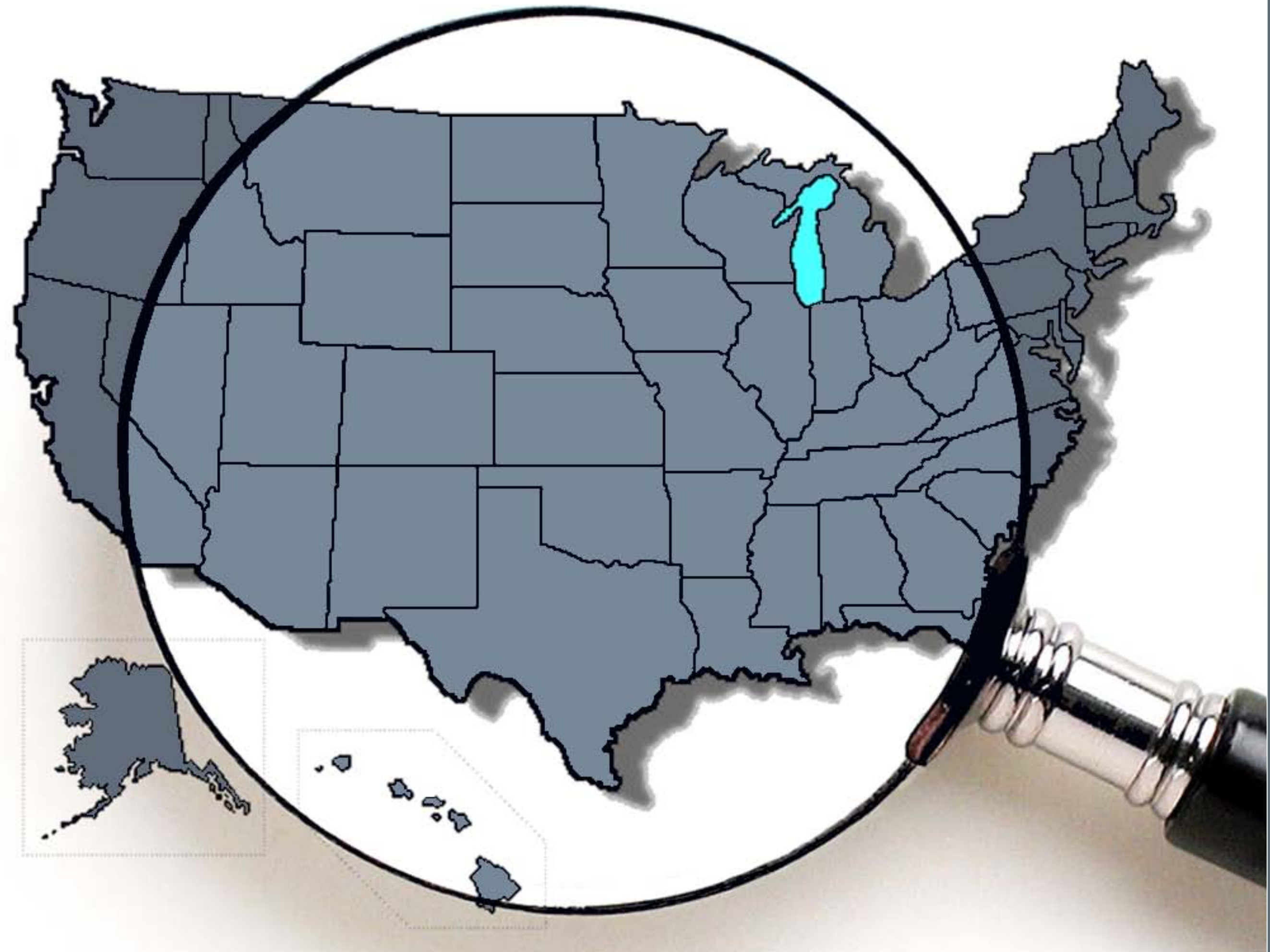
August 2010

Understanding the Economy: Promising Signs of Recovery in Manufacturing



A REPORT BY THE U.S. CONGRESS JOINT ECONOMIC COMMITTEE
REPRESENTATIVE CAROLYN B. MALONEY, CHAIR
SENATOR CHARLES E. SCHUMER, VICE CHAIR

Promising Signs of Recovery in Manufacturing

One particularly bright spot in the U.S. economy in recent months is the manufacturing sector. The U.S. manufacturing sector has shown signs of recovery in the first half of 2010, following more than two years of unrelenting employment losses. Even as the sector has rebounded, adding a total of 136,000 jobs since December 2009, the expansion remains fragile and warrants targeted policies to bolster continued progress.

Employment within the manufacturing sector has expanded for the past six consecutive months. The last time that the U.S. saw two or more consecutive months of manufacturing employment gains was between December 2005 and April 2006, when the sector added a total of 51,000 jobs. A recovery in the manufacturing sector is vital to America's global competitiveness; the sector is a key source of good-paying jobs that can play an important role in spurring growth in other sectors of the economy that support manufacturing. Increasing exports of manufactured goods will also help improve the country's trade imbalance and current account deficit. Some economists believe that the mismatch between countries holding large current account deficits – such as the United States – and countries with large current account surpluses – such as China – was partly responsible for the financial crisis.[1]

Although manufacturing employment for the United States as a whole increased in 2010, the experience within individual states has been more uneven. While 37 states saw manufacturing payrolls expand in at least three of the first six months of 2010 states, only five states (New Hampshire, Florida, Tennessee, Texas and Indiana) experienced manufacturing employment growth in each of the first six months of 2010. Of those five states that experienced continuous growth in manufacturing employment in the first half of 2010, manufacturing jobs employ more than ten percent of the labor force in three states (Indiana, Tennessee and New Hampshire), while Texas contains the second largest manufacturing workforce in the country.

Within manufacturing, employment growth appears to be strongest in the durable goods sector, especially in transportation equipment, machinery, fabricated metal products, and primary metals. Some of the growth in durable goods employment may be due to inventory restocking, especially in primary metals and transportation equipment. During this recession, manufacturers met demand out of inventory rather than out of production, and inventory levels shrunk. Manufacturing inventories started rising in January 2010. However, the already-restocked inventories coupled with declining new orders for durable goods in May and June may suggest weak employment demand in the future for manufacturing workers.

In addition, some of the growing demand for durable goods may be export-related. According to the Department of Commerce's International Trade Administration, exports supported 6.9 percent of total employment within the United States in 2008, and more than one-third of that employment was related to the manufacturing sector.[2]

The manufacturing sector has been at the front end of the economic recovery; however, employment growth in the sector for the whole country remains fragile. Employers added only 9,000 manufacturing jobs in June – the smallest monthly jobs gain for the industry in the first half of 2010, indicating that this sector is still weak. Congress and the Administration have taken a number of actions to support the manufacturing sector, including support for exports, tax credits for clean energy manufacturing and efforts to spur domestic demand for vehicles.

The following report documents the historical decline in manufacturing employment – a gradual decline that predated the Great Recession and several recent administrations but significantly intensified during the Bush administration. Approximately 4.7 million manufacturing jobs (27.3 percent of employment within the industry) were lost from February 2001 to February 2009. Special attention is given to the most recent decline from 2006 to 2009 and the differences in manufacturing employment declines across the states. In particular, the report shows:

- The durable goods sector was particularly hard-hit by the recession. About three-fourths of the almost 2.7 million manufacturing jobs lost between June 2006 and December 2009 were within the durable goods manufacturing.

- In June 2006, manufacturing made up more than 10 percent of employment in 26 states; by December 2009, only 17 states had manufacturing sectors that made up more than 10 percent of employment.

- In the first half of 2010, manufacturing gained 136,000 jobs. Nearly all of those employment gains were in durable goods manufacturing.

- The gains in durable goods employment have been concentrated in states with large manufacturing bases in the Midwest and South. Michigan, Ohio and Texas have shown particularly strong gains.

- Some of the recent employment growth in manufacturing may be due to inventory restocking – as manufacturing inventories began to rise in January 2010 so did manufacturing employment. In fact, the ISM Index shows that growth in the manufacturing sector is slowing now that firms have restocked their inventories.

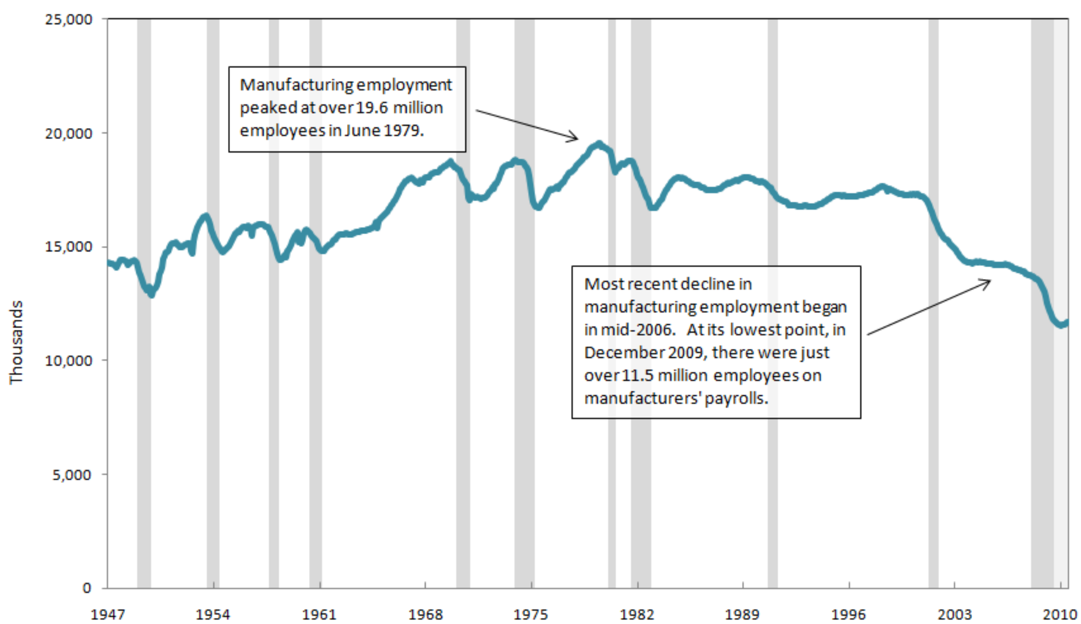
- Congressional actions to support manufacturing have included support for exports, tax credits for clean energy manufacturing and efforts to spur domestic demand for vehicles. More actions are needed to ensure a robust and sustainable recovery in the U.S. manufacturing sector.

Decline in Manufacturing Pre-Dates the Great Recession

Manufacturing has long been a cornerstone of the American economy. However, the increase in global competition over the last several decades has translated into a sustained decline in manufacturing employment. While the Great Recession put a great deal of pressure on manufacturing, the decline in the sector predates the most recent economic crisis and several recent administrations. (See Figure 1)

After years of continuous, but gradual, decline, the contraction of the manufacturing sector intensified during the Bush administration. Approximately 4.7 million manufacturing jobs (27.3 percent of employment within the industry) were lost from February 2001 to February 2009. Employment losses eased briefly during 2004 and 2005 as new orders for manufactured goods increased. However, beginning in June 2006 and running through December 2009, manufacturing employment contracted sharply again.

Figure 1: Employment in Manufacturing Has Fallen From 1970s Highs; Most Recent Decline Began in Mid-2006



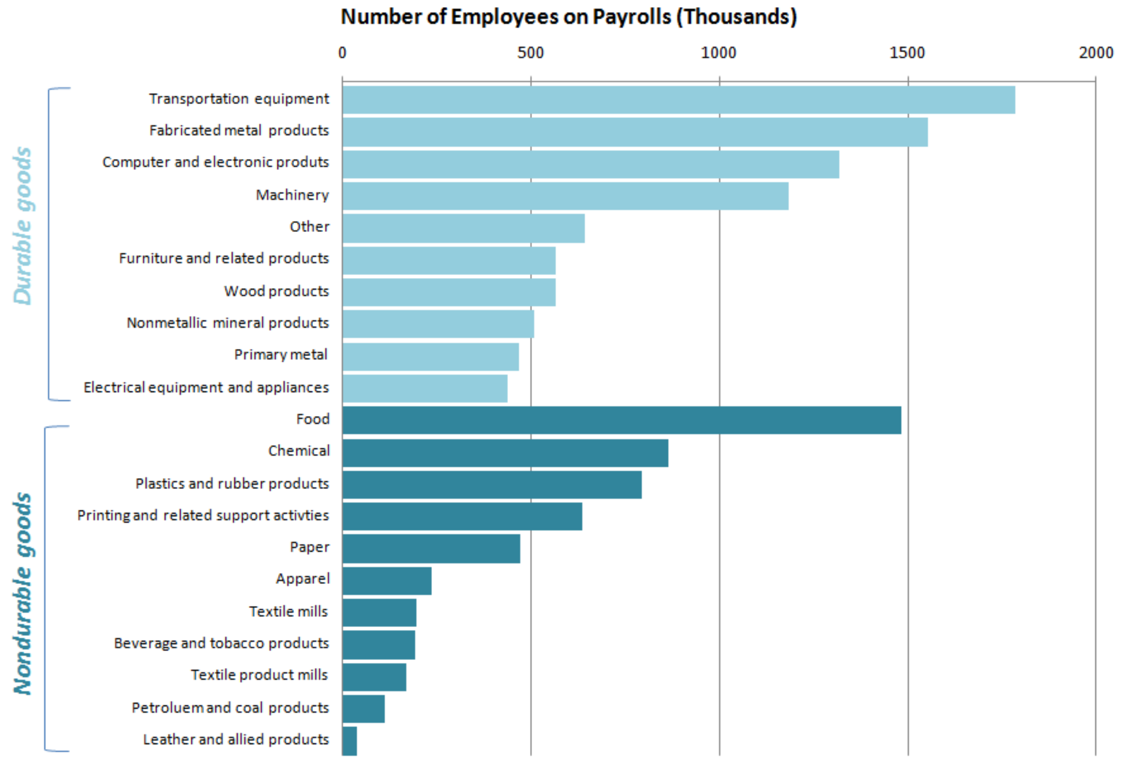
Sources: JEC Majority Staff based on data from the Bureau of Labor Statistics and National Bureau of Economic Research.
Note: Grey areas represent periods of recession as defined by NBER. NBER has not yet determined the official end date of the 2007 recession; however, GDP growth turned positive in the third quarter of 2009. This is shown as the light grey area (July 2009 to June 2010).

Snapshot of Manufacturing in the United States in 2006, Prior to the Current Decline

Manufacturing employment was concentrated in durable goods.

Prior to the decline beginning in mid-2006, nearly two-thirds (64 percent) of all manufacturing employment was concentrated in the production of durable goods – principally transportation equipment, fabricated metal products, computers and other electronic products, and machinery. (See Figure 2) The remaining 36 percent of manufacturing employment was in the production of nondurable goods; food production dominated nondurable manufacturing employment.

Figure 2: Manufacturing Employment Before the Most Recent Decline: June 2006



Source: JEC Majority Staff based on data from the Bureau of Labor Statistics, Payroll Survey.

Manufacturing employment was critical across the nation, particularly in Indiana, Wisconsin, Arkansas, Mississippi, Iowa, and Michigan.

Manufacturing employees were located throughout the country, but most were located in one of several states: California (1.5 million), Texas (927,000), and Ohio (801,000). (See Figure 3) In all, 54 percent of all manufacturing jobs were located in just ten states.

The ranking of states most dependent on manufacturing employment differs substantially. Indiana was at the top, with over 19 percent of all employment within the state located in the manufacturing sector. (See Figure 4) Manufacturing employment in Wisconsin, Arkansas, Mississippi, Iowa, and Michigan also exceeded 15 percent of all employment within the state.

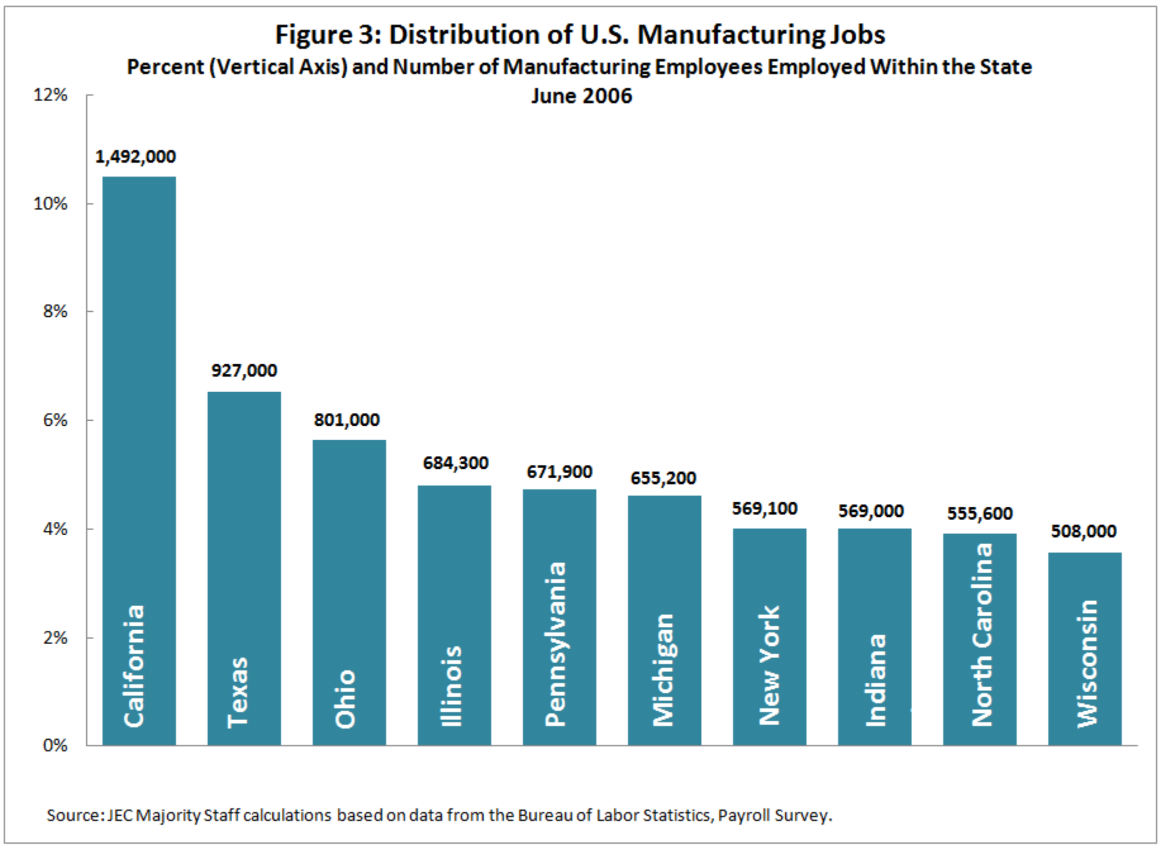
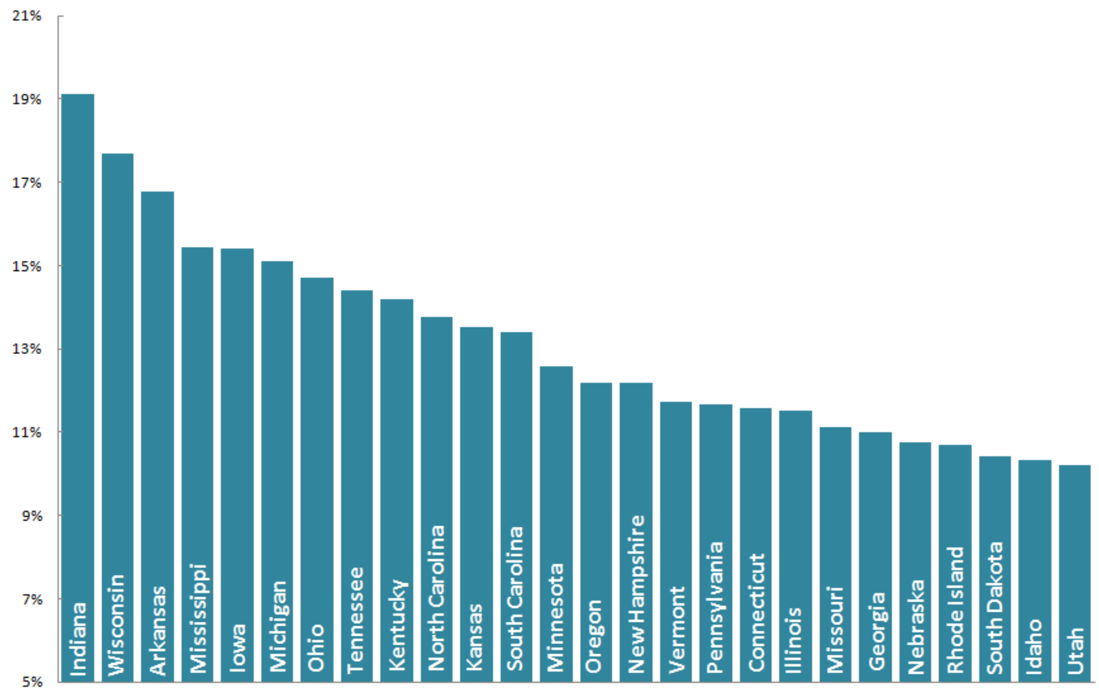


Figure 4: States Where Manufacturing Jobs Make Up More than 10 Percent of Payrolls
Manufacturing Payrolls as a Share of Total Payrolls (Percent), June 2006



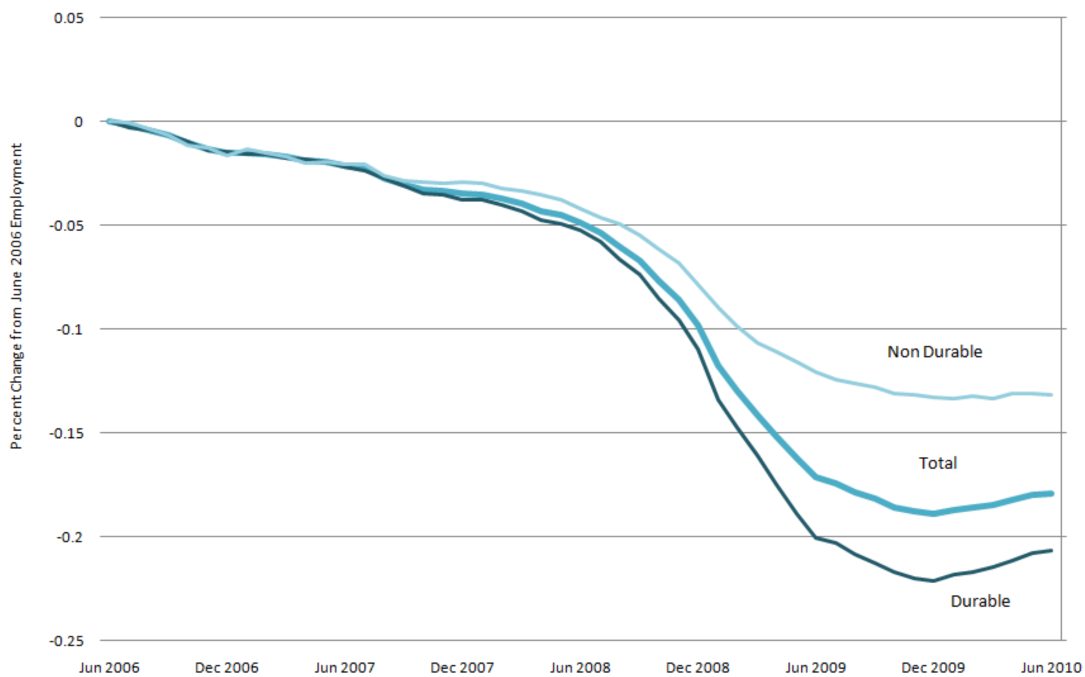
Source: JEC Majority Staff calculations based on data from the Bureau of Labor Statistics, Payroll Survey.

Snapshot of the 2006-2009 Decline in Manufacturing

Employment decline was deeper in the durable goods sector.

The most recent decline in manufacturing employment was concentrated in the production of durable goods. Roughly three-quarters of the nearly 2.7 million manufacturing jobs lost between June 2006 and December 2009 were within the production of durable goods. At its lowest, the number of employees of durable manufacturing payrolls had fallen 22 percent from its June 2006 level. (See Figure 5) That works out to a decline of 2 million jobs in the durable goods sector between June 2006 and December 2009.

Figure 5: Manufacturing Employment Has Started to Rebound From the Latest Decline



Source: JEC Majority Staff calculations based on data from the Bureau of Labor Statistics, Payroll Survey.

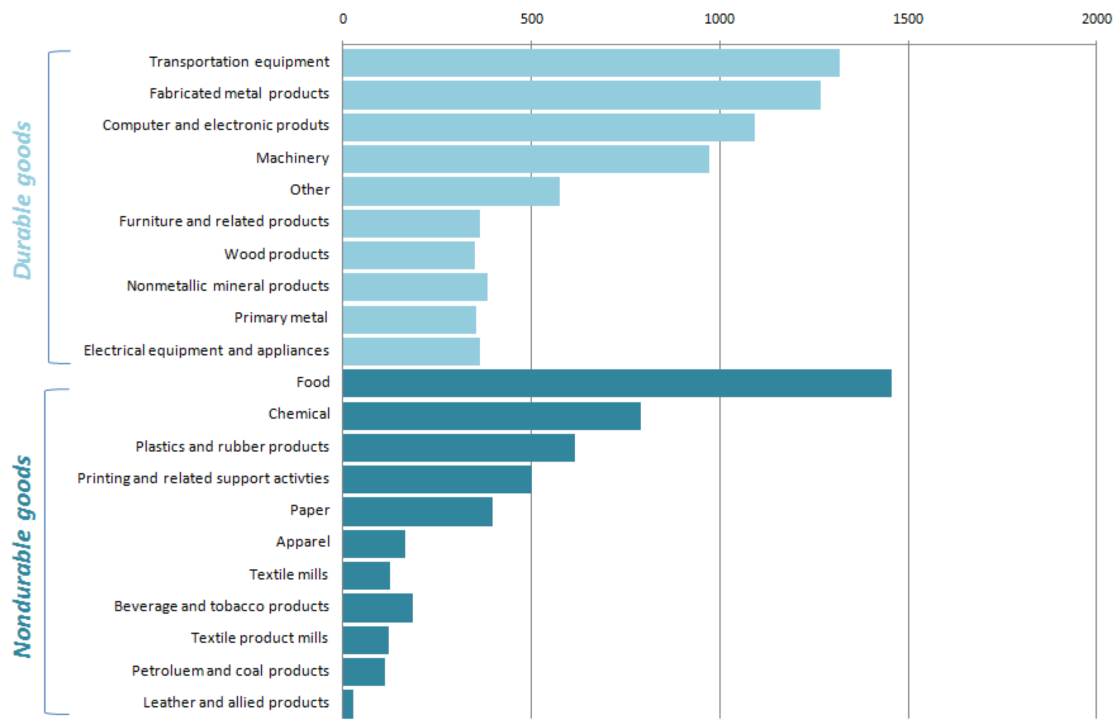
Certain sub-sectors of manufacturing were particularly hard-hit during the decline.

The latest decline in manufacturing employment hit virtually all sub-sectors of manufacturing. (See Figure 6) However, in terms of sheer number of jobs lost, the transportation equipment sub-sector was by far the hardest hit, losing 470,000 jobs – nearly 18 percent of all manufacturing losses over the period. As a percent of total jobs in the sub-sector, losses from June 2006 to December 2009 were largest in wood products (38 percent), furniture and related products (36 percent), transportation equipment (26 percent), textile mills (37 percent), textile product mills (27 percent), and apparel (29 percent).

As a result of these losses, in December 2009, payroll employment in the food production sub-sector outstripped employment in all other sub-sectors. Manufacturers of transportation equipment and fabricated metal products were the second and third largest employers in the sector in December 2009.

Figure 6: Manufacturing Employment in December 2009

Number of Employees on Payrolls (Thousands)



Source: JEC Majority Staff based on data from the Bureau of Labor Statistics, Payroll Survey.

Some states hit much harder than others.

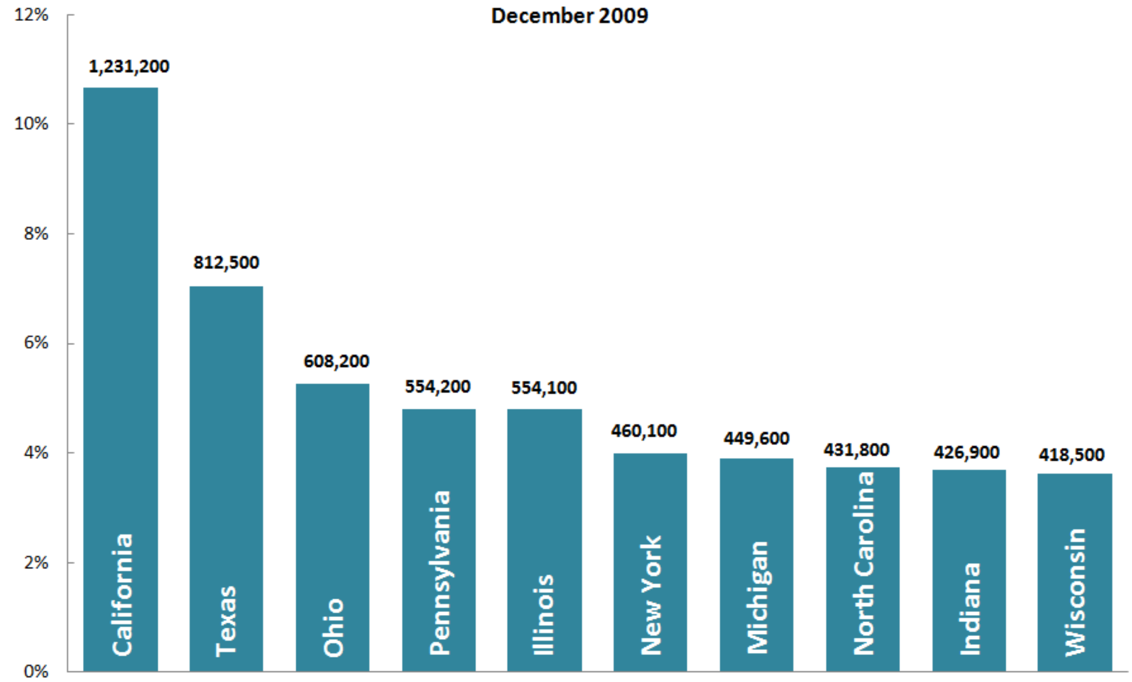
While the manufacturing sub-sectors with the most employees changed over the decline, the loss of 2.7 million manufacturing jobs did little to reshuffle the geographic distribution of manufacturing jobs throughout the country. (See Figure 7) However, the decline severely impacted employment in states with large concentrations of manufacturing jobs. Within those states, the distribution of employment shifted away from manufacturing towards other sectors, creating large pools of unemployed manufacturing workers. Whereas manufacturing made up more than 10 percent of total employment in 26 states in June 2006 (See Figure 4), it was more than 10 percent of employment in only 17 states in December 2009: Wisconsin, Indiana, Arkansas, Iowa, Mississippi, Ohio, Kansas, Kentucky, Michigan, Tennessee, South Carolina, North Carolina, Minnesota, Vermont, Oregon, New Hampshire, and Pennsylvania. (See Figure 8)

Manufacturing employment plummeted in states with a strong manufacturing presence. In Michigan, for instance, manufacturing employment sank by 31 percent between June 2006 and December 2009. Manufacturing employment in Indiana contracted by 25 percent over this period, while employment in the sector fell by 24 percent in Ohio. (See Figure 9)

Figure 7: Distribution of U.S. Manufacturing Jobs

Percent (Vertical Axis) and Number of Manufacturing Employees Employed Within the State

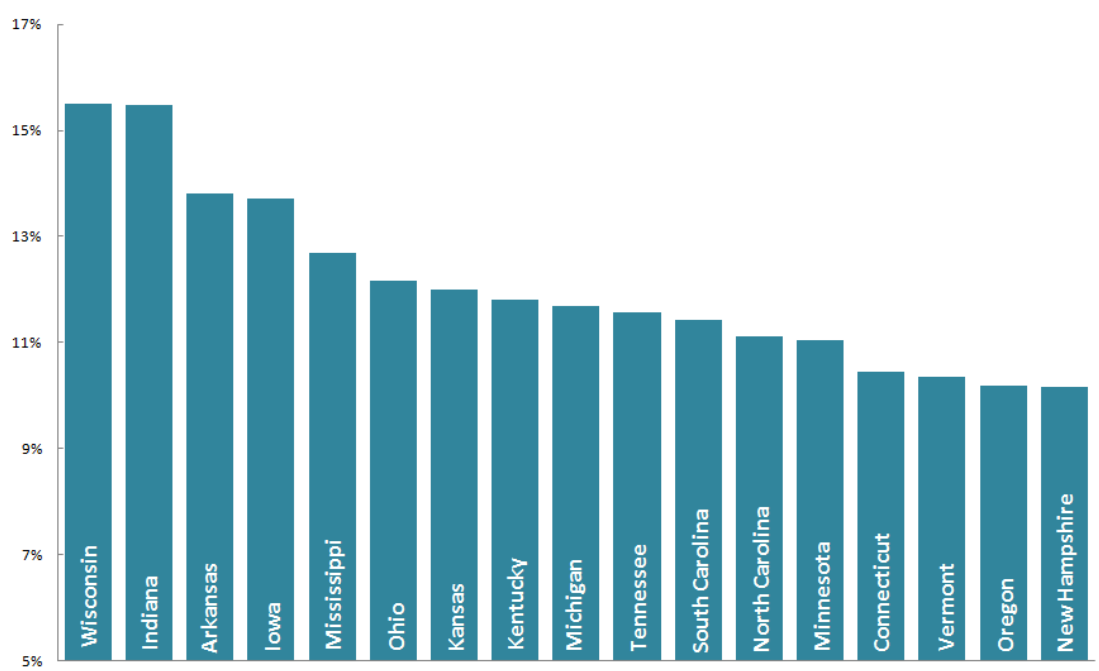
December 2009



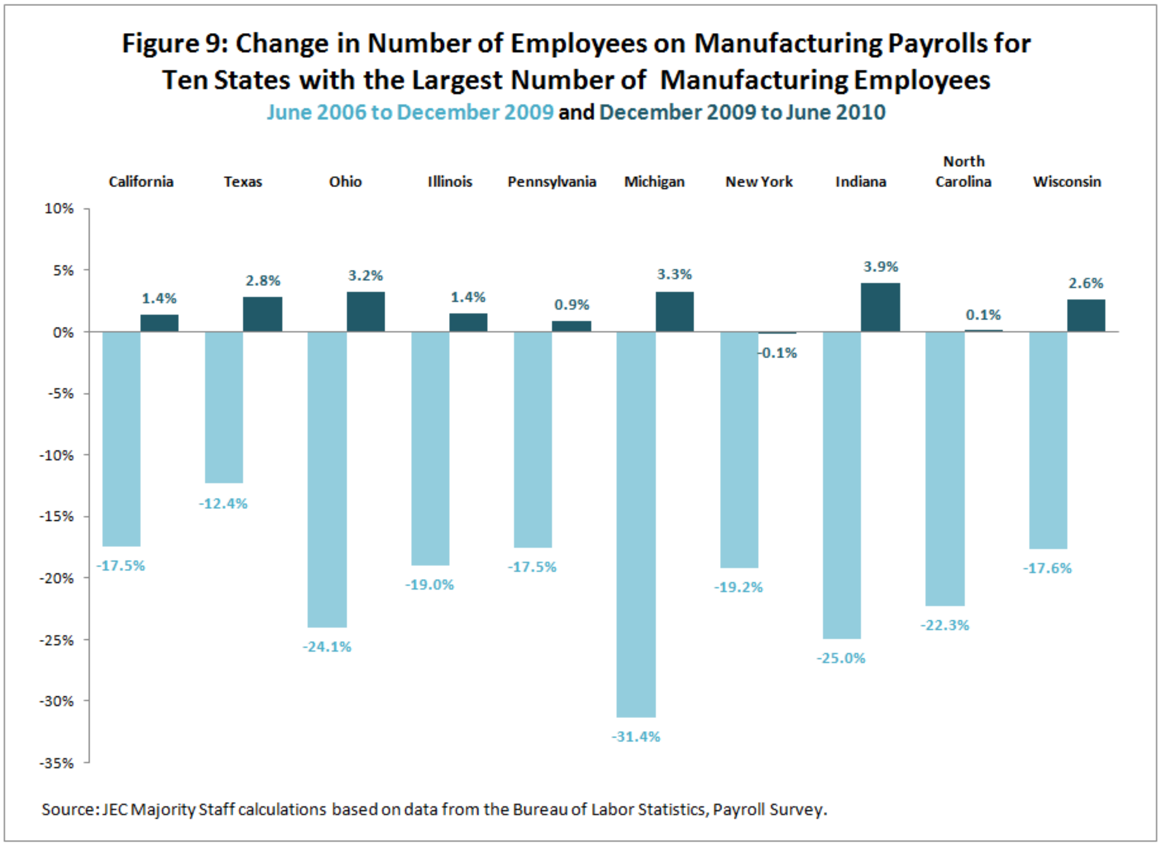
Source: JEC Majority Staff calculations based on data from the Bureau of Labor Statistics, Payroll Survey.

Figure 8: States Where Manufacturing Jobs Make Up More than 10 Percent of Payrolls

Manufacturing Payrolls as a Share of Total Payrolls (Percent), December 2009



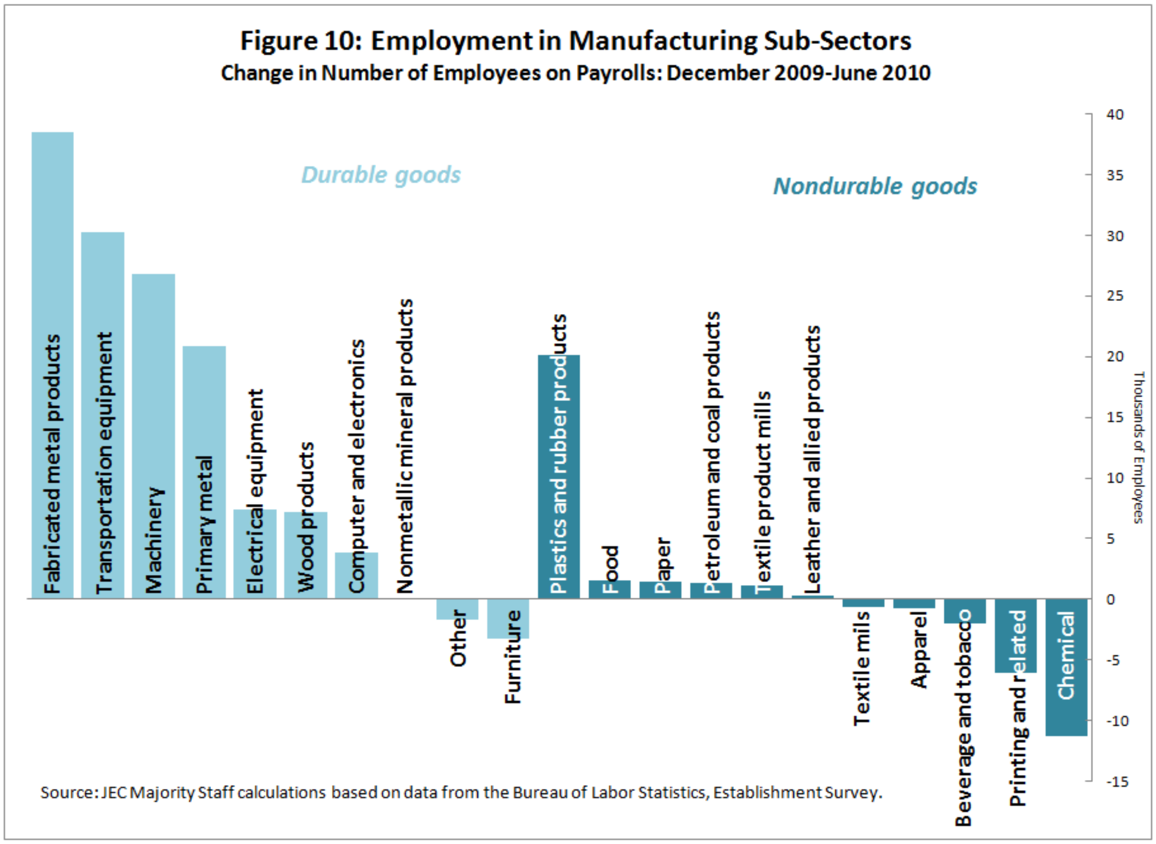
Source: JEC Majority Staff calculations based on data from the Bureau of Labor Statistics, Payroll Survey.



Manufacturing Employment Is on the Rebound in 2010

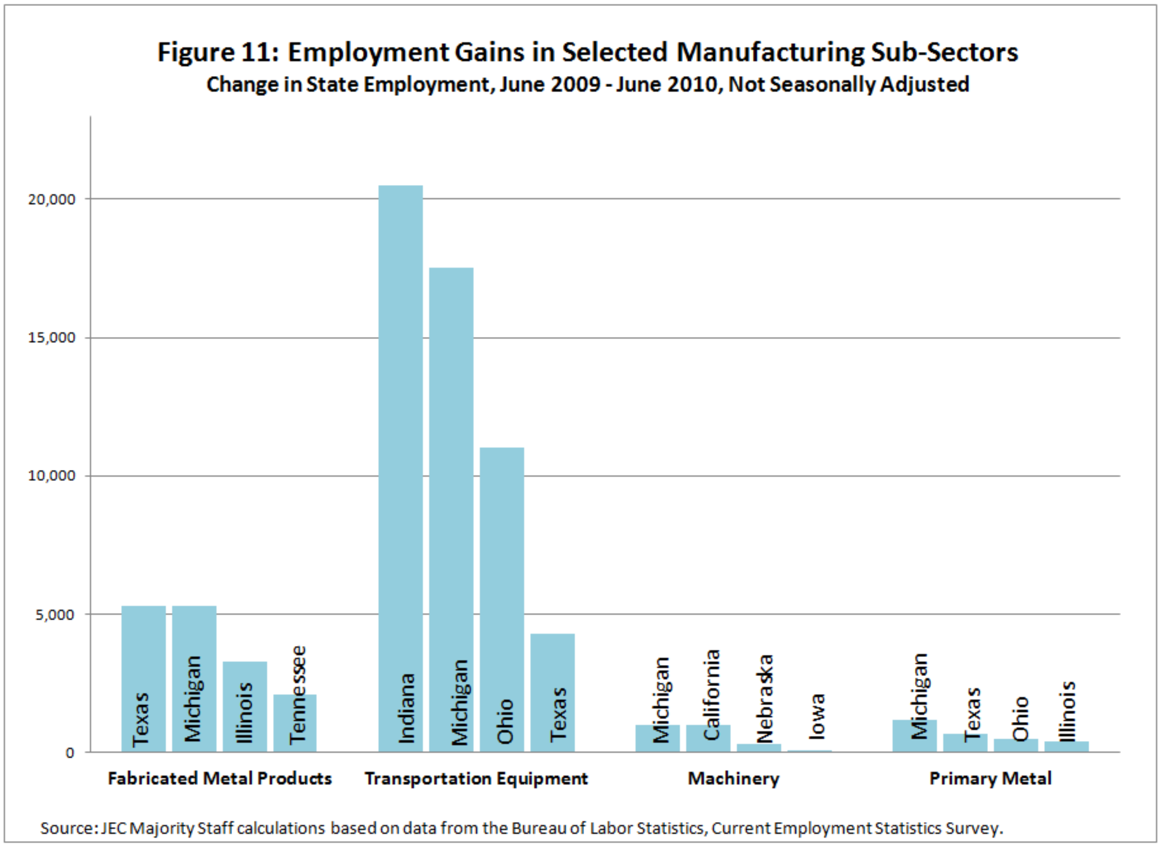
Impressive employment growth concentrated in durable goods.

Manufacturing payrolls have increased since December 2009, with employers adding 136,000 jobs in the first 6 months of 2010. The six-month stretch of growth is the longest since 1997. Nearly all of the increase (130,000 jobs) was in durable goods manufacturing. Fabricated metal products, transportation equipment, and machinery manufacturing have added the most jobs. (See Figure 10)



Increase in durable goods sub-sector employment has benefitted specific states.

Because of the concentrated employment growth in specific sub-sectors of durable goods manufacturing (fabricated metal products, transportation equipment, and machinery), the benefits have been a particular boon to a handful of states. In particular, Michigan has seen strong gains in employment in all four expanding manufacturing sectors. (See Figure 11) Illinois, Indiana, Texas, Illinois, and Ohio, California, Tennessee, and Nebraska have also seen employment gains thanks to expansion of key manufacturing sub-sectors.



Overall, however, the rebound in manufacturing employment has been uneven across the country.

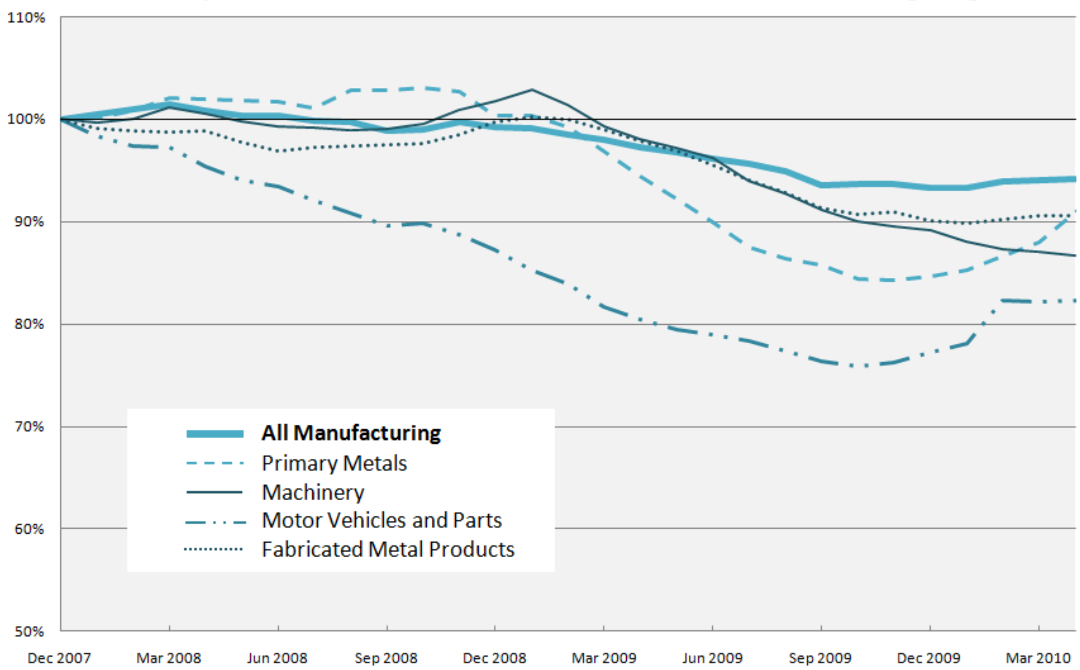
The experience within individual states, however, has been more uneven. While 37 states had manufacturing employment growth in at least three of the first six months of 2010, only five states (New Hampshire, Florida, Tennessee, Texas and Indiana) experienced manufacturing employment growth in each month of the first half of 2010. Of those five states that experienced continuous growth in manufacturing employment in the first half of 2010, manufacturing jobs employ more than ten percent of the labor force in three states (Indiana, Tennessee and New Hampshire) although Texas contains the second largest manufacturing workforce of all states. Moreover, in the states with the largest manufacturing payrolls, the declines of the 2006-2009 period far outstrip the gains made to-date in 2010, suggesting a great deal of ground left to be gained.[3] (See Figure 9)

Inventory restocking has likely contributed to manufacturing employment gains in the first half of 2010.

Manufacturing inventories shrank during the Great Recession as firms used existing inventories – rather than new production – to meet demand. The slowdown in production enabled employers to significantly reduce their payrolls and trim inventories. Manufacturing inventories started rising in January 2010.[4] (See Figure 12) Some of the growth in durable goods employment may be due to inventory restocking, especially in primary metals and transportation equipment, as the increase in inventory levels coincided with employment gains in those sectors. While inventories remain below pre-recession levels, once firms have restocked their inventories, demand will need to come from new orders for manufactured goods if employment in the sector is to continue to grow.

Figure 12: Manufacturers in Some Durable Goods Subsectors Have Increased Production to Restock Inventories

Real Inventory Levels as a Percent of December 2007 Level for Selected Manufacturing Categories



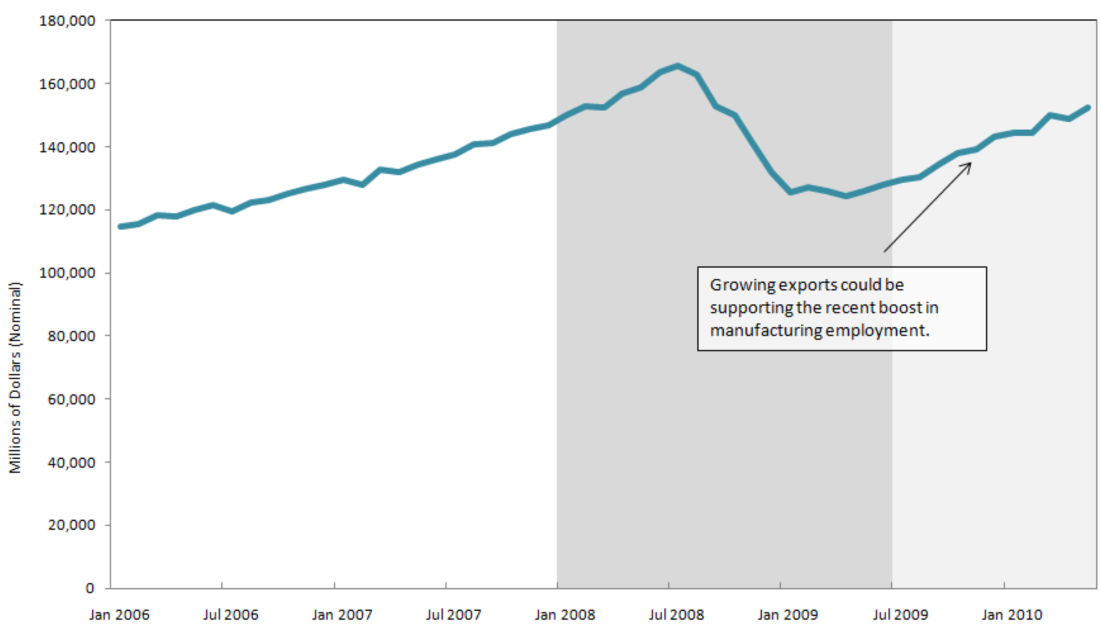
Source: JEC Majority Staff calculations based on data from the Bureau of Economic Analysis.

Exports may explain some of the rebound in manufacturing employment and will be a source for future demand.

Some of the growth in demand in durable goods orders may be export-related, as U.S. exports have grown since mid-2009. (See Figure 13) Exports play a major role in bolstering employment in the U.S. economy, accounting for nearly 7 percent of total employment in 2008. (See Figure 14) No other sector of the U.S. economy is more affected by exports than manufacturing – exports supported over one-quarter (26.9 percent or 3.7 million jobs) of all U.S. manufacturing jobs in 2008, and over one-third (35.9 percent) of all jobs supported by exports was in the manufacturing sector. (See Figure 15) Consequently, a robust U.S. manufacturing sector is dependent upon exports. Preliminary estimates from the Department of Commerce, International Trade Association suggest that export-supported employment slipped in 2009, and then rebounded and began growing again in 2010.

Figure 13: U.S. Exports Have Been Growing Since Mid-2009

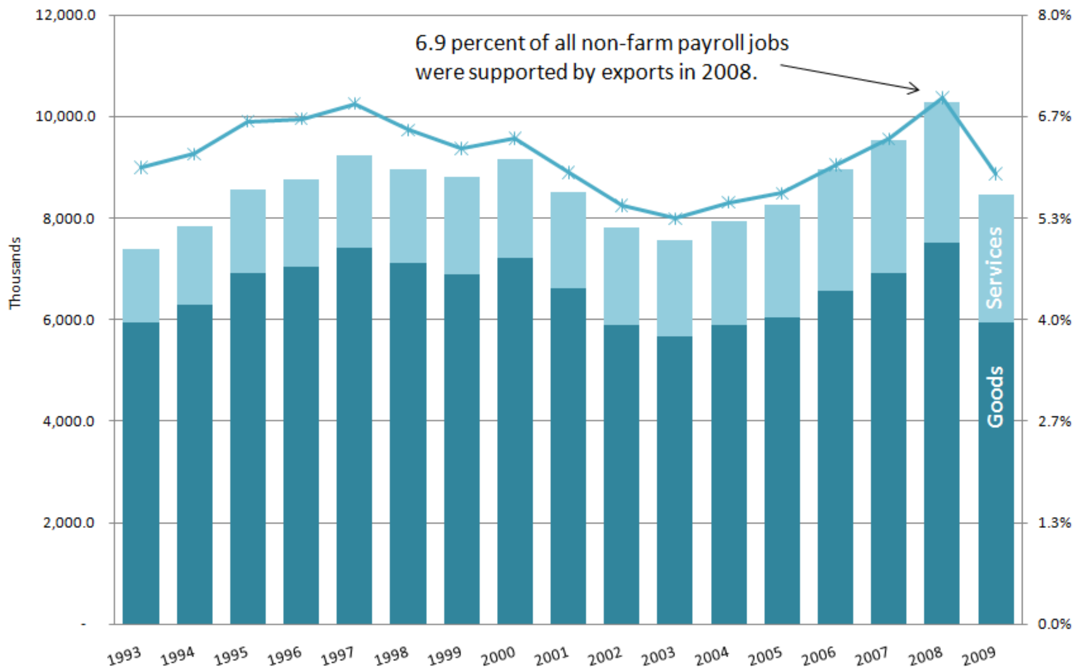
Value of Exports of Goods and Services



Sources: JEC Majority Staff based on data from the U.S. Census Bureau and National Bureau of Economic Research.
Note: Grey areas represent periods of recession as defined by NBER. NBER has not yet determined the official end date of the 2007 recession; however, GDP growth turned positive in the third quarter of 2009. This is shown as the light grey area (July 2009 to June 2010).

Figure 14: Employment Supported By Exports

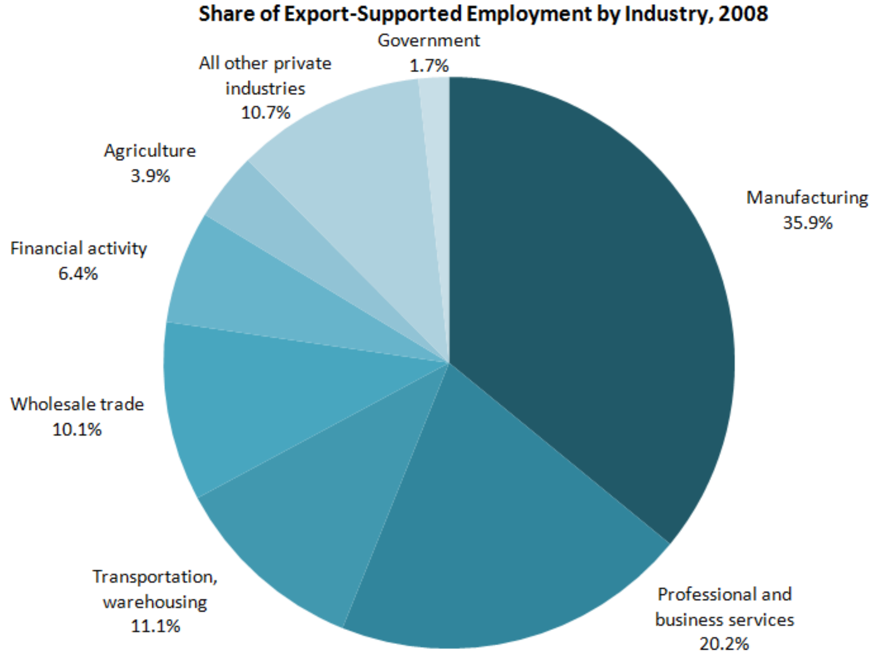
Number of Jobs Supported by Exported Goods and Services, and Export-Supported Jobs as a Share of Total Employment



Sources: JEC Majority Staff based on data from the International Trade Administration and Bureau of Labor Statistics.
Notes: Total employment includes wage and salary, self-employed, and unpaid family workers. Data for 2009 is preliminary.

Figure 15: Over One-Third of All Jobs Supported by Exports Are Within the Manufacturing Sector

Share of Export-Supported Employment by Industry, 2008

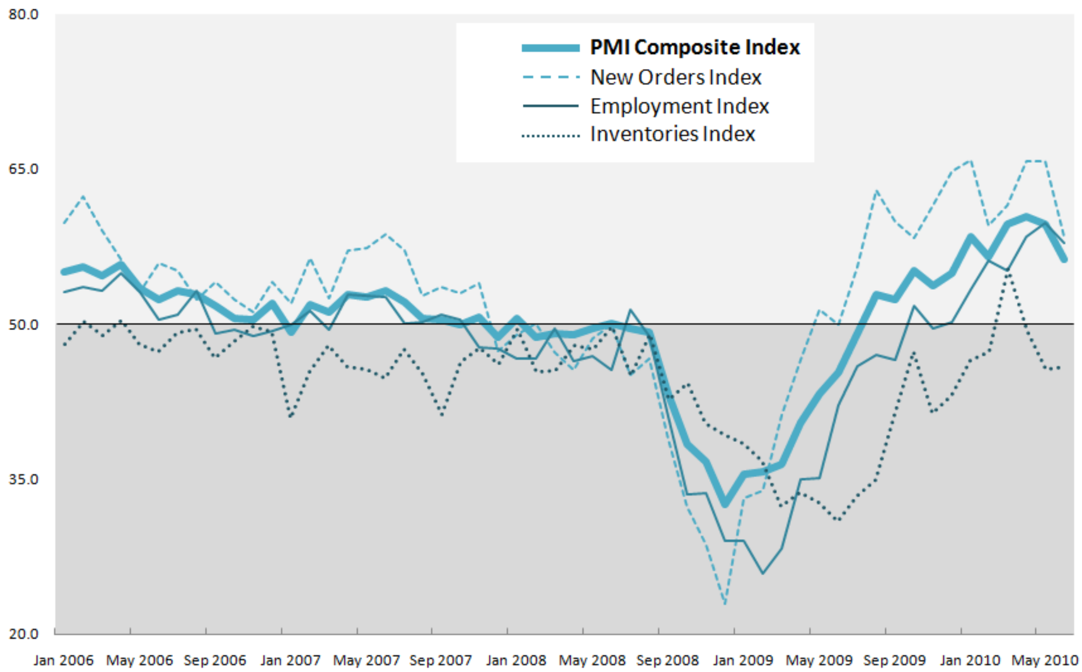


Sources: JEC Majority Staff based on data from the International Trade Administration and Bureau of Labor Statistics.
Note: "All other private industries" is comprised of: Information (2.9 %), Leisure and hospitality (2.9%), Retail trade (1.4%), Other private services (1.3%), Mining (0.8%), Construction (0.7%), Utilities (0.4%), Utilities (0.4%), and Education, health, and social services (0.3%).

Rebound in Manufacturing Remains Fragile, Despite Positive Signs

As the recent employment growth suggests, the outlook for the country's manufacturing sector is bright. However, recent months have provided worrisome signs that the sector's recovery is still quite fragile. The ISM Index shows that growth in the manufacturing sector is slowing now that firms have restocked their inventories. (See Figure 16) ISM's employment and new orders indices still show signs of growth, if at a slower pace than in the earliest months of 2010. However, the Bureau of Labor Statistics' data show only 9,000 manufacturing jobs added in June – the smallest employment gain in the first half of 2010, and further indication that the sector is still weak.

Figure 16: Overall ISM Manufacturing Index Points To Further Expansion at a Slower Pace
(Values of 50+ Indicate Expansion)



Source: JEC Majority Staff based on data from the Institute for Supply Management.

Targeted Policy Actions Needed to Bolster Fragile Manufacturing Recovery

Congress and the Administration are targeting the manufacturing sector with policies aimed at rebuilding the industry and are committed to growing the country's exports in the coming years. Actions to support the manufacturing sector include: support for exports, tax credits for clean energy manufacturing, and efforts to spur domestic demand for vehicles. The House has already passed many of these critical actions. Pending Senate action, Congress is poised to take significant steps toward insuring that this bright spot in the economy continues to light the way toward a better tomorrow. The attached table highlights legislation and presidential actions taken that may help support the manufacturing sector during the recovery.

The Recovery Act included support for infrastructure, clean energy research and development, and small businesses which may have played a role in some of the gains in manufacturing employment. According to the Council of Economic Advisers, the 48C Advanced Energy Manufacturing Credit, which pays for 30 percent of cost of clean energy investment with firms, has already awarded $2.3 billion dollars to qualified firms.[5] These investments are leveraged with private sector dollars to support a larger investment. For example, funds in the Recovery Act support the General Electric Appliance Park facility in Louisville, Kentucky, which will be producing energy-efficient water heaters.[6]

In addition, it is likely that the rebate for energy-efficient vehicles in Supplemental Appropriations Act of 2009 (expanded in a later supplement) helped spark consumers' pent-up demand for cars that led to the increase in employment in the motor vehicles sector of manufacturing.

Legislation and Presidential Initiatives since January 2009.

Public Law Number and Title	Date Passed	Summary
PL 111-5 American Recovery and Reinvestment Act	February 17, 2009	Appropriated funds for infrastructure, clean energy research and development, and health information technology.
PL 111-32 Supplemental Appropriations Act of 2009	June 24, 2009	Appropriated $3 billion for the "Cash for Clunkers" rebate for energy-efficient vehicles.
PL111-47 Making Supplemental Appropriations for FY 2009 for the Consumer Assistance to Recycle and Save Program	August 7, 2009	Appropriated an additional $2 billion for "Cash for Clunkers"
H.R. 4380 United States Manufacturing Enhancement Act of 2010	Awaiting President's signature	Suspends, decreases or extends suspensions of tariffs on certain products used by domestic manufacturers.
House Passed Bills		
Bill Number and Title	**Date Passed**	**Summary**
H.R. 2454 American Clean Energy and Security Act of 2009	June 26, 2009	Authorizes funding for clean energy research and adoption.
H.R. 1622 To provide for a program of research, development, and demonstration on natural gas vehicles	July 21, 2009	Authorizes the Department of Energy and EPA to conduct a five-year program on natural gas vehicle research and development.
H.R. 3246 Advanced Vehicle Technology Act of 2009	September 16, 2009	Authorizes funding for basic and applied research for the development of clean energy transportation technologies.
H.R. 3585 Solar Technology Roadmap Act	October 22, 2009	Authorizes funding for basic and applied research for the development of solar energy technologies.
H.R. 4849 Small Business and Infrastructure Jobs Tax Act of 2010	March 24, 2010	Extends the use of Build America Bonds to 2013.
H.R. 5019 Home Star Energy Retrofit Act of 2010	May 6, 2010	Authorizes the Energy Secretary to establish a program to provide consumers and contractors with discounts to retrofit their homes to achieve energy savings.
H.R. 5116 America COMPETES Reauthorization Act of 2010	May 28, 2010	Authorizes federal government funding in basic science and technology research.
H.R. 1855 Strengthening Employment Clusters to Organize Regional Success (SECTORS) Act of 2010	July 19, 2010	Amends the Workforce Investment Act to require the Secretary of Labor to award competitive industry or sector partnership grants that encourage growth and competitiveness.
H.R. 4692 National Manufacturing Strategy Act of 2010	July 28, 2010	Directs the President to submit to Congress a National Manufacturing Strategy every four years which addresses policies to create

		sustained employment and growth, recruit and educate the workforce, and increase productivity and exports.
H.R. 5156 Clean Energy Technology Manufacturing and Export Assistance Act of 2010	July 28, 2010	Authorizes the creation of a Clean Energy Technology Manufacturing and Export Assistance Fund to promote policies that reduce production costs and encourage innovation, investment and productivity in the clean energy sector. The Commerce Secretary is also directed to provide information and assistance to domestic businesses to promote exports of clean energy technology products and services.
H.R. 1875 End Trade Deficit Act	July 28, 2010	Establishes an Emergency Commission to provide a detailed plan for reducing both the overall trade deficit and specific bilateral trade deficits.
Presidential Initiatives		
President Obama's Initiatives	**Date Introduced**	**Summary**
National Export Initiative	March 11, 2010	In the State of the Union address, the President called for an initiative to double U.S. exports and support 2 million jobs. Steps taken to support this goal include: creating a new Cabinet-level focus on U.S. exports, expanding export financing, prioritizing government advocacy on behalf of U.S. exporters, providing new resources to U.S. businesses seeking to export, and ensuring a level playing field for U.S. exporters in global markets.
Free Trade Agreements with Panama, Colombia, and South Korea	July 7, 2010	Directed USTR Ron Kirk to resolve outstanding issues with free trade agreements with Panama, Colombia, and South Korea so that they may be submitted for Congressional consideration.

[1] *See*, *eg*., Nouriel Roubini. Testimony before the Joint Economic Committee on "Faltering Economic Growth and the Need for Economic Stimulus," October 30, 2008.

[2] Tschetter, John. U.S. Department of Commerce, International Trade Administration. *International Trade Research Report no. 1*. "Exports Support American Jobs: Updated measure will quantify progress as global economy recovers." April 2010, available at http://trade.gov/publications/pdfs/exports-support-american-jobs.pdf.

[3] For more information on how states are faring during the economy recovery, see the Joint Economic Committee's monthly release, *Understanding the Economy: State-by-State Snapshot.* For data through June 2010, *see* http://jec.senate.gov/public/index.cfm?p=PressReleases&ContentRecord_id=aefd35e2-aad3-4cfa-924d-8461da26d4a8.

[4] Department of Commerce, Bureau of Economic Analysis. National Income and Product Accounts. *Underlying Tables: Manufacturing and Trade Inventories and Sales Table 1BU.*

[5] Council of Economic Advisers. *The Economic Impact of the American Recovery and Reinvestment Act of 2009: Fourth Quarterly Report*, July 14, 2010.

[6] *Ibid.*