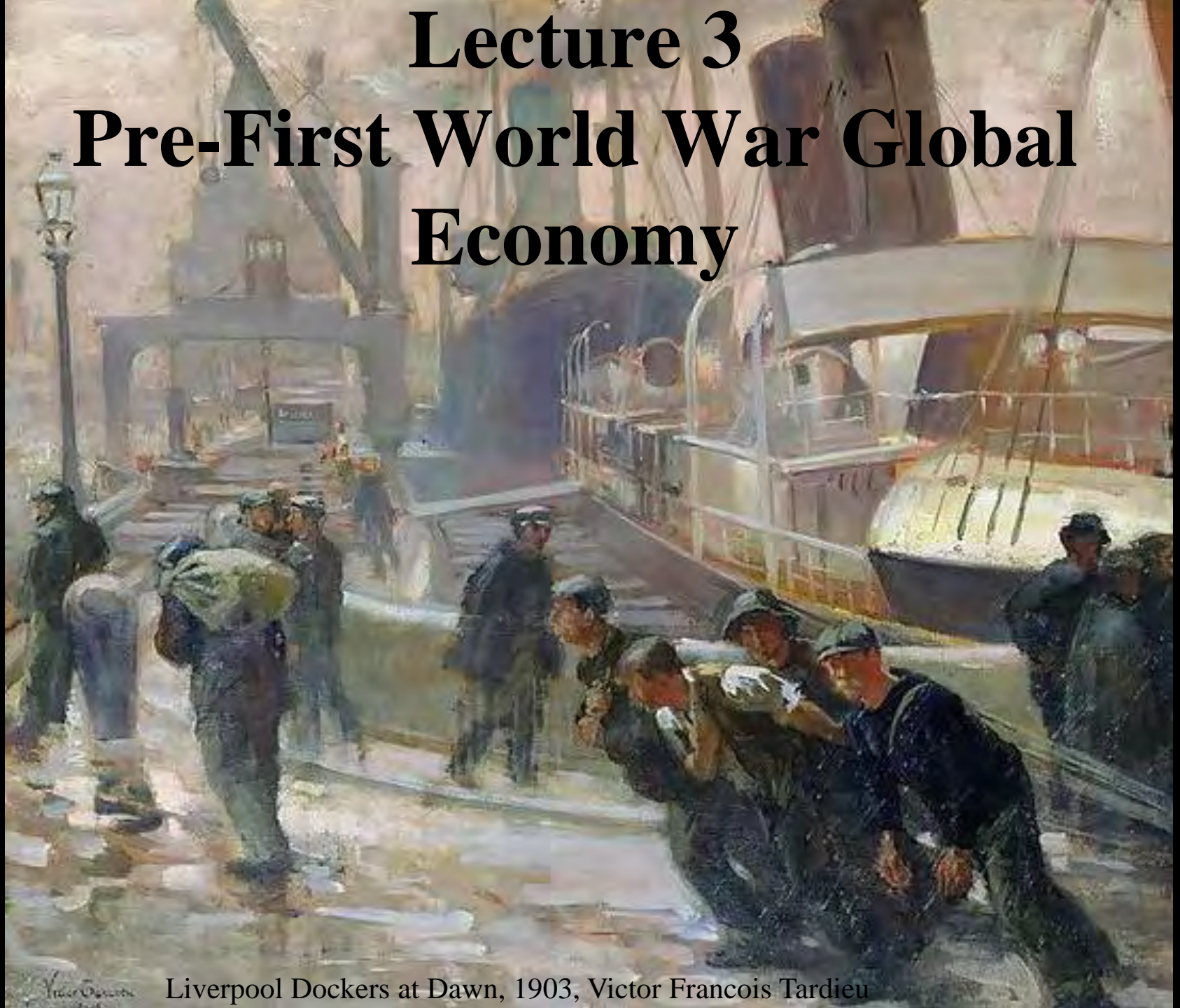


Lecture 3

Pre-First World War Global Economy



Liverpool Dockers at Dawn, 1903, Victor Francois Tardieu

All of globalization and history in one diagram

		SPIRIT <i>Political and Institutional Basis for Globalization</i>	
		<i>weak</i>	<i>strong</i>
FLESH <i>Economic and Technological Basis for Globalization</i>	<i>weak</i>	Classical to Medieval Era (15 th century and before)	Early Modern Era (16 th to 18 th centuries)
	<i>strong</i>	Most of Twentieth Century (ca. 1914–1990s?)	“Nineteenth Century” (ca. 1815–1914)

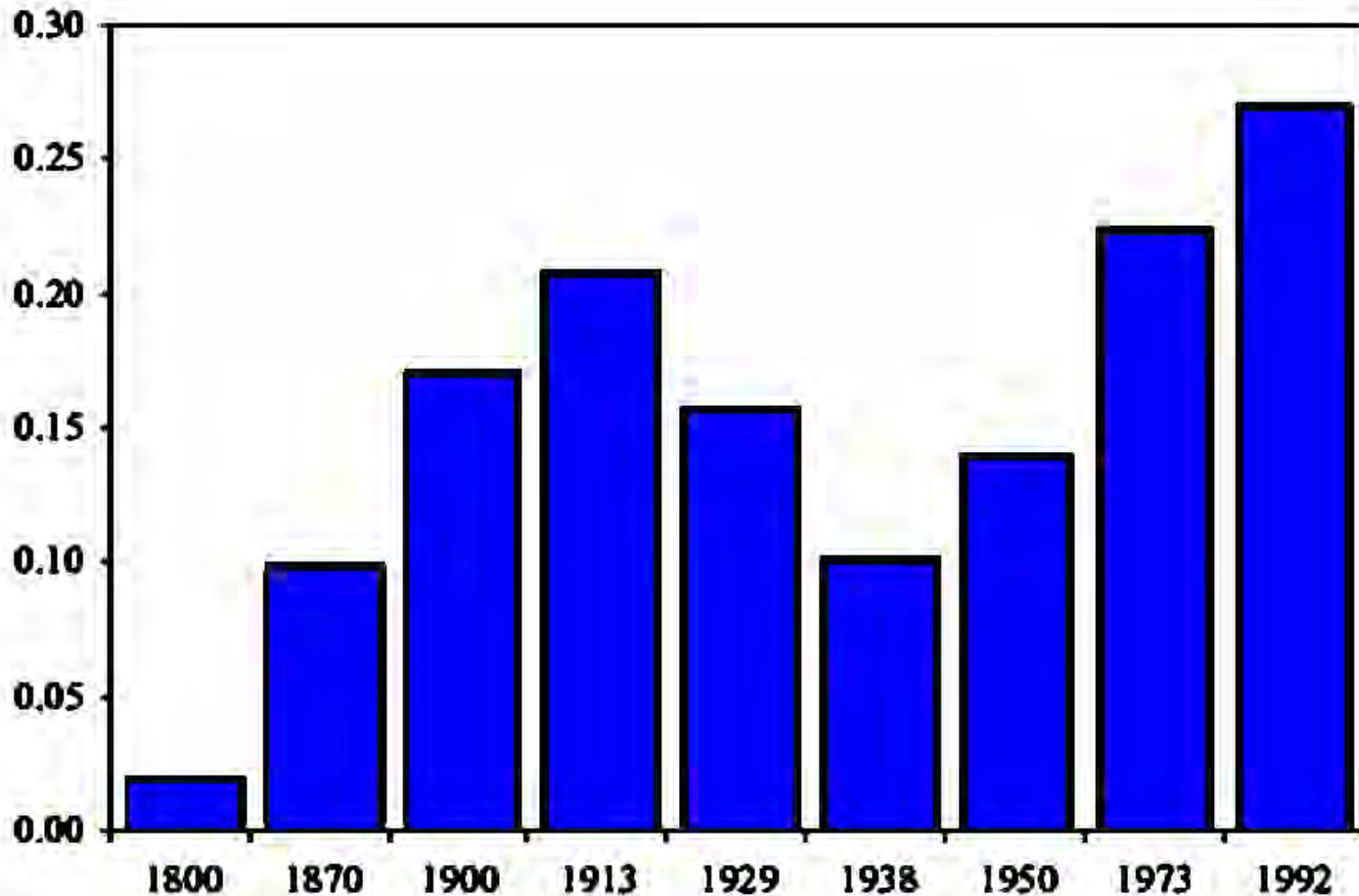
Source: Alan Taylor, “Globalization, Trade, and Development: Some lessons for History” NBER Working Paper 9326, Nov. 2002

General Features of late 19th C.

- Growth of Trade
 - Trade/GNP (major countries)
- Capital Market Integration
- Immigration 1870 -1910
 - Cumulative labour force impact (inc. demography)
 - Old world: -13%
 - New world: +40%
- Convergence?
- Factor price equalization?
- Frontier and multilateral adjustment.
- Tariffs

Trade as percentage of output

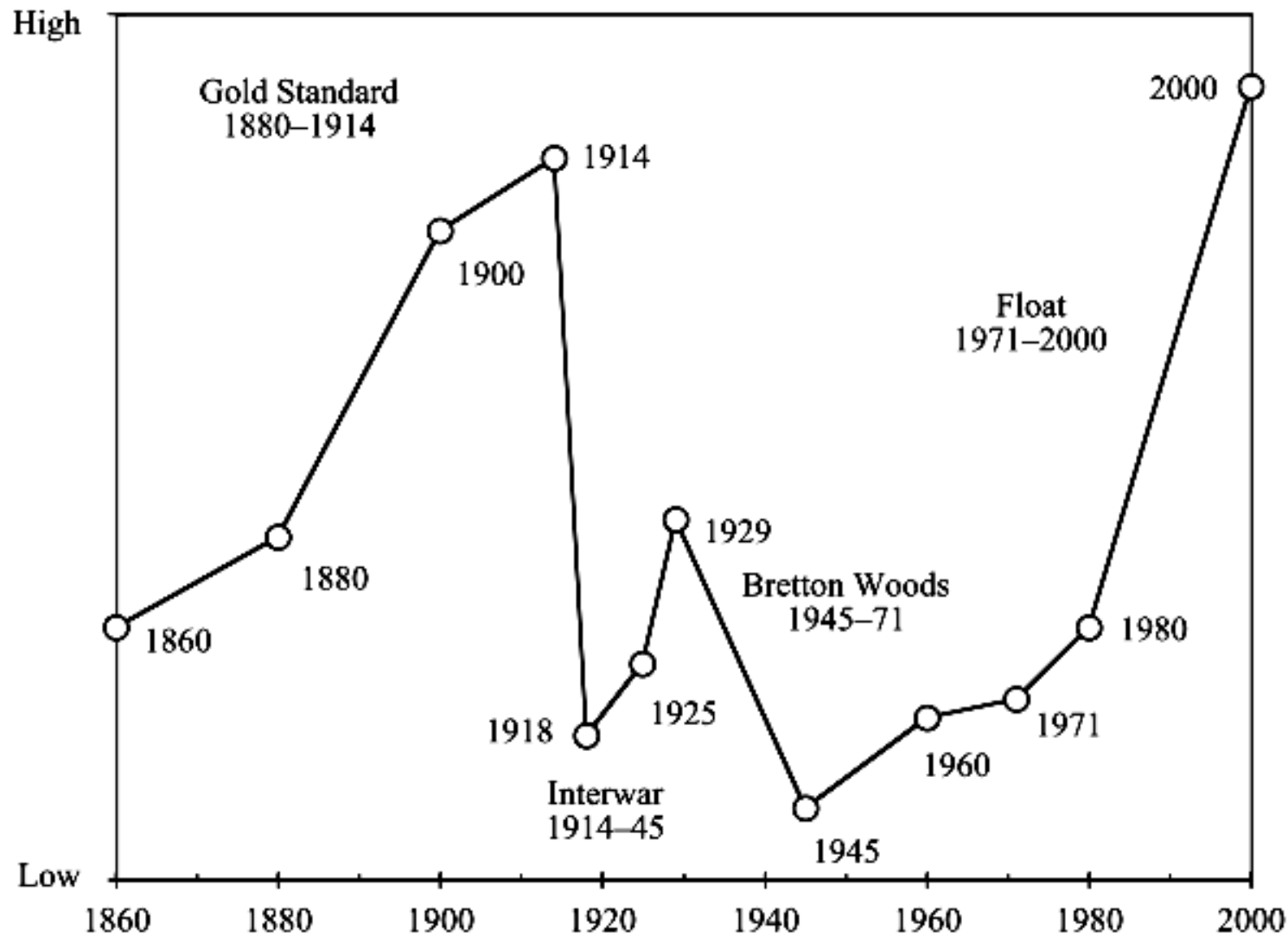
56 countries 1800-2000



Notes: Exports plus imports divided by output.

Source: Estevadeordal, Frantz, and Taylor (2003).

Stylized view of International Investment



Political factors (Spirit)

- Somewhat more complicated than slide 1.
- Eighteenth Century Mercantilism.
- British repeal of Corn Laws, 1846.
- Cobden-Chevalier Treaty, 1860.
- German Zollverein – more liberal at mid century.
- Late 19th century tariffs to protect agriculture from globalization.
- United States – high tariff economy throughout.

Driving technology

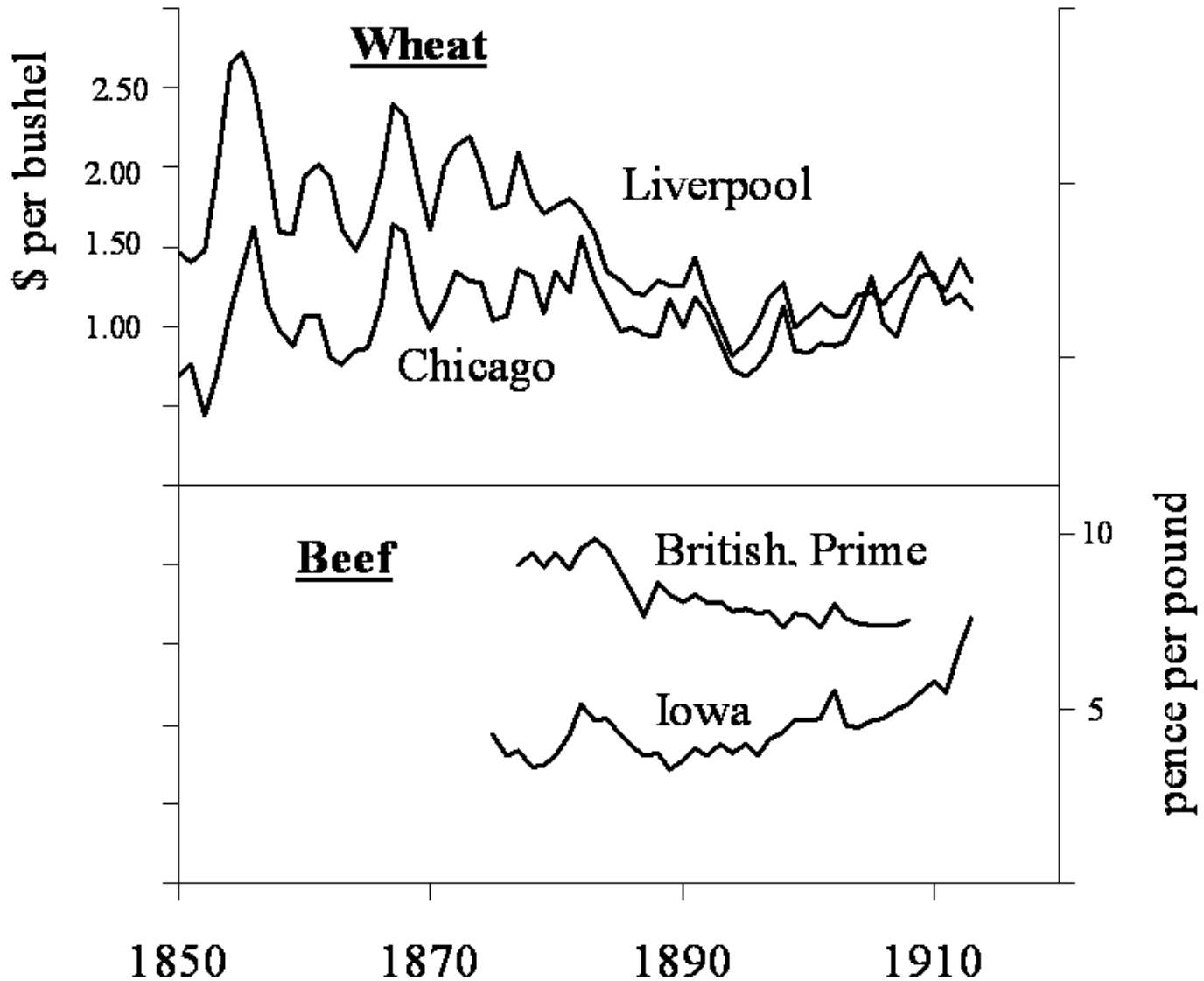
- Shifts from being driven by British technological leadership.
- However, may still be thought of as impact of the Industrial Revolution.
 - Greatest impact of IR was probably the effect of the great improvements in iron production and steam power on transportation.
 - Impact felt mainly after the mid-century.
- International prices of traded commodities converge.

Economics of cheaper transport

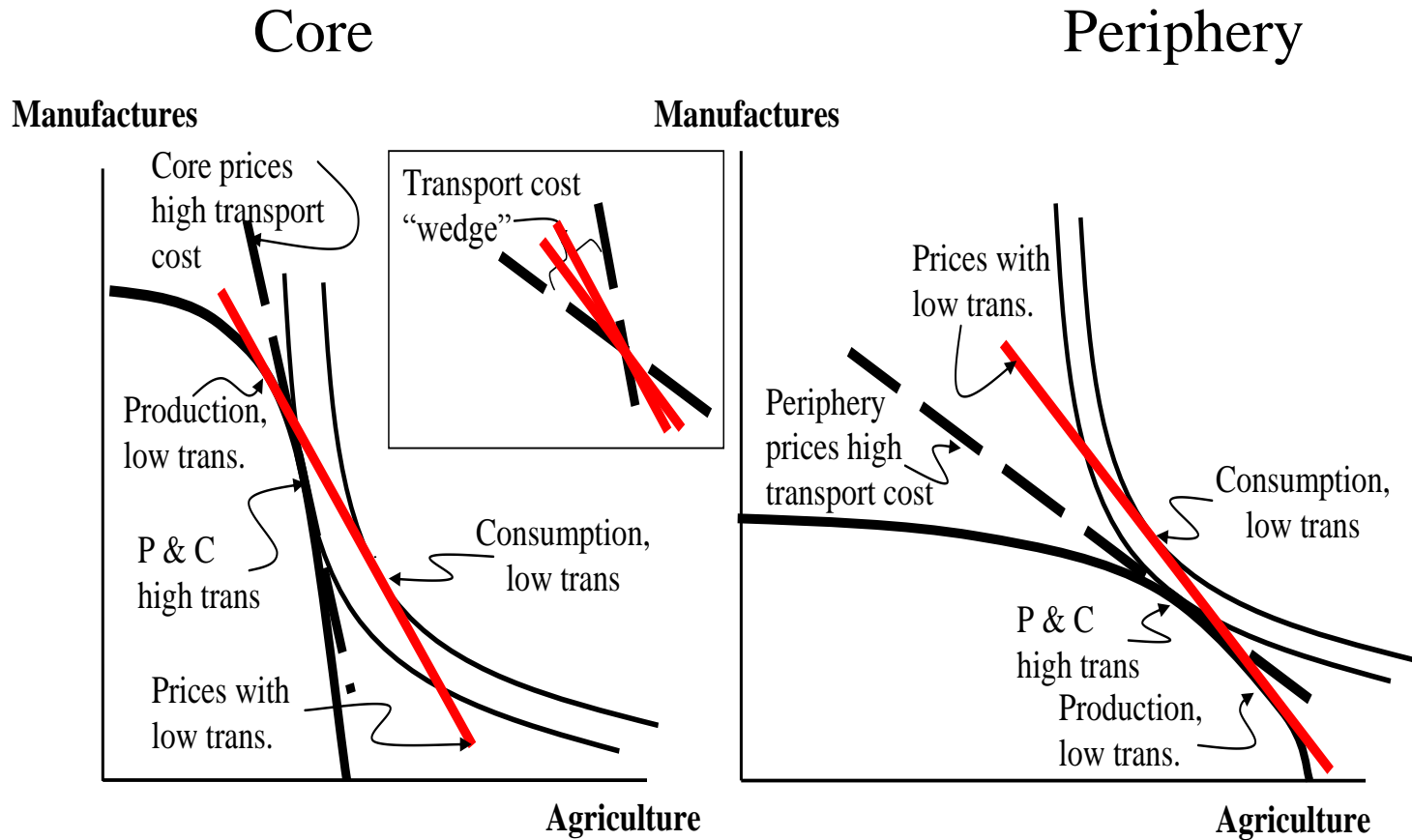
- Product price convergence in Heckscher-Ohlin framework.
 - Specialization in production response to product price convergence.
 - Factor price equalization (Stolper-Samuelson).
- Factor market integration.
 - International migration.
 - Capital markets
- The recent literature has focused on these effects (O'Rourke and Williamson; Alan Taylor; Mark Flandreau).
- Later in this lecture I want to take a slightly different tack and emphasize the frontier and increase of resource endowment.

Transportation Improvements

Wheat and Beef Prices: US and UK



Transportation Costs and Globalization



Emigration from Europe, 1846-1924

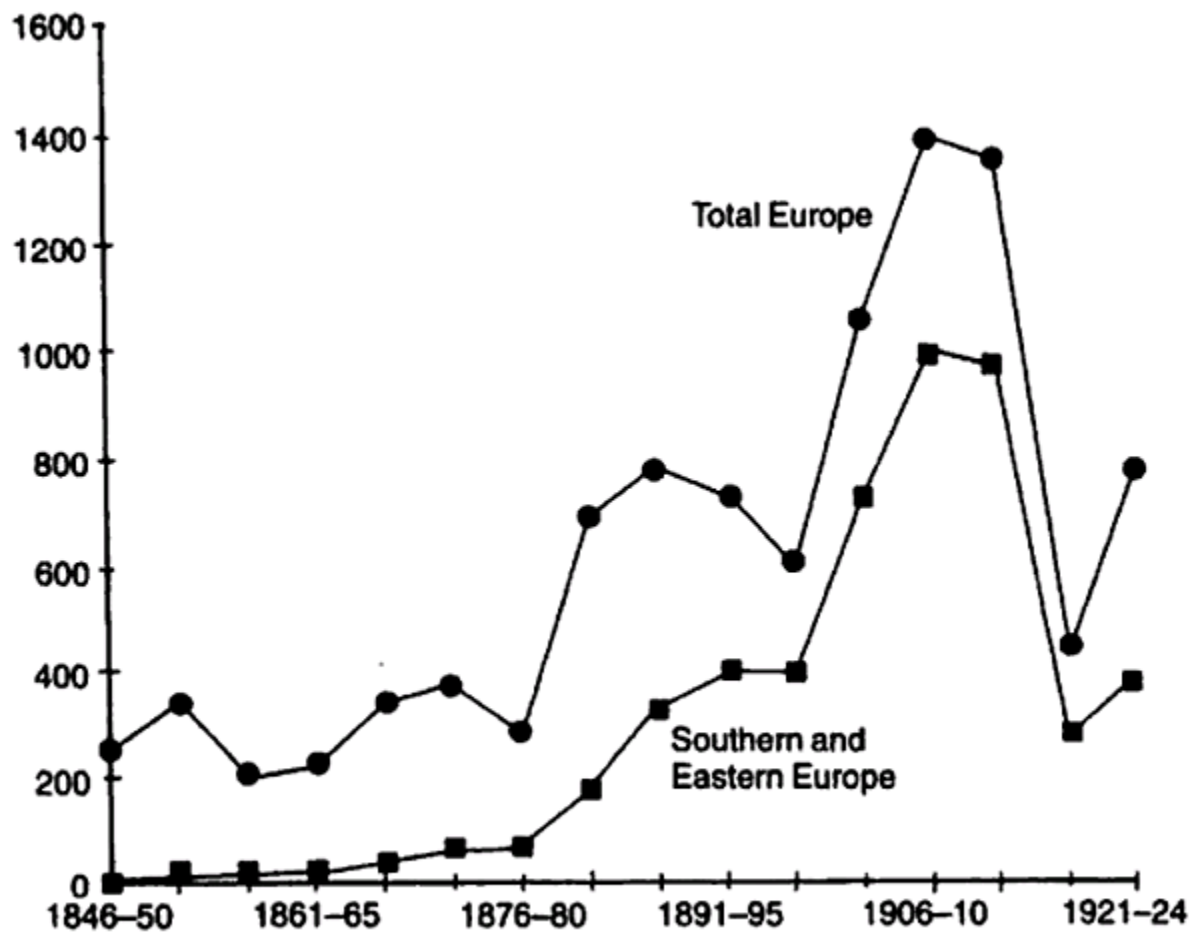


Figure 1.1 Emigration from Europe, 1846-1924, five-year annual averages (000's)

Immigration to Americas, 1846-1924

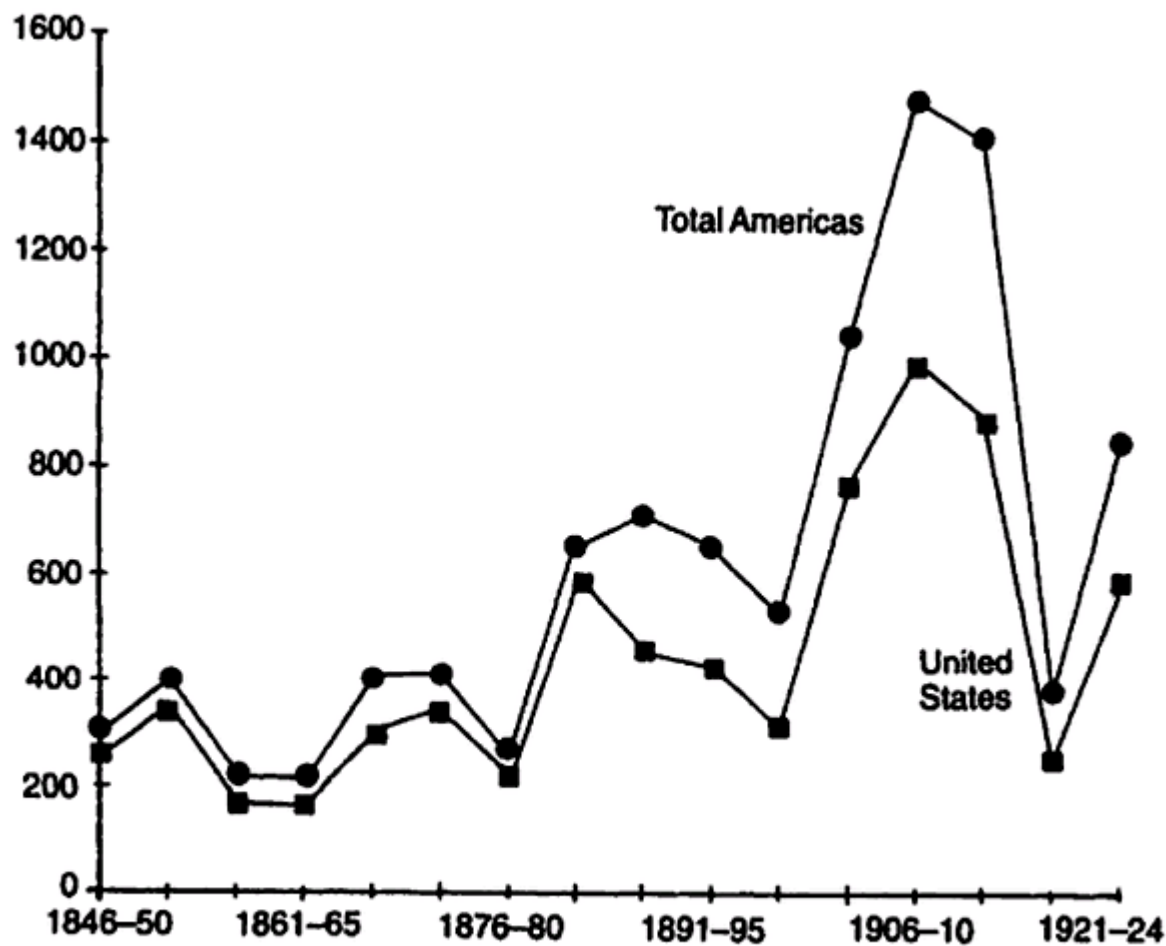


Figure 1.2 Immigration to the Americas, 1846-1924, five-year annual averages (000's)

Migration rates

Table 1.1 European emigration rates by decade (per 1000 mean population)

<i>Country</i>	<i>1851-60</i>	<i>1861-70</i>	<i>1871-80</i>	<i>1881-90</i>	<i>1891-1900</i>	<i>1901-10</i>
Austria-Hungary	2.9	10.6	16.1	47.6	—	—
Belgium	—	—	—	8.6	3.5	6.1
British Isles	58.0	51.8	50.4	70.2	43.8	65.3
Denmark	—	—	20.6	39.4	22.3	28.2
France	1.1	1.2	1.5	3.1	1.3	1.4
Germany	—	—	14.7	28.7	10.1	4.5
Ireland	—	66.1	141.7	88.5	69.8	—
Netherlands	5.0	5.9	4.6	12.3	5.0	5.1
Norway	24.2	57.6	47.3	95.2	44.9	83.3
Sweden	4.6	30.5	23.5	70.1	41.2	42.0
Switzerland	—	—	13.0	32.0	14.1	13.9
Finland	—	—	—	13.2	23.2	54.5
Italy	—	—	10.5	33.6	50.2	107.7
Portugal	—	19.0	28.9	38.0	50.8	56.9
Spain	—	—	—	36.2	43.8	56.6

Source: Ferenczi and Willcox (1929: 200-1).

Table 1.2 New World immigration rates by decade (per 1000 mean population)

<i>Country</i>	<i>1851-60</i>	<i>1861-70</i>	<i>1871-80</i>	<i>1881-90</i>	<i>1891-1900</i>	<i>1901-10</i>
Canada	99.2	83.2	54.8	78.4	48.8	167.6
United States	92.8	64.9	54.6	85.8	53.0	102.0
Cuba	—	—	—	—	—	118.4
Argentina	38.5	99.1	117.0	221.7	163.9	291.8
Brazil	—	20.4	41.1	72.3	33.8	—

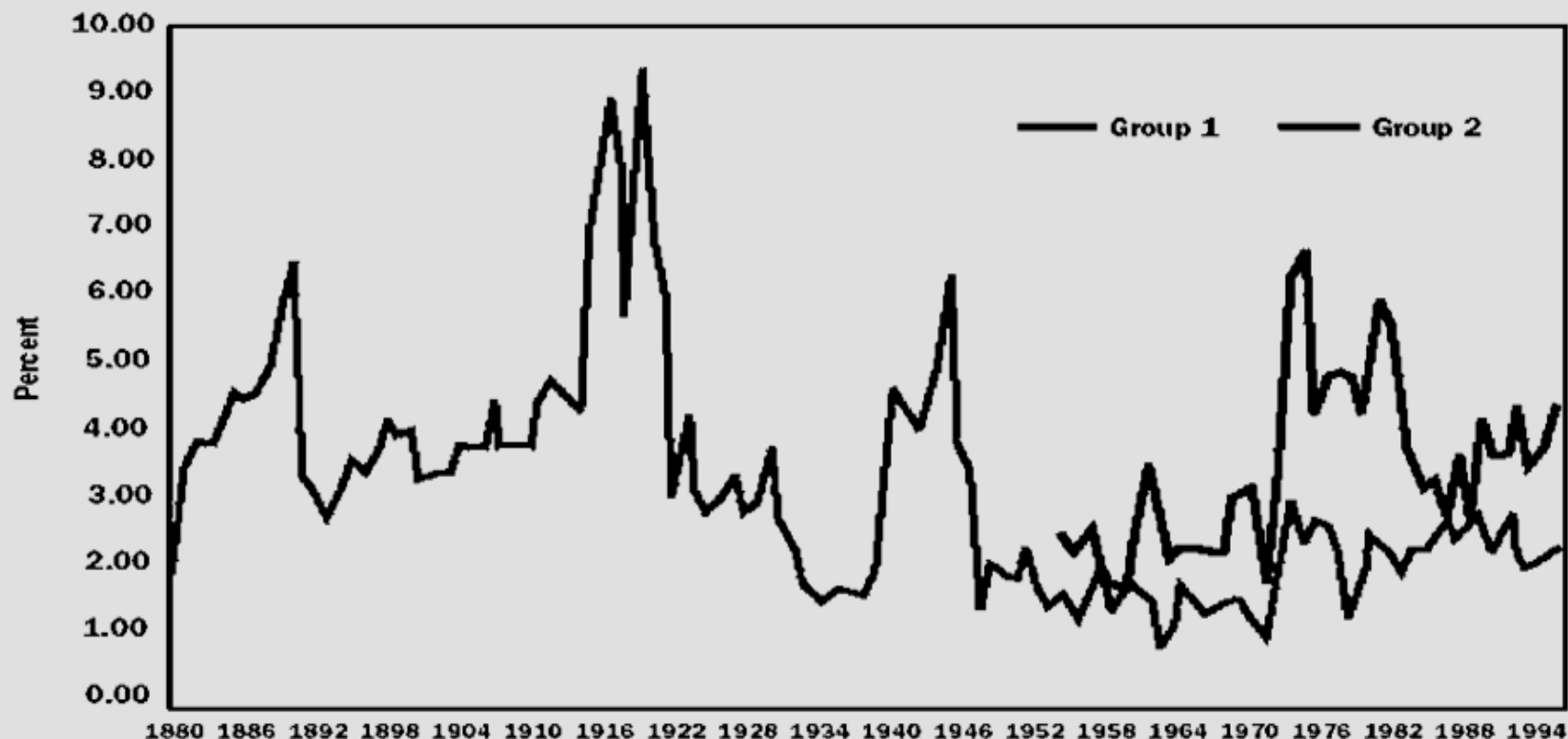
Source: See Table 1.1.

Capital Market Globalization

- Developed rapidly in late nineteenth century.
- Interest rates converged.
- Britain foremost lender.
- Aided development of frontier areas.
 - Railroads
 - Other overhead capital
- Sovereign debt issues and crises.
- Role of gold standard.

International Capital Flows

RATIO OF CURRENT ACCOUNT TO GDP (MEAN OF ABSOLUTE VALUES)

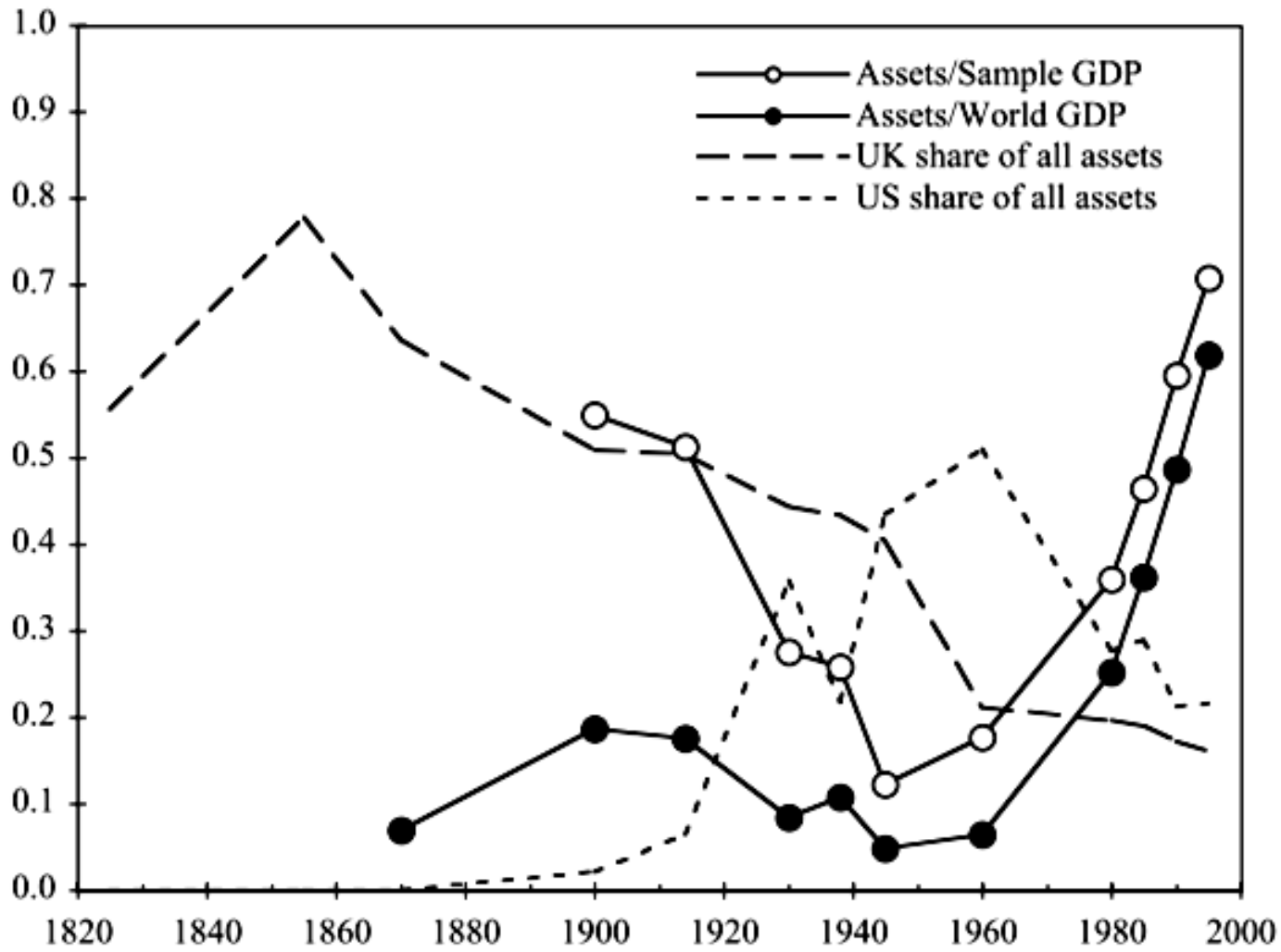


Group 1: Argentina, Australia, Canada, Denmark, Finland, France, Germany, Italy, Japan, Norway, Sweden, UK and US

Group 2: Algeria, Brazil, Chile, China, Columbia, Egypt, Hungary, India, Israel, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Romania, South Africa, Thailand, Turkey and Venezuela

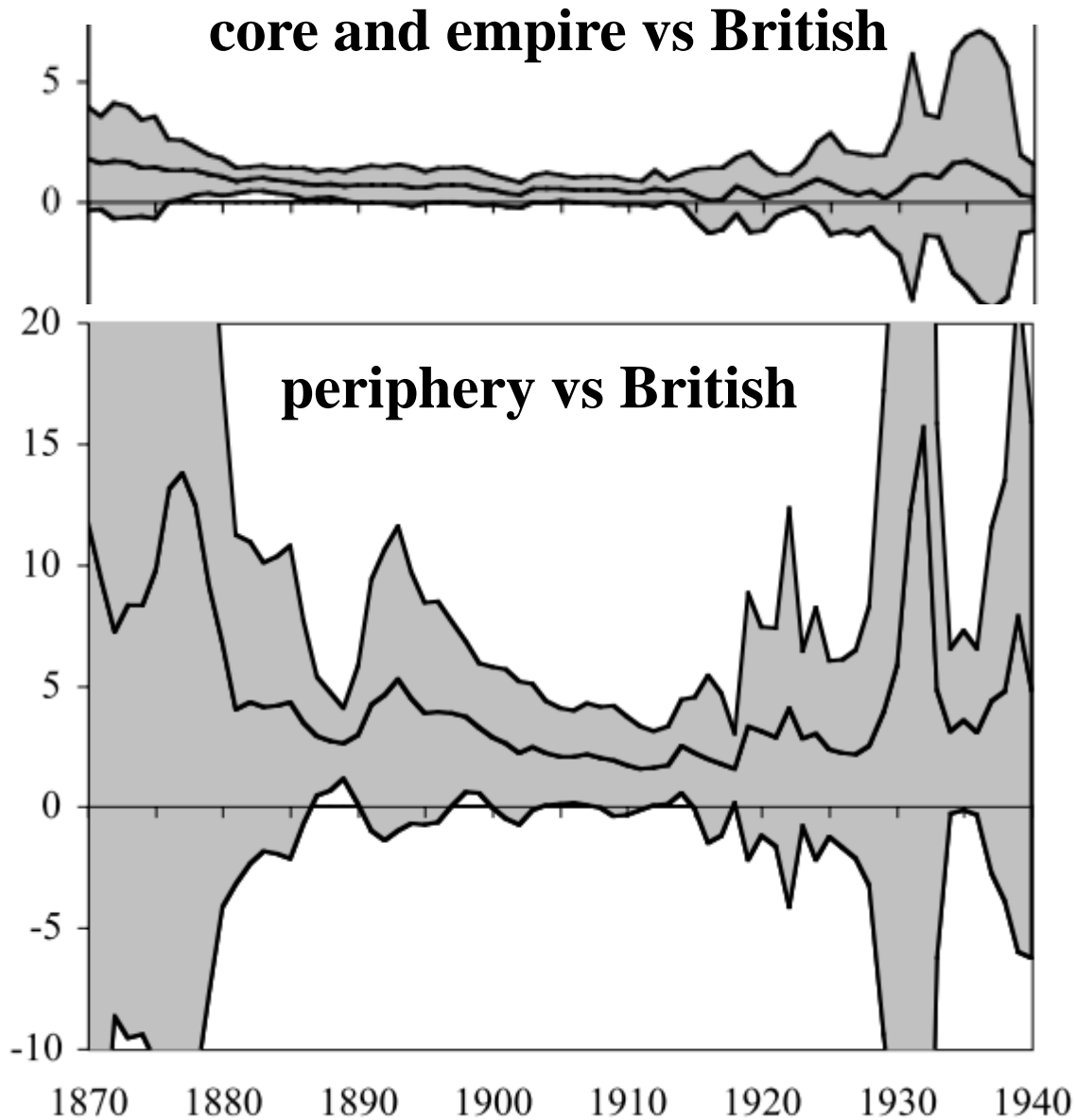
Source: See Data Appendix in Borio, Eichengreen and Kim (1998)

Foreign Capital relative to GDP



Source: Obstfeld and Taylor (2003) p. 143

Bond interest convergence:



Nature of capital market convergence

- Removal of restrictions lead to arbitrage
- Gold standard (Bordo-Rockoff; Obstfeld-Taylor)
 - Reduce transactions costs
 - “good housekeeping seal of approval”
- Globalization and Governance (Flandreau-Zumer)
- British **Empire** (Ferguson)

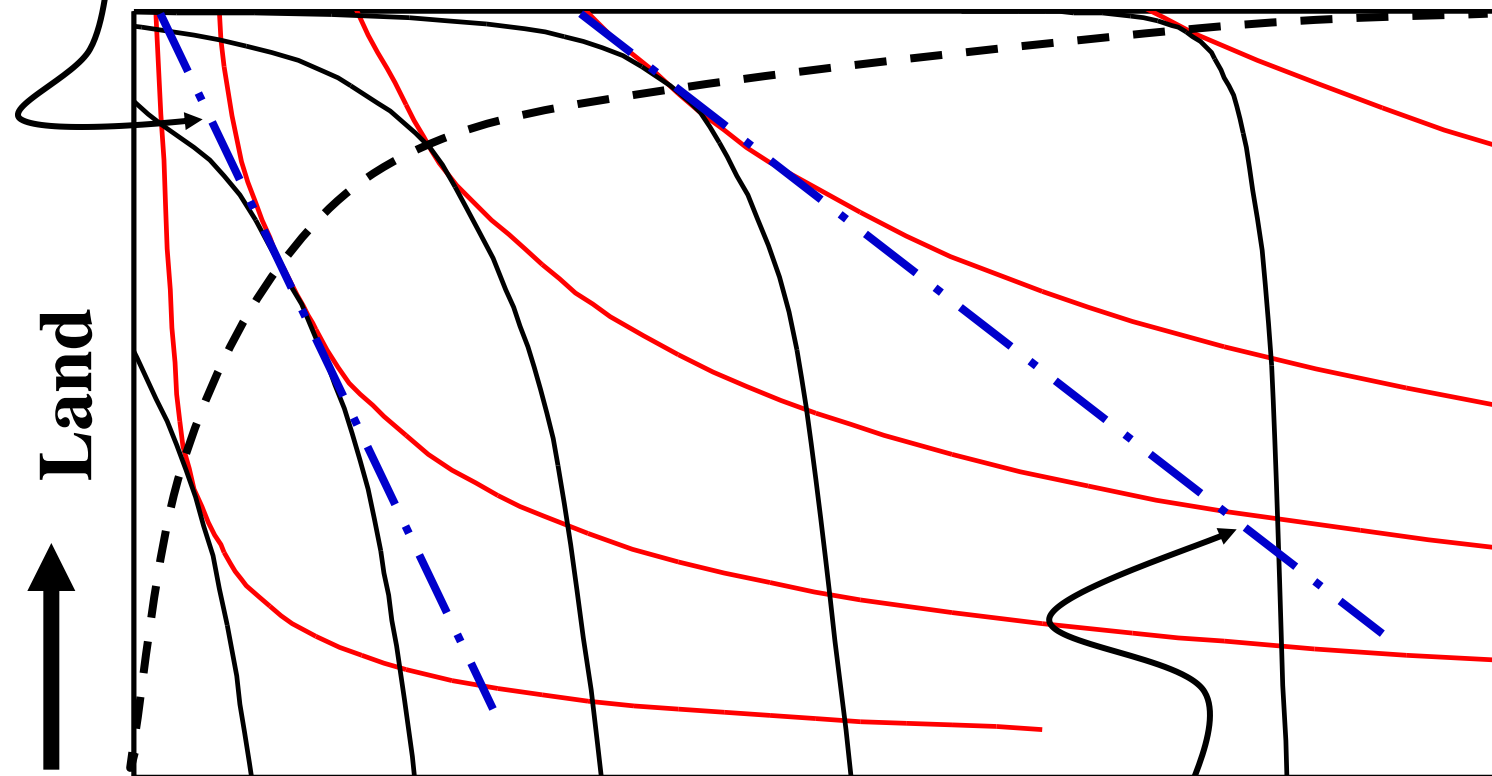
Analysis: O'Rourke and Williamson

- Heckscher-Ohlin trade theory.
- Product price convergence.
 - Implies factor price convergence.
 - Stolper-Samuelson effects of specialization.
- Also international factor movements.
 - Labour movement from labour abundant, land scarce economies to land abundant economies
 - Capital mobility and capital market integration.
- Factor price convergence a key consequence.

Factor price effects, periphery (Stolper-Samuelson)

Low Ag Q; high wages

← Manufacturing



Land



Agriculture →



Labour

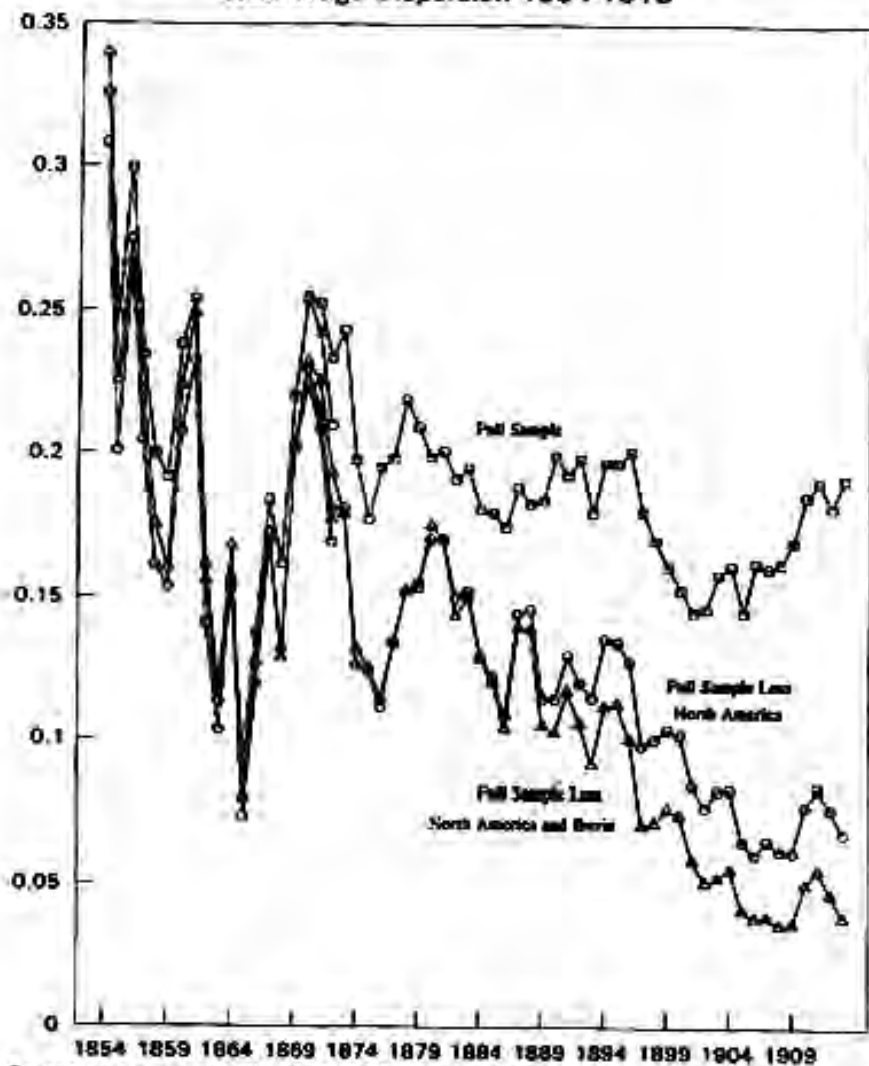
High Ag Q; low wages



Factor Price Equalization

Figure 1

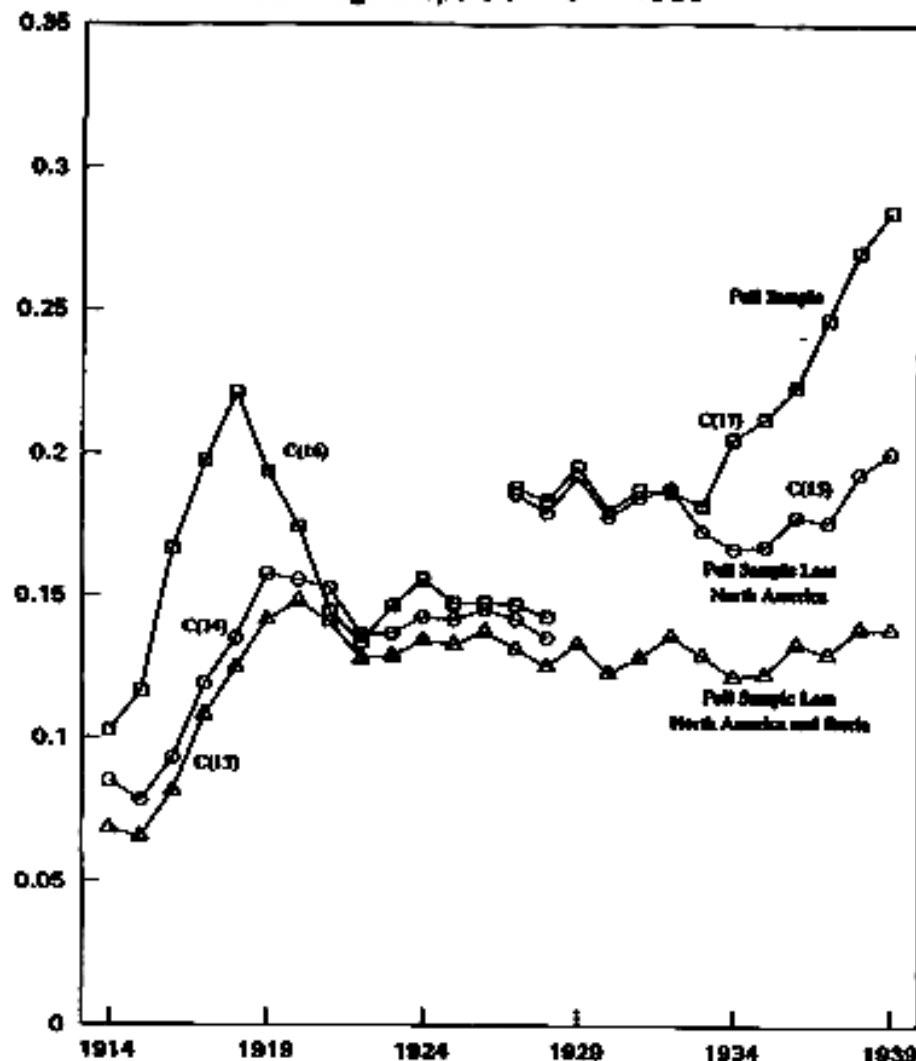
Real Wage Dispersion 1854-1913



Source: Williamson (1995, Table A2.1; revised 1998)

Figure 2

Real Wage Dispersion 1914-1939



Source: Williamson (1995, Table A2.2)

C(14) and C(16) exclude Portugal which enters in 1927 giving rise to series C(15) and C(17).

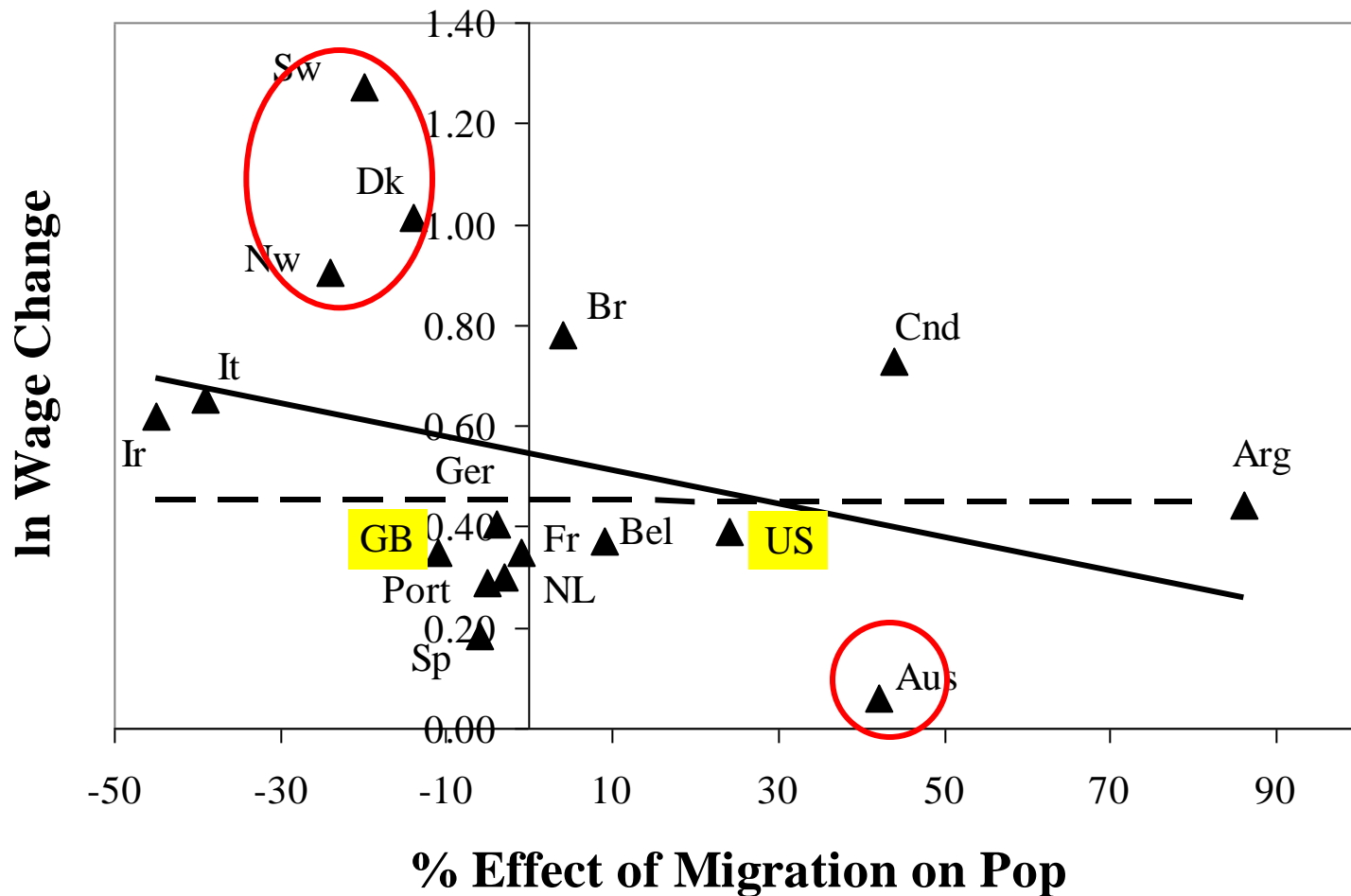
America as a Puzzle

Real Wage Convergence?

Britain and the United States 1870 – 1914

<u>Convergence Force:</u>	<u>Effect on real wages:</u>		
	<u>Britain</u>	<u>US</u>	<u>British/US</u>
1. Price Convergence:	+ 20.0 %	0.0 %	+ 20.0
2. Labour Migration	+ 5.6 %	-8.1 %	+ 13.7
3. Capital Movement	-7.3 %	+ 0.1 %	-7.2
Overall			+ 26.5

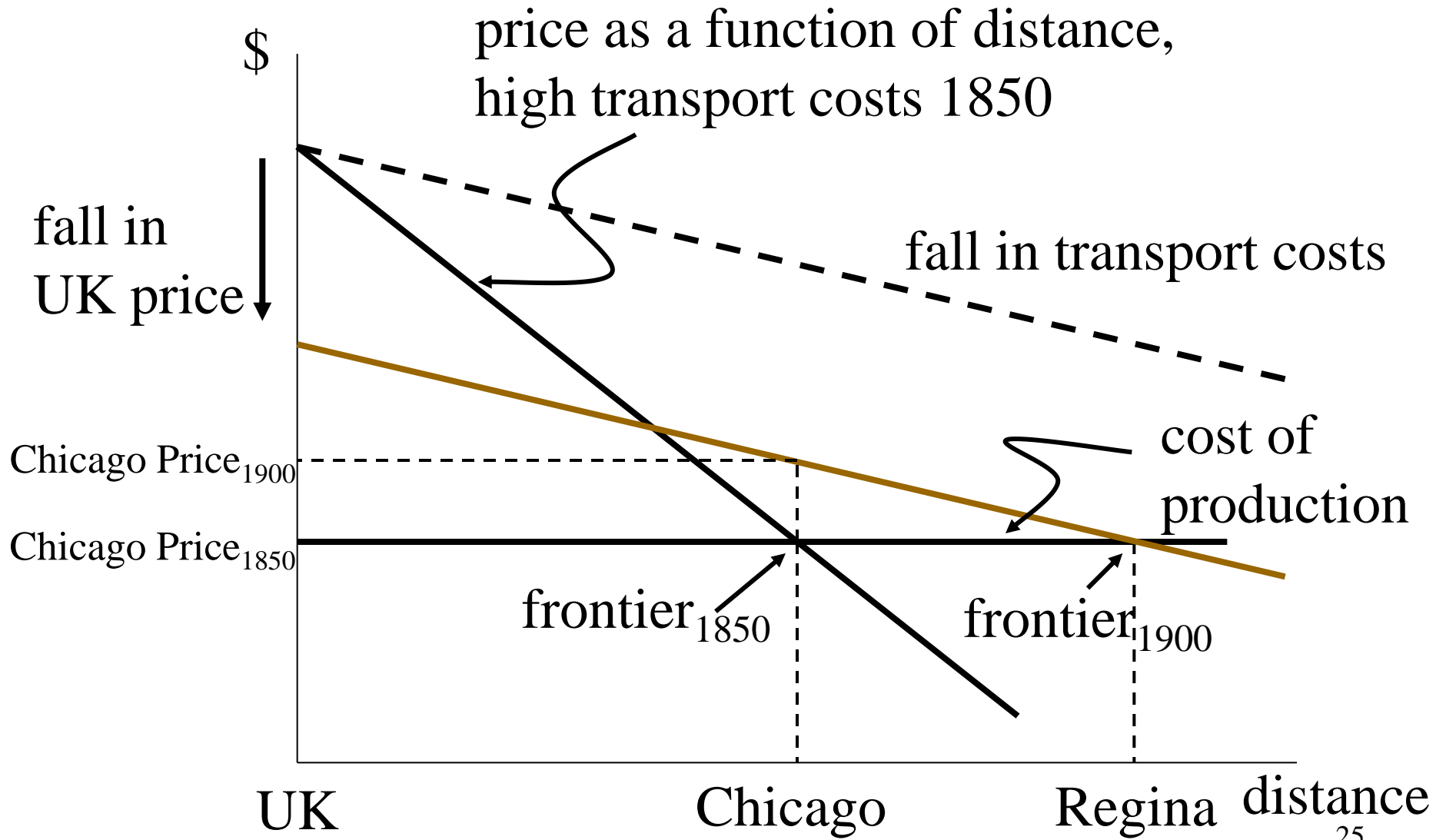
Migration and real wages



My preferred alternative focus: Core, Periphery, Frontier

- Core
 - Western Europe (and NE United States)
 - Land poor
 - Labour and capital abundant
- Periphery
 - Typically continental frontiers
 - US, Russian steppes, southern hemisphere, SE Asia
 - Land abundant, but often largely unsettled

Movement of the frontier



Wheat production and trade

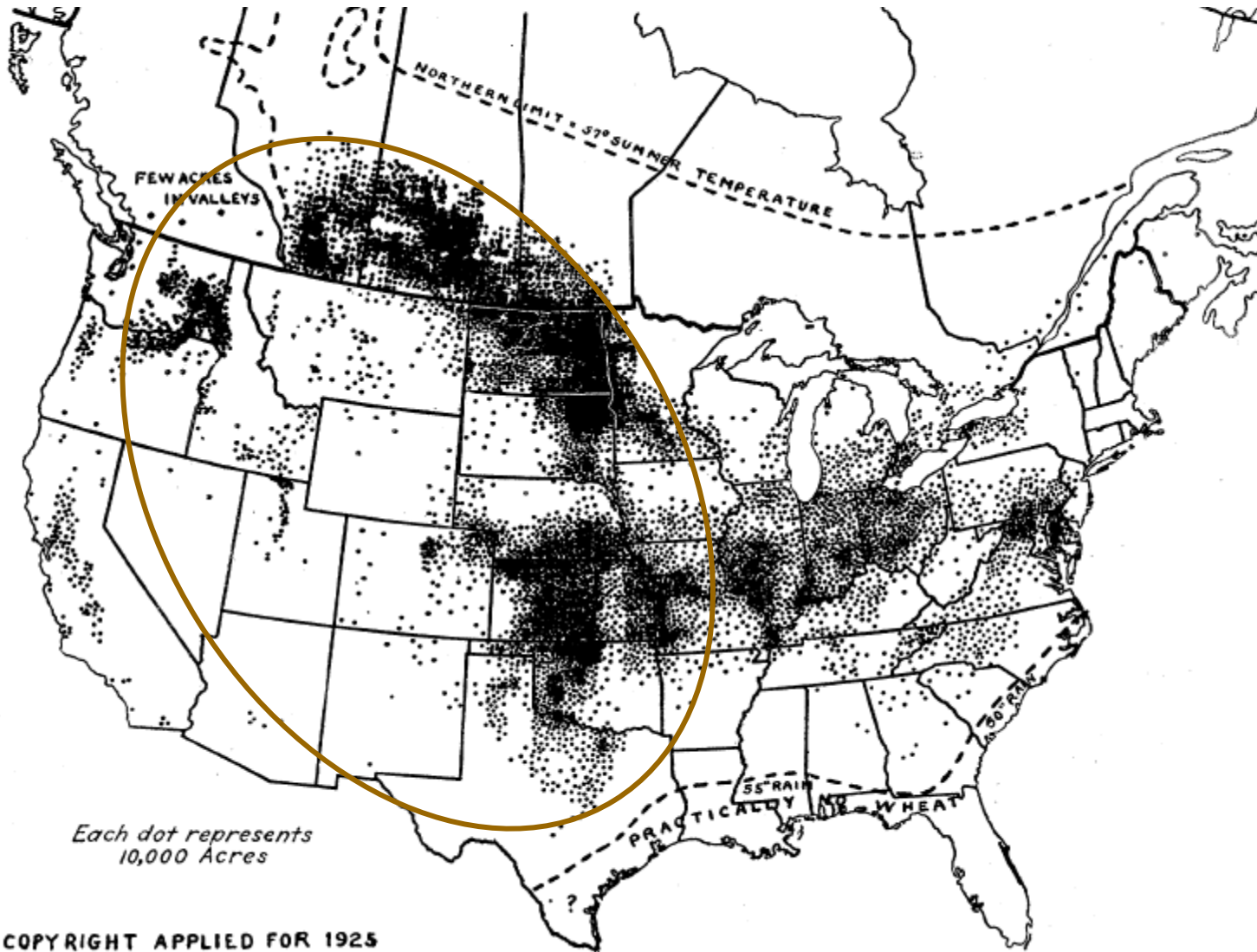
Early 1870s



Pre WWI



Wheat Acreage, US & Canada 1920

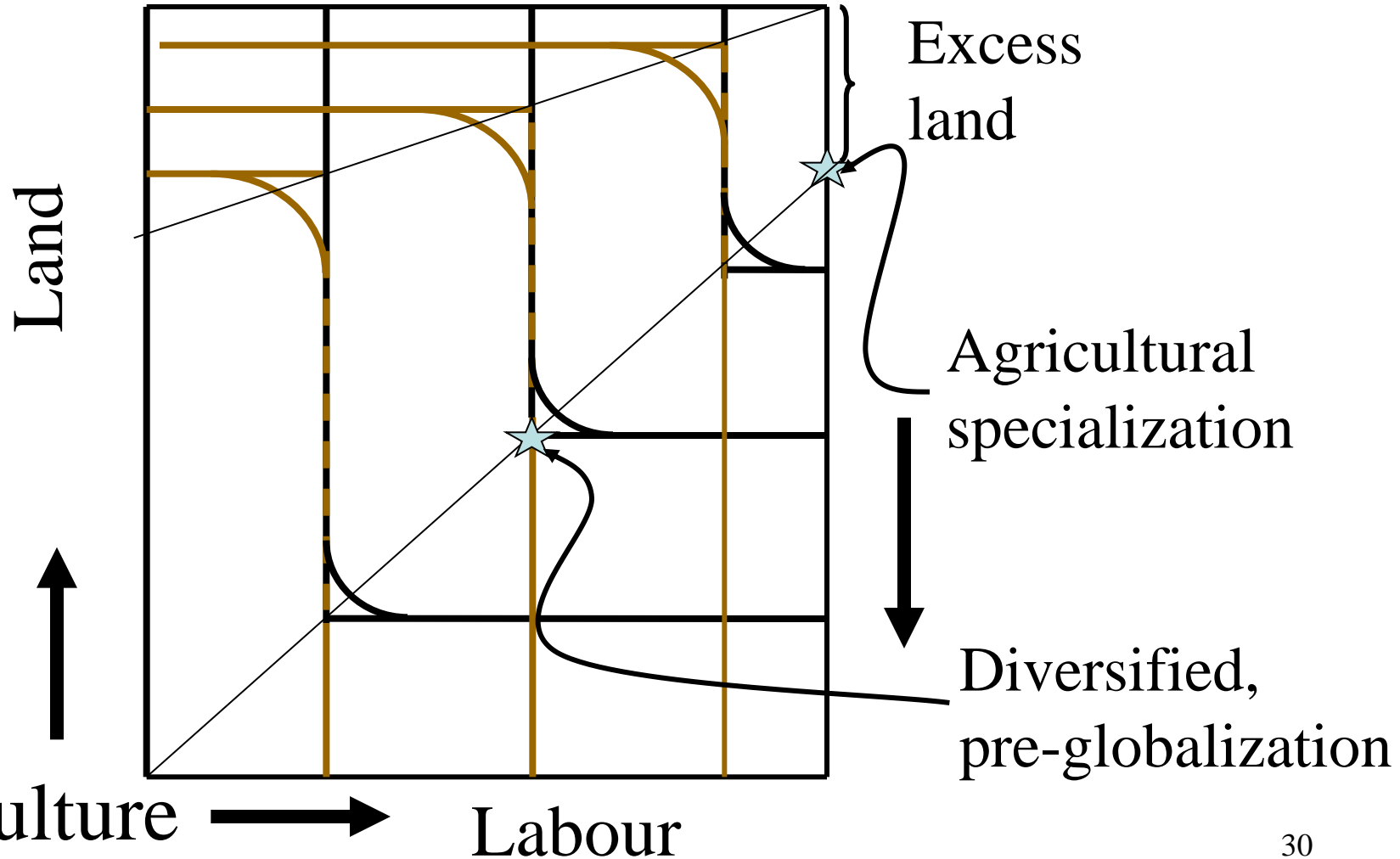


North American frontier, 1810-1910

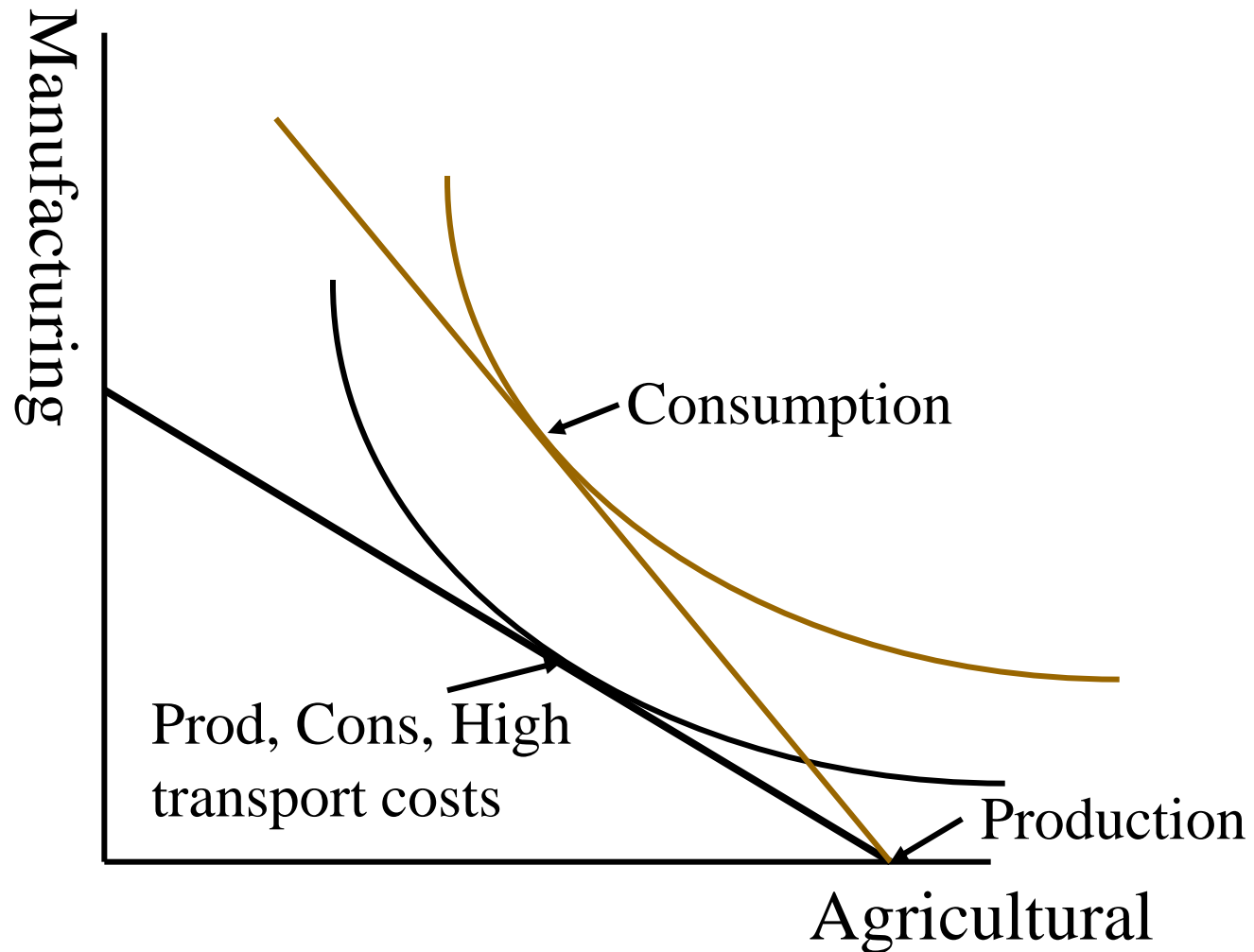


Superabundant land (fixed proportions)

← Manufacturing



Production possibility and trade



Frontier: labour, capital and infrastructure

- US as key example
 - Railroads
 - Urban structure extended
- Large role of external sources of capital and labour
 - European (cf British) capital
 - European labour
- America rather different
 - Contained own core as well as periphery

U.S. Railroad Investment

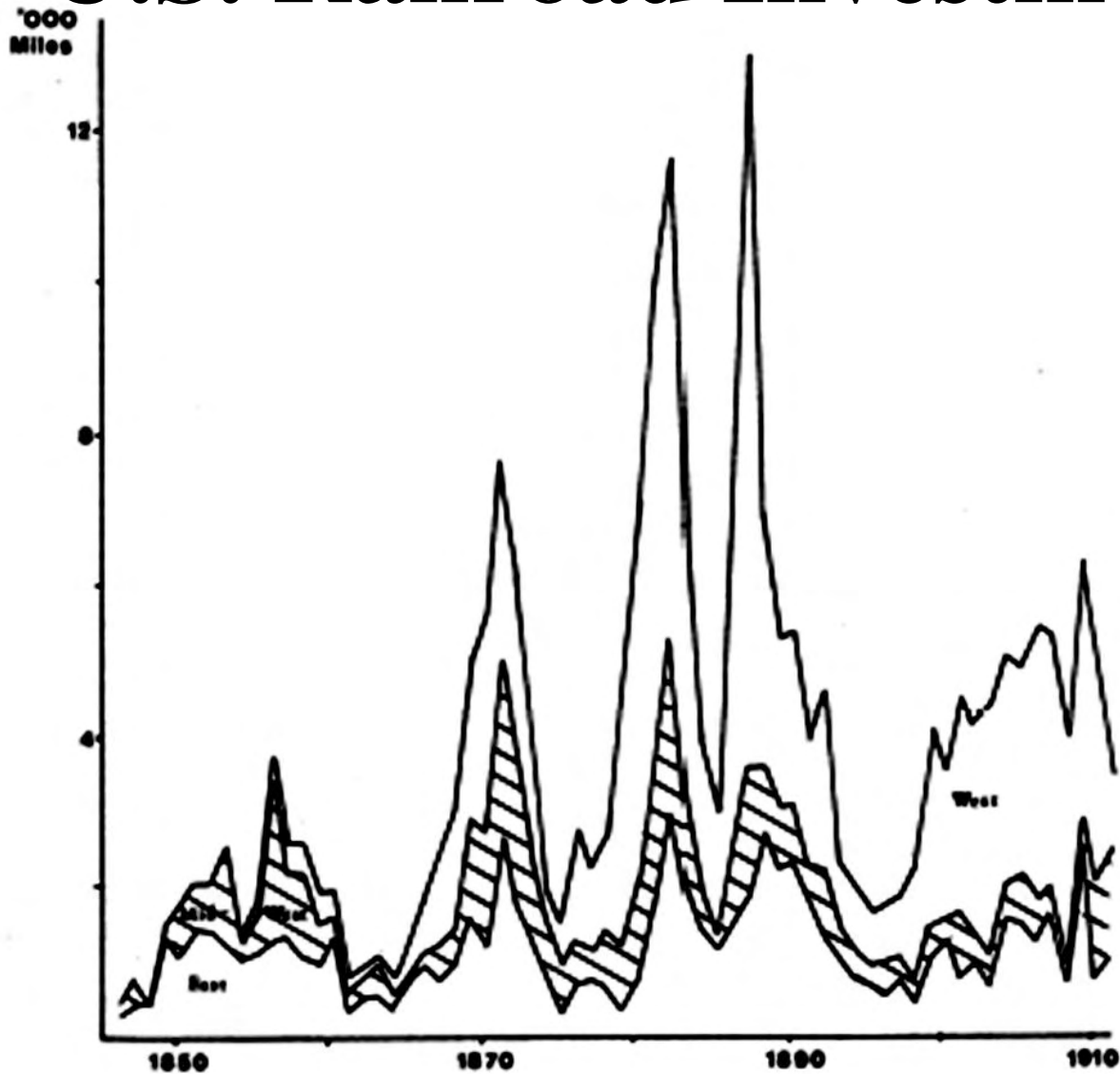


FIGURE I

Source: Harley (1980)

International Labour Migration

Emigration from Europe
(5 yr. ave.)

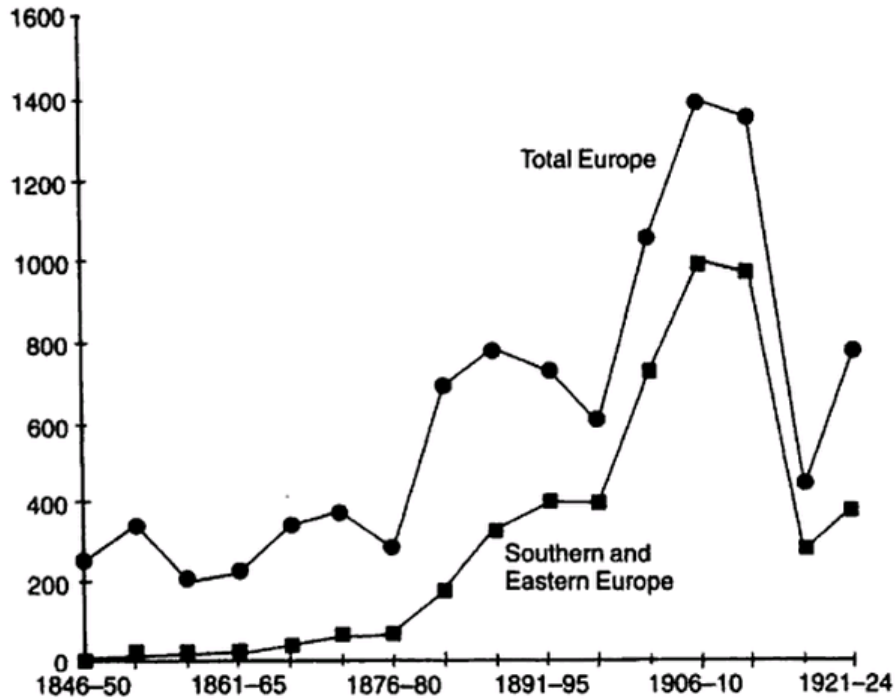


Figure 1.1 Emigration from Europe, 1846-1924, five-year annual averages (000's)

Immigration into Americas
(5 yr. ave.)

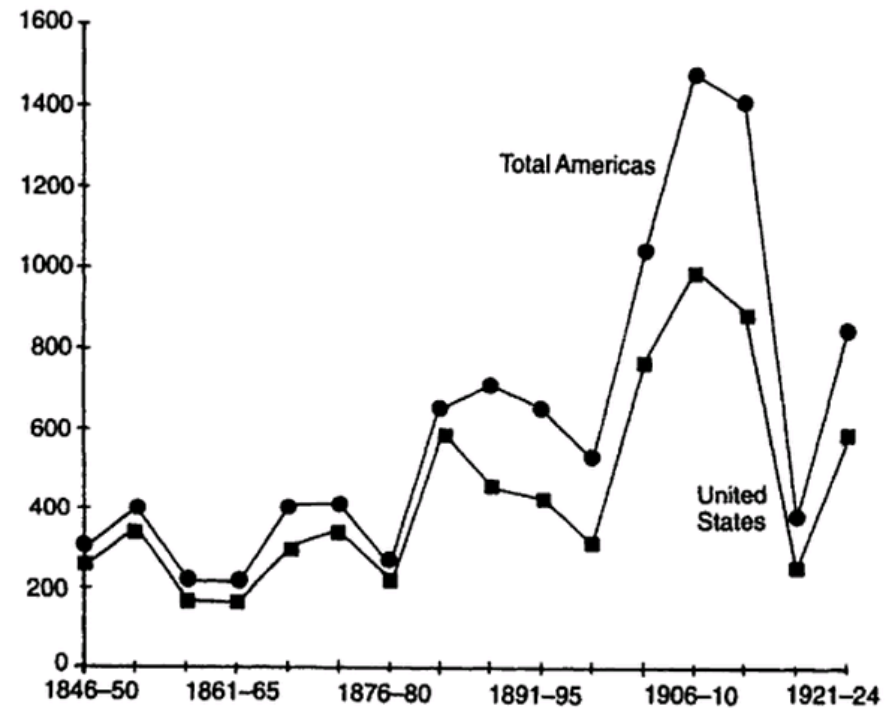


Figure 1.2 Immigration to the Americas, 1846-1924, five-year annual averages (000's)

From bilateral to a global system

- Simplest perspective (trade theory).
 - Transport wedge falls, increased specialization
 - Core manufacture,
 - periphery primary products.
 - Factor price equalization.
 - Dynamic growth implications?
- Frontier focus.
 - Increase of resource endowment of periphery.
 - Resources draw capital and labour.
 - Increased demand for ‘transactions services’.

Britain and global system (bad?)

- Exports (manufactures) grow more slowly than imports.
- Exports tend to go to ‘easy’ markets
 - Lose of markets in advanced economies.
 - Principal exporter to formal and ‘informal’ empire.
- Exports remain concentration in ‘old’ industries.
- Become largest importer of manufactured goods (principally ‘new’ goods).

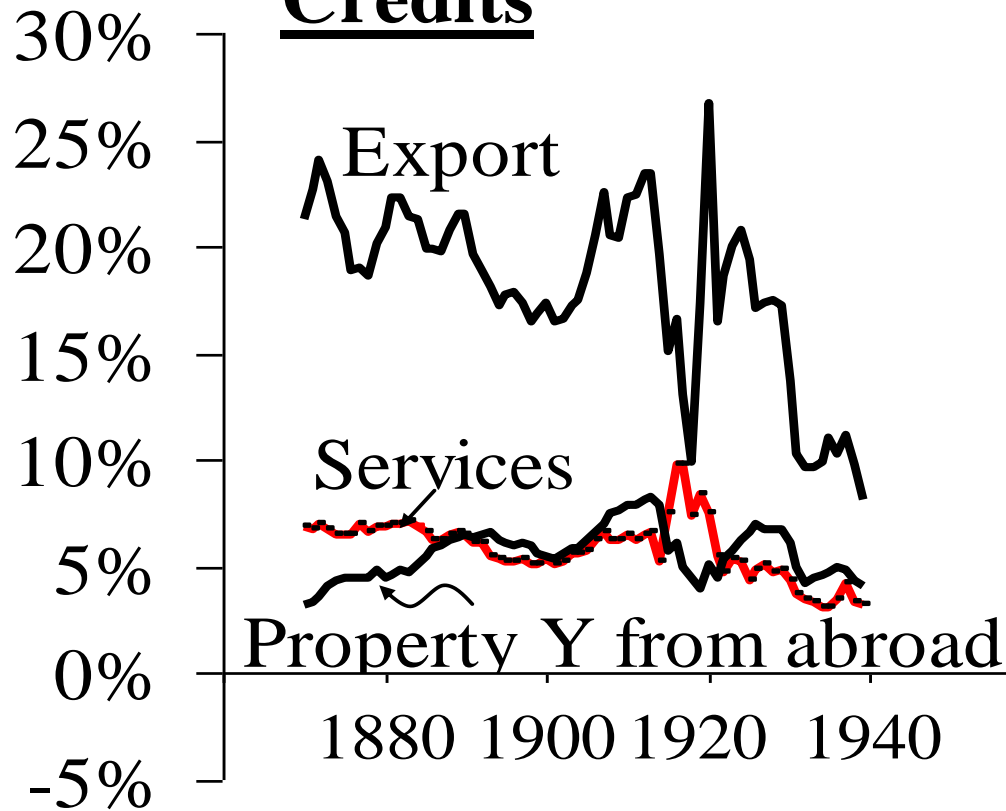
Britain in system

- Growth focus – frontier expansion.
- Lender for frontier capital.
 - Future revenue.
- Provider of ‘transactions services’ for globalized economy
 - Finance, etc. (City).
 - Shipping.
- Balance of payments implication.
 - Revenues from these activities need balance.
 - Imports or foreign investment up; exports down

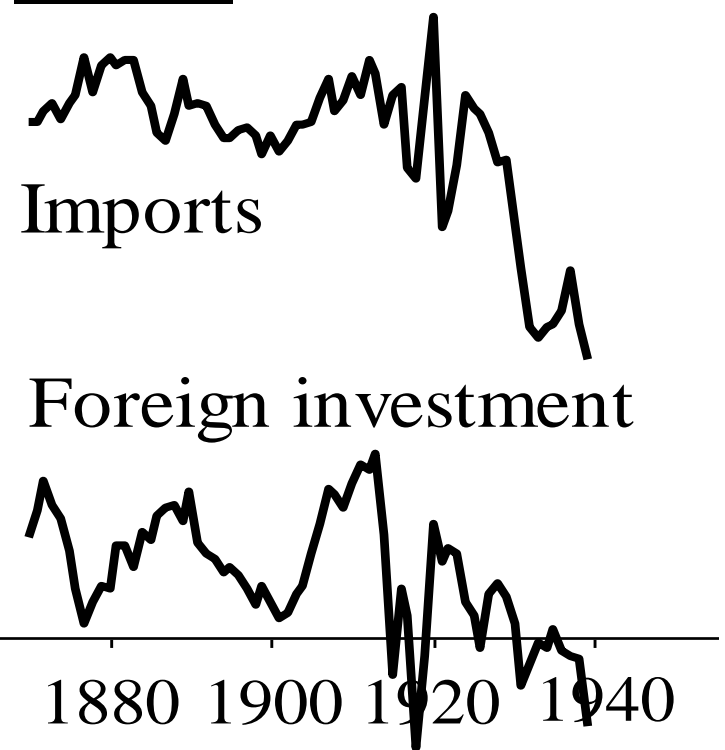
British balance of payments

% of GNP

Credits



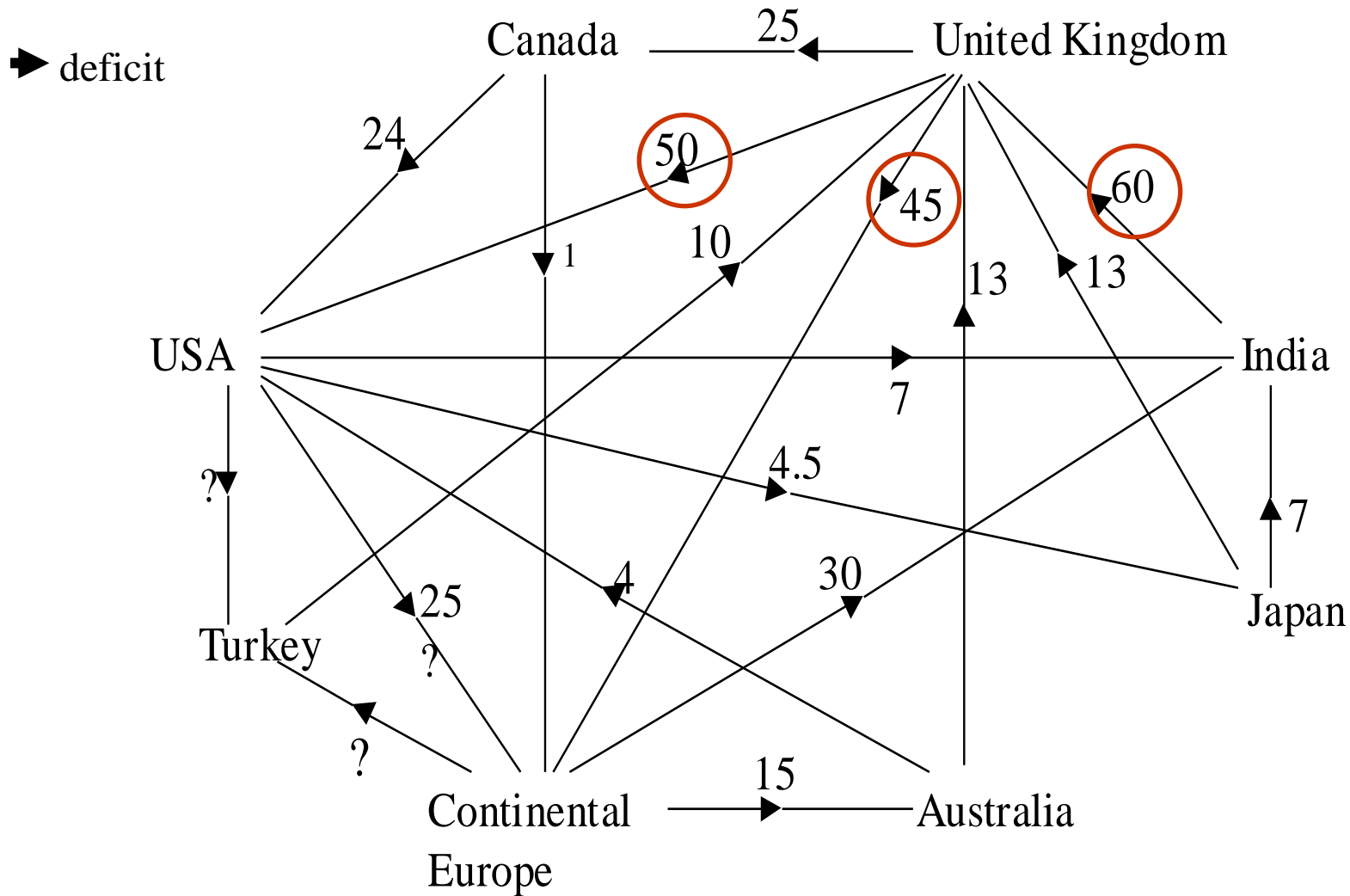
Debits



Multilateral trade equilibrium

- International service income and earnings from overseas capital.
 - Balance of payment equilibrium: receipts = expenditure.
 - “Dutch disease” (successful export “crowds out” other exports).
- A multilateral goods trade equilibrium.
 - Britain export surplus with low tech periphery.
 - Imports manufactured goods from advanced core.
 - Deficit with core (i.e. pays for advanced goods by exporting “old” goods to low tech periphery).

Multilateral trading, c. 1910



Britain's trade

- **Expansion of primary producing periphery.**
 - Supply: Transportation improvements.
 - Demand: Industrialization and Population growth in core.
- **British capital exports to expanding periphery.**
 - Capital exports large balance of payments debit.
 - Capital earnings large balance of payments credit.
- **British comparative advantage in services.**
 - Underlying leadership in shipping, finance, etc.
 - Commercial and imperial connections.
- **Comparative advantage within manufacturing.**
 - Technological advantage from 1st Industrial Revolution.
 - No first mover advantages in 2nd Industrial Revolution.

Rest of core trade (inc. USA)

- **Imports from periphery expand.**
- **Multilateral payment for primary imports.**
 - Exports not in heavy demand in periphery markets.
 - British market was open with high income levels willing to import sophisticated manufactures.
- **Comparative advantage within manufacturing.**
 - British first mover advantage in old industries.
 - More equal footing in new technology.

American trade

- America was frontier.
 - Exports
 - 1900: 65% crude materials and food.
 - Abundant raw materials support export industry,
 - Iron and steel,
 - Advanced manufacturing
- Tariff.
 - Industrialization with raw material abundance and high wages.
 - American system of manufacture.
- Imports:
 - 1900: 60% materials and food.

Periphery trade

- Infrastructure investment.
- Raw material exports.
- Often relatively low income.
- Trade etc. often in hands of international firms.

Tariffs and growth, the late 19th century experience

- Modern empirical research has established a clear negative relationship between protection and growth.
- Nineteenth century evidence throws doubt on the generality of this result.

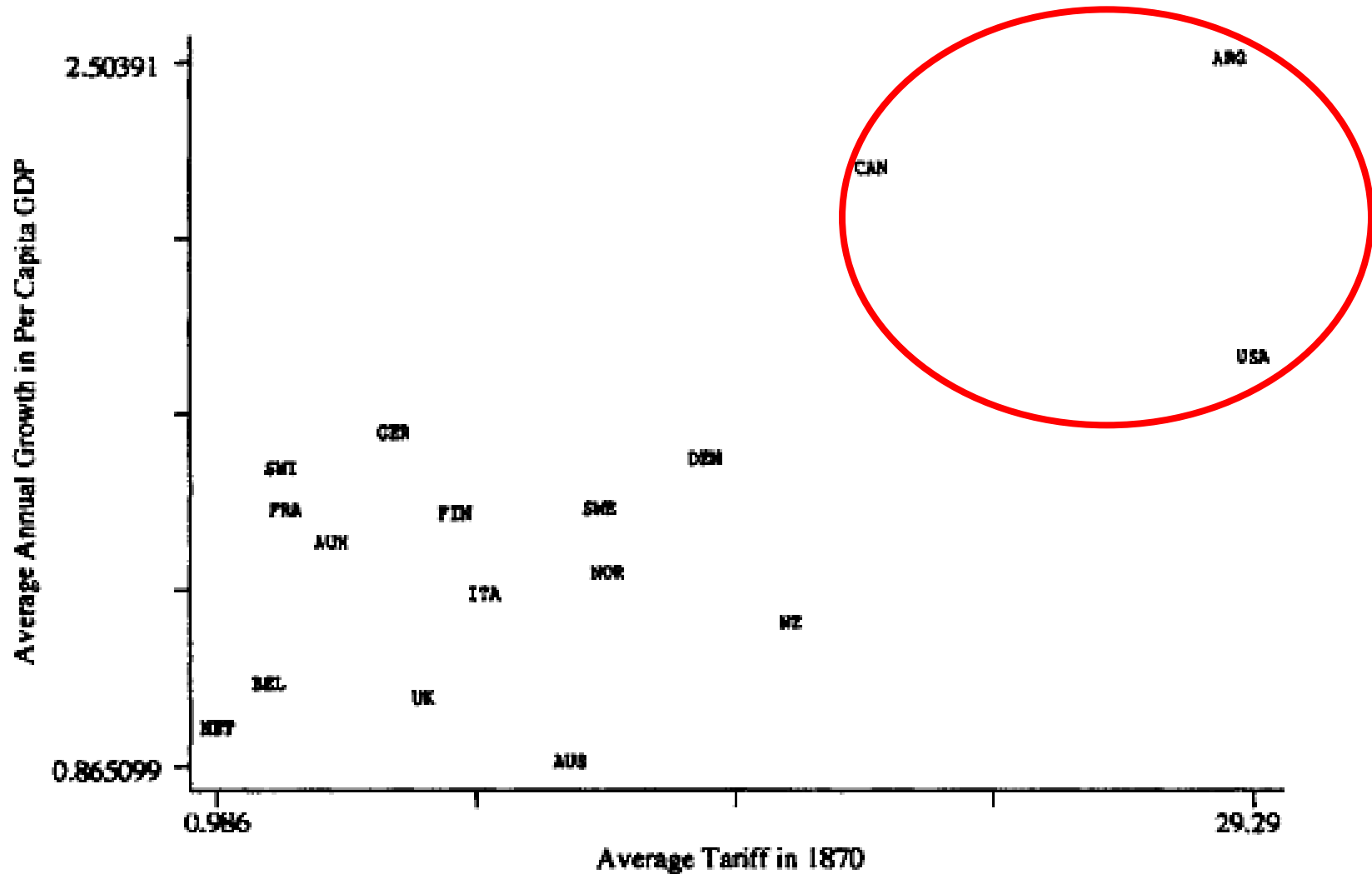
Tariffs and Growth 1870 - 1913

Unconditional Convergence Model
(Dependent variable is average annual growth rate)

	(1)	(2)	(3)	(4)	(5)
Fixed effects?	No	No	Yes	No	Yes
<i>C</i>	1.718 (4.303)	3.477 (4.576)		4.170 (4.950)	
<i>LY</i>	-0.286 (-0.733)	-0.383 (-1.020)	0.288 (0.340)	-0.761 (-1.962)	-5.027 (2.833)
<i>LTAR</i>		0.746 (2.679)	1.538 (2.128)	0.691 (2.566)	0.511 (0.659)
<i>D1877</i>				-0.566 (-1.132)	-2.383 (-2.607)
<i>D1882</i>				-1.079 (-2.196)	-2.589 (-3.304)
<i>D1887</i>				-0.913 (-1.877)	-2.223 (-3.187)
<i>D1892</i>				-0.756 (-1.569)	-1.841 (-2.929)
<i>D1897</i>				0.040 (0.084)	-0.789 (-1.427)
<i>D1902</i>				0.113 (0.239)	-0.295 (-0.632)
No. of observations	70	70	70	70	70
R-squared	0.008	0.104	0.267	0.252	0.453
Adjusted R-squared	-0.007	0.077	0.128	0.154	0.274

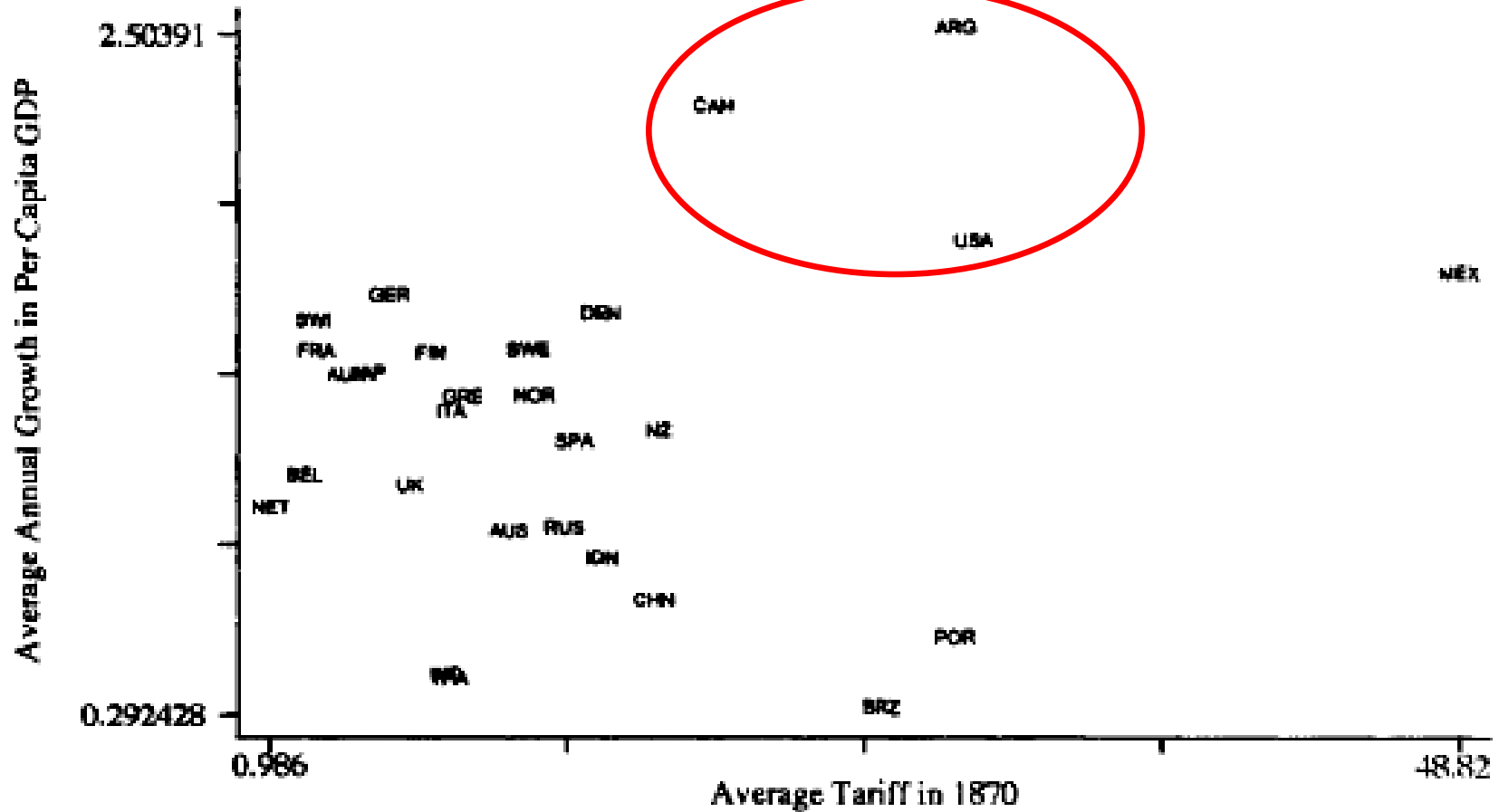
Source: O'Rourke, 2000.

Tariffs and Growth 1870 - 1913



Source: Irwin, 2002

Larger sample?



Source: Irwin, 2002