

# American Manufacturing Growth Since NAFTA

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# The Rhetoric

In 1992, Ross Perot claimed that NAFTA would create a “giant sucking sound” as US jobs and investors rushed to Mexico.

In 2004, John Kerry criticized “Benedict Arnold CEO’s who move profits and jobs overseas.”

In 2012, President Obama said, “I’m calling on those businesses that haven’t brought jobs back to take this opportunity to get the American people back to work.”

# Facts

- US manufacturing employment has fallen over the past few decades
- However, US manufacturing productivity has increased relative to other sectors and to other countries
- We isolate the impact of offshoring to Mexico by US firms and find that greater expansion in Mexico leads to greater expansion in the US

# PIIE Research

- This presentation is based on the recent PIIE Policy Brief:  
*“The US Manufacturing Base: Four Signs of Strength”* by Theodore H. Moran and Lindsay Oldenski
- We include updates to that brief that look specifically at the activities of US MNCs in Mexico since NAFTA

# Complements or Substitutes?

- **Case 1:** Firms have a fixed number of jobs, which can be filled with workers in either in the US or another country. Policies restricting outward FDI would benefit domestic US workers. (*Substitution*)
- **Case 2:** Firms expand abroad for reasons unrelated to US labor markets. Restricting foreign expansion would not impact US workers.
- **Case 3:** Expanding abroad makes US companies more productive and leads to new sales opportunities, increasing the number of US workers they hire. Restricting foreign expansion by US MNCs would hurt US workers. (*Complementarities*)

# Complements or Substitutes?

- We find evidence that case 3 dominates, and that foreign sales, employment, and investment by US firms complement their sales, employment, and investment at home.
- This doesn't mean that there are never any negative effects of offshoring on individual workers or firms, just that the positive effects are larger.

# Average annual growth, US manufacturing and total US economy (percent)

Indicator	1960-79	1980-99	1990-99	2000-2010	2010-2013
<b>Employment</b>					
Manufacturing	1.1	-0.5	-0.4	-3.4	0.2
Total	2.0	1.6	1.6	-0.2	1.0
<b>Output</b>					
Manufacturing	3.9	3.5	3.6	-1.0	4.0
Total	3.8	3.2	3.7	1.8	2.9
<b>Output per Person</b>					
Manufacturing	2.8	4.0	4.0	3.0	3.9
Total	1.8	1.6	2.0	2.0	1.9

Source: Information for 1960-1979 is from Lawrence and Edwards' calculations using data from the Bureau of Economic Analysis (BEA) and the World KLEMS Database. Information for all other years was compiled by Moran and Oldenski using data from the US Bureau of Labor Statistics. 7

# Average annual US manufacturing output growth by subsector (percent)

	1988- 2011	1990- 1999	2000- 2009	2010- 2011
1. Semiconductors and other electronic components	15.5	26.1	4.6	22.5
2. Computer and peripheral equip manufacturing	15.3	28.6	11.3	-27.4
3. Other transportation equipment	5.9	7.8	9.7	0.6
4. Railroad rolling stock	5.1	6.1	-0.8	4.4
5. Medical Equipment and supplies	4.4	5.0	4.2	2.0
6. Agriculture, construction, and mining machinery	3.8	2.0	2.2	15.3
7. Communications equipment	3.5	12.2	-4.9	2.1
8. Coating, engraving and heat treating	3.1	4.5	-1.1	13.2
9. Machine shops, screws, nuts, and bolts	3.1	4.6	-1.2	13.9
10. Iron and steel mills	2.6	1.6	-0.3	19.1
11. Motor vehicle parts	2.5	6.4	-4.4	17.7
12. Industrial machinery	2.2	3.3	-3.3	19.0
13. Motor vehicles	2.2	4.1	-4.9	25.8
14. Pharmaceutical and medical	2.2	3.5	1.1	-2.1
15. Meat	2.1	2.7	1.4	0.5

Source: Authors' calculations using data from the Bureau of Labor Statistics.

# Average annual change in manufacturing value added share of GDP (2010 and 2011)

Country	Average Annual Percent Change in Manufacturing Value Added Share of GDP
<b>United States</b>	<b>2.19%</b>
<b>World Average</b>	<b>-0.99%</b>
Germany	7.92%
Japan	2.69%
European Union	2.62%
High Income: OECD	2.57%
Mexico	1.41%
China	0.48%
United Kingdom	0.12%
Low Income	0.10%
India	-1.21%
France	-1.71%

# US MNC investment in Mexico

- In 2012, Mexico was the 23rd largest recipient of FDI worldwide, but it was the 11th largest destination for investment by US firms.
- In 2011, affiliates of US firms in Mexico sold \$252 billion of goods and services, and employed 1.3 million Mexican workers.
- Is this good or bad for the US?

# The role of outward investment by US MNCs

- In a recent PIIE policy brief, we use detailed data on all US MNCs over a 20 year period to show that expansion abroad by US firms is associated with greater sales, employment, exports, capital investments, and R&D spending by those firms in the US.
- I will show with new data analysis that these general results for US manufacturing FDI also hold specifically for expansion by US manufacturers just in Mexico.

# The role of outward investment by US MNCs

- In other words, we never heard the giant sucking sound, and the leaders of firms that invest abroad are not really “Benedict Arnolds.”

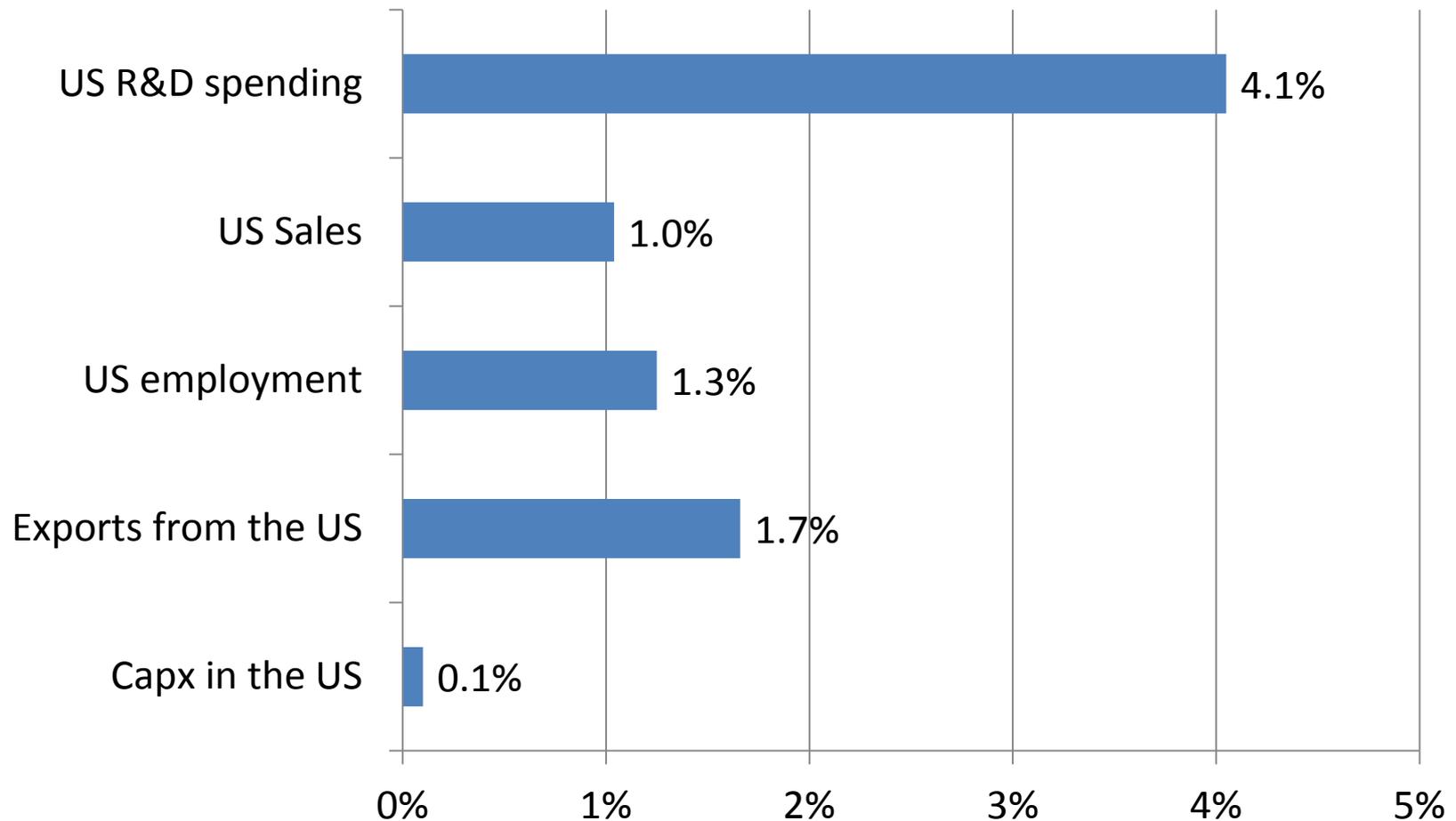
# Methodology

- Overall US manufacturing employment has been falling over time. However, domestic manufacturing employment by US MNCs has been doing much better than manufacturing employment by non-MNCs in the US.
- The aggregate data suggest that MNCs activities at home and abroad move together.
- There could be any number of other factors behind these aggregates. Need to look at individual firm level data.
- We use data on all US MNCs over a 20 year time period from the US Bureau of Economic Analysis (BEA), which includes the activities of these firms at home and at their foreign affiliates.

# Methodology

- Firms differ in many ways, so it is important to look at data on a large number of individual firms over many years.
- This allows us to control for firm “fixed effects”, isolating how employment in the US changes when a firm increases its outward FDI.
- Also need to include year fixed effects, which hold constant everything that was going on in a given year, such as recessions and booms. This is very important in light of the Mexican peso crisis and the recent US financial crisis.

# A 10% increase in employment at affiliates of US firms in Mexico is associated with:



# Translating the empirical results into employment numbers

- The average US firm in the sample employs 25,642 workers in the US and 1,311 workers in Mexico.
- Every 10% percent increase in employment at affiliates of US firms in Mexico corresponds to about 131 jobs in Mexico.
- This is associated with a 1.3% increase in employment per MNC in the US, or 333 US jobs per firm.

# Translating the empirical results into employment numbers

- For the average US firm, adding 131 jobs in Mexico is associated with 333 new jobs in the US at that same firm.
- These numbers may be offset by other factors, such as economic downturns or industry trends. They capture the net relationship between offshoring and domestic activity, so there could be some movement in both directions.
- But it is very clear that the net impact of direct investment in Mexico by US firms is positive, not negative.

# Conclusions

- US manufacturing productivity has increased over the past few decades, while employment has decreased.
- Offshoring to Mexico is not responsible for the fall in US manufacturing employment, as direct investment by US firms in Mexico has a net positive effect on domestic US investment, employment, and sales.