International Trade

Lecture 1: Introduction to the Course

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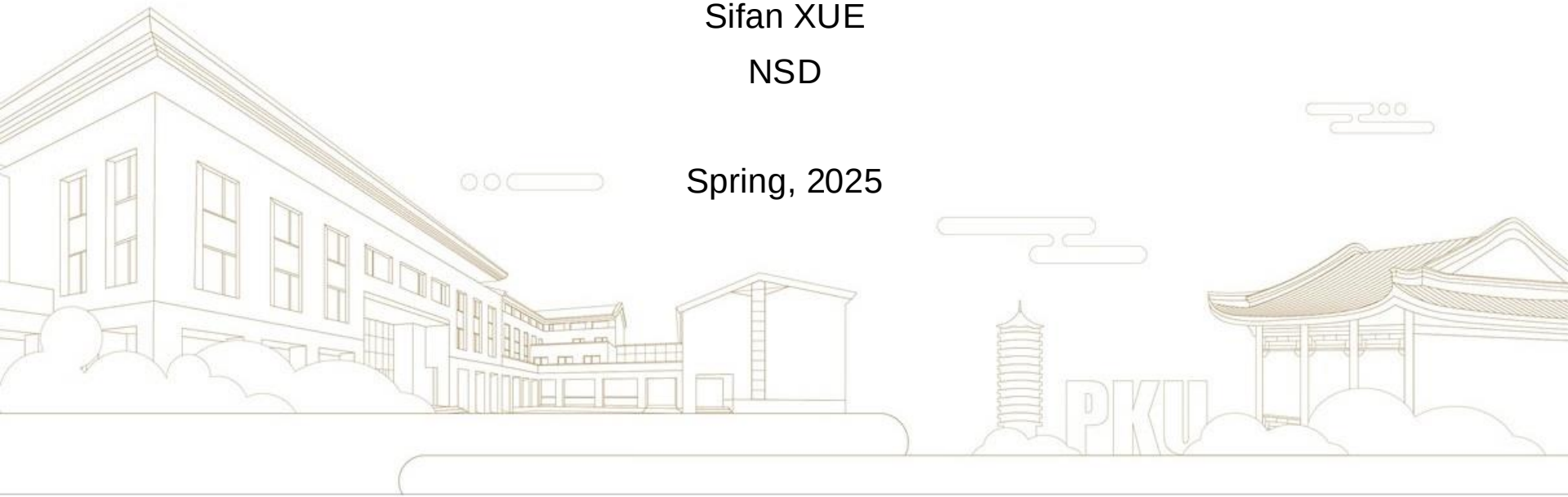
NSD

Spring, 2025



The Teaching Team

- Me, the instructor
  - BA, Fudan; PhD in Economics, Princeton
  - 2024-now, assistant professor at PKU NSD
  - Research interests: international trade, macroeconomics
  - Email: sifanx@nsd.pku.edu.cn
  - Office Hours: 9-10am, Wednesday

    @ Room 255 Chengze Garden, NSD

The Teaching Team

- Zheming LIANG, the teaching assistant
  - PhD at NSE
  - Email: zmliang2021@nsd.pku.edu.cn
  - TA sessions (remote): after the submission of each HW, TBA

Outline for Today

- Course roadmap
  - Topics & methods
- Course requirements
  - Prerequisite, Grading, assignments, exams
- Introduction to international trade
  - Very basic notions and facts

Course Roadmap

- In this course, we study “international trade”…
- What is “international trade” all about?

Phenomena of International Trade

"Trade" "International"

- Transactions of goods and services across borders
- Flows of factors (capital, labor, etc.) across borders
- Reallocation of production process across borders
- "Trade" does not have to be "international"
- "International (flows)" not only "(conventional) trade"
  - Finance, people, pollution, information, technology, data, etc.

Topics of International Trade

- Why do countries trade?
  - Differences in endowments of goods, factors
  - Differences in technology
  - Economies of scale
- What are the consequences of trade?
  - Wages, prices, employment, welfare
  - Quality and variety of goods available
  - Quality and variety of inputs available
  - Winners and losers: workers, firms

Topics of International Trade

- Policies that directly affect trade
  - Tariffs, antidumping duties, export subsidies, countervailing duties, regulatory barriers
  - Causes and consequences of trade barriers
  - Multilateral trade agreements - WTO
  - Preferential trade agreements – EU, NAFTA, China-ASEAN, Regional Comprehensive Economic Partnership (RCEP), etc.
- Indirectly?
  - Exchange rate, immigration, multinational tax policies, etc.

Is “international trade” important?

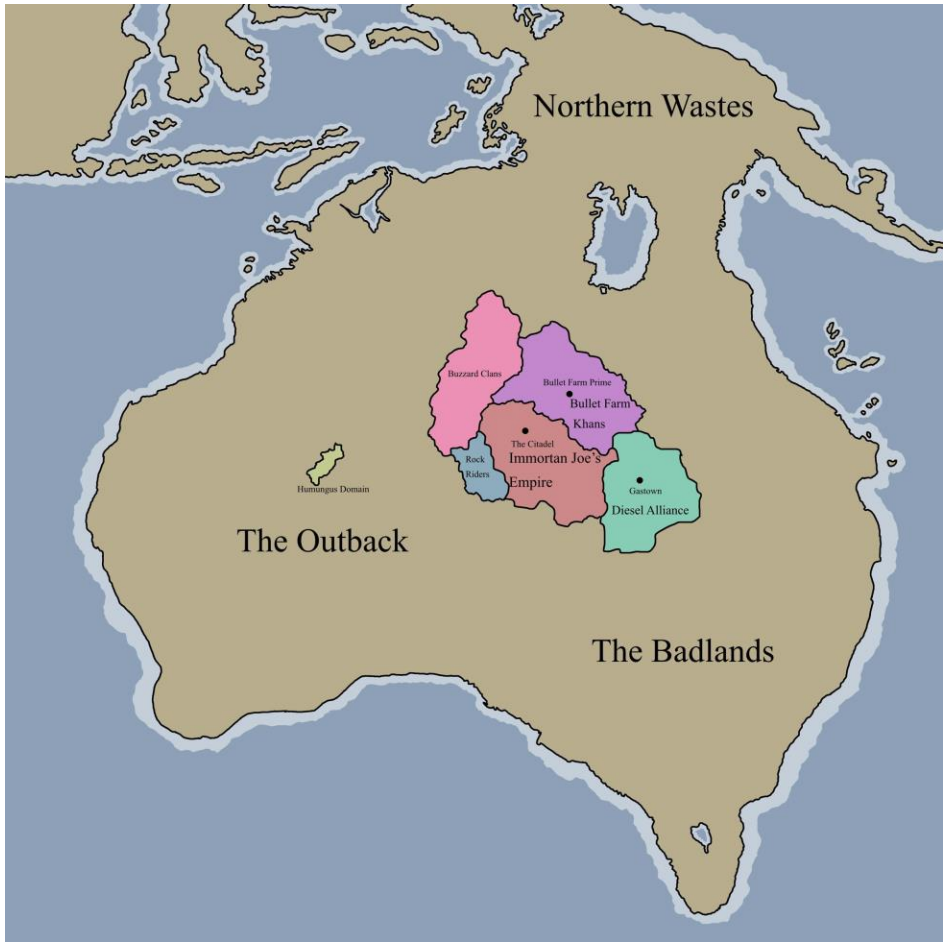
- Mad Max: survival, resistance, and the fight for freedom in a desolate and brutal world.

Resources:

The Citadel: Water
Gastown: Fuel
The Bullet Farm

Trade:

Furiosa’s job



Is “international trade” important?

- Arcane: class struggle, ambition, and the consequences of scientific experimentation.

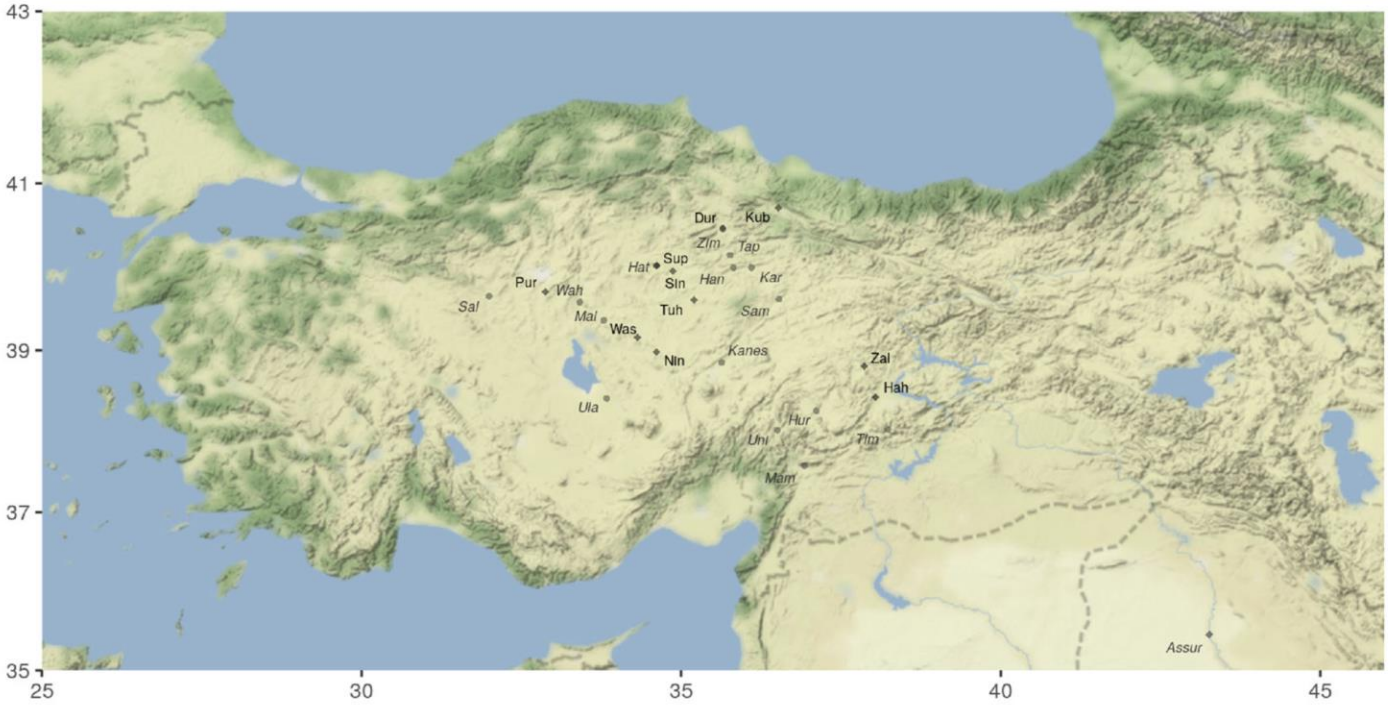
Trade cost:

The Hexgate enable airships or people to reach the destination at the other end in a very short time, significantly shortening the spatial distance.
This has made Piltover a central hub for trade among various parties in the Rune Lands.

Is “international trade” important?

- “Trade, Merchants and the Lost Cities of the Bronze Age,” Barjamovic, et al. (2019 QJE)

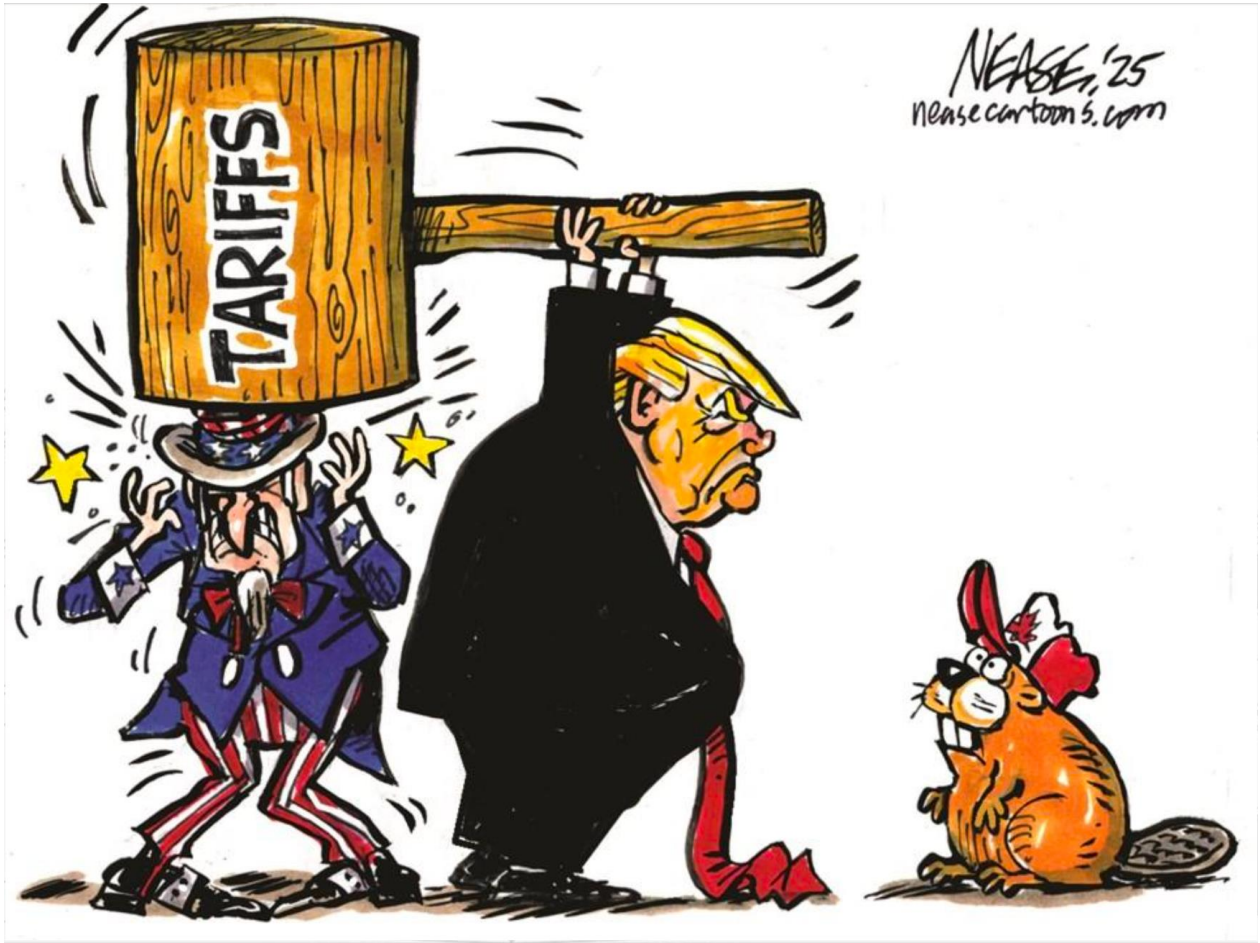
We analyze a large data set of commercial records produced by Assyrian merchants in the nineteenth century BCE. Using the information from these records, we estimate a structural gravity model of long-distance trade in the Bronze Age. We use our structural gravity model to locate lost ancient cities. In many cases, our estimates confirm the conjectures of historians who follow different methodologies. In some instances, our estimates confirm one conjecture against others.



Is “international trade” important?

- “The Return to Protectionism,” Fajgelbaum, et al. (2020 QJE)

“…, the aggregate real income loss (to the US) was $7.2 billion, or 0.04% of GDP.”



Methods of International Trade

- Models
  - Clarify mechanisms and implications in a rigorous way
  - Sometimes goes beyond conventional wisdom, or intuition
  - Get a sense of magnitude, numbers

Methods of International Trade

- Notes on models
  - Exogenous & endogenous variables
  - “Comparative Statics”: if we change one exogenous variable and hold the others constant, what happens to the endogenous variables?
  - “All models are wrong, but some are useful”: what are the key assumptions? When are the key assumptions likely and unlikely to hold? Will we have the same predictions if we break that assumption?

Methods of International Trade

- Empirics
  - Test evaluate key predictions from the model, select the right model, guide us to build new models
  - Get a sense of the magnitude, shocks and policies evaluation
  - Sometimes several mechanisms, “ultimately an empirical question”
- This course: ~75% of time models, ~25% of time empirics

Outline of the Course

- Module 1: fundamental models in trade
  - Comparative advantage
  - Determinants of comparative advantages
  - Welfare impacts of trade
  - Endowment Model, Ricardian Model, Specific Factors Model, Heckscher-Ohlin Model

Outline of the Course

- Module 2: complexities in trade
  - Flow of factors and production process
  - Trade with external economies of scale
  - Trade with imperfect competition
  - Trade with heterogeneous firms

Outline of the Course

- Module 3: trade policies
  - How trade policies affect the patterns of trade?
  - What are the welfare impacts of trade policies?
  - What political economic factors determine trade policies?

Outline of the Course

- Module 4*: empirics in trade
  - Introduction to empirical studies
  - Empirics on comparative advantages
  - Trade and firms
  - Trade costs and economic geography
  - The China-US trade issues
  - Trade and the environment

Course Requirements

- Prerequisites
  - Principles in Economics; Intermediate Microeconomics
  - Key concepts to review:
    - Introductory chapters: PPF, opportunity costs, supply and demand curves (and how they shift), comparative statics;
    - Consumer theory: preference, utility, and indifference curves; budget constraint; solving the consumer optimization question
    - Producer theory: production function (MPL, MPK, returns to scale), factor demand and supply; factor prices; profit maximization in perfect competition market; monopolistic competition
    - Welfare analysis: consumer surplus, producer surplus, deadweight loss
    - General equilibrium: Edgeworth box, Walras Theorem

Course Requirements

- Prerequisites
  - Mathematics to review:
  - Basic algebra (transformations; sets of linear equations);
  - (Partial) derivatives/differentiation; total differentiation
  - The concept of integral
  - Proportional changes

$$y = x_1^{\alpha_1} x_2^{\alpha_2} \cdots x_N^{\alpha_N} \Longrightarrow \frac{\Delta y}{y} \simeq \alpha_1 \frac{\Delta x_1}{x_1} + \alpha_2 \frac{\Delta x_2}{x_2} + \cdots + \alpha_N \frac{\Delta x_N}{x_N}$$

  - Lagrangian style optimization

$$\max_{C_1, C_2} \mathrm{U}(C_1, C_2) \ \text{s.t.} \ p_1 C_1 + p_2 C_2 \leq I$$

Course Requirements

- Grading
  - Attendance (10%): TA takes attendance; allow two absences
  - Participation (10%): read abstract & introduction of assigned paper(s) before empirical lectures, in-class quizzes about main idea, finding, and policy implication of the paper(s)
  - Problem Sets (20%): 4 problem sets, grade on a check-plus, check, check-minus basis
    - You can drop one of them; late submission will not be accepted.

Course Requirements

- Grading
  - Midterm Exam (25%): scheduled on Apr. 8 (in class)
  - Final Exam (35%): scheduled on Jun. 17 (time and place TBD)
  - All exams are open book, open notes
  - No any devices other than calculator
  - One lecture for review before each exam
  - Final exam covers the entire semester, but no less than 2/3 from lectures after the midterm

Course Requirements

- How should you learn?
  - In class:
  - Attendance and attention
  - No multi-tasking
  - Answer questions and ask questions
  - Feel free to interrupt if you don’t understand at anytime

Course Requirements

- How should you learn?
  - Outside class:
  - Review slides (and your own notes)
  - Read assigned materials, keep up with the pace of the class
  - Work hard on problem sets
  - Go back and forth from exercises to lecture notes
  - Ask questions to each other
  - Read news about trade and discuss with each other

Course Requirements

- How should you learn?
  - Books for reference:
  - Paul R. Krugman, Maurice Obstfeld, and Marc J. Melitz. International Economics: Theory and Policy. 12th Edition.
  - Robert C. Feenstra and Alan M. Taylor. International Trade. 4th Edition.
  - Check relevant book chapters if you have questions
  - Not mandatory – problem sets and exams about lecture slides

Course Requirements

- General Interest Readings
  - 鞠建东《大国竞争与世界秩序重构》北京大学出版社 2024
    - Public lecture this Friday (Feb 21) 7 pm @ NSD 249
  - News; Policy Report; Op-ed

Introduction to International Trade

- Key definitions:
  - Exports: products/services sold from one country (“home”) to another (“foreign”)
  - Imports: product purchased by one country from another
  - Trade surplus (resp. deficit): total exports minus imports (resp. imports minus exports)
  - Foreign Direct Investment (FDI): investment and control in overseas affiliates
  - Note: this course is not about exchange rates. Exchange rates and trade imbalances will be discussed under “international finance”.

Popular Misconceptions about Trade

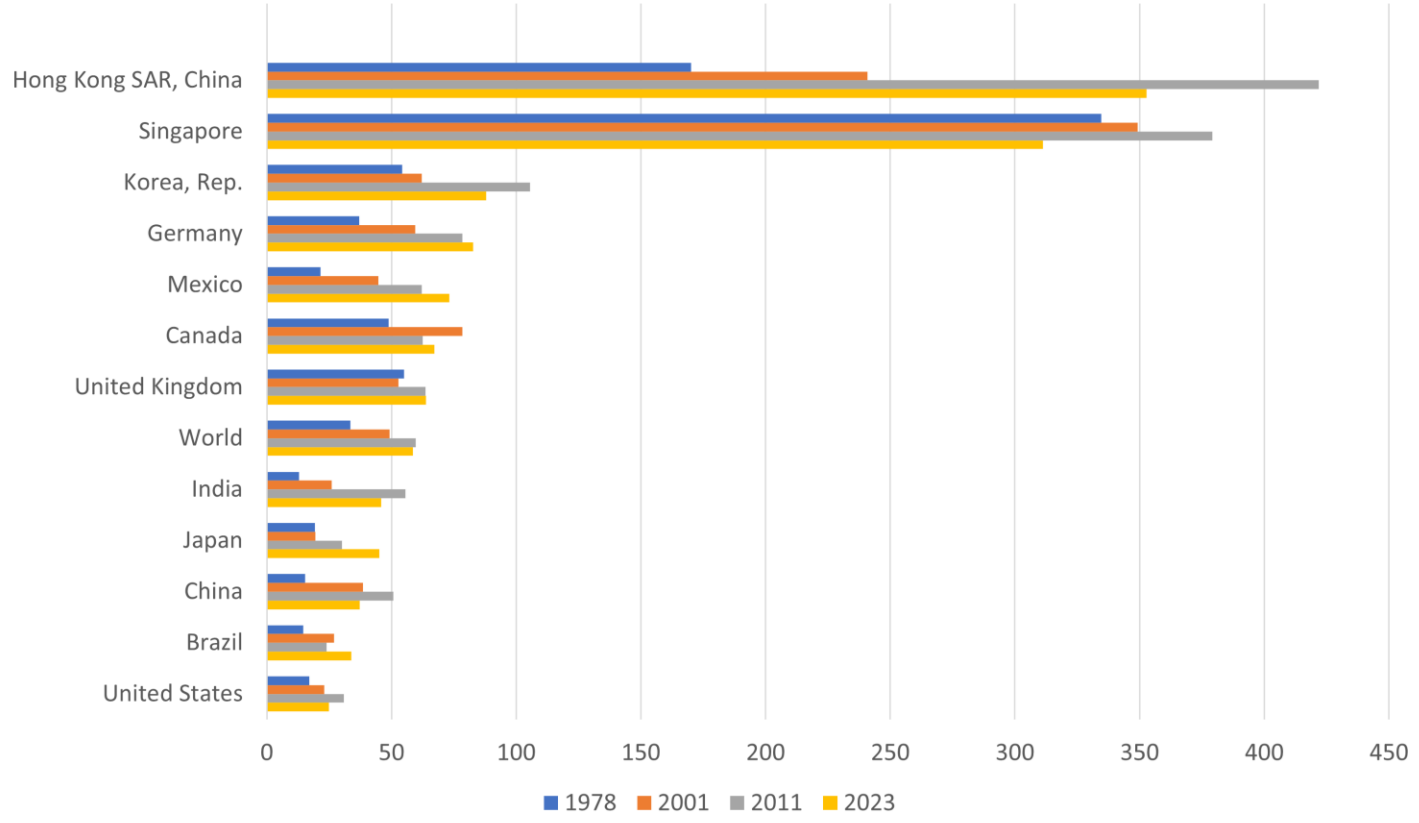
- “We live in a globalized world where international trade has become largely predominant.”
- “We mostly trade consumer good such as food or iPhones.”
- “Trade (and FDI) mostly happens between high-wage (rich) and low-wage (poor) countries.”
- “The world has become flat and distance is no longer important in shaping trade patterns. ”
- “Trade is a zero-sum game with winners and losers.”

What's the volume of trade?

- Misconception: "We live in a globalized world where international trade has become largely predominant."
- Reality:
  - There is not that much trade compared to domestic (local) transactions
  - The ratio of trade to GDP is small for most countries
  - Yet, we see increasing trade volumes over the past decades – "globalization"

What's the volume of trade?

- Trade to GDP ratio of selected economies
  - Source: World Development Indicators, the World Bank

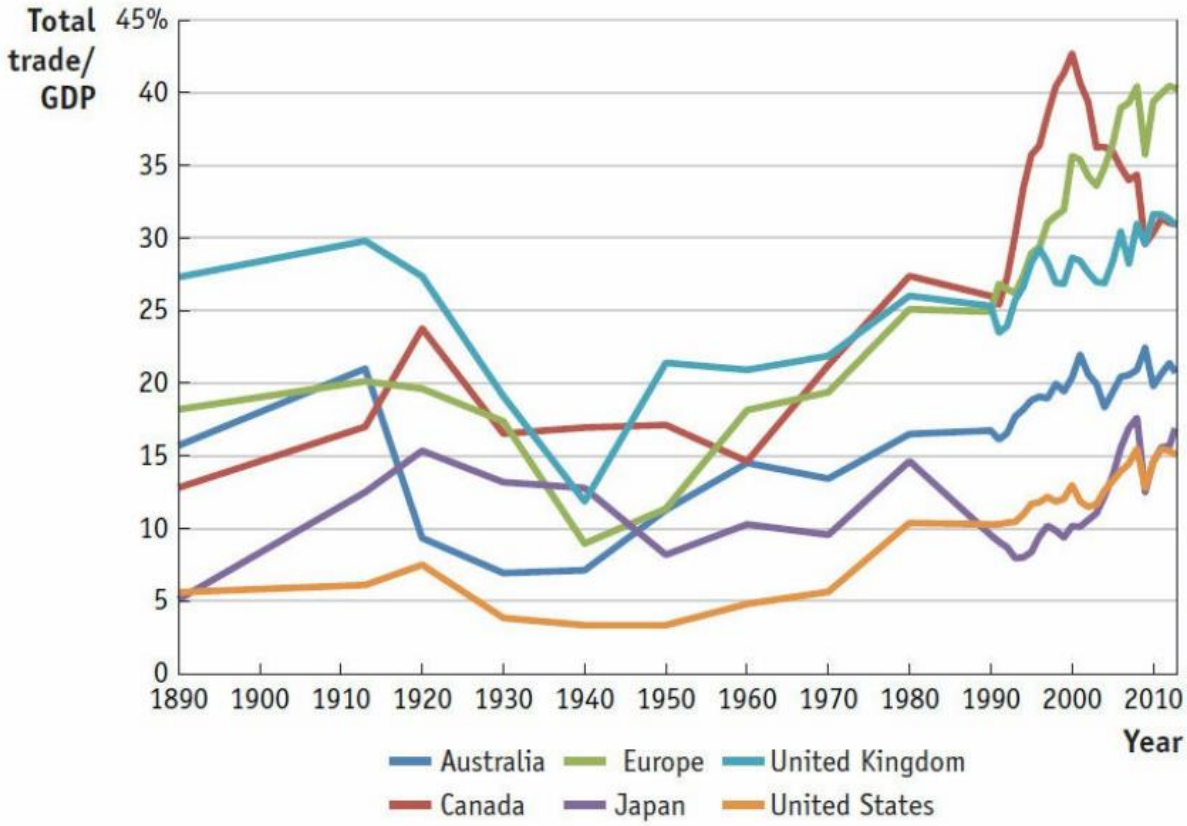


What's the volume of trade?

- Globalization over the past decades
  - Increasing flow of goods and services
  - Increasing flow of capital and labor
  - Increasing flow of information
  - Not the first wave of globalization in human history

What's the volume of trade?

- Trade to GDP ratio in history



Three "golden ages" of trade

- 1890s to WWI
- Since 1950s
- Since 1990s

What's the volume of trade?

- Forces shaping globalization over the past decades
  - Technology
    - Transportation-enhancing
    - Communication-enhancing
    - Productivity-enhancing

What's the volume of trade?

- Forces shaping globalization over the past decades
  - Policy
    - Trade liberalization
    - FDI liberalization
    - International migration

What's the volume of trade?

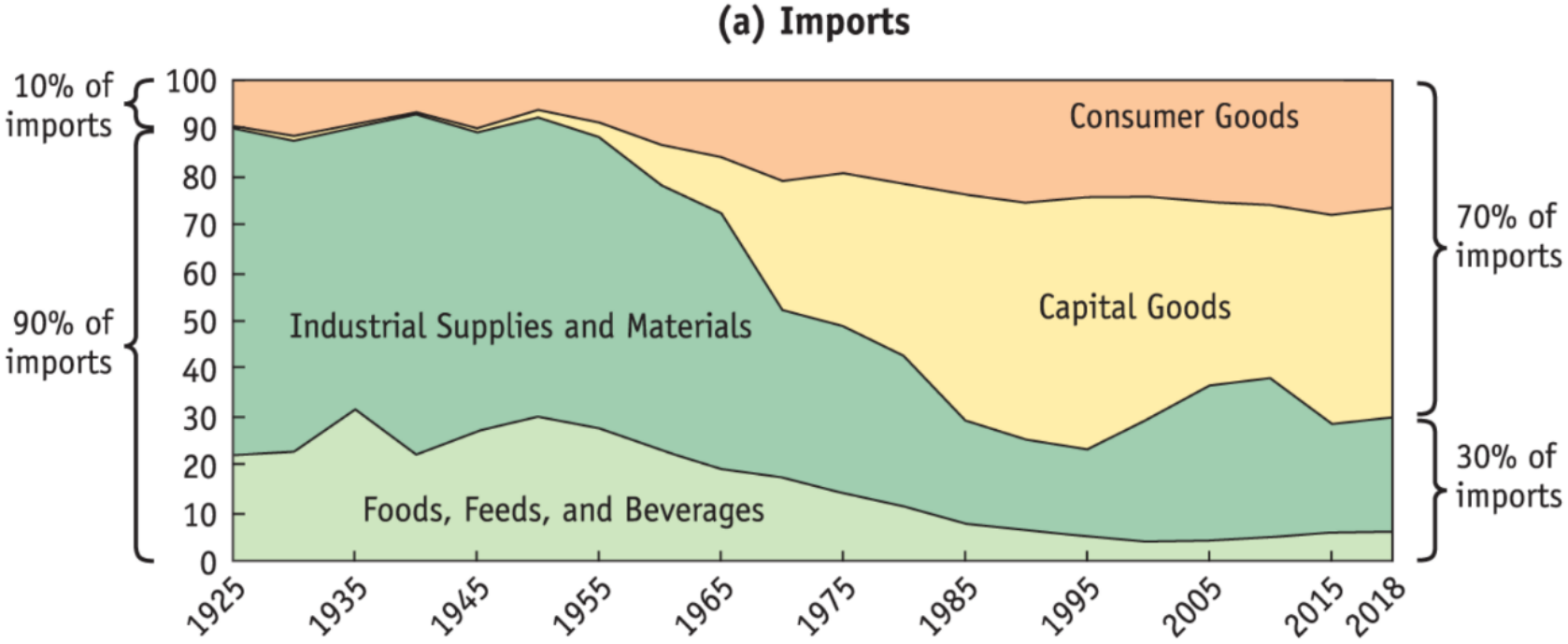
- What's new about the recent wave of globalization?
  - Unprecedented magnitude of trade and capital flows
  - Communication technologies
  - Fragmentation of production (e.g. iPhone's global production chain)

What do we trade?

- Misconception: “We mostly trade consumer good such as food or iPhones.”
- Reality: most trade is industrial supplies and capital goods (e.g. machinery, intermediate inputs)

What do we trade?

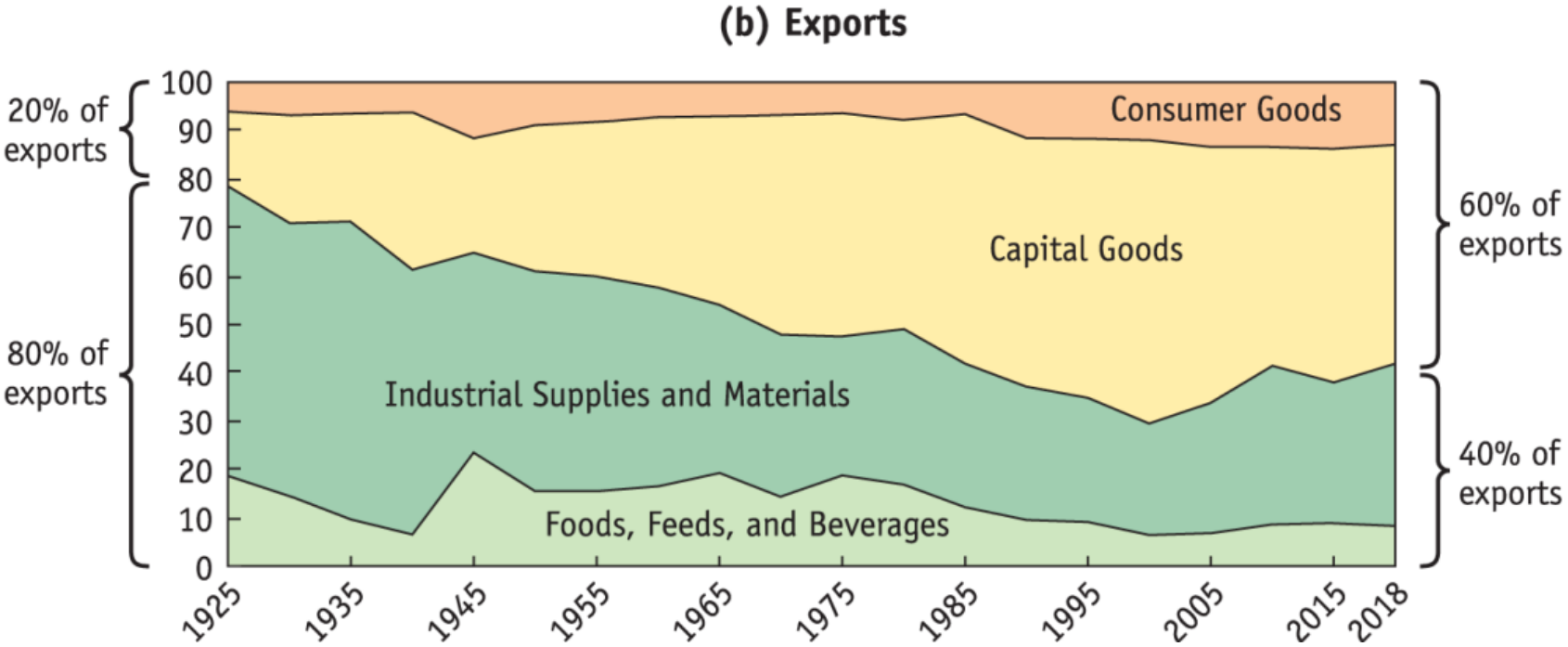
- The structure of U.S. imports, 1925-2018



Source: Bureau of Economic Analysis, the United States.

What do we trade?

- The structure of U.S. exports, 1925-2018



Source: Bureau of Economic Analysis, the United States.

With whom do we trade?

- Misconception: “Trade (and FDI) mostly happens between high-wage (rich) and low-wage (poor) countries.”
- Reality: most trade is between rich countries; most FDI is both from and to rich countries.

With whom do we trade?

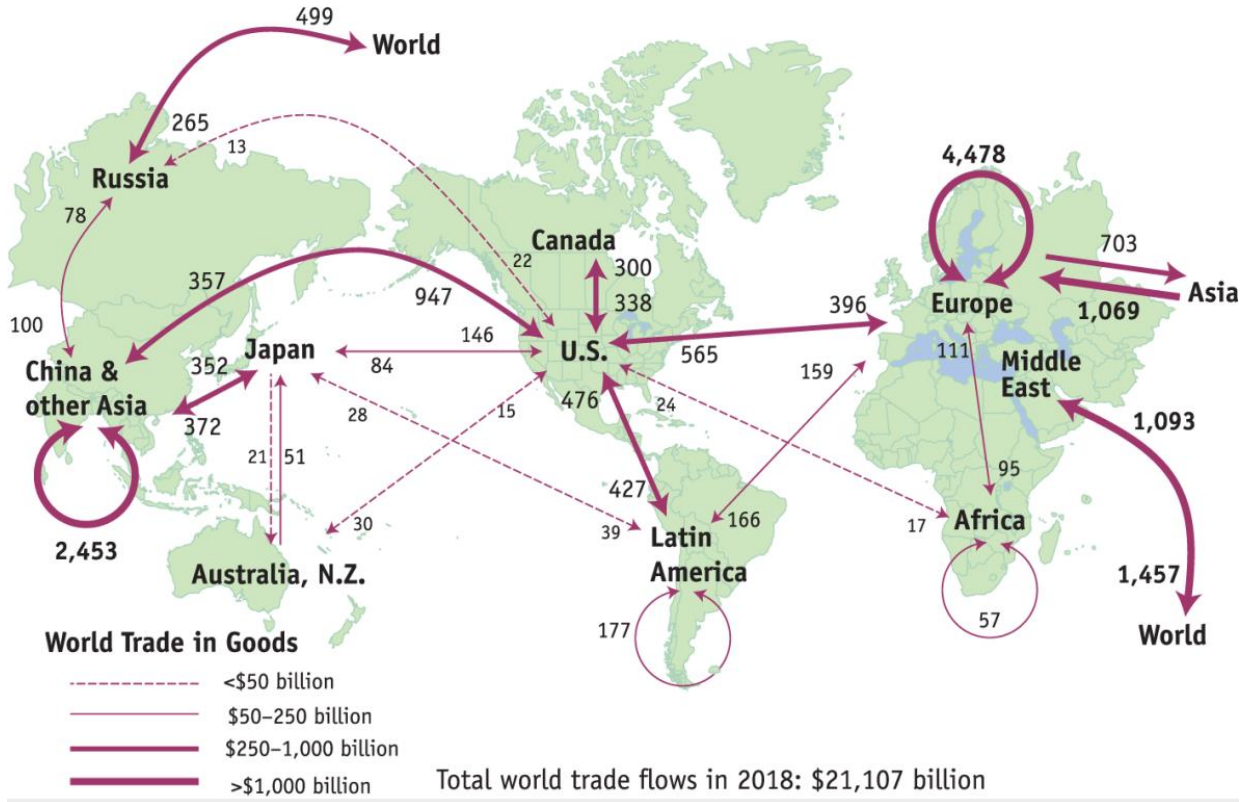


FIGURE 1-2 World Trade in Goods, 2018 ($ billions) This figure shows the trade in merchandise goods between selected countries and regions of the world for 2018 in billions of dollars. The amount of trade in goods is illustrated by the width of the lines, with the largest trade flows having the heaviest lines and the smallest having dashed lines.

Data from: United Nations trade data.

With whom do we trade?

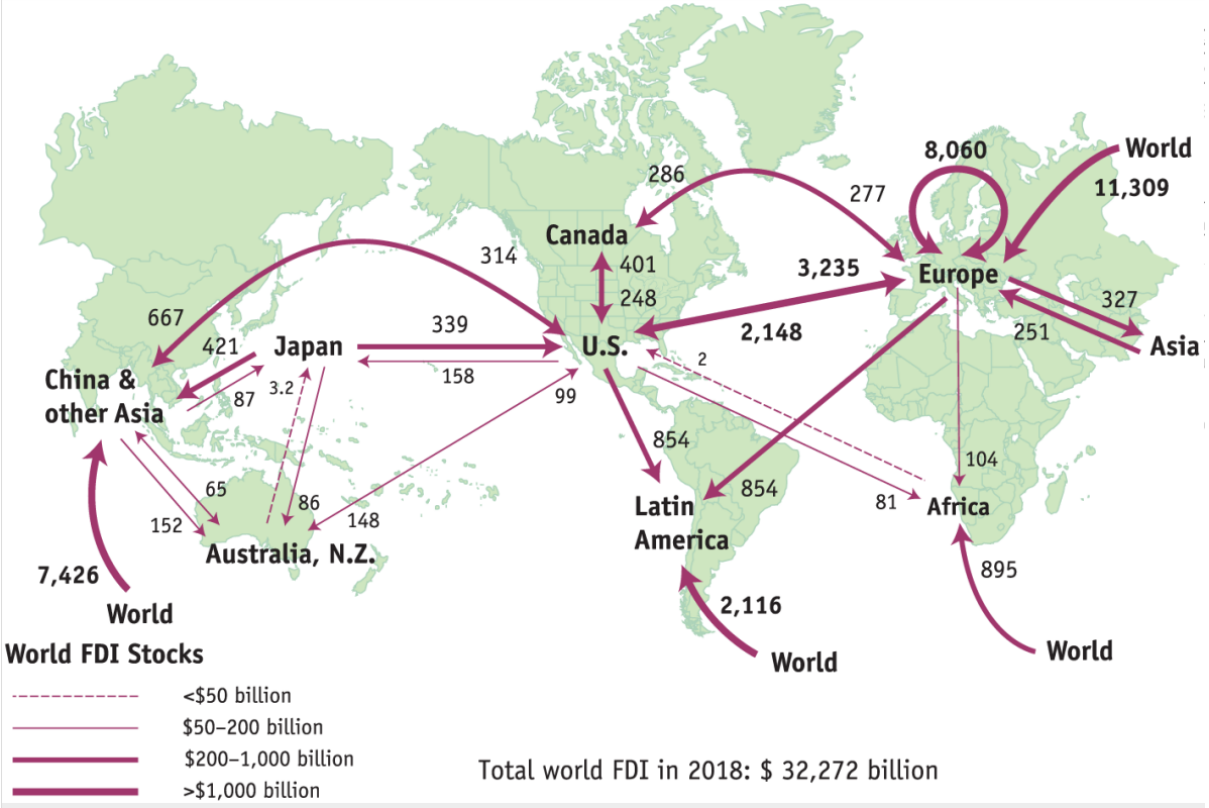


FIGURE 1-7 Stock of Foreign Direct Investment, 2018 ($ billions) This figure shows the stock of foreign direct investment between selected countries and regions of the world for 2018 in billions of dollars. The stock of investment is illustrated by the width of the lines, with the largest stocks having the heaviest lines and the smallest having dashed lines.

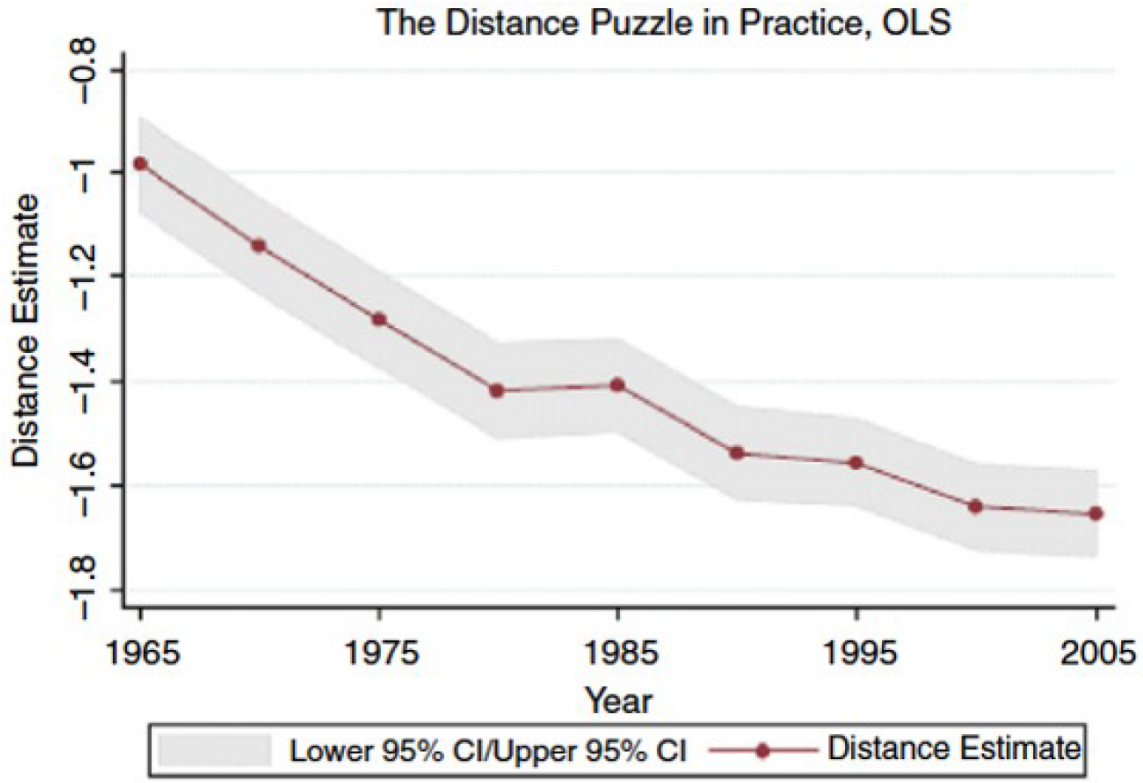
Data from: OECD and UN foreign investment data.

Does distance matter for trade?

- Misconception: “The world has become flat and distance is no longer important in shaping trade patterns. ”
- Reality: trade is even more sensitive to distance now compared to several decades ago.

Does distance matter for trade?

- The negative effect of distance on trade has increased



Source: Yotov (2012), Economic Letters 117

What distance may capture?

- Cultural: language, ethnicity, religion, norms, ...
- Administrative: colonial ties, regulation, hostilities, currency regime, ...
- Geographic: physical distance, common borders, access to ports, climate, ...
- Economic: endowments, market size, currency volatility, infrastructure, ...

What distance may capture?

- Example of cultural distance: Nike's CNY series, 2016

Who gains and losses from trade?

- Misconception: “Trade is a zero-sum game with winners and losers.”
- Reality: trade is a positive-sum game where all countries gain from trade. However, within each country, there can be both winners and losers from trade.
- Maybe the most important misconception about trade!
- We’ll elaborate this with models and data in future lectures over the semester