

# Is the U.S. Losing Its Manufacturing Base?

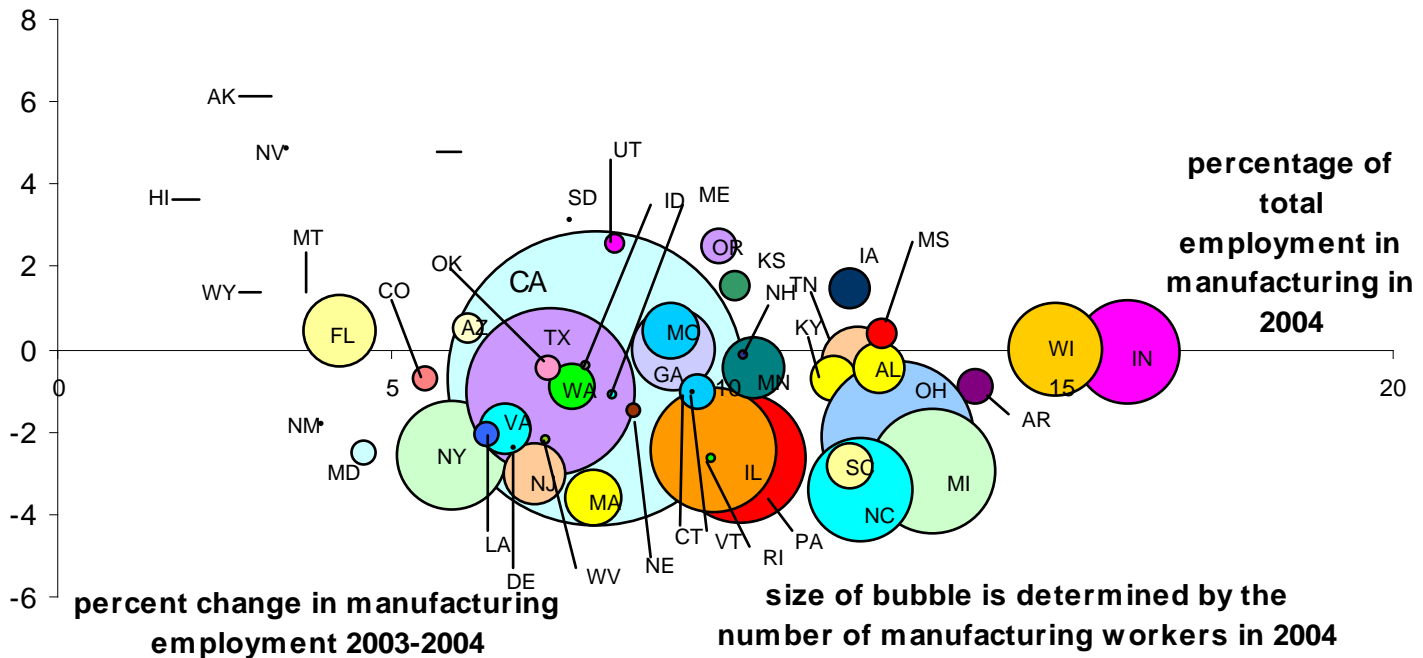
**The Dauch Center for the Management  
of Manufacturing Enterprises  
Annual Fall Meeting  
Purdue University  
West Lafayette, Indiana  
September 21, 2006**

**William Strauss**  
Senior Economist  
and Economic Advisor  
Federal Reserve Bank of Chicago

**Why should Indiana care?**

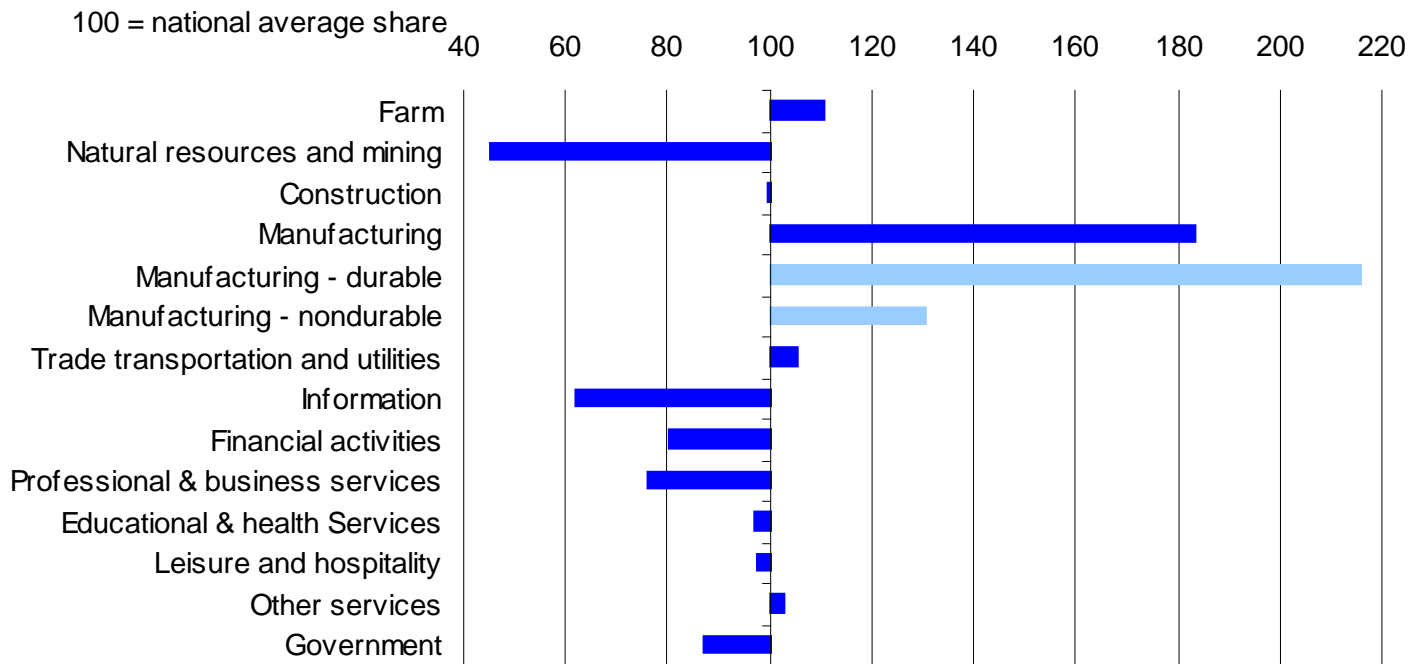
# Indiana has the largest share of workers in manufacturing

## Manufacturing employment



# Indiana's employment is highly concentrated in durable manufacturing

Indiana employment distribution (2004)

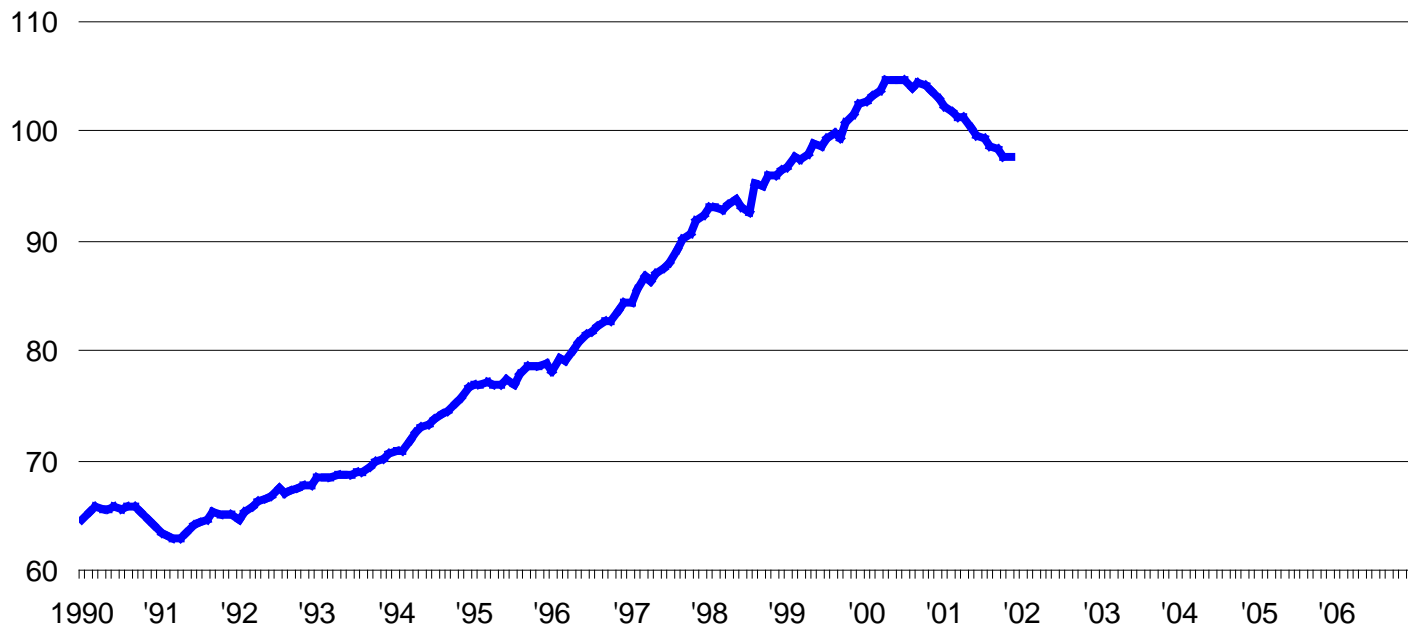


# The Setup

# Manufacturing output peaked in June 2000 and fell 6.5% over the next 18 months

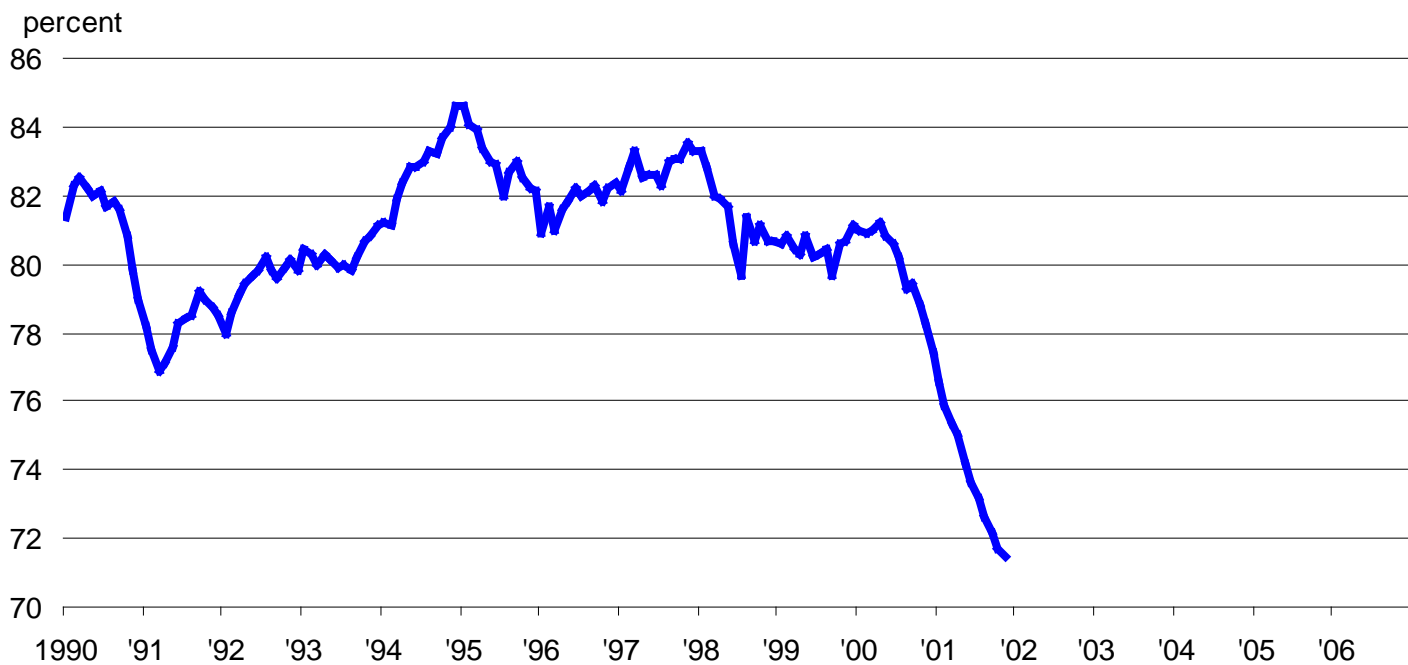
## Industrial production - manufacturing

Index 1997=100

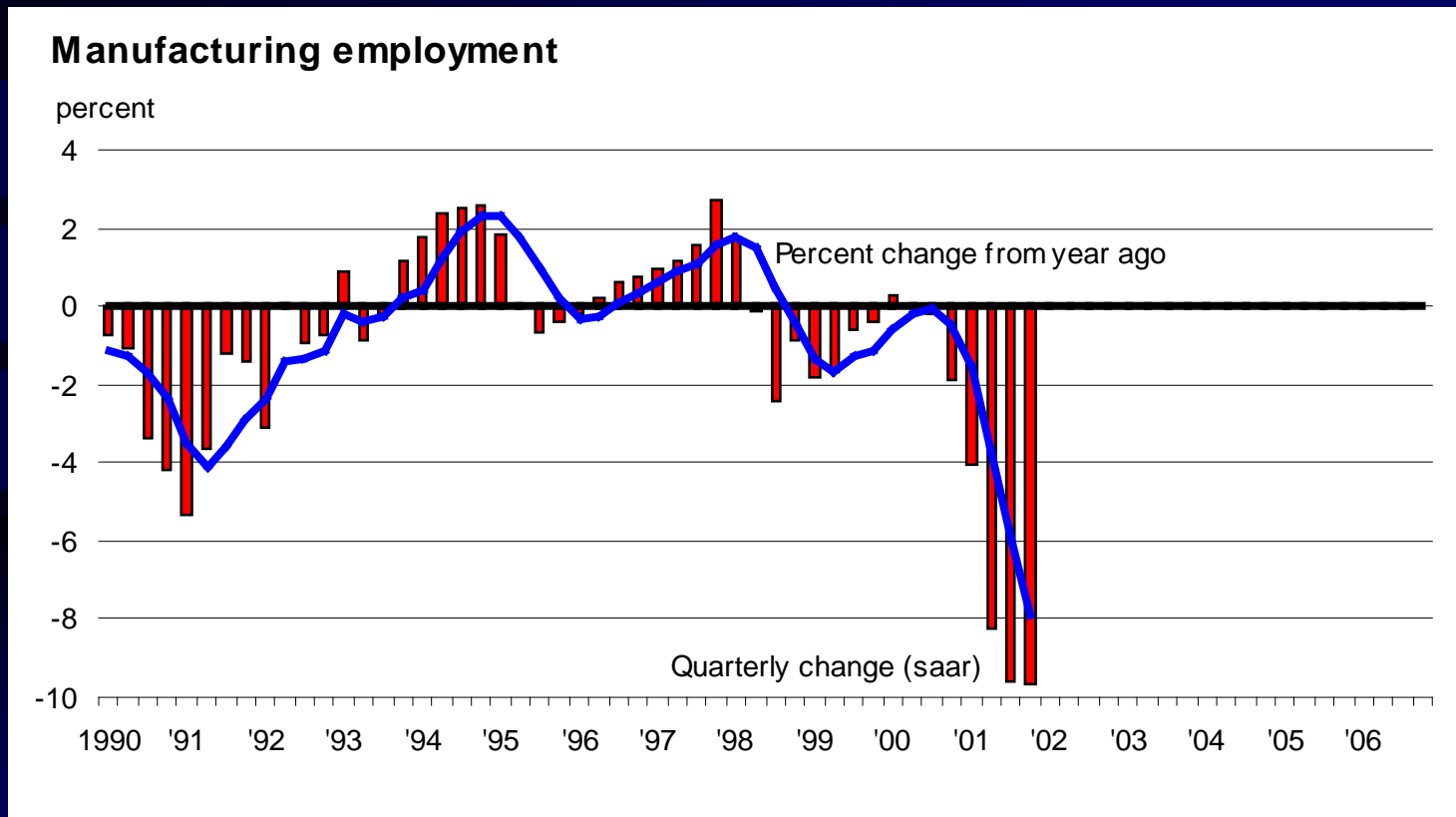


# Manufacturing capacity utilization collapsed in the middle of 2000

Capacity utilization - manufacturing



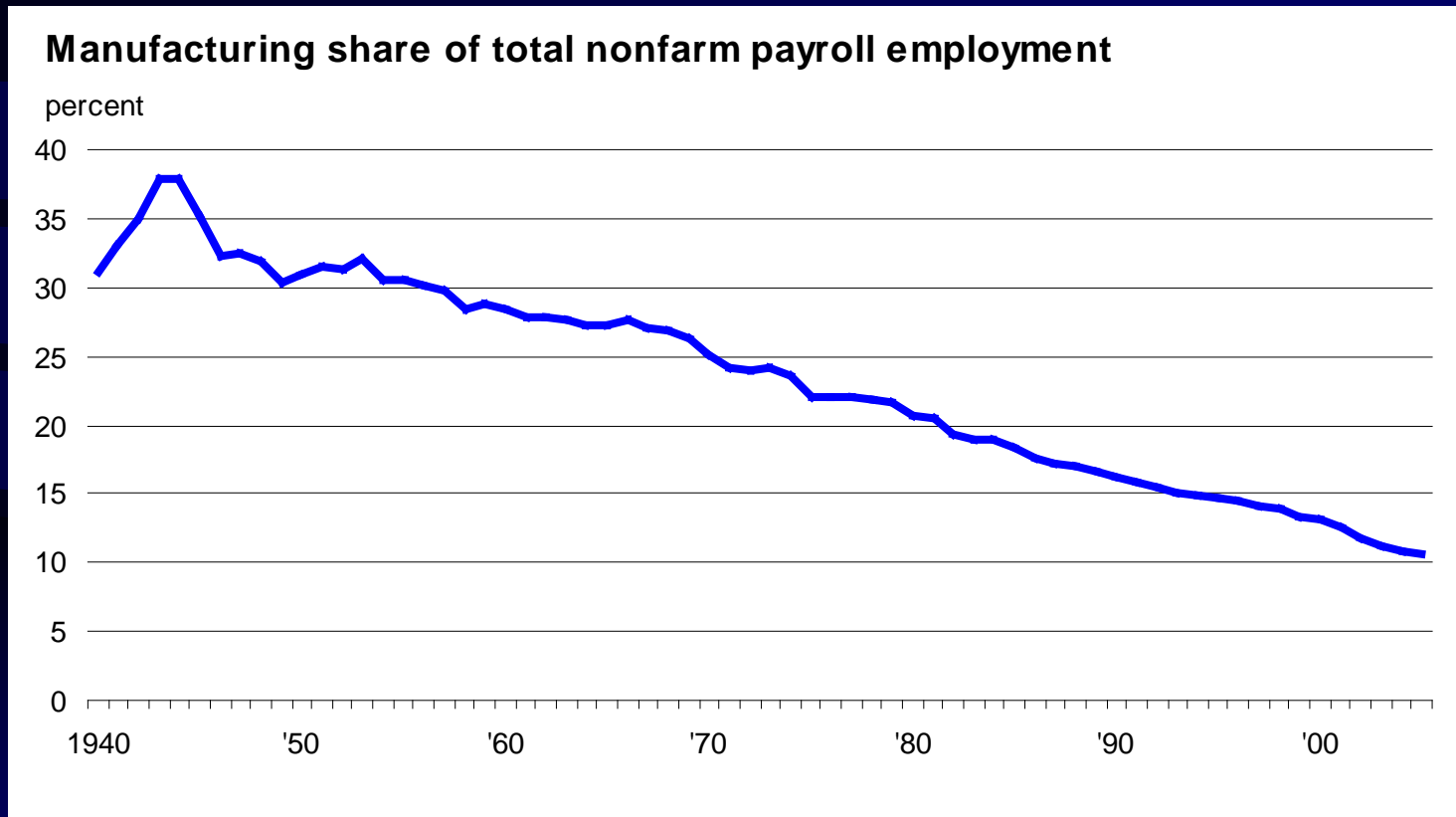
# Job declines in the manufacturing sector began to escalate, with over 1.5 million jobs lost



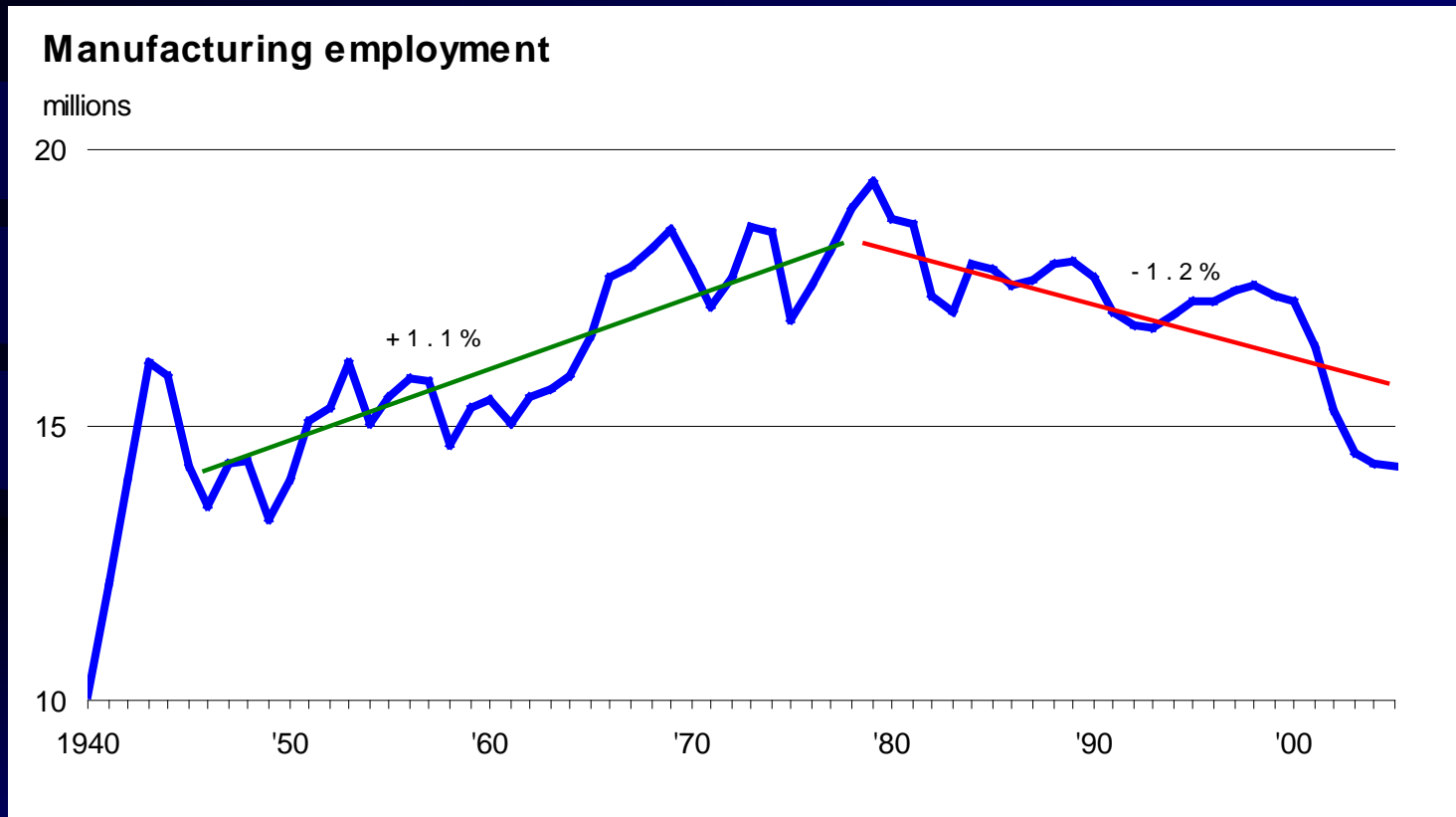


# **Is the U.S. Losing Its Manufacturing Base?**

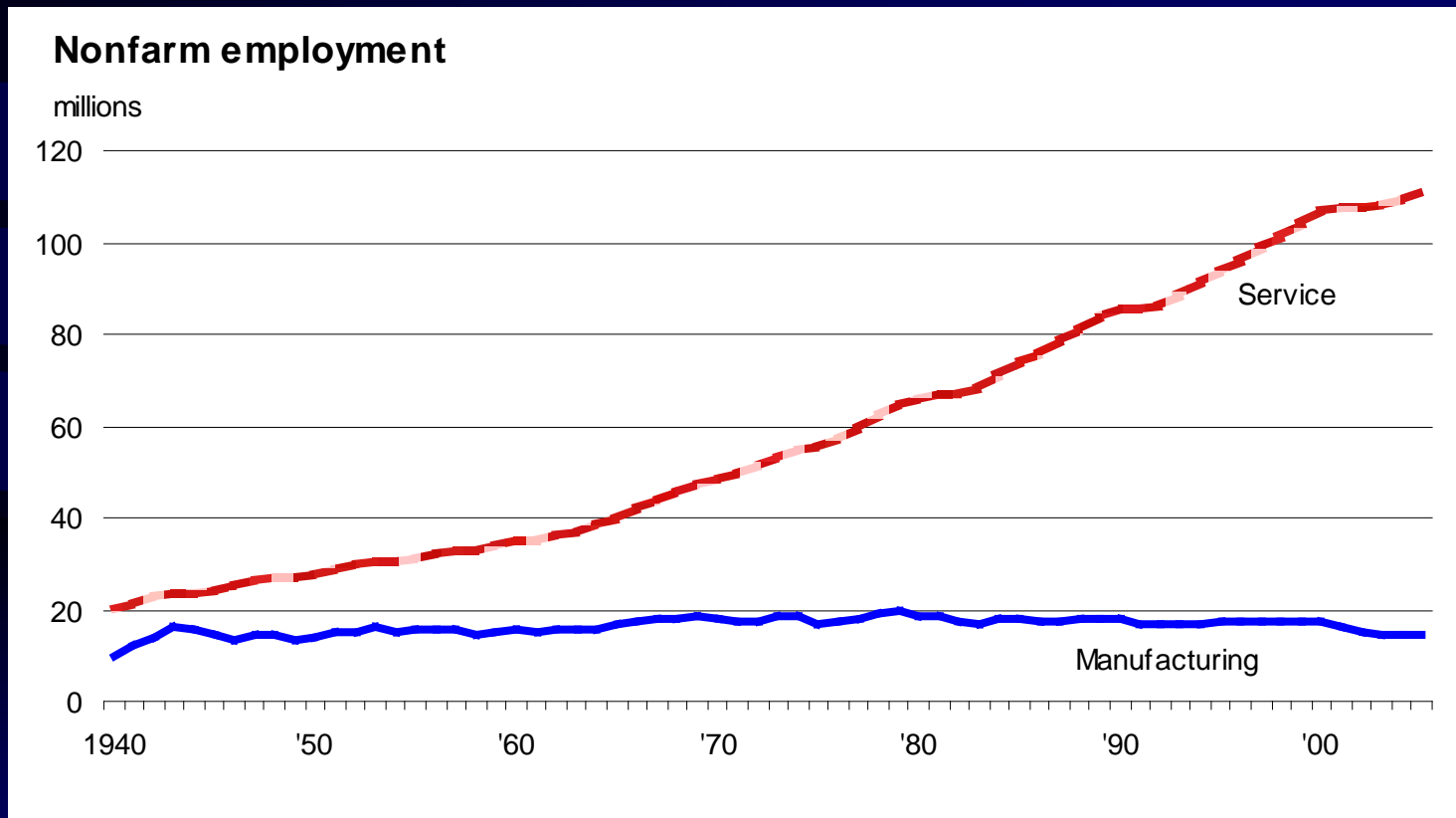
# Manufacturing employment as a share of national employment has been declining for over 60 years



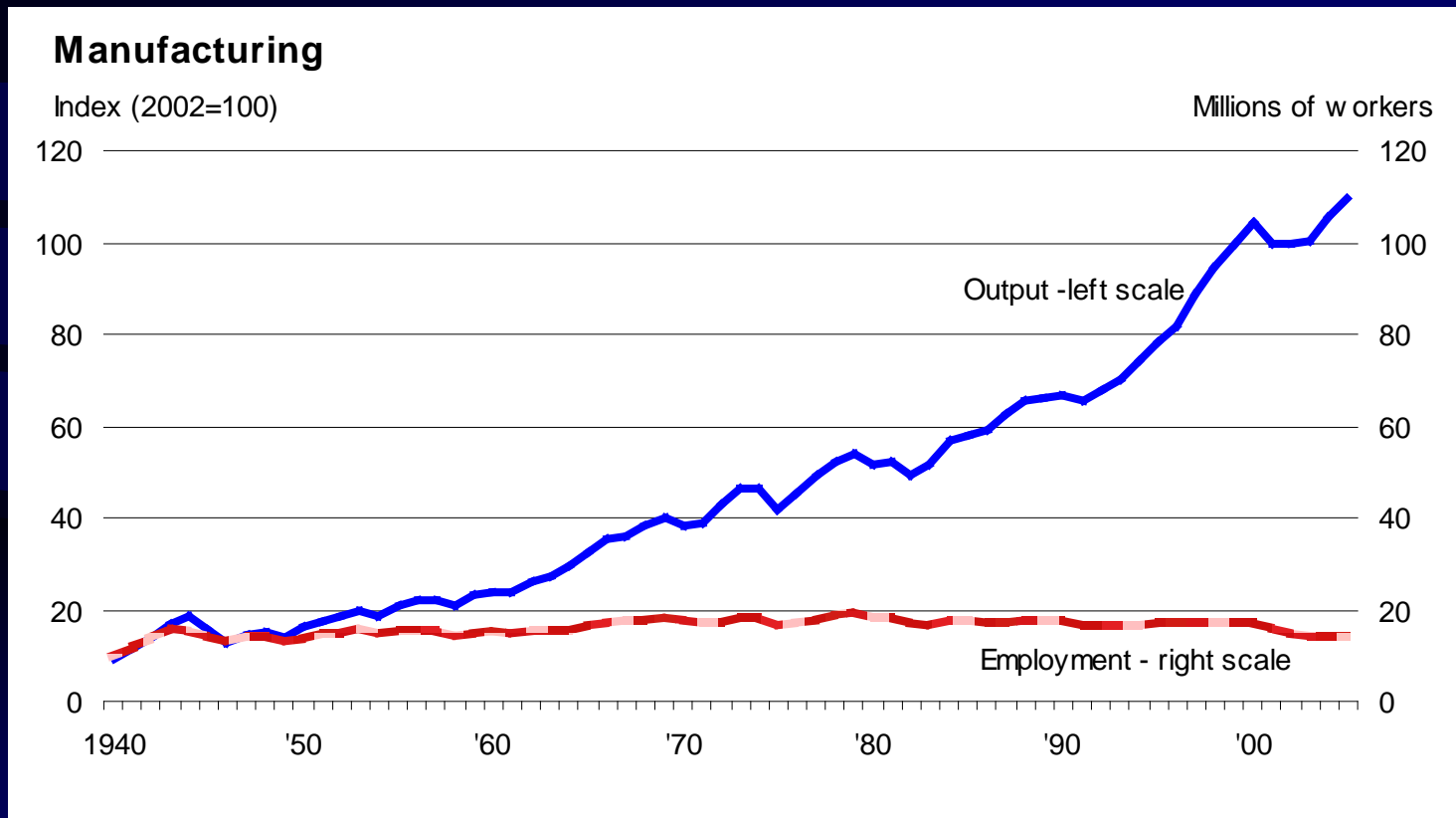
The number of jobs in manufacturing has declined since 1980, following an upward trend between 1947 and 1979



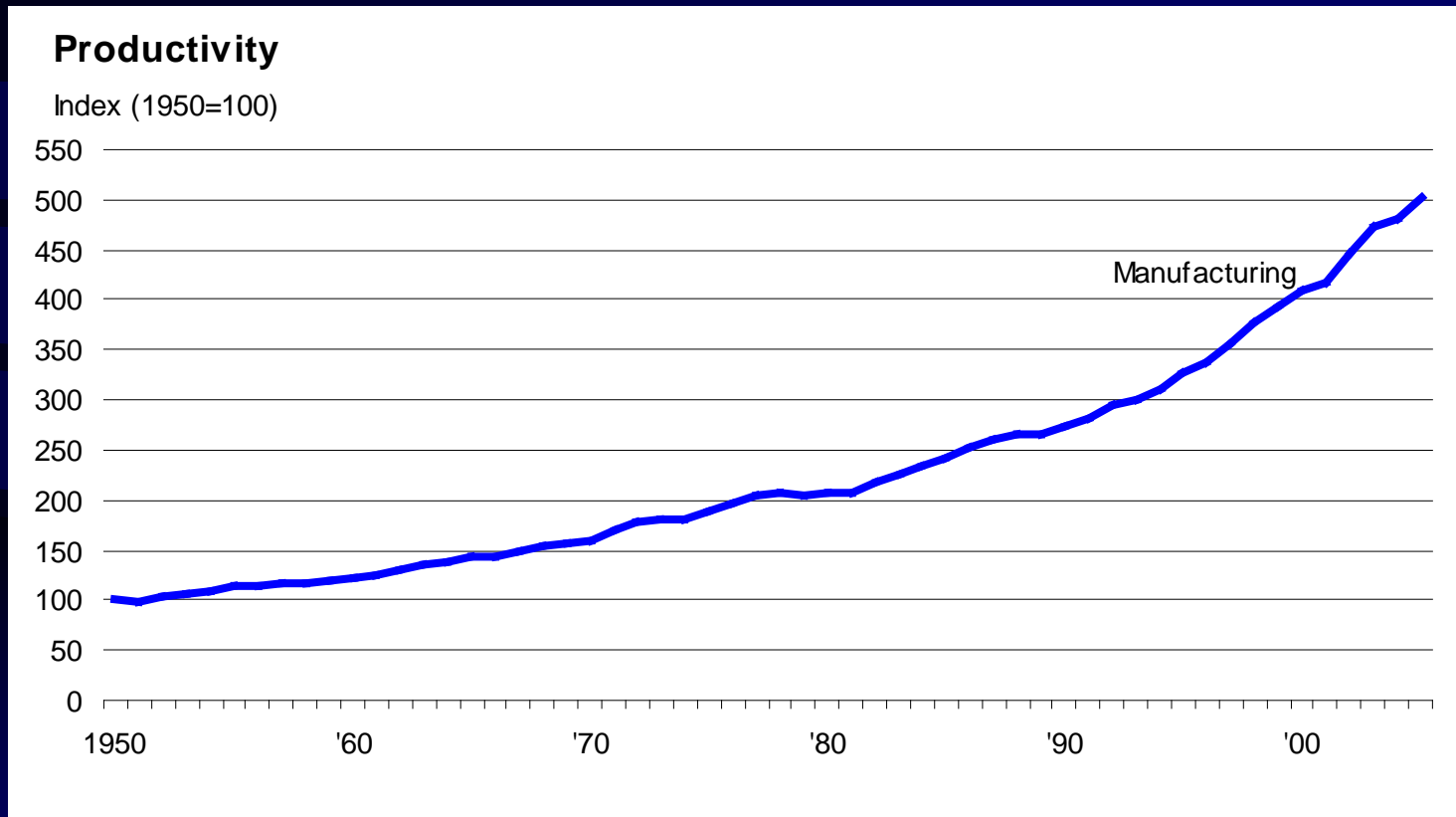
# Service sector employment has grown more than fivefold over this period



**While manufacturing employment growth was flat over the past 60 years, manufacturing output increased by 3.7% per year**



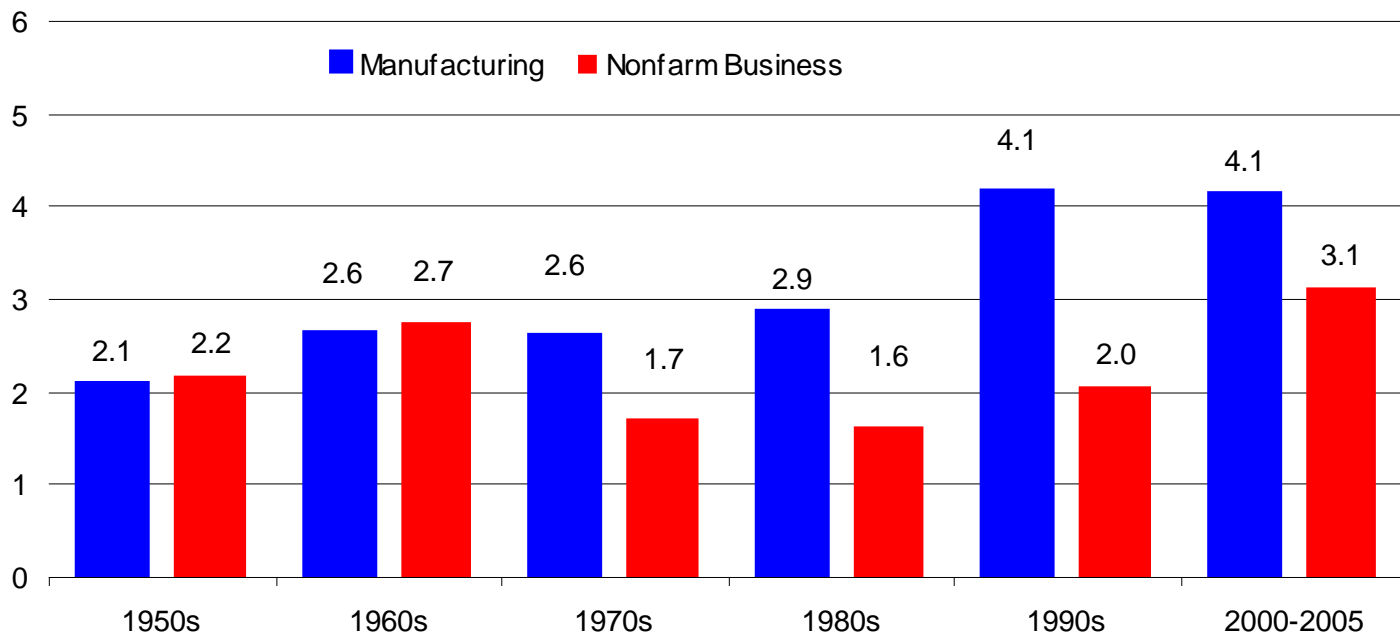
# The increase in output can be attributed to strong productivity growth experienced by the manufacturing sector



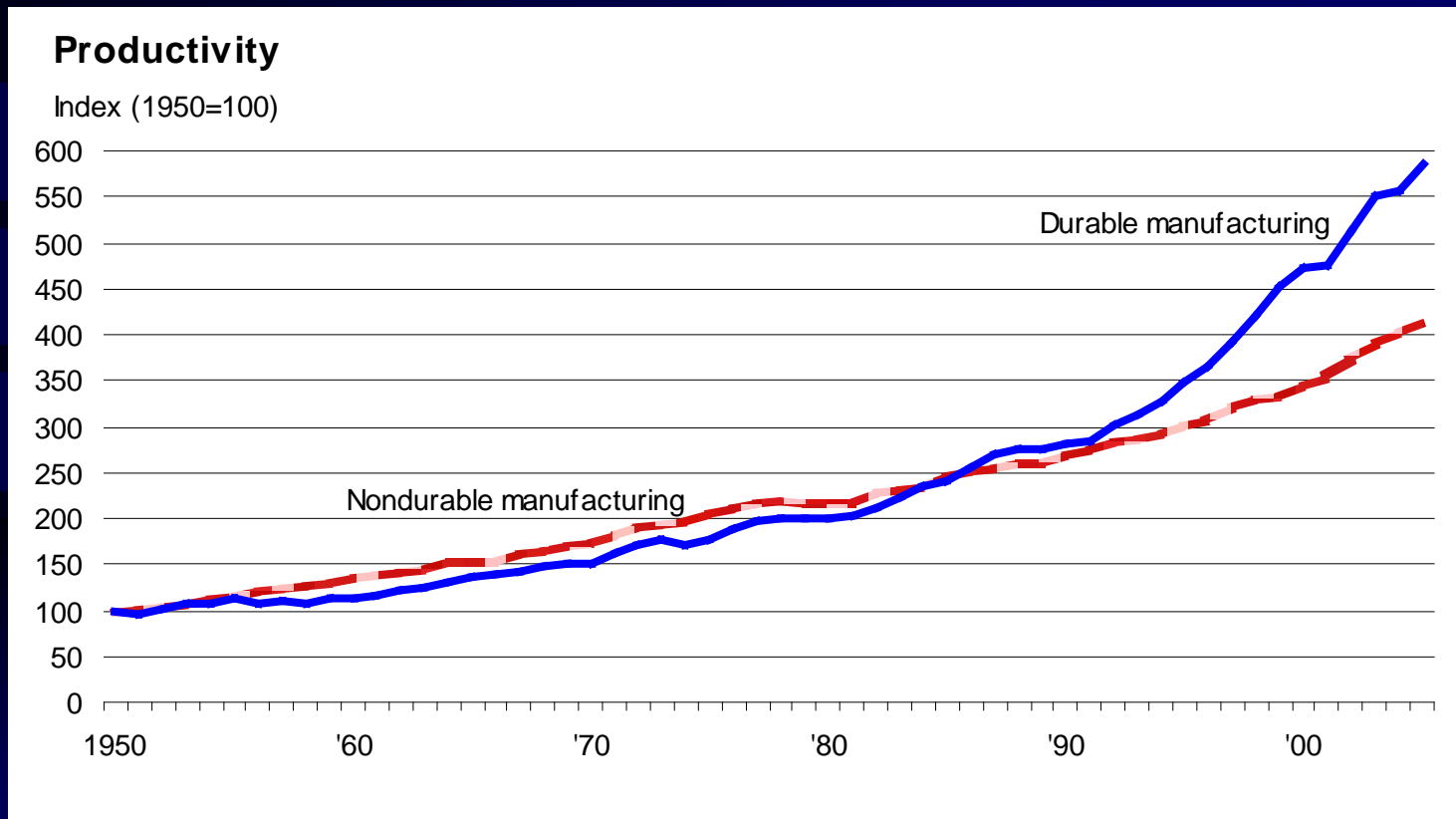
# Manufacturing productivity growing faster in the past 25 years

## Productivity

Average annual percent change

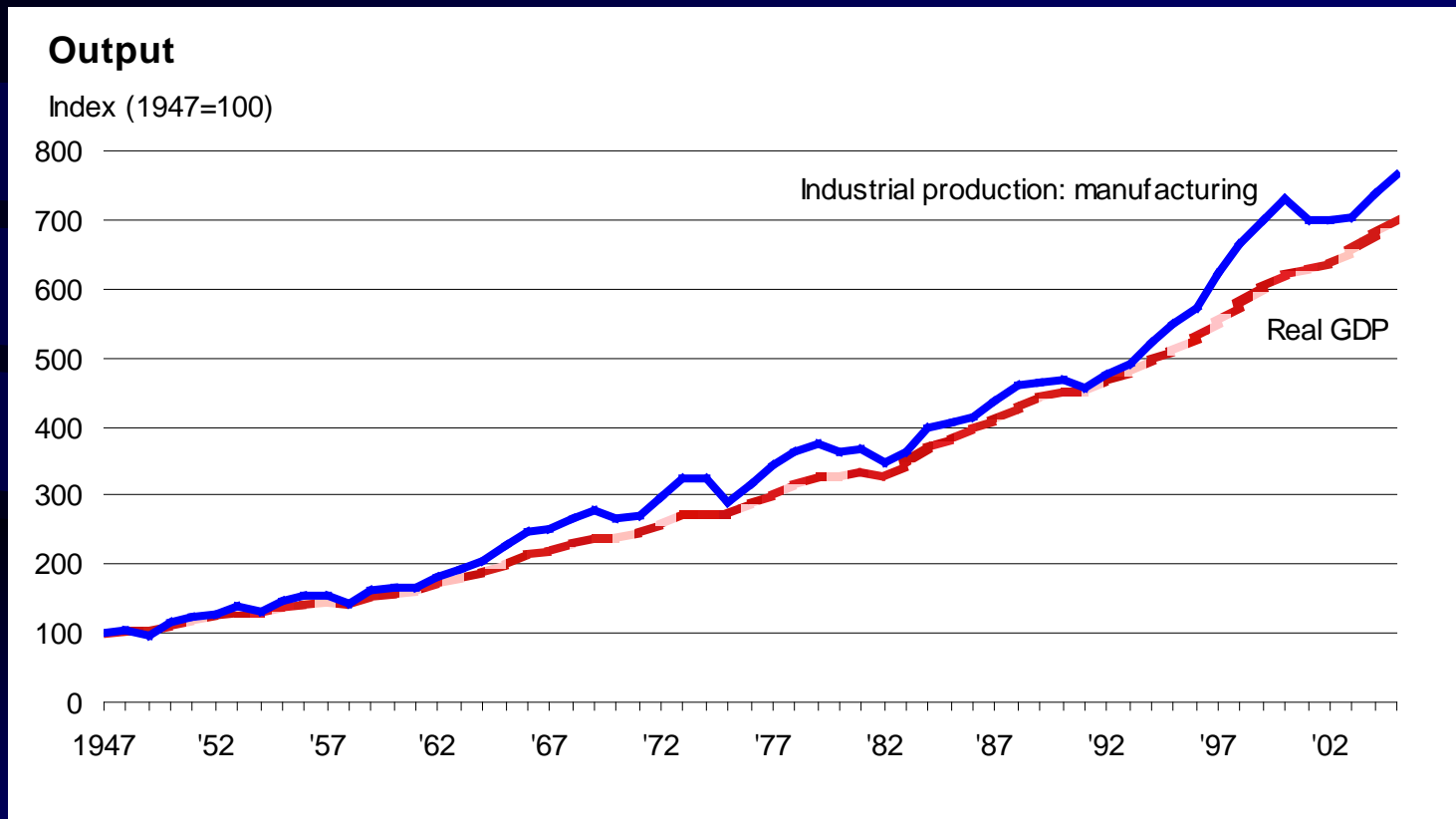


# Productivity in the durable manufacturing sector has been stronger than in nondurable manufacturing

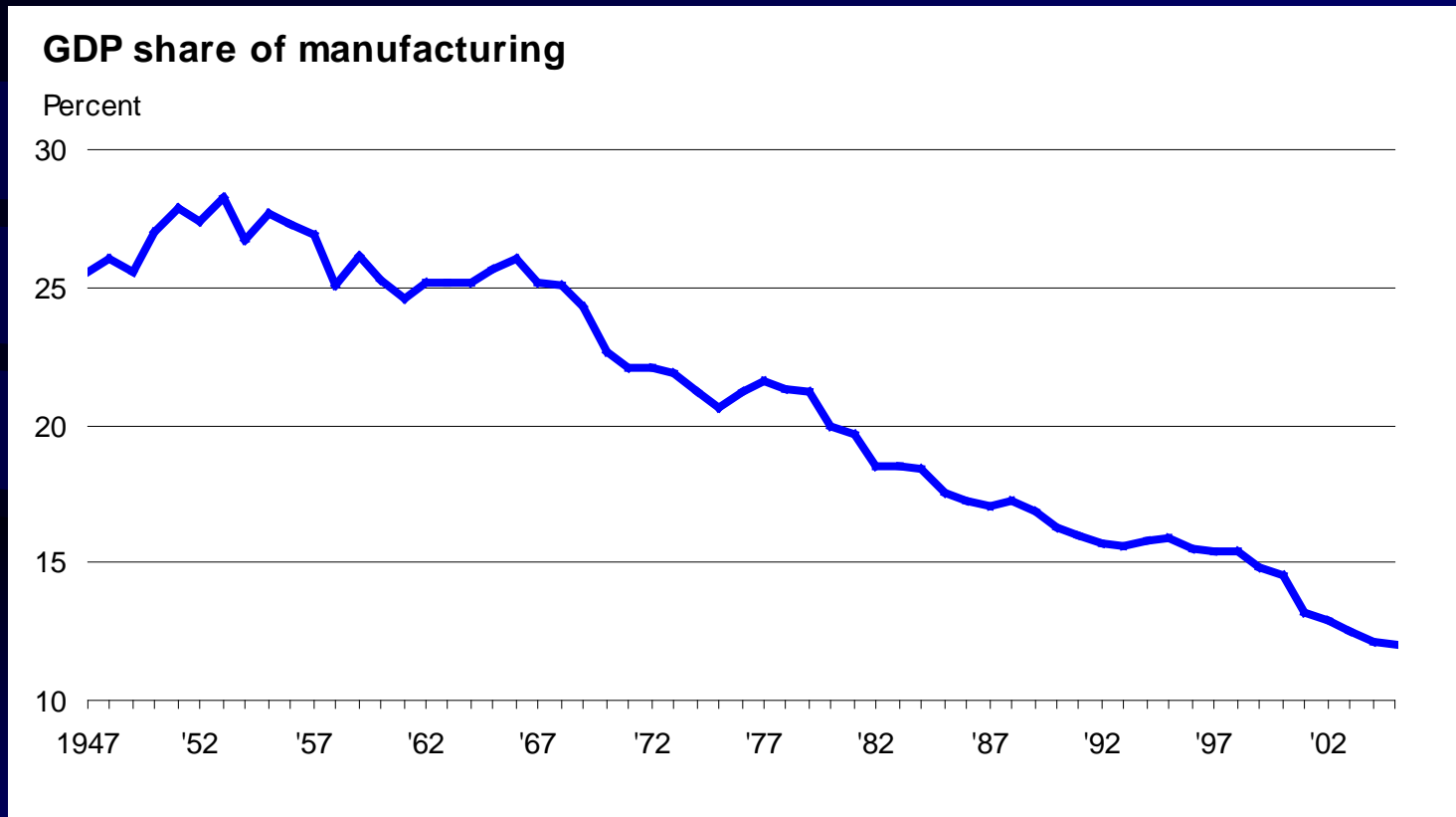




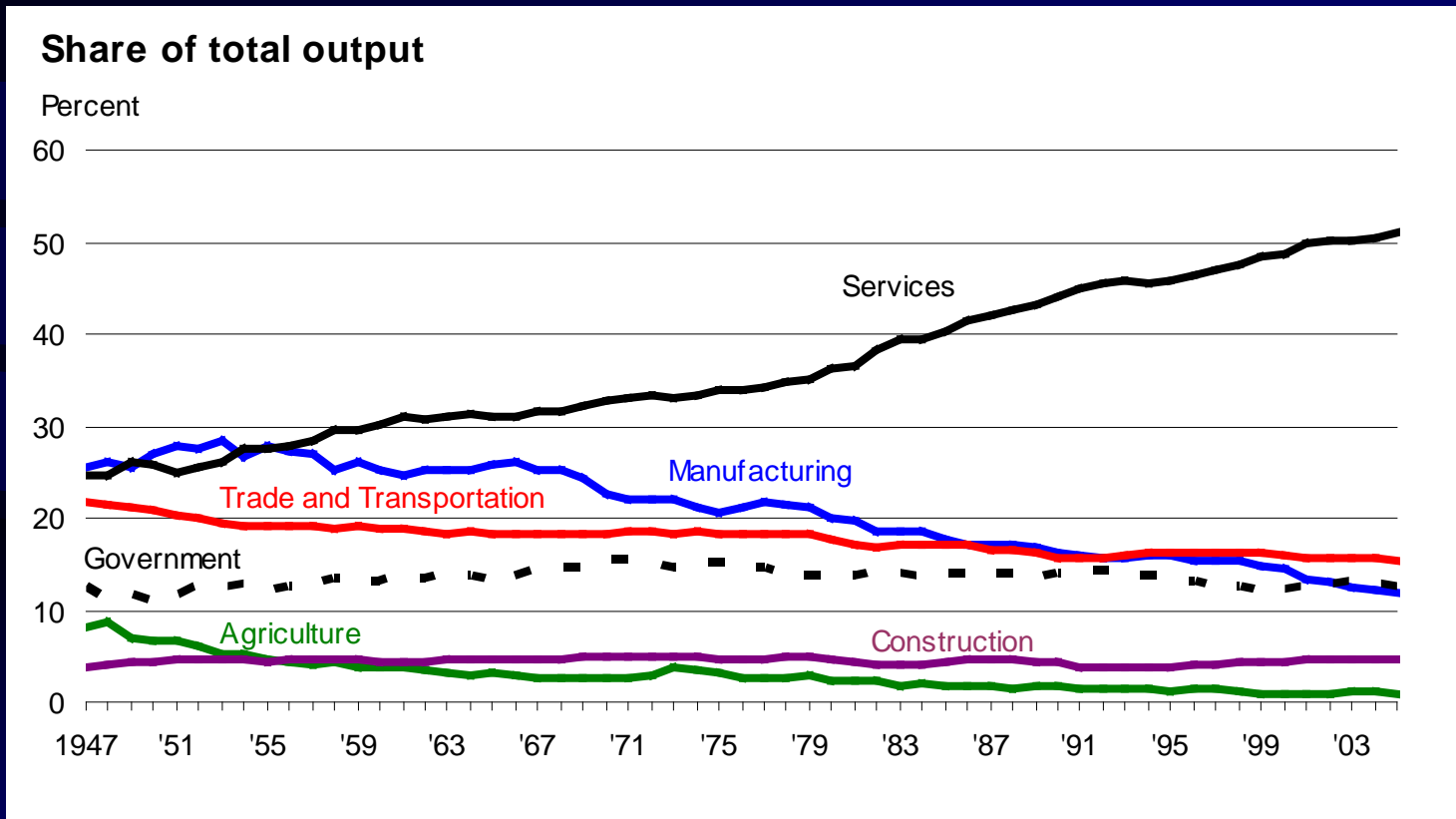
# Strong productivity growth has allowed the manufacturing sector to grow faster than the overall economy



# The lower relative prices in the manufacturing sector has lead to manufacturing comprising a smaller share of GDP over time



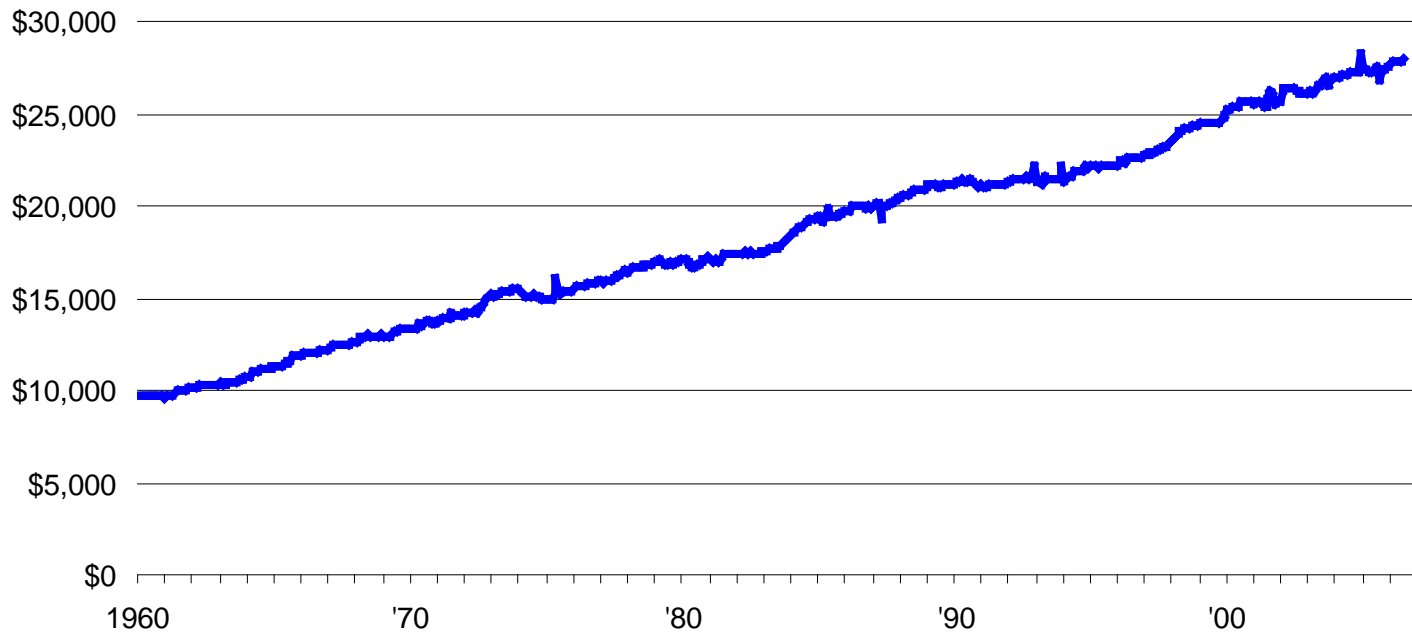
# The service sector's share of U.S. output has been rising steadily



# Standards of living in the United States are at an all-time high

## Real disposable personal income - per capita

2000 chained dollars

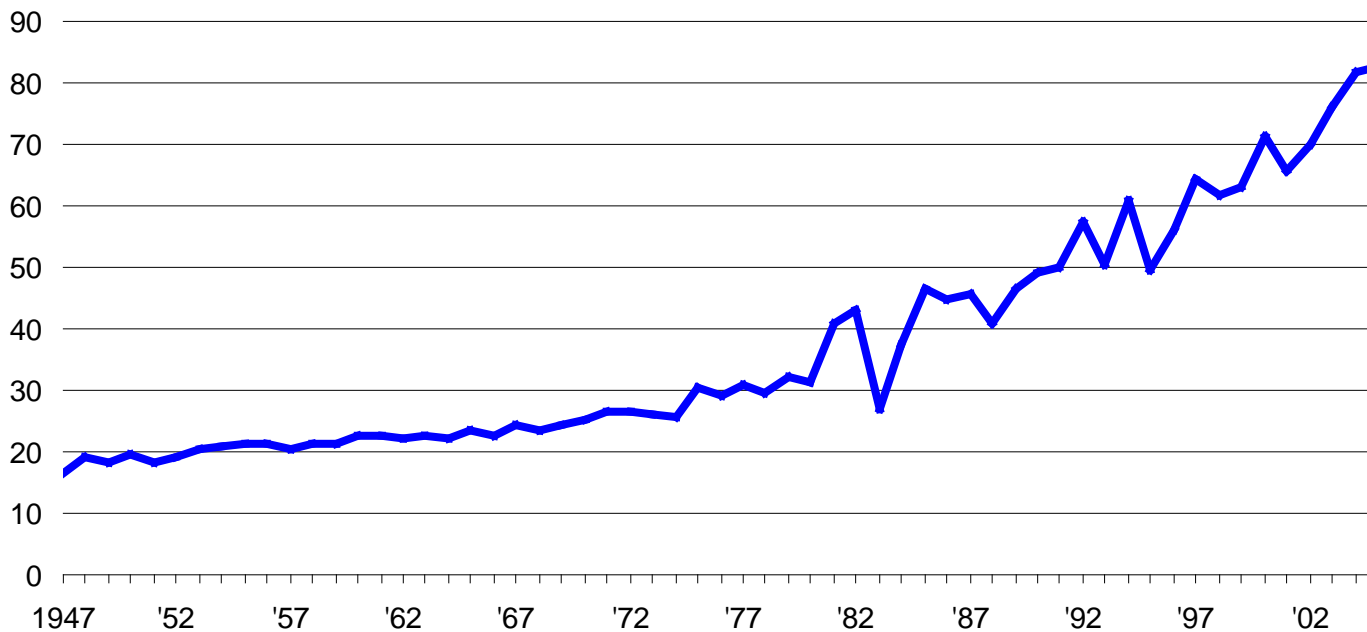


# Lessons from the farm sector

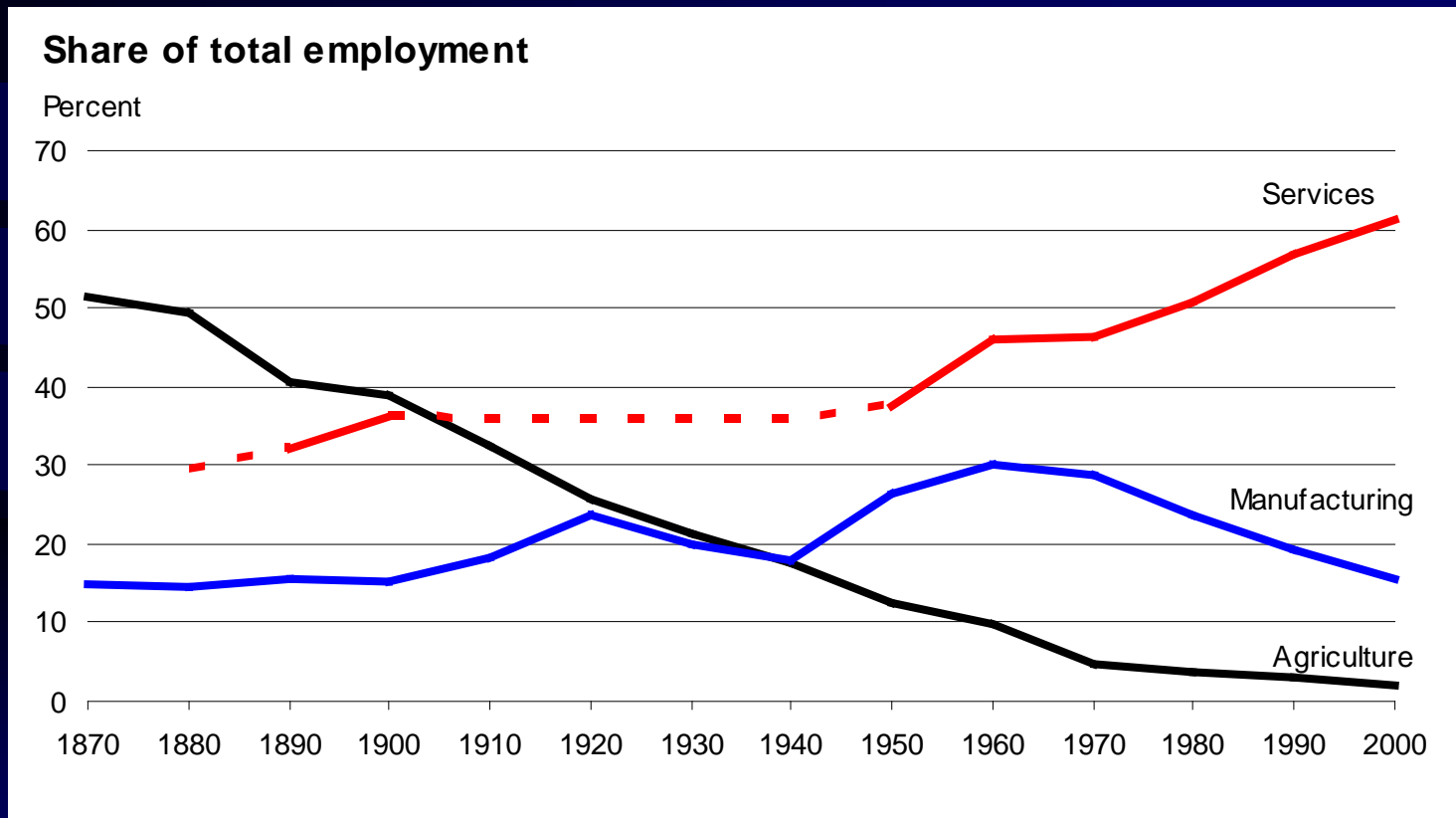
**We are producing more in our farm sector  
than at any time in our history**

### Real gross domestic farm business product

Billions of 2000 chained dollars



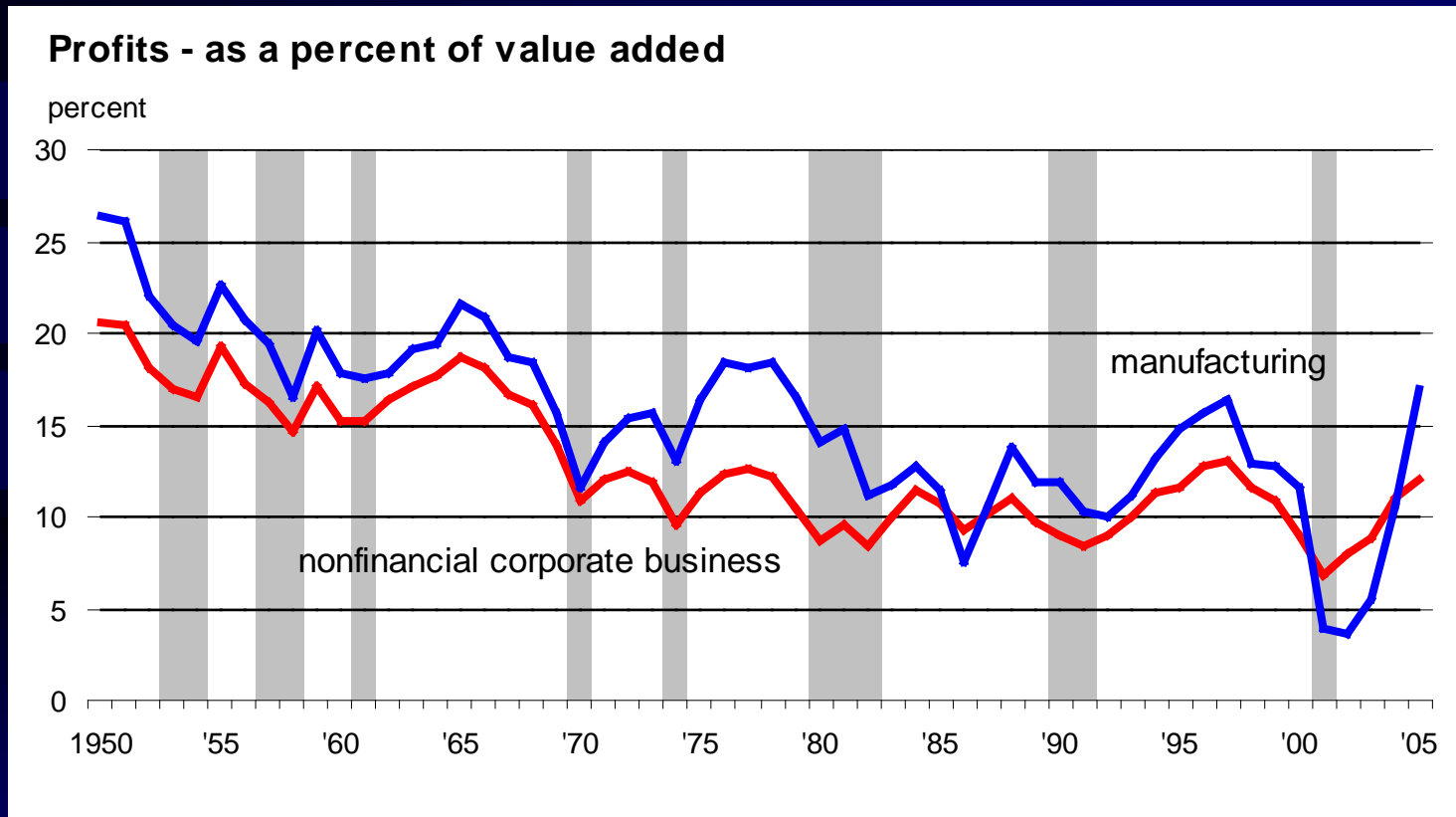
**And we are accomplished this remarkable feat with just 2.0% of our employment devoted to farming**



**How profitable  
is manufacturing?**



# While more cyclical, profits in manufacturing have out-performed returns in nonfinancial corporate businesses

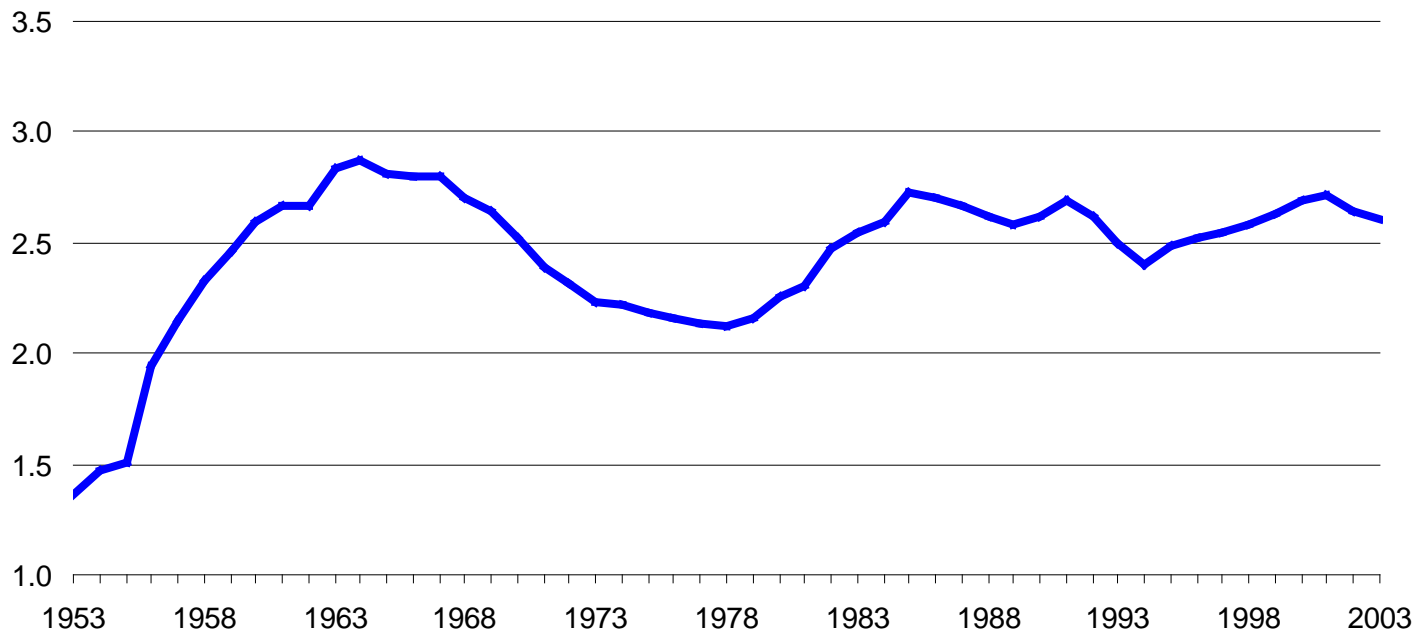


**Is the U.S. positioned to  
continue its strong  
productivity gains?**

# U.S. maintaining its commitment to research and development

Research and development expenditures share of GDP

percent

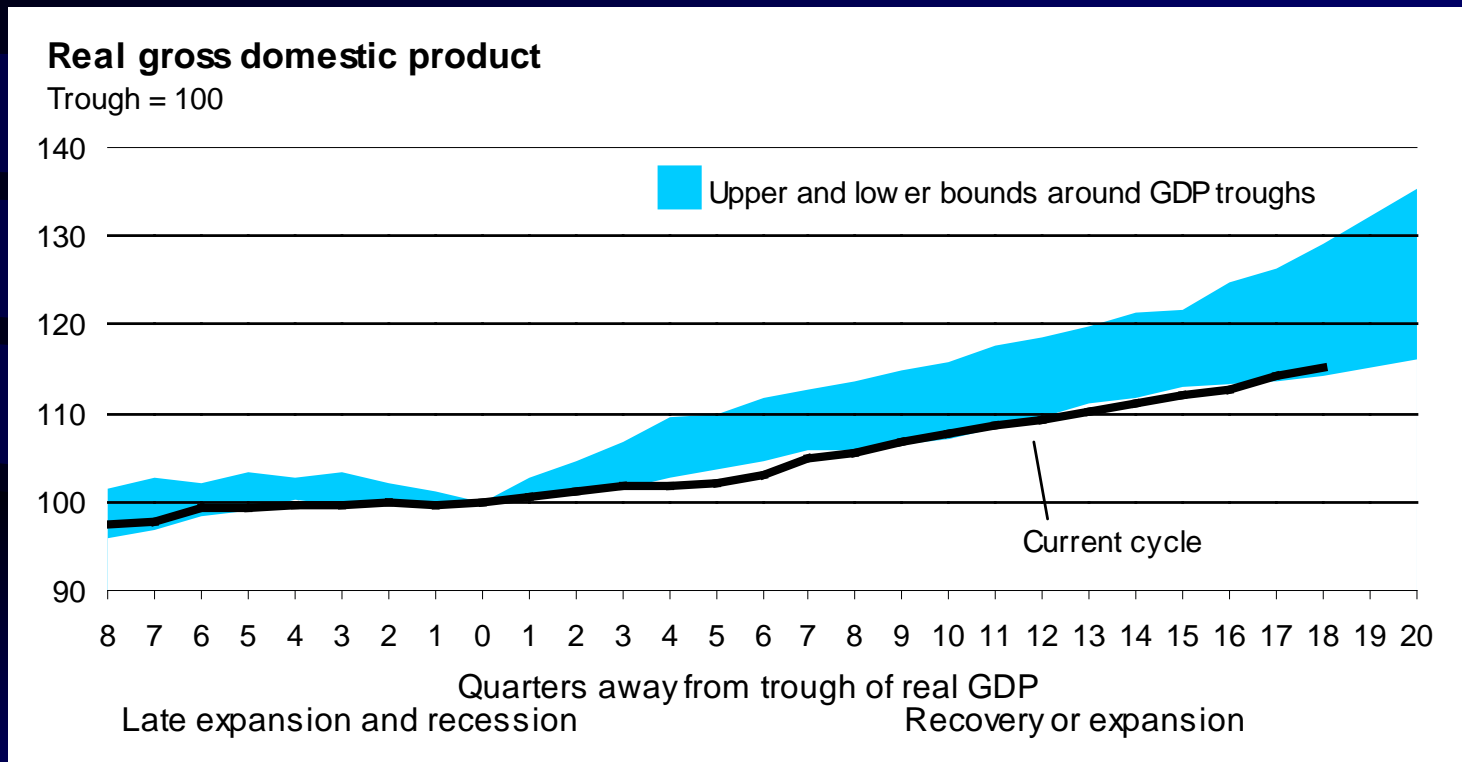


**The doldrums that manufacturing  
experienced in 2000-2003  
were closely linked with the  
economic recession**

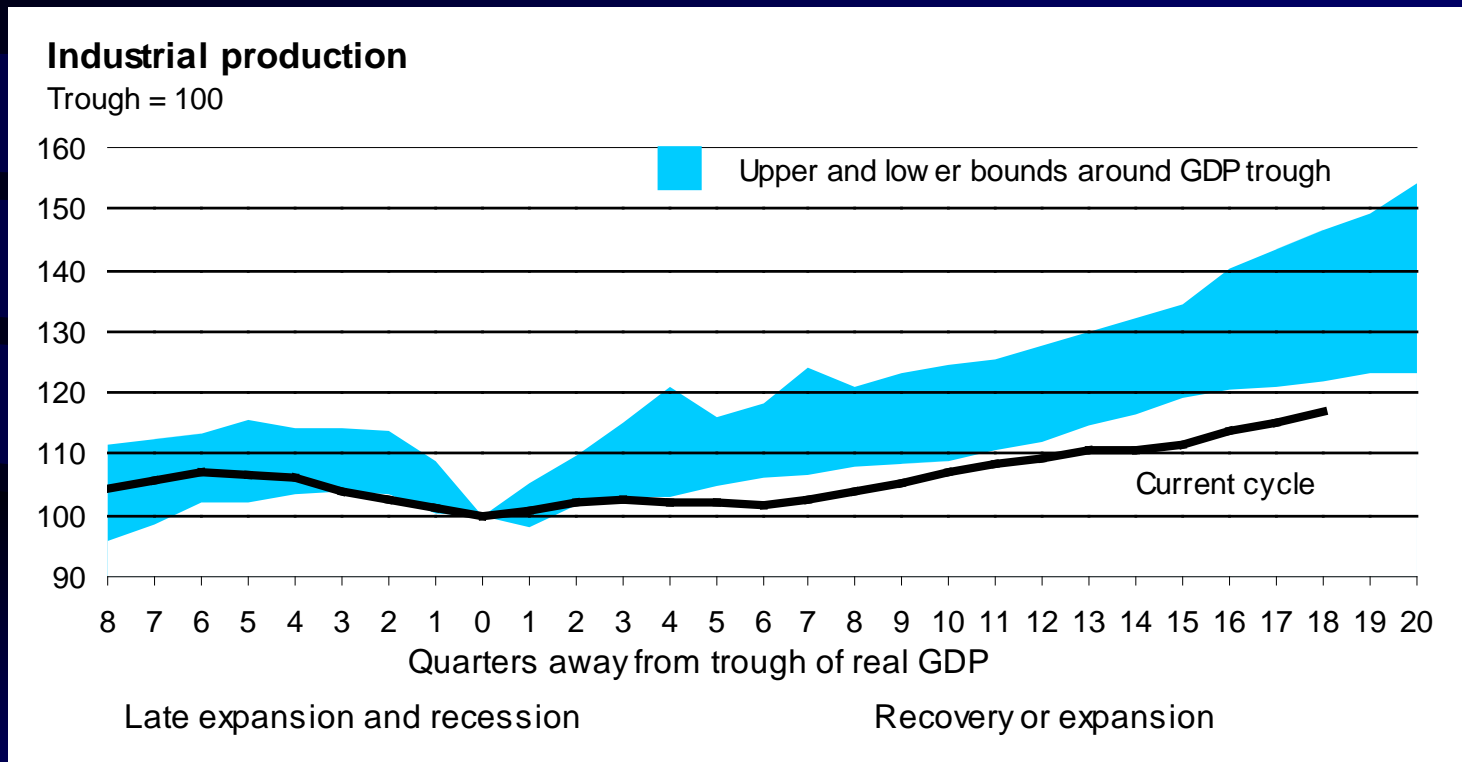
# The economy has been hit hard by a number of negative economic shocks over the past few years

- The equity market collapse that began in early 2000
- Soaring energy prices
- The September 11, 2001 attack on the United States
- The corporate governance scandals that started in late 2001
- A war with Afghanistan in late 2001
- The geopolitical uncertainties regarding Iraq that began in the summer of 2002
- The hurricanes that hit the Gulf Coast in 2005

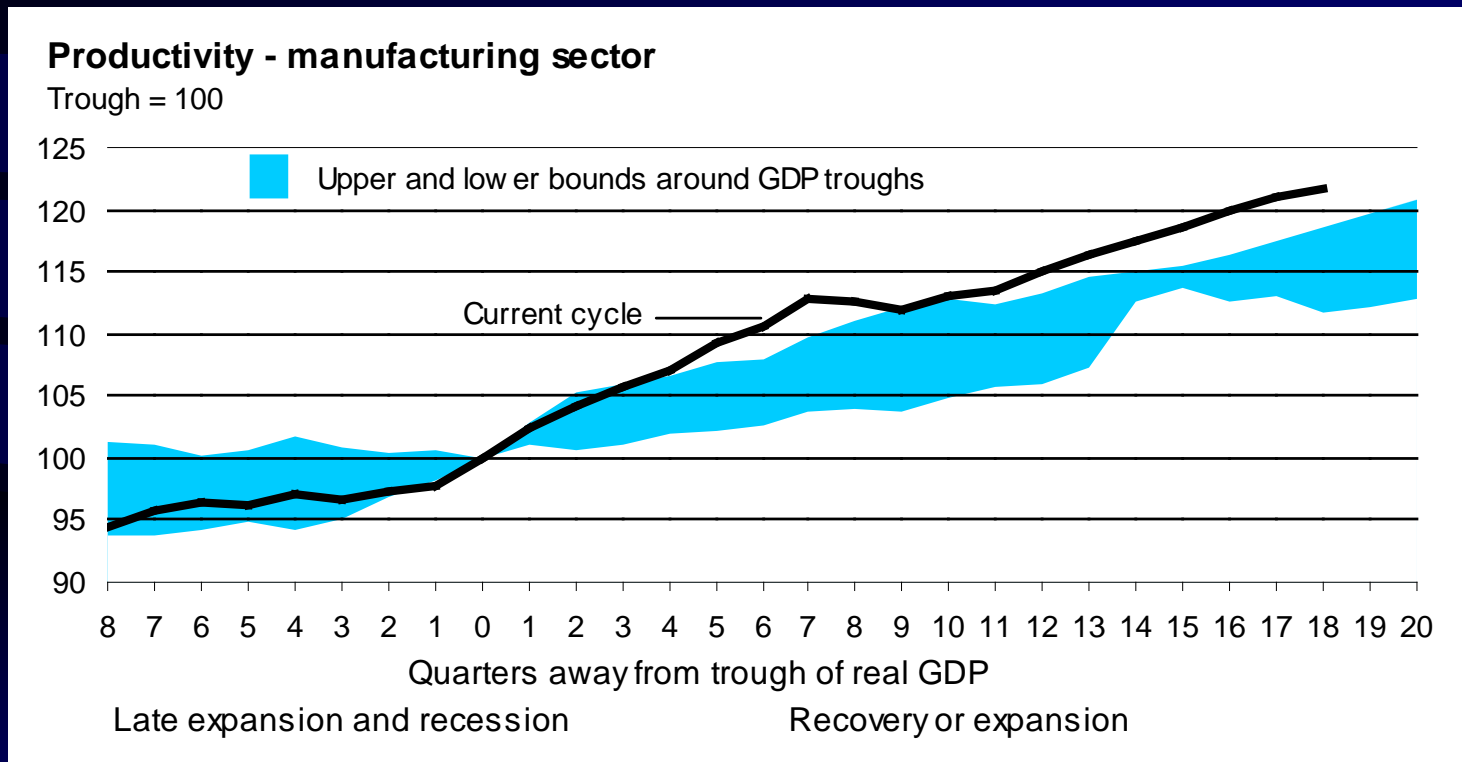
# These shocks hampered the current economic expansion



# And led to the relatively sluggish performance of manufacturing production

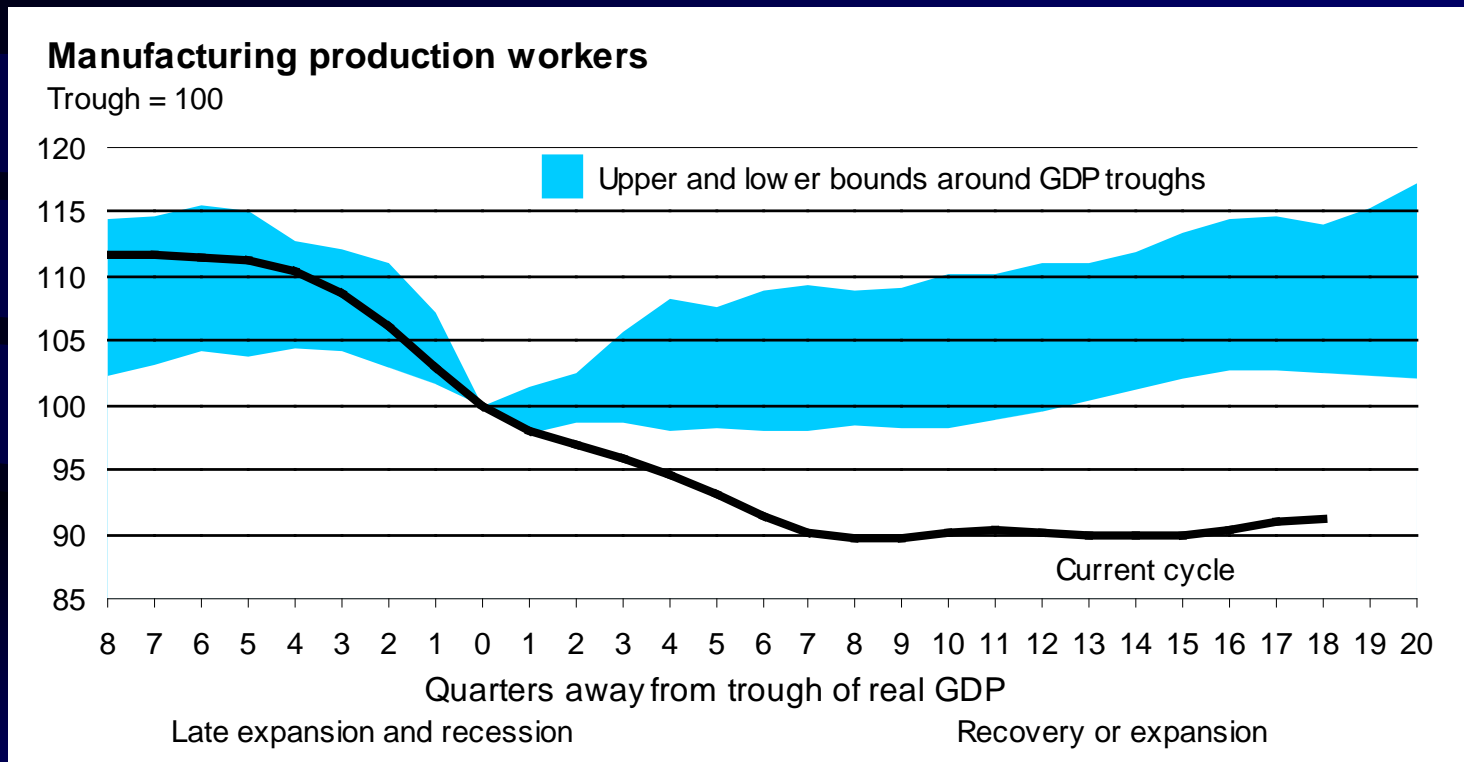


**However, productivity within the manufacturing sector has grown at a substantially faster rate than during any previous expansion**

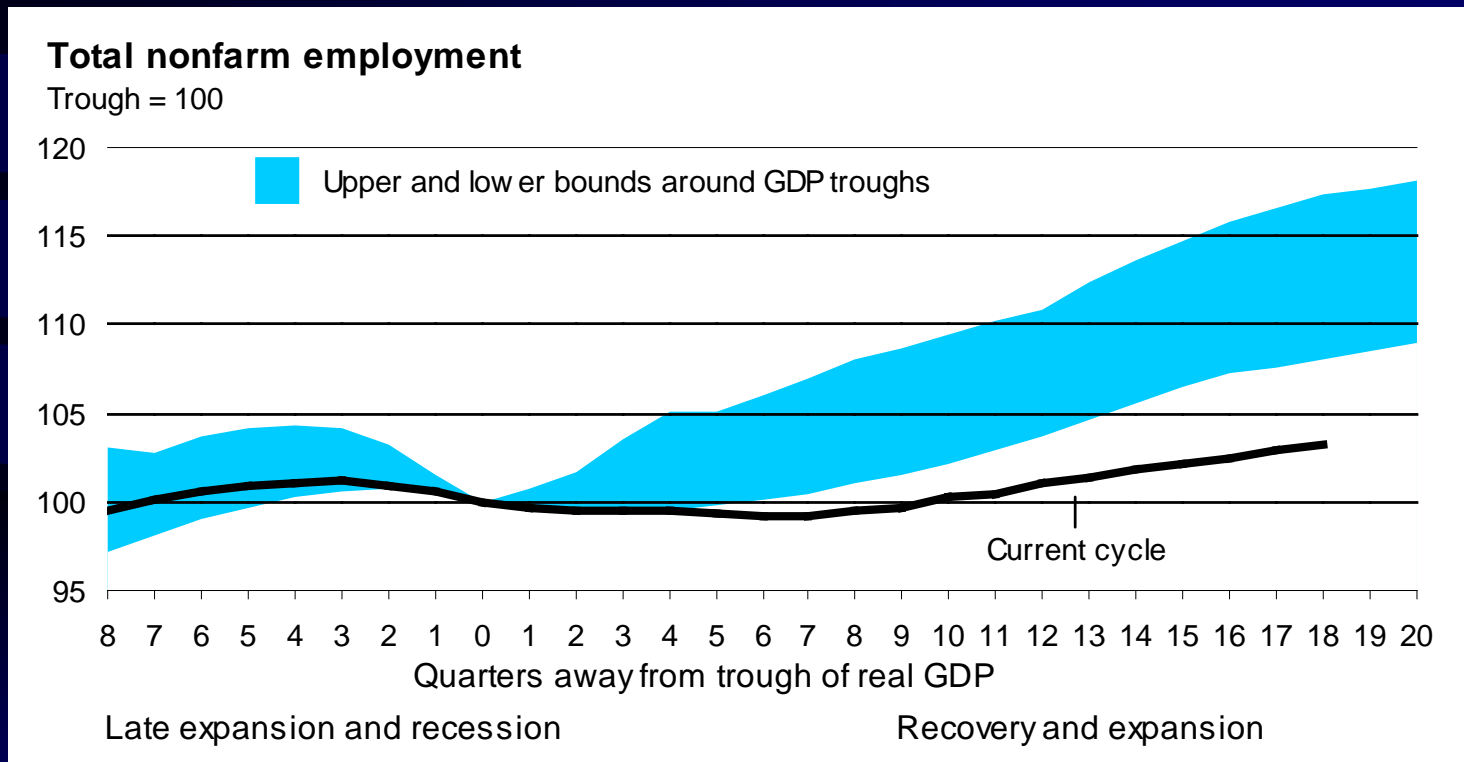




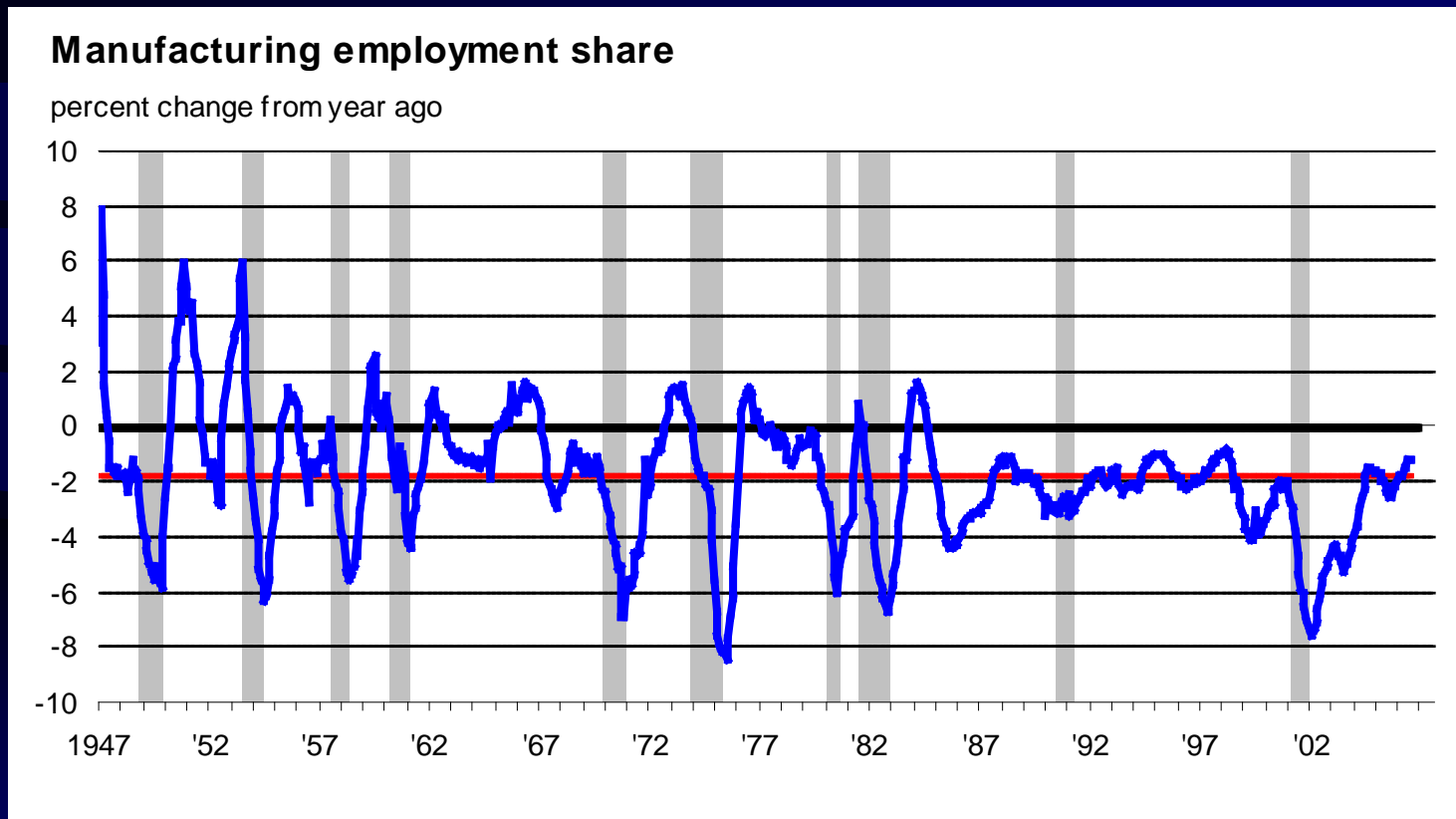
# Manufacturing workers suffered steep employment declines over the past several years



# But so has everyone else

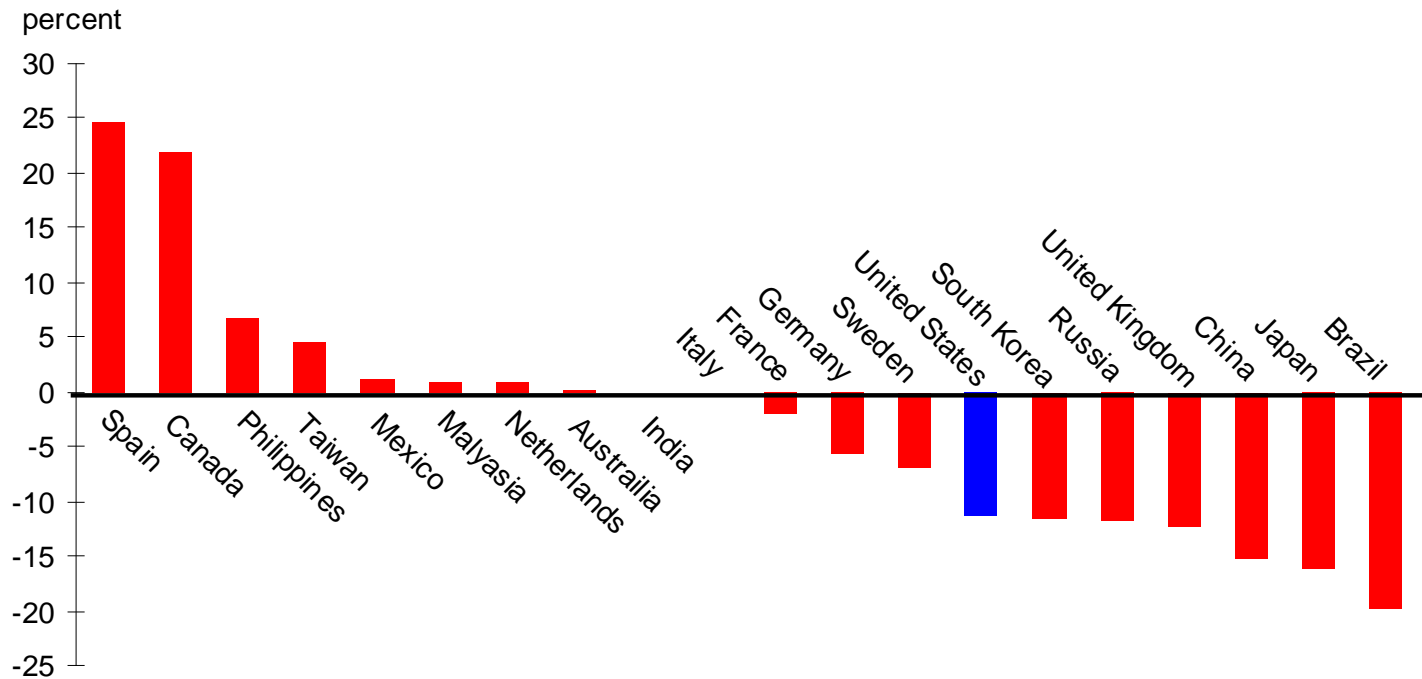


**When changes in nonfarm employment are considered,  
the most recent manufacturing employment downturn  
is not unprecedented**



**Manufacturing employment losses have occurred  
across numerous countries –  
among 20 big economies, 22 million jobs have been lost**

**Percent change in manufacturing employment from 1995 to 2002**

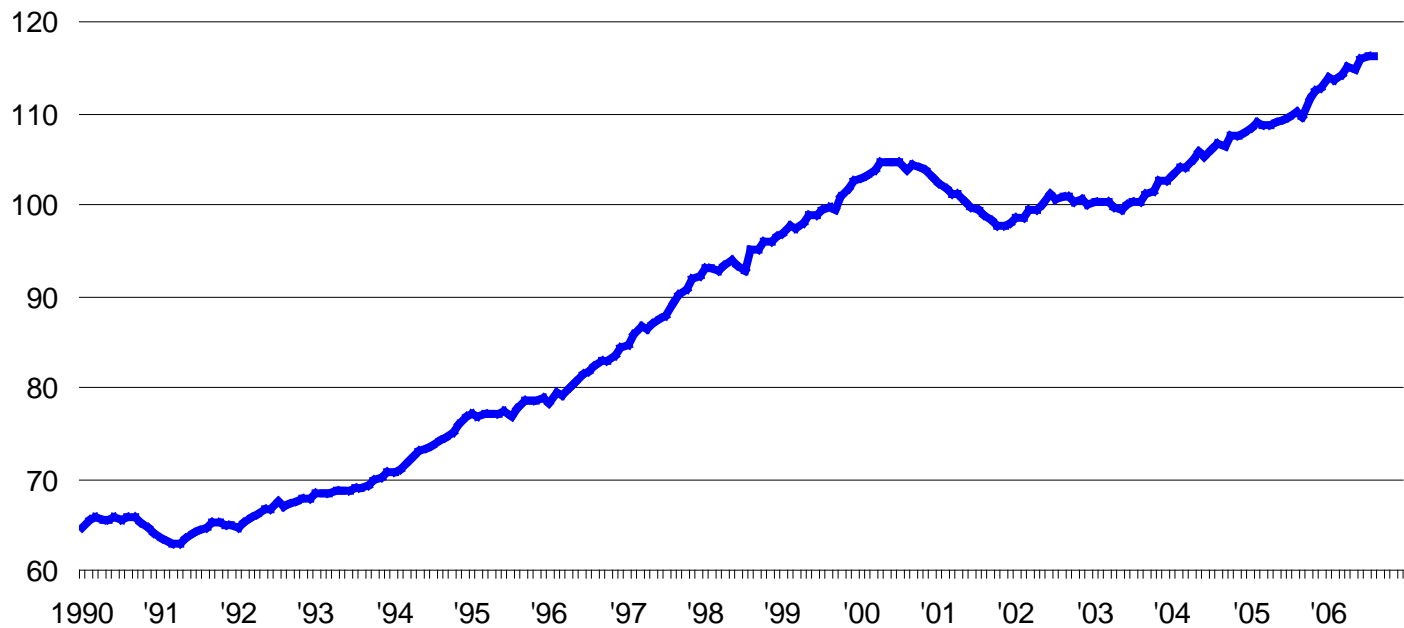


# The Current Expansion

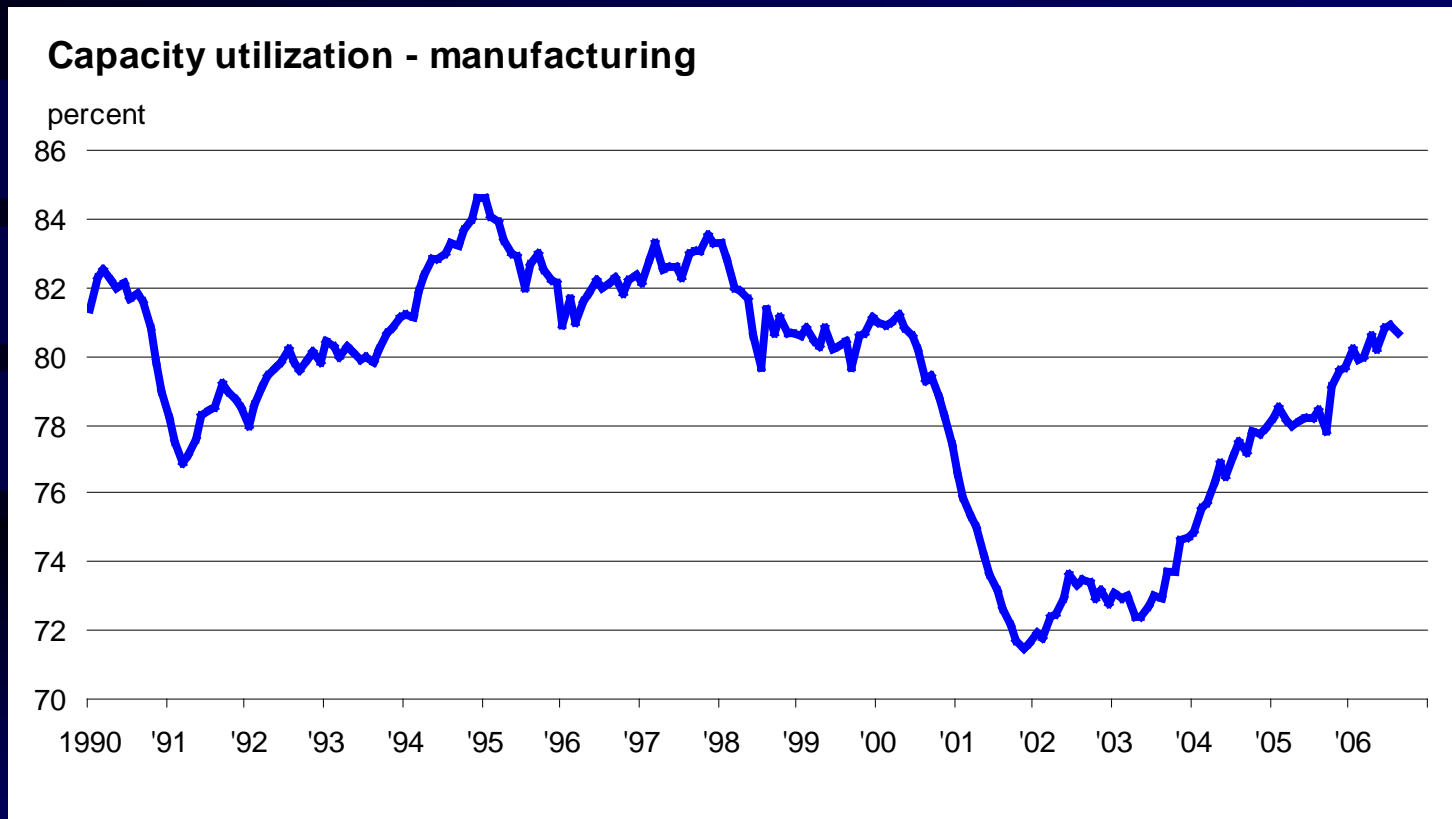
**Manufacturing output in the United States  
is at an all-time record,  
more than 19% higher than the end of 2001**

### Industrial production - manufacturing

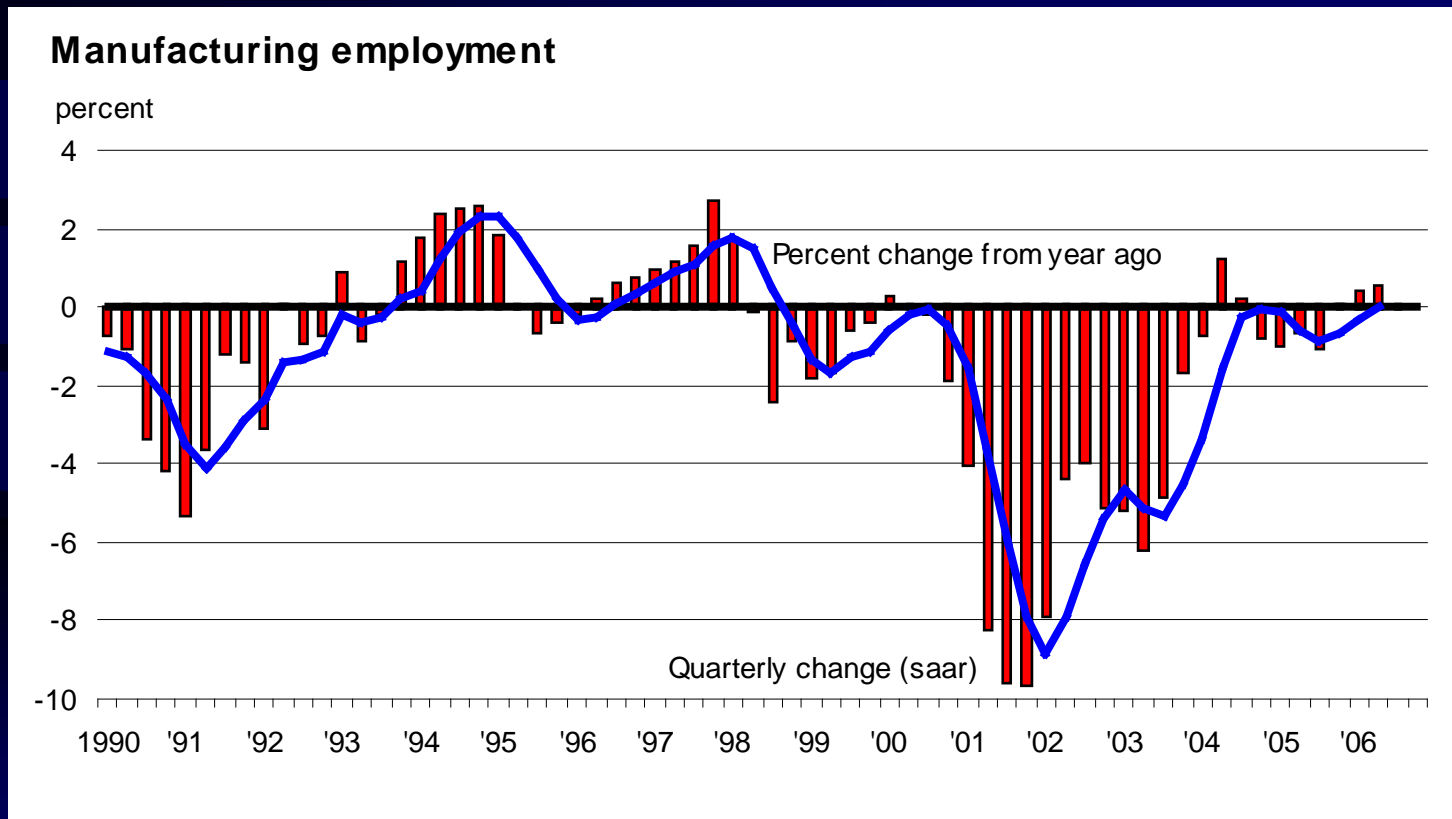
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# Manufacturing capacity utilization is above its historical average



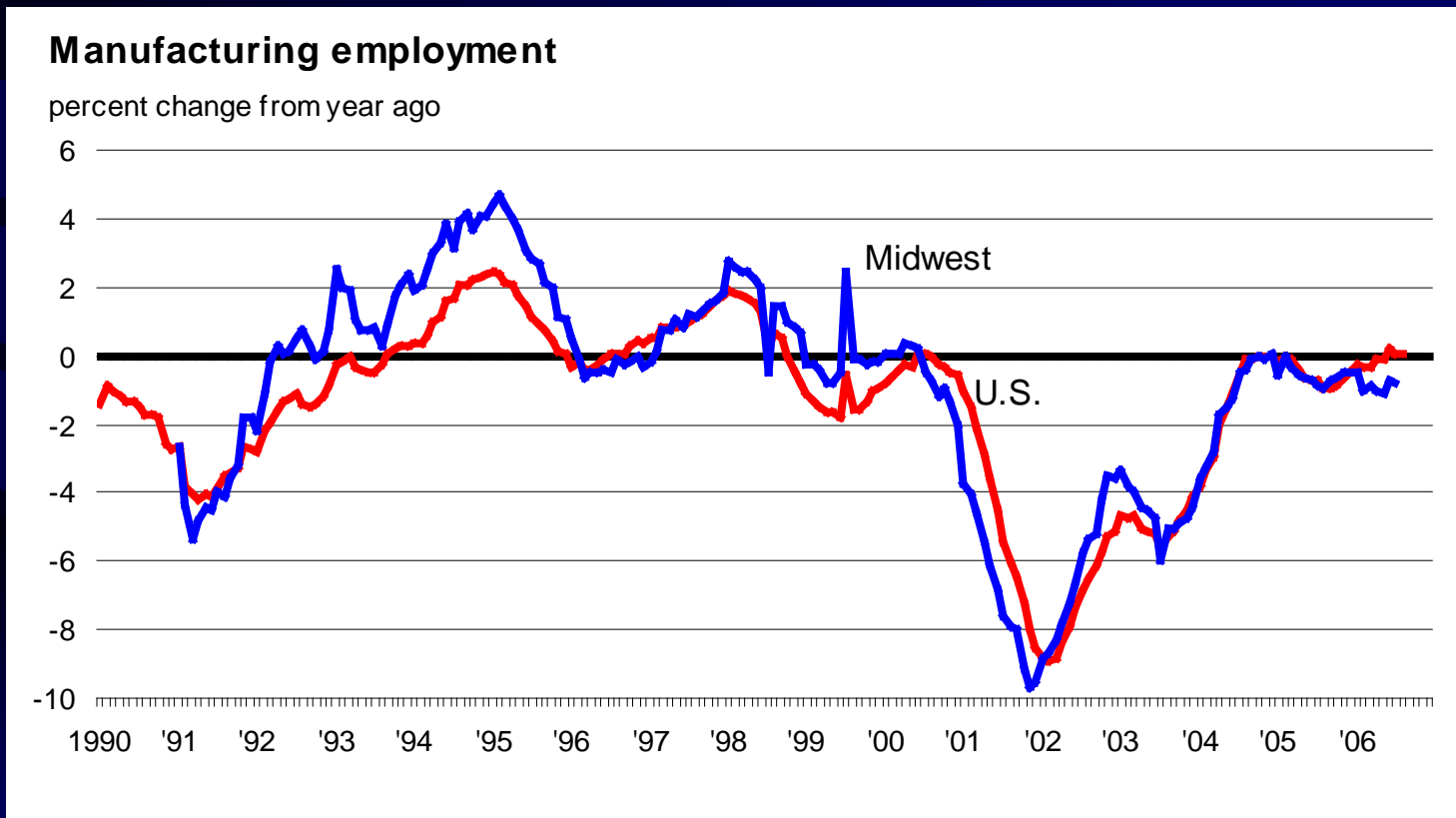
# Manufacturing employment growth has been flat over the past year



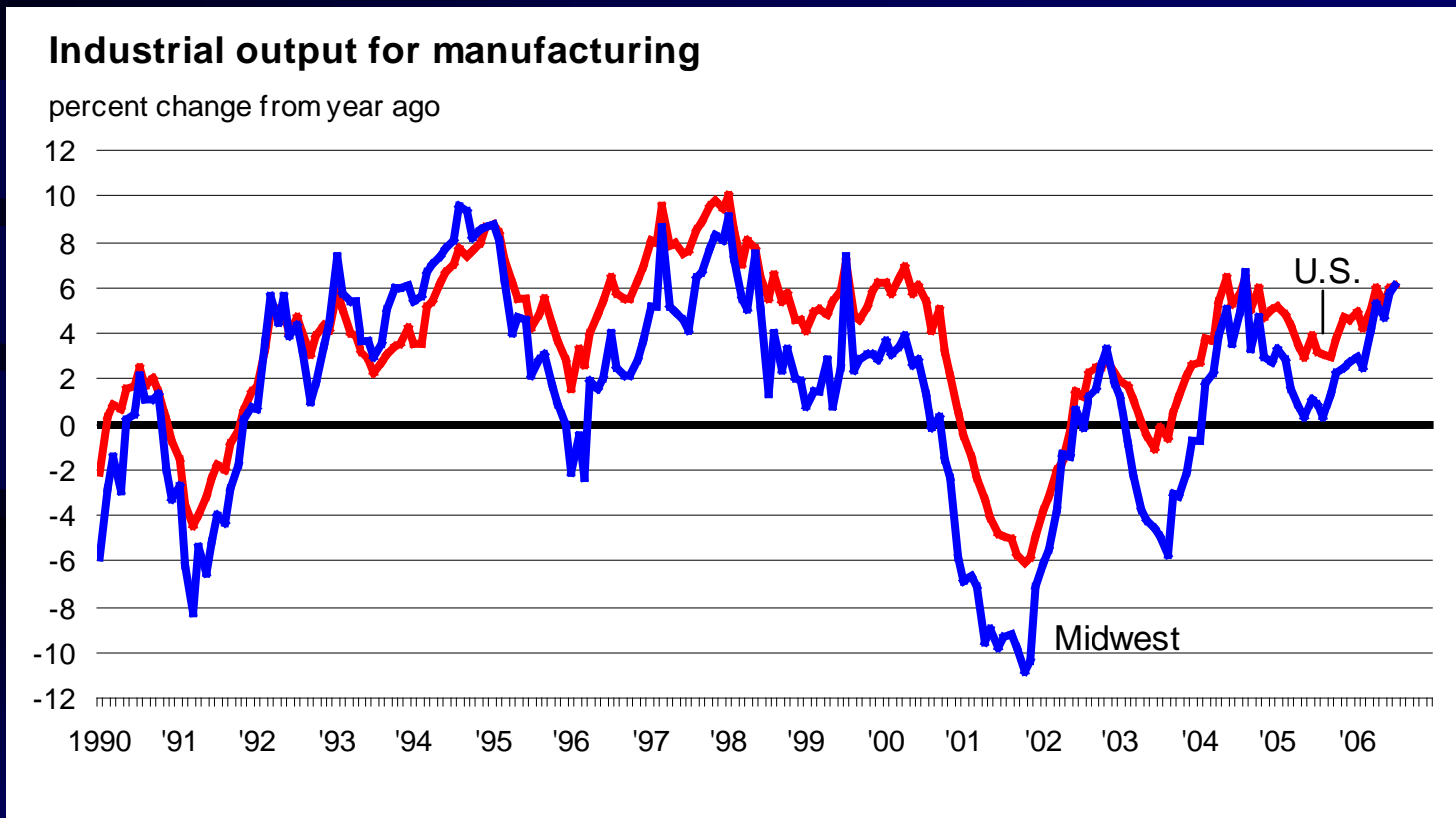


# Activity in the Midwest

# Midwest manufacturing employment growth has recently been below the U.S.



# Midwest manufacturing production growth is just above the nation's rate



# Summary

- Manufacturing output in the U.S. has never been higher
- The success of manufacturing has been driven by productivity
- Manufacturing employment has shown little change over the past 60 years
- The most recent decline in manufacturing was cyclical, not structural
- Profits in manufacturing have outperformed profits for the rest of the nation
- The trends that have dominated manufacturing for the past 60 years are suggestive of the future for U.S. manufacturing: ever increasing output with employment representing a smaller share of total employment

# *Chicago Fed Letter* - June 2003

[www.chicagofed.org](http://www.chicagofed.org)

