

## Assessing Manufacturing: Output and Labor

Making It In America – Manufacturing Matters  
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## The Setup



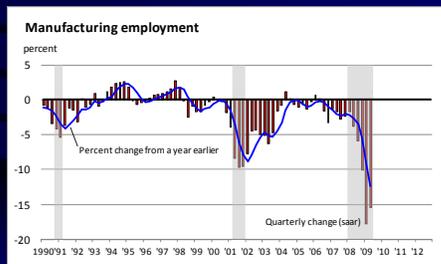
Manufacturing output peaked in December 2007  
and fell 20.4% over the following 18 months



Manufacturing capacity utilization collapsed  
to the lowest rate in 70 years



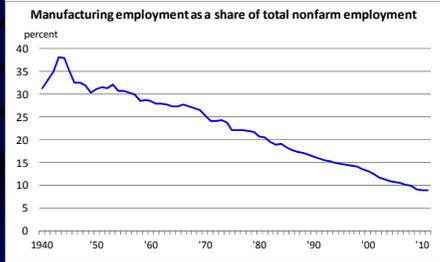
Job declines in the manufacturing sector were significant,  
with over 2.0 million jobs lost over that same period



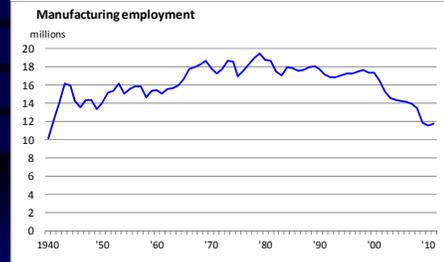
## Is the U.S. Losing Its Manufacturing Base?



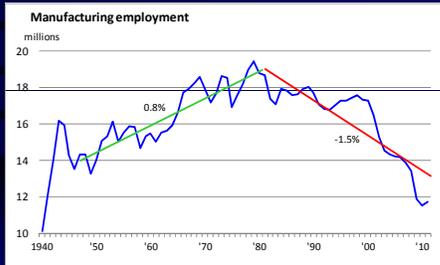
Manufacturing employment as a share of national employment has been declining for over 50 years



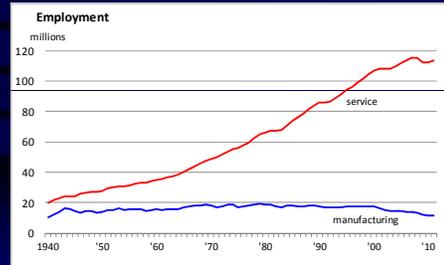
The number of jobs in manufacturing has been relatively stable over this period, edging lower on average by -0.3% per year since 1947



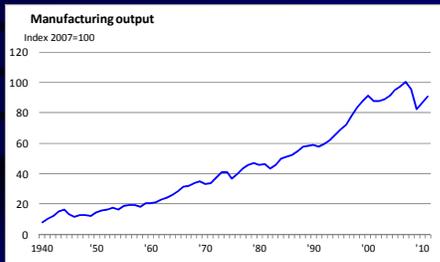
Not to make a mountain out of a molehill, but manufacturing employment was increasing up until 1979 and has been moving lower over the past 30 years



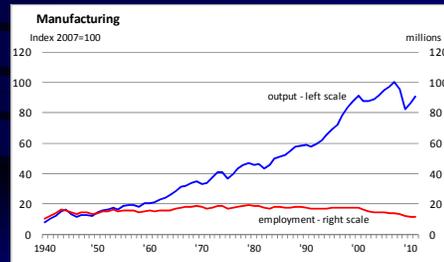
However, service sector employment has grown more than fourfold over this period, averaging growth of 2.3% per year since 1947



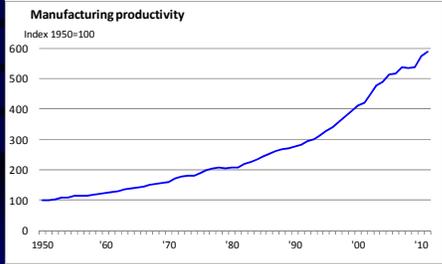
While manufacturing employment growth has been edging lower over the past 63 years, manufacturing output increased by 3.1% per year



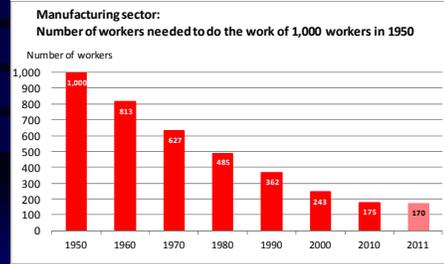
This translated into an almost 600 percent increase in manufacturing output over this time period



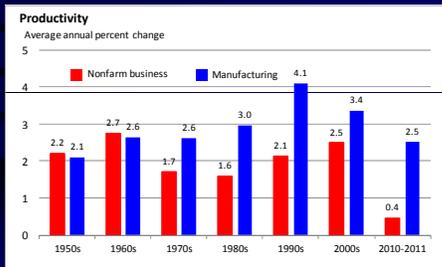
The increase in output can be attributed to strong productivity growth experienced by the manufacturing sector



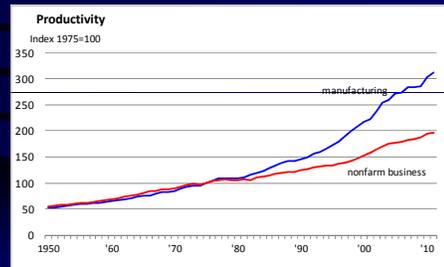
What took 1,000 workers to produce in 1950 takes 170 workers today



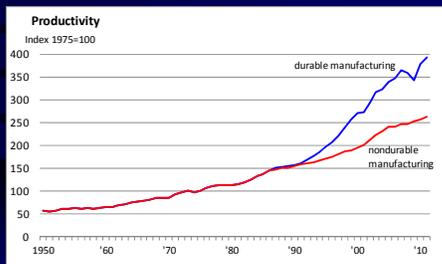
Manufacturing productivity growing faster over the past 40 years



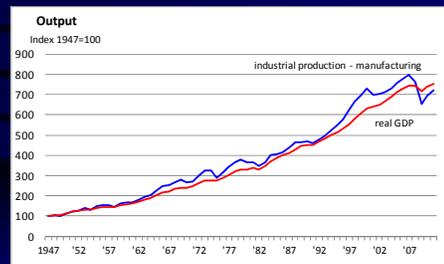
The divergence in productivity appears to have occurred around the mid-1970s

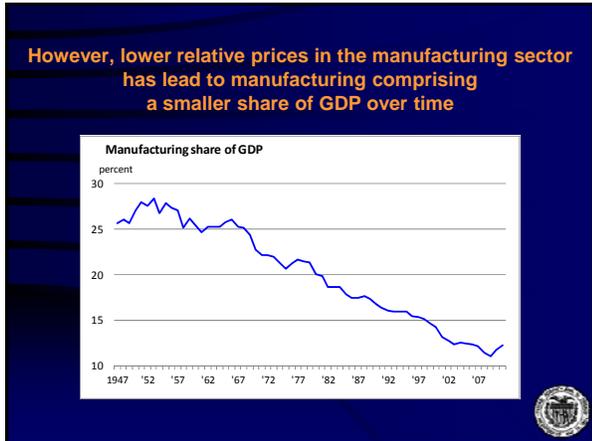


This divergence is especially apparent in durable manufacturing

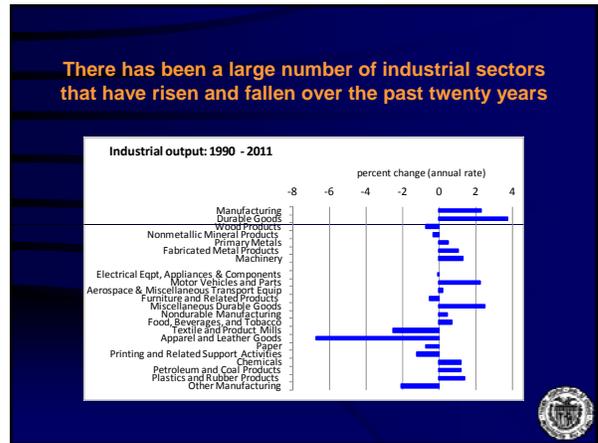
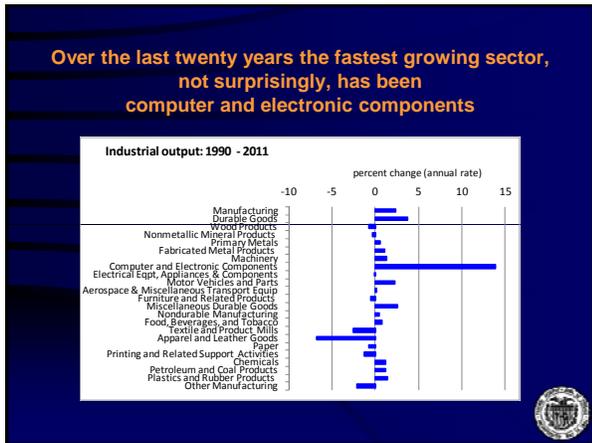


Strong productivity growth had allowed the manufacturing sector to grow faster than the overall economy

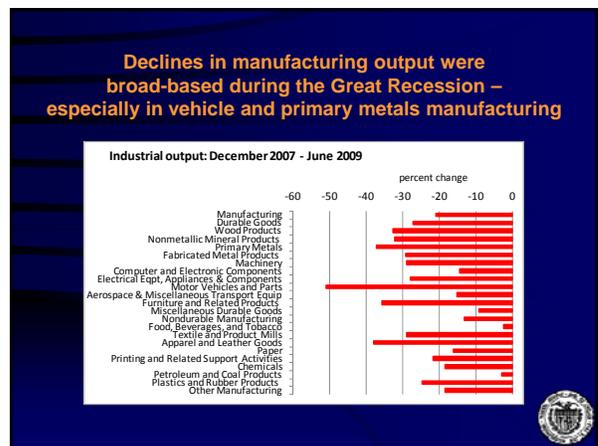




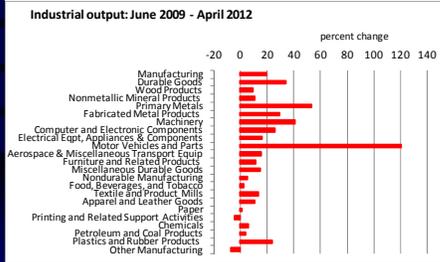
**The Manufacturing Sector Continues to Re-invent Itself**



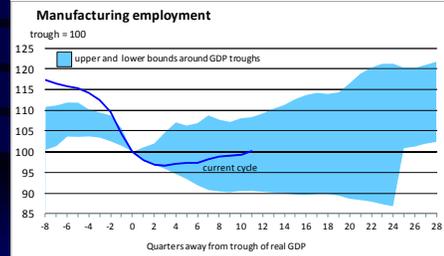
**The collapse in manufacturing experienced in 2008-2009 is closely linked with the economic recession**



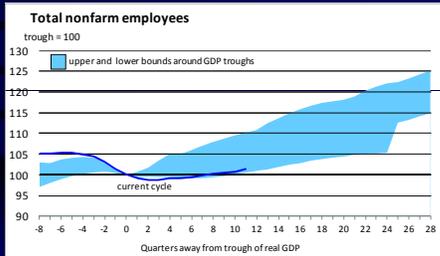
The recovery has also been broad-based with motor vehicles and primary metals manufacturing leading the way



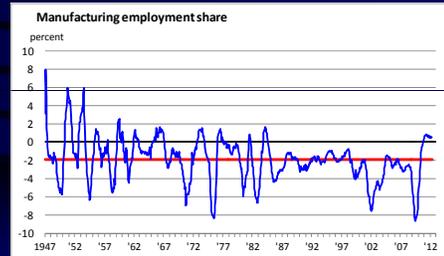
Manufacturing workers have suffered steep employment declines over the current cycle



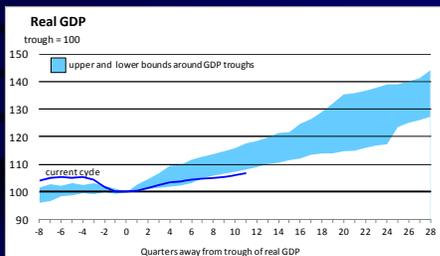
But the overall economy's employment growth also struggled



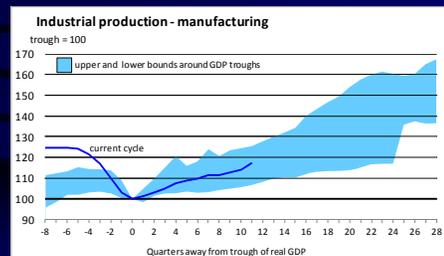
When changes in nonfarm employment are considered, the most recent manufacturing employment downturn is not unprecedented



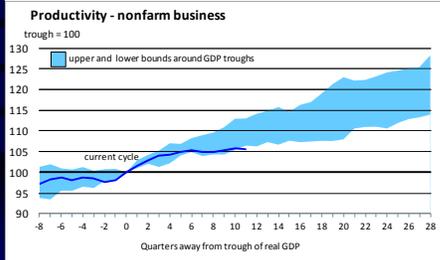
The financial crisis and its aftermath has hampered the current economic expansion



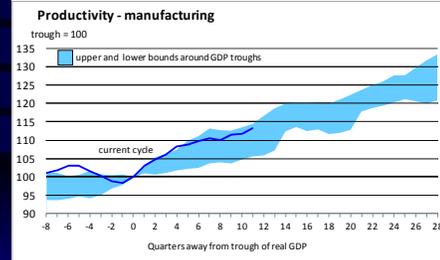
The recovery in manufacturing output is in-line with past industrial recoveries



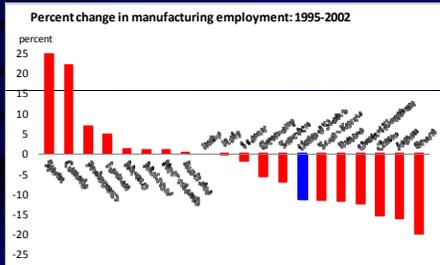
Productivity in the overall economy has grown at a rate near the low-end of previous expansions



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



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

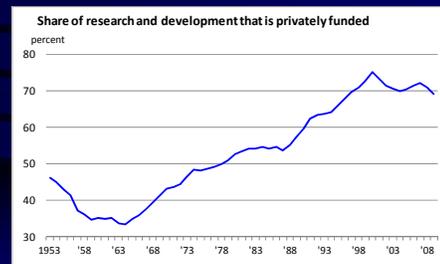


Is the U.S. positioned to continue its strong productivity gains?

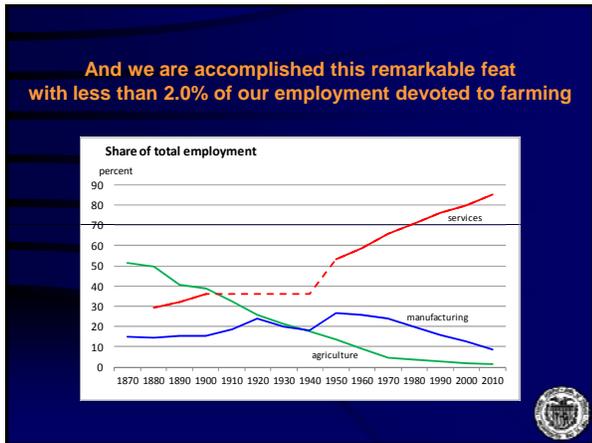
U.S. maintaining its commitment to research and development



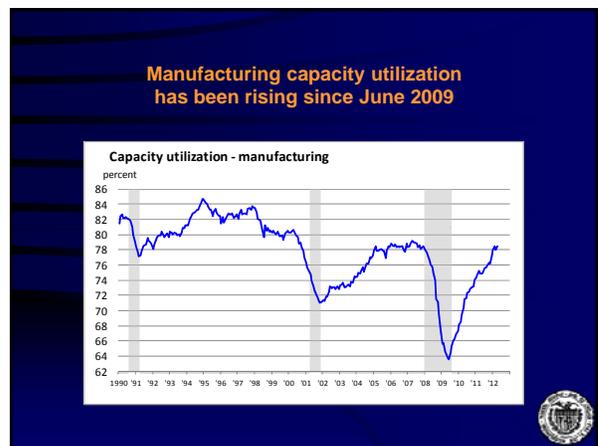
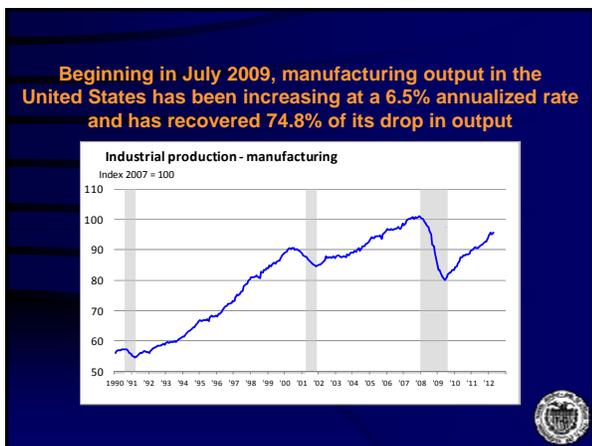
The vast majority of U.S. research and development is being privately funded



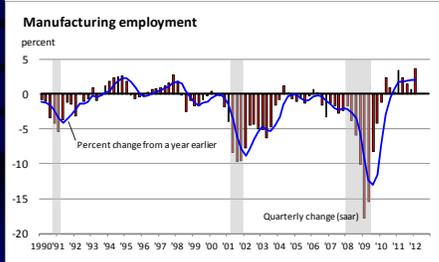
## Lessons from the farm sector



## The Current Expansion



And while manufacturing jobs have been rising,  
they have only recovered 21.1% 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](http://www.chicagofed.org)

