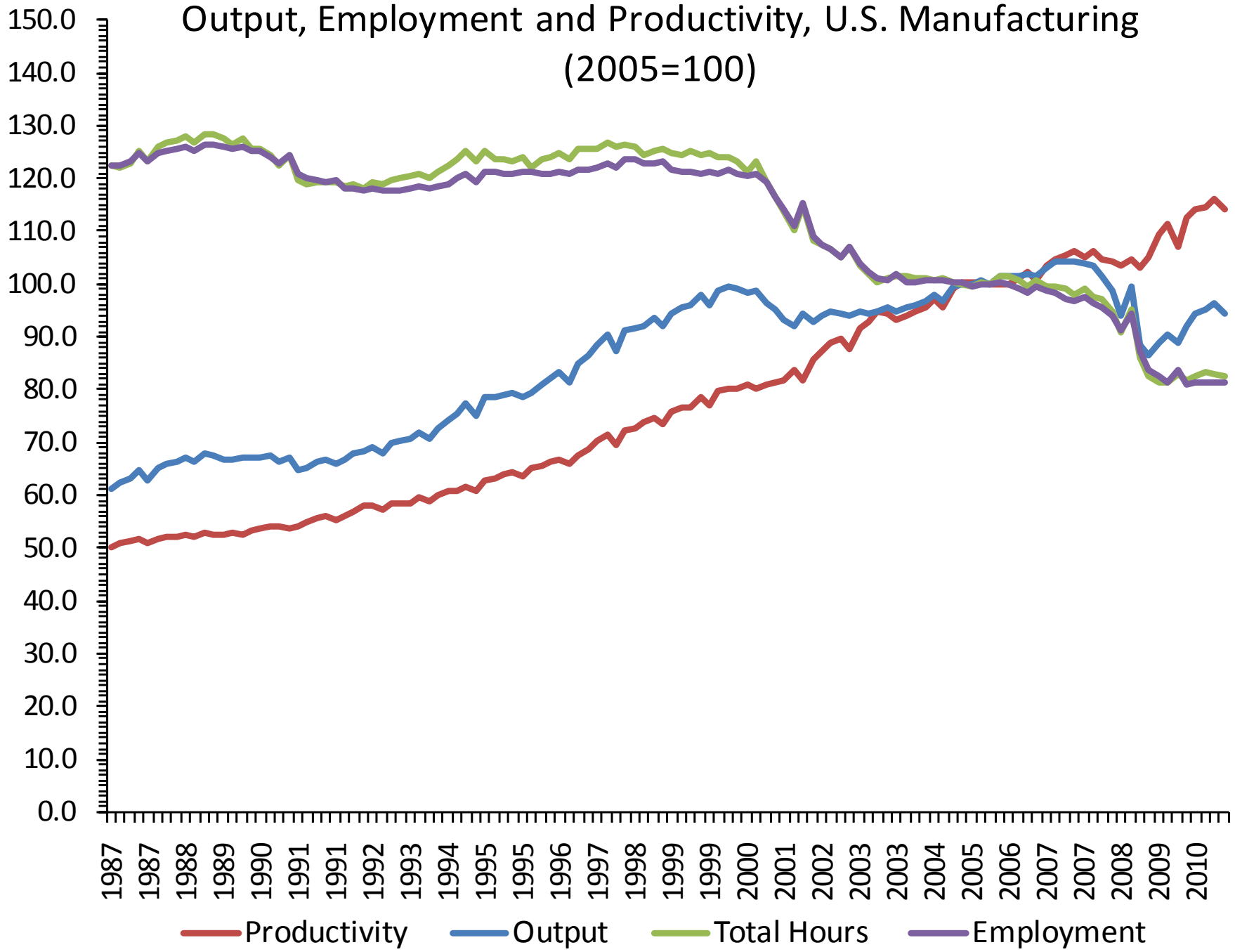
University of Maryland and NBER

*Without implication, this presentation draws heavily on joint work with Steven Davis, Jason Faberman, Lucia Foster, Ron Jarmin, C.J. Krizan, Javier Miranda and Chad Syverson

Overview

- Dynamism of U.S. Businesses has played an important role in U.S. job and productivity growth
 - Arguably critical for innovation (broadly defined)
 - » Development and introduction of new goods and processes involves creative destruction
 - Part of ongoing reinventing and restructuring that is inherent in a healthy, dynamic market economy
- Where does U.S. manufacturing fit into this picture?
 - Downsizing of manufacturing employment with rising productivity over the last 30 years
 - What has been the nature and contribution of reallocation in the U.S. manufacturing sector to productivity growth?

Output, Employment and Productivity, U.S. Manufacturing (2005=100)



Job Creation and Destruction, U.S. Private Sector, Annual Rates (Percent of Employment), 1980-2009

Source: BDS

Total=16.9

Total=15.3

Continuing
Establishments
10.6

Continuing
Establishments

10

New Establishments
(Existing Firms)

3.2

Exiting Establishments
(Continuing Firms)

2.4

New Firms

3.1

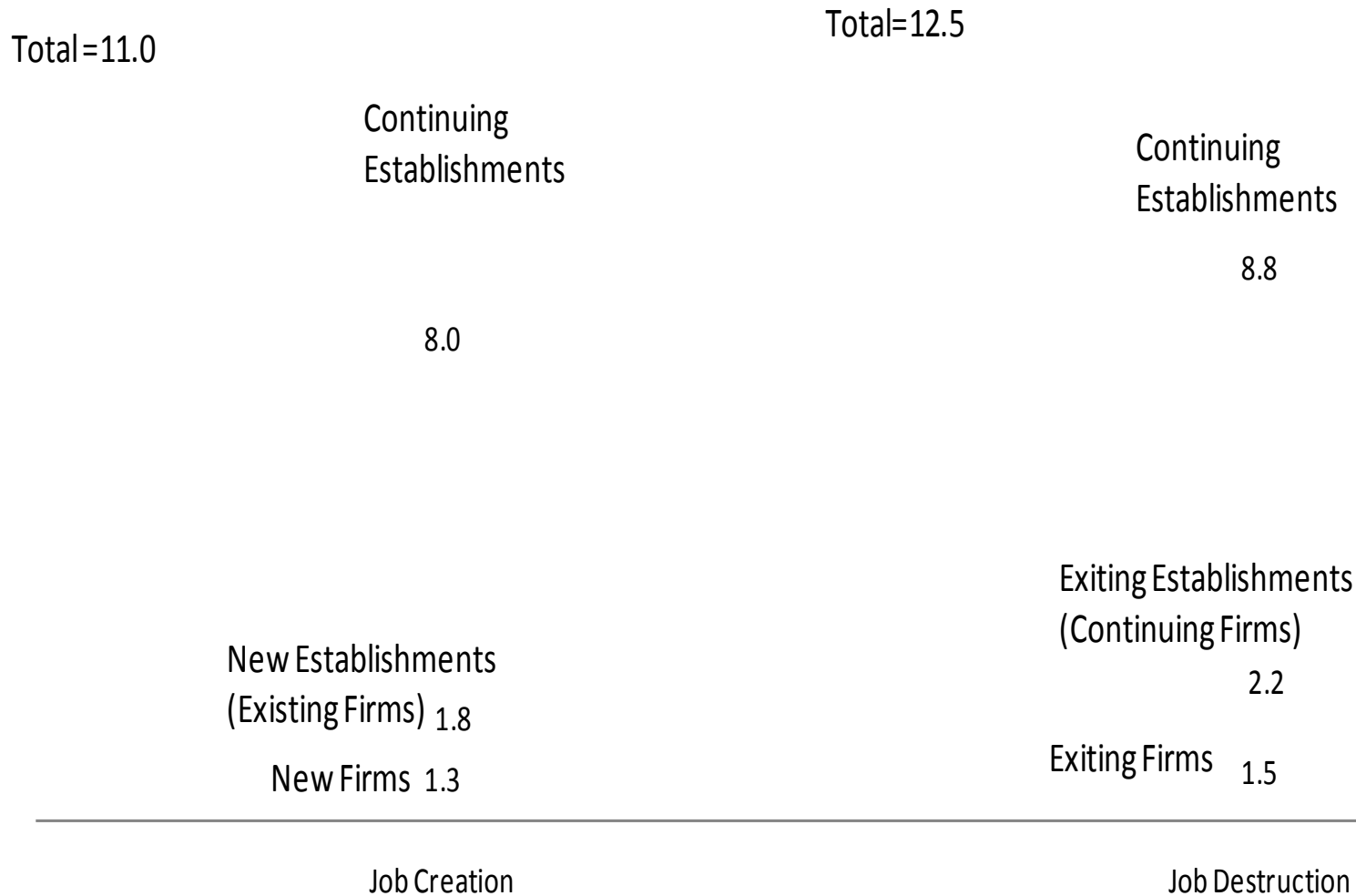
Exiting Firms

2.9

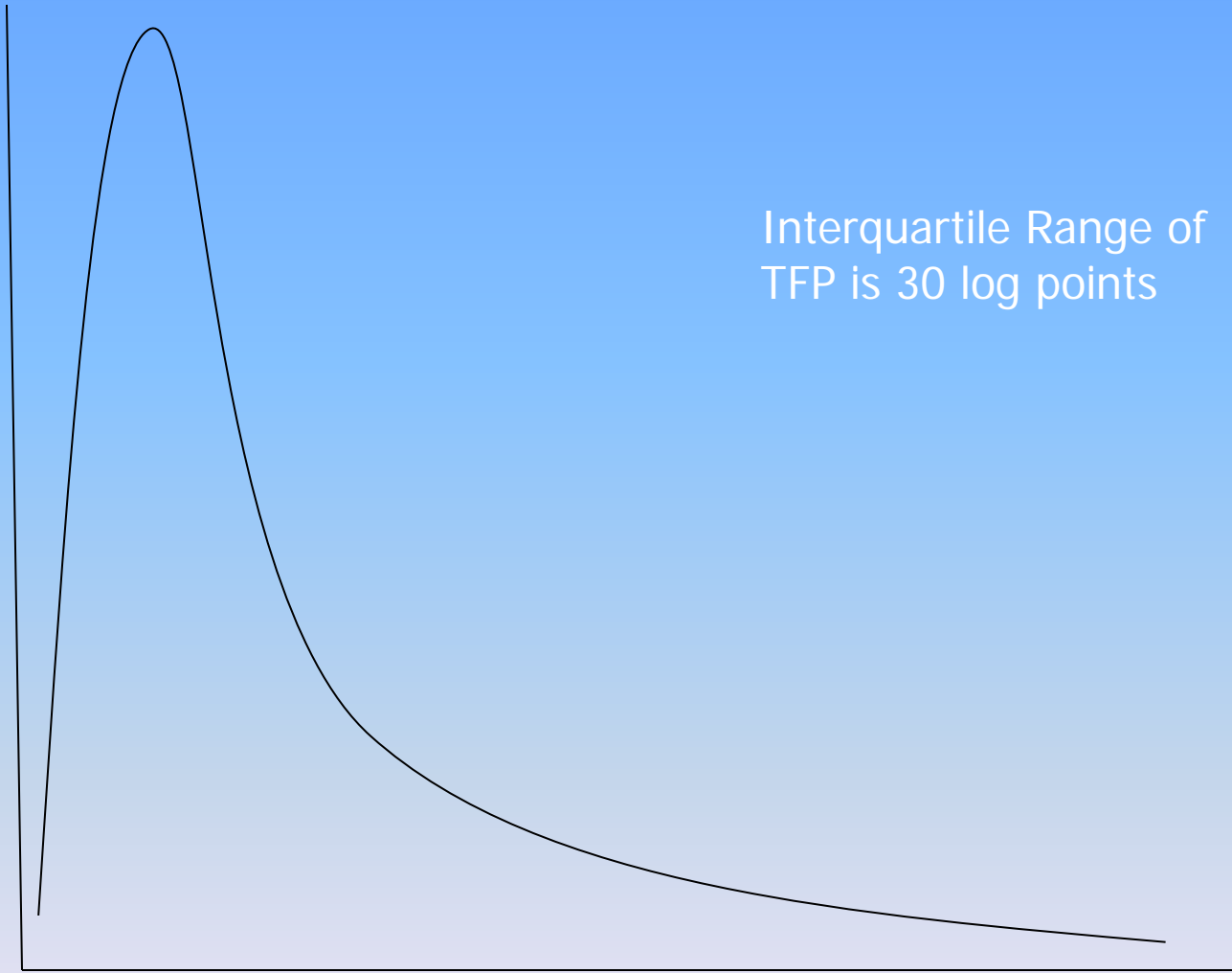
Job Creation

Job Destruction

Job Creation and Destruction, U.S. Manufacturing Sector, Annual Rates (Percent of Employment), 1980-2009



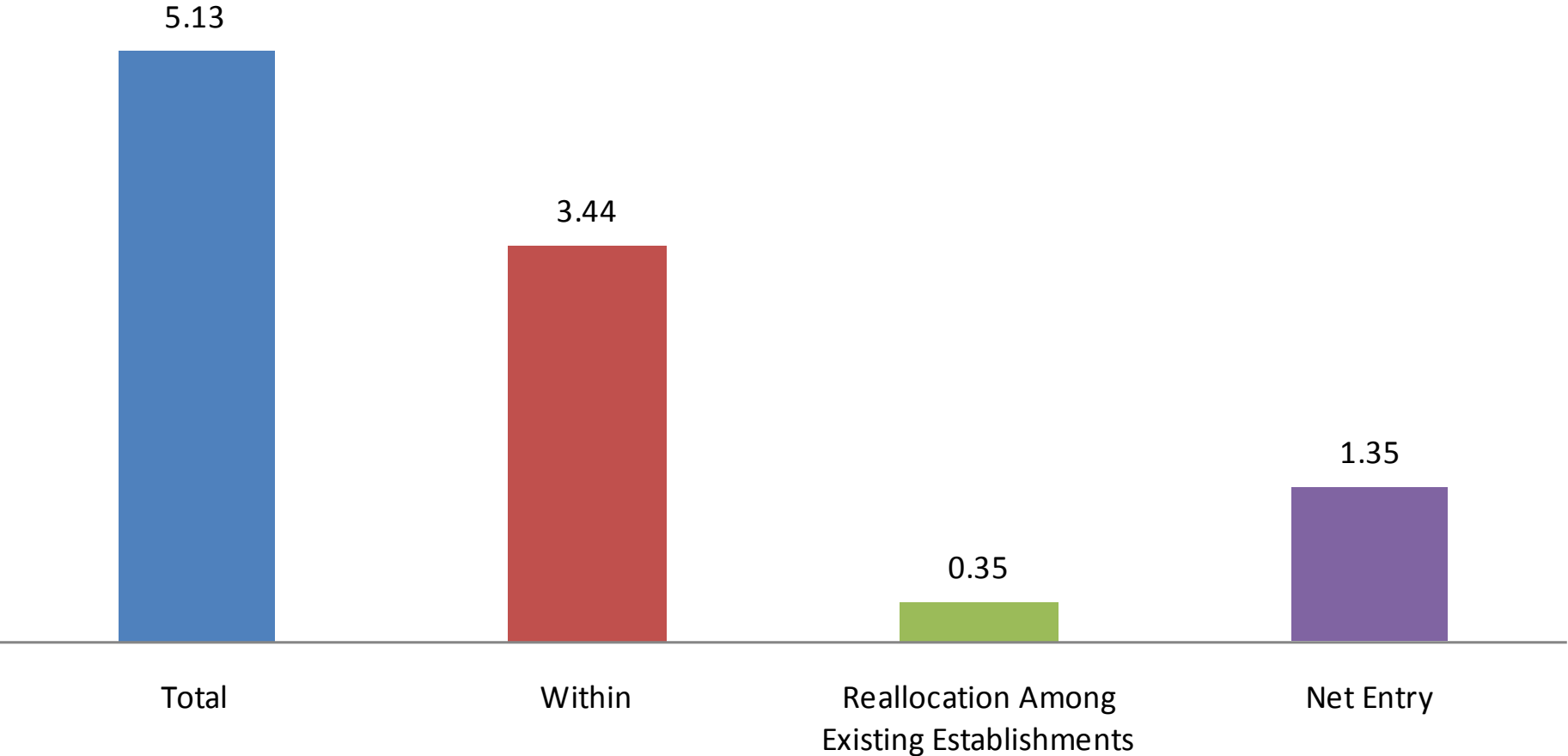
Productivity Distribution Within Narrowly Defined Industries



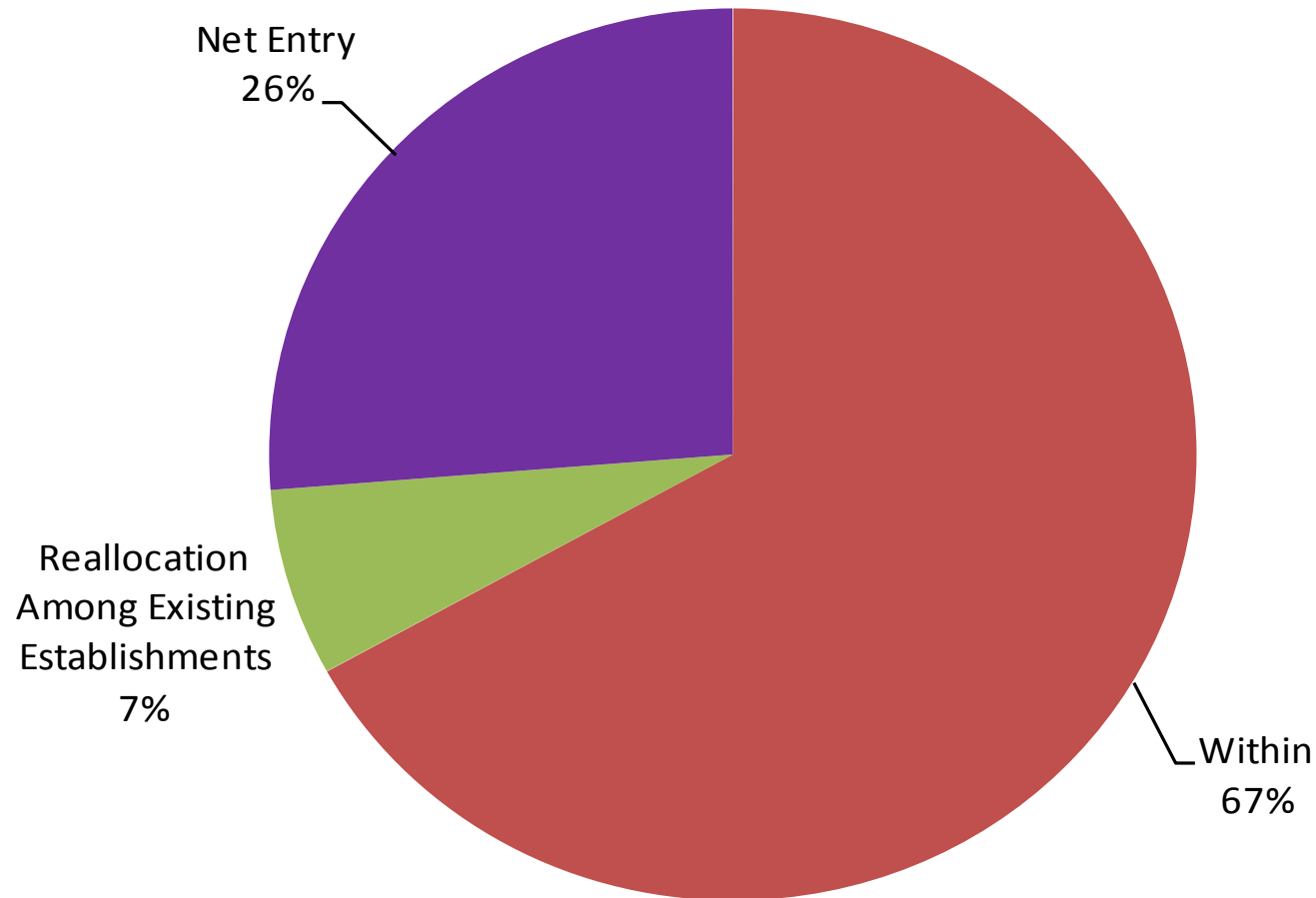
Productivity of Businesses

Components of Total Factor Productivity Growth over Five-Year Horizons, 1977-1997, Selected Manufacturing Industries

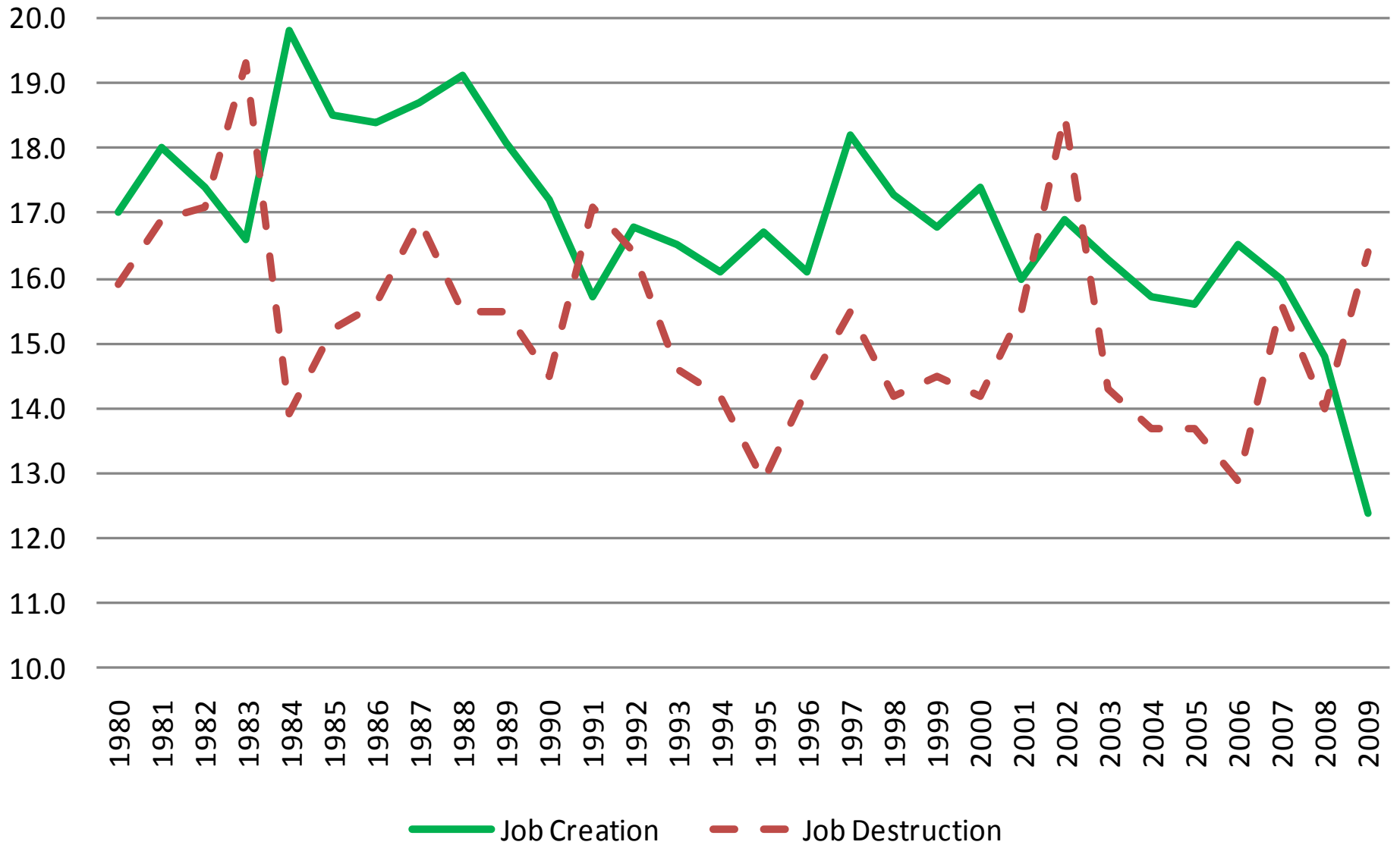
■ Total ■ Within ■ Reallocation Among Existing Establishments ■ Net Entry



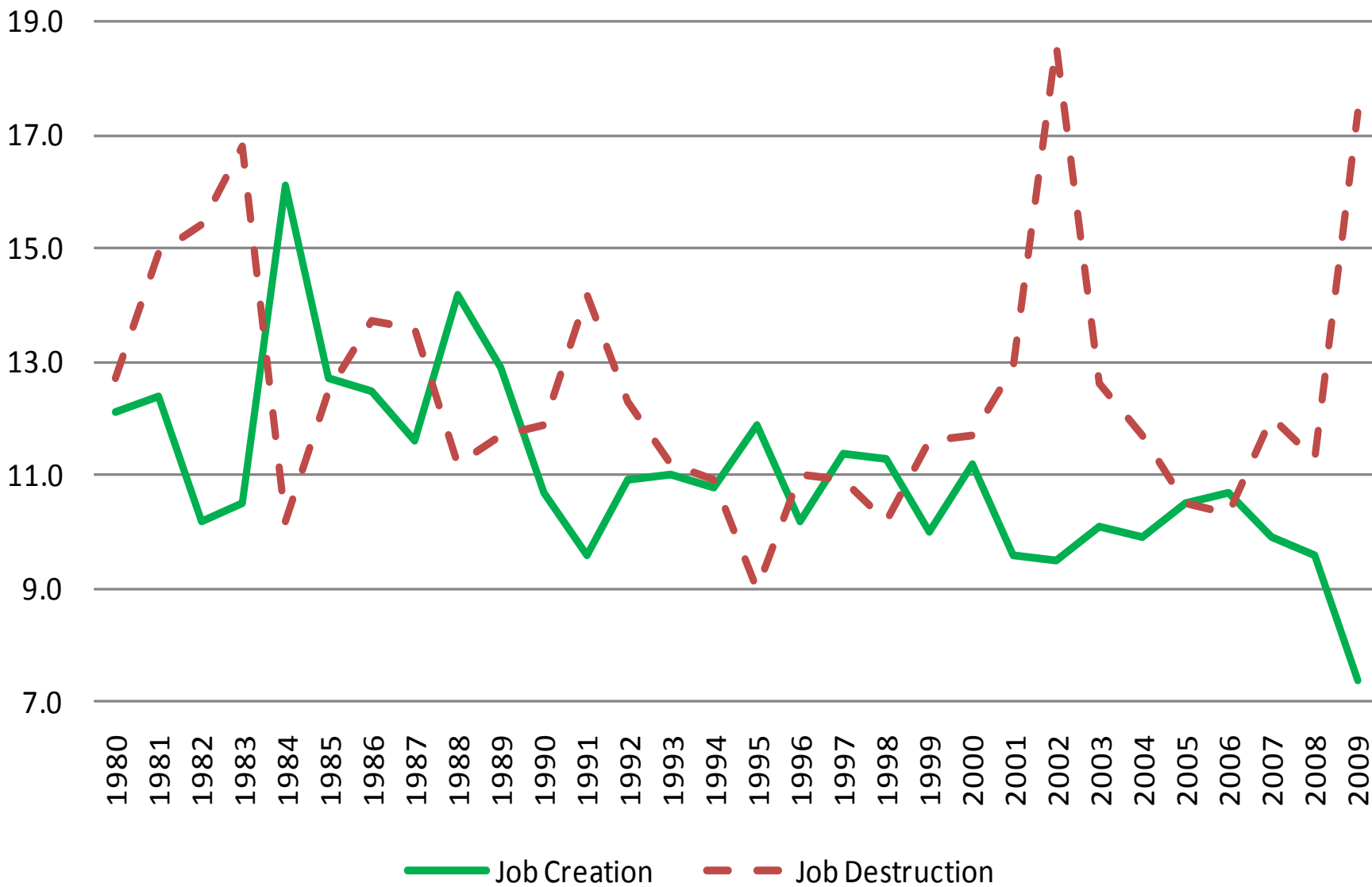
Shares of TFP Growth Over 5-Year Horizons, 1997-1997, Selected Manufacturing Industries



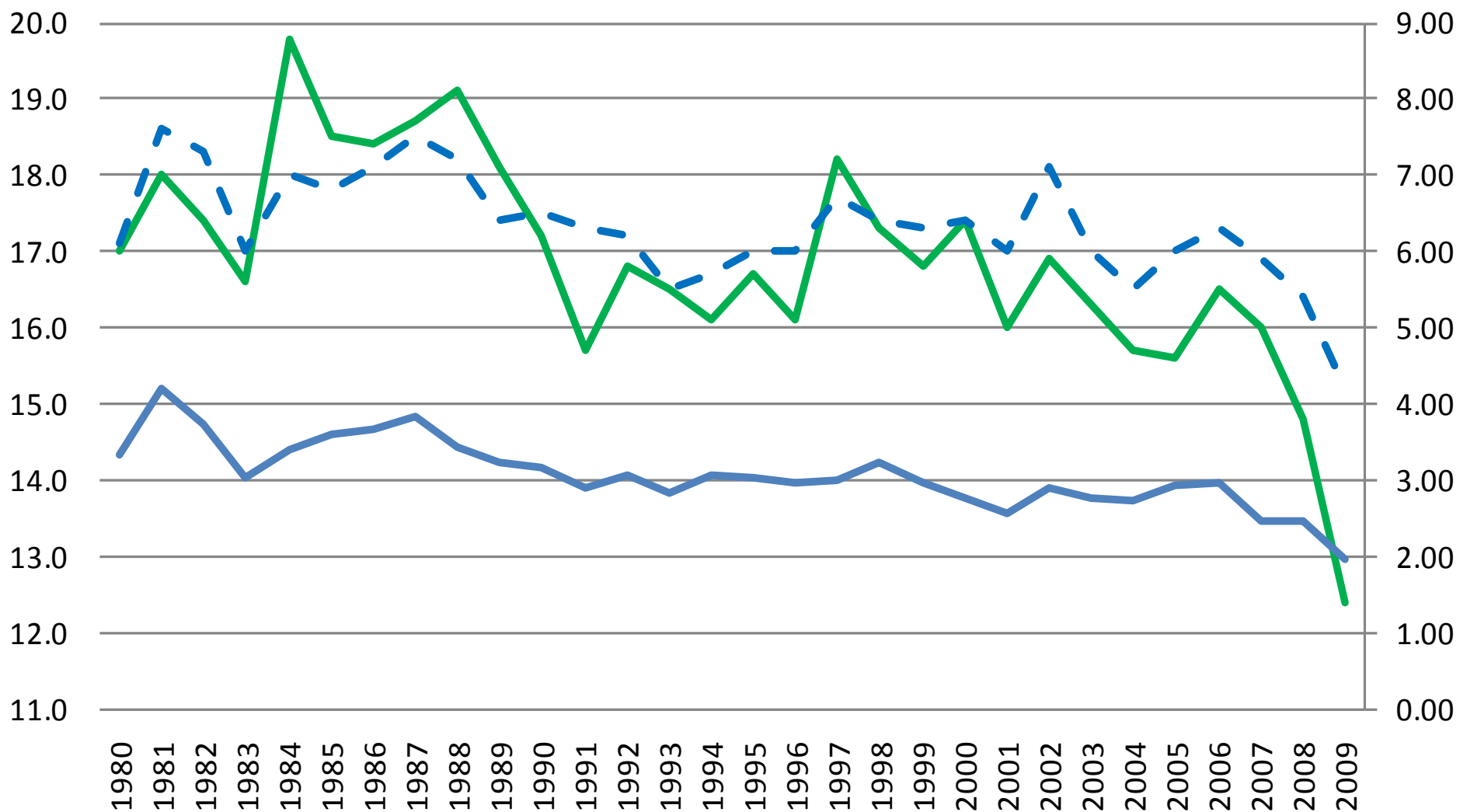
Gross Job Creation and Destruction Rates, U.S. Private Sector



Gross Job Creation and Destruction Rates, U.S. Manufacturing Sector



Job Creation and Business Startup Rates, U.S. Private Sector

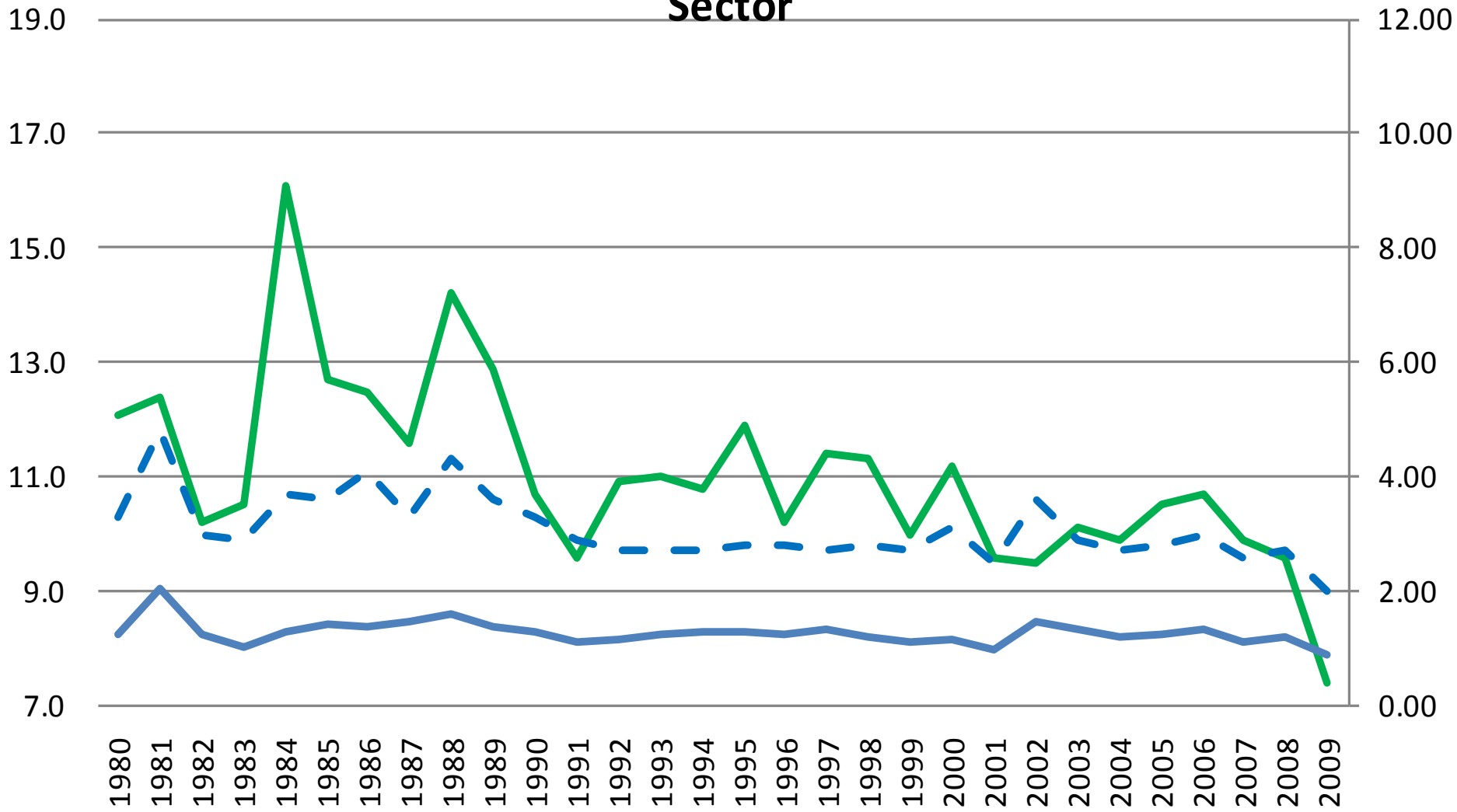


— Gross Job Creation

— Job Creation (Startups) -- Right Axis

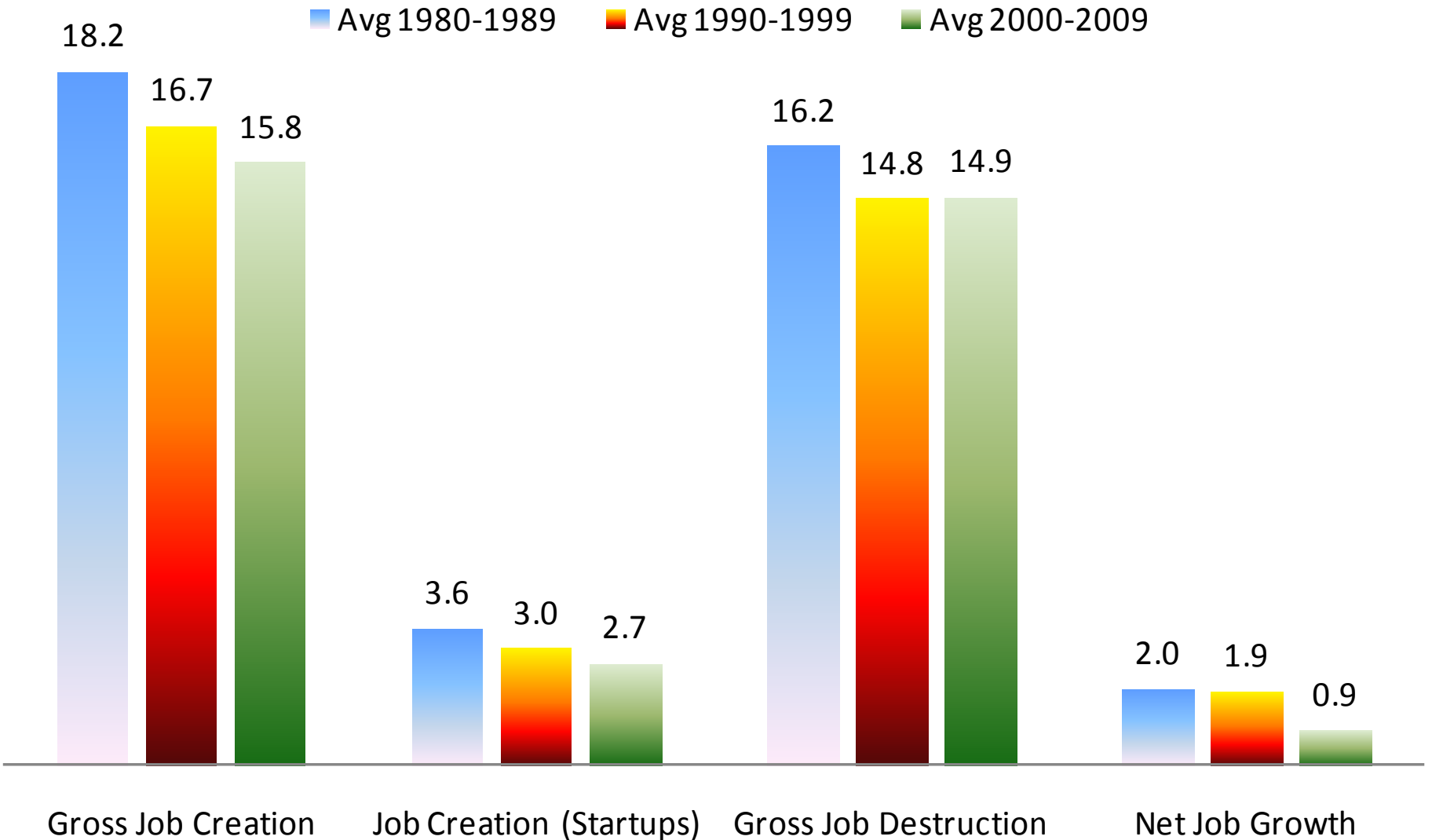
- - Job Creation (New Establishments)-- Right Axis

Job Creation and Business Startup Rates, U.S. Manufacturing Sector



- Gross Job Creation
- Job Creation (Startups) -- Right Axis
- - Job Creation (New Establishments)-- Right Axis

Trends in Gross Flows and Net Job Creation, Private Sector



Trends in Gross Flows and Net Job Creation, Manufacturing

Avg 1980-1989

Avg 1990-1999

Avg 2000-2009

12.5

10.8

9.8

13.3

11.3

12.9

1.4

1.2

1.2

Gross Job Creation

Job Creation (Startups)

Gross Job Destruction

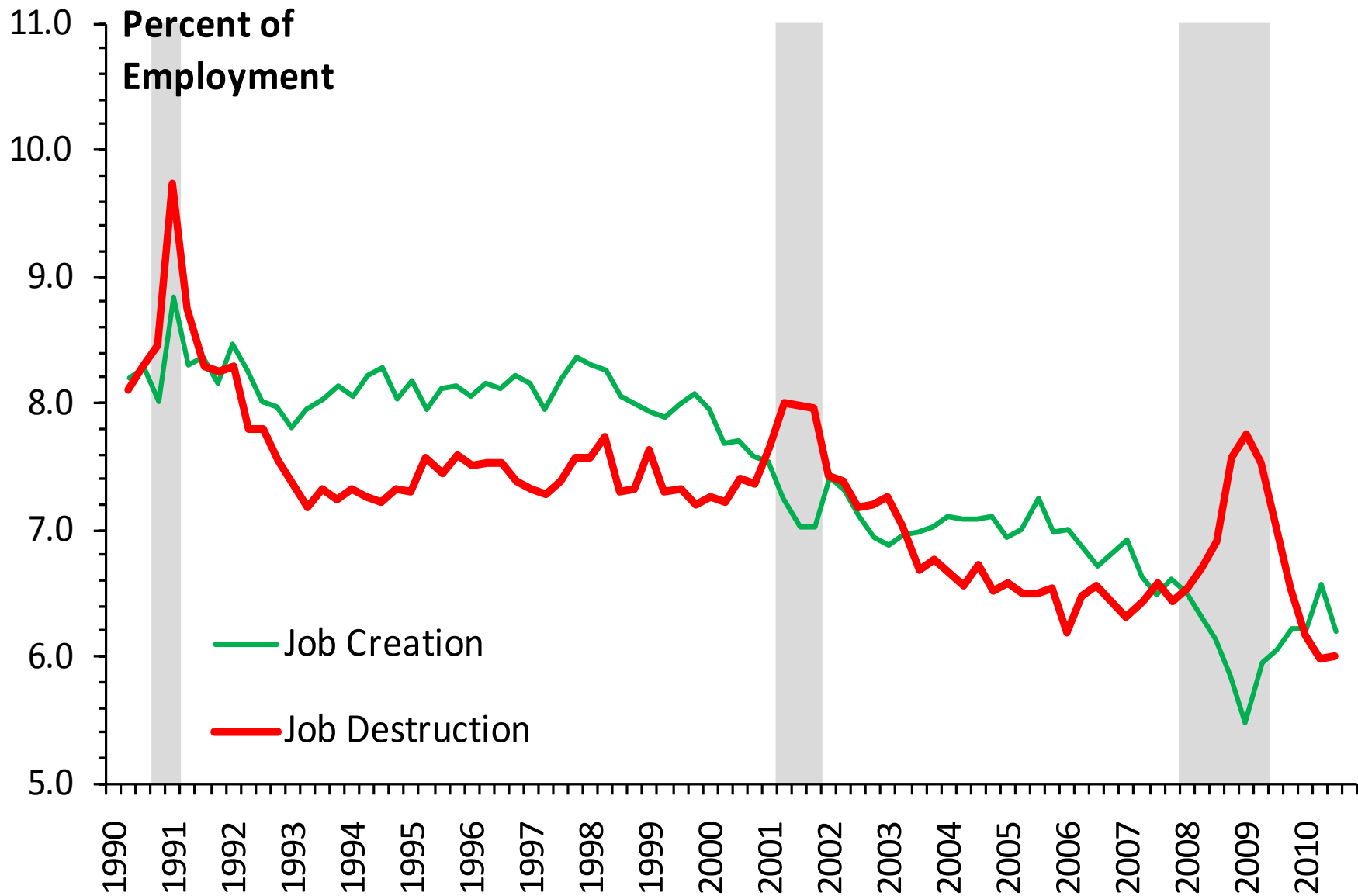
Net Job Growth

-0.8

-0.5

-3.1

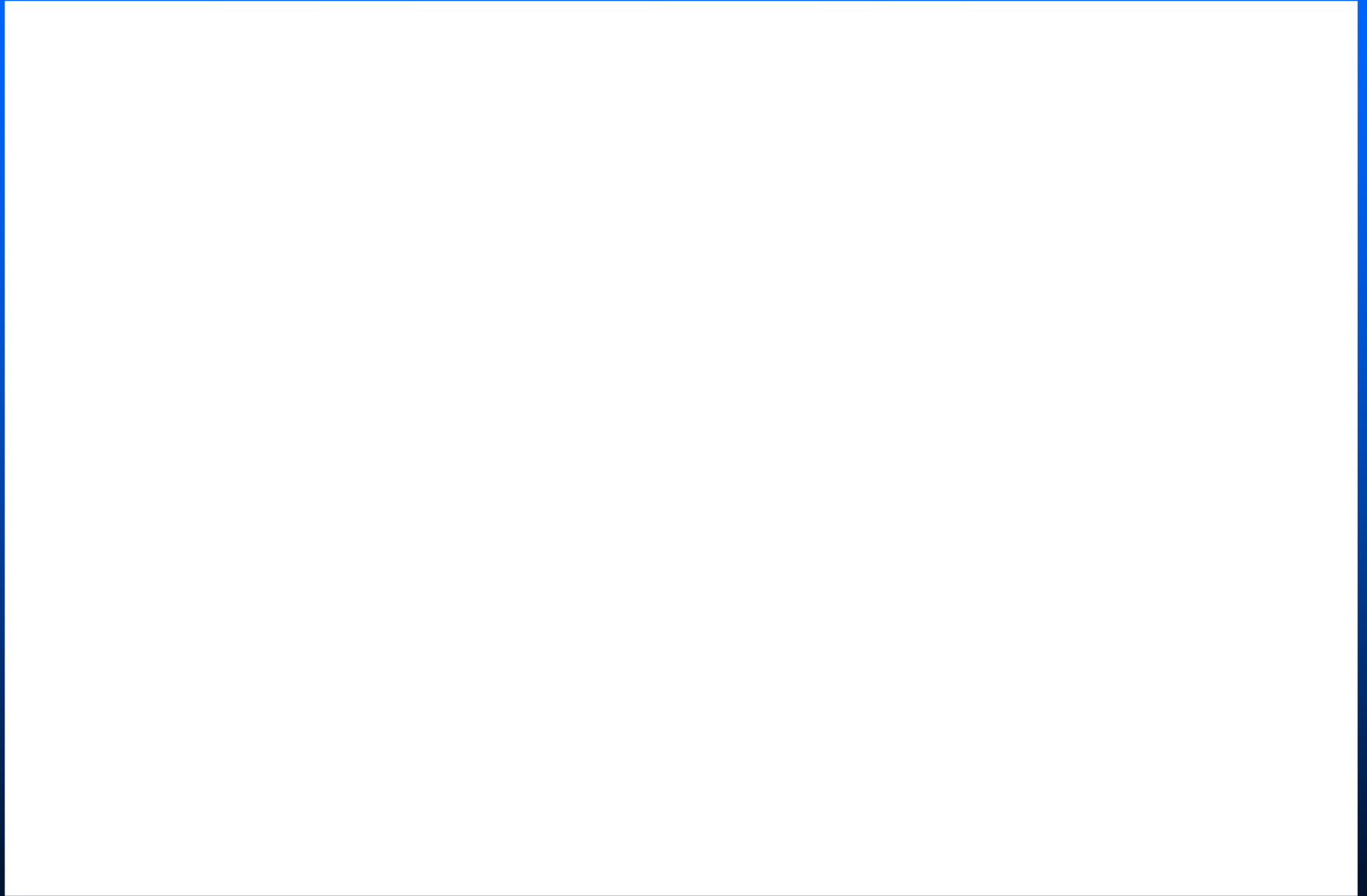
Quarterly Job Creation and Destruction Rates, U.S. Private Sector, 1990:2-2010:3, BED



Quarterly Job Creation and Destruction Rates, U.S. Mfg Sector, 1992:3-2010:3, BED



Quarterly Job Creation and Destruction Levels, U.S. Mfg Sector, 1992:3-2010:3, BED



U.S. Business Dynamism

- U.S. has exhibited a robust pace of productivity enhancing creative destruction
- Pace of Business Dynamism in U.S. Manufacturing not as high as overall economy but still substantial...
 - In spite of continued net employment declines, annual gross job creation rate in manufacturing is about 11 percent.
 - Entry of new firms and new establishments of existing firms contribute about 30 percent to gross job creation

Contribution to Productivity Growth?

- About two thirds of U.S. manufacturing productivity growth over a five year horizon due to within establishment increases in productivity.
 - This contribution of within is high relative to other sectors.
- The remaining one third is due to reallocation
 - Most of the contribution from reallocation is due to net entry
 - The contribution of net entry increases over longer horizons due to selection and learning effects.

Cyclical and Secular Trends

- U.S. Manufacturing had large net declines in 2001 and 2008-09 recessions
 - Most of this was due to very large spikes in job destruction. These spikes account for much of the lower employment in U.S. manufacturing over the last decade
- There is however a downward trend in job creation in Manufacturing
 - Although not so much in role of business startups
- Economy-wide downward trend in dynamism – less clear in Manufacturing

Key Messages

- Important to take into account business dynamism:
 - In spite of net declines, U.S. manufacturing expanding plants still adding 400,000-600,000 jobs per quarter
 - Business startups contribute substantially to these new jobs
 - Creative destruction in manufacturing has been productivity enhancing.