

The Costs of Free Trade

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I Introduction

Trade is unpopular right now.

Reasons:

1. Loss of **manufacturing** jobs.
2. Import-competing **regions** lose their main employers.
Rust belt, Detroit, etc.
3. **Wage decline** for low-skilled workers.

Would trade restrictions fix those problems?

I.I Other Concerns

1. **Technology** competition.

Semiconductors, AI

2. **National security**

Restrictions of technology trade with China.

We won't talk about these "non-economic" concerns.

But note: Those concerns could justify **targeted** trade restrictions, but not tariffs on all imports.

2 Manufacturing Jobs

2.1 Does Trade Cost Manufacturing Jobs?

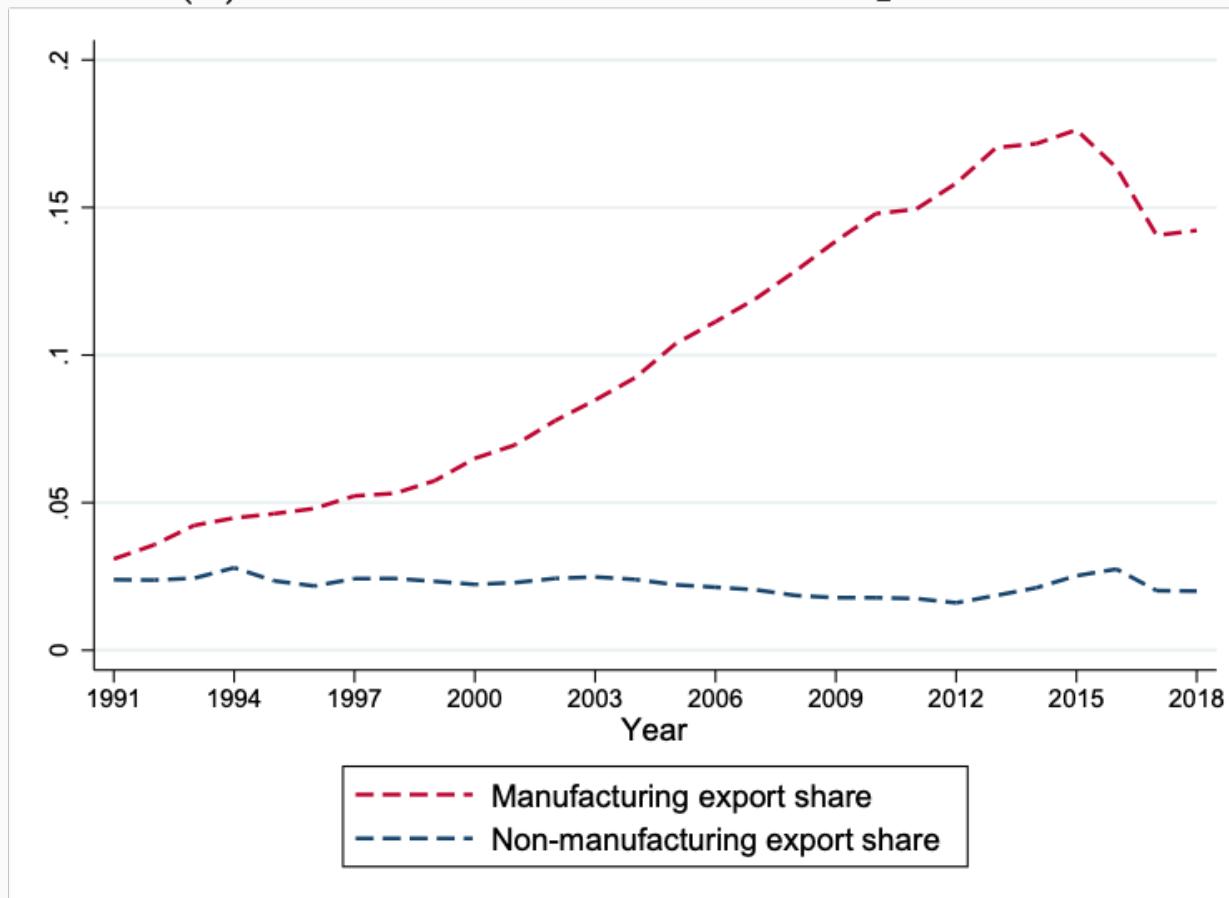
How might trade cost manufacturing jobs?

The U.S. trade deficit reduces U.S. GDP by sending dollars spent by American consumers and businesses to foreign producers, stimulating foreign economies rather than our own.

— Source: CPA 2024

The China Shock

(a) China share of world exports



China Joins the WTO

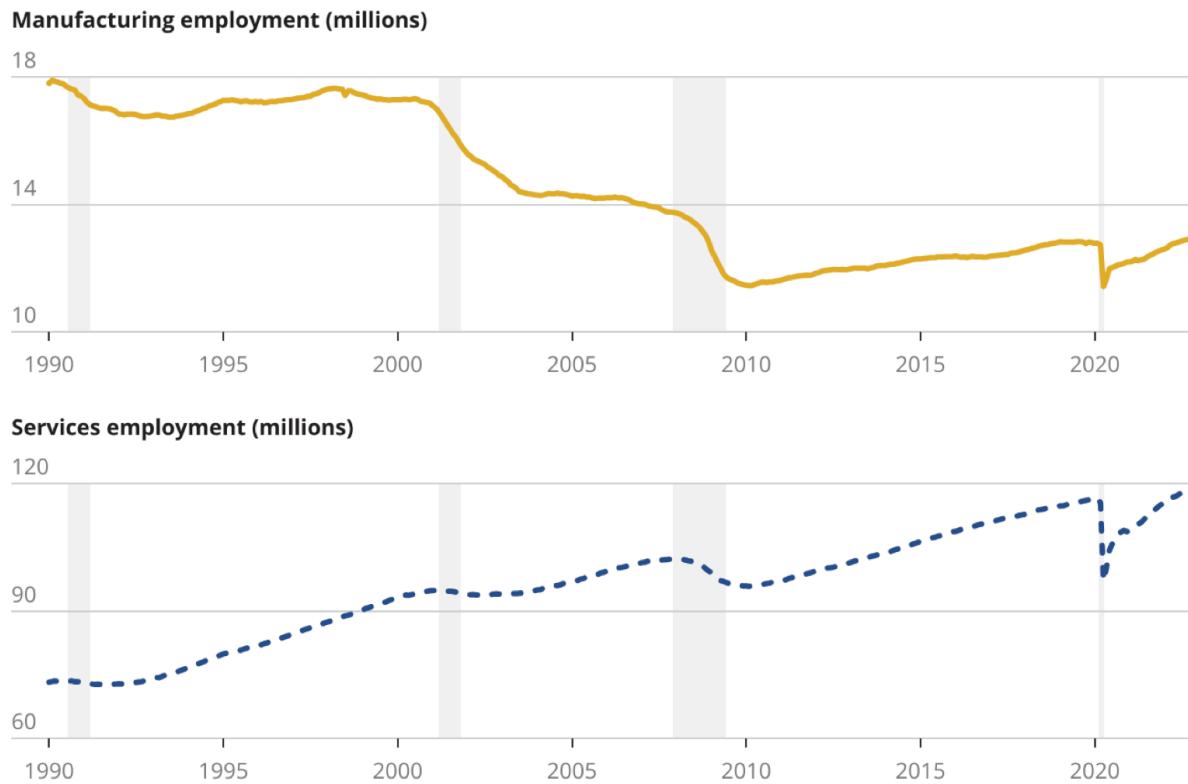
Large rise in Chinese
export volume

Autor (2021)

Evidence: China Shock

Figure 2: Employment shifts from manufacturing to services

Manufacturing and services employment levels, 1990–2022



Manufacturing jobs decline rapidly after 2000.

“**China shock**”

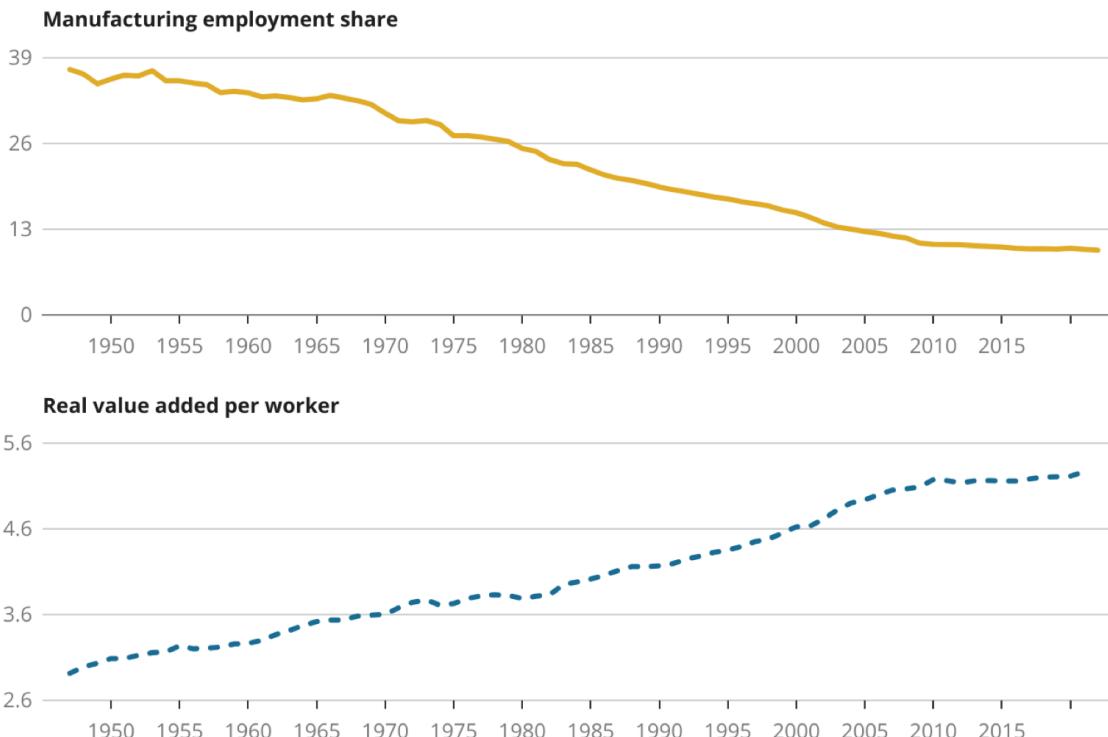
China joins the World
Trade Organization
(WTO)

Source: Handley (2024)

Manufacturing Share in Employment

Figure 1: U.S. manufacturing employment shares fall as productivity rises, 1947–2022

U.S. employment share of manufacturing and real value added per worker



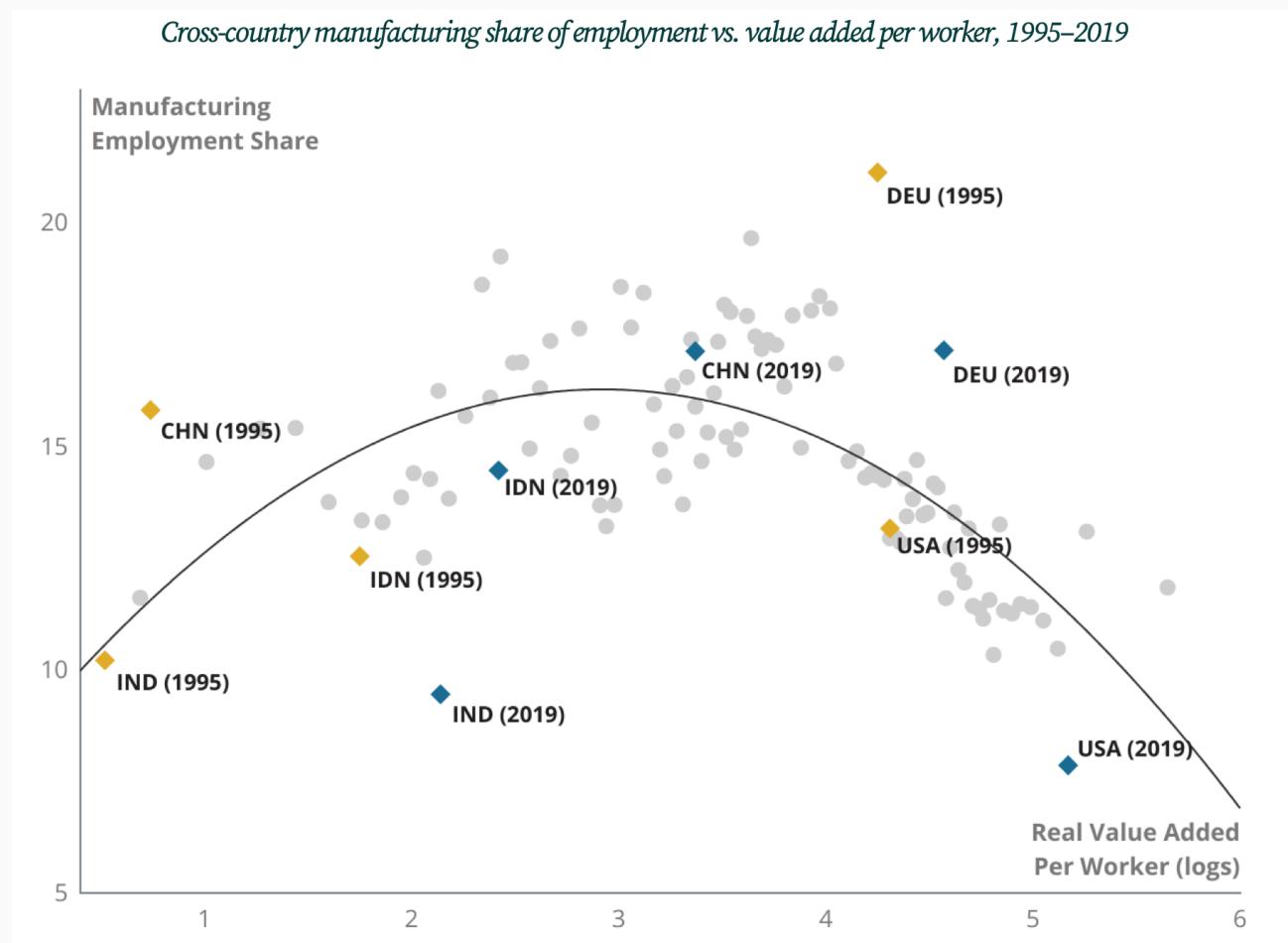
Manufacturing employment

- has been declining for a **long time**.
- since long before trade with China opened up

Similar pattern in **all developed countries**
(including those with trade surpluses)

Source: Handley (2024)

Manufacturing Share and Development

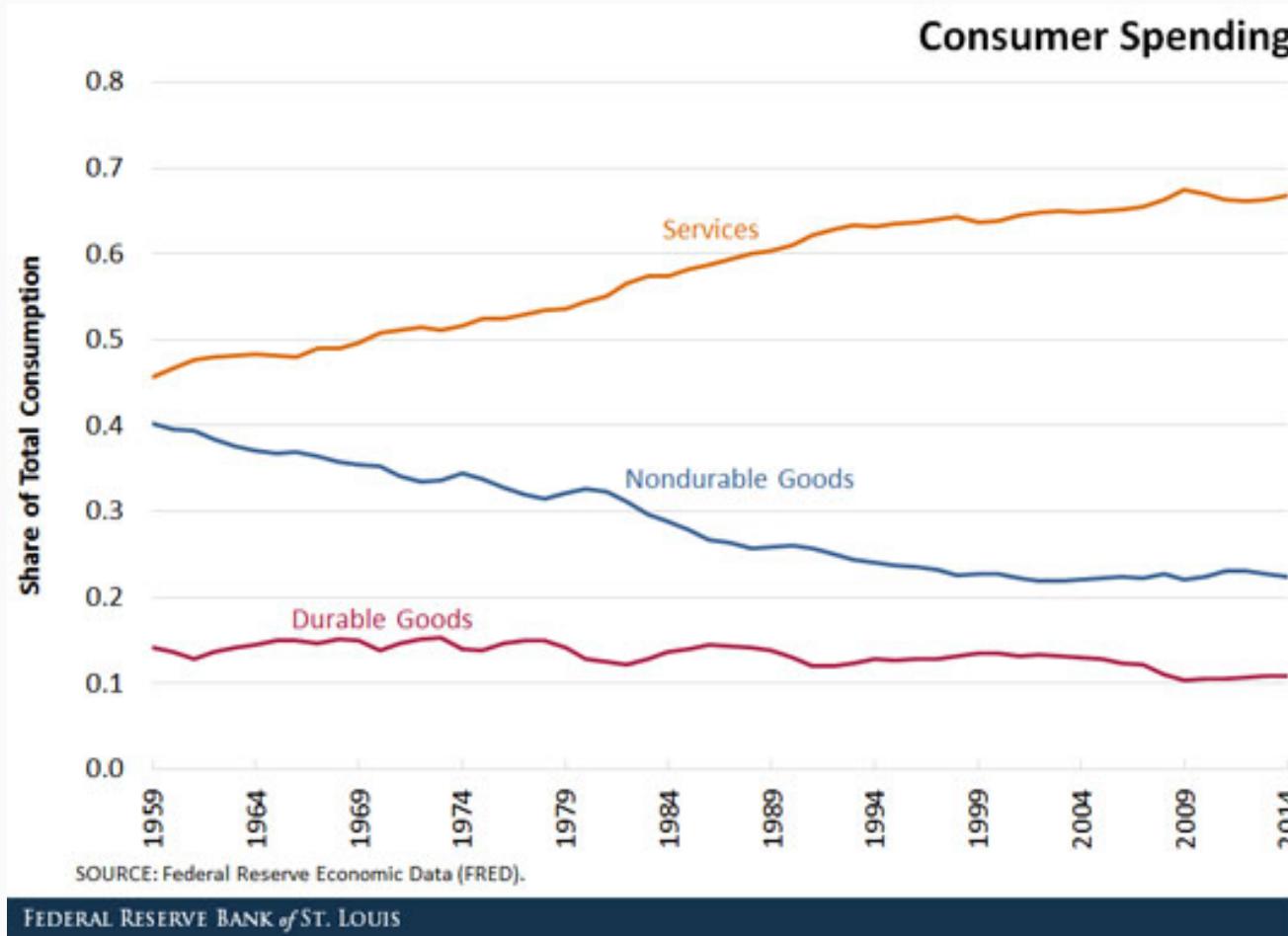


Manufacturing employment first rises and then falls with economic development.

What might be the reason?

Source: Handley (2024)

Declining Consumption Share



Consumption

- is moving into services, out of manufacturing.
- In all developed countries.

Income and price effects.

Source: St Louis Fed 2015

2.2 What Does Our Model Imply?

In the AS/AD model: Does trade (or a trade deficit) reduce manufacturing employment?

Let's start with the trade deficit ...

Easy answer:

How about shutting down trade?

What Does Our Model Imply?

The U.S. trade deficit reduces U.S. GDP by sending dollars spent by American consumers and businesses to foreign producers, stimulating foreign economies rather than our own.

— Source: CPA 2024

What's wrong with that logic?

Simplest case: only manufacturing is traded.

What is the process in words?

- Cheap imports of textiles => textiles output shrinks => imports rise =>

Tariffs: The Process

Figure 2

Higher tariffs ultimately reduce US exports



Source: Author's illustration.

The mechanism. Illustration from Gagnon 2025

2.3 Can Tariffs Bring Back Manufacturing Jobs?

Thought experiment

Suppose we could simply relocate the production of all imports into the U.S.
No other changes occur.

How many manufacturing jobs would that create?

The share of manufacturing employment in total US employment would increase by just 1.7 percentage points, from 7.9 to 9.7 percent.

— Source: Lawrence 2025

Why so small?

2.4 Some Manufacturing Facts

Here is the simplest back-of-the-envelope calculation.

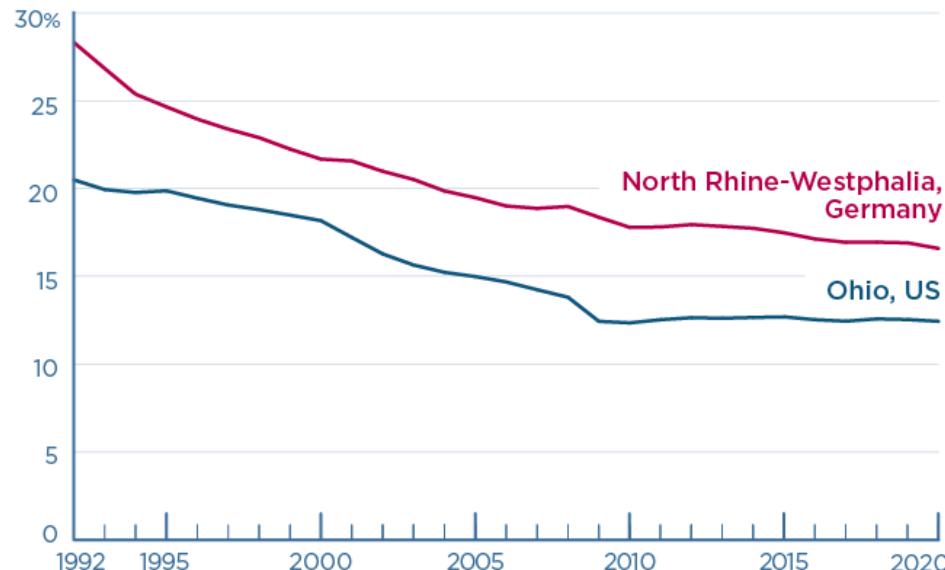
Value added (2024)	\$2.9 trillion
Trade deficit in value added	\$627 billion
Fraction of value added that is imported	21.5%
Fraction of employment	7.9%

Source: [Lawrence 2025](#)

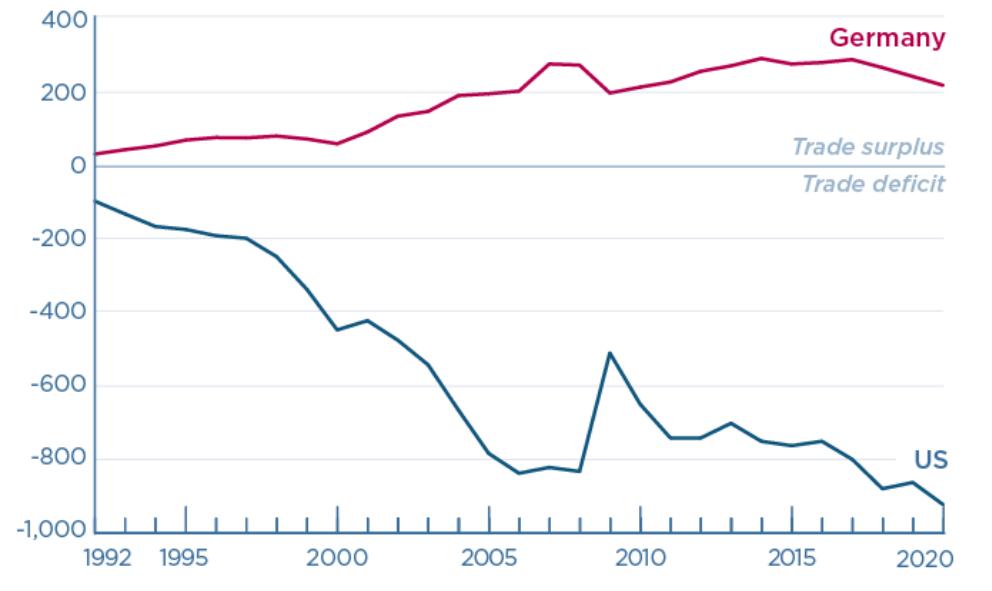
So, if we increase employment by 17%, it rises from 7.9% to 9.7%

2.5 Example: Germany

Manufacturing employment as a share of total employment



Annual goods trade balance, billions USD



Source: Posen 2021

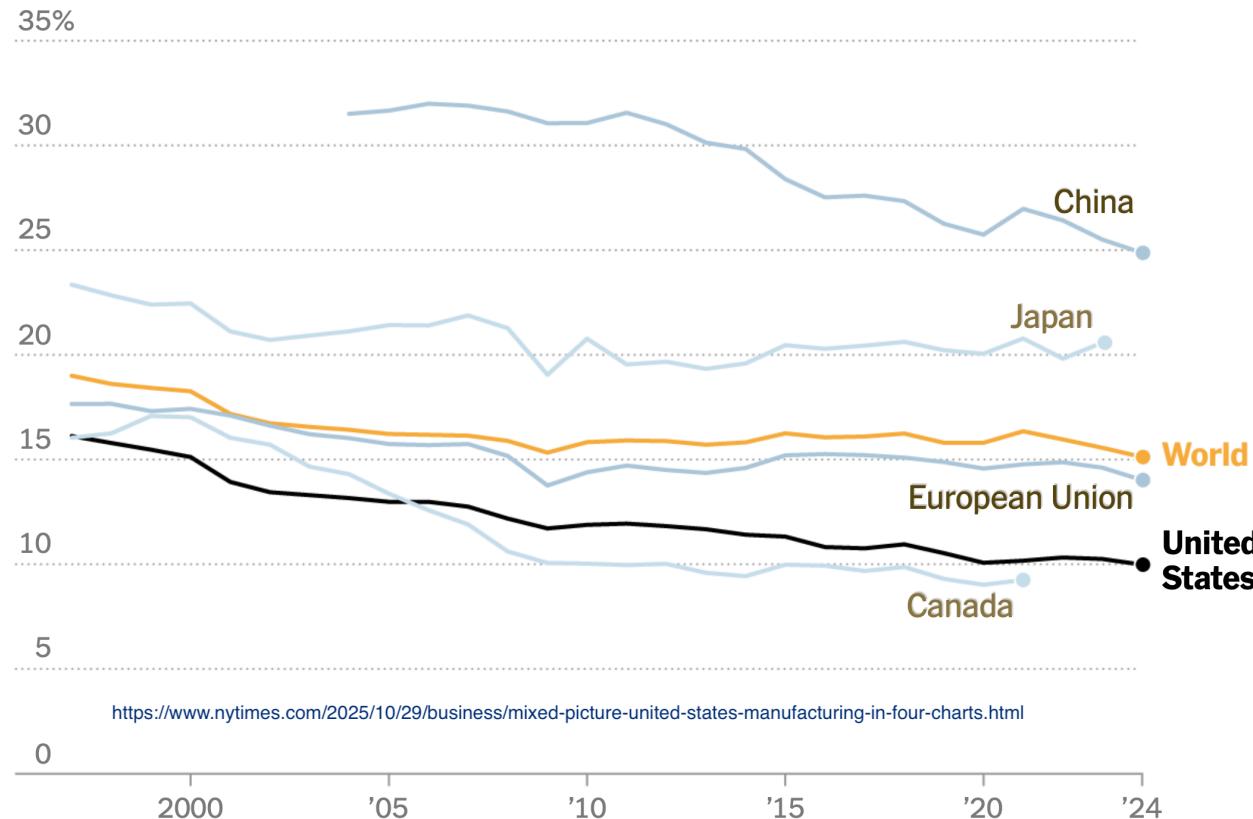
2.5 Example: Germany

The point:

Manufacturing employment shrinks, even for countries with trade surpluses.

2.6 Manufacturing jobs around the world

Manufacturing: the share of the manufacturing industry's contribution to each economy.



Manufacturing does not account for much of output - even in China.

Employment shares are even lower.

Manufacturing jobs are not coming back.

Source: New York Times 2025

2.7 Summary

Trade (with China) cost some manufacturing jobs after year 2000.

But the long-term trend decline in manufacturing is much larger

and has structural reasons

(composition of demand shifts towards services).

Implication:

The decline in manufacturing is not reversible.

Background reference: [Conversable Economist](#)

3 The China Shock: Regional Effects of Trade Shocks

3.1 Expected outcomes

China joins the WTO in 2001.

Import-competing manufacturing industries contract

- comparative advantage

Workers move into other sectors

or

Workers move into other places

=> **Costs of the shock are dispersed**

3.2 Actual outcomes

Displaced workers experience permanent wage loss.

Few workers move to other commuting zones.

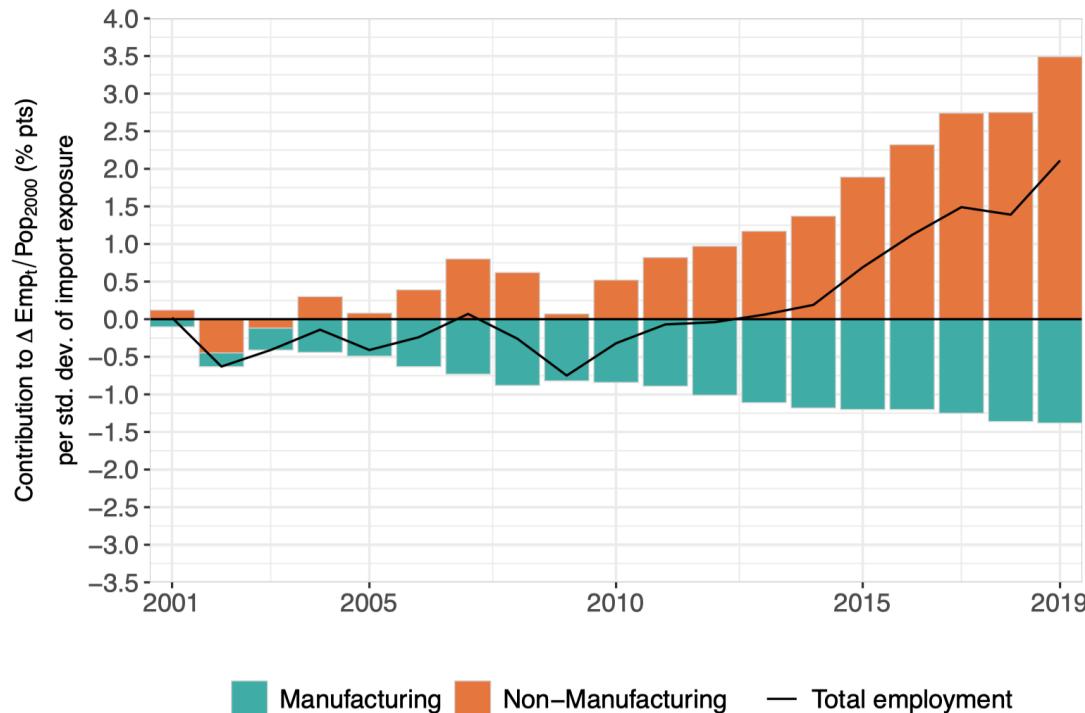
Non-employment rates permanently rise in places with import-competing industries

Surprise: Workers are **far less mobile** than expected.

=> **Costs of the shock are not dispersed**

3.3 Places Recover

A. Total Employment

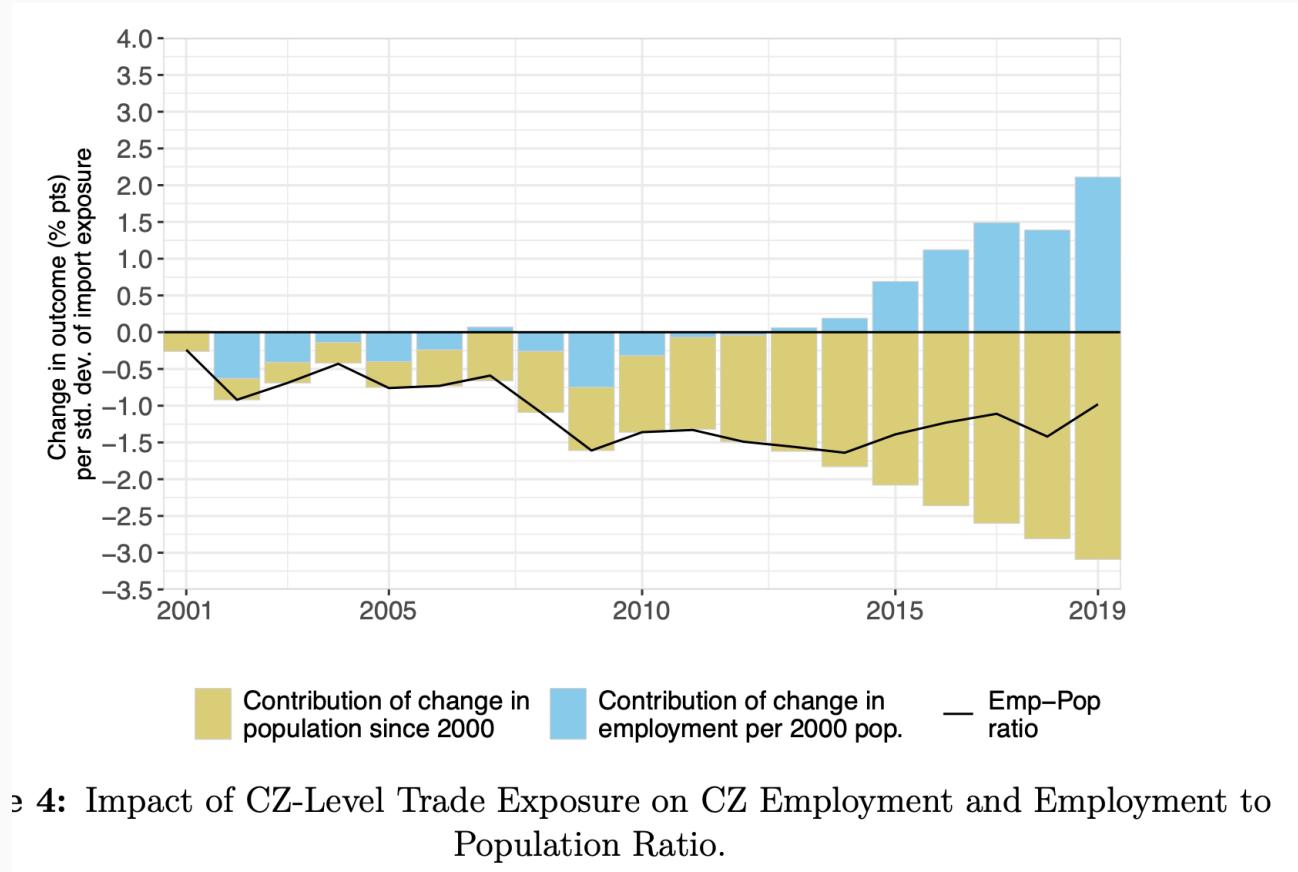


The figure shows how a 1 std deviation increase in exposure to Chinese imports affects employment over time.

Employment **rises**.

Source: [Autor et al. 2025](#)

3.4 People do not recover



Employment rises
but
employment / population
declines.

Source: [Autor et al. 2025](#)

→ 4: Impact of CZ-Level Trade Exposure on CZ Employment and Employment to Population Ratio.

3.5 Summary

Expected adjustment after a trade shock:

1. Workers move out of the area.
2. Workers switch out of manufacturing.

Neither adjustment is important in the data.

What is actually happening:

1. Fewer people move out of the area.
2. More people move in.
3. Existing workers are paid less
and often stay **non-employed** for long times.

3.6 Why This is Important

The costs of trade shocks are not dispersed.

- Incumbent workers never recover.

New jobs are created in affected areas.

- But incumbents do not benefit.

This is an important reason for the current opposition to trade.

How could “good jobs” be brought back to affected areas?

4 Summary

Trade has important **benefits**.

- Benefits are **dispersed**.
- Lower product prices.

Trade costs are highly **localized**.

- Incumbent workers never recover.

Creating **new jobs** in affected areas does not seem to benefit incumbent workers much.

Manufacturing jobs are not coming back.

Unresolved: How to restore prosperity in affected areas?