Recent Developments in the U.S. Manufacturing Industry

Kevin L. Kliesen
Business Economist and Research Officer
September 7, 2017
Disclaimer

The views we will express today are our own and do not necessarily reflect the positions of the Federal Reserve Bank of St. Louis or the Federal Reserve System.
The Big Picture (Macro Stuff)

• The U.S. economy has developed some momentum. Global growth is also strengthening.

• Hurricane Harvey will affect the U.S. economy; Q3 real GDP growth may be trimmed modestly. However, growth will probably be boosted in the fourth quarter because of rebuilding.

• Labor market conditions remain solid; capital spending appears to be picking up, as are exports.

• Inflation remains below the Fed’s 2% target.
Manufacturing Facts

• Manufacturing output is volatile—it is sensitive to changes in U.S. and world economic conditions.

• But U.S. manufacturing benefits more from stronger U.S. real GDP growth than foreign growth.

• Changes in the value of the dollar have modest effects on exports of manufactured goods.

• Manufacturers benefit from imports of intermediate materials that reduce their costs, which raises productivity and profits and wages.
A Slow Climb out of the Recession

Manufacturing Production and Employment
Index, 2012 = 100

Change since June 2009
Prod.: 18.6%
Employ: 6.0%

Favorable Labor Market Dynamics

Labor Market Dynamics in the Manufacturing Sector
Thousands of Workers

- Hires
- Quits
- Layoffs
- Openings

SOURCE: JOLTS (Bureau of Labor Statistics) and Haver Analytics
THREE TAKEAWAYS FROM THIS MORNING’S PRESENTATION
Fewer jobs in manufacturing.

U.S. Employment Shares by Major Industry and Sector, 1939 to 2016
Percent of Total Nonfarm Payroll Employment

But manufacturing output as a share of GDP has remained constant.

**U.S. Output Shares by Major Industry and Sector, 1947 to 2016**

Percent of Real GDP

- **Manufacturing**
- **Construction**
- **Services**
- **Govt.**

**SOURCE:** U.S. Bureau of Economic Analysis
Productivity growth in manufacturing exceeds services.

Percent changes at annual rates

- 1987-1995: Nonfarm Business 1.6, Manufacturing 2.7
- 1995-2005: Nonfarm Business 2.8, Manufacturing 4.6
- 2005-2016: Nonfarm Business 1.2, Manufacturing 2.0
An Overview of Manufacturing in St. Louis

Charles S. Gascon
Regional Economist
September 7, 2017

The views I will express are my own and do not necessarily reflect the positions of the Federal Reserve Bank of St. Louis or the Federal Reserve System.
First glance: St. Louis looks very much like the US

Source: Bureau of Labor Statistics
Manufacturing employment shares vary within the region

Source: Bureau of Labor Statistics
# Manufacturers headquartered in St. Louis

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Industry</th>
<th>Revenue (Billions)</th>
<th>Local Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emerson Electric</td>
<td>Electrical Engineering</td>
<td>$23.2</td>
<td>2,600</td>
</tr>
<tr>
<td>Sigma-Aldrich</td>
<td>Biology, Chemistry, and Materials Science</td>
<td>$6.8</td>
<td>2,000</td>
</tr>
<tr>
<td>Edgewell Personal Care</td>
<td>Consumer products</td>
<td>$2.2</td>
<td>175</td>
</tr>
<tr>
<td>Energizer Holdings</td>
<td>Batteries</td>
<td>$1.7</td>
<td>400</td>
</tr>
<tr>
<td>Belden Inc.</td>
<td>Electronics</td>
<td>$1.3</td>
<td>334</td>
</tr>
<tr>
<td>American Railcar Industries</td>
<td>Railcars</td>
<td>$1.1</td>
<td>277</td>
</tr>
</tbody>
</table>

Source: Compustat, St. Louis Regional Chamber, St. Louis Business Journal, and St. Louis Post-Dispatch
Other major local manufacturing employers

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Industry</th>
<th>Local employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boeing</td>
<td>Aerospace</td>
<td>14,000</td>
</tr>
<tr>
<td>GM</td>
<td>Auto</td>
<td>4,600</td>
</tr>
<tr>
<td>Anheuser-Busch InBev</td>
<td>Brewery</td>
<td>4,300</td>
</tr>
<tr>
<td>Mallinckrodt</td>
<td>Pharmaceuticals and Medicine</td>
<td>2,500</td>
</tr>
<tr>
<td>Nestle Purina</td>
<td>Pet Food</td>
<td>2,200</td>
</tr>
<tr>
<td>U.S. Steel</td>
<td>Steel</td>
<td>2,200</td>
</tr>
</tbody>
</table>

Source: St. Louis Regional Chamber
St. Louis manufacturing subsectors

- Transportation Equipment, 23k jobs
- Fabricated Metal, 10k
- Chemical, 12k
- Food, 9k
- Plastics/Rubber Products, 7k
- Primary Metals, 7k
- Machinery, 13k
- Other, 33k

Total employment: 99k
Concentration of employment relative to national average

Source: Bureau of Labor Statistics
Manufacturing wages average around $1,361 per week
Does the local decline in manufacturing look like the US?

Loss from mfg. job decline
Loss from shift to service sectors

St. Louis  U.S.

Transport Equipment
Primary Metals
Computers/Electronics
Apparel
Other

United States

St. Louis

Source: Bureau of Labor Statistics
Is there evidence of right-to-work laws increasing employment shares in manufacturing?

Source: Bureau of Labor Statistics and author’s calculations/National Conference of Legislators
“Advanced” manufacturing

• Advanced industries defined as:
  • R&D spending per worker at least $450
  • At least 21% of jobs require STEM knowledge
• 35 manufacturing subindustries are advanced
  • Including aerospace products, motor vehicles, chemical, petroleum/coal, and more
• Roughly 40% of manufacturing employment is advanced

Source: Muro, Rothwell, Andes, Fikri, and Kulkarni (Brookings Institute, 2015)
Advanced manufacturing has declined as share of manufacturing employment in St. Louis

Source: Bureau of Labor Statistics and author’s calculations

NOTE: There was a sector omitted in the version presented, this slide was updated on 9/13 with corrected data.
Connect With Us

Federal Reserve Economic Data (FRED)
Thousands of data series, millions of users

Blogs and Publications
News and views about the economy and the Fed

Economic Education Resources
For every stage of life

Community Development
Promoting financial stability of families, neighborhoods

STLOUISFED.ORG

SOCIAL MEDIA

ECONOMY MUSEUM

INSIDE THE ECONOMY MUSEUM
AT THE FEDERAL RESERVE BANK OF ST. LOUIS