

Introduction and Trade Facts

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International Trade II, Chapter 1

Today's lecture

I - Course details

II - Trade facts

III - Trade wars (if we have time)

Course Details: Preamble

- Feedback is greatly appreciated.
- Feel free to ask questions and slow me down when needed.
- Previews and reviews are important for understanding.
- Be prepared for the expectations of graduate-level studies.

Course Details: Organization

- **Website**
 - <https://moodle.graduateinstitute.ch/course>
- **Class Materials**
 - Reference papers or book chapters (see syllabus)
 - Papers designated for presentation (see syllabus)
- **Grading**
 - Class participation (1/2), paper presentation (1/2)
 - Applied work (1/2)
- **Office Hours**
 - Wednesdays 14:00-16:00 (during course weeks)

Course Details: Objectives

- To understand basic trade facts and globalization processes
- To discuss the empirical relevance of major trade theories
- To present the empirical tools used to test international trade theories

Pre-requisites: Intermediate Microeconomics (EI037 Microeconomics), Intermediate Econometrics (e.g., W.H. Greene, Econometric Analysis)

Course Details: Outline

Preliminary and Subject to Changes

- Week 1 Introduction and Trade Facts
- Week 2 Trade War Facts + Technology and Trade (Ricardian)!
- Week 3 Technology and Trade + Papers for Presentation (Ricardian)*
- Week 4 Factor Endowments and Trade (HO)
- Week 5 Trade under Imperfect Competition (Krugman)
- Week 6 Papers for Presentation (HO+Krugman)*
- Week 7 Economic Geography
- Week 8 Gravity Equations
- Week 9 Papers for Presentation (Economic Geography + Gravity Equations)*
- Week 10 Trade with Heterogeneous Firms
- Week 11 Trade Policy
- Week 12 Trade Organizations

Course Details: Topics

Questions We Will Address

- Why do countries trade with each other?
- Why do they trade certain products rather than others?
- Who wins and loses from international trade? (i.e., the micro impacts of trade)
- How does trade affect national economies? (i.e., the macro impacts of trade)
- How does trade influence the spatial distribution of economic activities?
- Why do only certain firms participate in international trade?
- What are the determinants and effects of trade policy?

Course Details: Topics

Questions We Will Not Cover

- Trade and Industrial Organization (IO): Why and how are production processes fragmented across countries? What influences a firm's organizational choices?
- Trade and Growth: How do economic growth and innovation interact with international trade?
- Trade and Public Economics: How should trade policy be designed in the presence of other policy instruments or goals beyond efficiency?
- Trade and Migration: How does trade affect migration, and how do regional flows of goods and people interact?
- Trade and Development: How does trade impact poverty, technology adoption, conflict, agricultural production, etc., in developing countries?
- More... (trade institutions, environmental consequences, etc.)

Trade Facts

Historical Perspective

Two Waves of Globalization

1. 1870-1914: The “Golden Age” of Trade

- Decline in transportation costs: steam revolution
- Increasing returns to scale in production
- Industrialization in the North, de-industrialization in the South
- Long-run capital flows
- Disrupted by WWI and protectionist measures lasting from the Great Depression until the end of WWII

2. 1960-?: The Second “Golden Age” of Trade?

- Decline in transportation and communication costs
- From the 1980s, financial liberalization and unilateral trade liberalization among developing countries
- Industrialization in the South, de-industrialization in the North
- North-North intra-industry trade
- Regional trade and the rise of global value chains (GVCs)

Historical Perspective

Global Trade Flow as % of GDP

Globalization over 5 centuries (1500-2011)

Shown is the sum of world exports and imports as a share of world GDP (%)
The individual series are labeled with the source of the data

Our World
in Data



Data sources: Klasing and Milionis (2014), Estevadeordal, Frantz and Taylor (2003) and the Penn World Tables Version 8.1
The interactive data visualization is available at OurWorldInData.org. There you find the raw data and more visualizations on this topic.

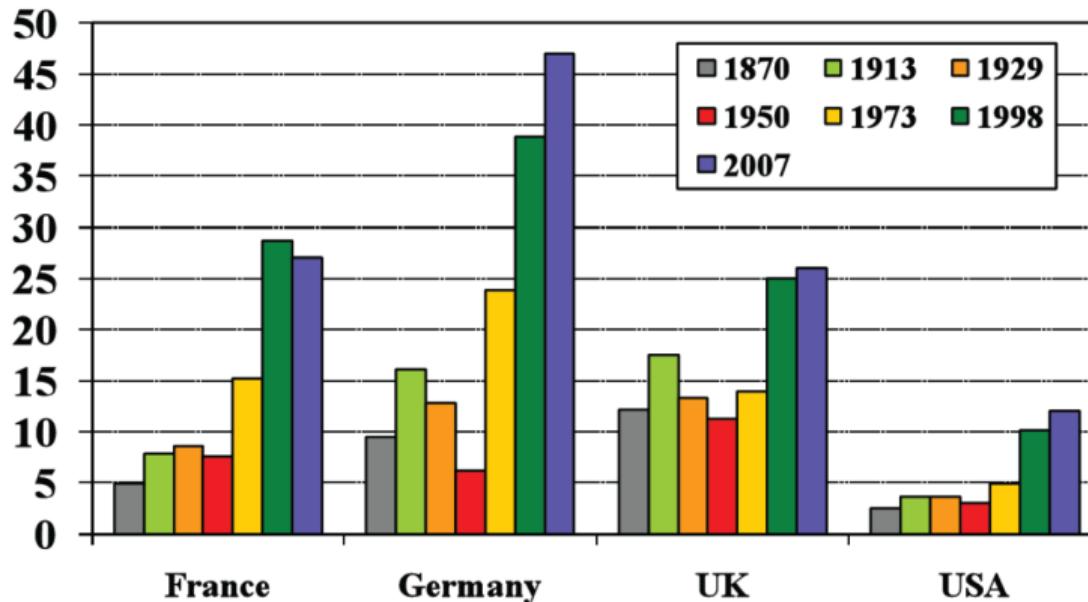
Licensed under CC-BY-SA by the author Max Roser.

Image: Our World in Data

First Wave

Developed Countries Dominated World Trade

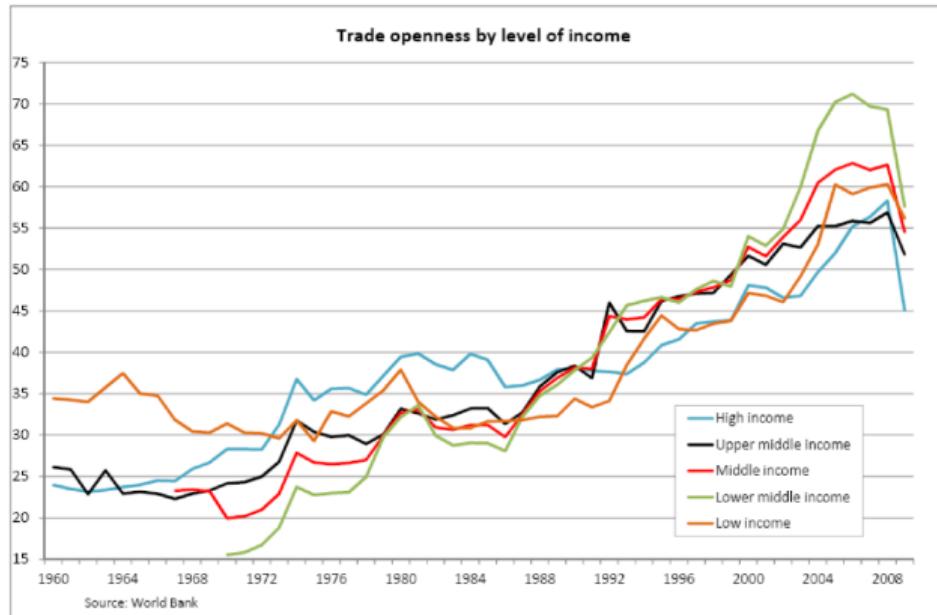
Exports of goods (% GDP)



Source : Baldwin & Martin (1999), CEPII-CHELEM database.

Second Wave

Trade Has Increased for All Country Groups



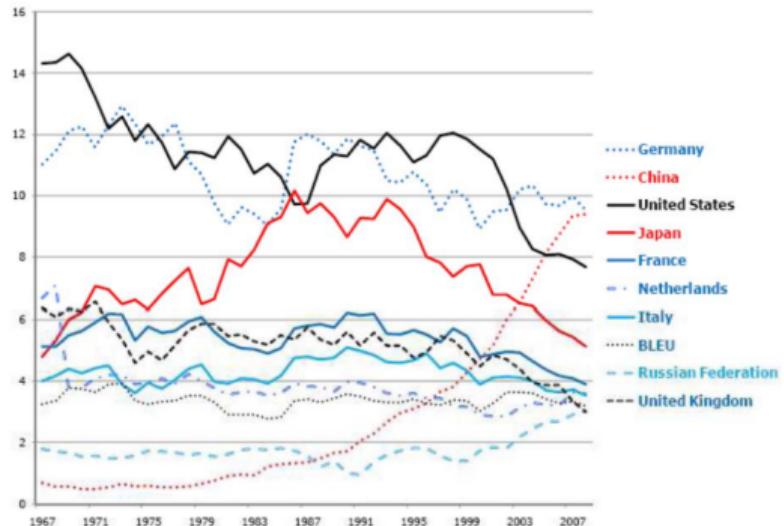
Source: World Bank

Country-Specific Trends

Developed Countries Still Dominate World Trade, but Patterns Change Rapidly (China!)

Ten leading merchandises' exporters 1967 – 2008

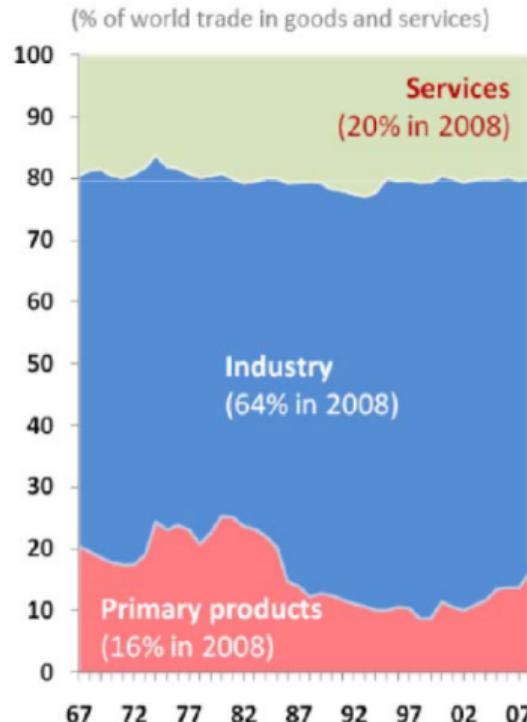
(percent of world merchandise trade)



What Trade?

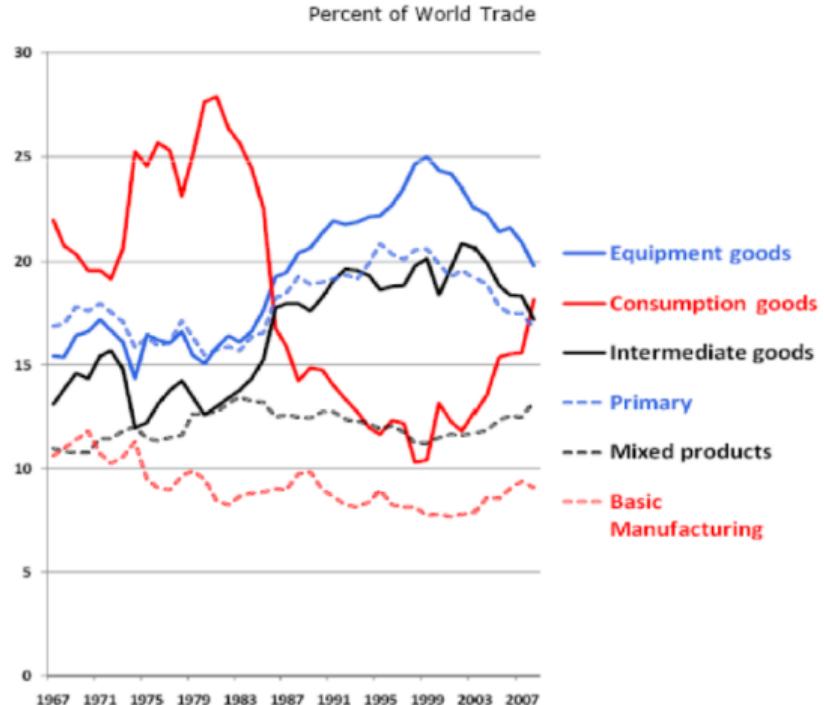
Most Trade is in Manufacturing

International Trade in Services compared to Trade In Goods: relative shares, 1967-2008



What Trade?

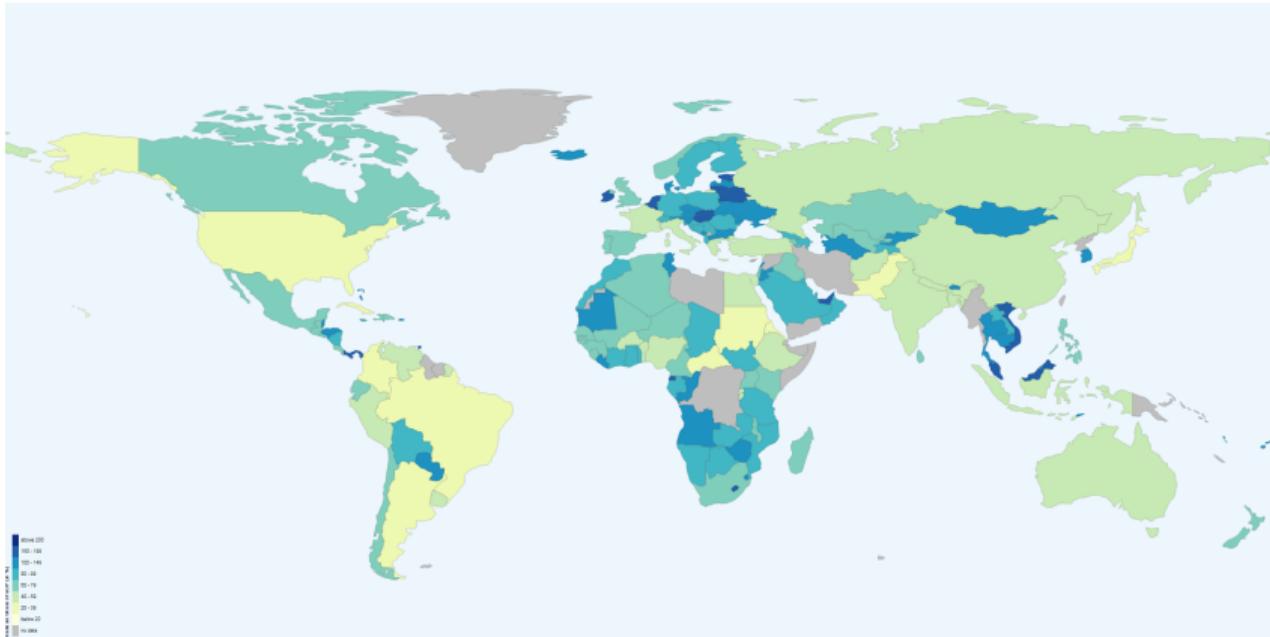
Production Has Become Increasingly Fragmented until Recently



Variation in Trade Openness

Developing and Small Countries are More Open to Trade

Trade (Exports and Imports of Goods) as a Share of GDP



Source: [Our World in Data](#)

Who Trades with Whom?

More Trade Between Similar Countries, Within the Same Region

Figure 1 –
Map of World Trade in Goods, 2000 (US billion dollars)



Source: Feenstra and Taylor, 2008, Chapter 1.

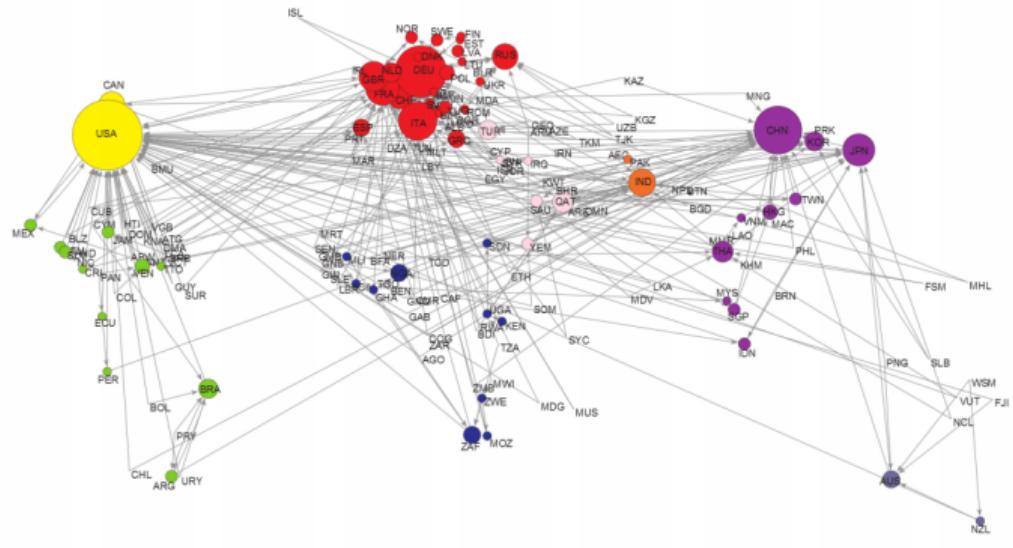
Note: The thickness of links is proportional to the volume of trade. Intra-regional trade flows are depicted by loops.

Who Trades with Whom?

Some Countries Trade with Many Others, Some with Only a Few

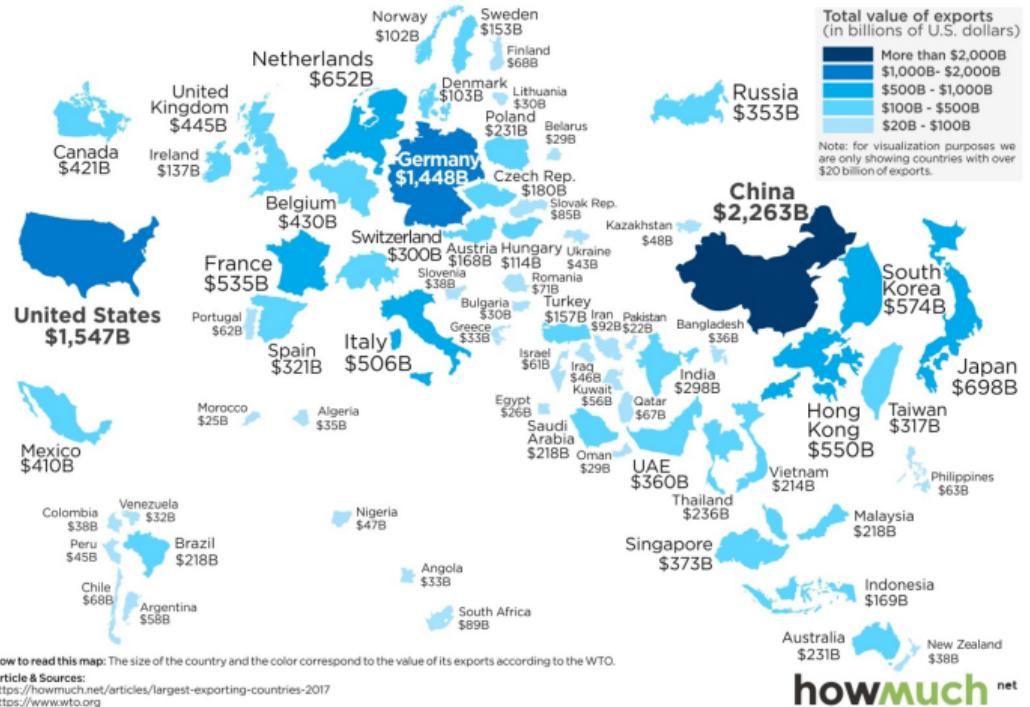
Figure 2 –

Map of World Trade in Goods as a Geographical Network (major two export partners,) 2007.



Source: [CEPII](#)

The Big Players Are...



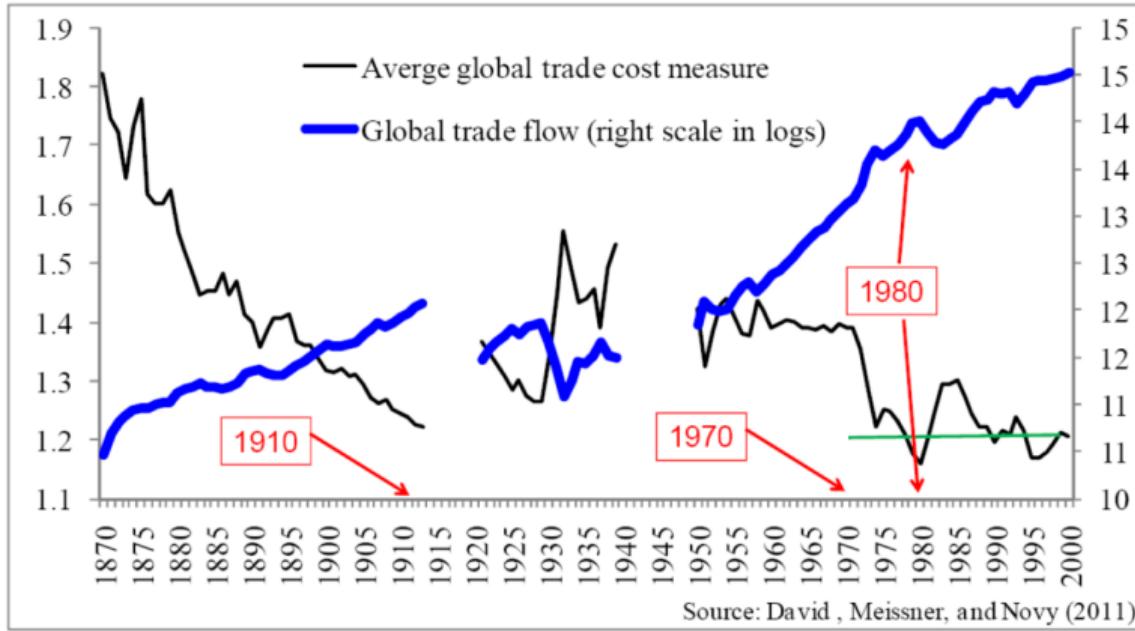
Source: Visual Capitalist

Explaining the Growth in World Trade

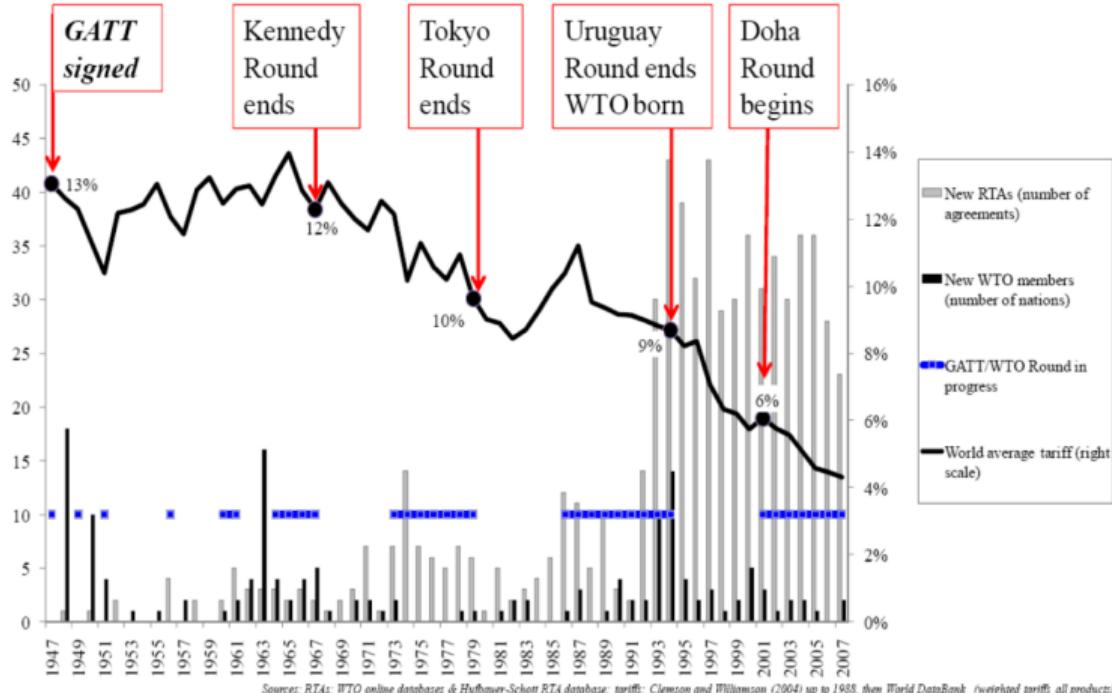
- 1. Decrease in trade costs (e.g., transportation and tariffs)**
2. Fragmentation of production

Trade Costs: Transportation

Estimated Transport costs, 1870 - 2000

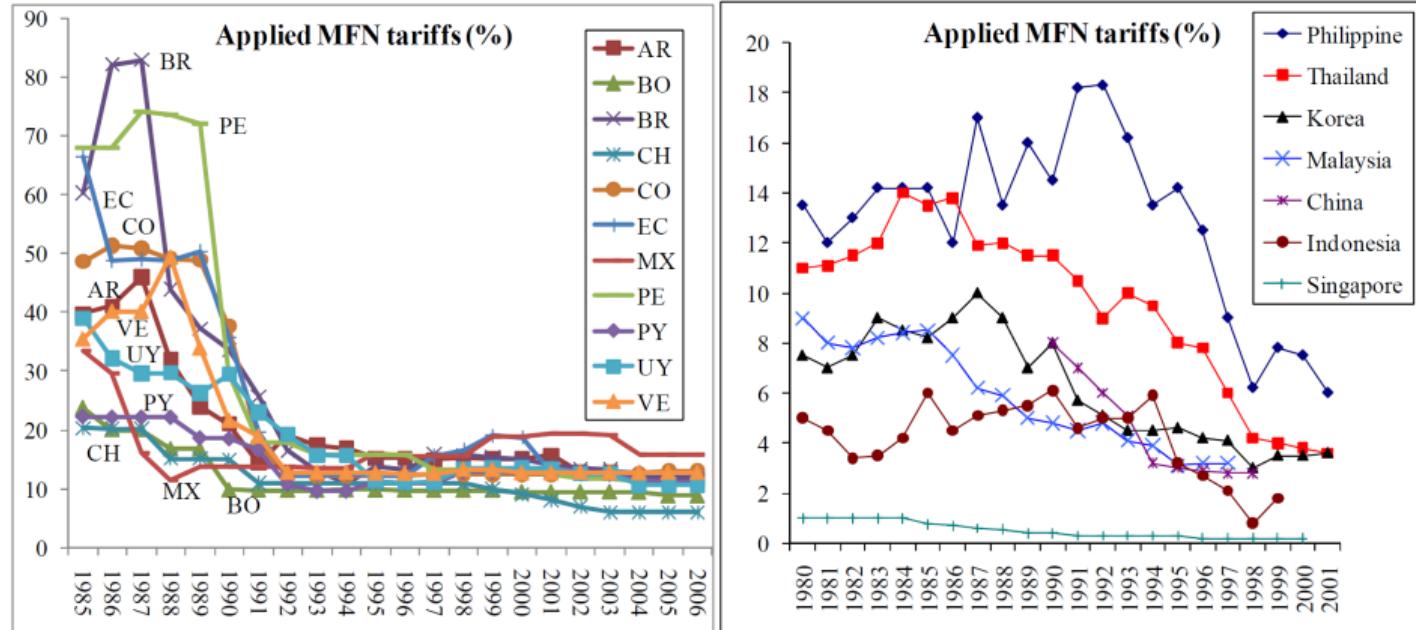


Trade Costs: Tariffs



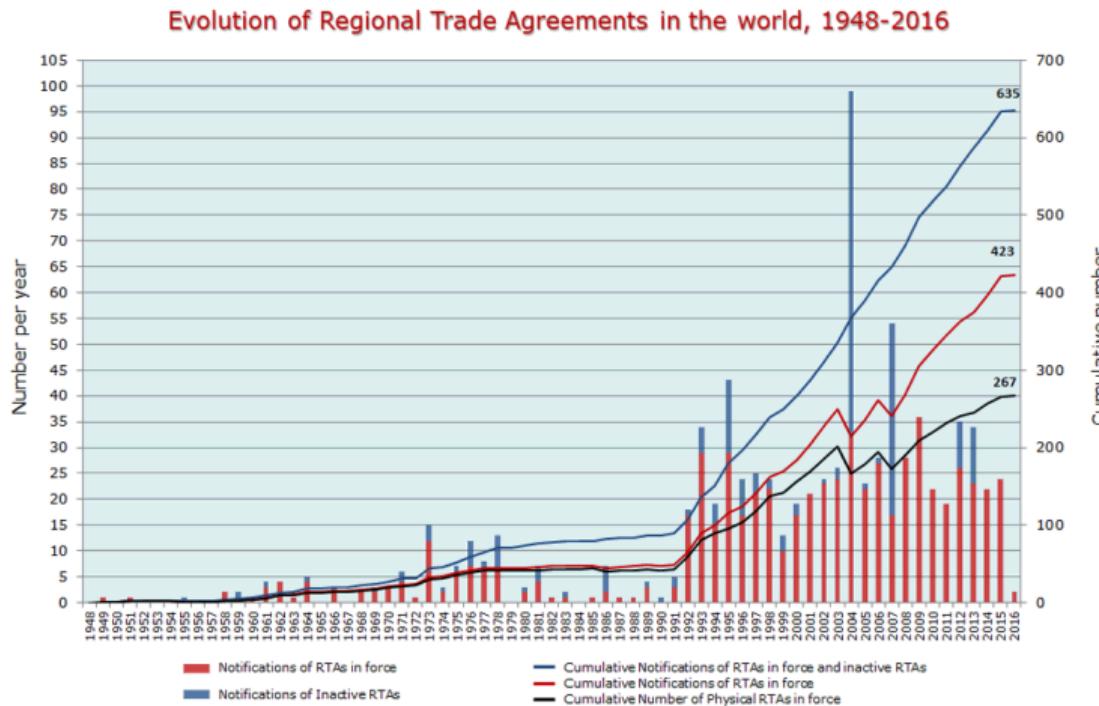
Trade Costs: Unilateral Trade Liberalization

Unilateral Tariff Cuts in Latin America and East Asia



Source: [Baldwin \(2010\)](#)

Trade Costs: Prevalence of RTAs



Source: WTO Secretariat

Trade Costs: A Side Fact on Tariffs

Developing Countries Tend to Have Higher Tariffs

Table 1: Import-weighted average applied tariffs (inc. preferences) by development status (%)

Importer: Developed	Developing	Least developed
Exporter: Developed	2.1	9.2
Developing	3.9	7.2
Least developed	3.1	7.2
Total	2.9	8.1

Source: Computed from UNCTAD TRAINS database.

Discussion: Is it beneficial for developing countries to have high tariffs?

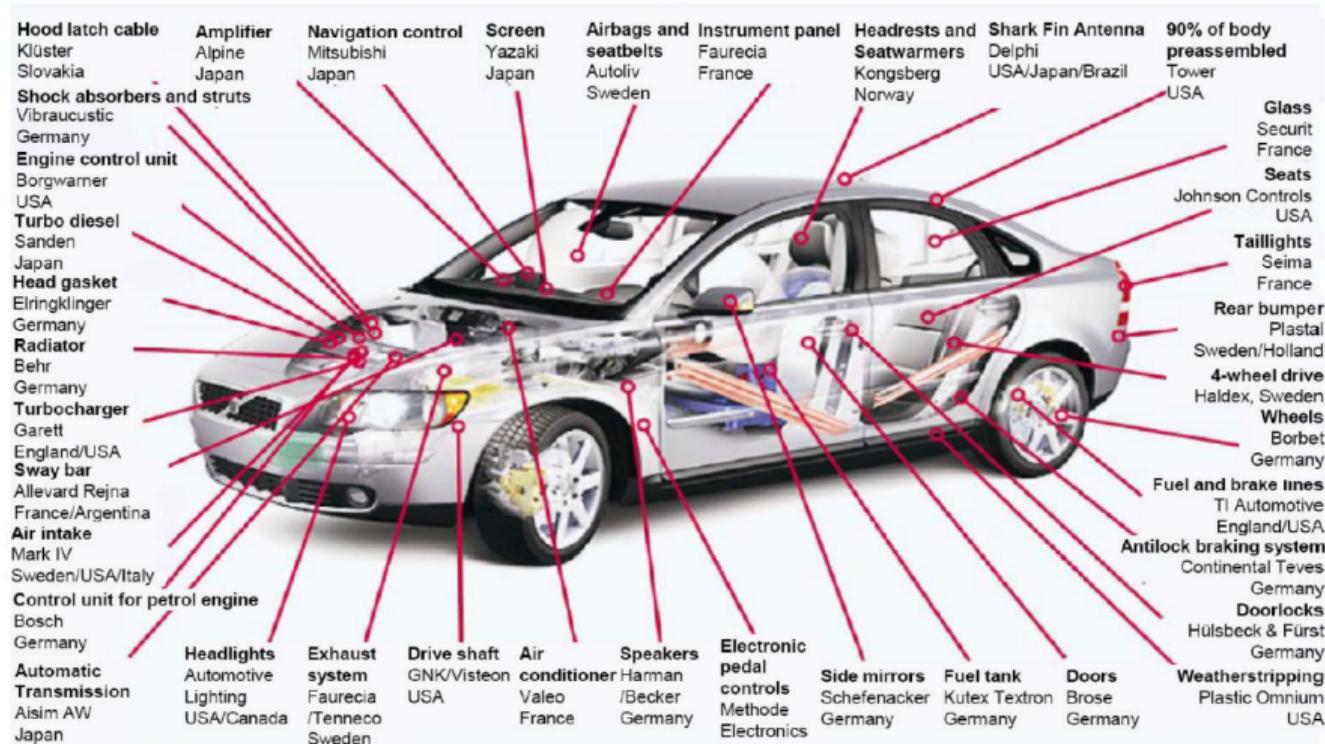
Explaining the Growth in World Trade?

1. Decrease in trade costs (transportation costs and tariffs)
2. **Fragmentation of production**
 - Partly generated by fall in trade costs: outsourcing
 - Can explain why trade increases faster than GDP

Fragmentation of Production

Figure 2: A complex global supply chain example: the Volvo S40

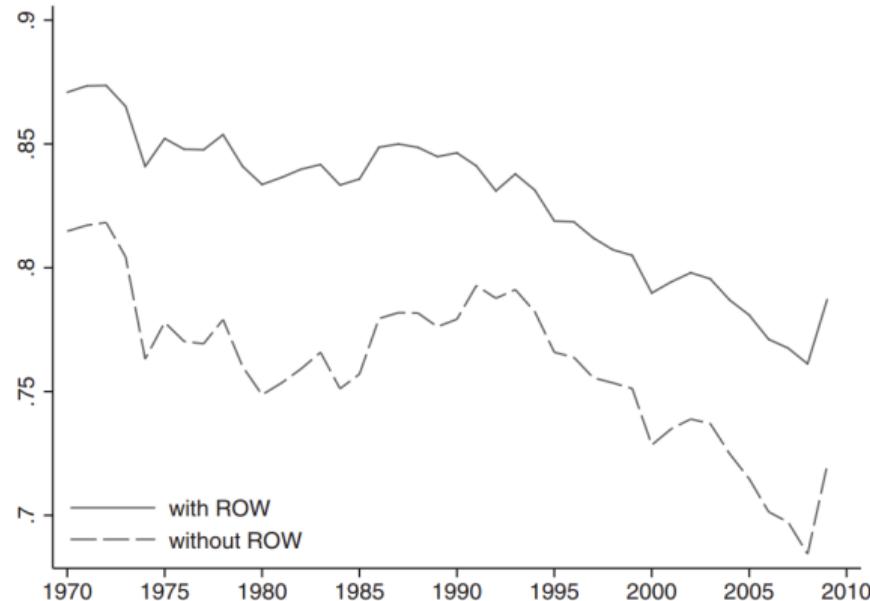
Source: Presentation by Ericsson Chairman Micheal Treschow at the conference.



Fragmentation of Production

Decline of Value Added by Gross Exports

FIGURE 1.—RATIO OF VALUE-ADDED TO GROSS EXPORTS FOR THE WORLD



The world value-added to export ratio is $VAX_t \equiv \left(\sum_{i \neq j} \sum_s va_{ijt}(s) \right) / \left(\sum_{i \neq j} \sum_s x_{ijt}(s) \right)$. The solid line includes shipments to and from the rest of the world, and the dashed line excludes them.

Source: Johnson and Noguera (2017)

Recap of Broad Trade Patterns

Static Facts:

- Leading exporters/importers are Germany, the US, China, and Japan (though not as a % of GDP)
- Manufacturing products are the most traded
- There are sizable differences in:
 - What countries export/import
 - Their export-to-GDP shares (overall trade openness)
- About half of world trade occurs among developed countries. Only 12% is among developing countries
- Countries tend to trade with close neighbors (geography matters). In addition to distance, other frictions matter

Recap of Broad Trade Patterns

Dynamic Facts:

- Two waves of globalization
- Trade costs have been declining, but not enough to fully explain the growth of trade
- Rapid growth of trade in developing countries and the rise of production fragmentation (might be reversing now)
- Unilateral liberalization since around 1985 and the explosion of regional trade agreements since 1990

A Side: Multinational Enterprises (MNEs) in Shaping Trade Patterns

While not the focus of this class, MNEs are crucial in shaping international trade.

- A few large MNEs dominate international trade.
- In 2001, the top 1% of U.S. exporters accounted for 81% of U.S. exports (Bernard et al., 2009).
- About 90% of U.S. trade involves MNEs, with nearly half of the imports transacted within their firms (Bernard et al., 2009).

Trade Wars

Trump's Trade War Timeline

BATTLE #1: Solar Panel and Washing Machine Industries

- Serious injury to these industries due to Chinese imports (USITC, Section 201).
- Trump approves global safeguard measures (tariff, quota) on \$8.5 billion in solar panels and \$1.8 billion in washing machines—an uncommon move historically.
 - Three-year period for washing machines.
 - Four-year period for solar cells and modules.
- China responds with tariffs on U.S. sorghum; WTO disputes filed by South Korea and China.

See more on PIIE's website

Trump's Trade War Timeline

BATTLE #2: Steel and Aluminum as National Security Threats (Section 232)

- On March 22, 2018, President Trump imposed a 25% tariff on steel imports into the U.S. from all countries (with temporary carve-outs).
- Impacted trading partners (EU, Turkey, China) imposed retaliatory tariffs. Chinese tariffs covered \$2.4 billion in U.S. exports, while U.S. steel tariffs covered \$2.8 billion in Chinese exports.

See more on PIIE's website

Trump's Trade War Timeline

BATTLE #3: Unfair Trade Practices for Technology and Intellectual Property (Section 301)

- 10% tariffs on \$50 billion worth of Chinese exports.
- Modified Section 301 to allow tariffs on more than \$50 billion worth of exports.
- Added tariffs on an additional \$200 billion worth of goods (approximately half of all goods imported from China to the U.S. in 2017).
- China responded with high retaliatory tariffs.
- Despite negotiation attempts, the U.S. raised the tariff rate to 25%.

See more on PIIE's website

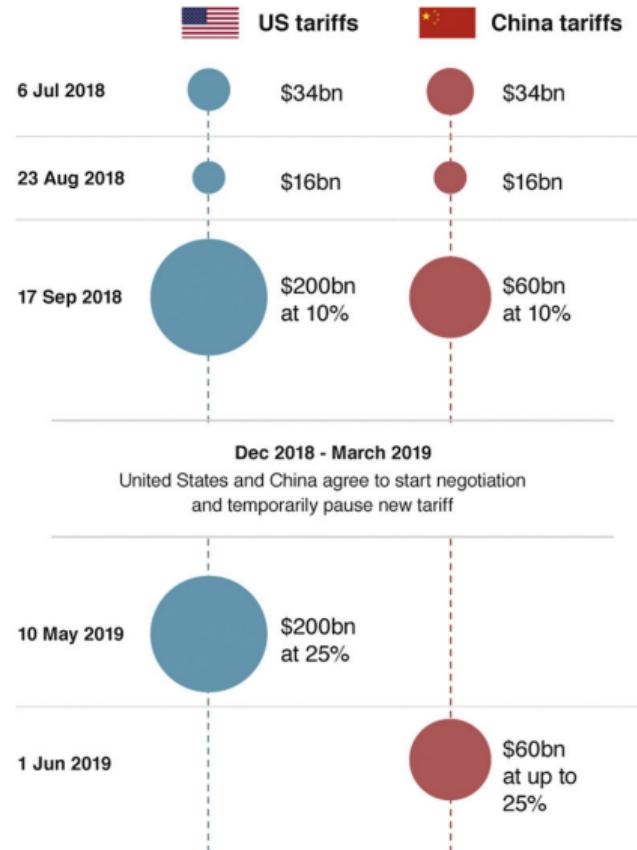
Trump's Trade War Timeline

BATTLE #4: Autos as National Security Threat (Section 232)

- Trump postpones a decision on auto tariffs following a US Department of Commerce report recommending "actions to adjust automotive imports" to protect national security.
- Trump eventually delayed (and never delivered) the auto tariff decision.
- From 2018 to January 2020, both the U.S. and China continued to impose higher and more expansive tariffs, adding, removing, and re-adding covered goods.

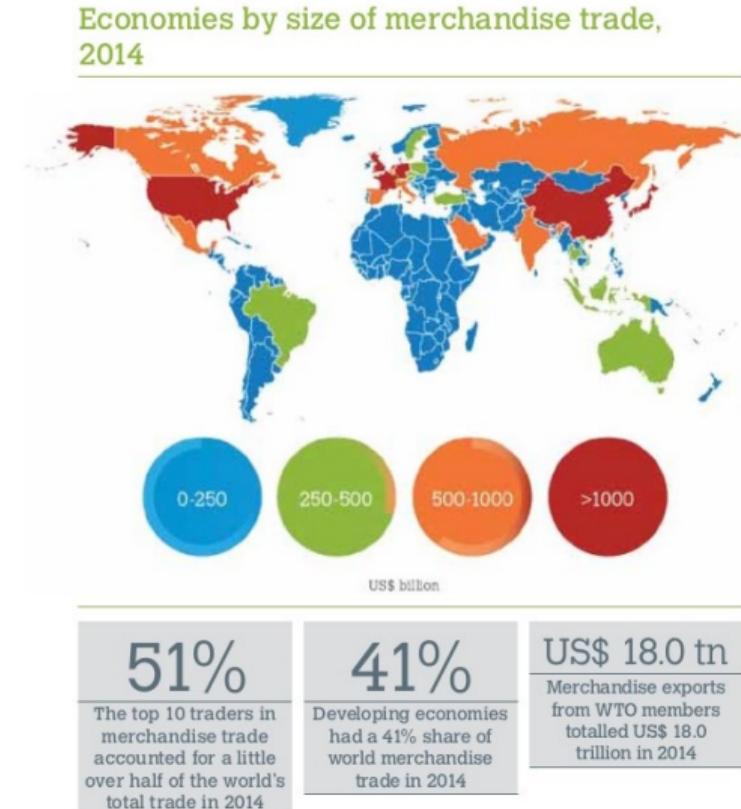
See more on PIIE's website

Protection Escalation



Trade War is “Local”

The Tension and Conflict Are Primarily Between a Handful of Major Manufacturing Economies



Causes of the Trade War: Truth or Illusion

Major complaints

- Unfair trade deals
- Trade imbalance
- Employment, or more precisely, manufacturing jobs
- Intellectual property rights

Fallacy: “US Trade Negotiators Have Been Out-Negotiated”

Wrong

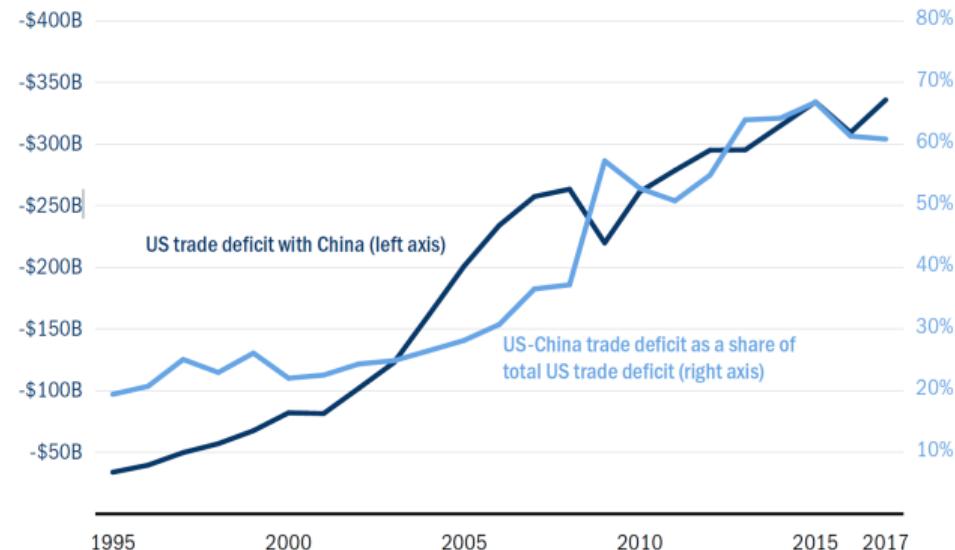
- In most trade negotiations (e.g., TPP, NAFTA, and the Uruguay Round), the US secured many of its objectives as a leader in the international order.
- US demands have driven deeper integration in areas such as labor rights, the environment, investor-state dispute settlement, and intellectual property protection.
- High-tariff trading partners were required to reduce barriers against US goods.
- Trump humorously claimed: “The negotiators for Germany have done a far better job than the negotiators for the US.”
- But Trump is correct on one thing: past trade deals are favorable for corporate Americans, but not necessarily beneficial for American workers.

Trade Imbalance

The US runs a big trade deficit with China, the deficit is also increasing sharply

Figure 1. U.S. trade deficit with China

Absolute and percent of total U.S. trade deficit

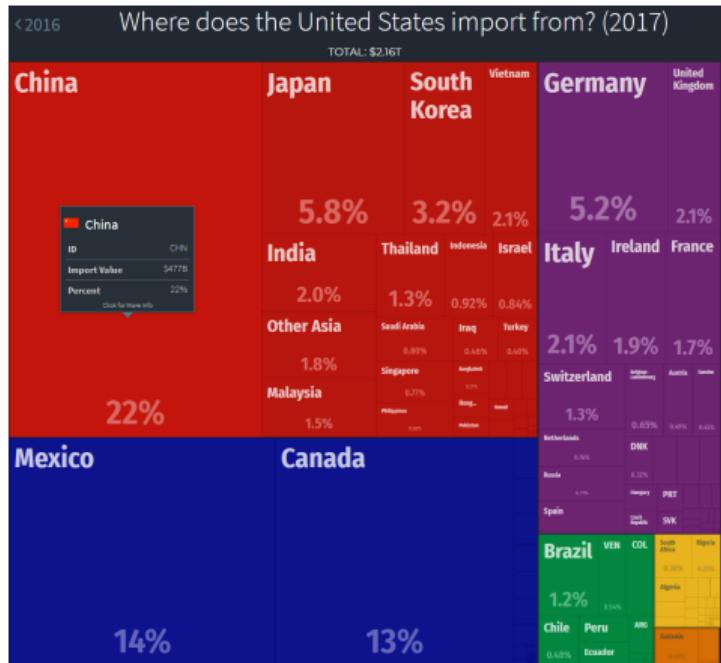


Source: Bureau of Economic Analysis

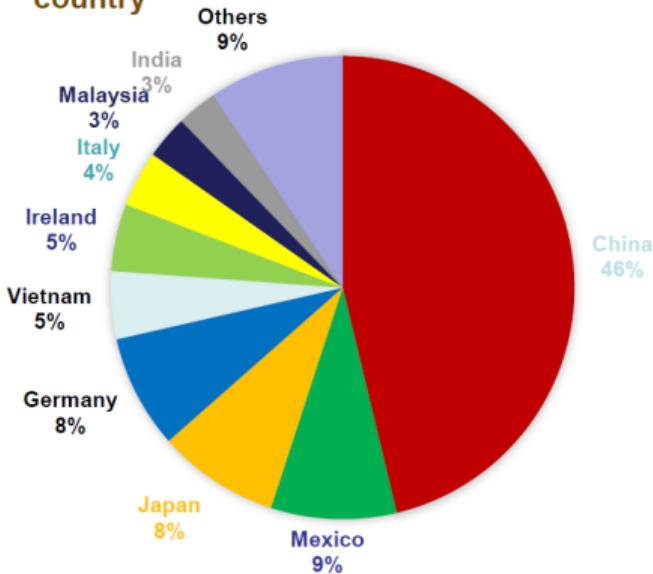
Note: Pre-1999 is for goods only.

Trade Imbalance

But... the same is true with other countries



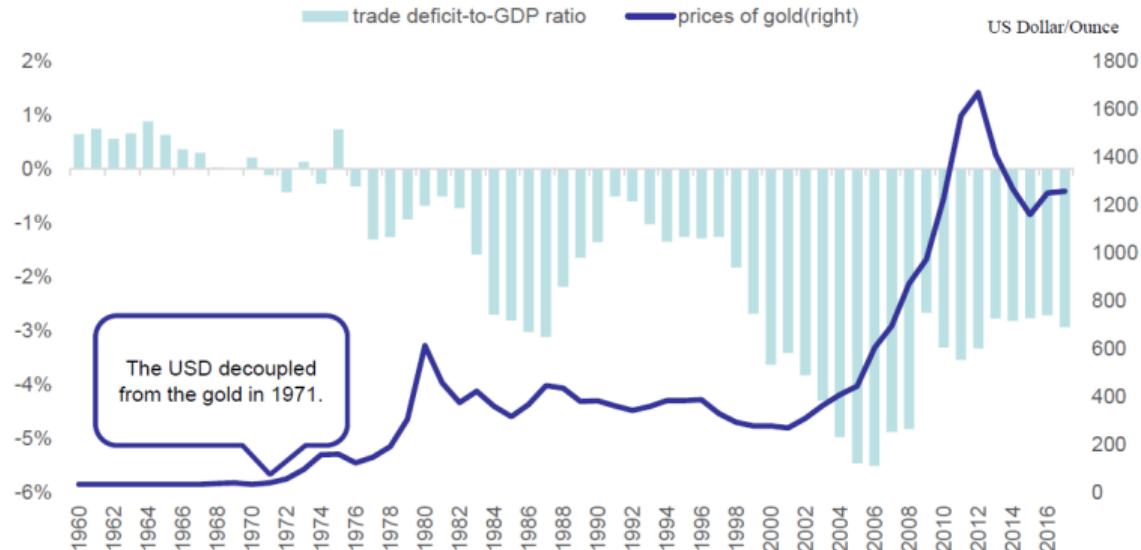
Shares of US trade deficit in goods by country



Trade Imbalance

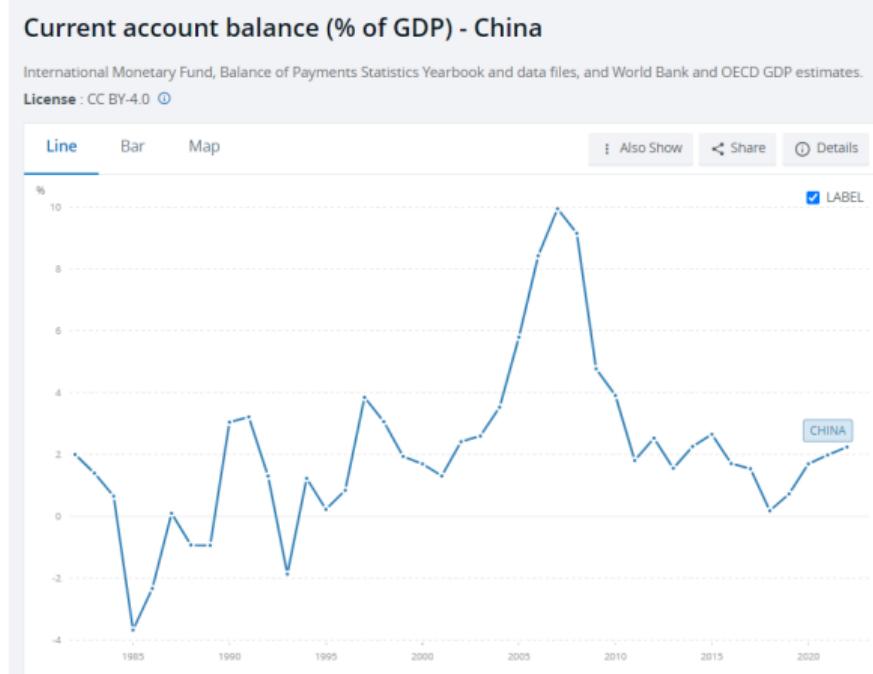
The timing does not coincide either

1. US trade deficit-to-GDP ratio and gold prices



Trade Imbalance

The timing does not coincide either

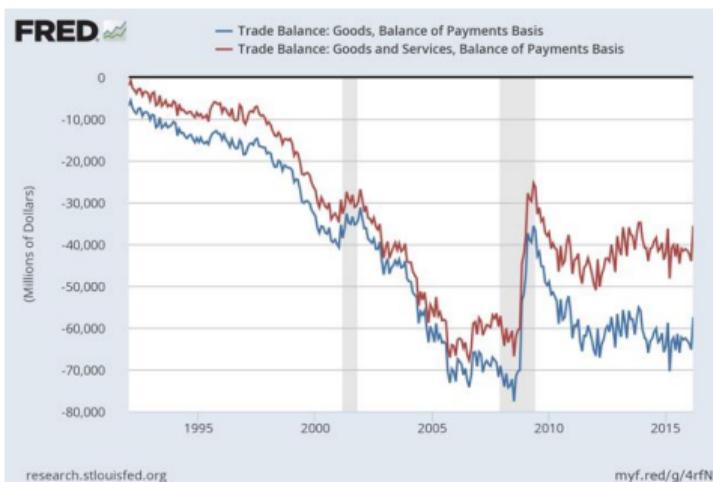
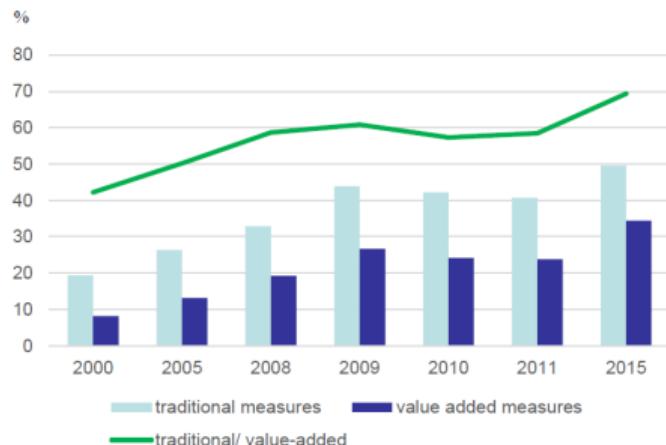


Trade Imbalance

Measurement(s)!

- Value added trade
- Trade in services
- Timing matters: international macro 101 tells us that China should run trade surplus now!

China's share in US trade deficit in goods



Should we even care about *bilateral* trade imbalance?

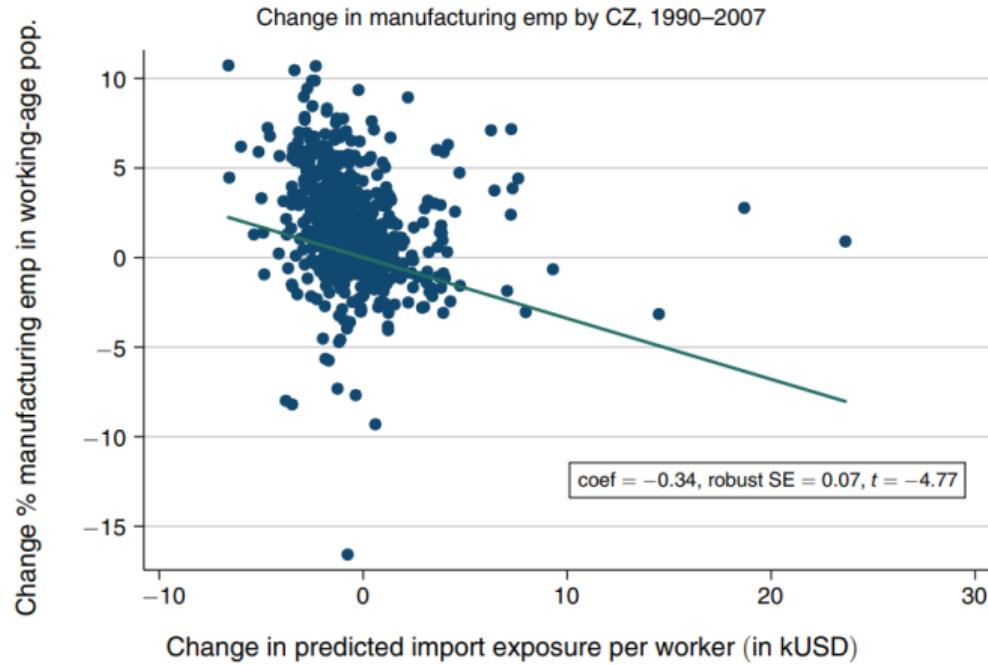
Fallacy: “Trade Deficit Indicates the Absence of Level Playing Field”

Wrong.

- There is no positive correlation between countries' tariff rates and their trade balances (or growth prospects).
 - Caroline Freund, PIIE, May 8, 2017, “Public Comment on Trump Administration Report on Significant Trade Deficits.”
- Trade deficits are macroeconomic phenomena, influenced by national incomes and exchange rates, and determined by national savings and investment.
- The US has run current account deficits since 1982 because national savings (both private and public) have been low.
- China, Germany, Japan, and South Korea run current account surpluses due to high national saving rates, which have strong underlying reasons.

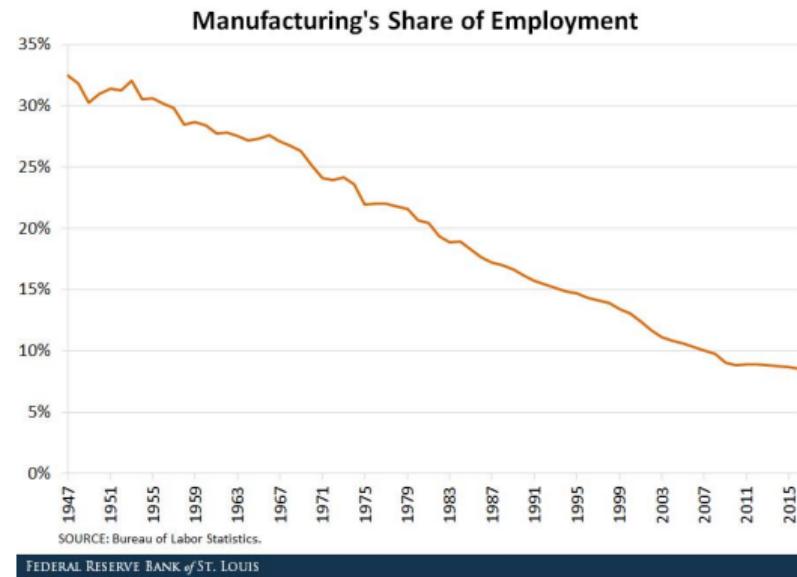
Employment

Change in regional exposure to import is associated with the decline of manufacturing employment...



Employment

But US manufacturing employment share has been declining since World War I....



Source: <https://www.stlouisfed.org/on-the-economy/2017/april/us-manufacturing-really-declining> stlouisfed.org

Employment

Other Facts

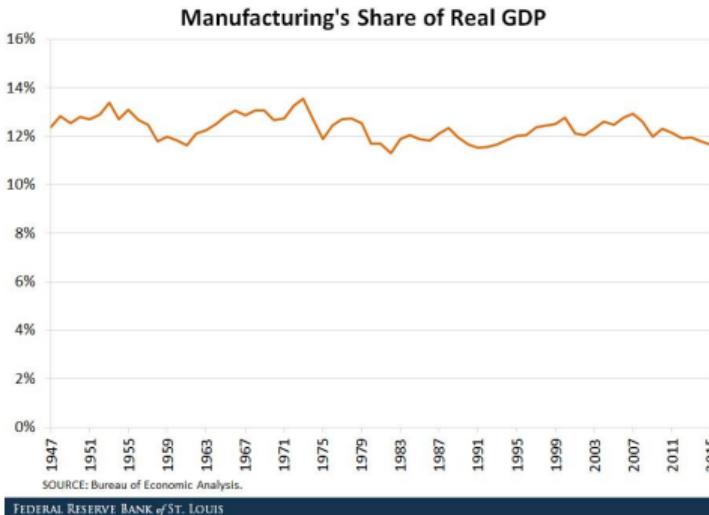
- Manufacturing employment accounted for 16% of total employment in the US in 1990. By 2015, this had decreased to 8.6%.
- Chinese exports are estimated to account for only 10% of the decline in US manufacturing between 1990 and 2007, which translates to a maximum of 0.8% of job losses in the US over the period.
 - What about the service and agriculture jobs created by trading with China?
 - What about the consumer surplus that benefits relatively poorer households?
- Scholars find similar effects of US trade with Vietnam, but not with EU trade with China. This raises the question: Could the cause be on the US side?
 - Automation
 - Servicification
 - ICT revolution and outsourcing

Employment

Is US manufacturing really declining?



FEDERAL RESERVE BANK of ST. LOUIS



FEDERAL RESERVE BANK of ST. LOUIS

Source: stlouisfed.org

Fallacy: “China Steals US Manufacturing Jobs?”

Perhaps wrong, for sure not the full (even the major) story

- If anything, the size is limited
- Corporate America gave manufacturing jobs away because of deeper reasons
- Positive effects of trading with China (and other countries) are overlooked during the policy debate
- Imposing tariffs won't bring back jobs
 - Those jobs will go to Vietnam, Thailand and other developing countries with low labor costs
 - People may lose more jobs, especially in services and agriculture, because of the declined purchases from China

Intellectual Property Rights

A true concern, but

- Part of the “market for technology” deal - average capital return of US MNEs in 2008 was 33%!
- Stricter regulations in technical transfer/trade compared to most developing countries (e.g., water, coverage ratio, the Wassenaar arrangement).
- Evidence? The Special 301 Report is quite vague.
- Unclear if a trade war leads to a better deal than deep trade agreements.

Recap on Trade Wars

- Trade War timeline
- Major complaints
 - Unfair trade deals
 - Trade imbalance
 - Employment, or more precisely, manufacturing jobs
 - Intellectual property rights