



INTRODUCTION TO INTERNATIONAL TRADE

Lecturer: Pierre-Louis Vézina (p.vezina@bham.ac.uk)

This module

- 10 weeks to understand how countries gain from trade
 - Week 1: An overview of world trade
 - Week 2-7: Sources of gains from trade
 - Week 8-10: Trade policy
- Syllabus up on canvas!

Good to know

- **Book:** International Economics, Theory and Policy, Paul Krugman, Maurice Obstfeld, Marc J. Melitz. , 9th Edition, Pearson.
- E-copy available from the library
- **Slides will be uploaded on canvas before the lecture**

Good to know

- **Lectures:**
 - Monday 5-6pm, , Poynting Building LT (S02)
 - Friday 11am-12pm, (Education Building Vaughn Jeffries LT)
- **Office hours**
 - Monday 2-4pm
 - Friday 1.30-2.30pm,

Good to know

- **TA for classes:** Liyun Zhang
- **Classes:**
 - three for each student
 - sign up via Canvas

Good to know

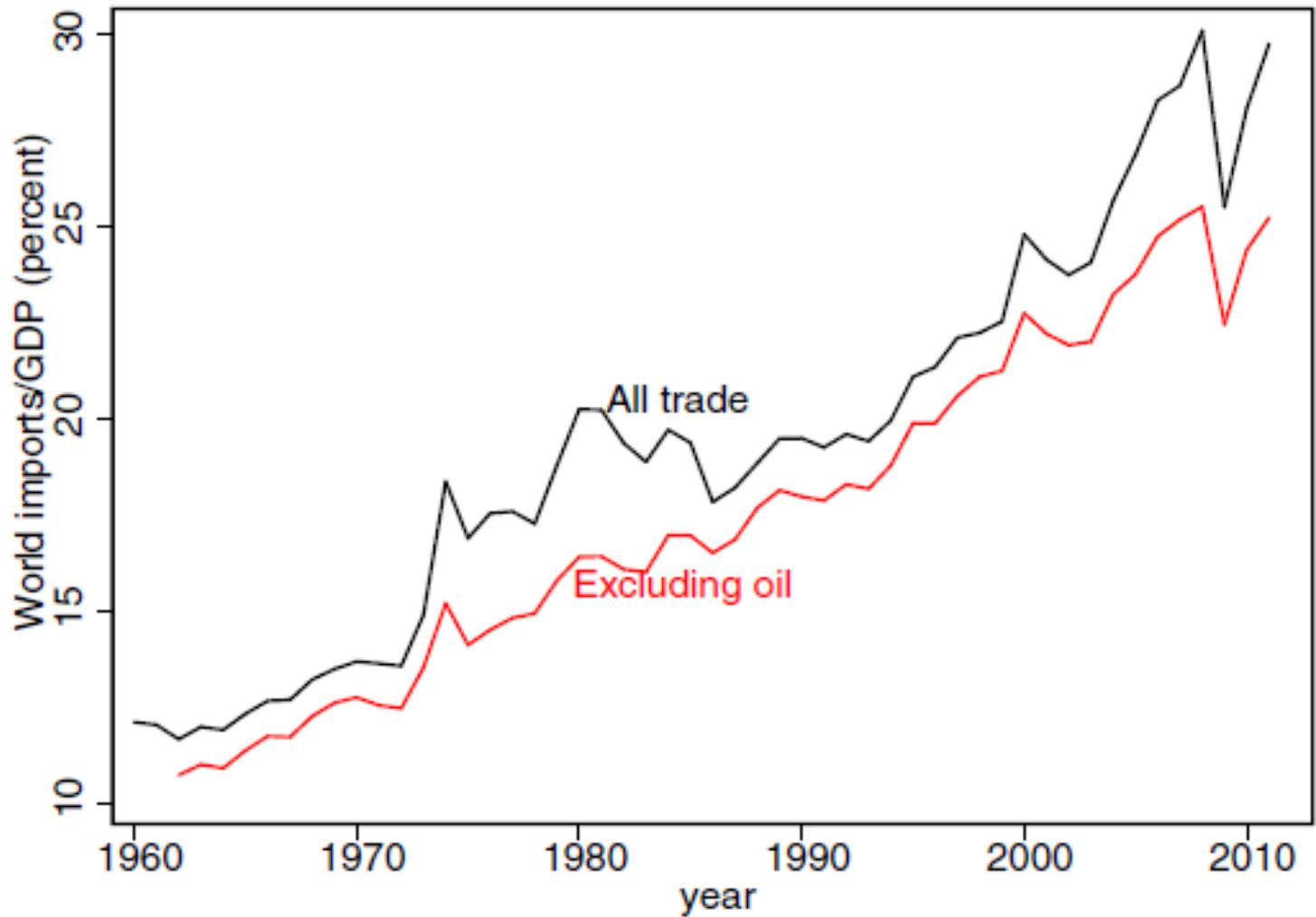
- **Assessment:** 80% summer exam, 20% test (Week 9).

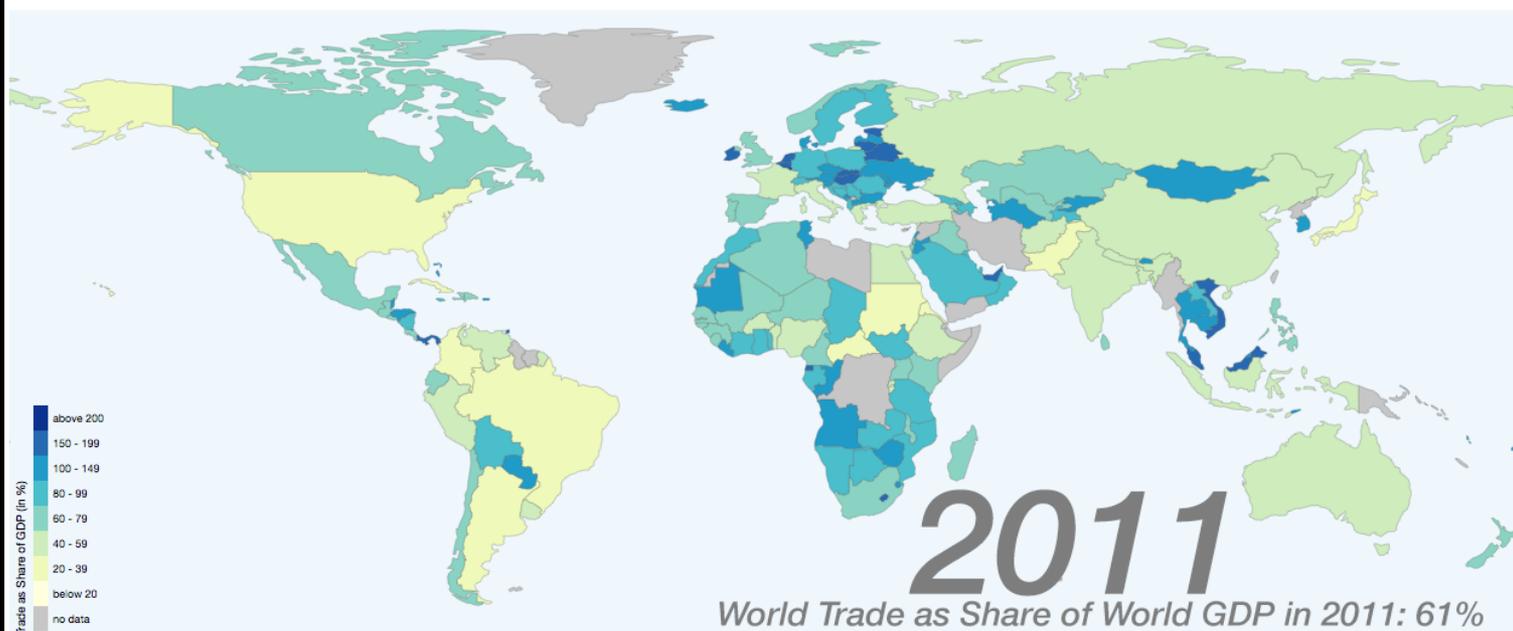
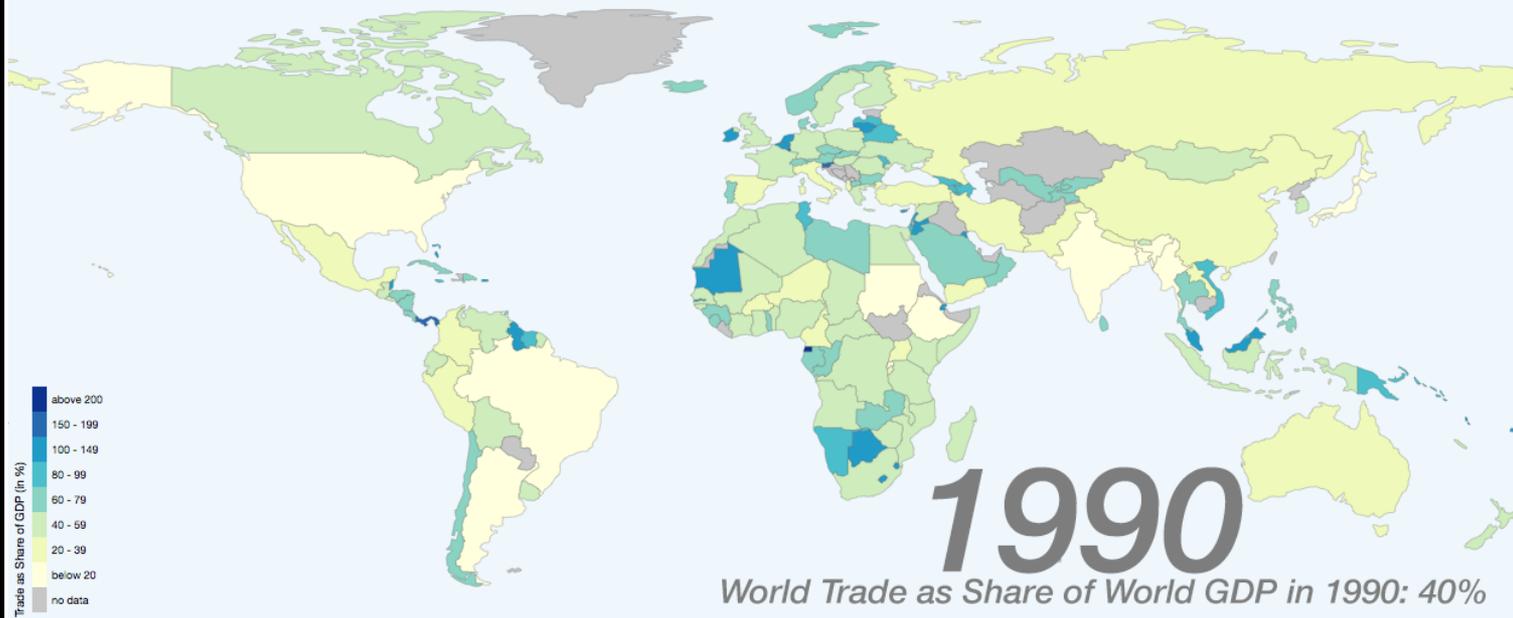
Week 1

1. An overview of world trade
2. The gravity model
3. The border effect

An overview of world trade

- 5 facts about world trade:
 - 1: Since 1960, world trade has become a much larger part of the world economy

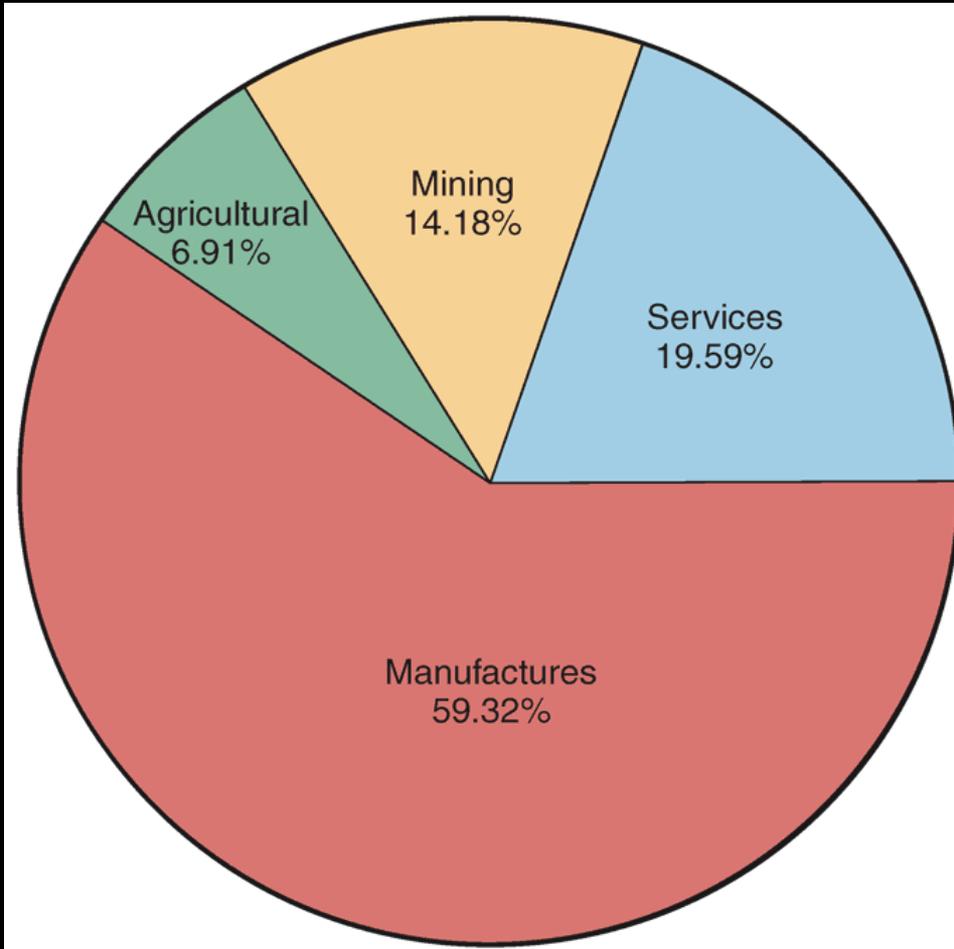




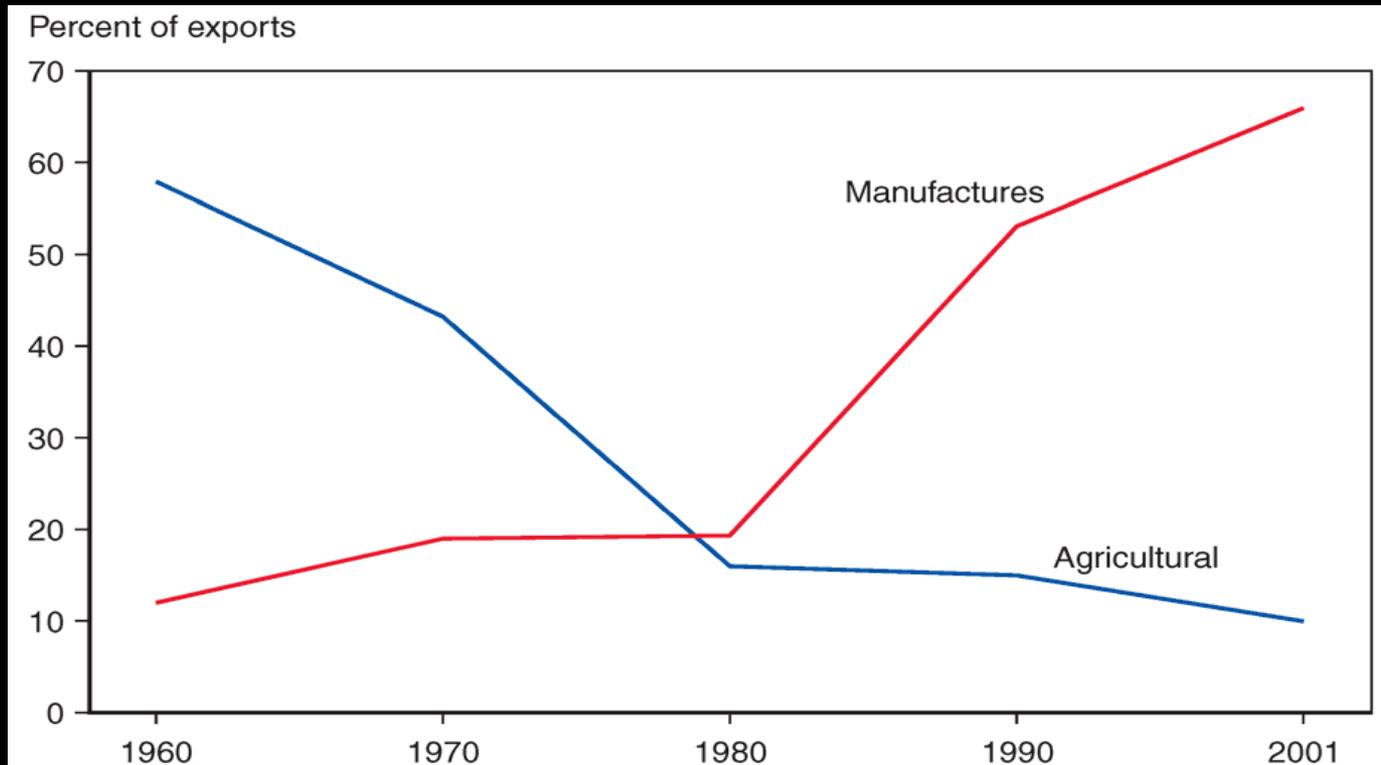
An overview of world trade

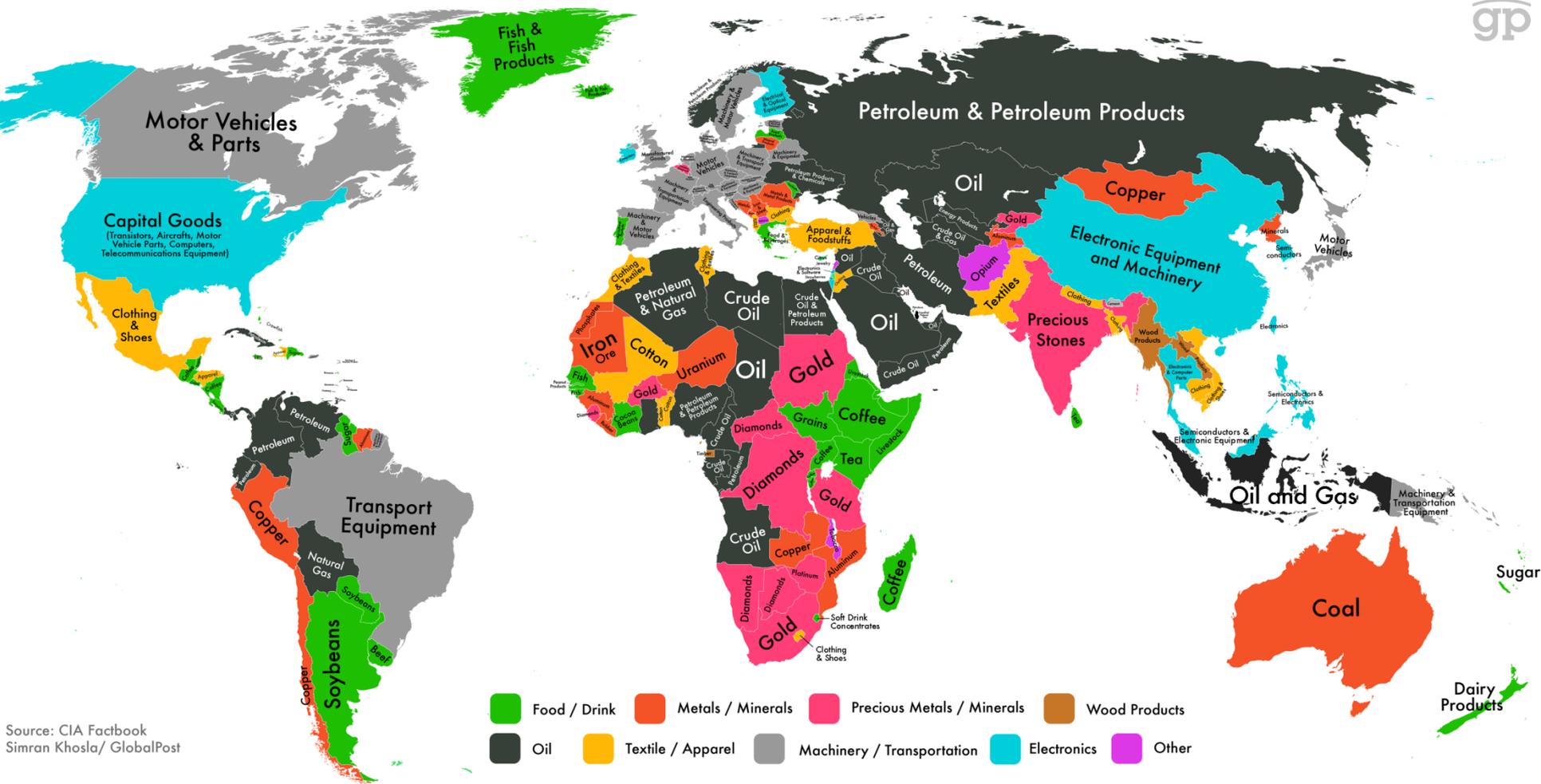
- 5 facts about world trade:
 - 1: Since 1960, world trade has become a much larger part of the world economy
 - 2: Almost 60% of trade is manufacturing goods

2005 world trade



Changing composition of developing-country exports



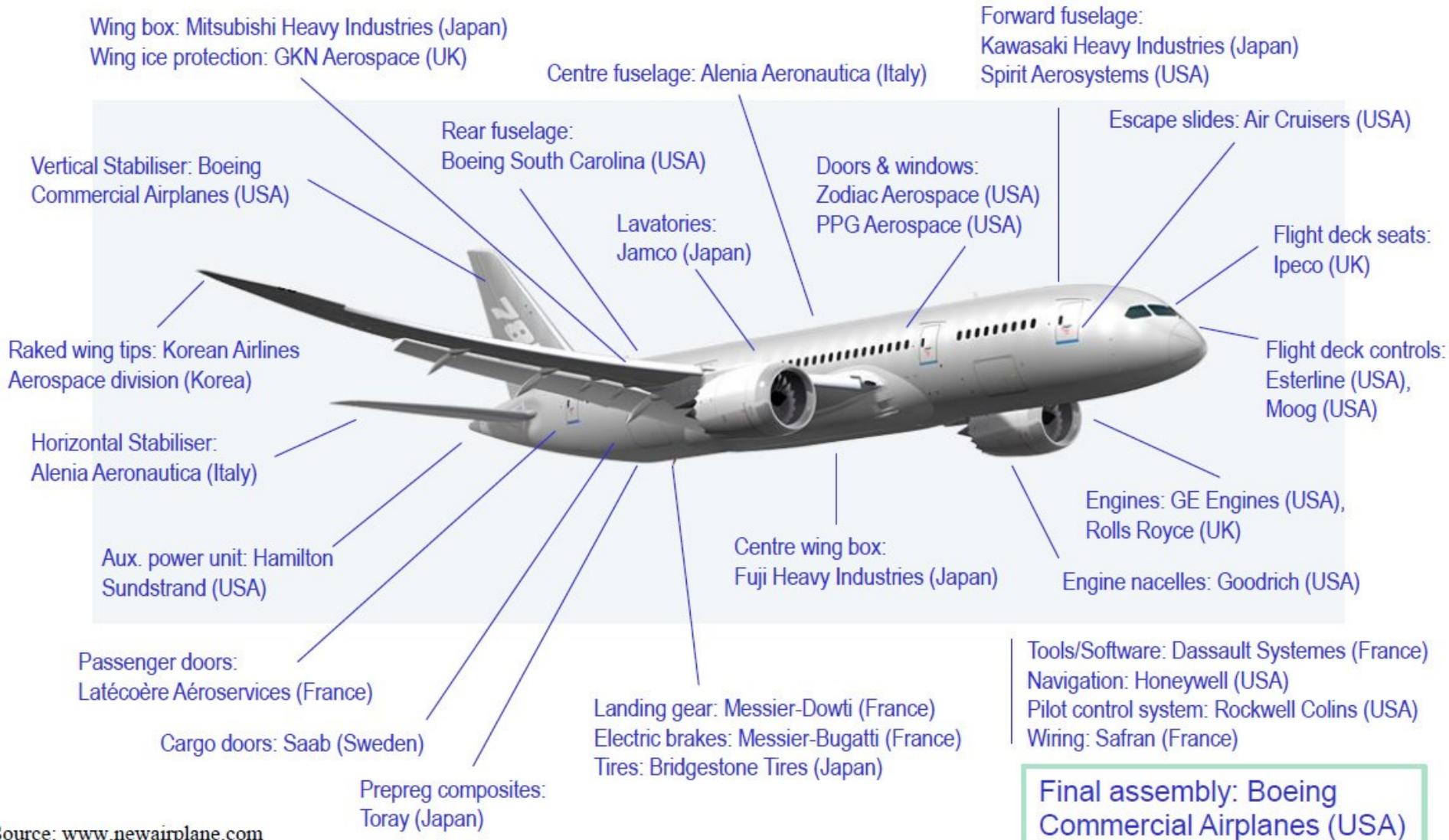


Source: CIA Factbook
Simran Khosla/ GlobalPost

An overview of world trade

- 5 facts about world trade:
 - 1: Since 1960, world trade has become a much larger part of the world economy
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Fragmentation of production: the example of the Boeing 787 Dreamliner

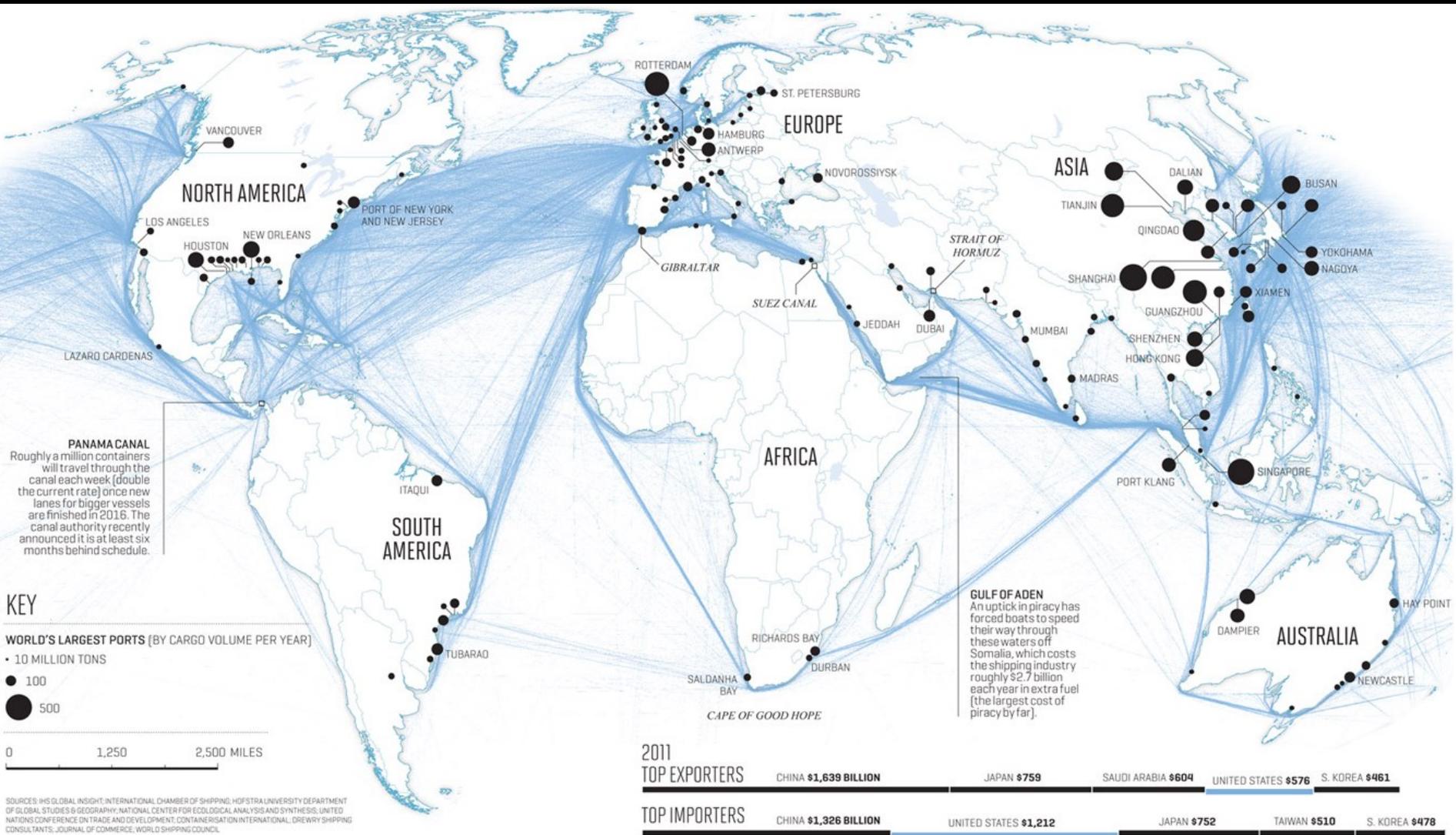


This is due to production fragmentation

- Example: £500 iPad may involve £800 of trade
 - Japan makes the £100 screen, exports it to China
 - Korea makes the £200 chip, exports it China
 - China assembles chip and screen, exports the £500 iPad to the US
- World imports = China imports
(£100+£200=£300) + US imports (£500) = £800
- World GDP = £500 iPad

An overview of world trade

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 - 3: International supply chains boost trade
 - 4: 90% of world trade is by sea



PANAMA CANAL
 Roughly a million containers will travel through the canal each week (double the current rate) once new lanes for bigger vessels are finished in 2016. The canal authority recently announced it is at least six months behind schedule.

KEY

WORLD'S LARGEST PORTS (BY CARGO VOLUME PER YEAR)

- 10 MILLION TONS
- 100
- 500



GULF OF ADEN
 An uptick in piracy has forced boats to speed their way through these waters off Somalia, which costs the shipping industry roughly \$2.7 billion each year in extra fuel (the largest cost of piracy by far).

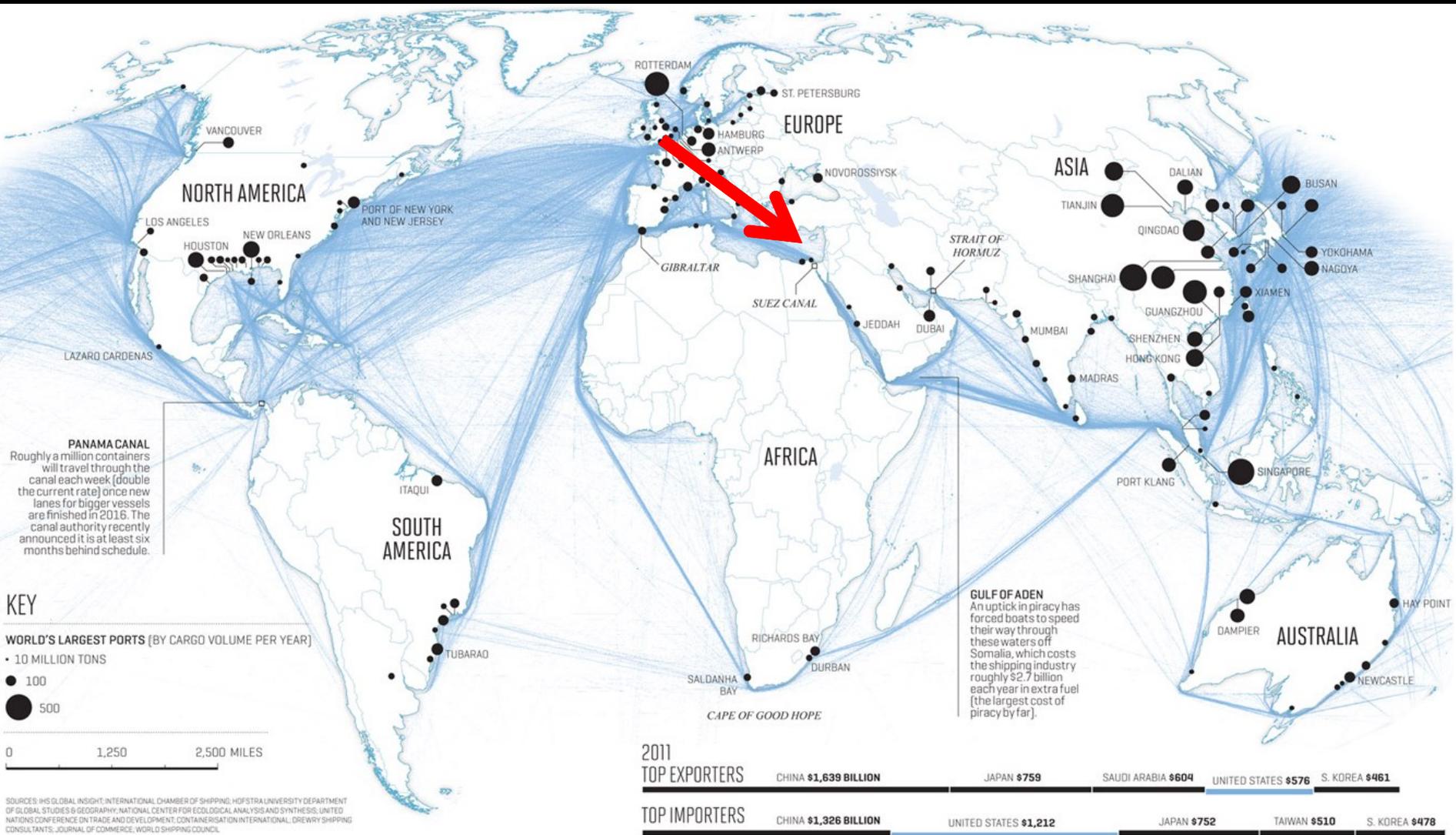
SOURCES: IHS GLOBAL INSIGHT; INTERNATIONAL CHAMBER OF SHIPPING; HOFFSTRA UNIVERSITY DEPARTMENT OF GLOBAL STUDIES & GEOGRAPHY; NATIONAL CENTER FOR ECOLOGICAL ANALYSIS AND SYNTHESIS; UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT; CONTAINERISATION INTERNATIONAL; DREWRY SHIPPING CONSULTANTS; JOURNAL OF COMMERCE; WORLD SHIPPING COUNCIL.

**2011
 TOP EXPORTERS**

| | | | | |
|-----------------------|-------------|--------------------|---------------------|----------------|
| CHINA \$1,639 BILLION | JAPAN \$759 | SAUDI ARABIA \$604 | UNITED STATES \$576 | S. KOREA \$461 |
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TOP IMPORTERS

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| CHINA \$1,326 BILLION | UNITED STATES \$1,212 | JAPAN \$752 | TAIWAN \$510 | S. KOREA \$478 |
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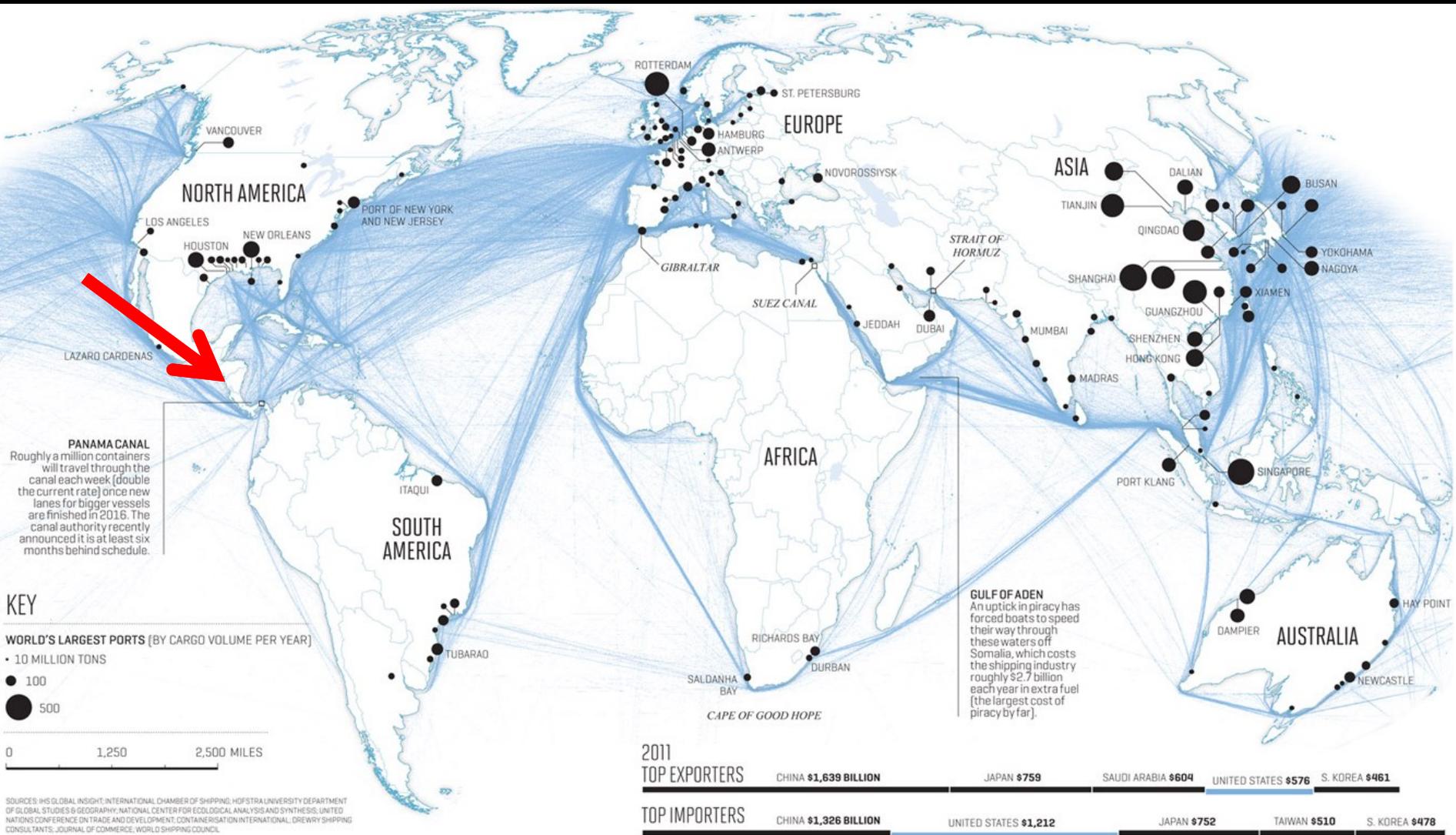
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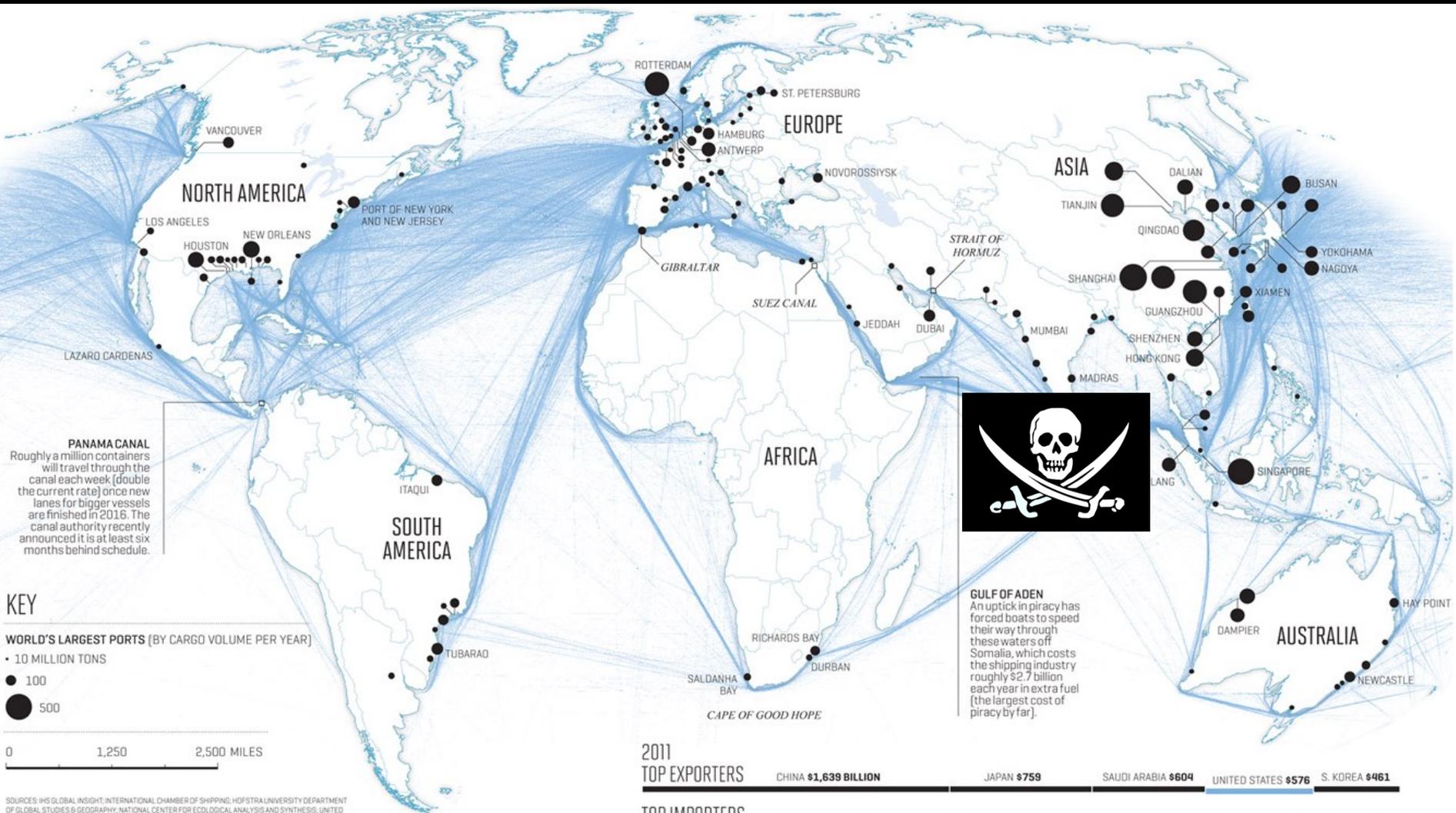
0 1,250 2,500 MILES

GULF OF ADEN
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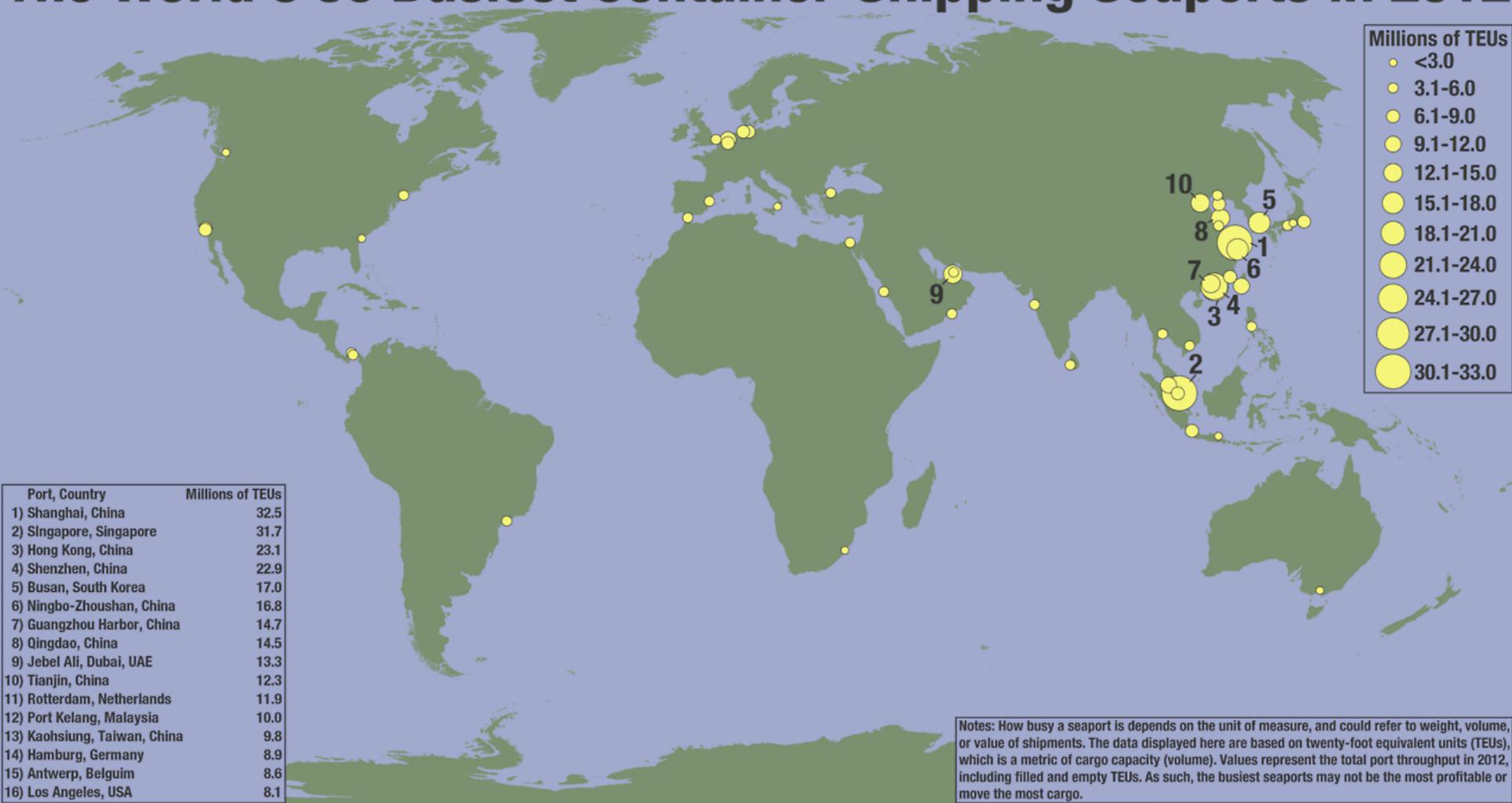
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The World's 50 Busiest Container-Shipping Seaports in 2012

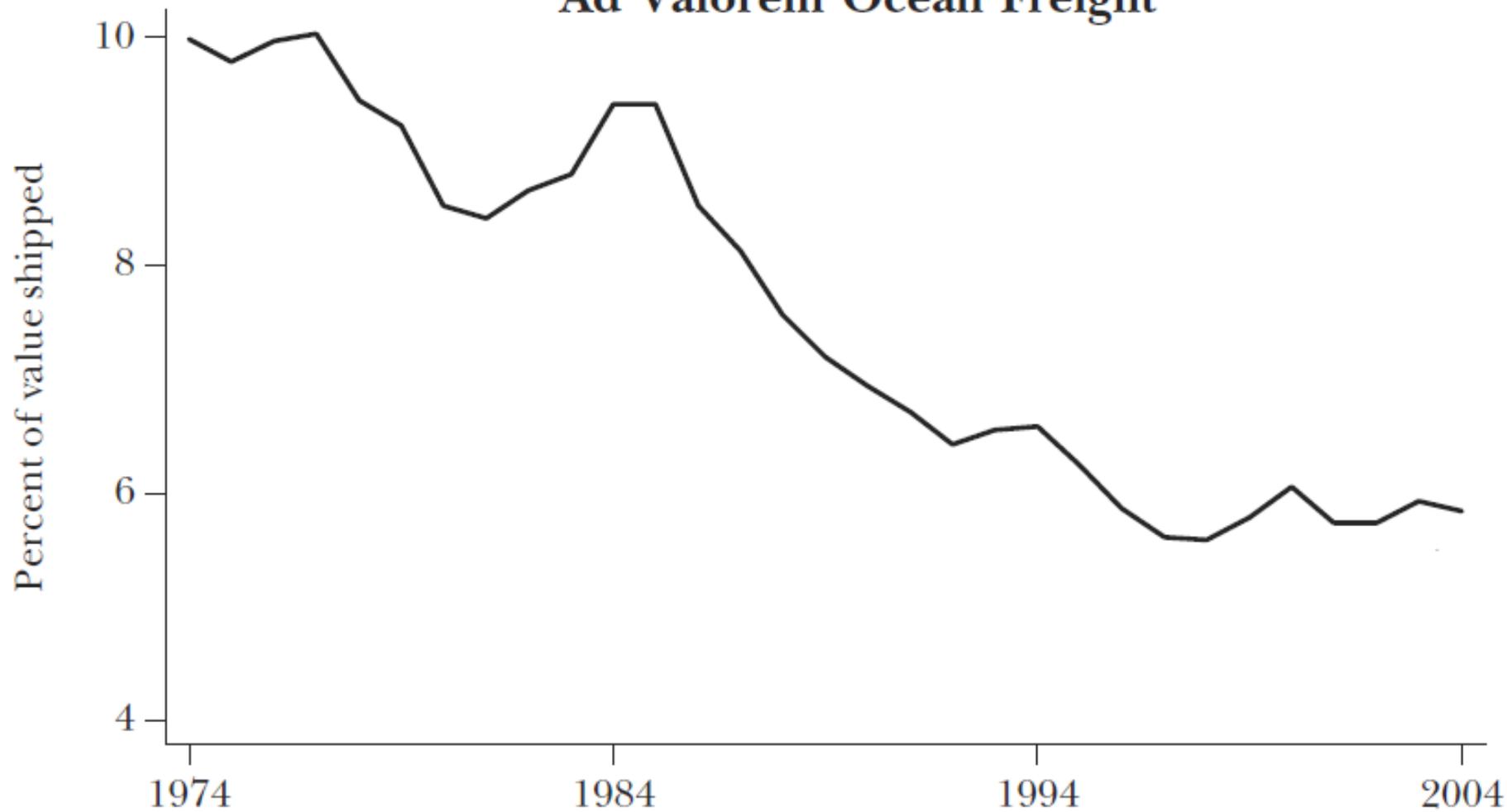


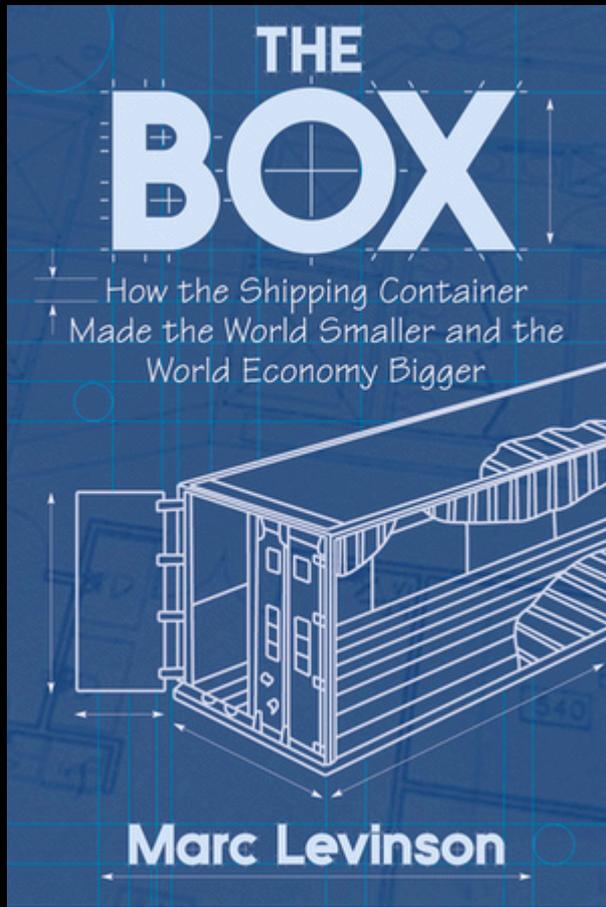


An overview of world trade

- 5 facts about world trade:
 - 1: Since 1960, world trade has become a much larger part of the world economy
 - 2: Almost 60% of trade is manufacturing goods
 - 3: International supply chains boost trade
 - 4: 90% of world trade is by sea
 - 5: Technology has greatly reduced trade costs

Ad Valorem Ocean Freight





"One of the most significant, yet least noticed, economic developments of the last few decades...

Containerization slashed the cost of transporting goods around the world and made the boom in global trade possible"

Container ports in 1965



Container ports in 1974



Container ports in 1983



Container ports in 2008



Growth of container ship size and insured vessel values



Fully cellular (1970-) 1,000 -2,500 teu 215x20x10m - **\$8m to \$12m**



Panamax (1980-) 3,000 – 3,400 teu 250x32x12.5m - **\$62m**



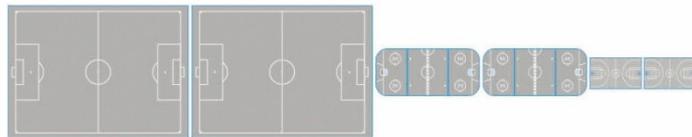
Post Panamax (1988) 4,000 – 5,000 teu 285x40x13m - **\$49m**



Post Panamax Plus (2000) 6,000 – 8,000 teu 300x43x14.5m - **\$98m**



Triple E (2013) 18,000 teu 400x59x15.5m - **\$140m**



The **Triple E** is equivalent to the length of 2 football fields, 2 ice hockey rinks and 2 basketball courts combined

Adapted with permission from
The Geography of Transport
Systems, Jean-Paul Rodrigue

Insured vessel values: AGCS
Insured vessel values are
approximate. Based on value
on entering the fleet.
Allow +/- 10% variance

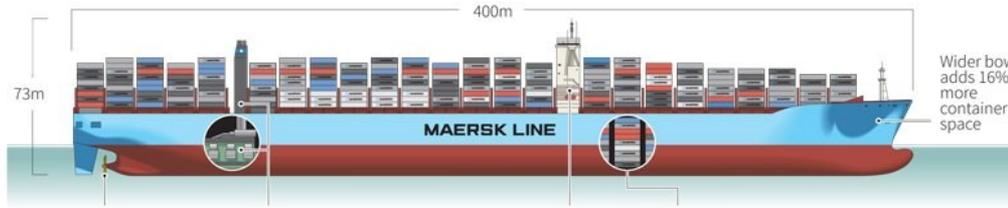
Cargo values not included

The world's largest ship

Designed to plough the trade route between Asia and Europe, Maersk's Triple-E is the first ship of its kind to transport as many goods in a single journey.

Maersk Triple-E

Max. speed **23 knots** Weight **60,000 tons** Breadth **59m** Crew **19** Deadweight **165,000 tons** TEU* capacity: **18,270** Cost per ship **\$185 million**



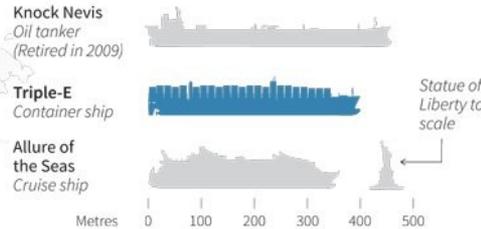
Two four-blade propellers run by twin 32MW engines Engines moved backwards to increase stability Bridge moved forward to improve the line of sight and allow containers to be stacked higher U-shaped hull design provides more space below deck Vessel is too wide for the Panama Canal and too tall for all ports in the U.S.

The "Maersk Mc-Kinney Moller" is the first of 20 ordered by Maersk Line from South Korea's Daewoo Shipbuilding & Marine Engineering.

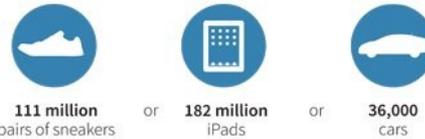
Likely route from Europe to Asia



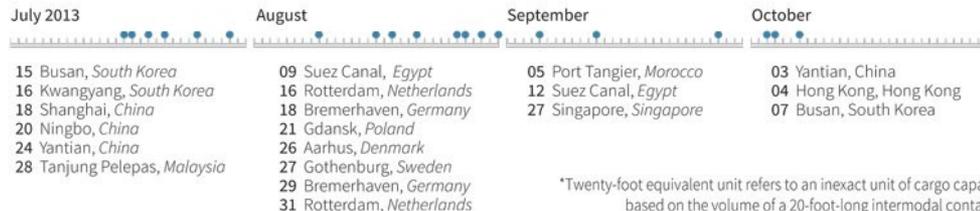
Compared to other large ships



In a single trip, the Triple-E could carry:



Timeline of maiden voyage port calls



*Twenty-foot equivalent unit refers to an inexact unit of cargo capacity based on the volume of a 20-foot-long intermodal container

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Week 1

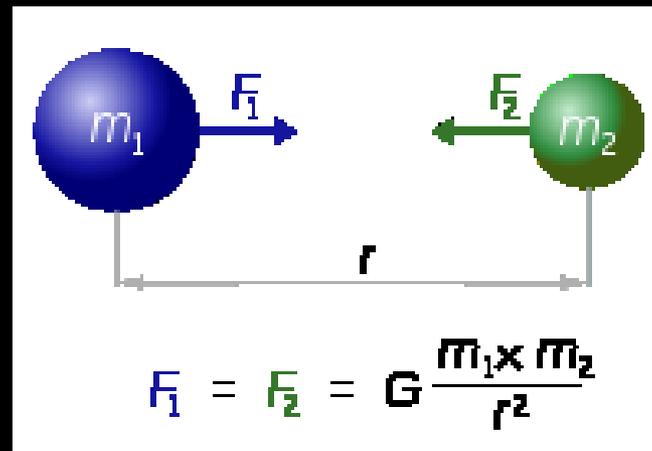
1. An overview of world trade
- 2. Who trades with whom? The gravity model**

The gravity model



The gravity model

- Newton's Law: Any two bodies in the universe attract each other with a force that is directly proportional to the product of their masses and inversely proportional to the square of the distance between them.



The gravity model

- The gravity model also explains international trade!
- Size (GDP) and distance determine bilateral trade across countries

The gravity model

$$X_{ni} = \frac{G Y_i^a Y_n^b}{D_{ni}^c},$$

- X_{ni} are exports from n to i
- Y_i and Y_n are exporter and importer GDPs
- D_{ni} is distance from i to n
- G is a constant
- In most estimations $a \approx b \approx c \approx 1$

The gravity model

- **Gravity Law:** *Holding constant the product of two countries' sizes, their bilateral trade will, on average, be inversely proportional to the distance between them.*

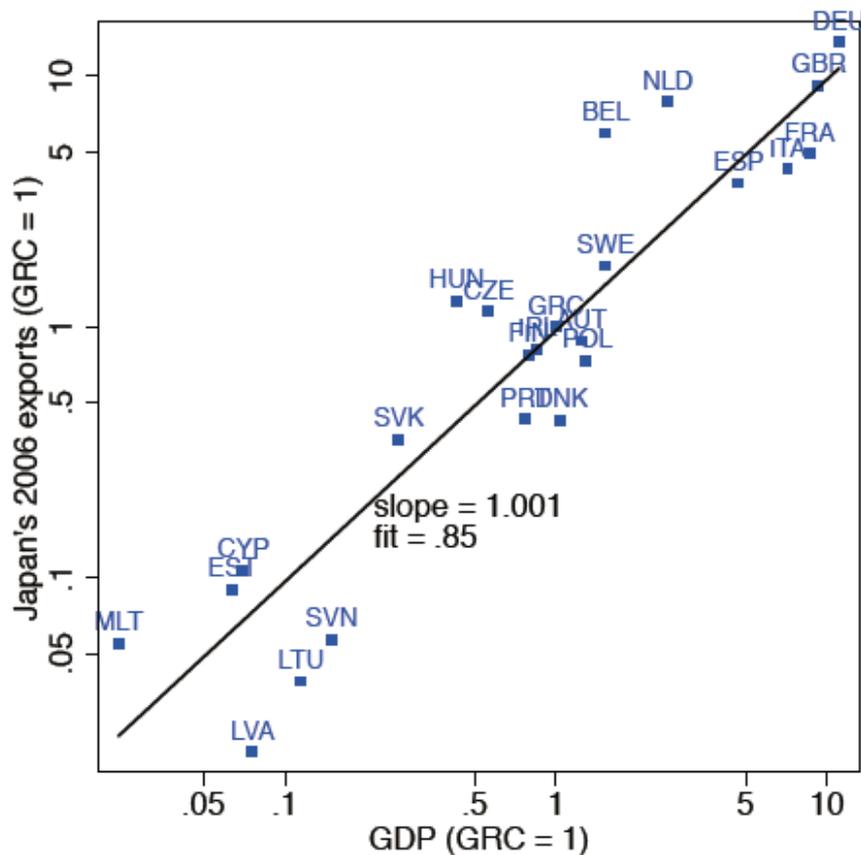
The gravity model

- Gravity models have produced some of the clearest and most robust findings in economics

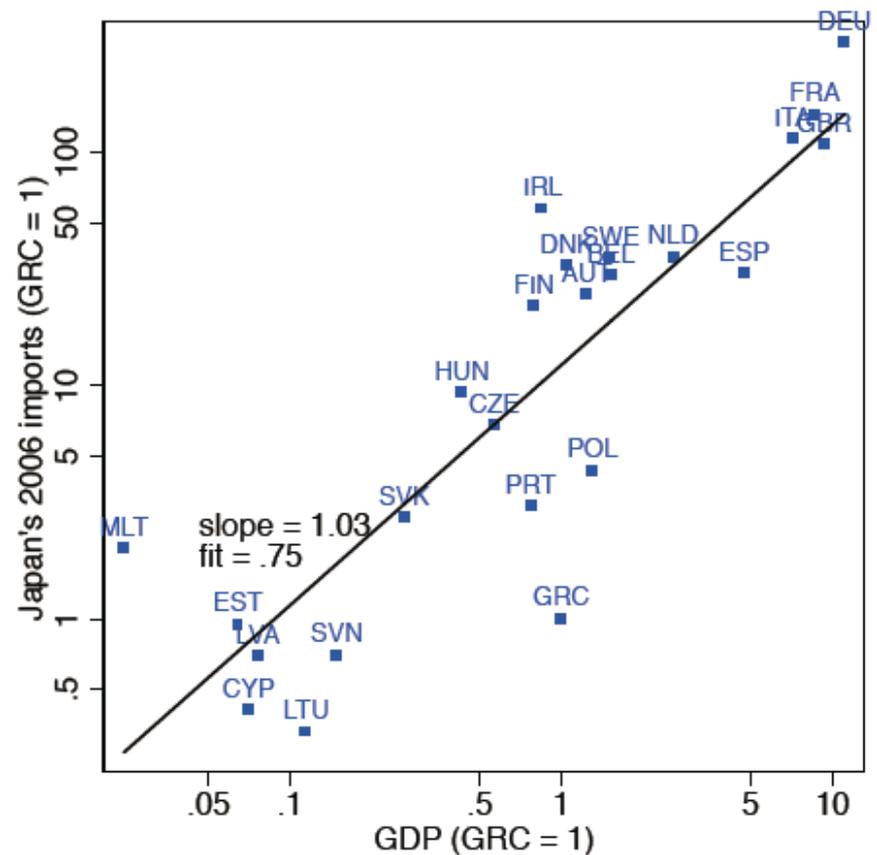
The gravity model

Figure 1: Trade is proportional to size

(a) Japan's exports to EU, 2006



(b) Japan's imports from EU, 2006



The gravity model

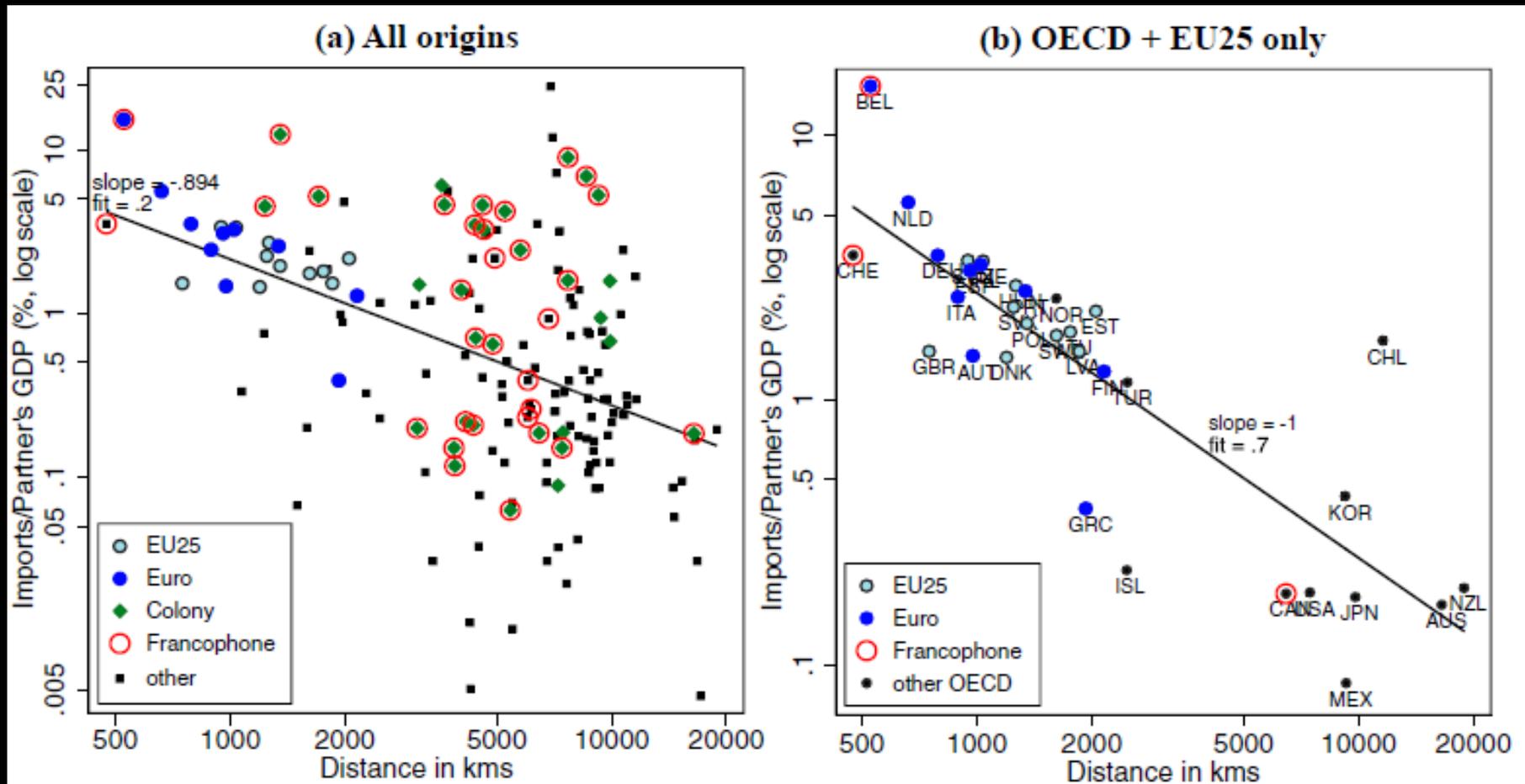
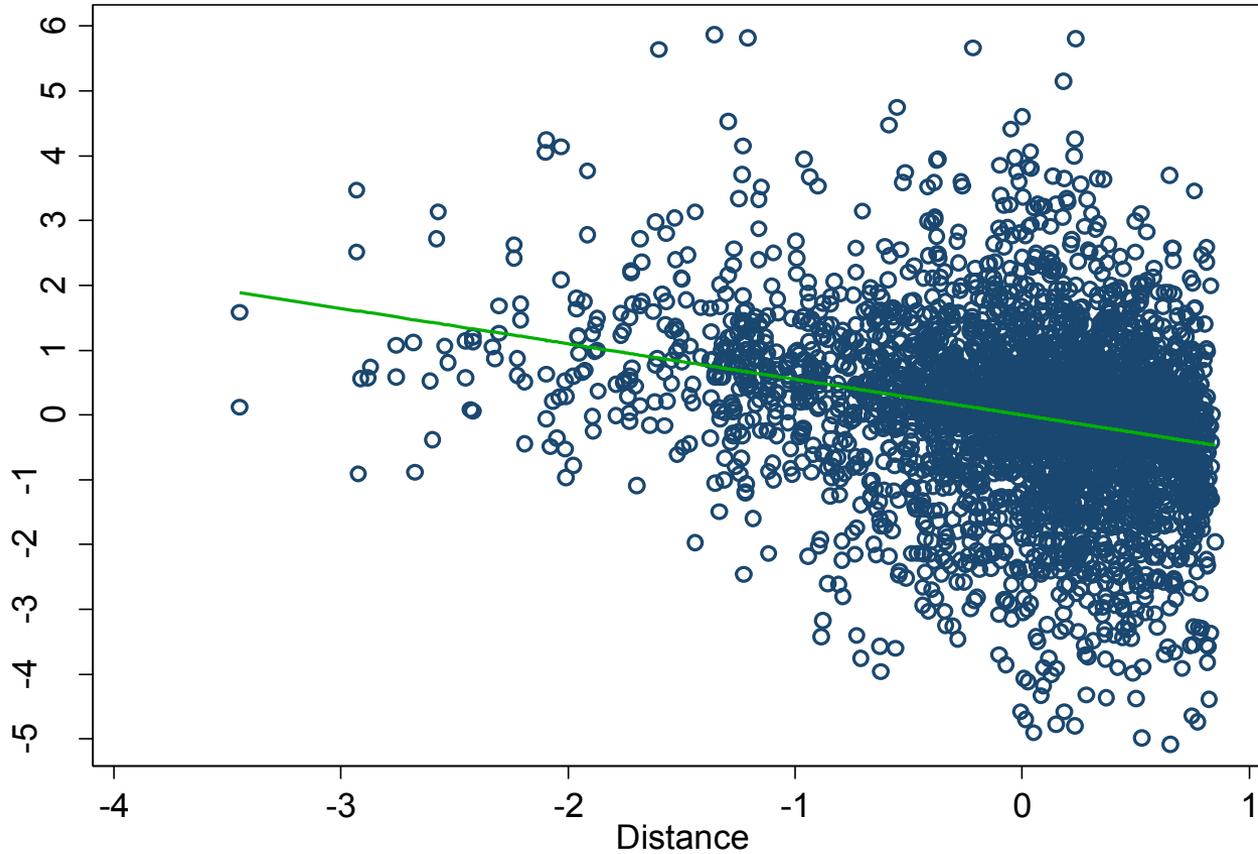


FIGURE 3 France's 2006 imports follow the gravity law

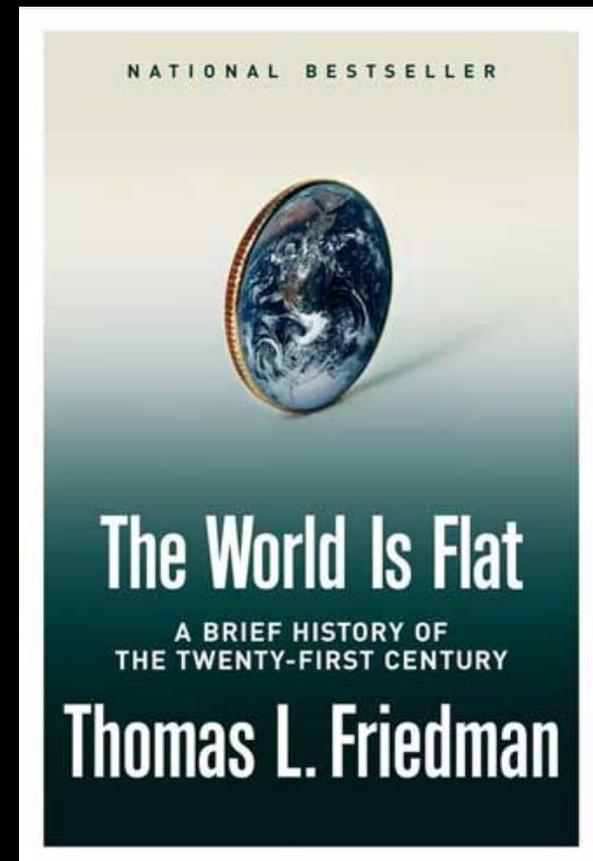
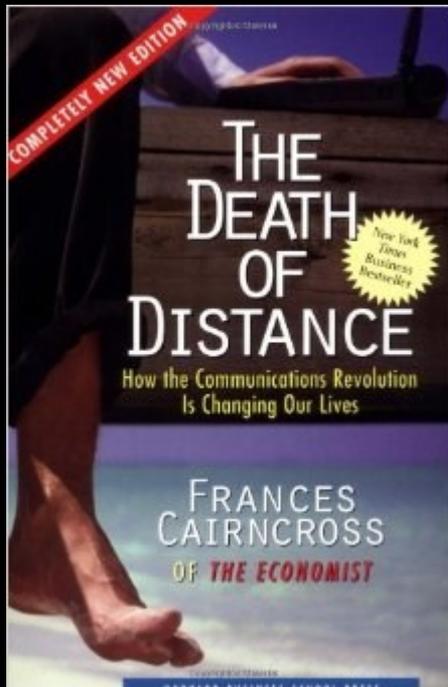
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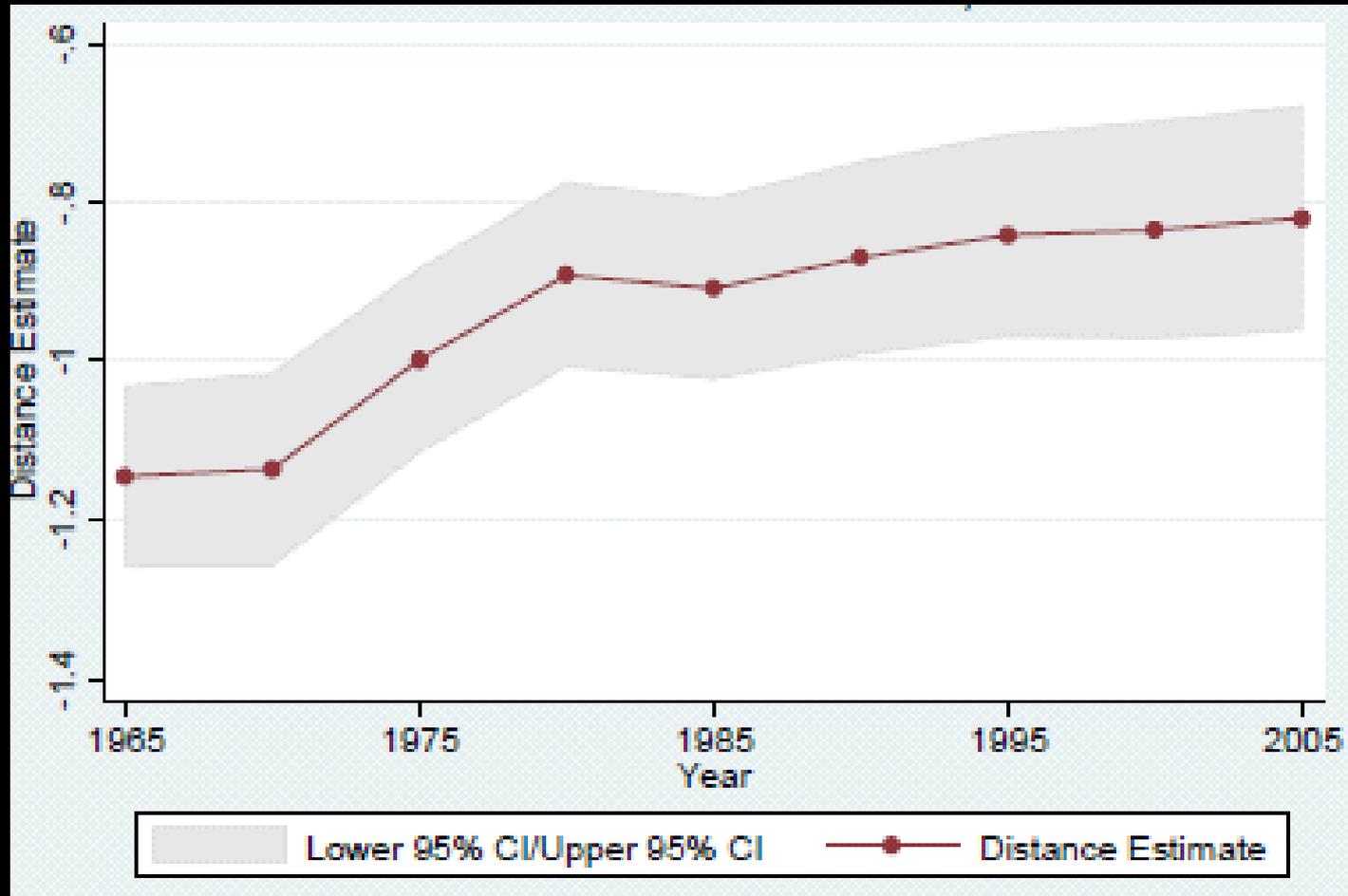
coef = -.54874635, se = .0334127, t = -16.42

The gravity model

- Has globalization brought the death of distance?



The gravity model



Week 1

1. An overview of world trade
2. Who trades with whom? The gravity model
- 3. The border effect**

The border effect

- Trade between countries is harder than trade between regions within a country
- Economists have coined how harder it is “the border effect”, as it involves crossing an international border
- The border effect is the empirical regularity that trade is much higher within countries than across country borders

The border effect

- Example:
 - Do US States and Canadian provinces trade as much between them when goods have to cross the border?
 - We can answer this question by looking at how much Canadian provinces and US States at similar distances trade with British Columbia

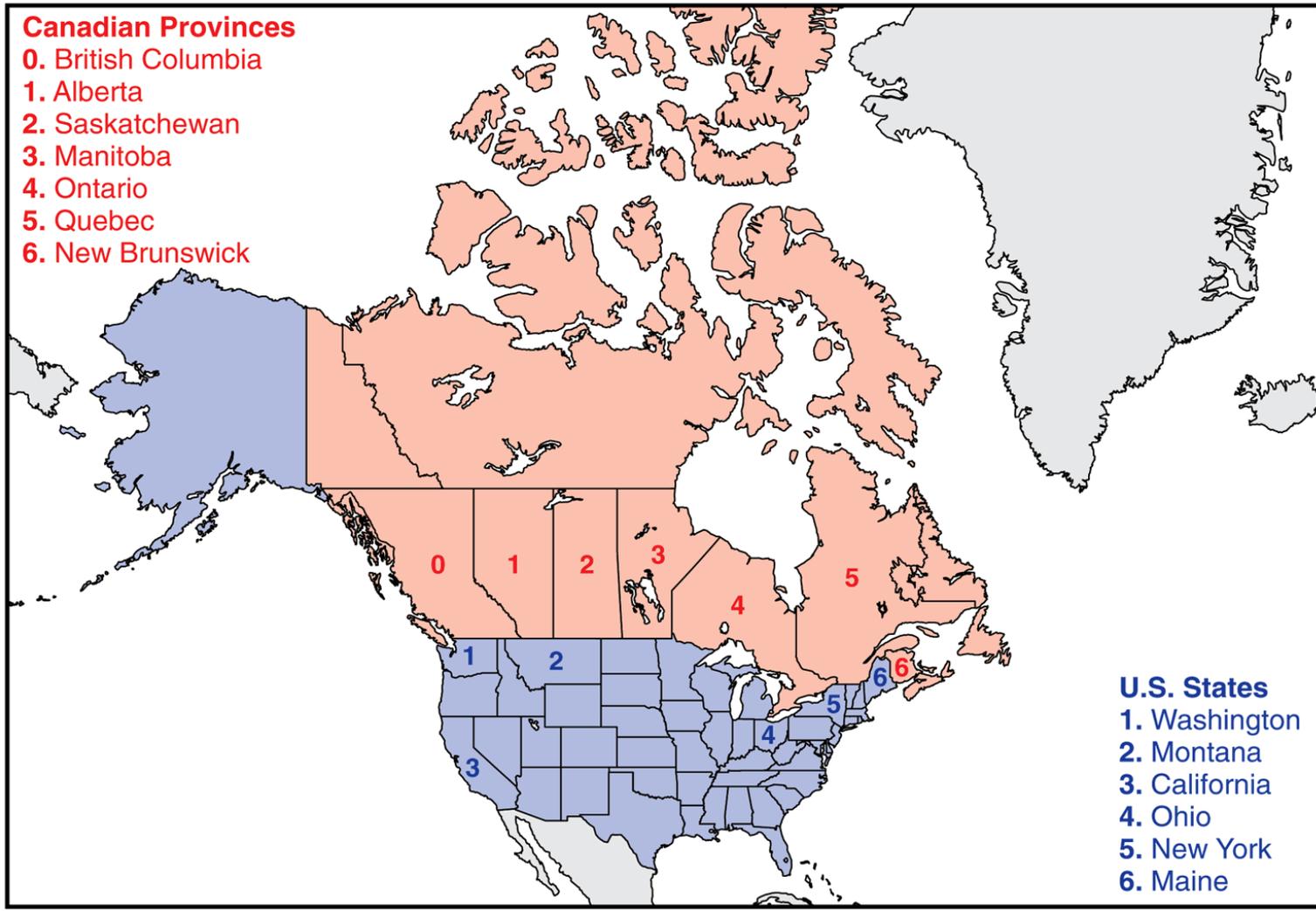


Figure 2-4

Canadian Provinces and U.S. States That Trade with British Columbia

The border effect

Crossing the border reduces trade by 80%

TABLE 2-3 Trade with British Columbia, as Percent of GDP, 1996

| Canadian Province | Trade as Percent of GDP | Trade as Percent of GDP | U.S. State at Similar Distance from British Columbia |
|-------------------|-------------------------|-------------------------|--|
| Alberta | 6.9 | 2.6 | Washington |
| Saskatchewan | 2.4 | 1.0 | Montana |
| Manitoba | 2.0 | 0.3 | California |
| Ontario | 1.9 | 0.2 | Ohio |
| Quebec | 1.4 | 0.1 | New York |
| New Brunswick | 2.3 | 0.2 | Maine |

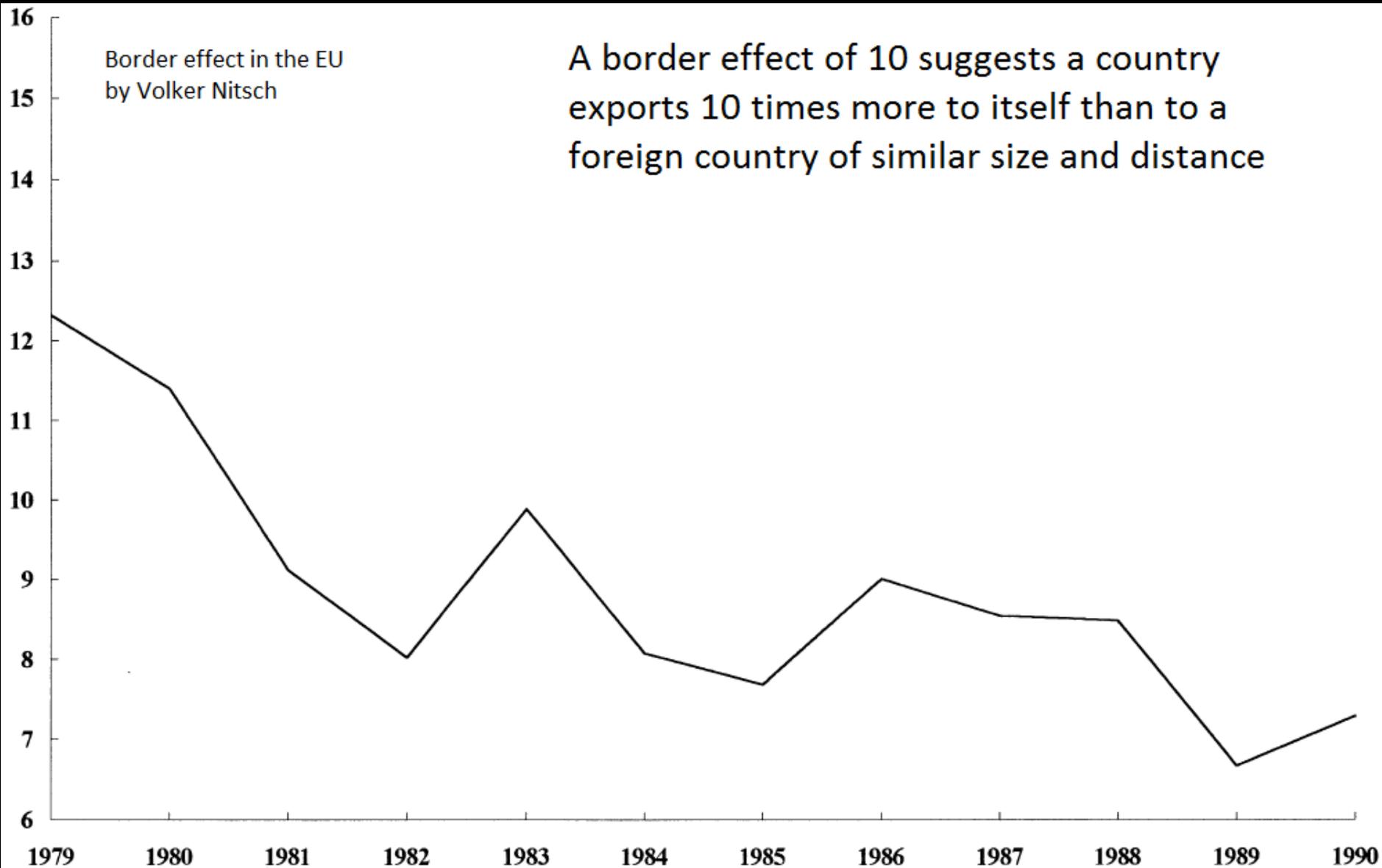
Source: Howard J. Wall, "Gravity Model Specification and the Effects of the U.S.-Canadian Border," Federal Reserve Bank of St. Louis Working Paper 2000-024A, 2000.

The border effect

- Why do borders reduce trade?
 - Tariffs
 - Administrative barriers (docs)
 - Currency exchange
 - Cultural barriers
 - ...?
- The border effect can also be thought of as a **home bias**, i.e. a preference for home goods over foreign ones

Border effect in the EU
by Volker Nitsch

A border effect of 10 suggests a country exports 10 times more to itself than to a foreign country of similar size and distance



Extra readings

- Head, K. and Mayer, T. (2013), [What separates us? Sources of resistance to globalization.](#) Canadian Journal of Economics, 46: 1196–1231.