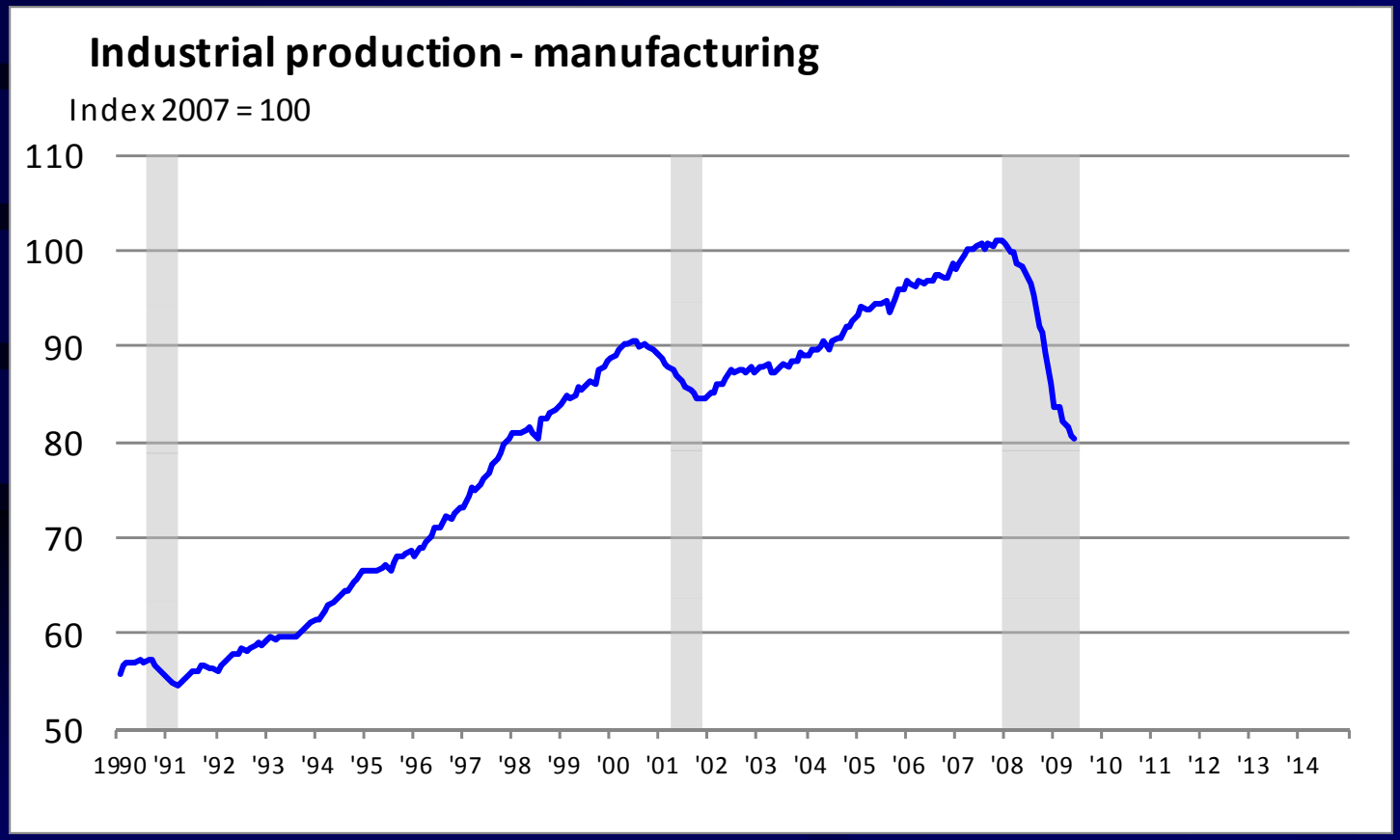
Is the U.S. Losing Its Manufacturing Base?

Rocky Mountain Economic Summit
Afton, WY
July 10, 2014

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

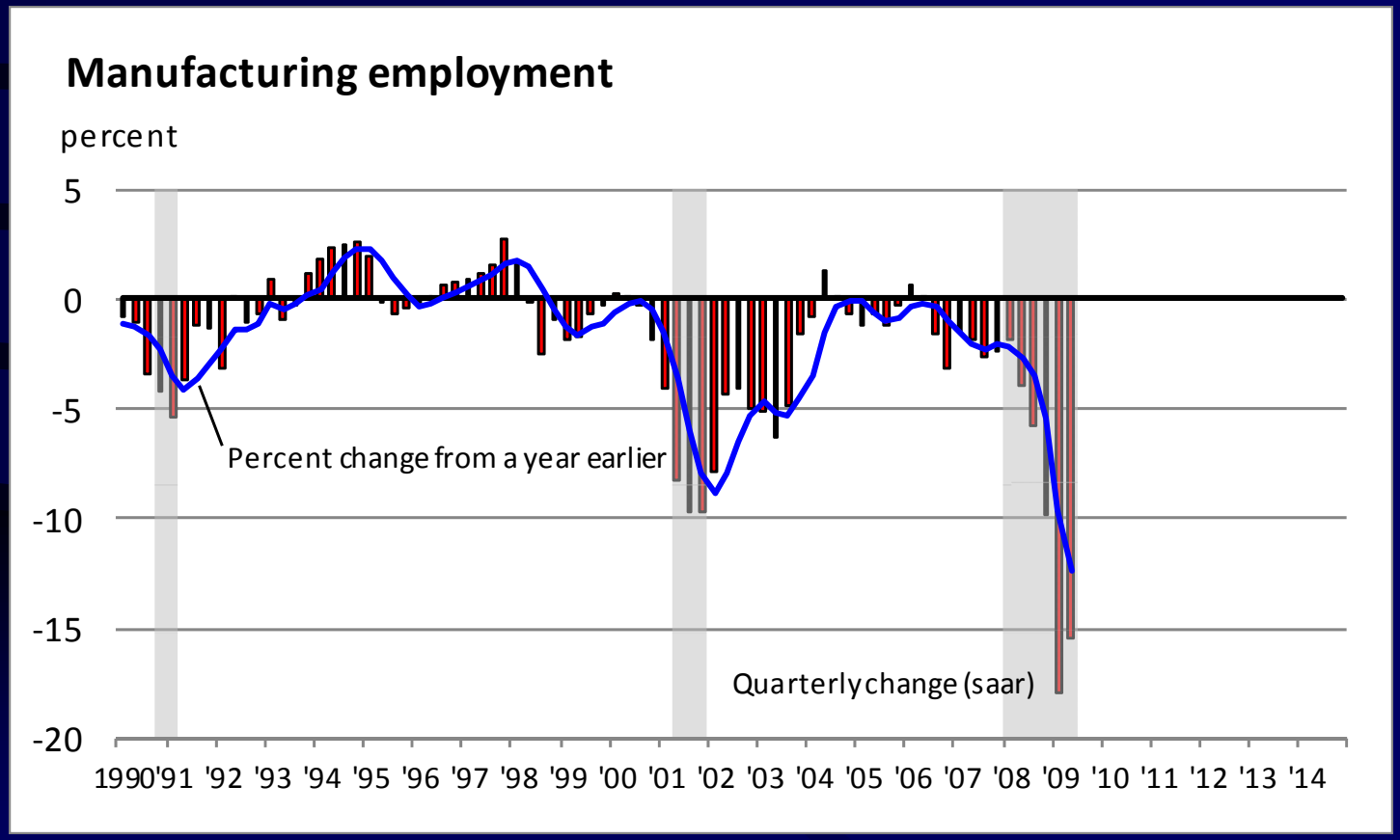
The Setup

Manufacturing output peaked in December 2007 and fell 20.8% over the following 18 months



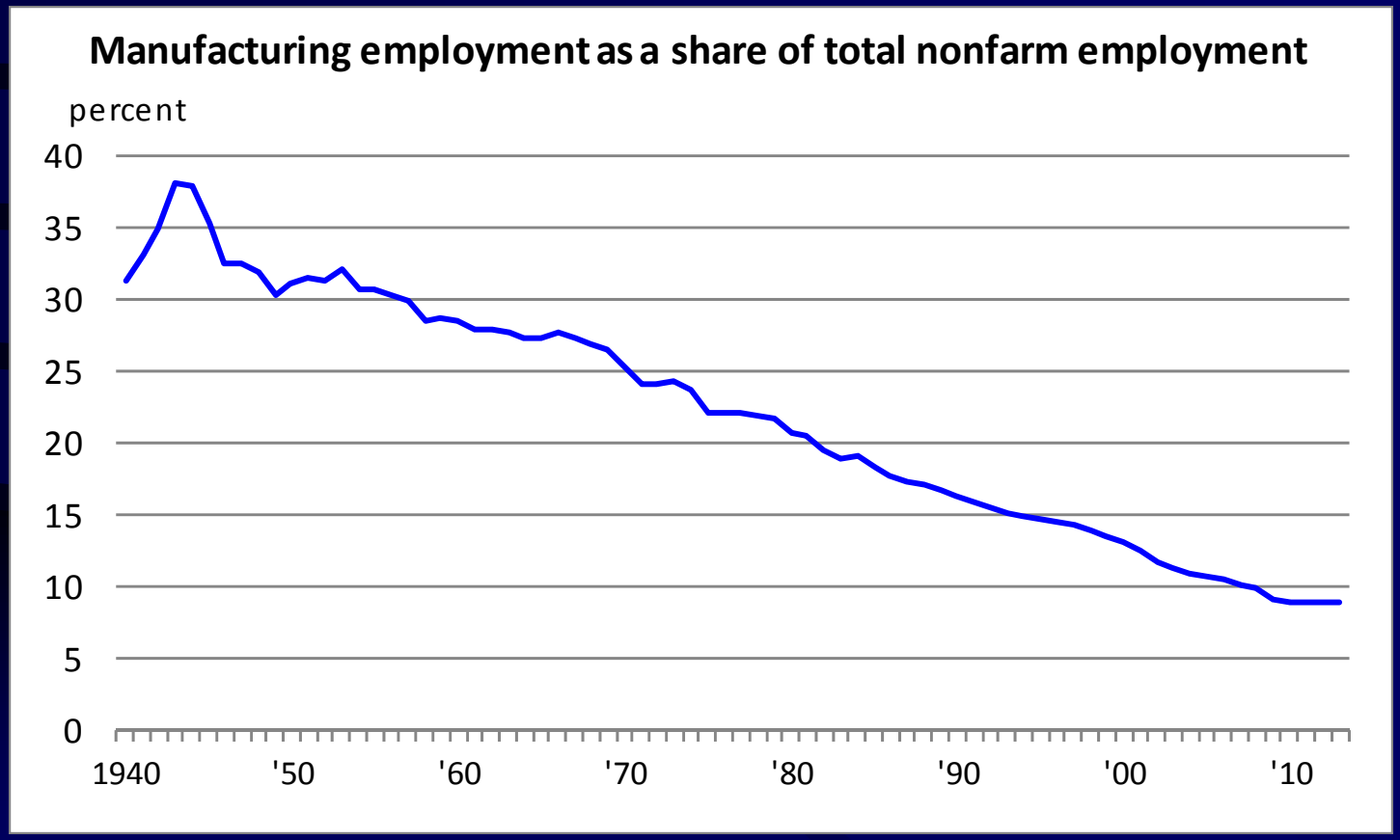
Manufacturing capacity utilization collapsed to the lowest rate in 70 years

Job declines in the manufacturing sector were significant, with over 2.0 million jobs lost over that same period

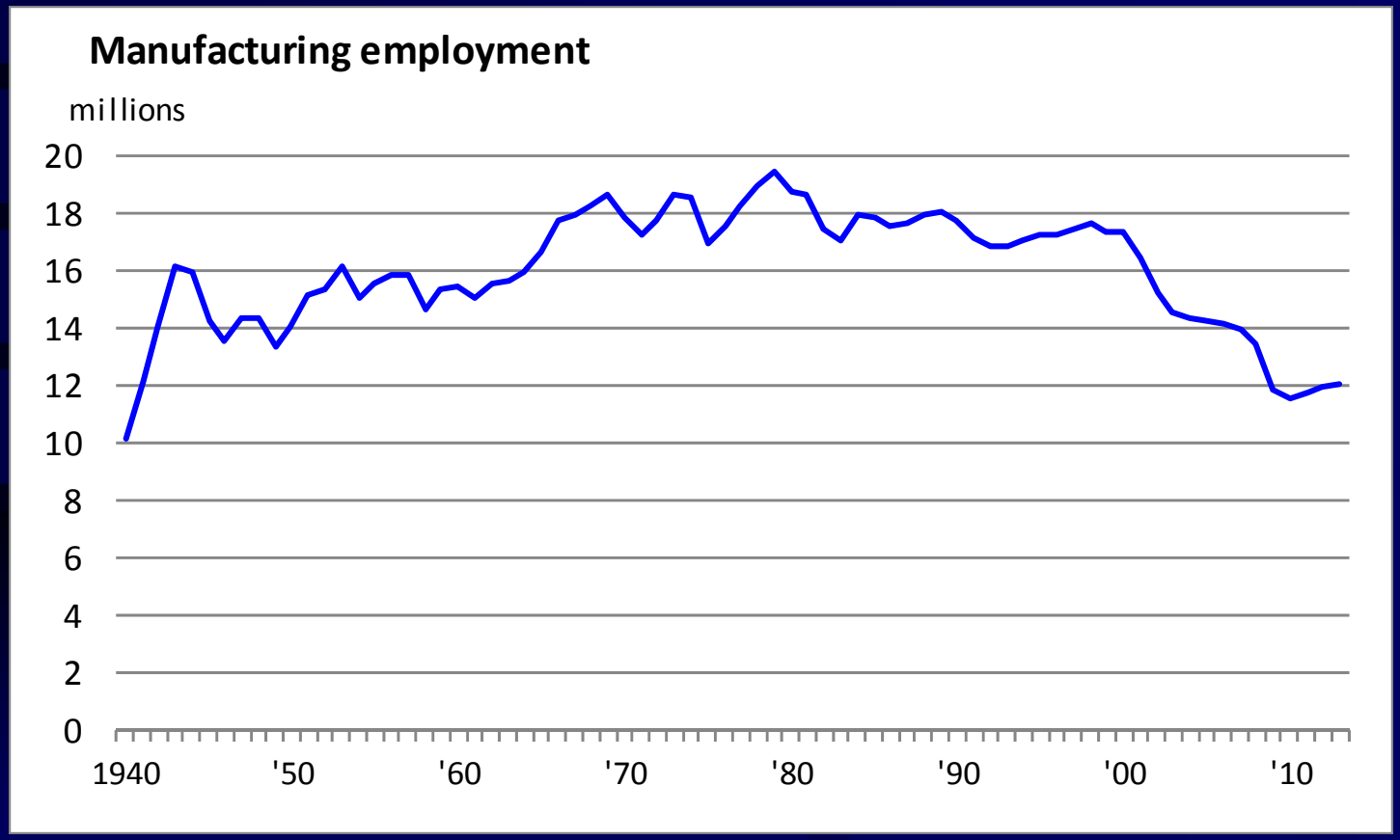


Is the U.S. Losing Its Manufacturing Base?

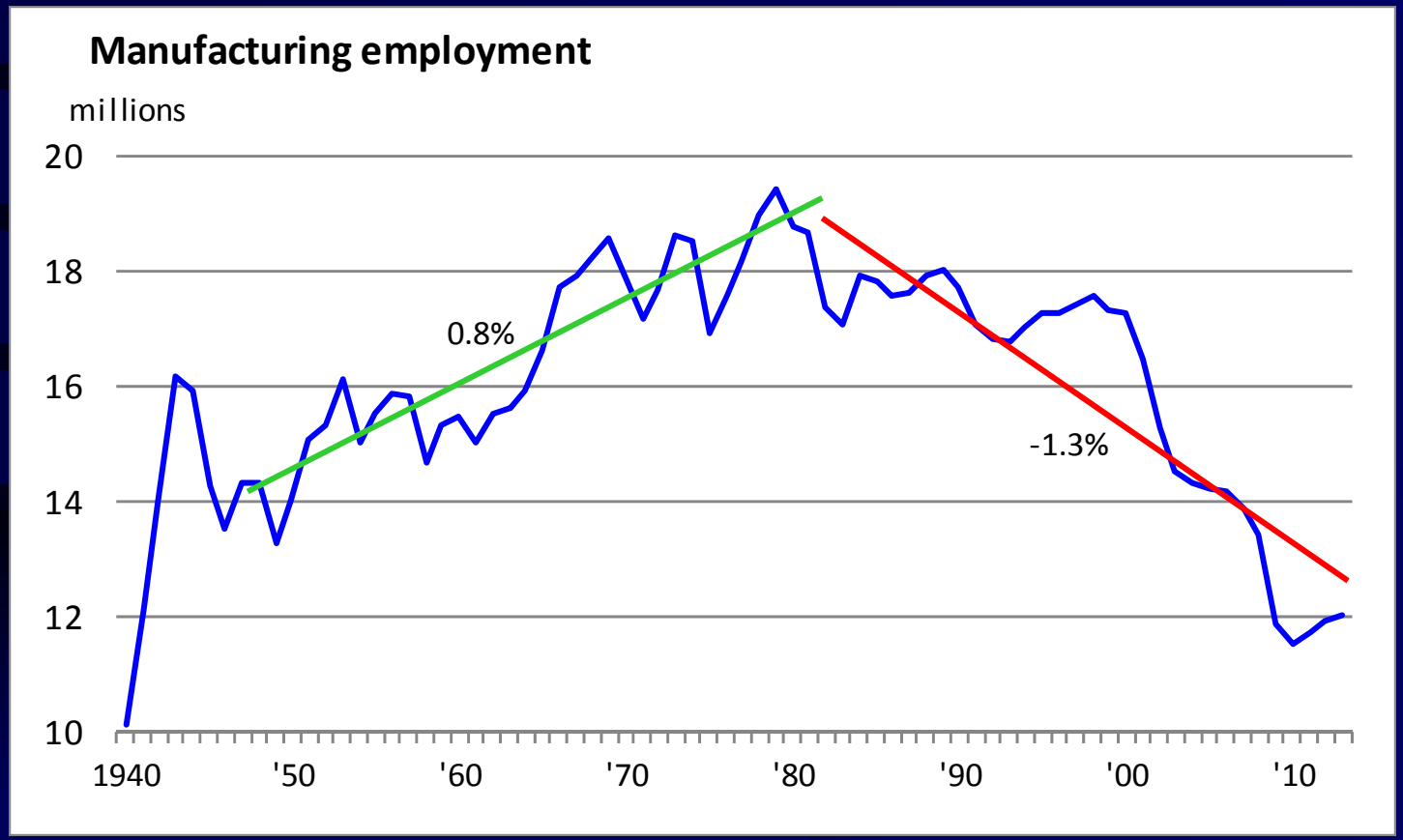
Manufacturing employment as a share of national employment has been declining for over 60 years



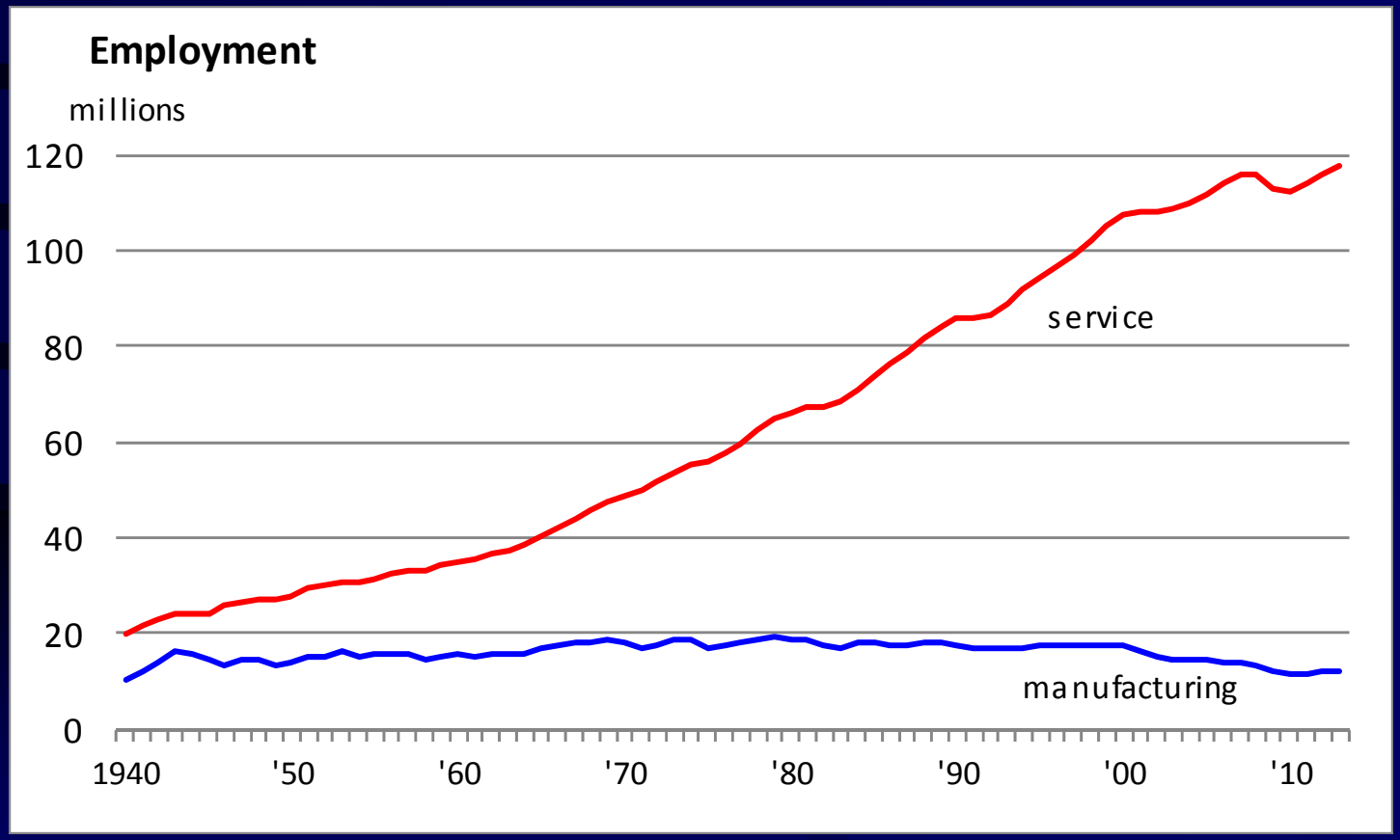
The number of jobs in manufacturing has been relatively stable over this period, edging lower on average by -0.3% per year since 1947



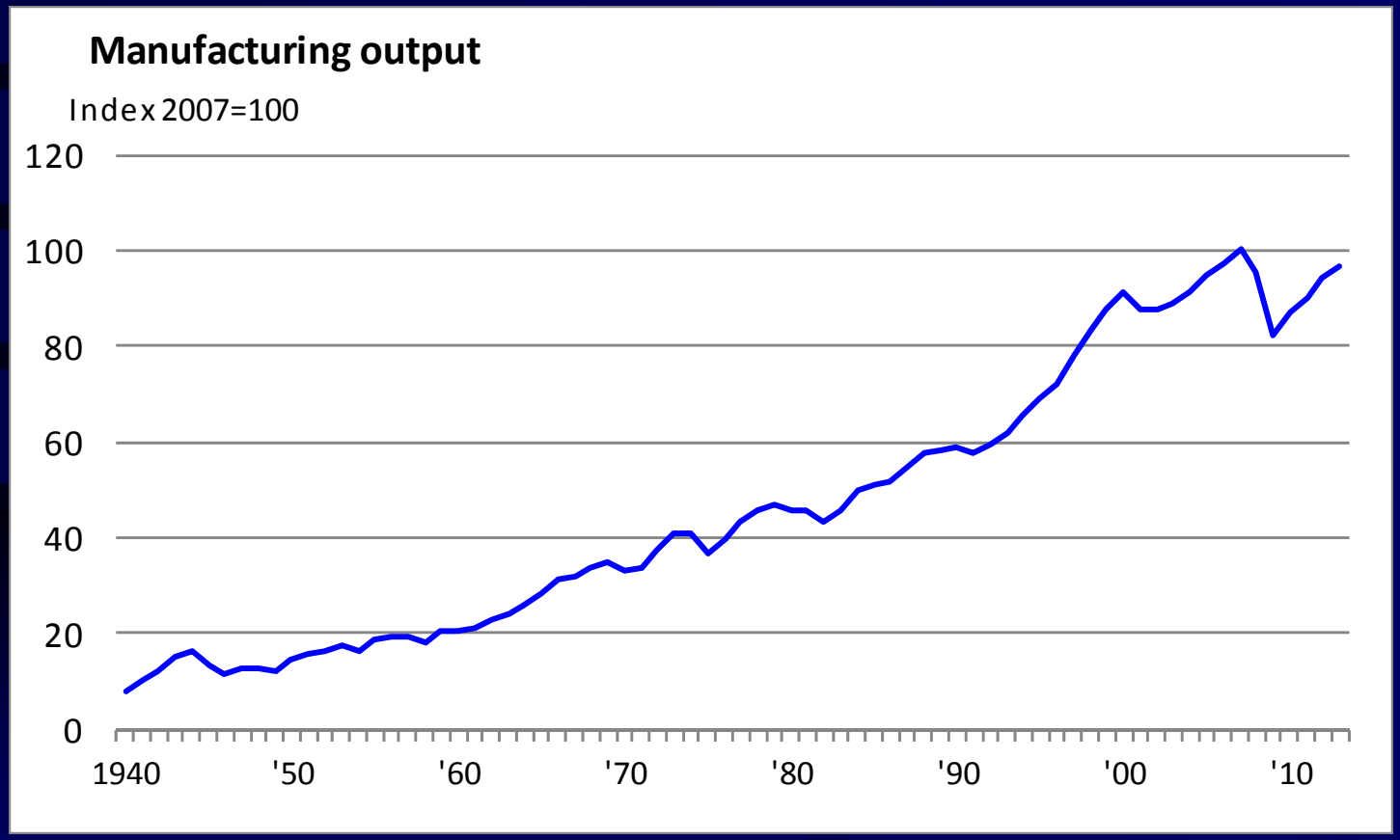
Not to make a mountain out of a molehill, but manufacturing employment was increasing up until 1979 and has been moving lower over the past 30 years



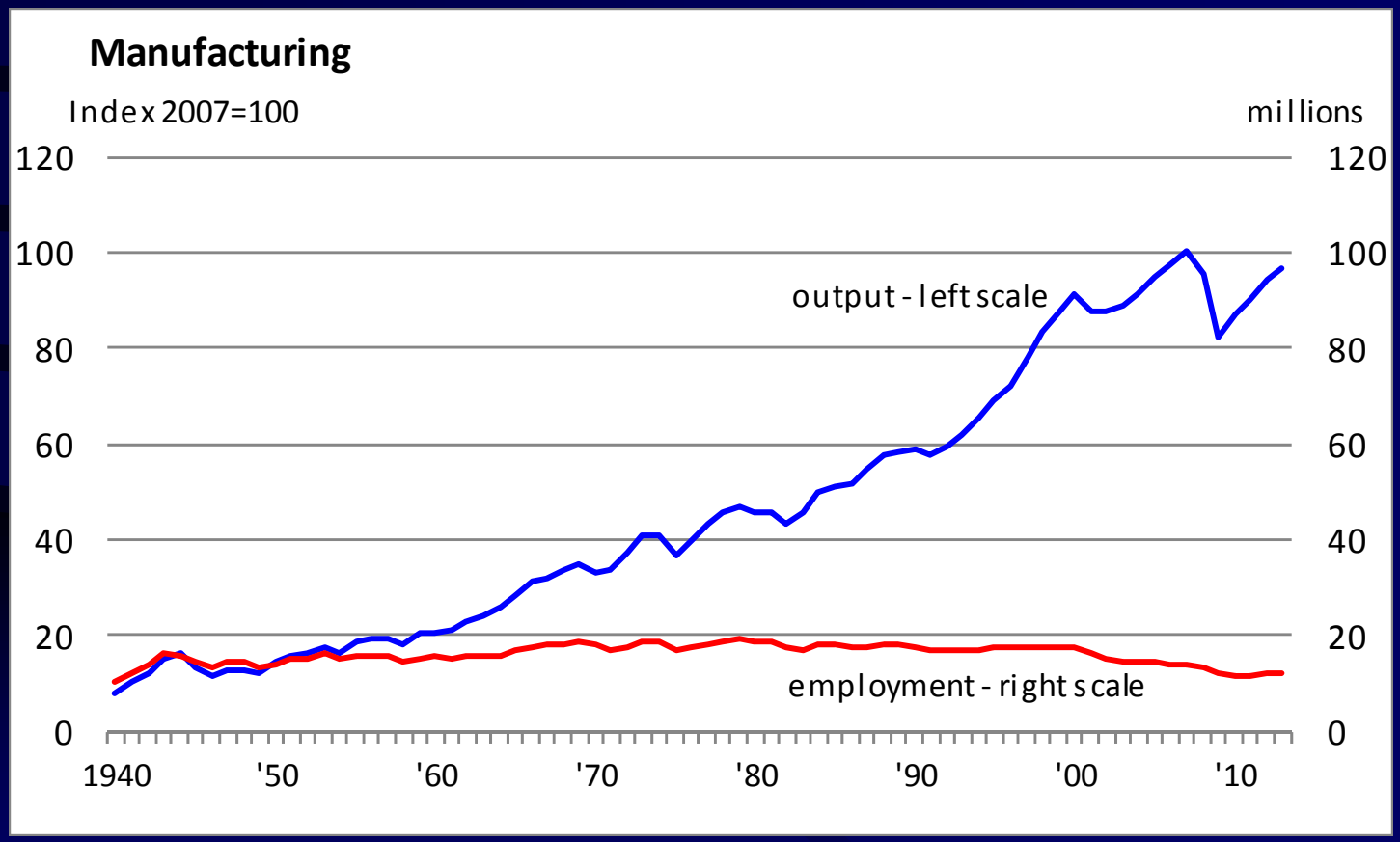
However, service sector employment has grown more than fourfold over this period, averaging growth of 2.3% per year since 1947



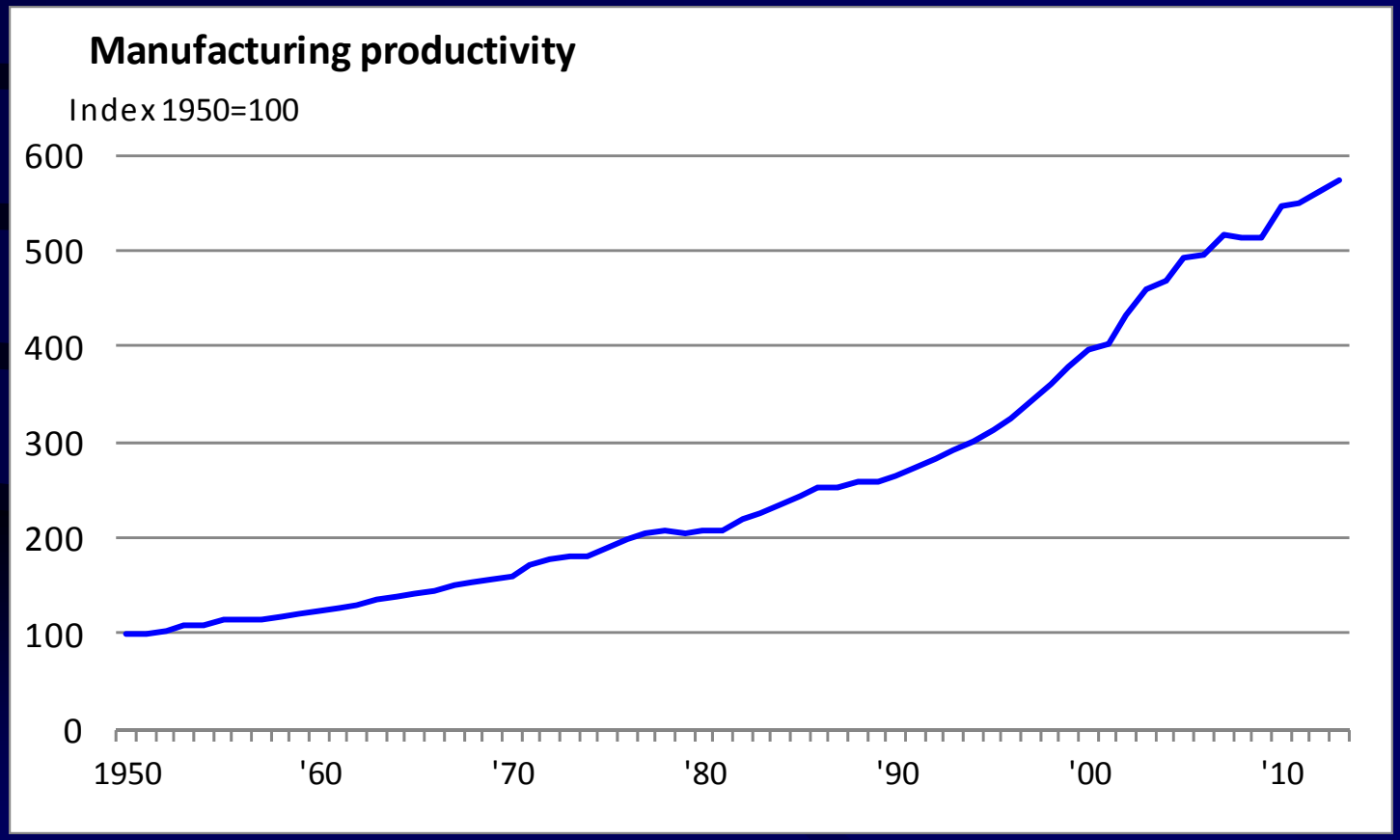
While manufacturing employment has been edging lower over the past 63 years, manufacturing output increased by 3.2% per year



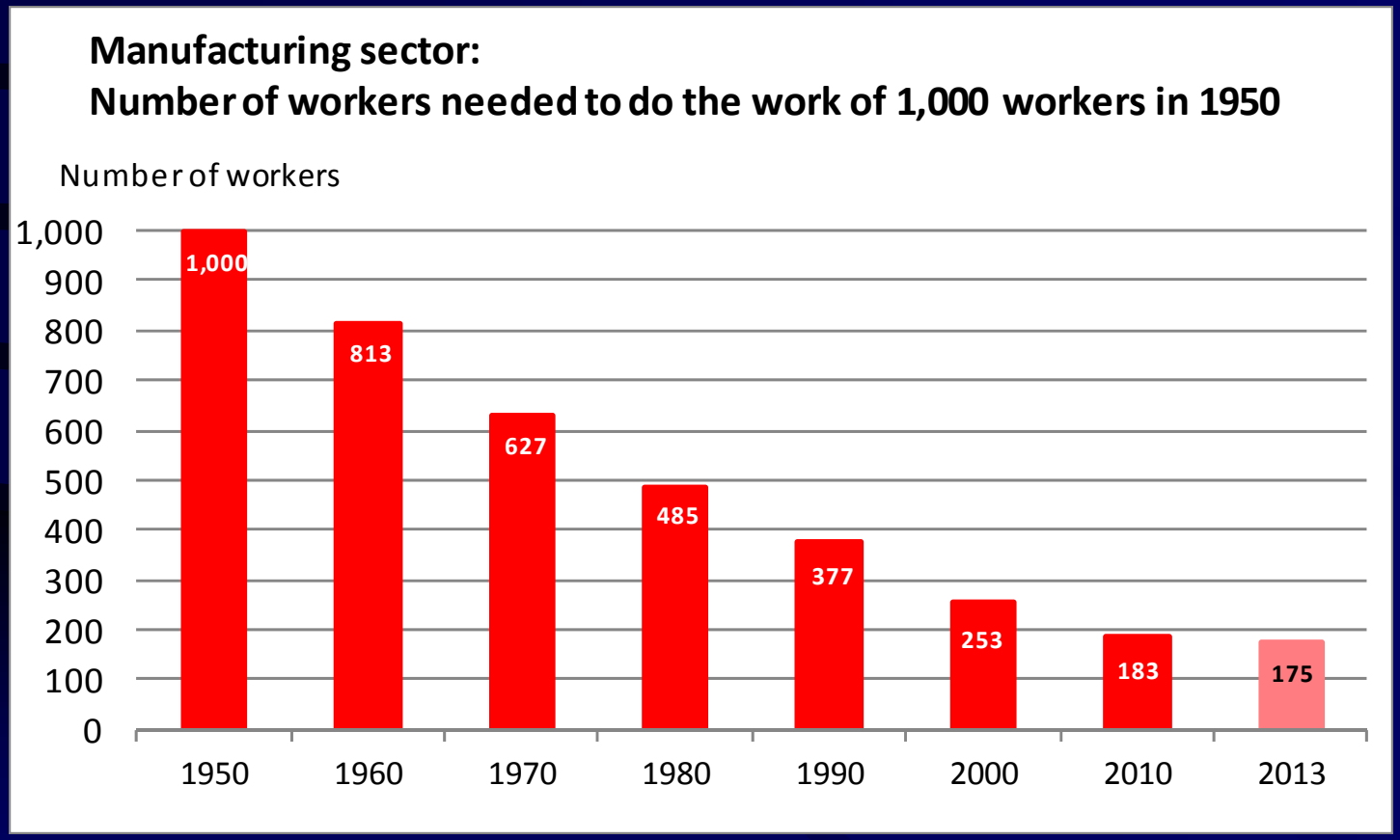
This translated into an almost 600 percent increase in manufacturing output over this time period



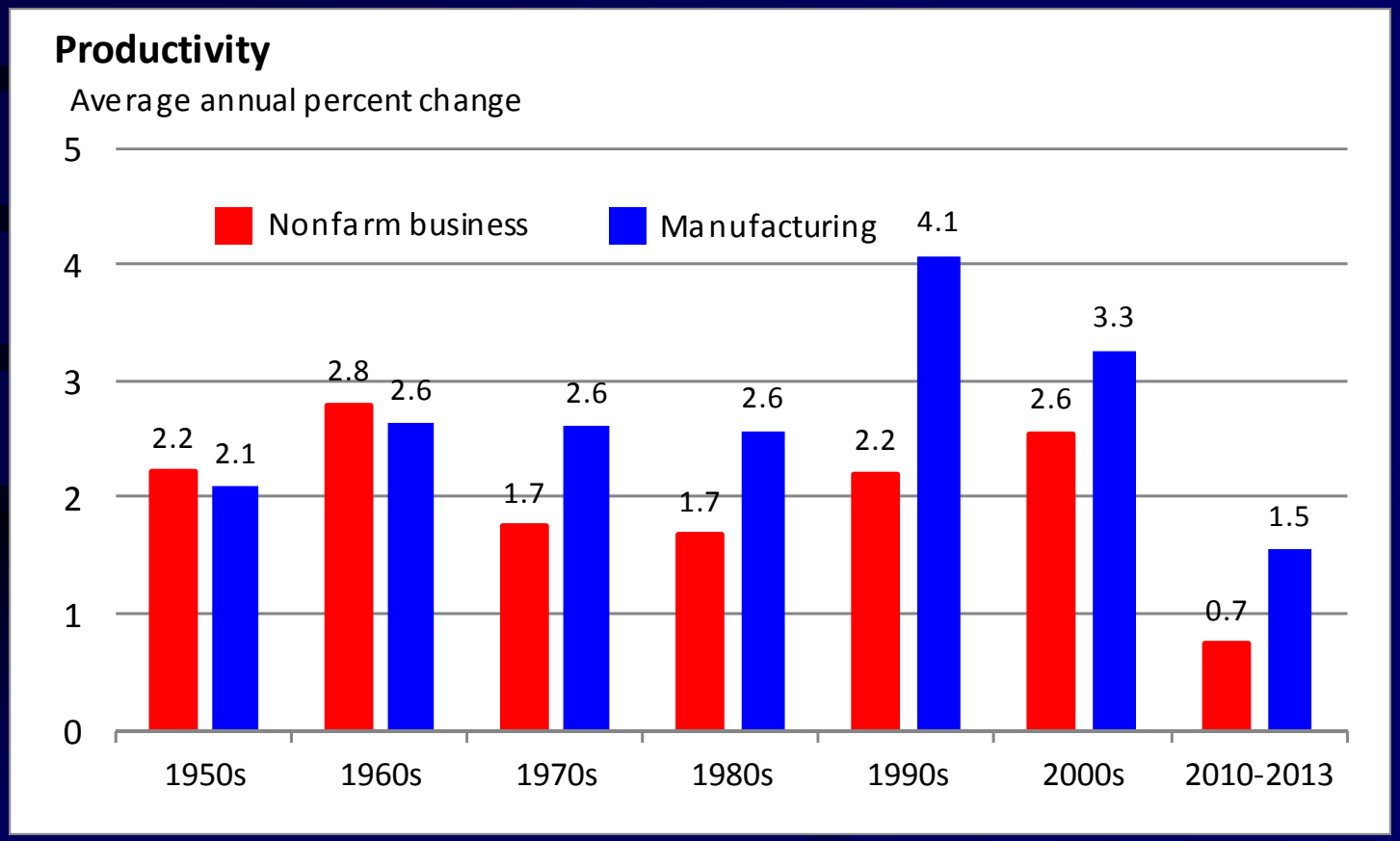
The increase in output can be attributed to strong productivity growth experienced by the manufacturing sector



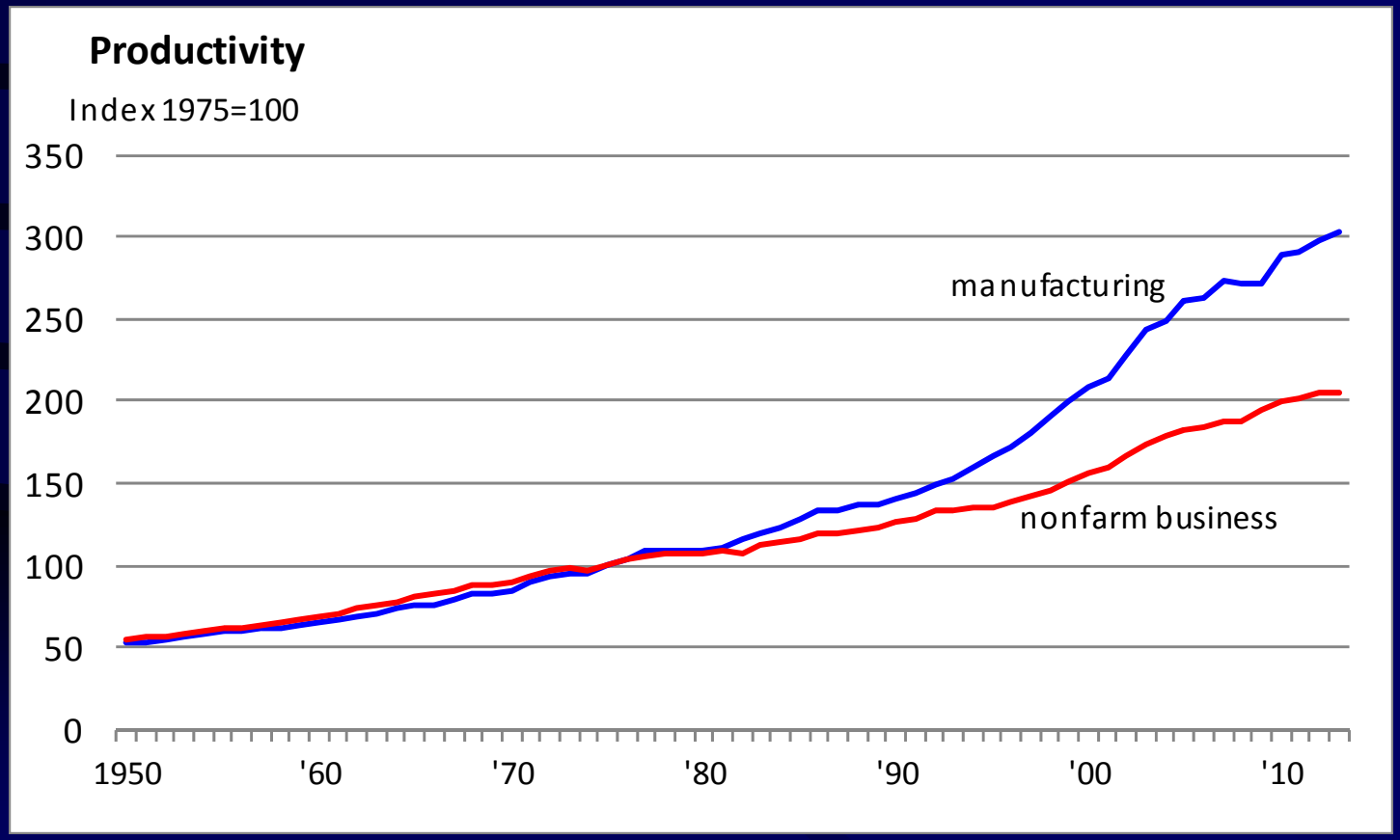
What took 1,000 workers to produce in 1950 takes 167 workers today



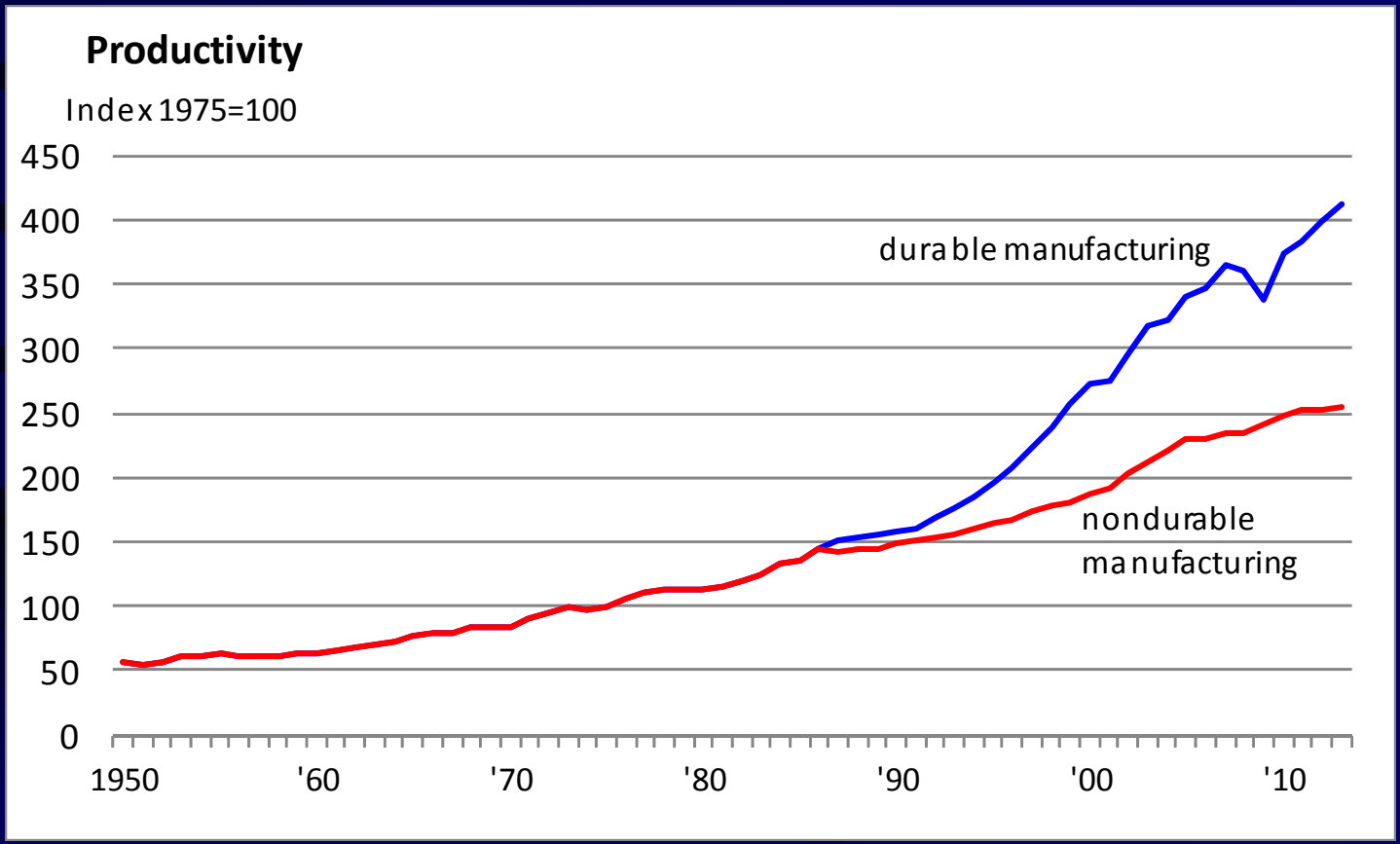
Manufacturing productivity has been growing faster over the past 40 years



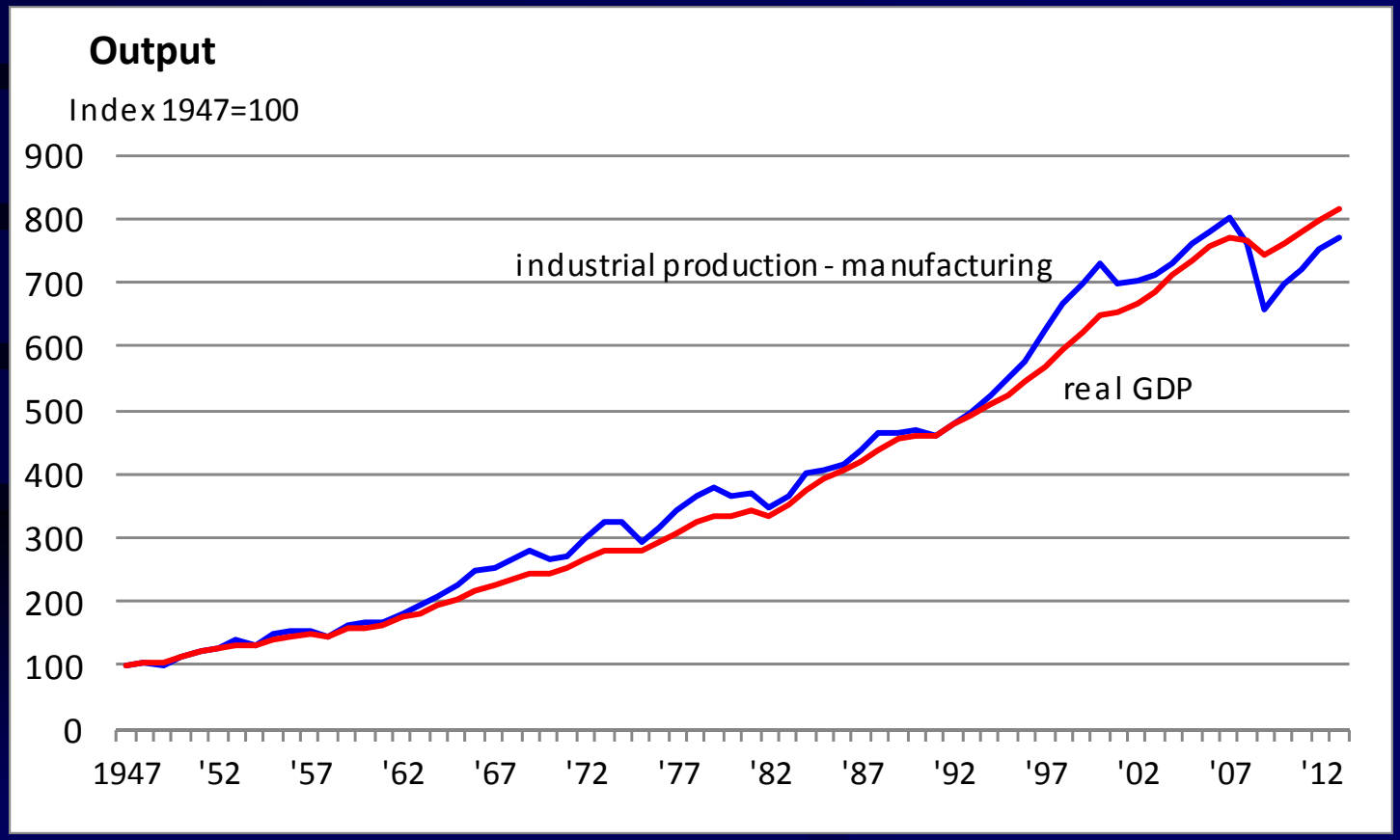
The divergence in productivity appears to have occurred around the mid-1970s



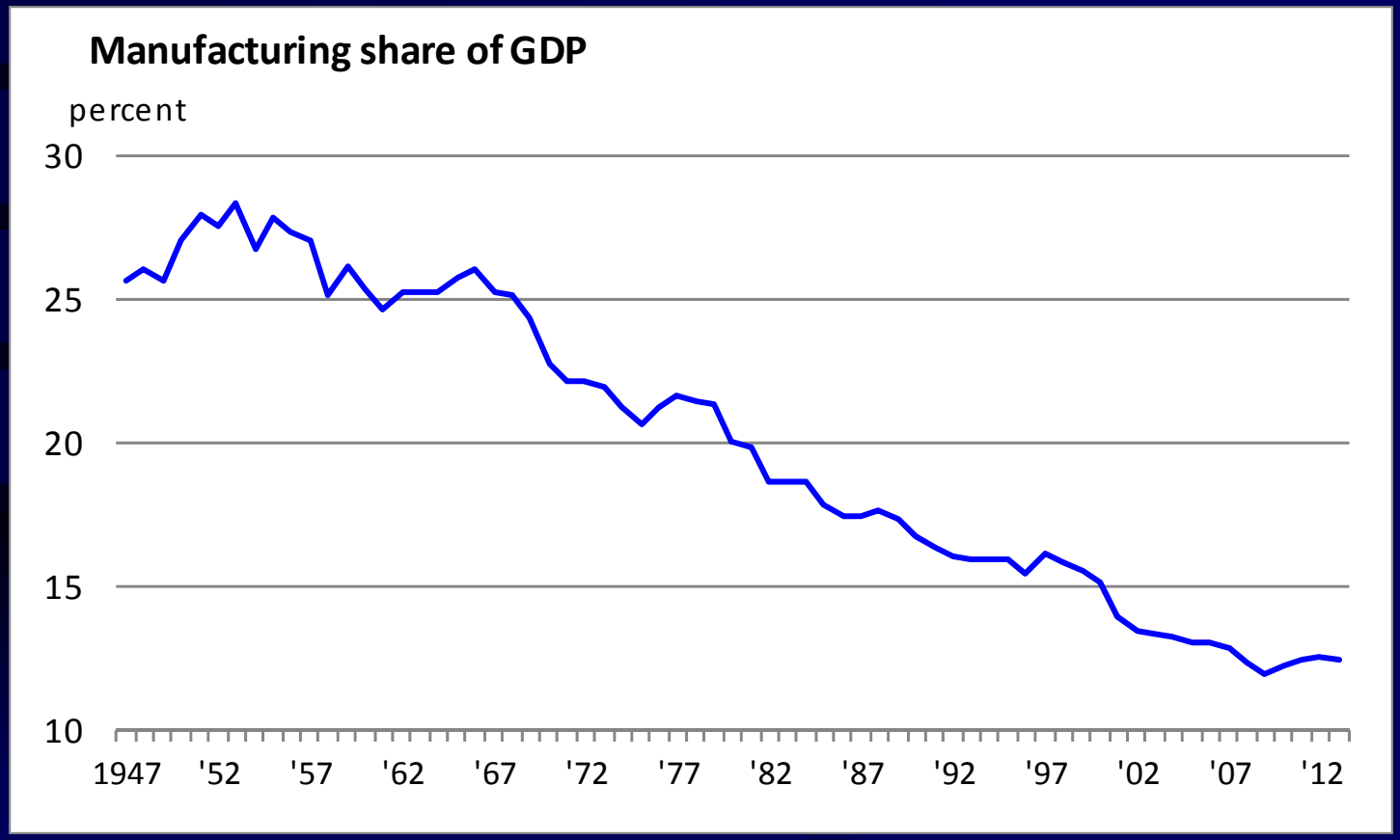
This divergence is especially apparent in durable manufacturing



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

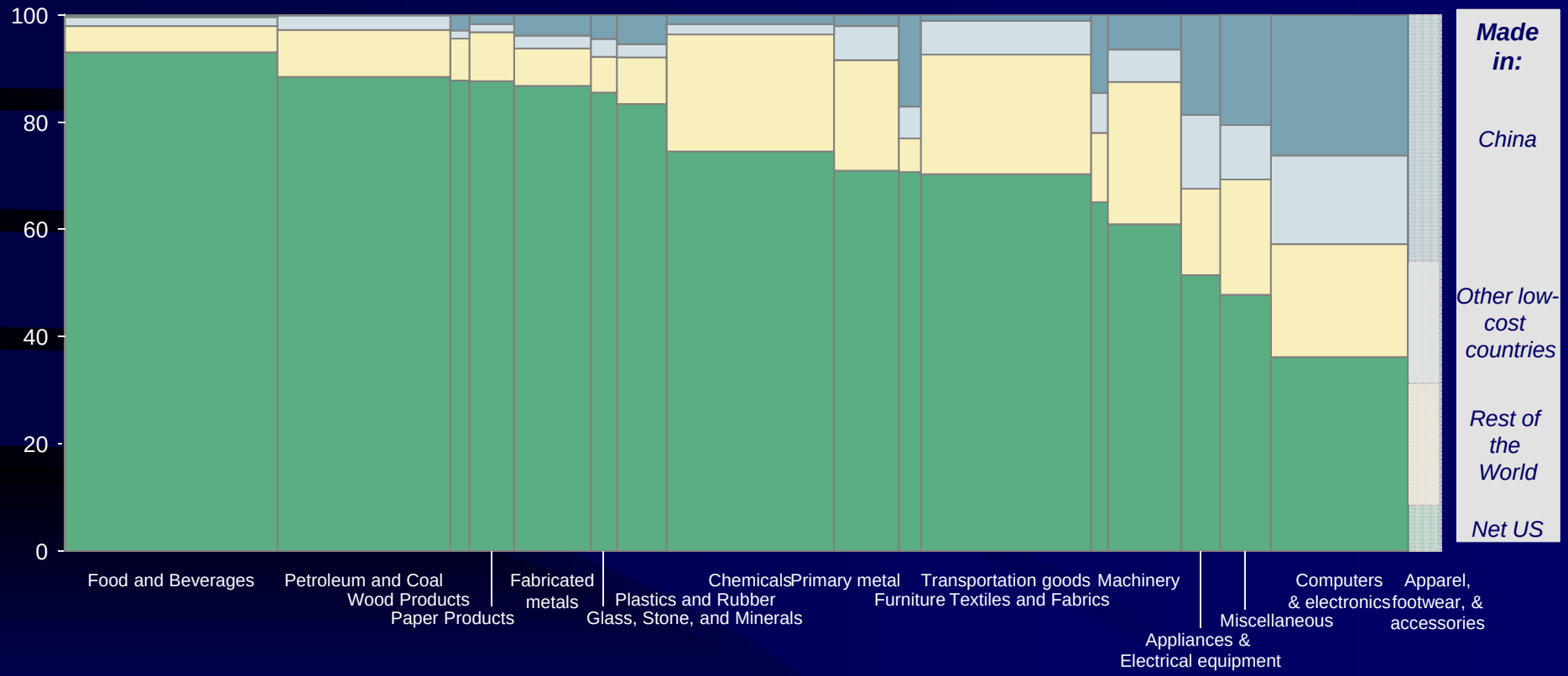


However, lower relative prices in the manufacturing sector has lead to manufacturing comprising a smaller share of GDP over time



However, the US still makes over 70% of what it consumes

% of US manufactured goods consumed in 2010[1] by source

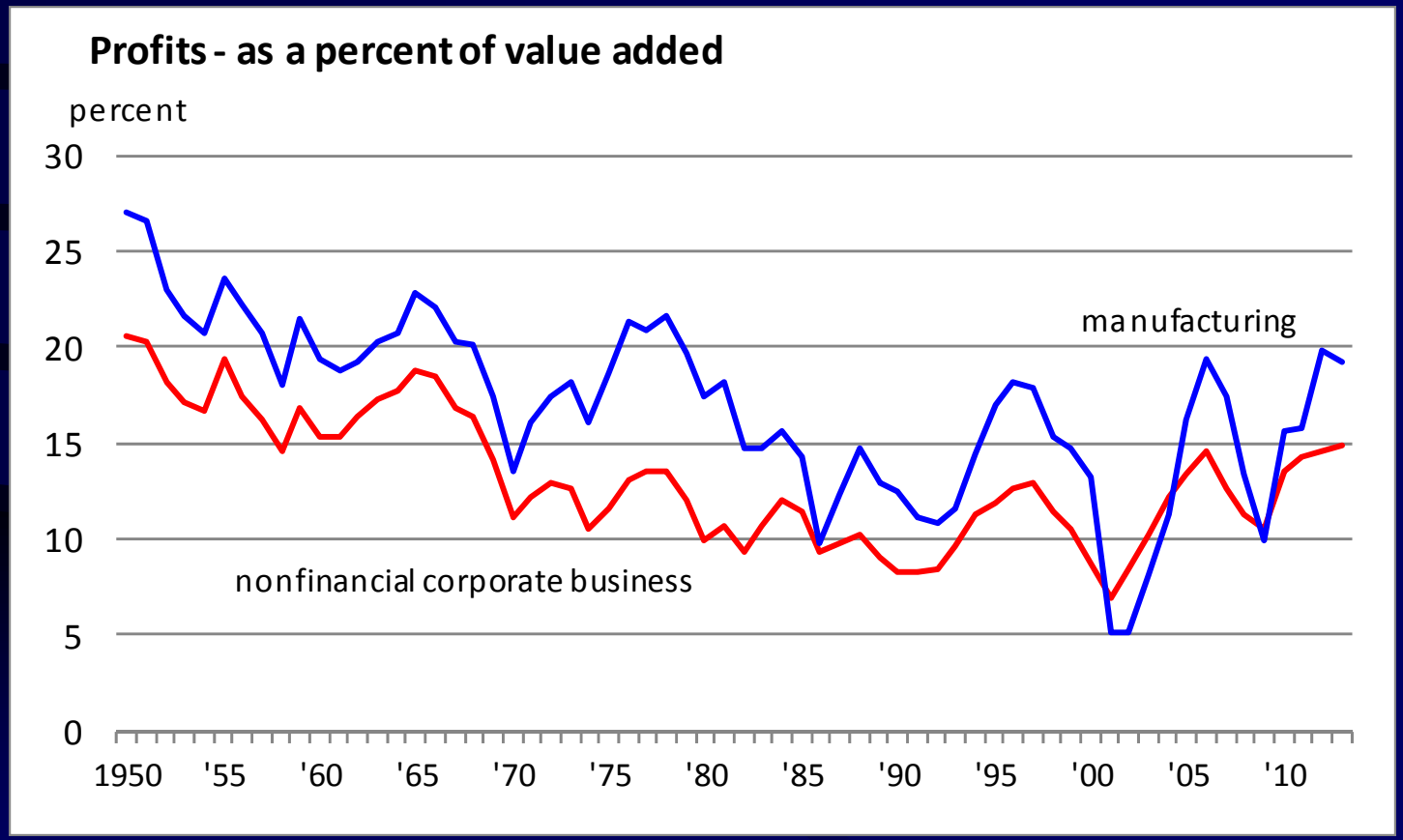


Value of US manufactured goods consumed by category (Billion USD)

From the Boston Consulting Group

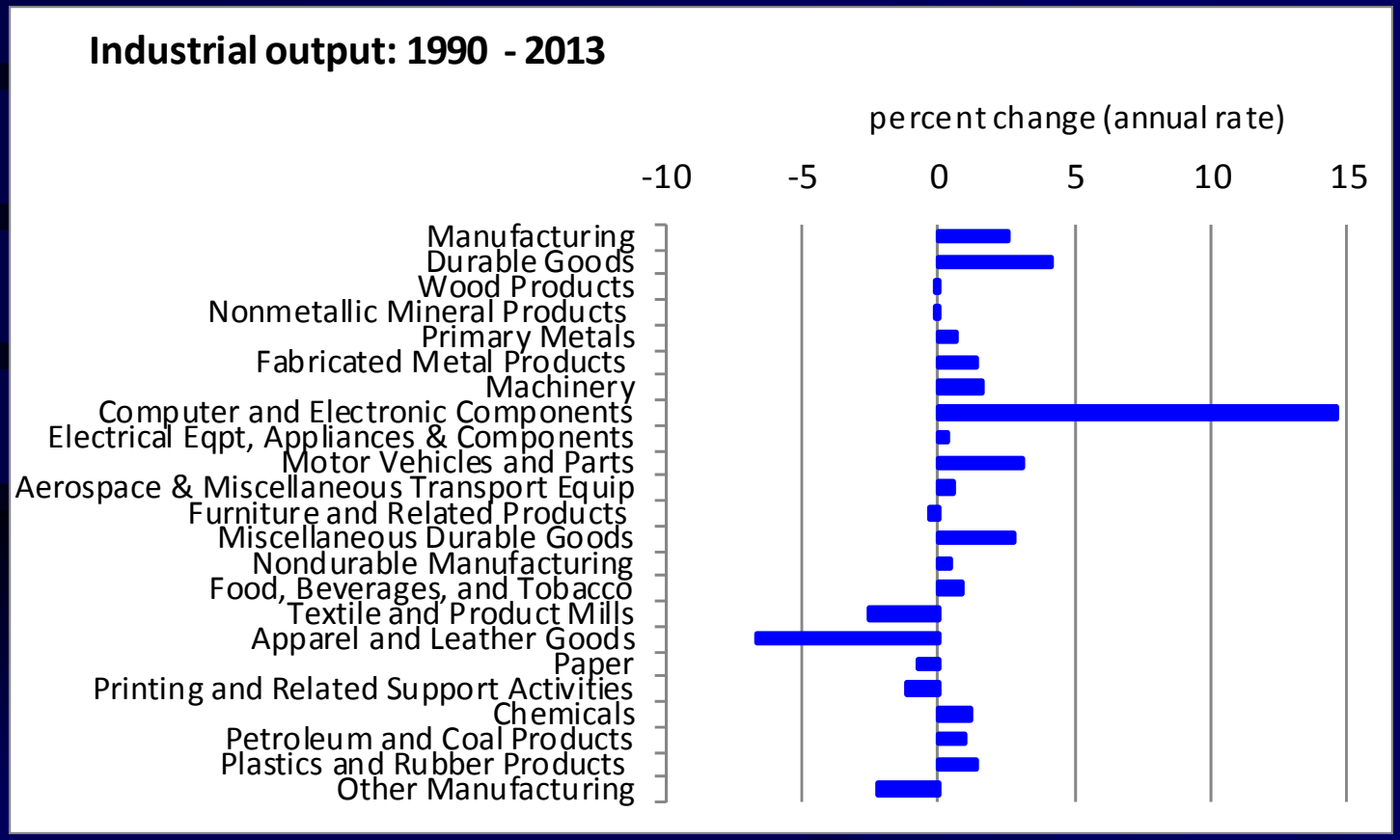
How profitable is manufacturing?

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

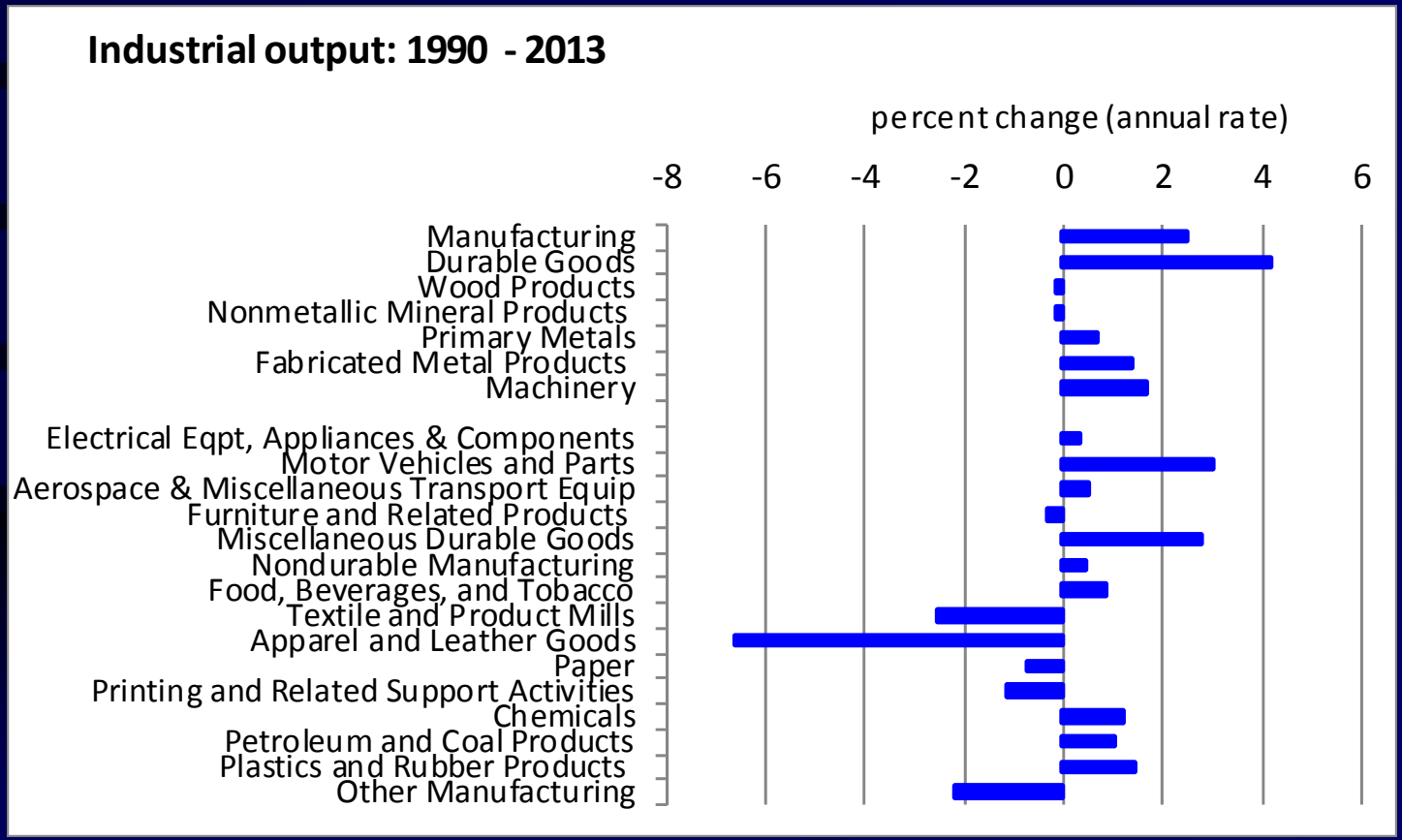


The Manufacturing Sector Continues to Re-invent Itself

Over the last twenty years the fastest growing sector, not surprisingly, has been computer and electronic components

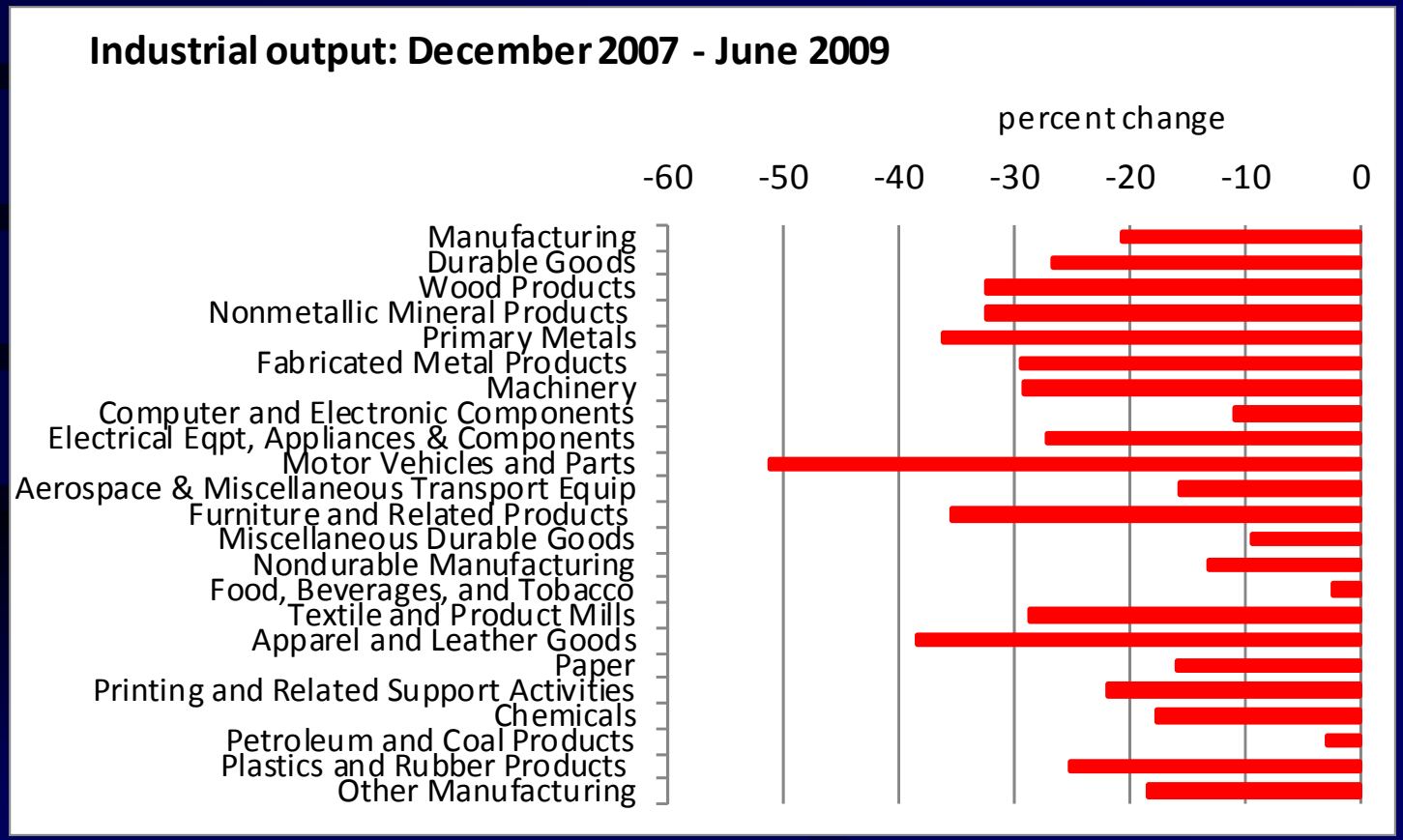


There has been a large number of industrial sectors that have risen and fallen over the past twenty years

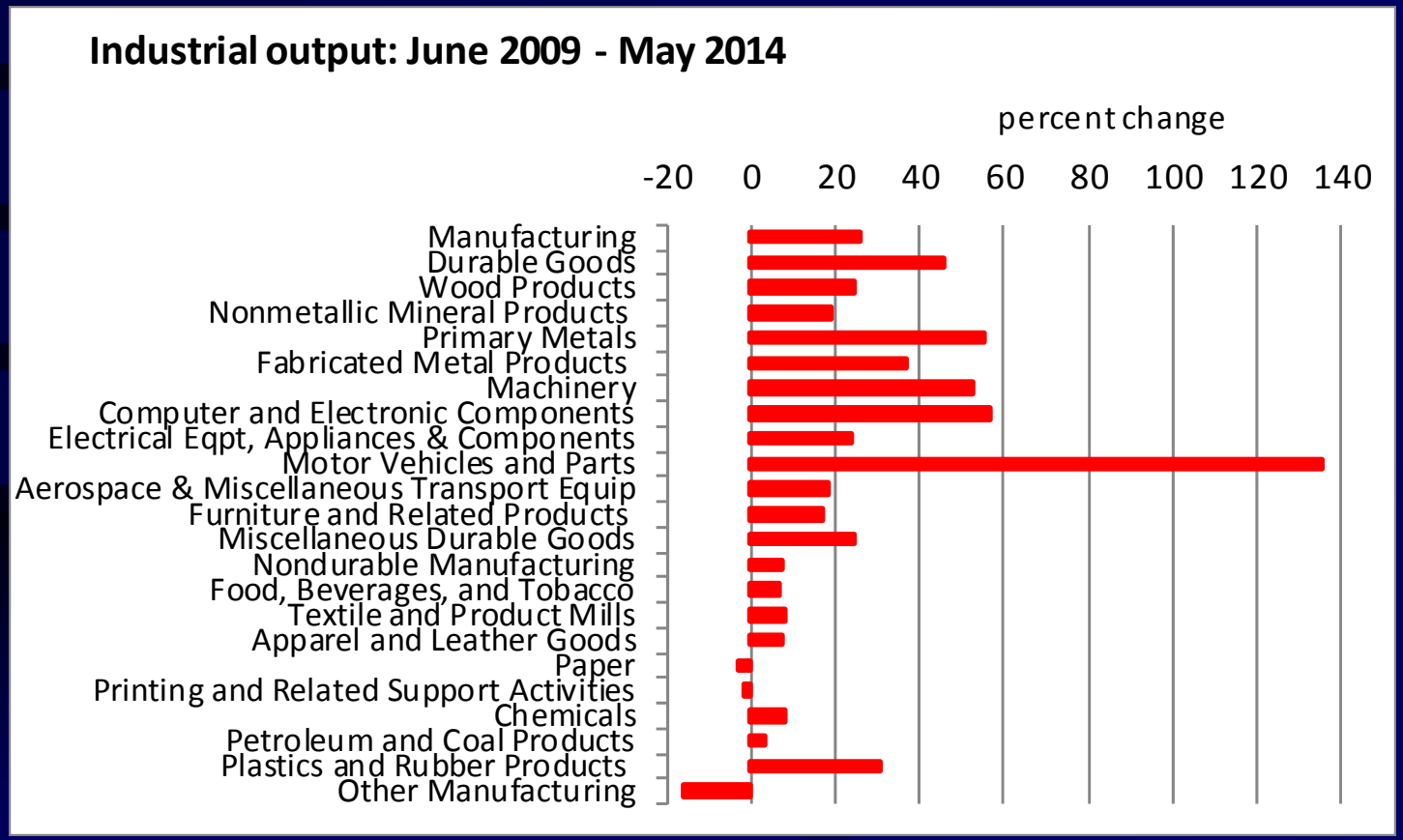


The collapse in manufacturing experienced in 2008-2009 was closely linked with the economic recession

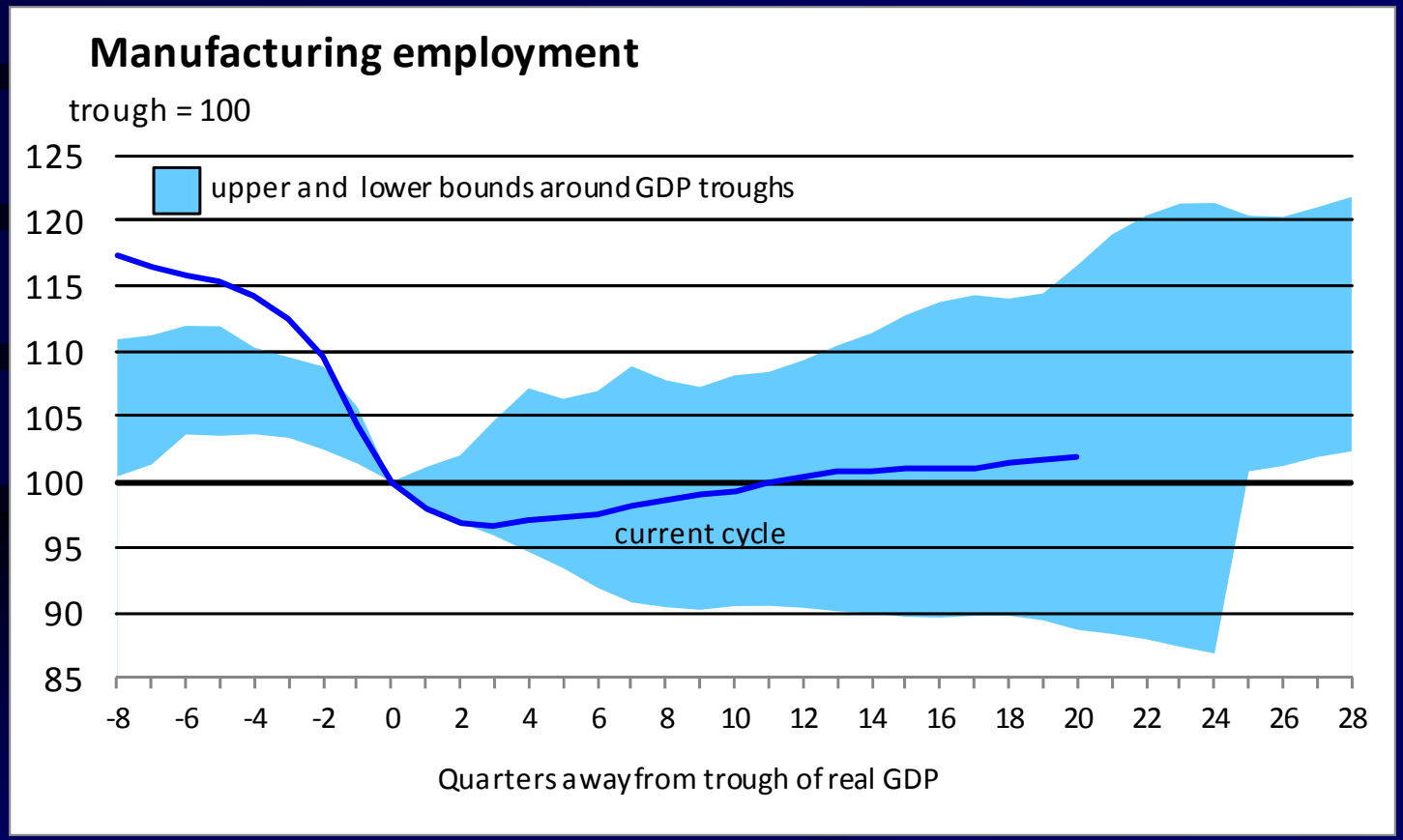
Declines in manufacturing output were broad-based during the Great Recession – especially in vehicle and primary metals manufacturing



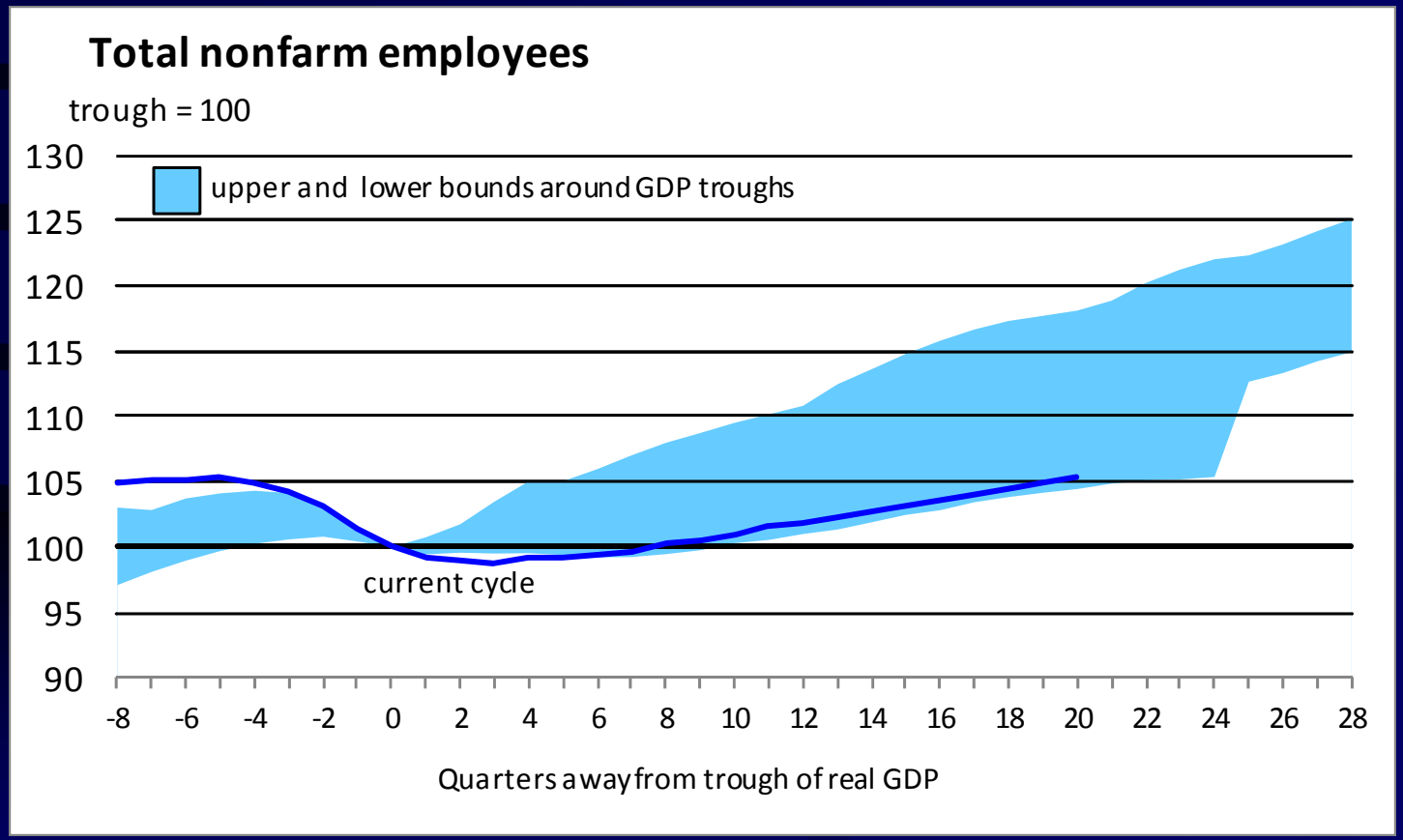
The recovery has also been broad-based with motor vehicles and primary metals manufacturing leading the way



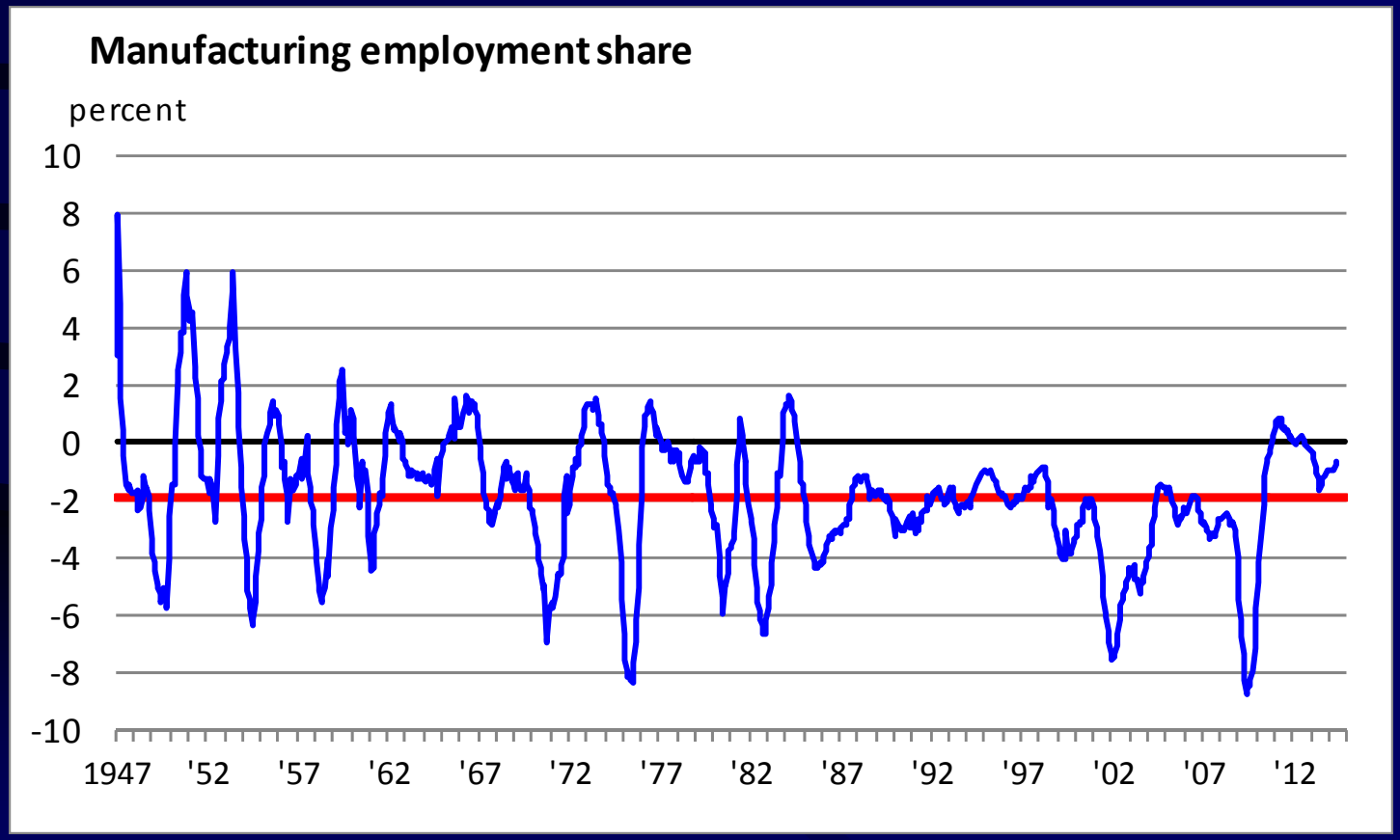
Manufacturing workers have suffered steep employment declines over the current cycle



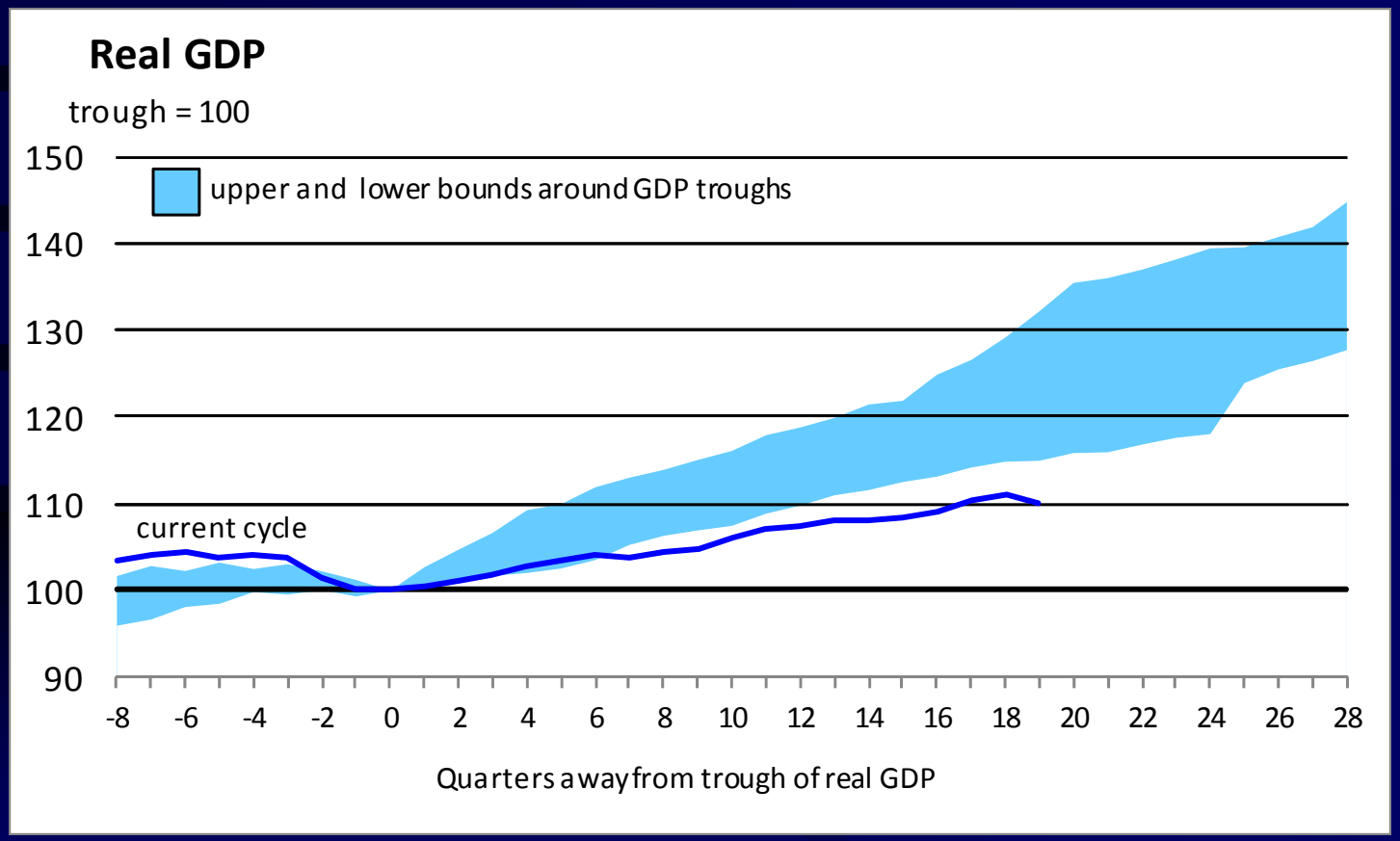
But the overall economy's employment growth also struggled



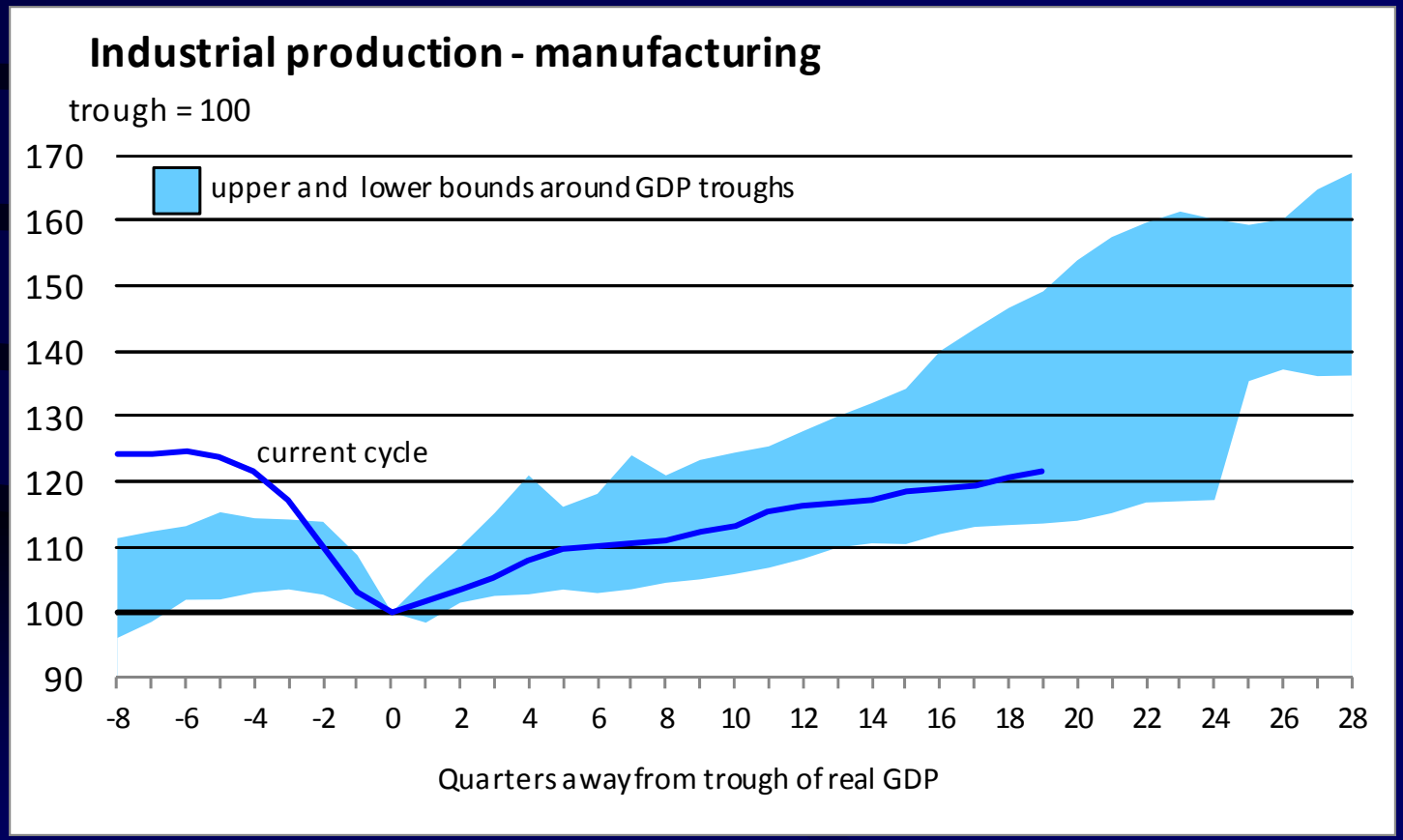
When changes in nonfarm employment are considered, the most recent manufacturing employment downturn is not unprecedented



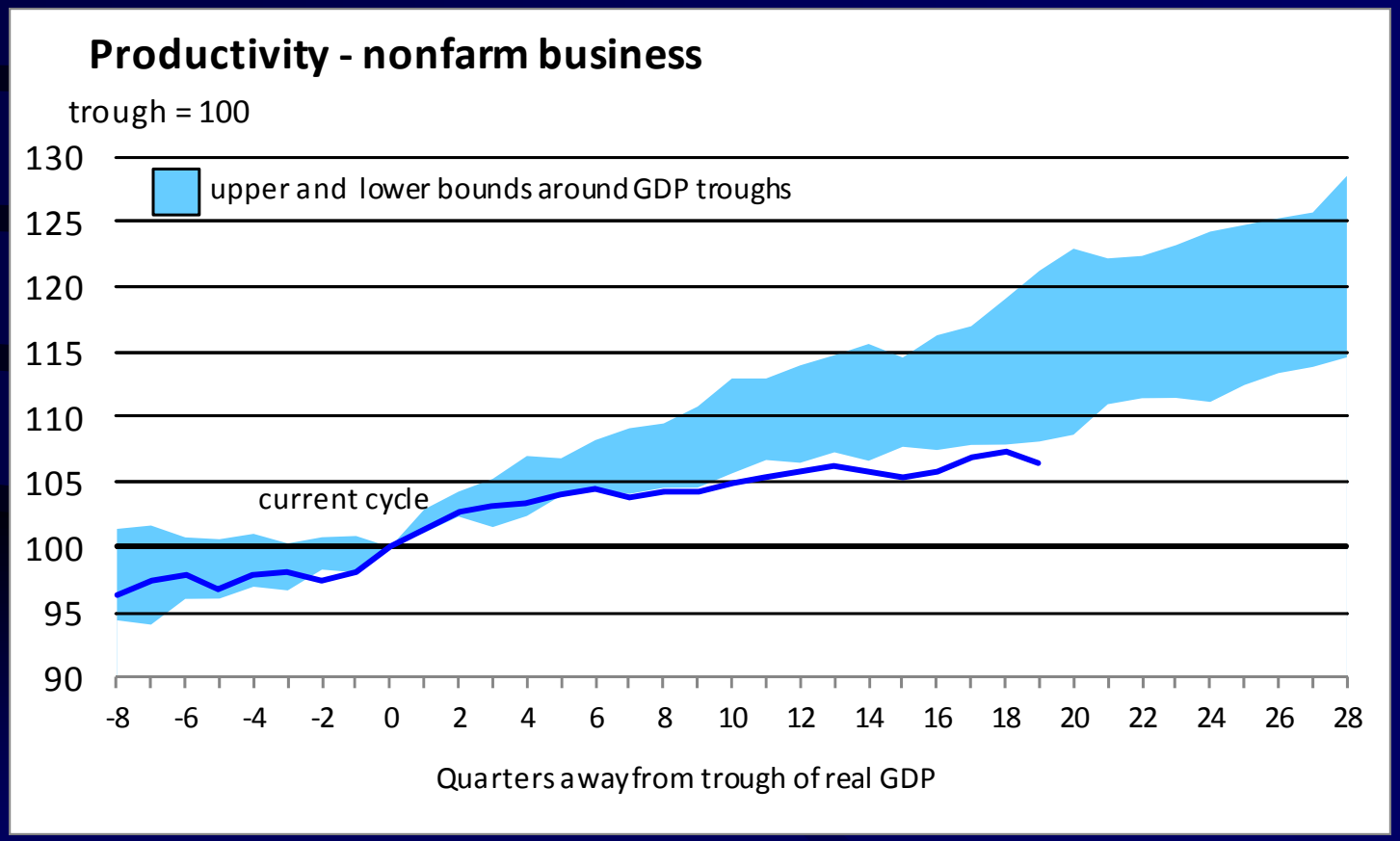
The financial crisis and its aftermath has hampered the current economic expansion



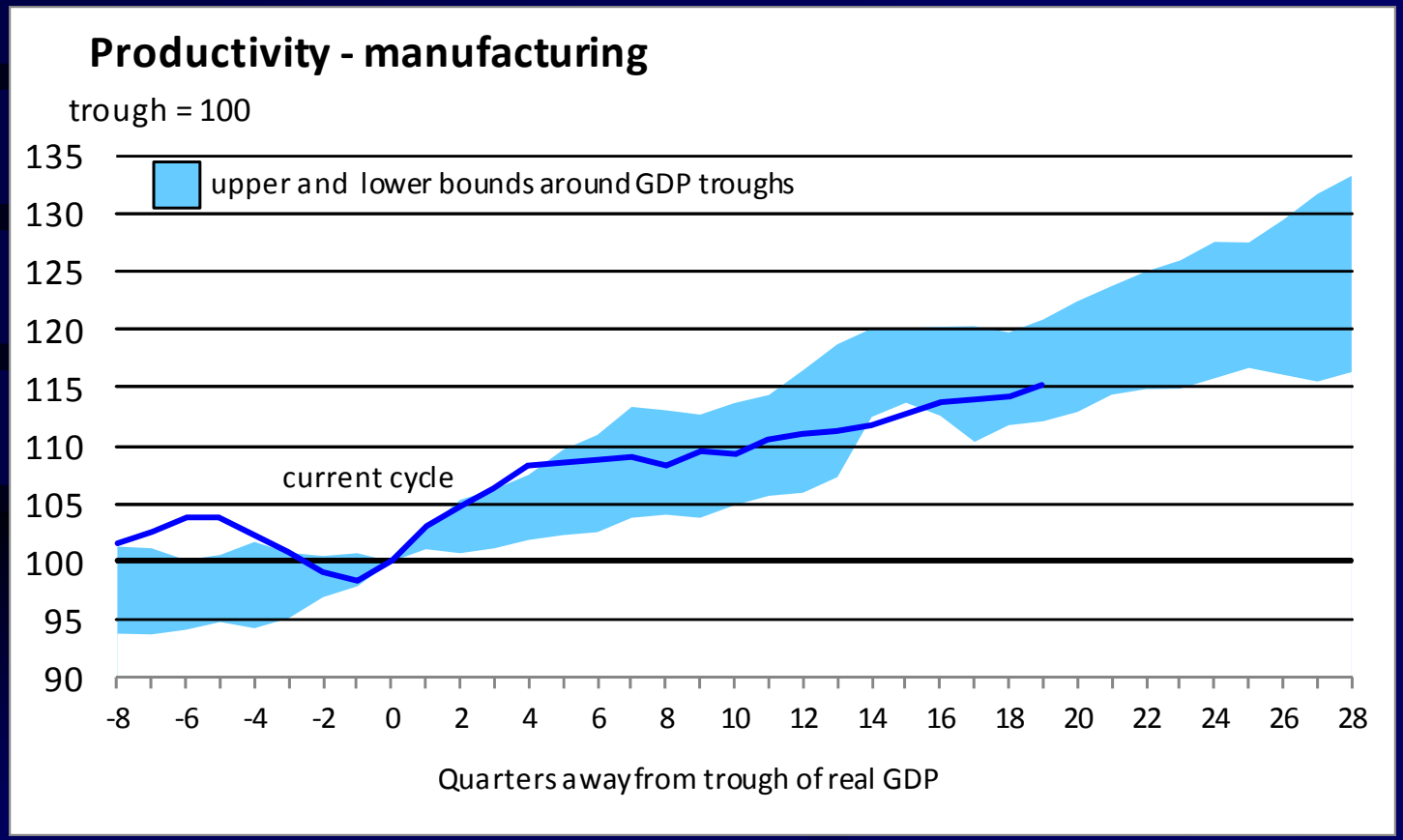
The recovery in manufacturing output is in-line with past industrial recoveries



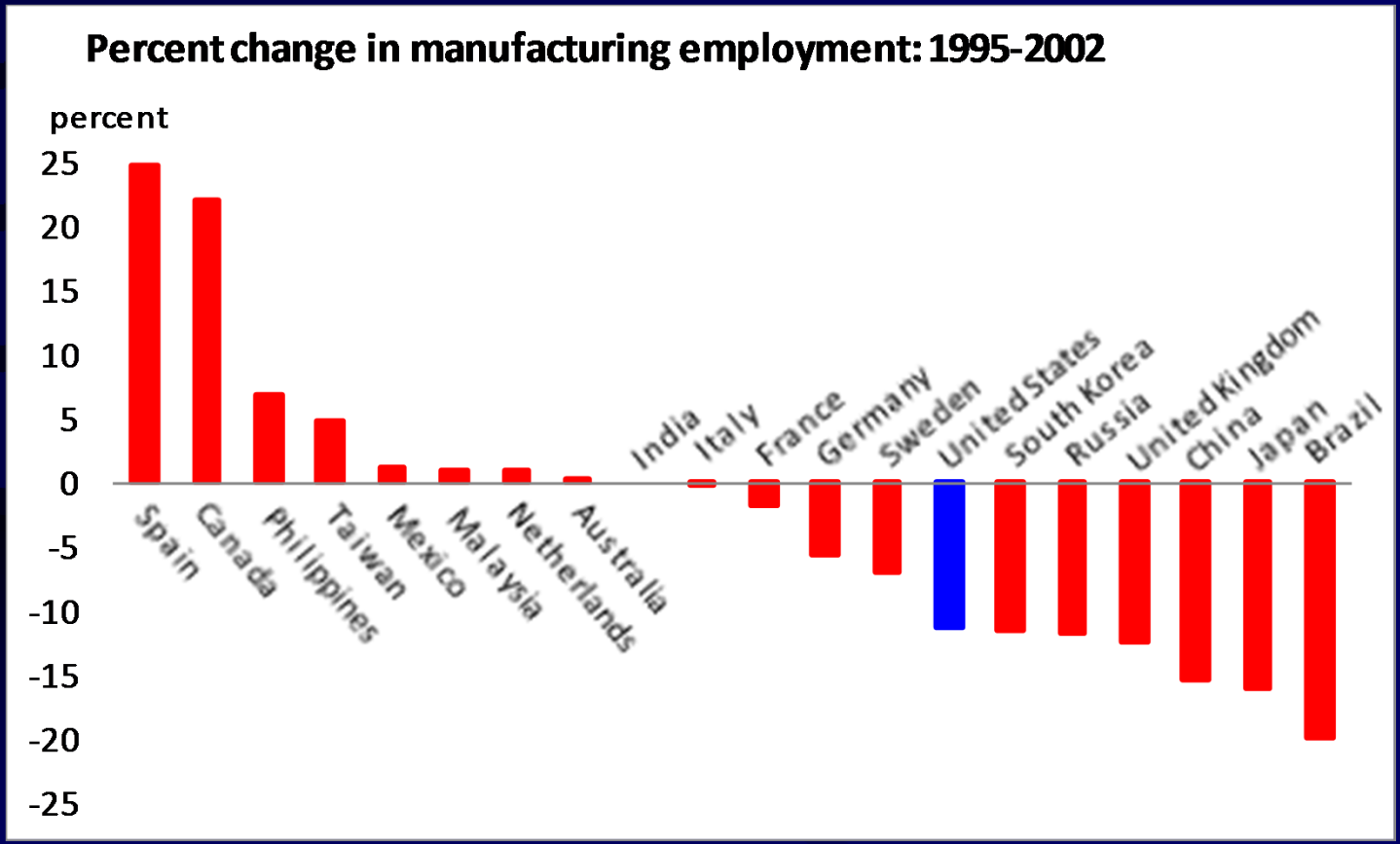
Productivity in the overall economy has grown at a rate below the low-end of previous expansions



However, productivity within the manufacturing sector has grown at a somewhat faster pace

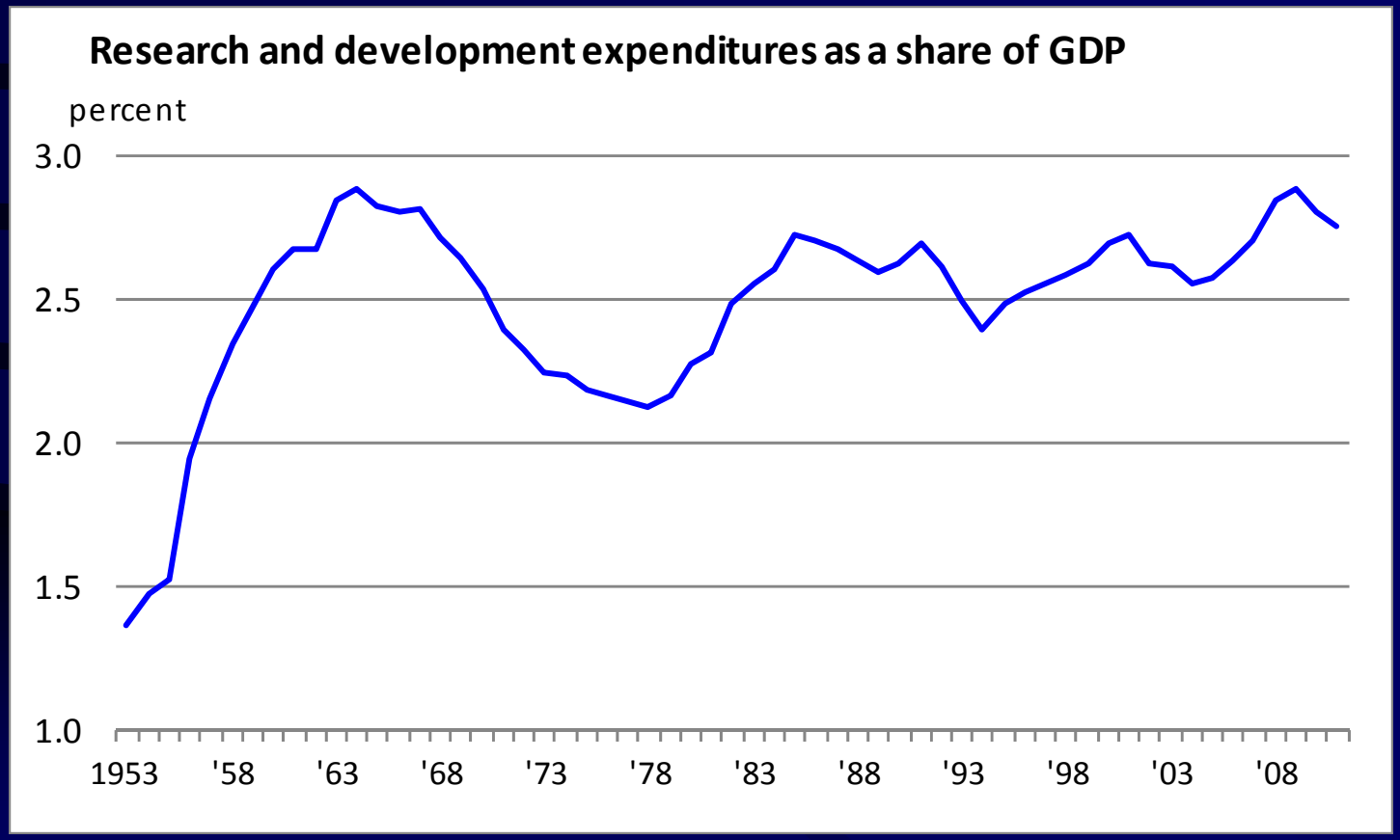


Manufacturing employment losses have occurred across numerous countries – among 20 big economies, 22 million jobs were lost

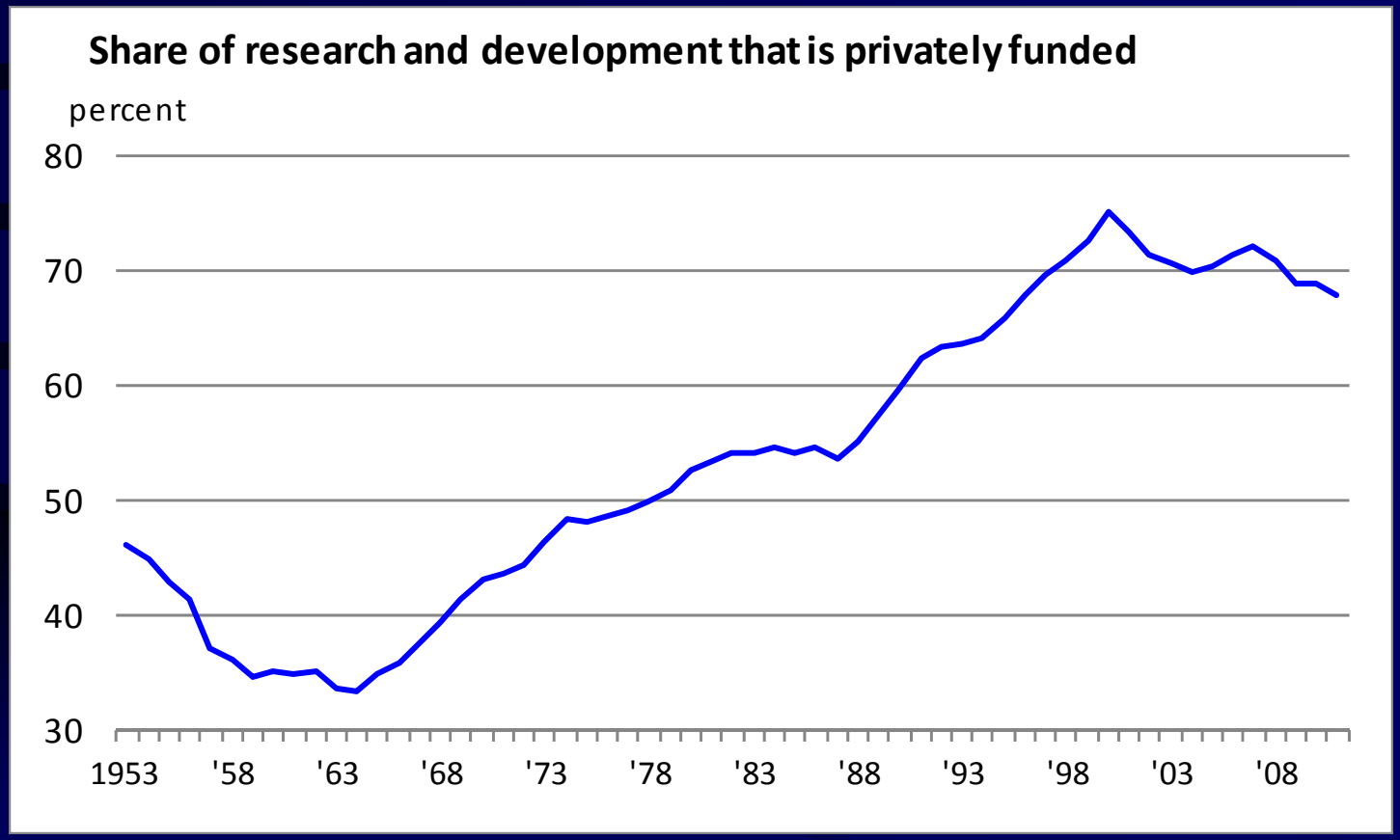


Is the U.S. positioned to continue its strong productivity gains?

U.S. maintaining its commitment to research and development

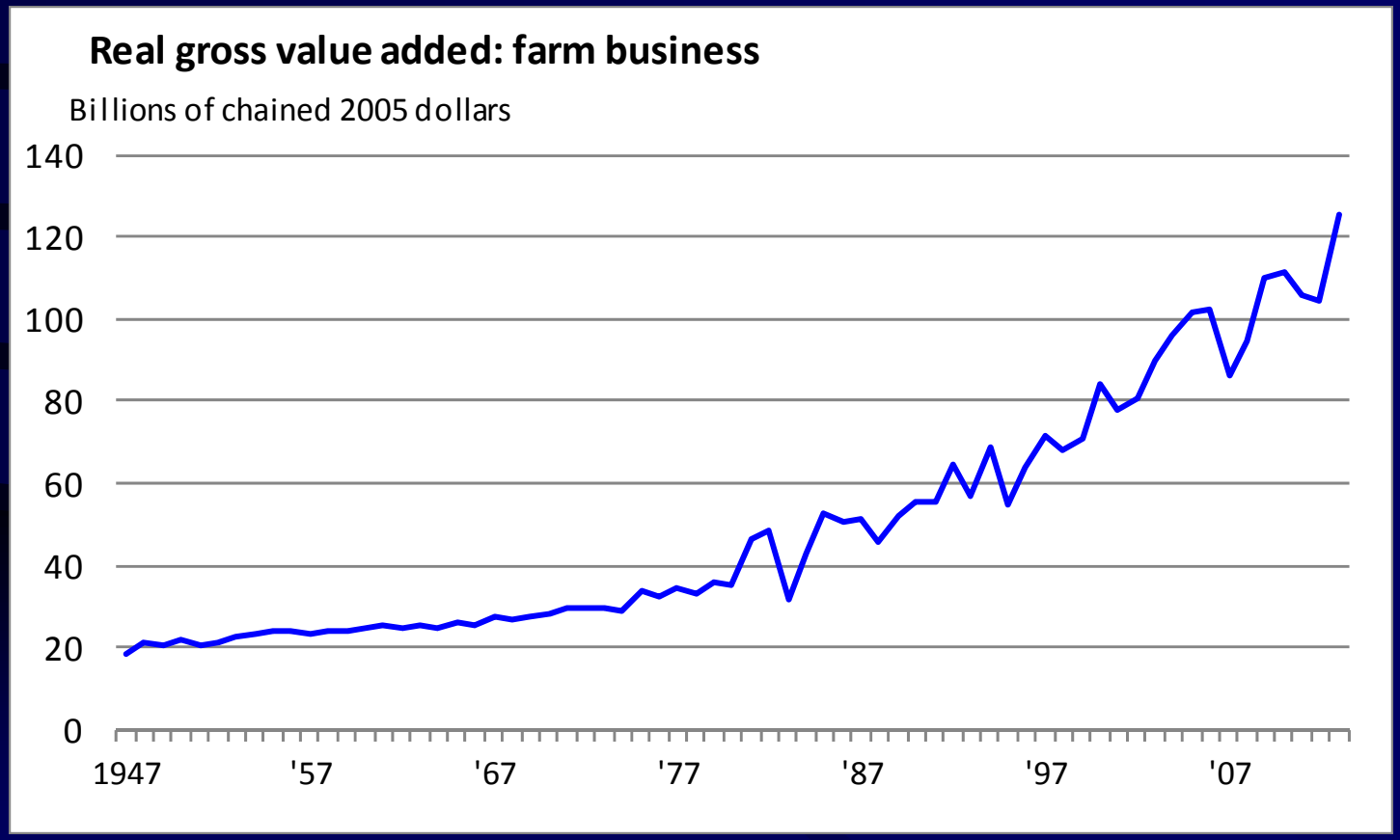


The vast majority of U.S. research and development is being privately funded

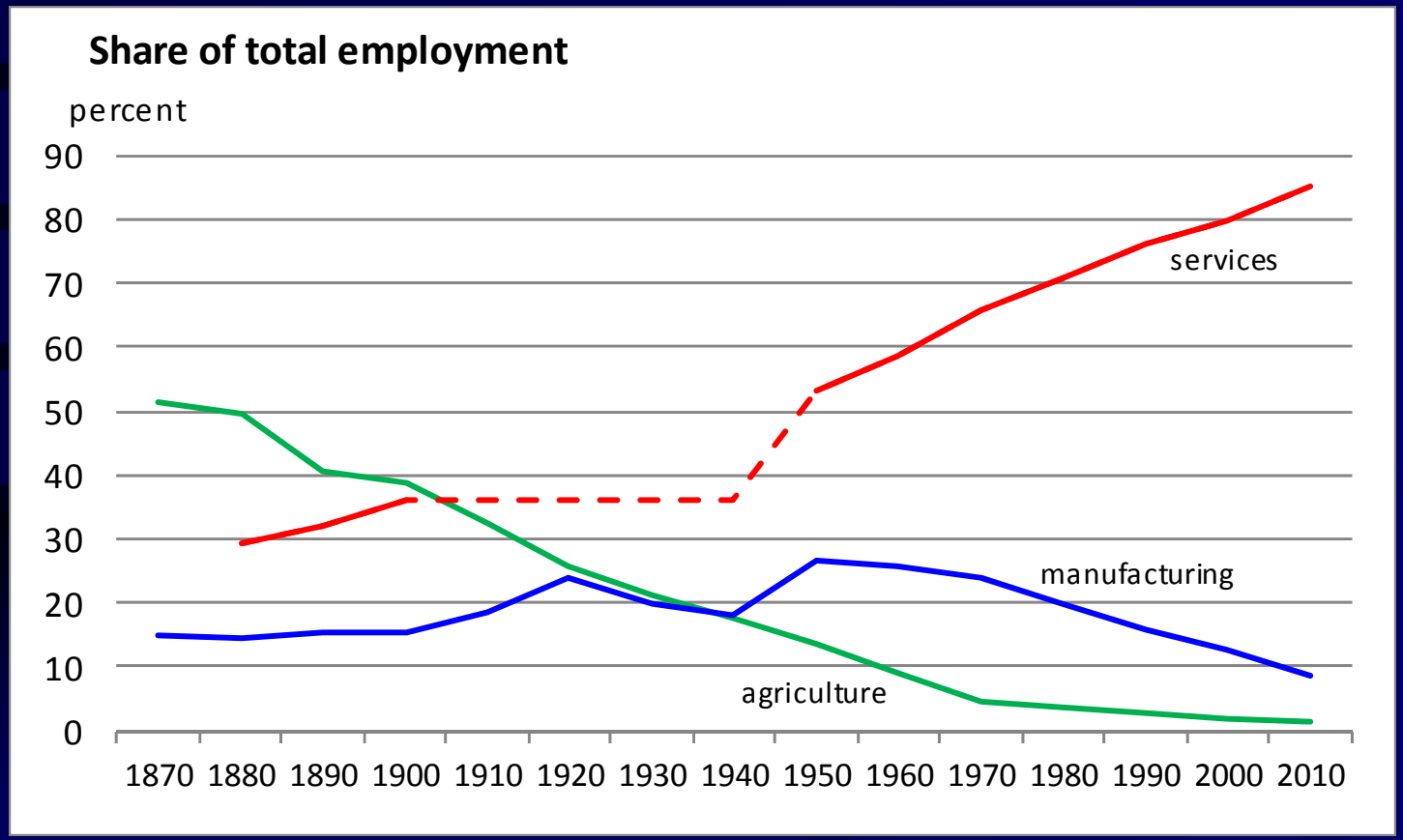


Lessons from the farm sector

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

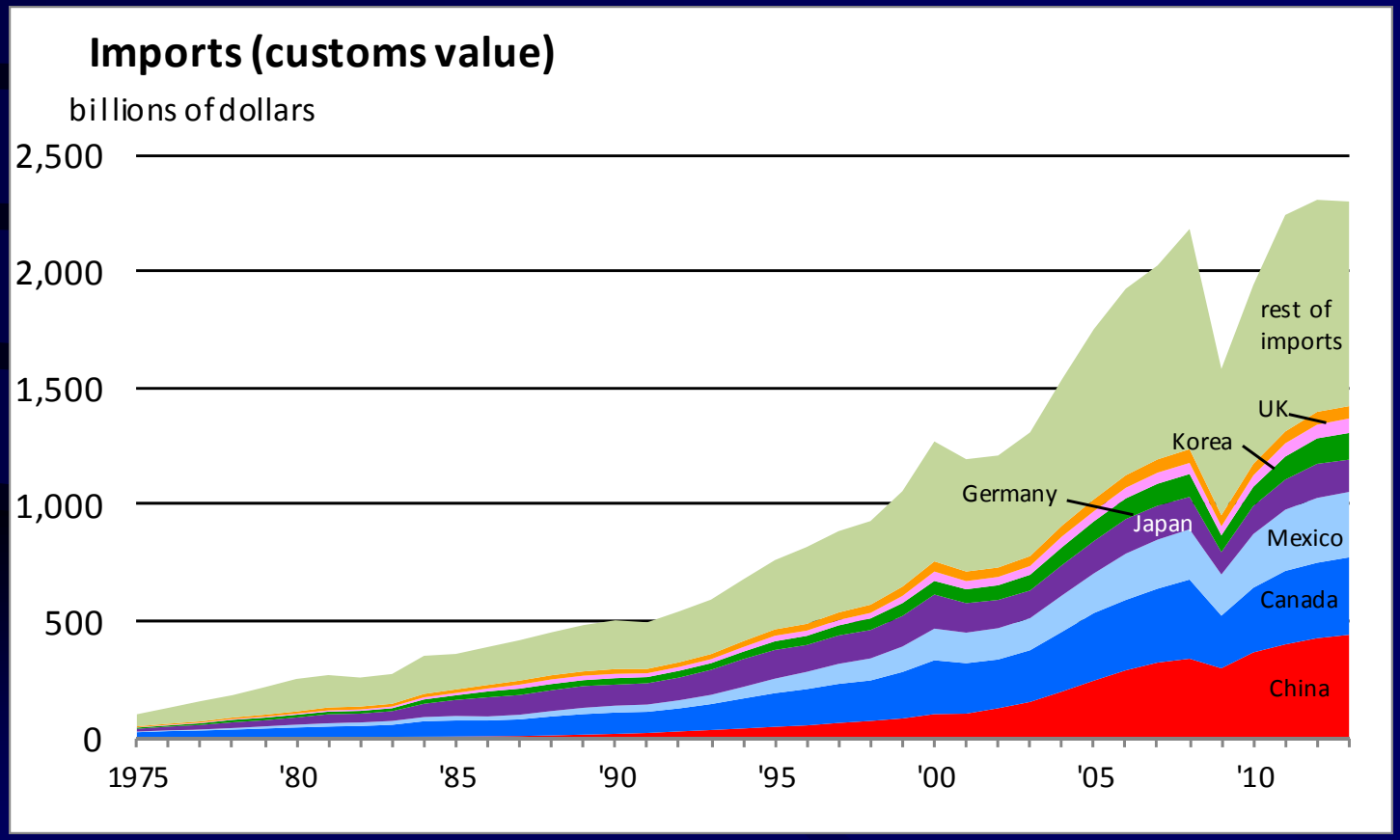


And we are accomplished this remarkable feat with less than 2.0% of our employment devoted to farming

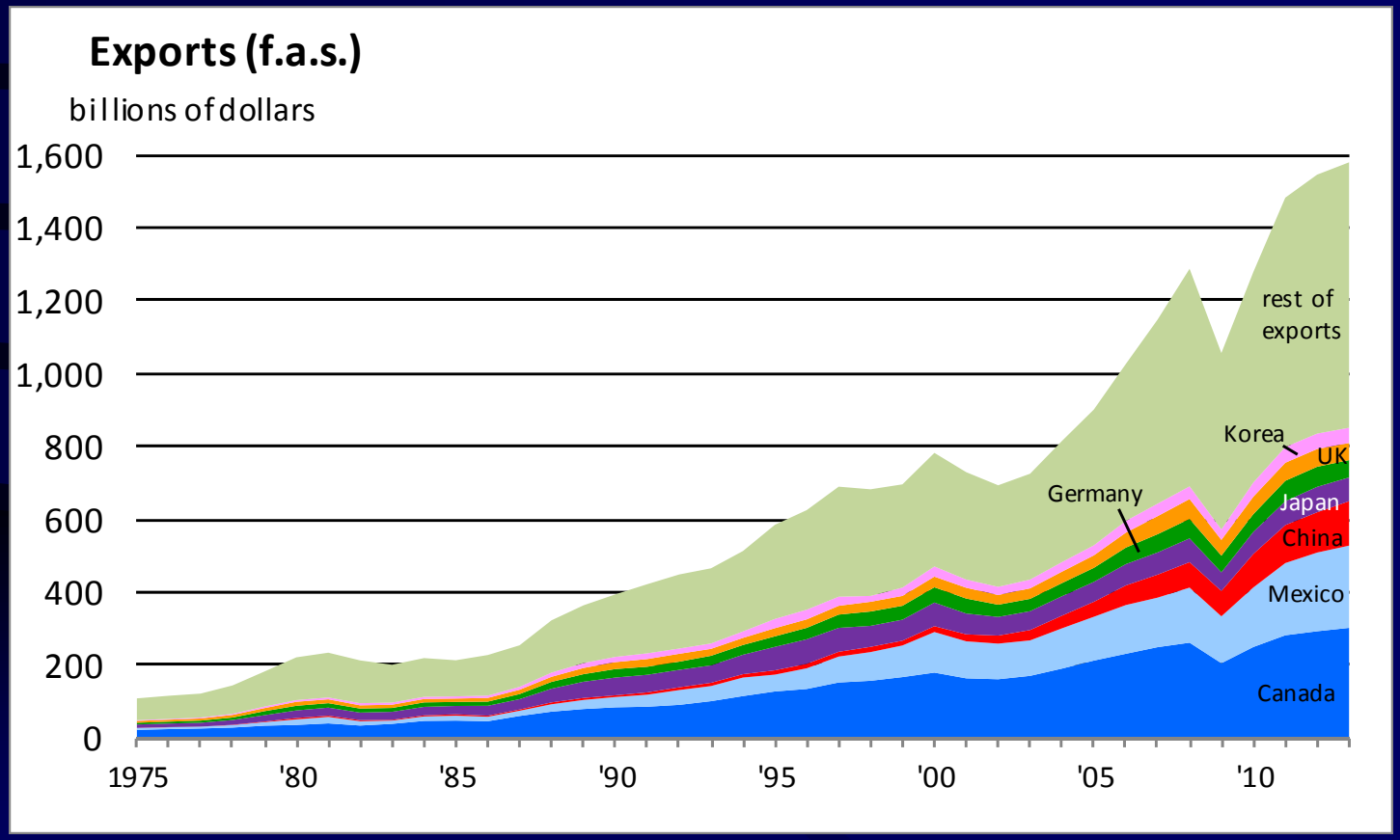


Trade with China

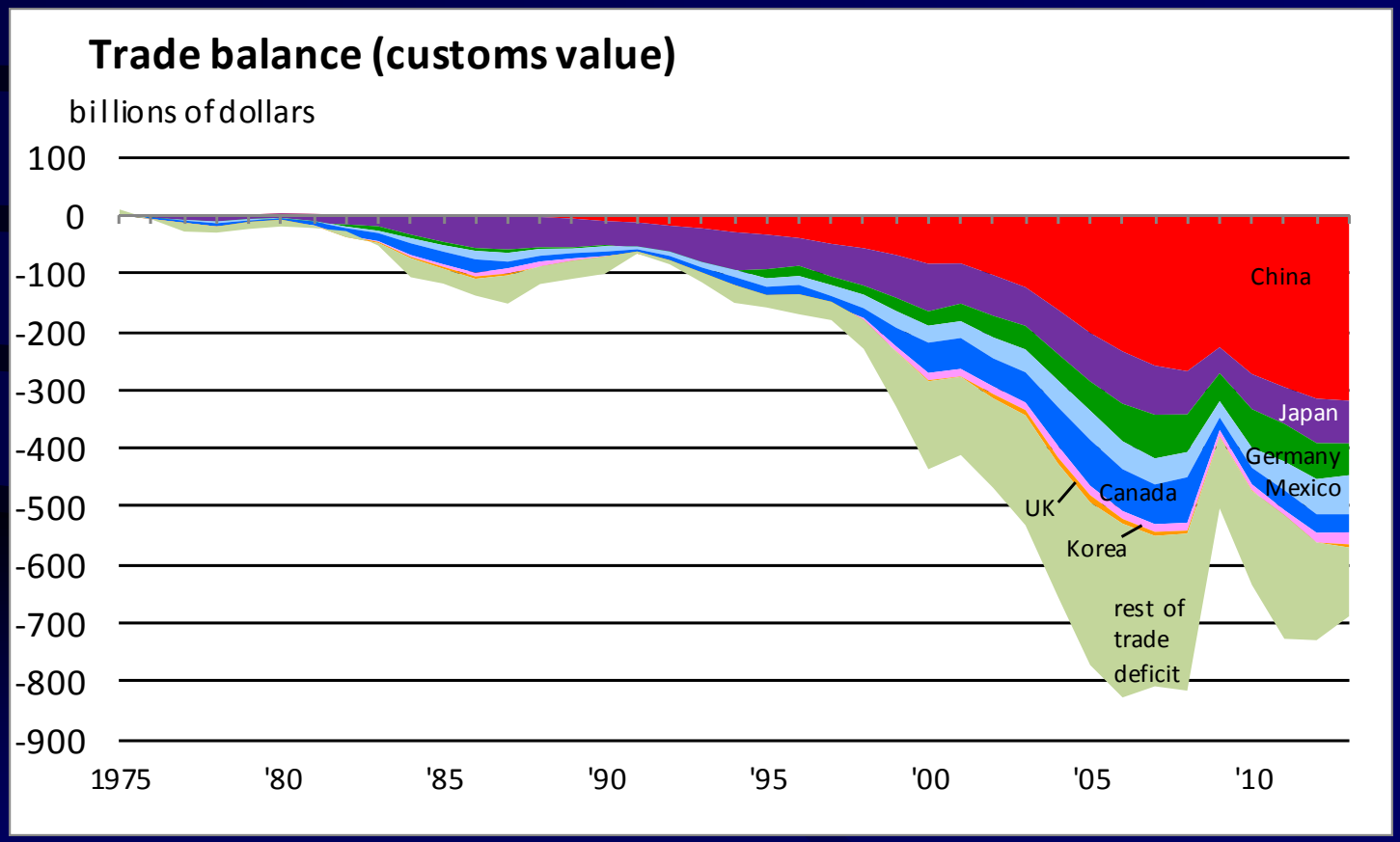
China has risen to number one in terms of U.S. imports, representing 19.4% of all imports in 2013



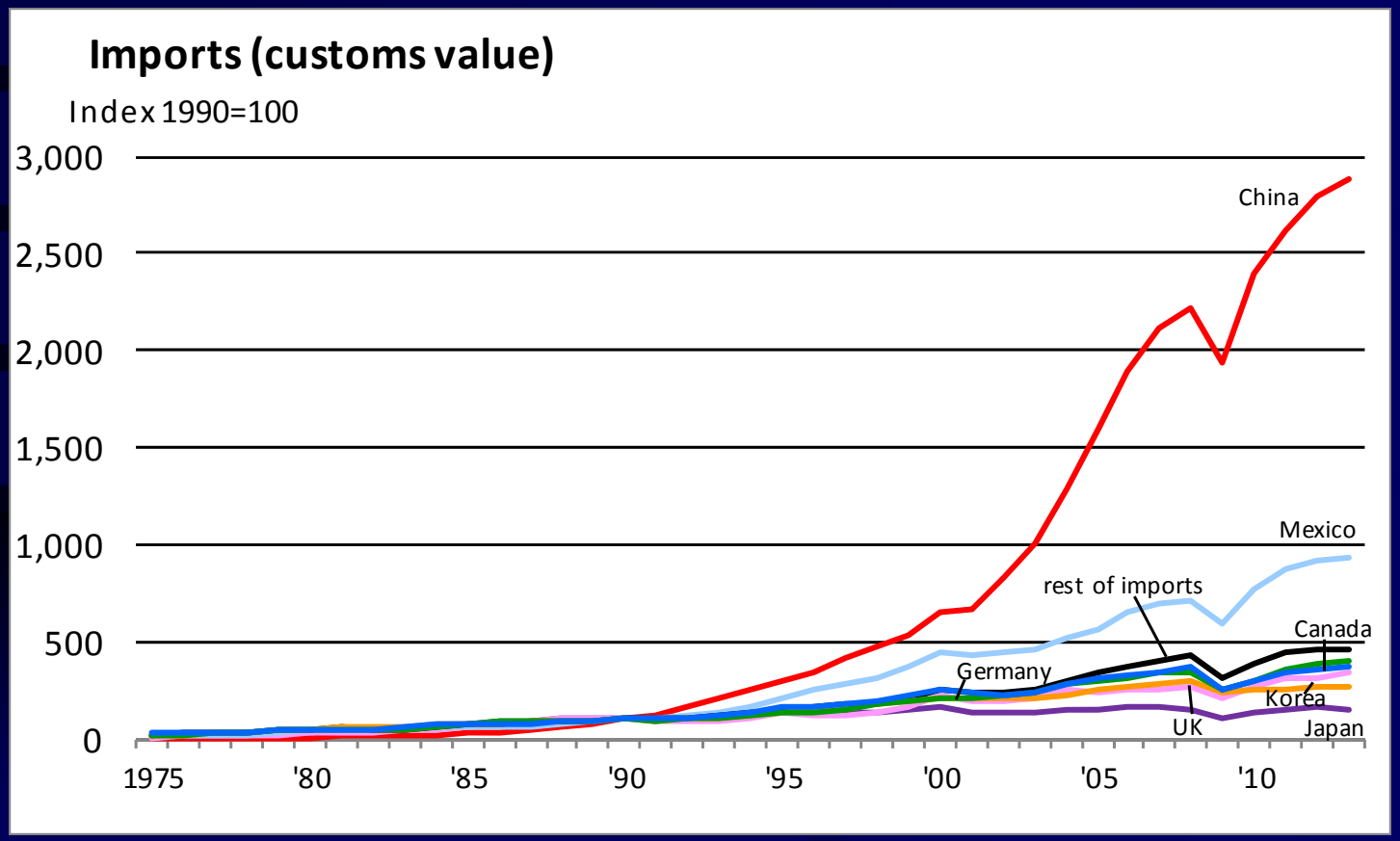
While China has risen to be our third largest export country, it represents only 7.7% of U.S. exports



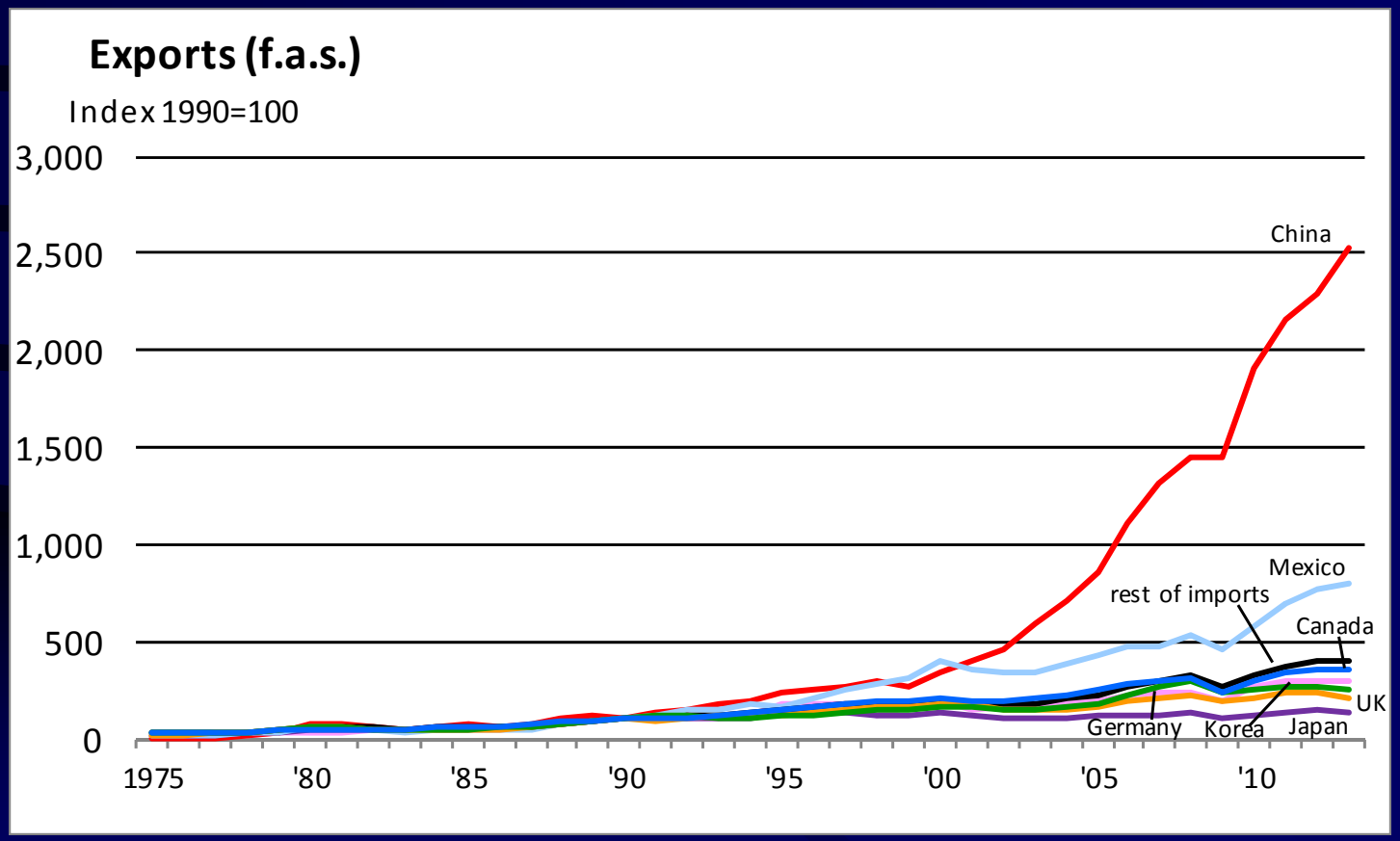
This difference has led to China having the largest trade deficit with the U.S.



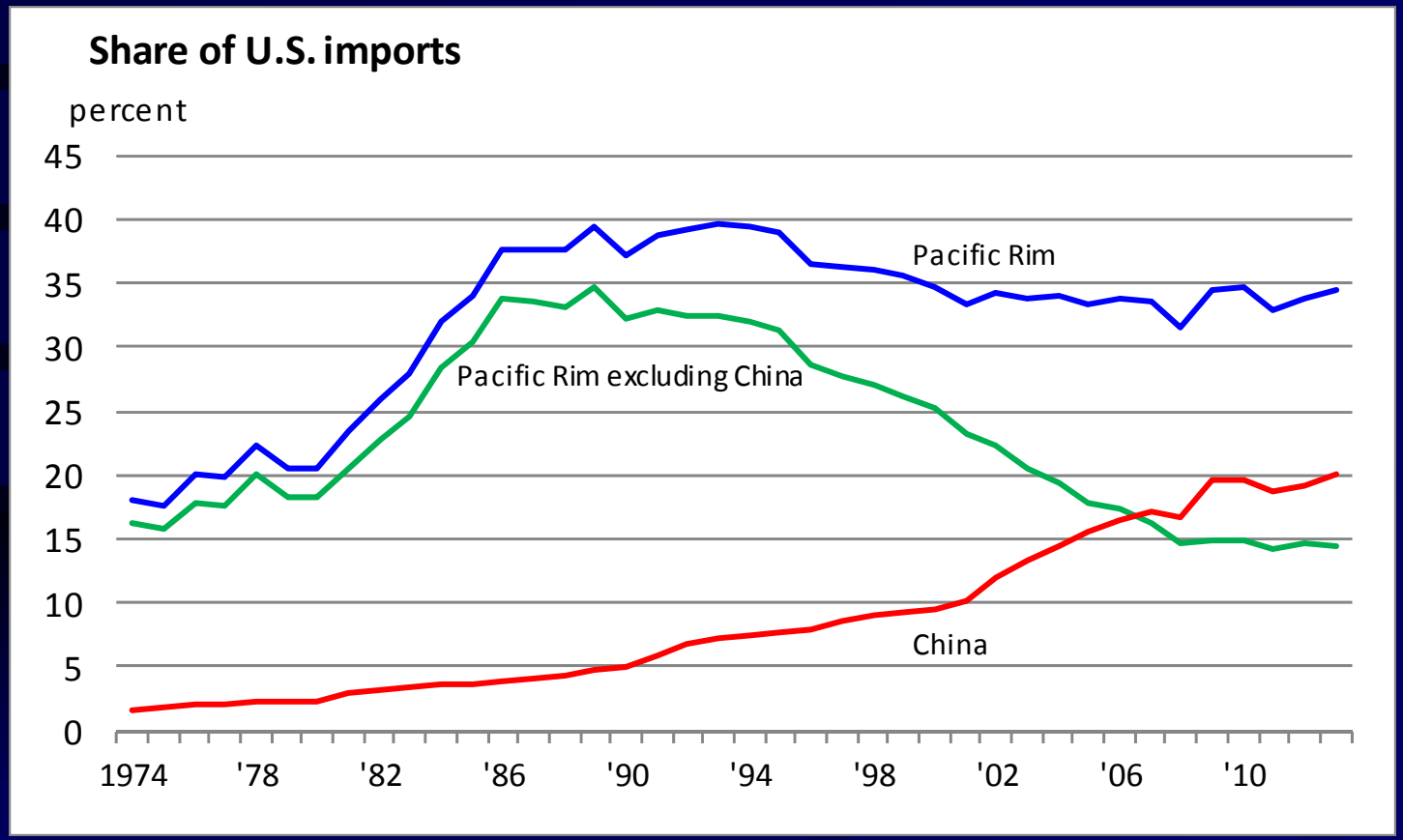
China has certainly increased the amount of goods flowing into the U.S.



They have also represented the largest gain for exports from the U.S.

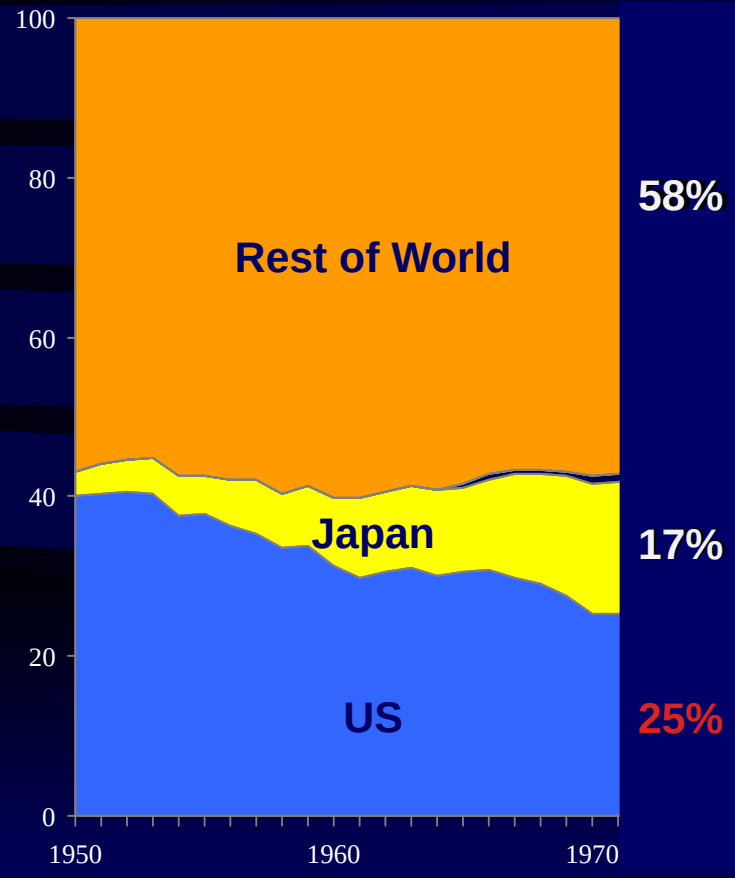


While China has increased its share of imports to the U.S., the Pacific Rim as a whole has had a declining share since the mid-90s



U.S. share of world manufacturing steady for last 40 years

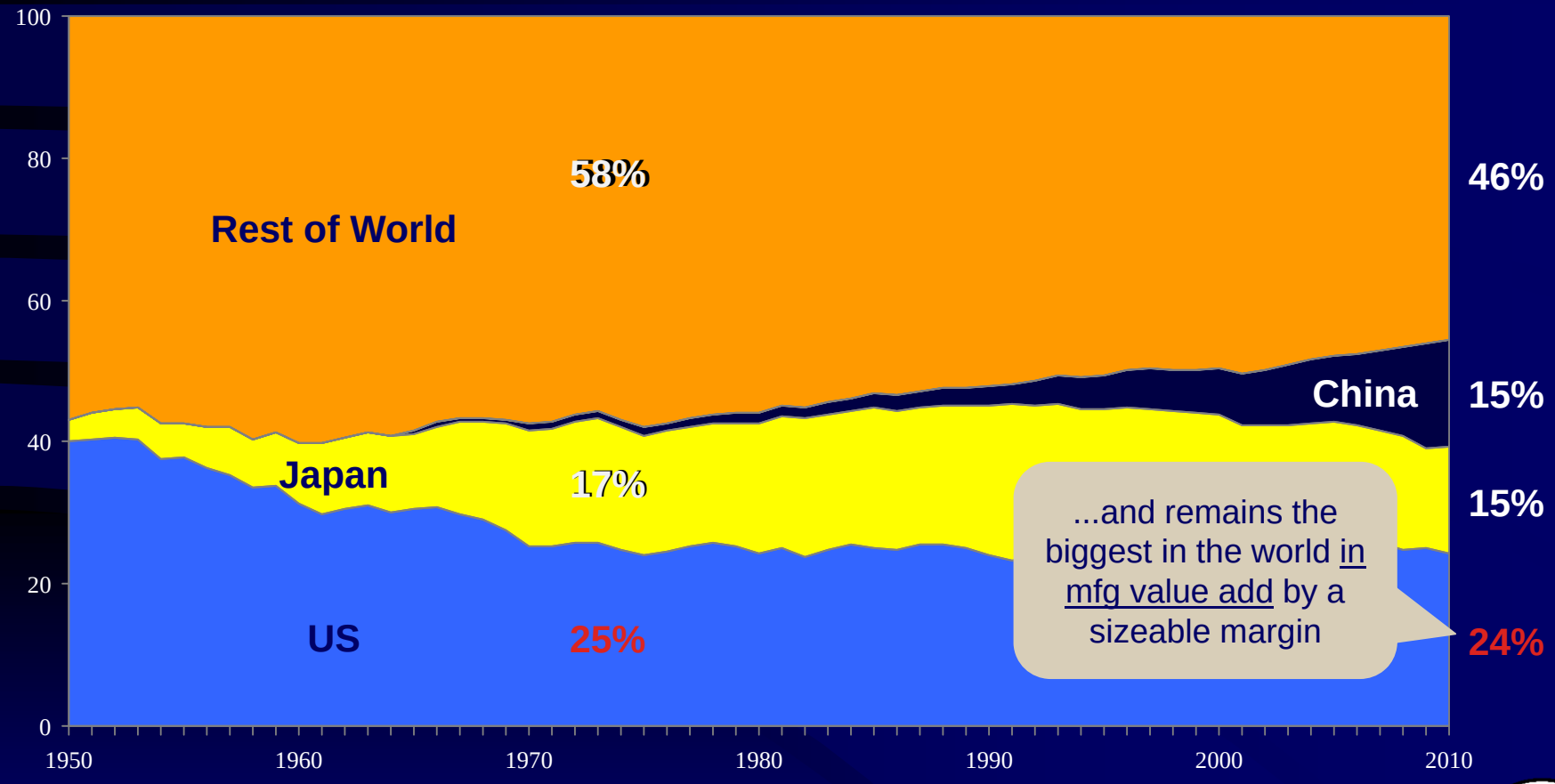
Manufacturing value added, % of world



From the Boston Consulting Group

U.S. share of world manufacturing steady for last 40 years

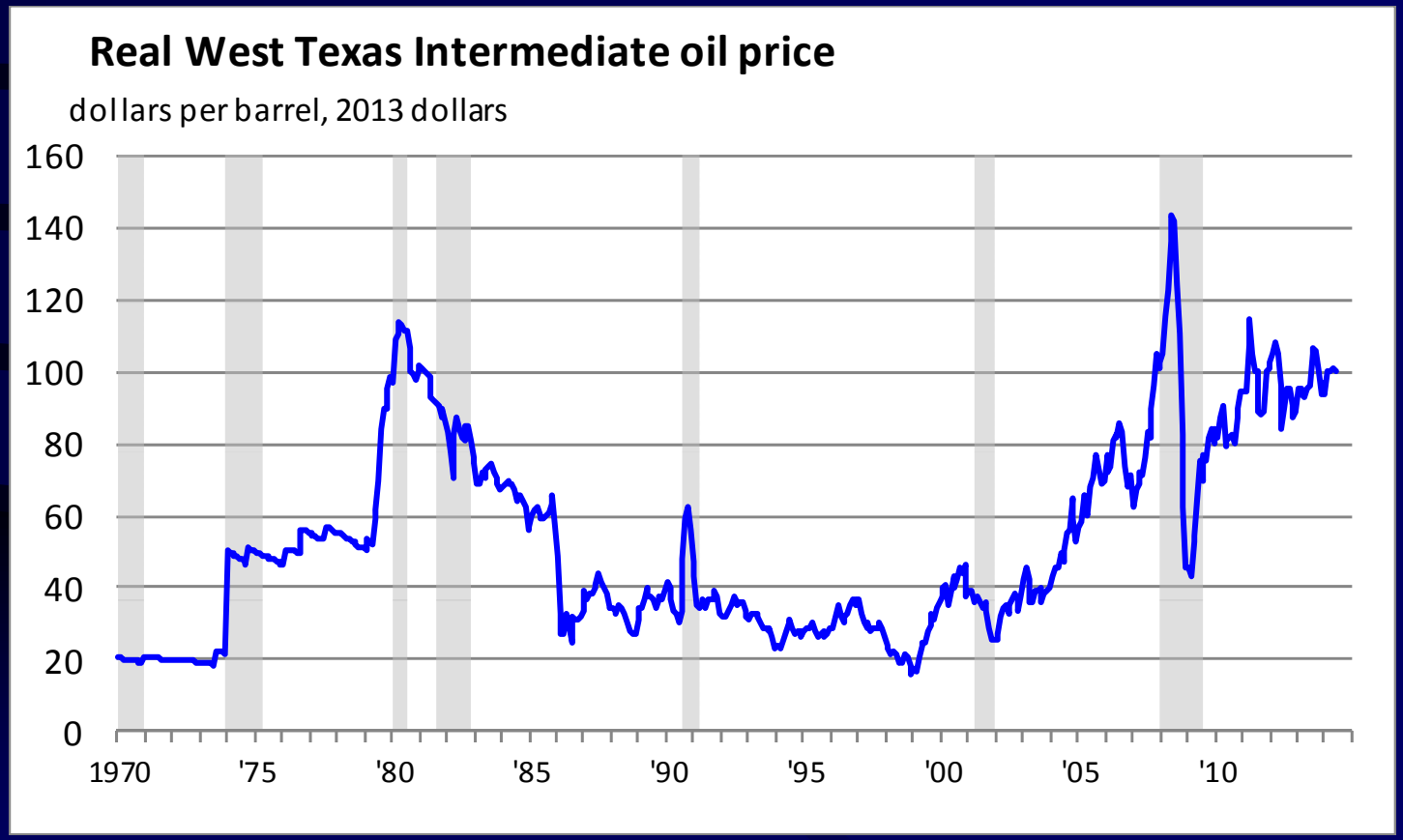
Manufacturing value added, % of world



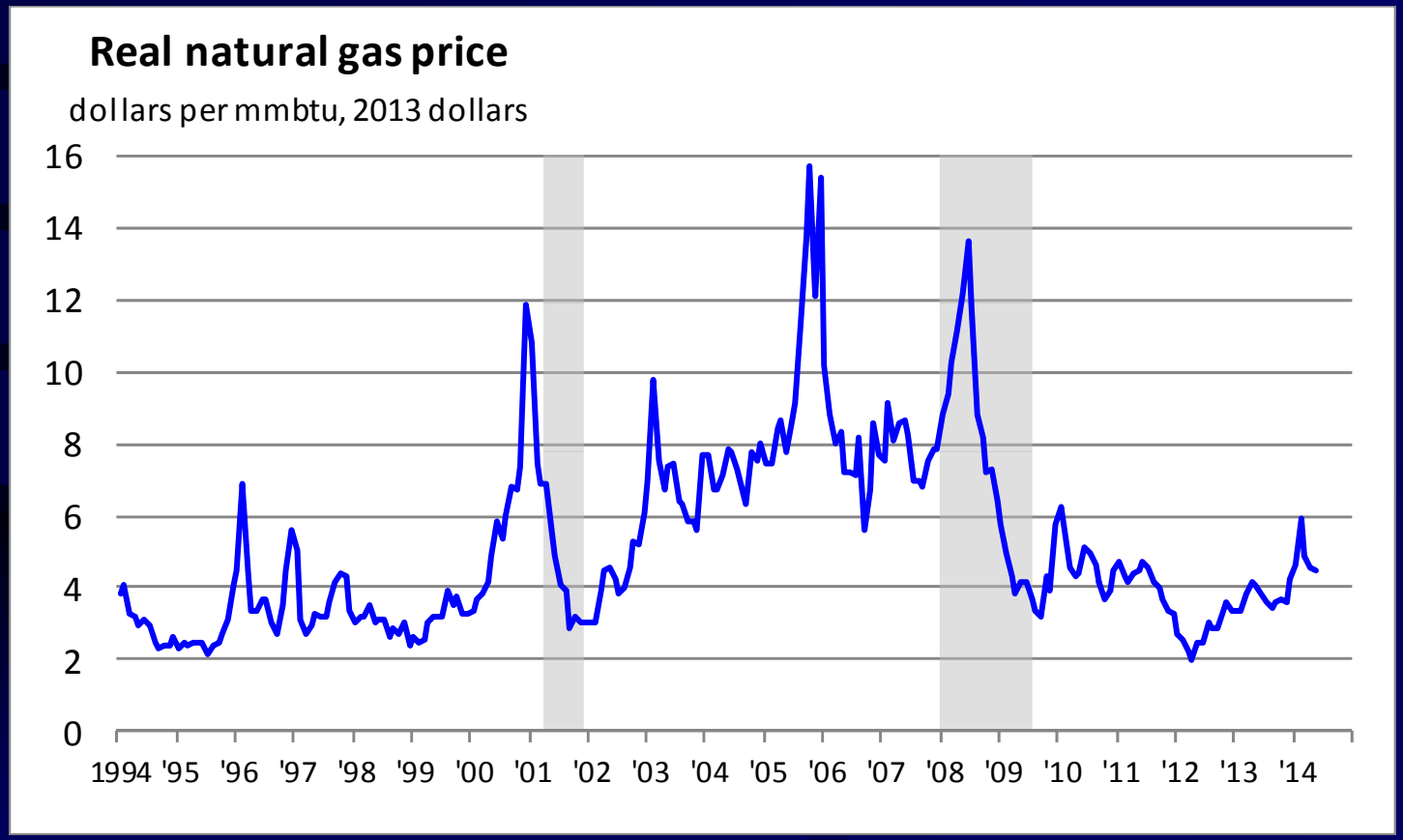
From the Boston Consulting Group

Energy

Adjusted for inflation, current oil prices are below the levels that existed thirty years ago



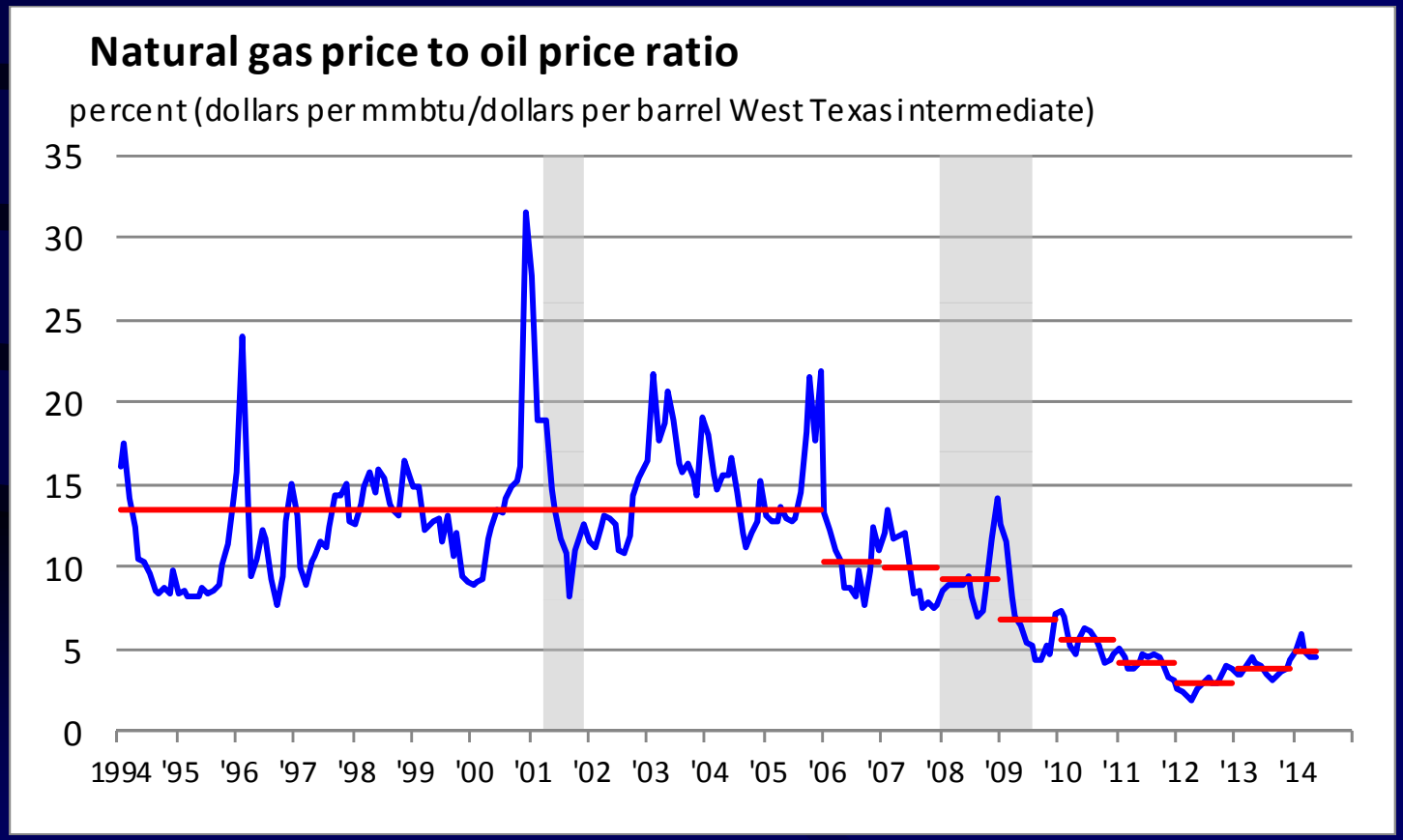
Natural gas prices are quite low



Due to technology that now allows access to reserves that have been known for quite a few years

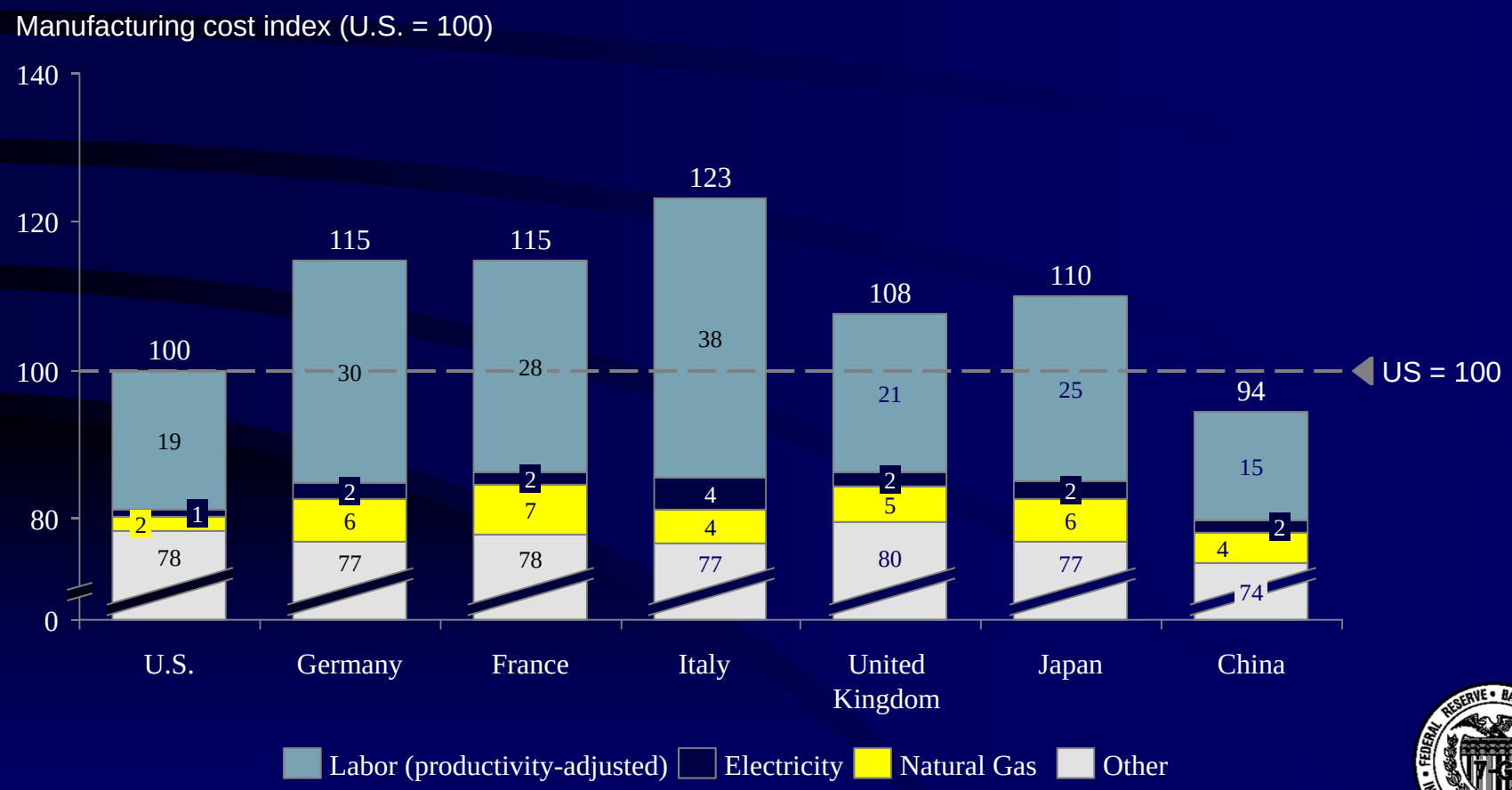
Source: U.S. Energy Information Administration based on data from various published studies. Canada and Mexico plays from ARI.
Updated: May 9, 2011

Between 1994 and 2005 the natural gas to oil price ratio averaged 13.4% - year-to-date it has averaged 4.8% in 2014



Implication: The U.S. is one of the world's lowest-cost countries for manufacturing

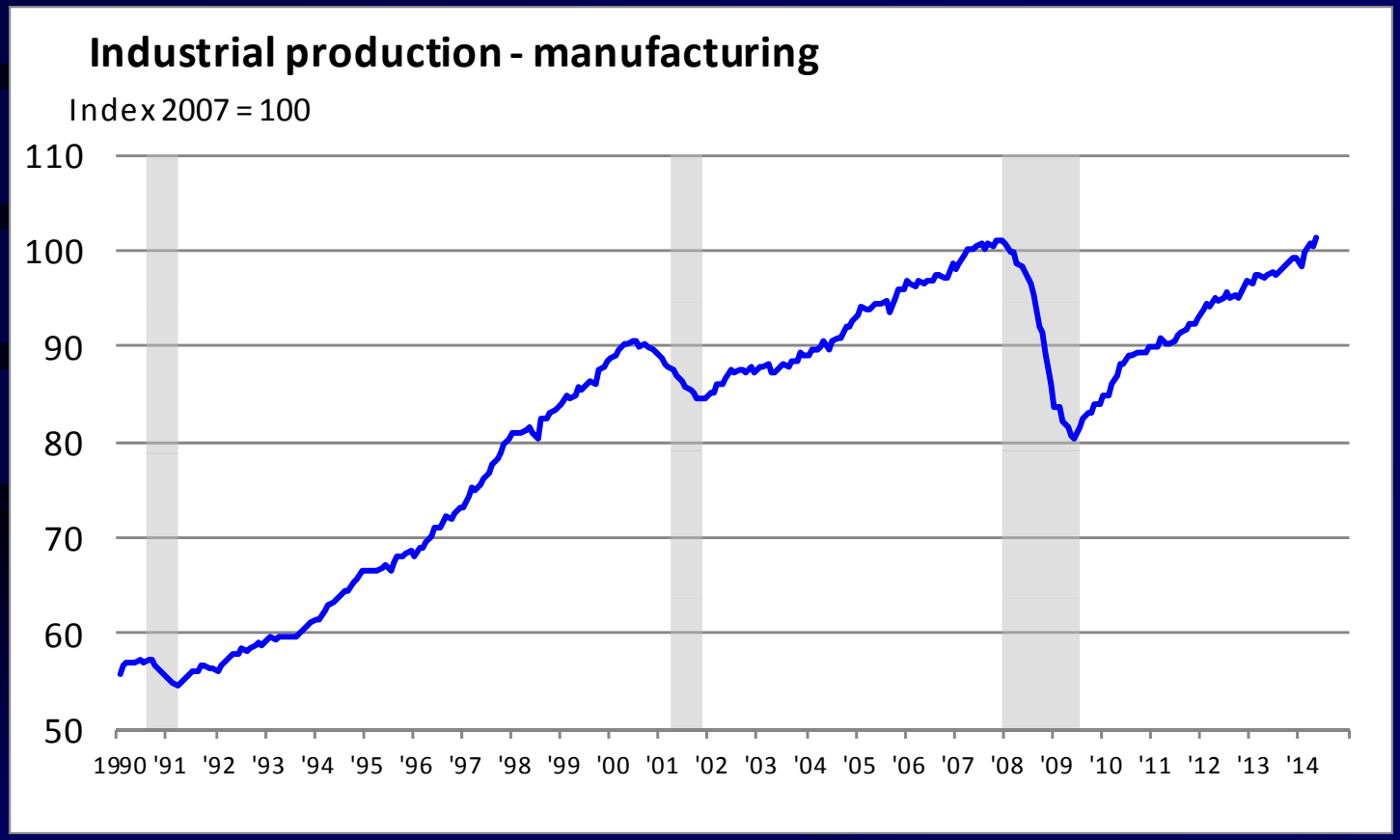
Major exporting nation average manufacturing cost structures relative to U.S. (2015 projections)



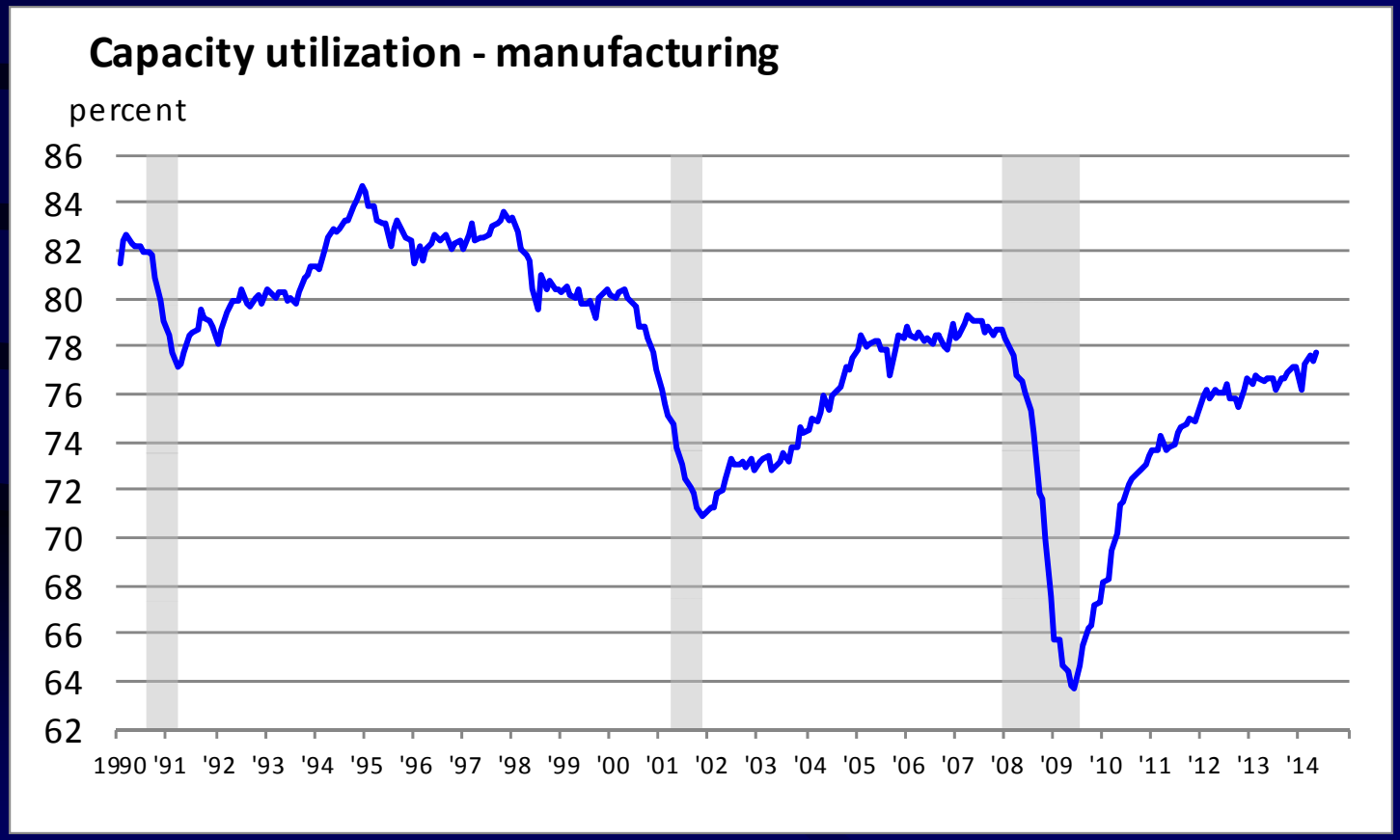
From the Boston Consulting Group

The Current Expansion

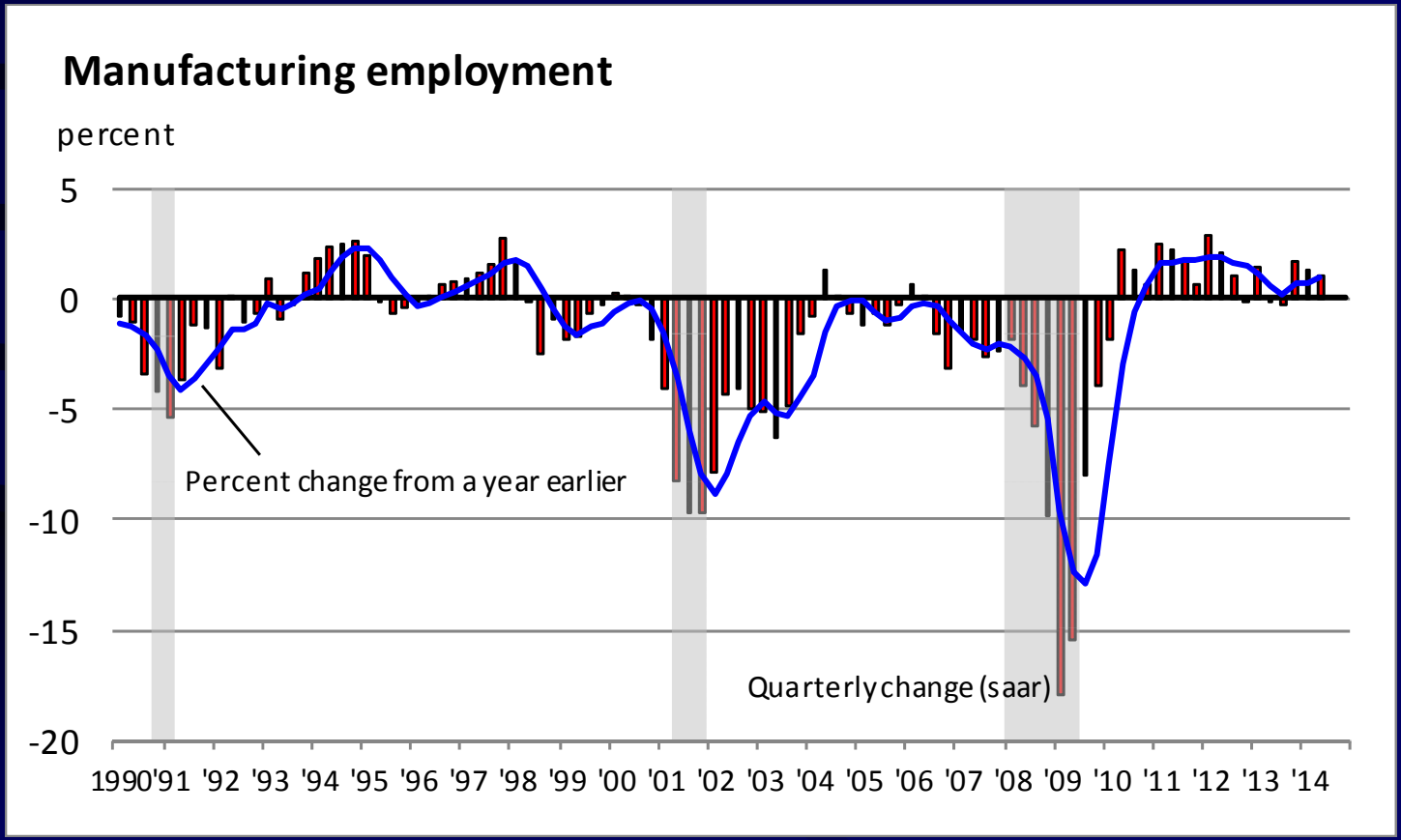
Beginning in July 2009, manufacturing output in the United States has been increasing at a 4.8% annualized rate and as of May 2014 it finally regained all the output lost during the Great Recession



Manufacturing capacity utilization has been rising since June 2009



And while manufacturing jobs have been rising, they have only recovered 29.1% of the jobs lost during the downturn



Summary

Manufacturing output is in the process of recovering its losses

The success of manufacturing has been driven by productivity

Manufacturing employment has shown little change over the past 70 years – with a steady decline over the past 30 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 70 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