Globalization, trade policy and industrialization in the long run

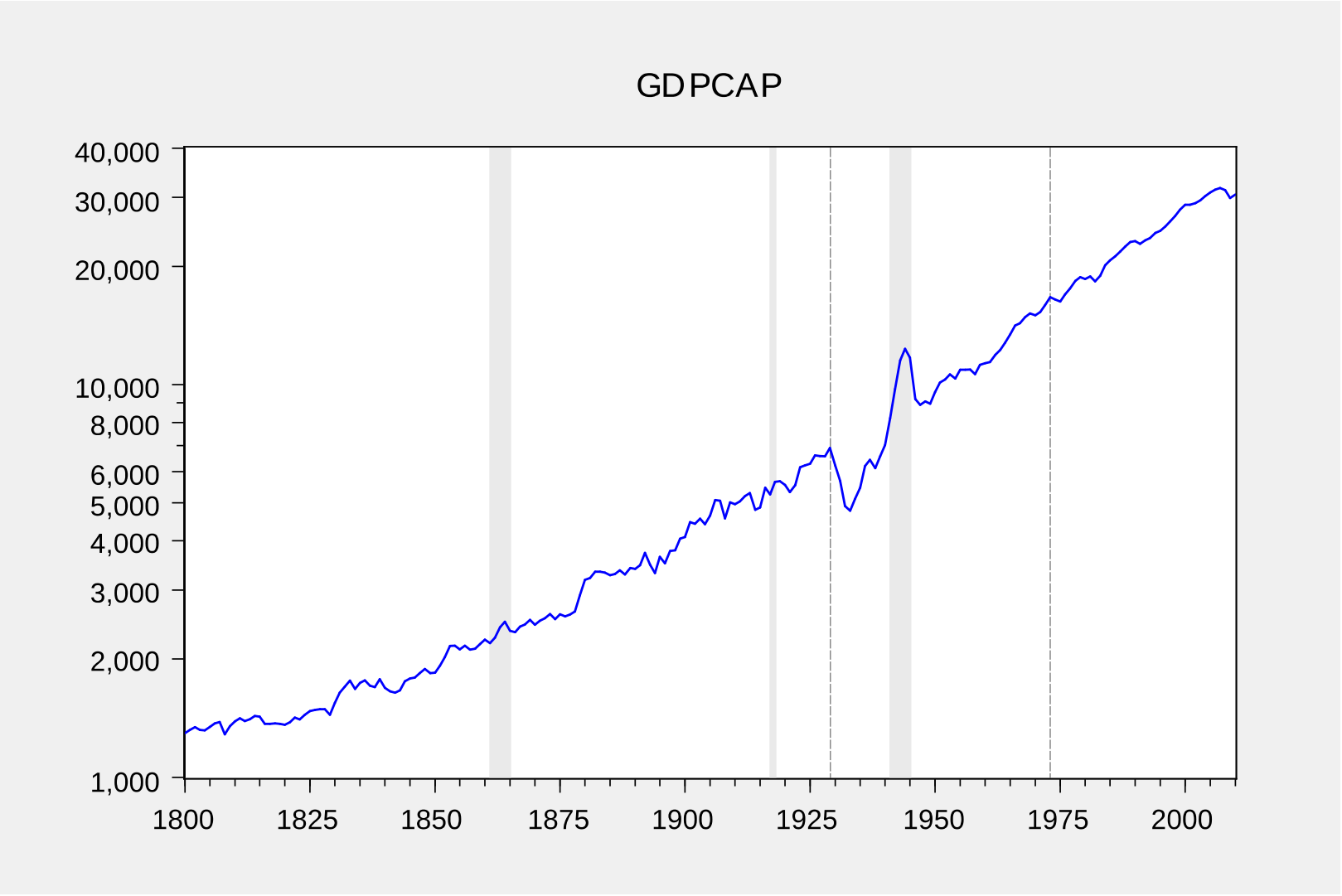
Kevin Hjortshøj O'Rourke
All Souls College, Oxford

The spread of modern industry & globalization in the long run

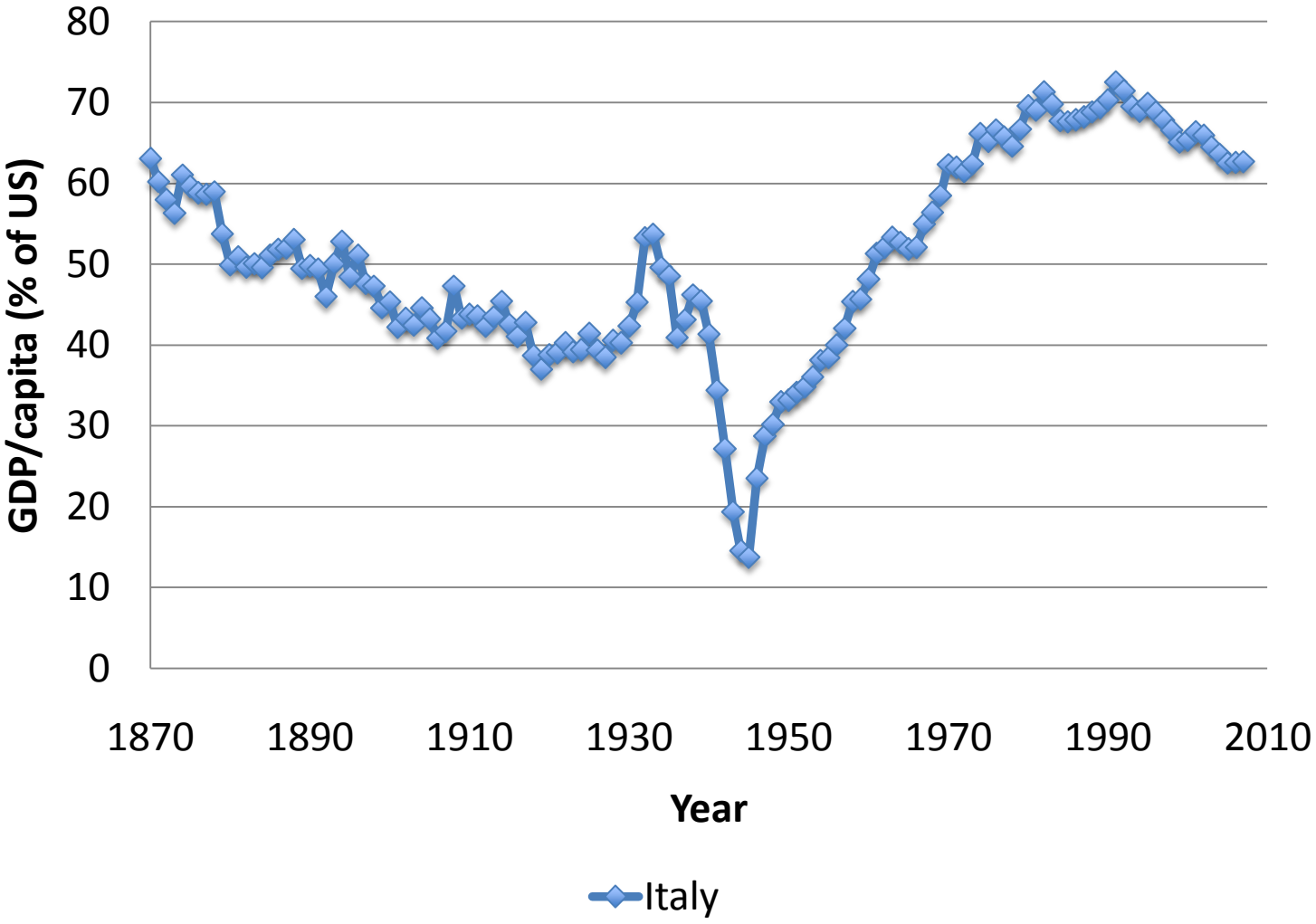
- Introduction: the convergence context
- The Industrial Revolution
- The spread of modern industry
- The second unbundling
- Gambling on globalization: future challenges

1. Introduction: the convergence context

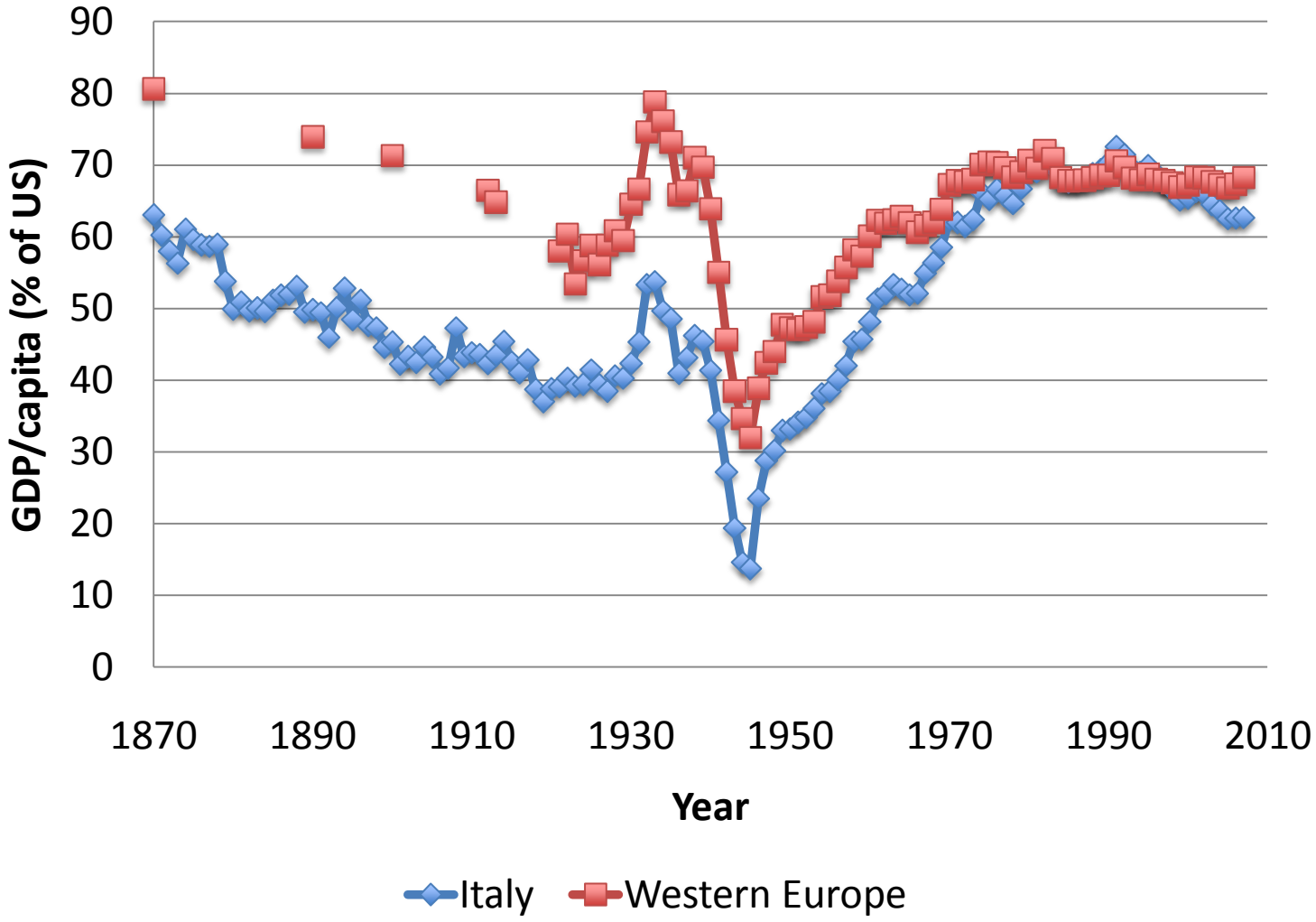
Growth on the technological frontier



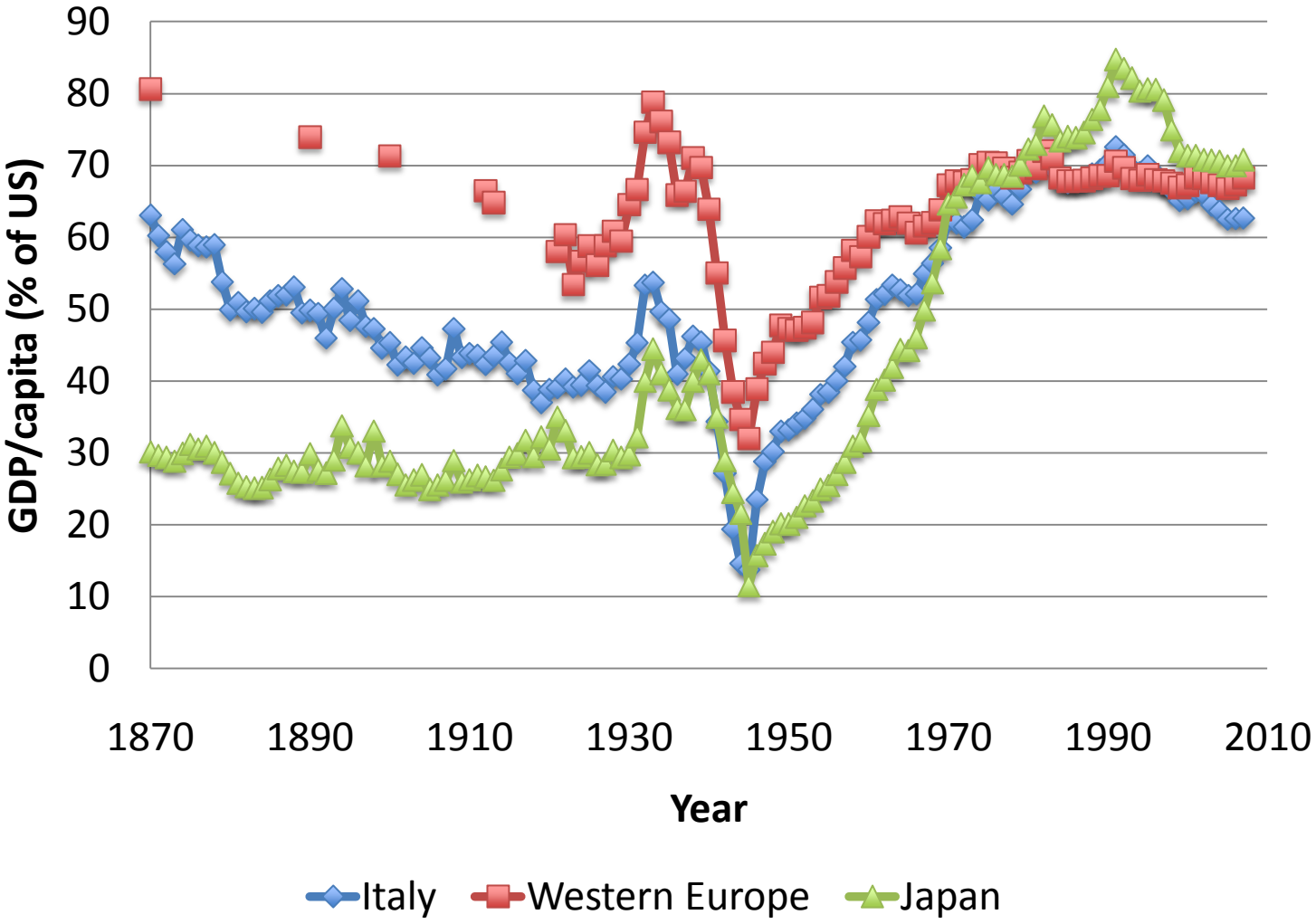
Convergence on the frontier



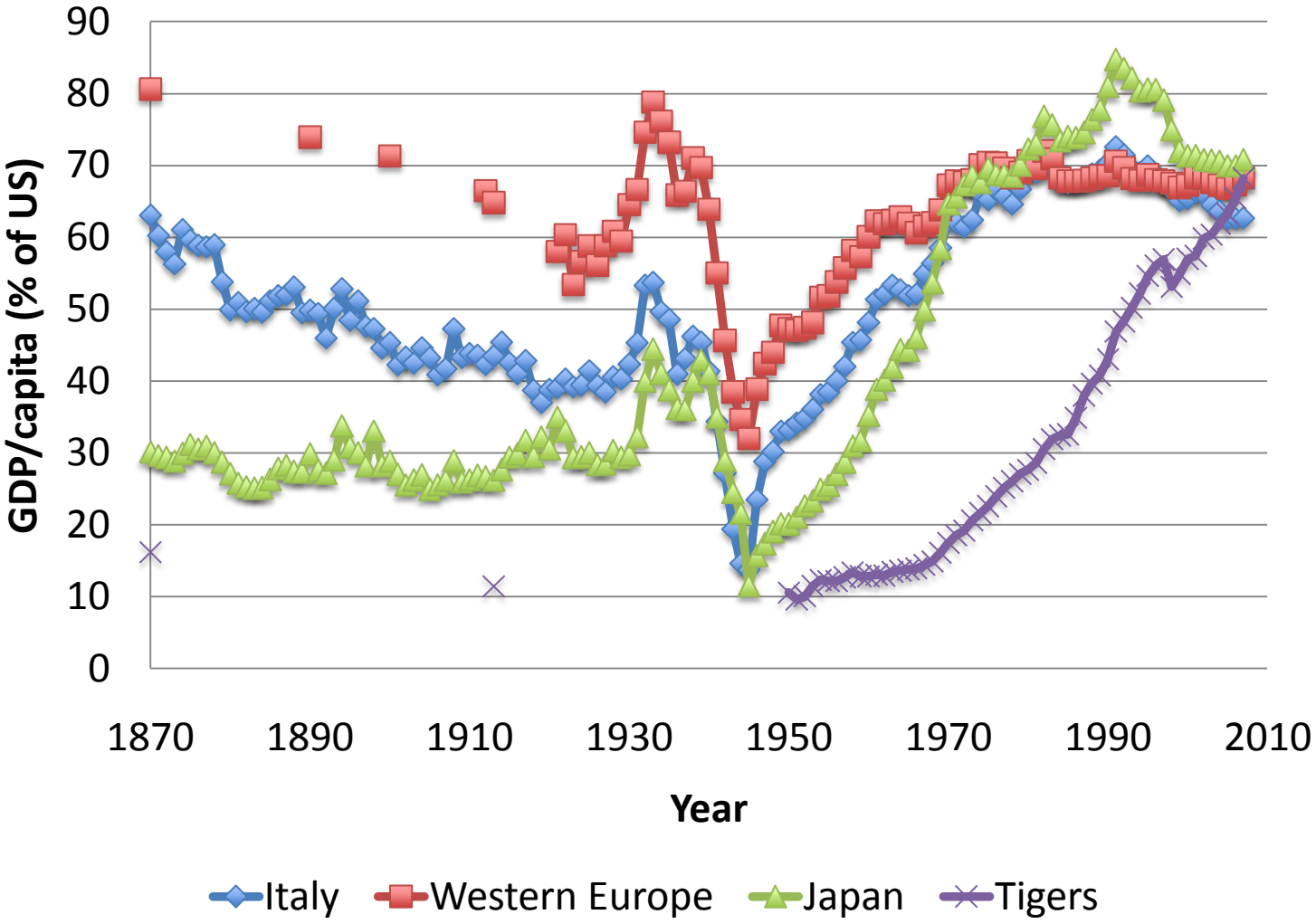
Convergence on the frontier



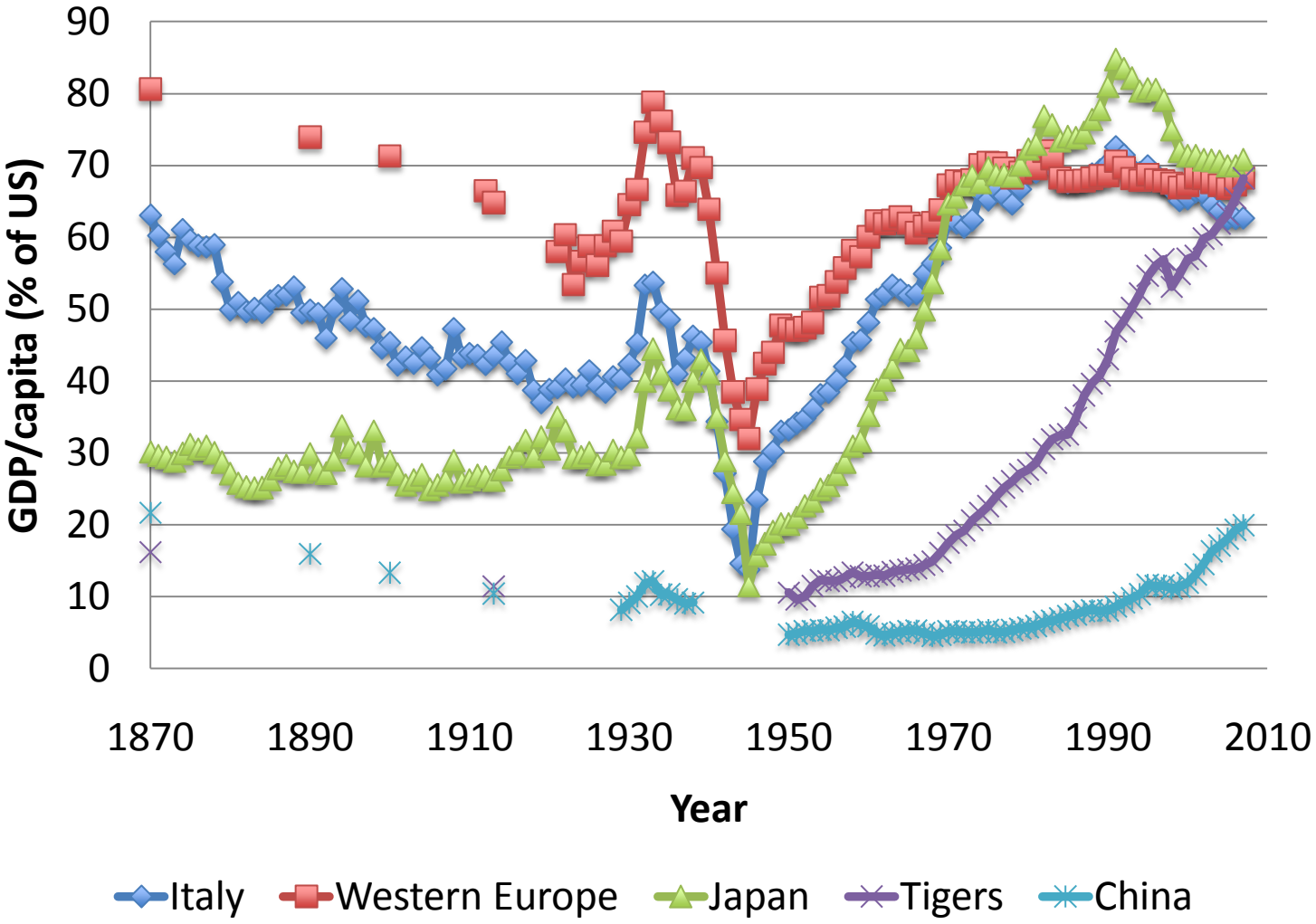
Convergence on the frontier



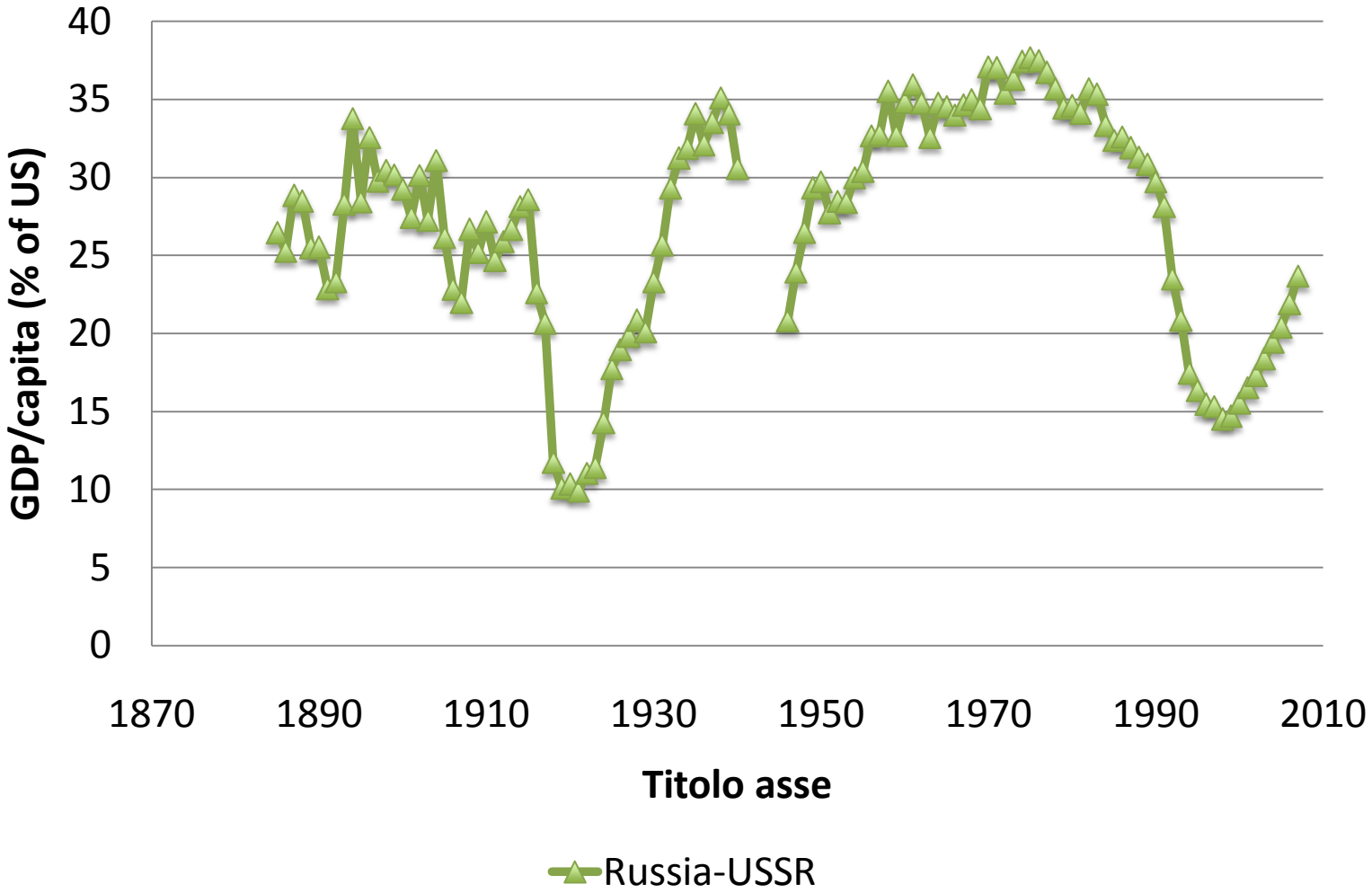
Convergence on the frontier



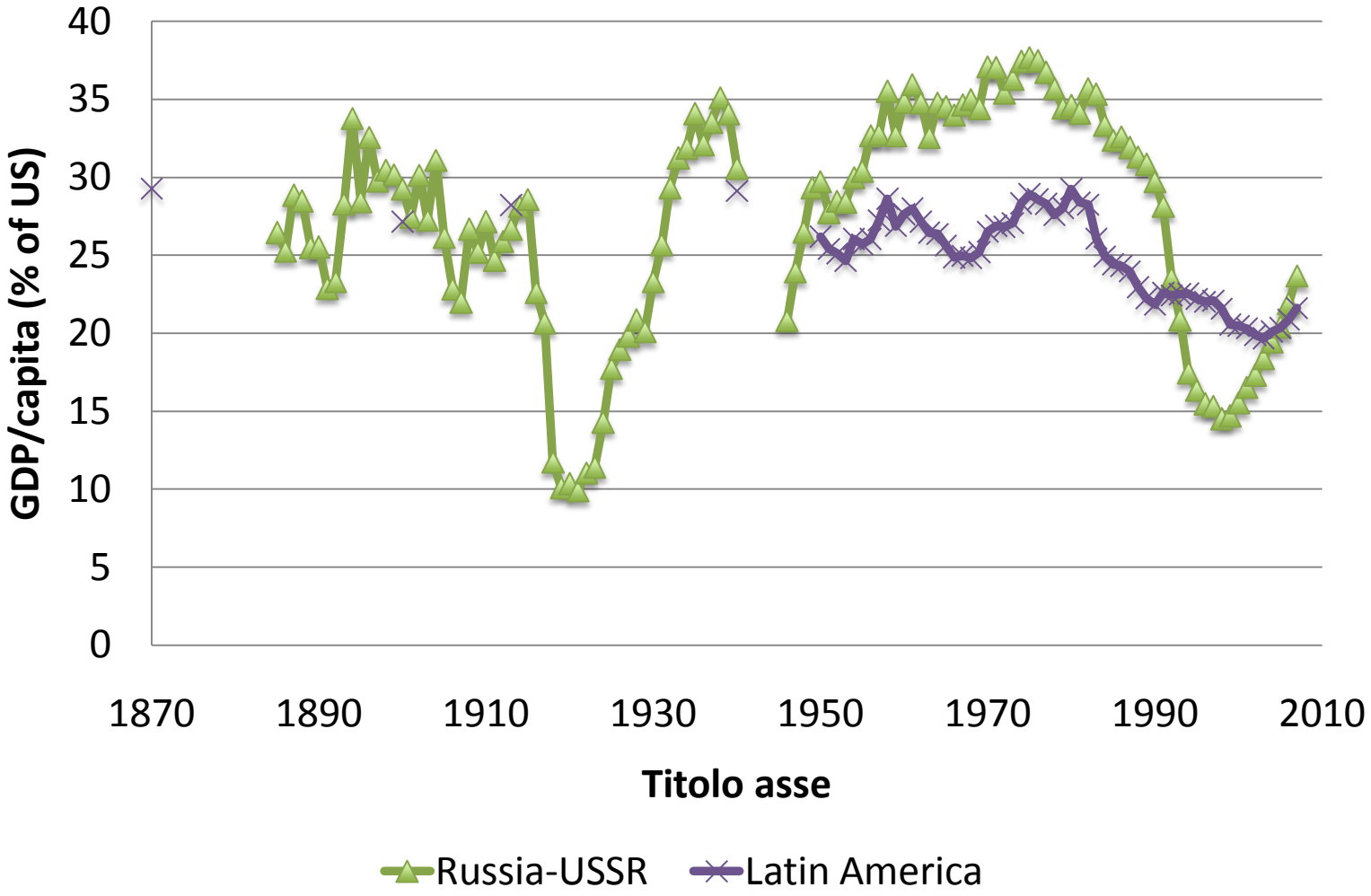
Convergence on the frontier



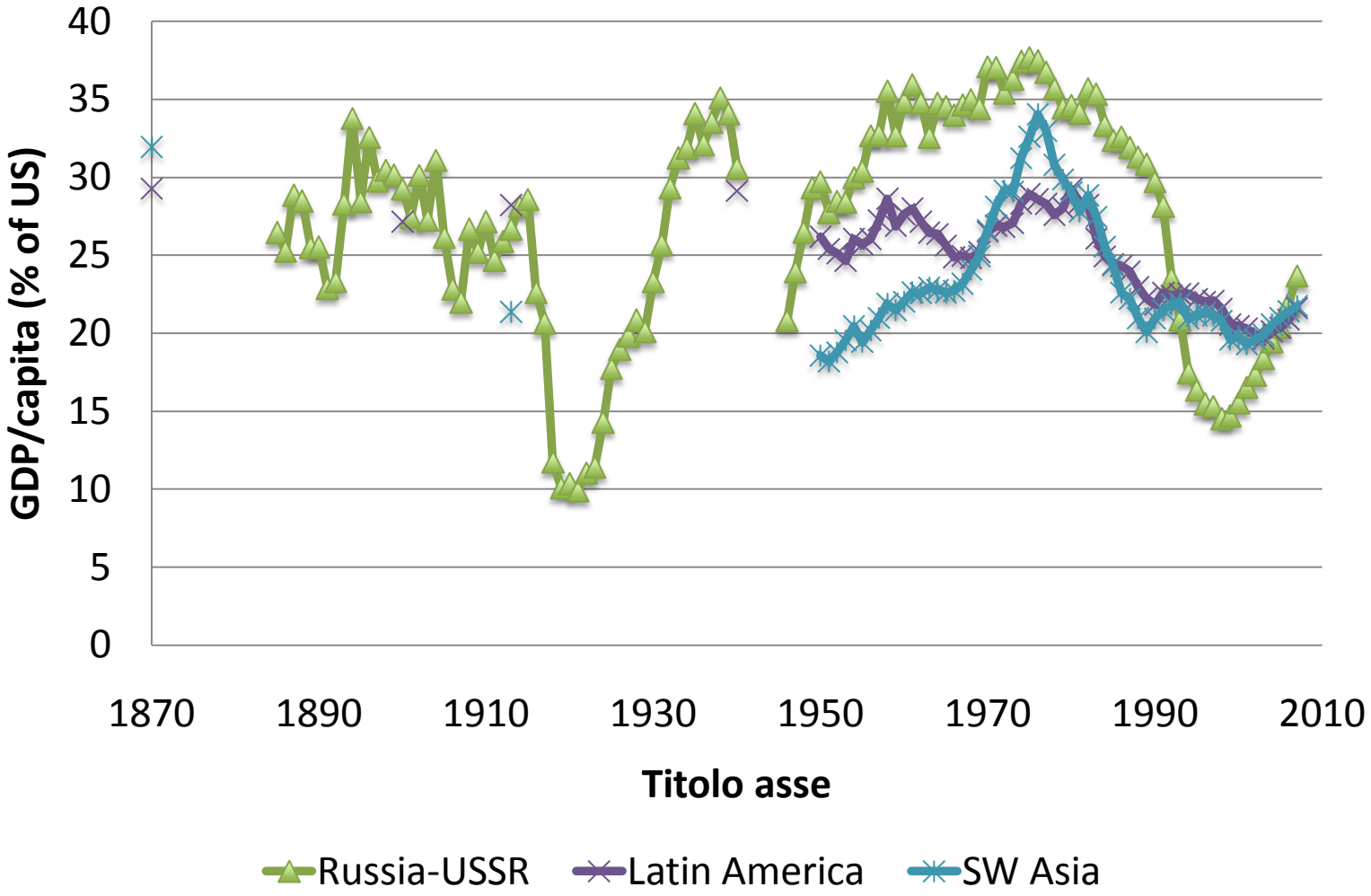
Convergence isn't inevitable



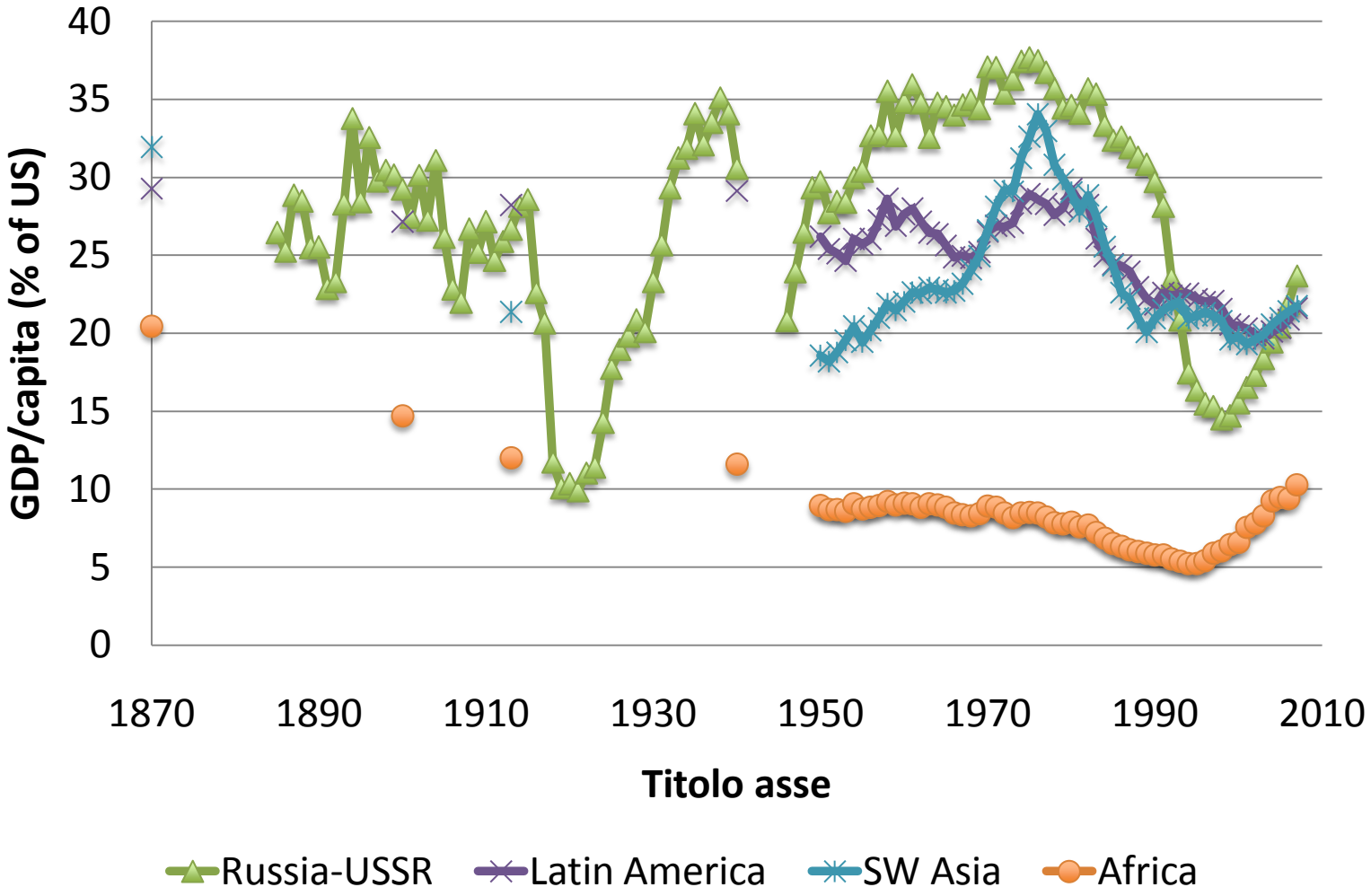
Convergence isn't inevitable



Convergence isn't inevitable



Convergence isn't inevitable



Convergence isn’t automatic

- Social capability: education, institutions (financial system, property rights, ..)
- Geography
- Events

Convergence isn’t automatic

- Social capability: education, institutions (financial system, property rights, ..)
- Geography
- Events
- **Directed technological change**

Convergence isn’t automatic

- Social capability: education, institutions (financial system, property rights, ..)
- Geography
- Events
- **Directed technological change**
- **Policies (in particular, in the context of today’s lecture, trade and industrial policies)**

In a trivial sense, globalization is essential for the spread of industry..

- ..if we include technological transfer under the heading “globalization”, as we should
- Indeed, some countries have tried to block interactions with the rest of the world to preserve technological superiority
  - Britain bans emigration of skilled workers in 1719, machinery exports in 1774 (repealed in 1825 and 1842)
- In this lecture I am more narrowly concerned with trade
  - Reverse engineering
  - But it can also undercut potential producers

2. The Industrial Revolution

Coal and the Industrial Revolution

- Wrigley (2010): transition from an organic economy to an energy-rich economy
- In organic economies photosynthesis is the source of most energy; land is an essential input into all our material products, and a constraint on growth
  - "competition for land among Malthus's four necessities – food, fuel, fiber, and building materials" (Pomeranz 2000, p. 56)

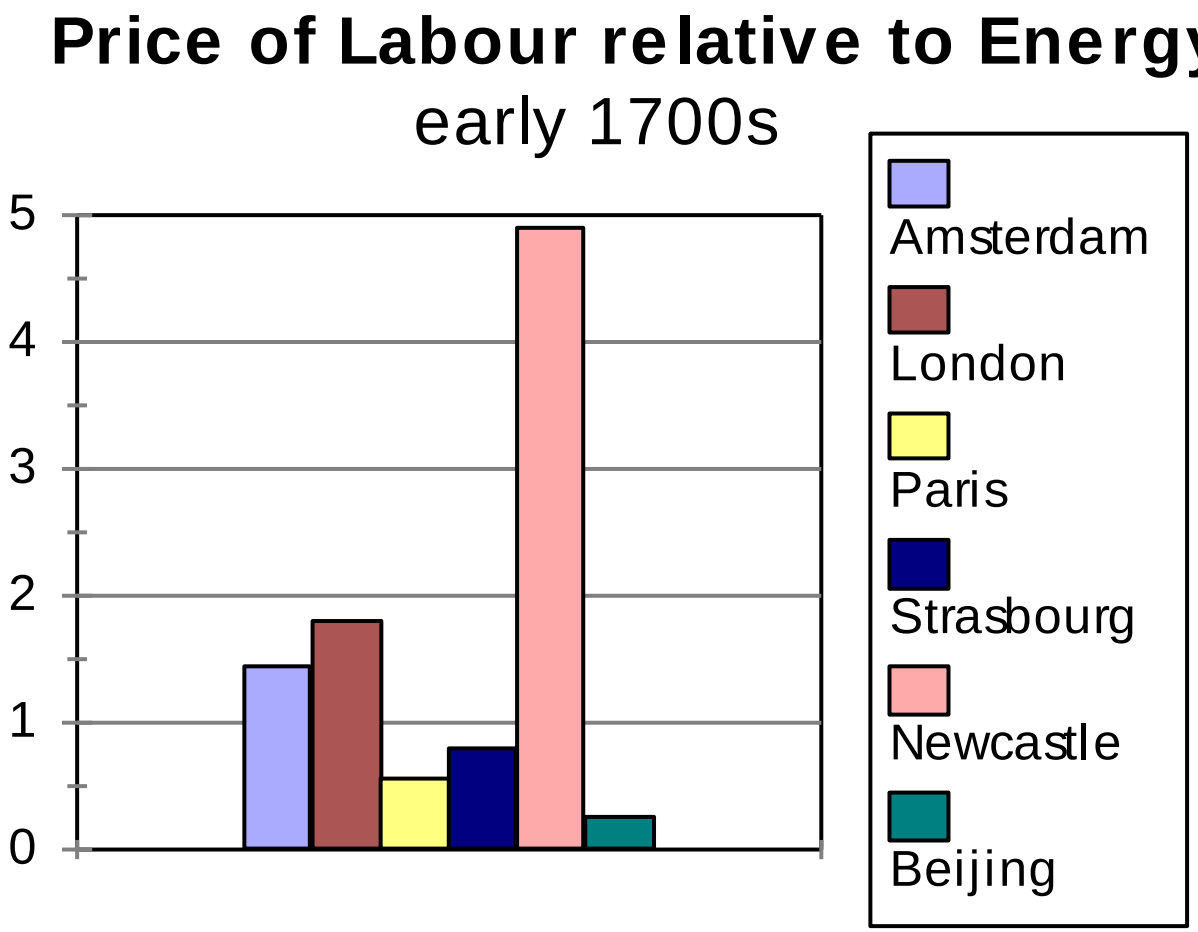
Escape from Malthus

- “In the Carboniferous era over many millions of years a proportion of the annual plant growth in some swampy areas became part of an energy store by the process which has given rise to the presence of coal measures in all the continents. A massive capital store of energy was slowly brought into being by setting aside a small proportion of the products of photosynthesis over a geological era” (Wrigley 2010, p. 22)
- “switch to coal may be regarded as a necessary condition for the industrial revolution” (p. 23)

The Industrial Revolution

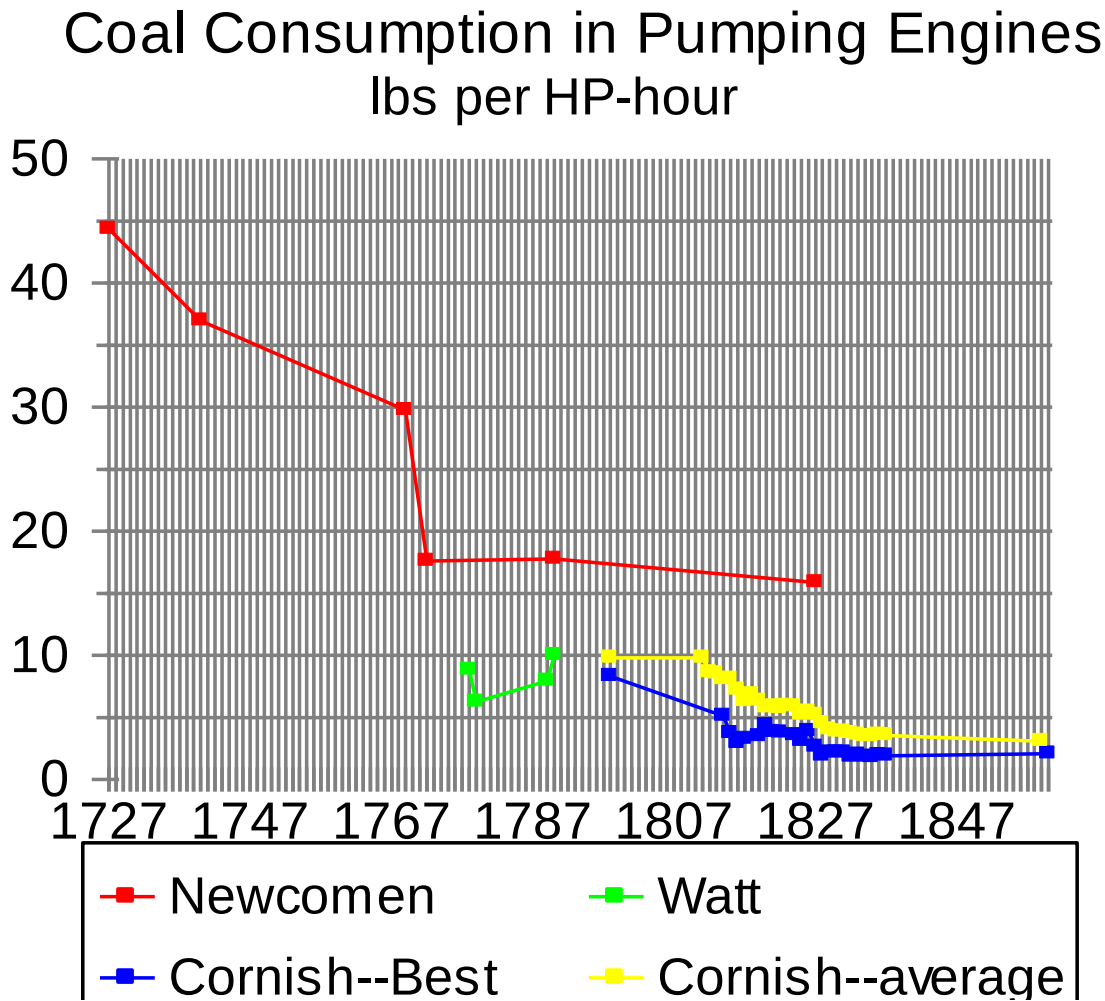
- Allen (2009)
  - IR involves substituting capital and energy for labour
  - Happens first in Britain since wages there are high relative to energy (coal) prices
  - Directed technological change: implies that new technologies may not be cost-efficient elsewhere (e.g. where wages are lower and/or energy is more expensive)

Britain was different



Source: generously made available by Bob Allen.

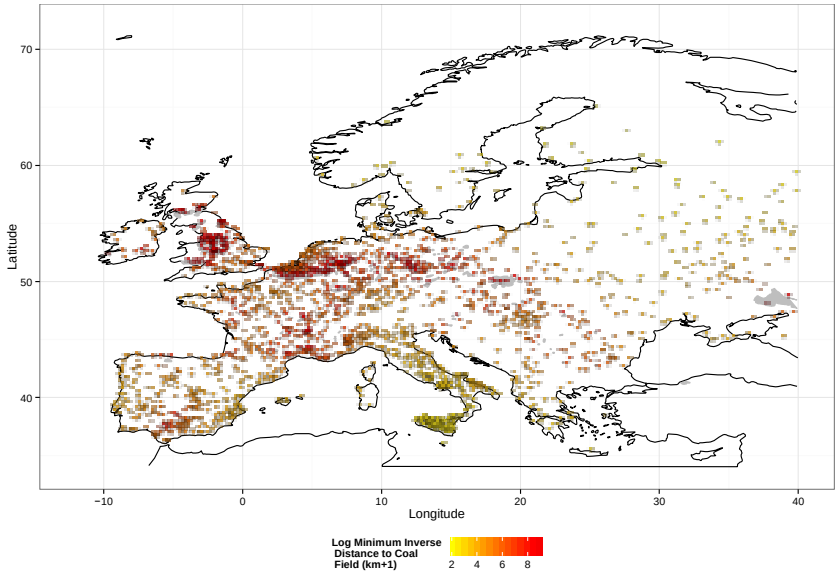
Allen: “It took 150 years of British engineering genius to improve the steam engine enough to make it cost effective even where fuel was expensive. And that’s when the steam engine spread abroad.”



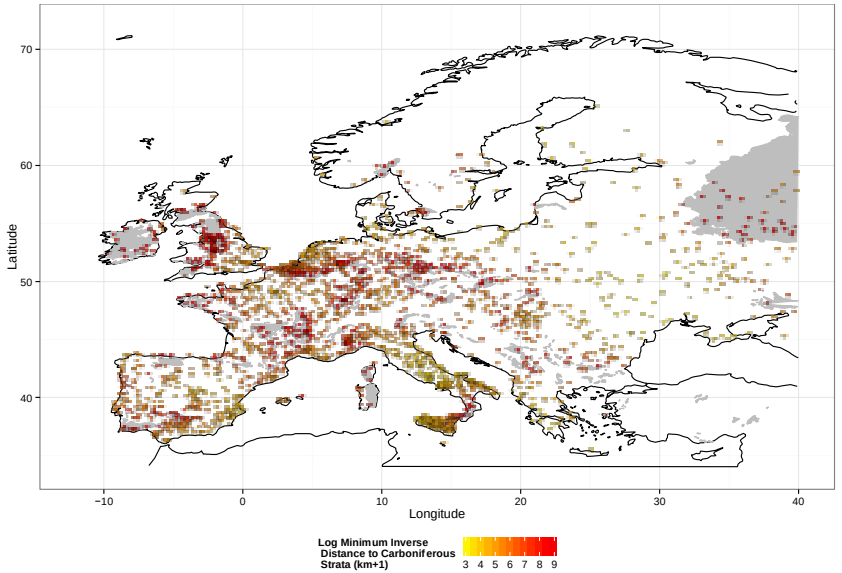
Source: generously made available by Bob Allen.

City sizes and proximity to coal

Figure 1: City's Proximity to Coal Fields or Carboniferous Strata (Grey Areas) in Europe.



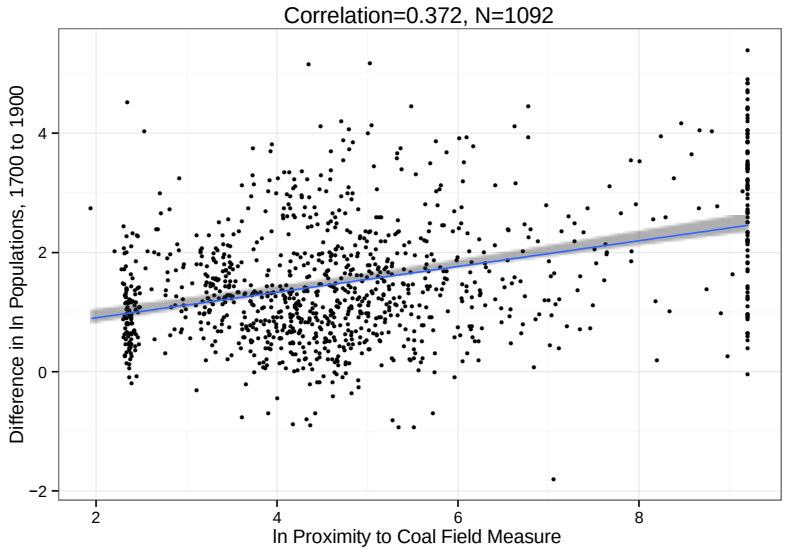
(a) Coal Fields



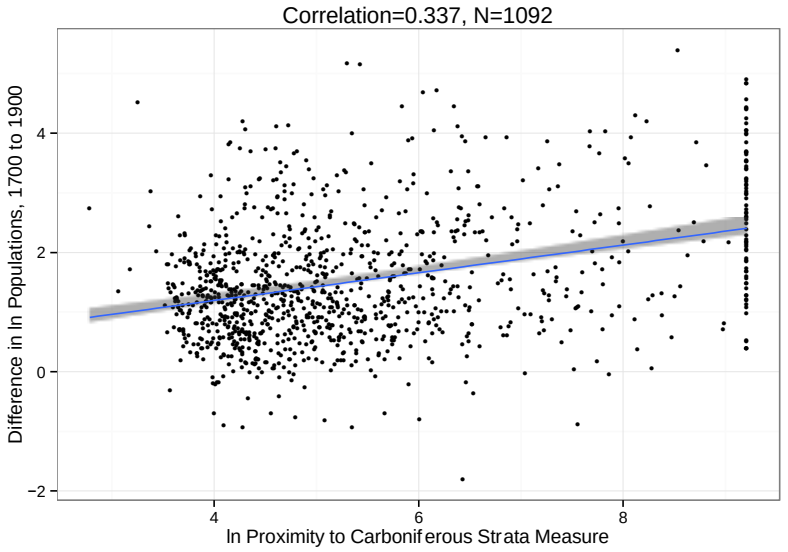
(b) Carboniferous Strata

City sizes and proximity to coal

Figure 3: City Population Growth and Proximity to Coal Fields or Proximity to Carboniferous Strata Scatterplots.



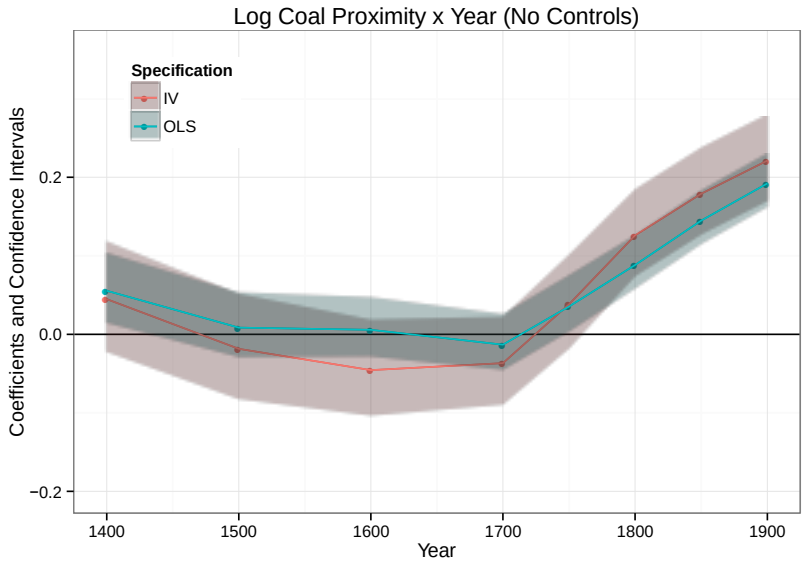
(a) Coal Fields



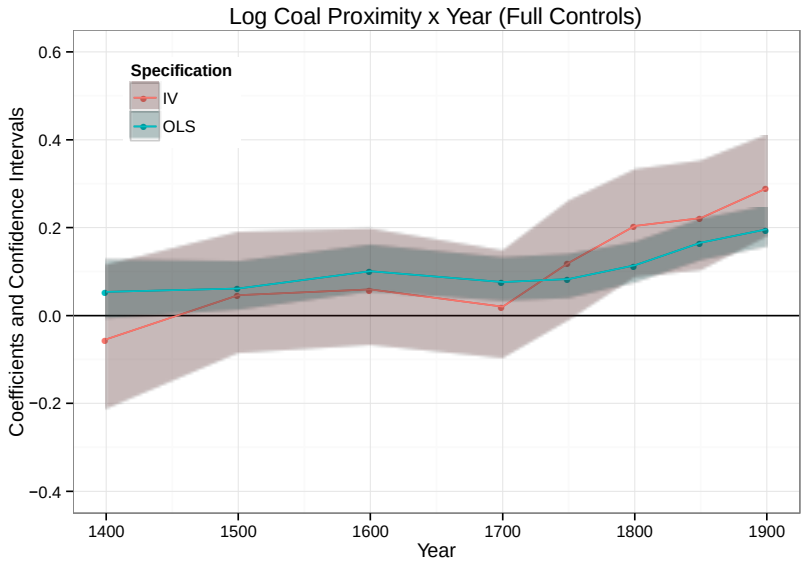
(b) Carboniferous Strata

City sizes and proximity to coal

Figure 4: Coal Coefficients from Flexible Models.



(a) Model without Controls.



(b) Model with Full Controls.

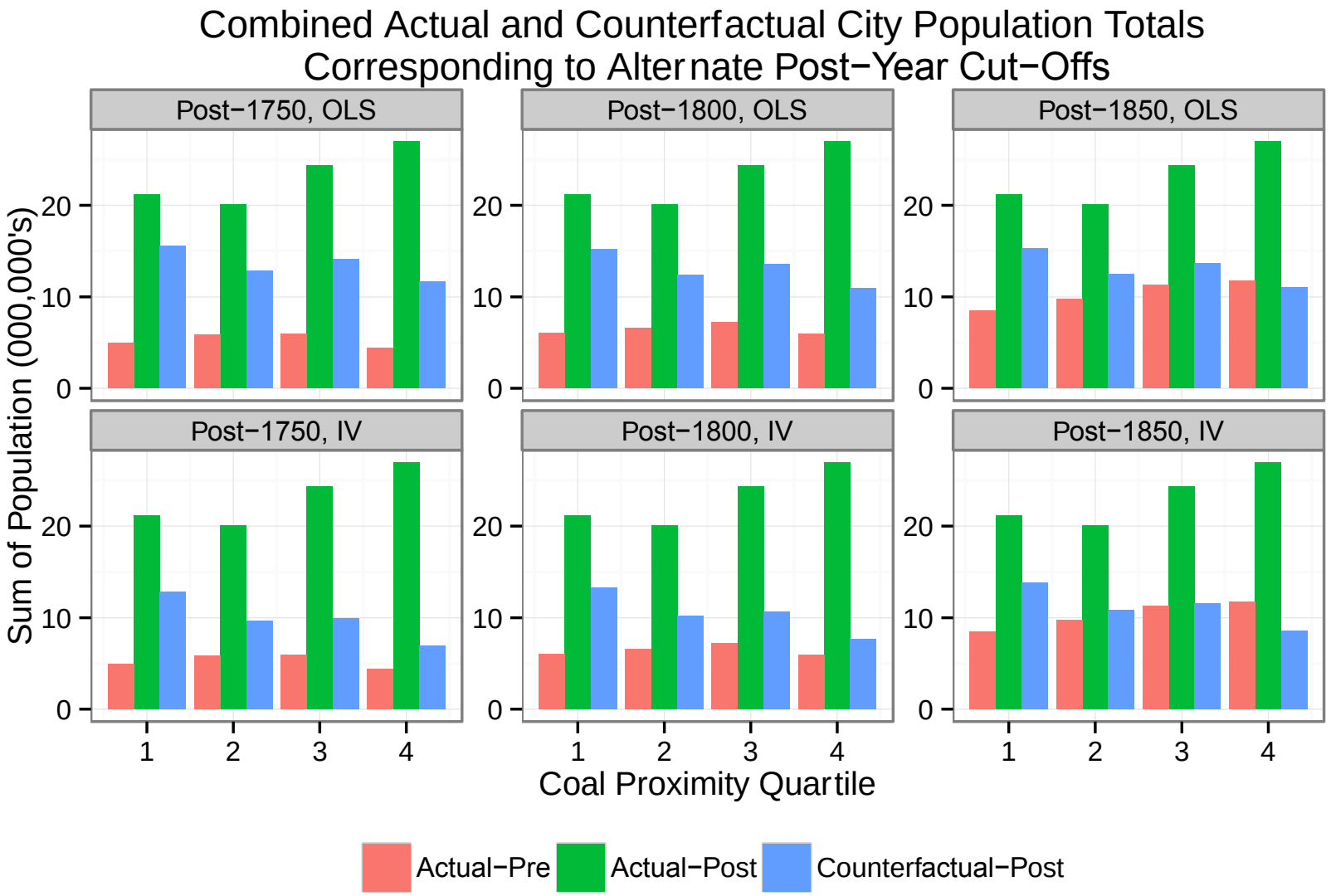
Shaded areas indicate +/ - 2 cluster robust standard errors.

$$\ln(Pop_{it}) = \alpha_i + \gamma_t + \sum_{j=1400}^{1900} \beta_j \ln(Coal_i) I_t + \sum_{j=1400}^{1900} X_i' I_t \Psi_j + \varepsilon_{it} \quad (2)$$

City sizes and proximity to coal

	Dependent Variable is Log City Population			
	(1)	(2)	(3)	(4)
OLS				
Coal × Post-1750	0.115^{***}	0.036^{*}	0.114^{***}	0.043^{***}
	(0.020)	(0.020)	(0.015)	(0.016)
Counterfactual Explained (%)	34.729	10.969	36.148	13.829
Coal × Post-1800	0.105^{***}	0.038^{**}	0.123^{***}	0.051^{***}
	(0.017)	(0.017)	(0.017)	(0.018)
Counterfactual Explained (%)	38.323	13.680	44.837	18.512
Coal × Post-1850	0.090^{***}	0.036^{*}	0.122^{***}	0.061^{***}
	(0.017)	(0.019)	(0.019)	(0.020)
Counterfactual Explained (%)	51.939	18.463	70.694	31.878
IV				
Coal × Post-1750	0.208^{***}	0.144^{***}	0.187^{***}	0.099^{**}
	(0.040)	(0.053)	(0.035)	(0.045)
Counterfactual Explained (%)	60.974	42.526	57.868	31.248
Coal × Post-1800	0.153^{***}	0.102^{**}	0.173^{***}	0.092^{*}
	(0.033)	(0.042)	(0.037)	(0.048)
Counterfactual Explained (%)	54.873	36.049	62.049	32.658
Coal × Post-1850	0.131^{***}	0.126^{***}	0.157^{***}	0.107^{*}
	(0.033)	(0.043)	(0.041)	(0.055)
Counterfactual Explained (%)	74.830	63.905	89.923	55.490
Excludes UK	N	Y	N	Y
Includes Interpolated Cities	N	N	Y	Y
Num. obs.	10773	9799	19305	17613

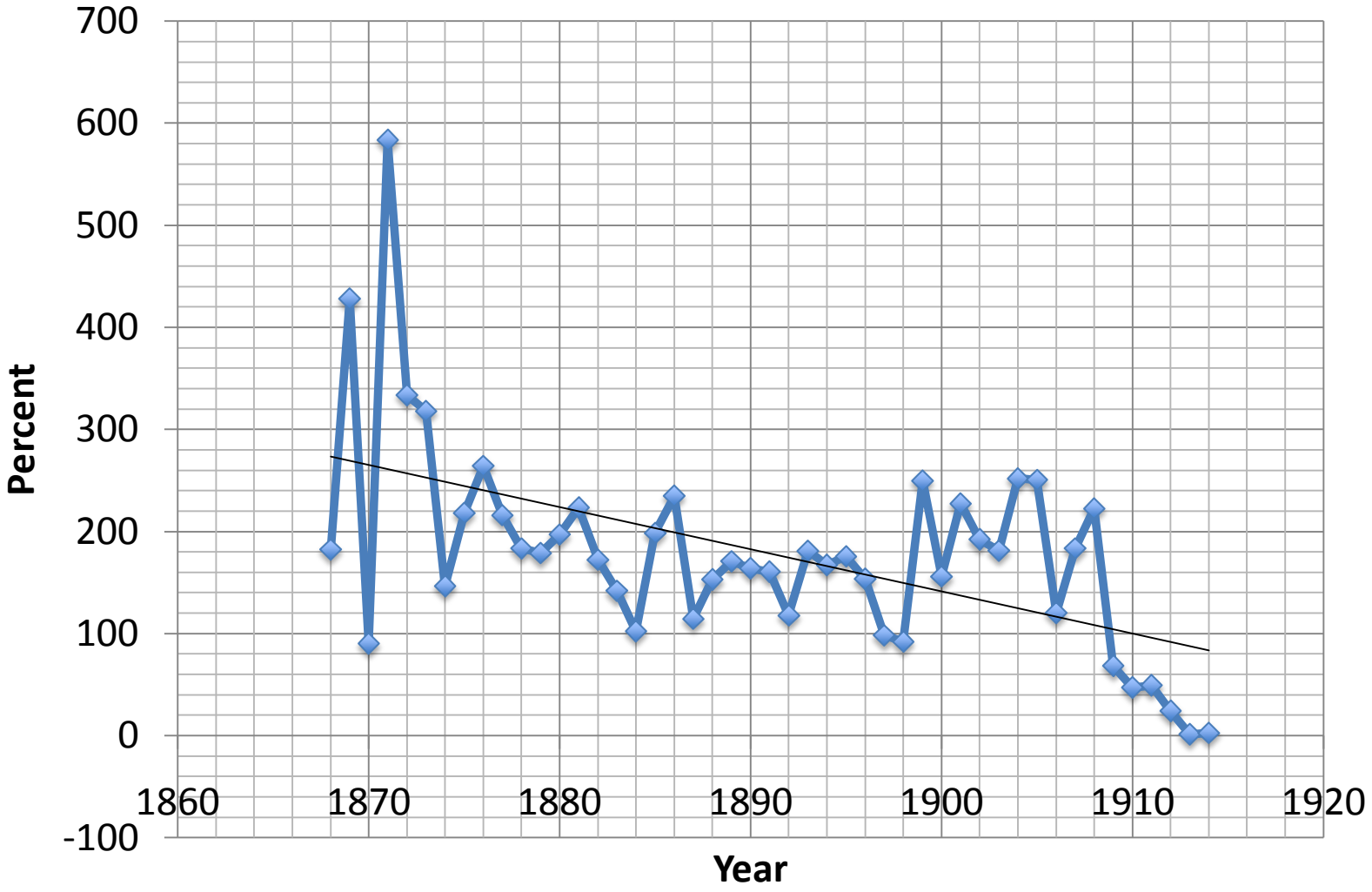
City sizes and proximity to coal



3. The spread of modern industry: escaping coalfields, protecting markets

Escaping coalfields

(Percentage price gap, Japanese import prices vs UK export prices)



The spread of industry to the periphery

Table 3. Industrial growth in early members of the "modern growth club"

Group	Country	In	1870-1890	1890-1913	1913-1920	1920-1938	1938-1950	1950-1973	1973-1990	1990-2007
European Periphery	Finland	1880	3.9	5.0	-5.8	6.7	4.4	6.0	3.5	6.4
	Russia	1880	5.3	4.6	-14.0	15.3	4.9	8.2	4.1	-0.5
	Austria	1883	4.8	3.3	-9.6	2.3	1.3	5.8	2.6	2.8
	Hungary	1883	4.8	3.3	-10.0	4.0	0.4	7.3	1.9	5.9
	Spain	1884	3.2	1.3	0.7	-0.5	2.7	8.9	1.3	2.9
Asia	Japan	1899	3.1	5.3	6.5	6.7	-3.7	12.4	4.1	1.0
	China	1900		7.8	9.4	5.3	-2.2	9.2	8.3	9.8
	Philippines	1913		6.3	10.1	3.4	9.4	7.0	1.8	3.3
	Taiwan	1914		5.1	9.8	4.4	-10.4	11.6	8.7	4.9
	Korea	1921		8.0	9.3	7.1	-4.0	13.6	11.7	7.4
Latam and Caribbean	Chile	1881	7.5	3.9	1.2	2.6	6.5	5.1	2.2	3.5
	Brazil	1884	7.5	0.0	6.7	3.2	7.0	8.0	2.6	2.1
	Argentina	1886	6.3	8.8	2.0	4.2	4.2	4.9	-1.0	1.7
	Uruguay	1886	4.1	3.9	2.7	3.2	4.8	1.3	1.5	0.1
	Mexico	1902		6.0	4.9	3.7	7.4	7.2	3.1	3.2
Middle East and North Africa	Turkey	1931	1.7	1.7	-5.8	8.1	3.6	7.7	5.1	4.1
	Morocco	1949					12.5	4.8	4.2	2.9
	Tunisia	1950					1.8	4.0	7.0	4.6
	Algeria	1959						9.8	7.4	0.1
	Egypt	1962				1.6		6.5	7.7	5.6
Sub-Saharan Africa	South Africa	1924			13.4	6.7	7.1	7.0	2.7	2.6
	Congo, Dem. Rep	1940				2.4	13.5	3.3	-0.6	-3.9
	Zimbabwe	1951					5.2	6.7	2.9	-3.7
	Kenya	1964						8.8	5.4	1.7
	Zambia	1966						8.3	2.4	2.8

Note: "In" indicates the first year that a country experienced a 10-year average backward looking growth rate greater than 5 per cent. Sources: Tables A.1 and A.6.

The spread of industry to the periphery

Table 3. Industrial growth in early members of the "modern growth club"

Group	Country	In	1870-1890	1890-1913	1913-1920	1920-1938	1938-1950	1950-1973	1973-1990	1990-2007
European Periphery	Finland	1880	3.9	5.0	-5.8	6.7	4.4	6.0	3.5	6.4
	Russia	1880	5.3	4.6	-14.0	15.3	4.9	8.2	4.1	-0.5
	Austria	1883	4.8	3.3	-9.6	2.3	1.3	5.8	2.6	2.8
	Hungary	1883	4.8	3.3	-10.0	4.0	0.4	7.3	1.9	5.9
	Spain	1884	3.2	1.3	0.7	-0.5	2.7	8.9	1.3	2.9
Asia	Japan	1899	3.1	5.3	6.5	6.7	-3.7	12.4	4.1	1.0
	China	1900		7.8	9.4	5.3	-2.2	9.2	8.3	9.8
	Philippines	1913		6.3	10.1	3.4	9.4	7.0	1.8	3.3
	Taiwan	1914		5.1	9.8	4.4	-10.4	11.6	8.7	4.9
	Korea	1921		8.0	9.3	7.1	-4.0	13.6	11.7	7.4
Latam and Caribbean	Chile	1881	7.5	3.9	1.2	2.6	6.5	5.1	2.2	3.5
	Brazil	1884	7.5	0.0	6.7	3.2	7.0	8.0	2.6	2.1
	Argentina	1886	6.3	8.8	2.0	4.2	4.2	4.9	-1.0	1.7
	Uruguay	1886	4.1	3.9	2.7	3.2	4.8	1.3	1.5	0.1
	Mexico	1902		6.0	4.9	3.7	7.4	7.2	3.1	3.2
Middle East and North Africa	Turkey	1931	1.7	1.7	-5.8	8.1	3.6	7.7	5.1	4.1
	Morocco	1949					12.5	4.8	4.2	2.9
	Tunisia	1950					1.8	4.0	7.0	4.6
	Algeria	1959						9.8	7.4	0.1
	Egypt	1962				1.6		6.5	7.7	5.6
Sub-Saharan Africa	South Africa	1924			13.4	6.7	7.1	7.0	2.7	2.6
	Congo, Dem. Rep	1940				2.4	13.5	3.3	-0.6	-3.9
	Zimbabwe	1951					5.2	6.7	2.9	-3.7
	Kenya	1964						8.8	5.4	1.7
	Zambia	1966						8.3	2.4	2.8

Note: "In" indicates the first year that a country experienced a 10-year average backward looking growth rate greater than 5 per cent. Sources: Tables A.1 and A.6.

The spread of industry to the periphery

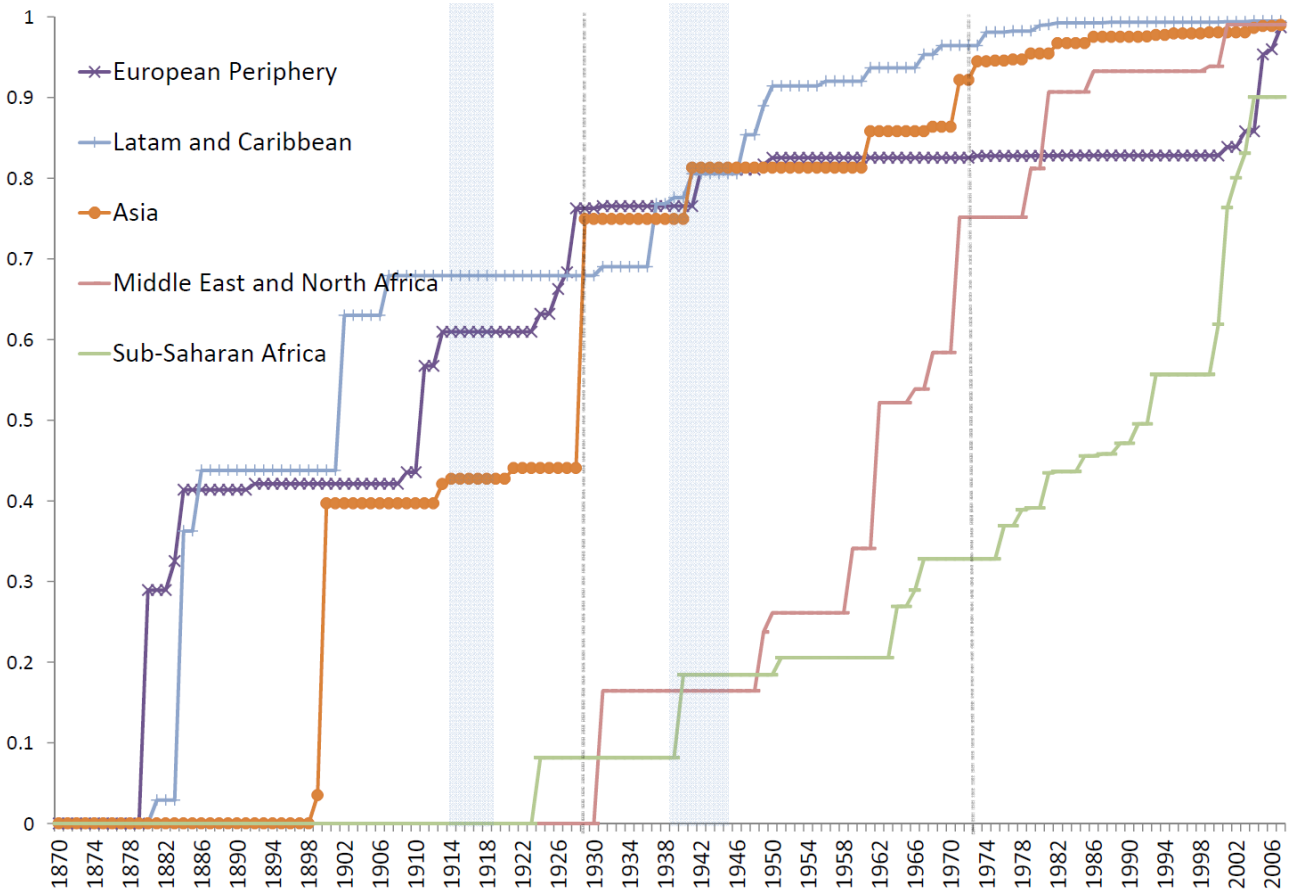
Table 3. Industrial growth in early members of the "modern growth club"

Group	Country	In	1870-1890	1890-1913	1913-1920	1920-1938	1938-1950	1950-1973	1973-1990	1990-2007
European Periphery	Finland	1880	3.9	5.0	-5.8	6.7	4.4	6.0	3.5	6.4
	Russia	1880	5.3	4.6	-14.0	15.3	4.9	8.2	4.1	-0.5
	Austria	1883	4.8	3.3	-9.6	2.3	1.3	5.8	2.6	2.8
	Hungary	1883	4.8	3.3	-10.0	4.0	0.4	7.3	1.9	5.9
	Spain	1884	3.2	1.3	0.7	-0.5	2.7	8.9	1.3	2.9
Asia	Japan	1899	3.1	5.3	6.5	6.7	-3.7	12.4	4.1	1.0
	China	1900		7.8	9.4	5.3	-2.2	9.2	8.3	9.8
	Philippines	1913		6.3	10.1	3.4	9.4	7.0	1.8	3.3
	Taiwan	1914		5.1	9.8	4.4	-10.4	11.6	8.7	4.9
	Korea	1921		8.0	9.3	7.1	-4.0	13.6	11.7	7.4
Latam and Caribbean	Chile	1881	7.5	3.9	1.2	2.6	6.5	5.1	2.2	3.5
	Brazil	1884	7.5	0.0	6.7	3.2	7.0	8.0	2.6	2.1
	Argentina	1886	6.3	8.8	2.0	4.2	4.2	4.9	-1.0	1.7
	Uruguay	1886	4.1	3.9	2.7	3.2	4.8	1.3	1.5	0.1
	Mexico	1902		6.0	4.9	3.7	7.4	7.2	3.1	3.2
Middle East and North Africa	Turkey	1931	1.7	1.7	-5.8	8.1	3.6	7.7	5.1	4.1
	Morocco	1949					12.5	4.8	4.2	2.9
	Tunisia	1950					1.8	4.0	7.0	4.6
	Algeria	1959						9.8	7.4	0.1
	Egypt	1962				1.6		6.5	7.7	5.6
Sub-Saharan Africa	South Africa	1924			13.4	6.7	7.1	7.0	2.7	2.6
	Congo, Dem. Rep	1940				2.4	13.5	3.3	-0.6	-3.9
	Zimbabwe	1951					5.2	6.7	2.9	-3.7
	Kenya	1964						8.8	5.4	1.7
	Zambia	1966						8.3	2.4	2.8

Note: "In" indicates the first year that a country experienced a 10-year average backward looking growth rate greater than 5 per cent. Sources: Tables A.1 and A.6.

The spread of industry to the periphery

Figure 2. Regional population-weighted diffusion curves: reaching the 5 per cent threshold



Note: The figure shows the proportion of the region's population in 2007 living in countries for which the 10-year backward looking average industrial growth rate exceeded a 5 per cent threshold. Countries for which data are missing are assumed not to have exceeded this threshold. Source: Table A.6.

The spread of industry to the periphery

Table 6: Unconditional industrial catching up

Period	Using period-specific benchmarks	Country sample					
		1870-1890	1890-1913	1920-1938	1950-1973	1973-1990	1990-2007
1870-1890	-0.341	-0.203					
	(0.409)	(0.256)					
1890-1913	-0.599	-0.009	-0.239				
	(0.376)	(0.137)	(0.223)				
1920-1938	-0.601**	-0.238**	-0.378**	-0.644**			
	(0.236)	(0.091)	(0.140)	(0.270)			
1950-1973	-3.722***	-1.023**	-0.598*	-0.734***	-0.800***		
	(0.552)	(0.417)	(0.324)	(0.269)	(0.268)		
1973-1990	-0.435***	-0.518***	-1.135***	-0.781*	-0.737**	-0.381***	
	(0.158)	(0.181)	(0.367)	(0.407)	(0.294)	(0.139)	
1990-2007	0.062	-0.396	-0.779**	-0.434	-0.044	0.233	0.062
	(0.156)	(0.302)	(0.327)	(0.266)	(0.254)	(0.199)	(0.156)
Number of Countries		23	29	44	56	92	146

Note: Coefficients are obtained by regressing regression-based growth rates of per capita manufacturing output reported in Table A.7 on the log level of per capita manufacturing output at the beginning of the period. The first column reports coefficients using period specific benchmarks; subsequent columns use backward extrapolation from a 2001 benchmark. See text for details. *, **, *** indicate statistical significance at the 10%, 5% and 1% levels respectively. Robust standard errors in parentheses.

Trade policy and the spread of industry: suggestive timing

- ISI period is the one in which there was the most systematic tendency for less industrialised countries to see more rapid industrial growth
- Latin America was protecting industry by the late 19th century
- So was the European periphery
- 1914-1950: war, Depression, protectionism: offered some dynamic benefits to periphery
- Post-1950: decolonisation, import substitution
- Late 19th century Japan, China, India an obvious exception

Trade policy and the spread of industry: suggestive timing

- ISI period is the one in which there was the most systematic tendency for less industrialised countries to see more rapid industrial growth
- Latin America was protecting industry by the late 19th century
- So was the European periphery
- 1914-1950: war, Depression, protectionism: offered some dynamic benefits to periphery
- Post-1950: decolonisation, import substitution
- Late 19th century Japan, China, India an obvious exception
- What about Italy?

Italy was a part of this process

Table A.6 Countries entering and exiting the 5% growth club

Groups	Country	Data Start	In	Out
European Periphery	Finland	1870	1880	2007
	Russian Federation	1870	1880	2007
	Austria	1870	1883	1977
	Hungary	1870	1883	2007
	Spain	1870	1884	1980
	Bosnia and Herzegovina	1881	1892	1912
	Serbia and Montenegro	1898	1909	1910
	Bulgaria	1870	1911	1985
	Italy	1870	1911	1982
	Romania	1902	1913	1982
	Greece	1913	1924	1981
	Czechoslovakia	1913	1926	1966
	Portugal	1870	1927	1986
	Latvia	1913	1928	2007
	Poland	1913	1928	2007
	Estonia	1920	1931	2007
	Yugoslavia, Federal Republic of	1910	1942	1984
	Albania	1938	1949	1970
	Ireland	1936	1950	2007
	Cyprus	1962	1973	1987
	Malta	1970	1981	1985
	Slovak Republic	1990	2001	2007
	Belarus	1990	2003	2007
	Slovenia	1990	2005	2007
	Ukraine	1987	2005	2007
	Lithuania	1995	2006	2007
	Czech Republic	1995	2007	2007
	Moldova	1995	2007	2007
	Croatia	1990		
	Iceland	1997		
	Macedonia, FYR	1990		
	Montenegro	2000		

!

Italy 1870-1940: a typical capital-scarce economy

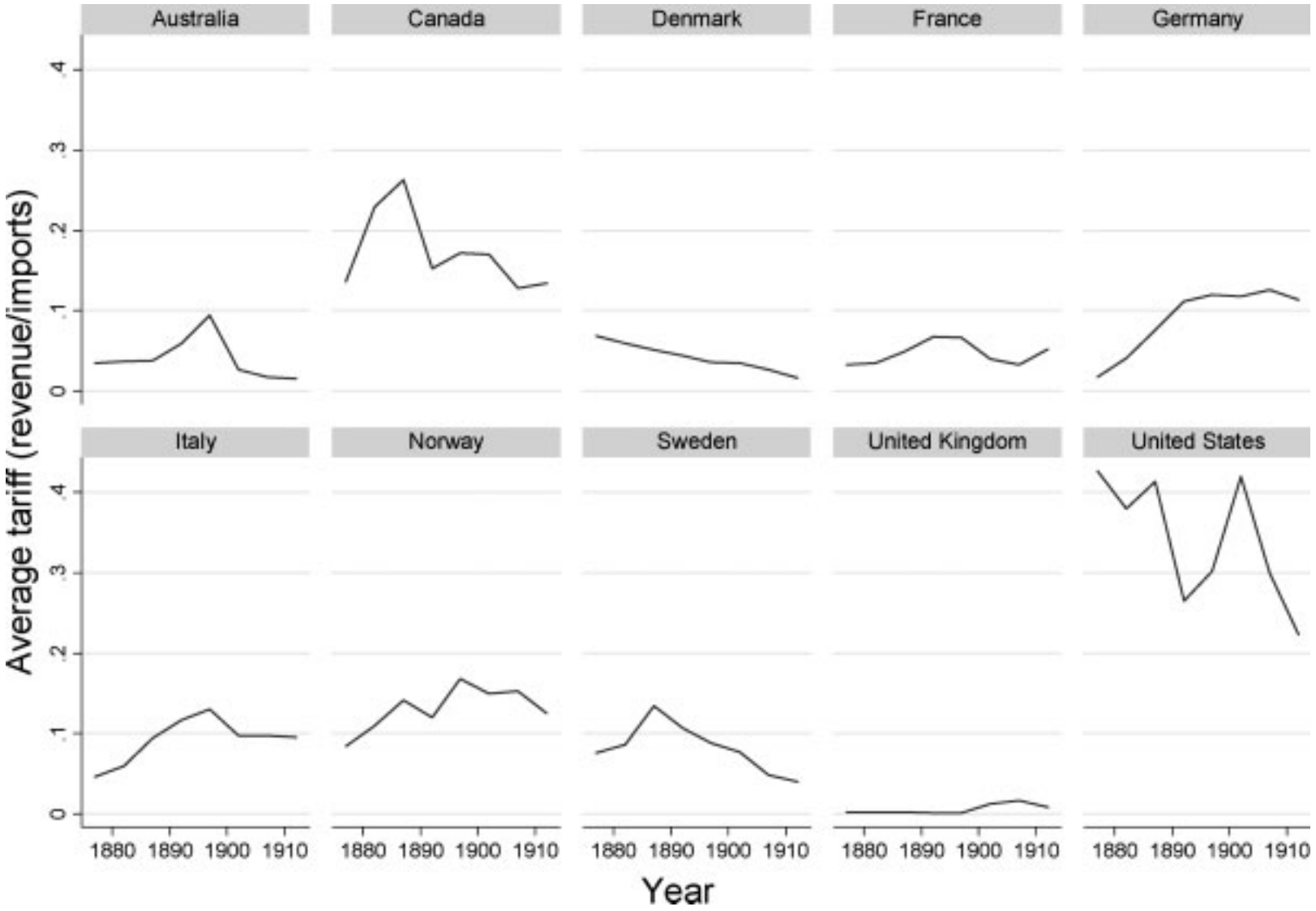
- Explains pattern of protectionism: protection for capital-intensive manufactures, like elsewhere on the periphery
  - Heckscher-Ohlin
- Explains frequent attempts to go on gold to attract capital inflows (like elsewhere)
- Explains waves of capital inflows, banking crises, and reforms
- Explains protection of military-industrial complex, developmentalist strategies

Trade policy 1861-1929

- Like elsewhere in Europe, Italy in 1861 adopts a liberal trade policy
- Shift to protection from 1878 not unusual; by 1887 K-scarce heavy industry a major beneficiary
- Levels of protection not extraordinary in a European context
- Terni (but Italy not the only country to chose location for such industries on strategic grounds)

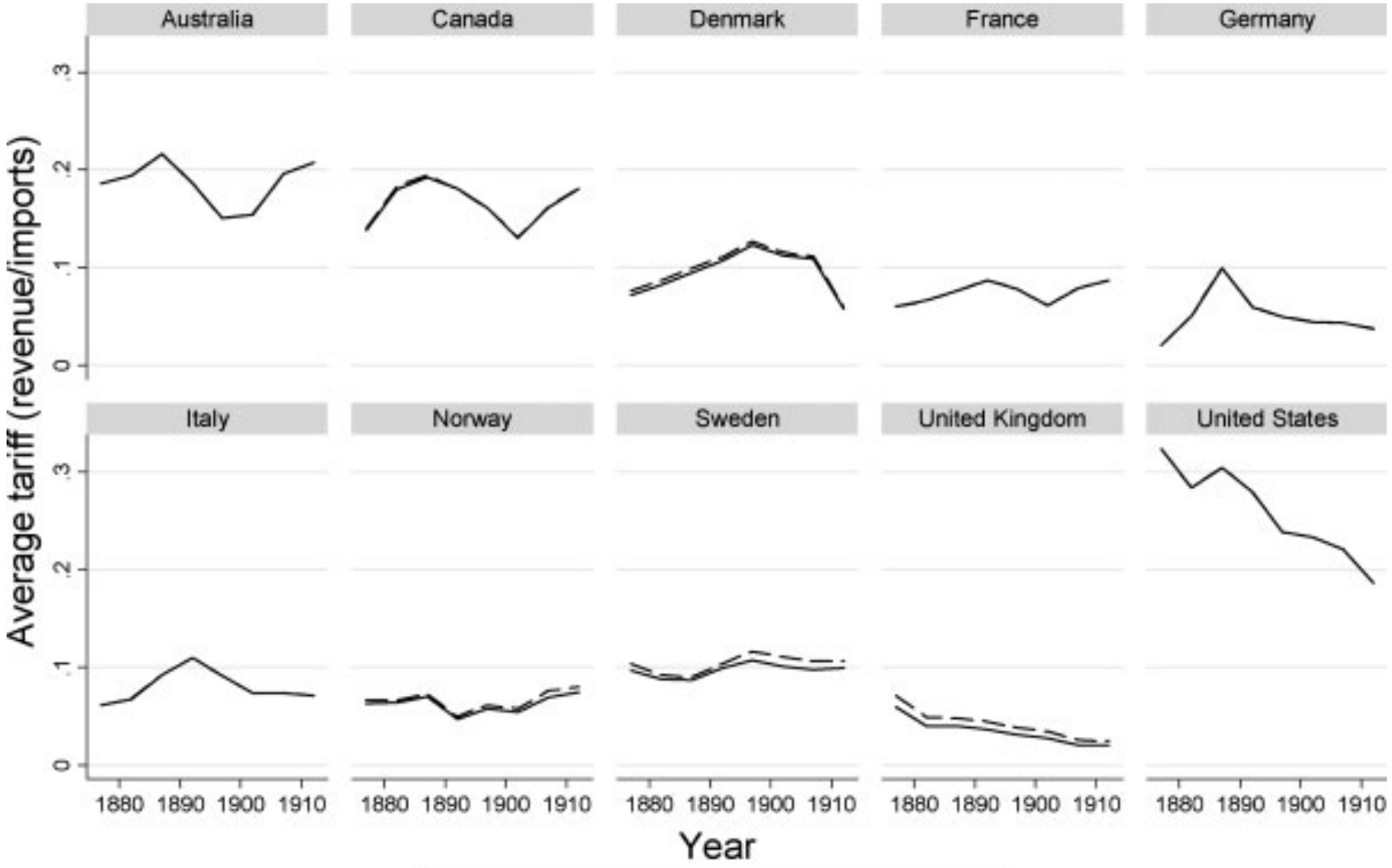
Italian protection: unexceptional

FIGURE 1.—AGRICULTURAL TARIFFS, 1875–1913



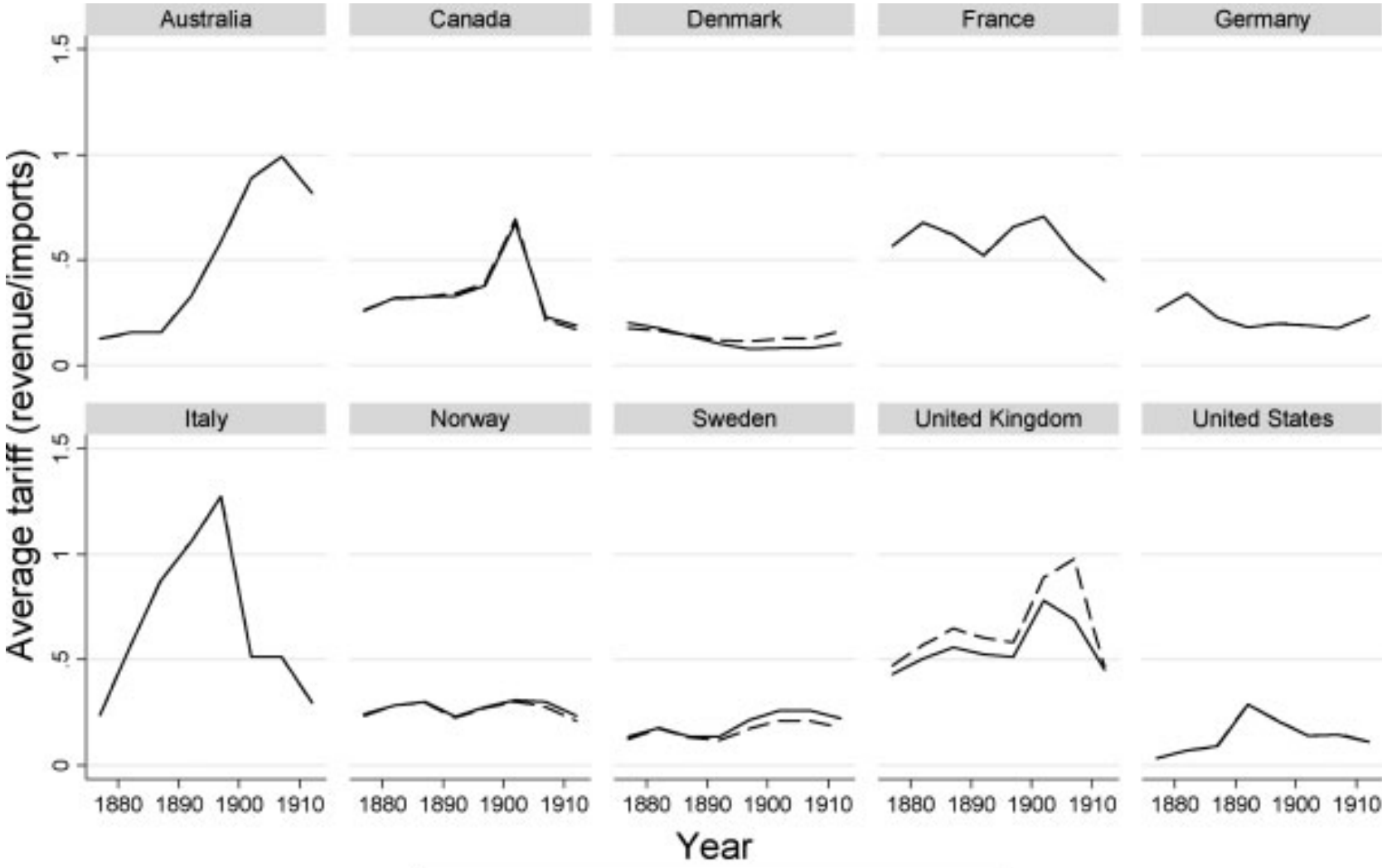
Italian protection: unexceptional

FIGURE 2.—MANUFACTURING TARIFFS, 1875–1913



Italian protection: unexceptional

FIGURE 3.—EXOTIC OR REVENUE TARIFFS, 1875–1913



Tariffs and growth in the 19th century

Table 7

Factor Accumulation Model

(Dependent variable is average annual growth rate)

	(1)	(2)	(3)	(4)	(5)
LY				1.464	−3.796
				(1.832)	(−2.300)
DKL	18.361	19.528	21.809	22.527	18.55
	(2.869)	(3.225)	(3.392)	(3.660)	(2.928)
DRL	10.913	14.189	22.933	18.235	22.748
	(0.750)	(1.030)	(1.669)	(1.333)	(1.724)
LTAR		1.853	1.142	1.737	0.570
		(2.845)	(1.669)	(2.708)	(0.810)
*D*1877			−0.990		−2.589
			(−2.070)		(−3.108)
*D*1882			−1.166		−2.508
			(−2.714)		(−3.510)
*D*1887			−0.736		−1.892
			(−1.786)		(−2.958)
*D*1892			−0.561		−1.527
			(−1.364)		(−2.648)
*D*1897			−0.279		−0.940
			(−0.650)		(−1.869)
*D*1902			−0.089		−0.397
			(−0.214)		(−0.938)
No. of observations	70	70	70	70	70
R-squared	0.331	0.414	0.524	0.447	0.569
Adjusted R-squared	0.204	0.291	0.355	0.319	0.405
S.E. of regression	1.023	0.965	0.920	0.946	0.884
F-statistic	28.701	20.154	7.004	15.110	7.338
Prob(F-statistic)	0.000	0.000	0.000	0.000	0.000
Mean of dependent variable	1.443	1.443	1.443	1.443	1.443
S.D. of dependent variable	1.146	1.146	1.146	1.146	1.146
Sum of squared residuals	60.664	53.119	43.210	50.117	39.074
Durbin-Watson stat.	1.462	1.612	1.853	1.801	1.693

Note: t-statistics are in parentheses. Estimation: OLS with fixed effects. Fixed effects omitted. Omitted year: 1907.

Tariffs and growth in the 19th century

TABLE 4.—INDUSTRIAL GROWTH AND THE STRUCTURE OF PROTECTION

Tariffs	(1) OLS	(2) IV
Log of initial income	−14.6961***	−18.0677***
	[4.2715]	[5.0450]
Growth in capital-labor ratio	0.0529	0.5927***
	[0.2429]	[0.1339]
Growth in land-labor ratio	0.8495**	0.4065
	[0.2625]	[0.2898]
Log of agricultural tariff	4.4055	9.4028*
	[6.7921]	[5.3760]
Log of manufacturing tariff	33.1353**	43.5415***
	[10.7230]	[15.8224]
Log of exotic tariff	−6.3245**	−2.3169
	[2.4452]	[2.6680]
Constant	19.2795***	
	[5.7456]	
Observations	63	56
Number of countries	9	8
R^2	0.45	

For sources, see the text. The dependent variable is per capita industrial growth. Robust standard errors in brackets, in column 1 clustered by country. *significant at 10%; **significant at 5%; ***significant at 1%. All regressions include country and time fixed effects (coefficients not reported). Australia is excluded in column 2. Column 2 uses the same variables as in table 2 to instrument for industrial tariffs.

Tariffs and growth in the 19th century

TABLE 2.—GROWTH AND THE STRUCTURE OF PROTECTION

	(1) OLS	(2) OLS	(3) IV1	(4) IV2
Log of initial income	−6.0603***	−6.4630**	−3.6651	−5.6425**
	[1.1125]	[2.3722]	[4.3356]	[2.2814]
Growth in capital stock per capita	0.1971**	0.3144***	0.4022***	0.3787***
	[0.0760]	[0.0919]	[0.0869]	[0.0759]
Growth in land per capita	0.3077	−0.0445	−0.0908	−0.0508
	[0.1855]	[0.1531]	[0.1895]	[0.1607]
Log of 1 + agricultural tariff	−5.0697	−1.8614	5.8644	−5.2245
	[4.8451]	[3.1389]	[13.4007]	[4.3962]
Log of 1 + manufacturing tariff	14.7219**	10.7419*	35.0486***	36.7037***
	[6.1808]	[4.8111]	[9.6094]	[10.0903]
Log of 1 + exotic tariff	−1.3786	0.163	1.9864	1.1465
	[0.8040]	[1.6055]	[1.9404]	[1.5272]
Constant	8.1735***	7.5417**		
	[1.3241]	[2.7856]		
Observations	70	63	63	63
Number of countries	10	9	9	9
R^2	0.51	0.55		

See the text for sources. The dependent variable is per capita GDP growth. Robust standard errors in brackets, in columns 1 and 2 clustered by country. *significant at 10%; **significant at 5%; ***significant at 1%. All regressions include country and time fixed effects (coefficients not reported). OLS: OLS fixed effects regression. Columns 2–4 exclude Australia. IV1: instruments for agricultural and manufacturing tariffs, using democracy and its interaction with the capital-labor and land-labor ratios. IV2: instruments for manufacturing tariffs only.

Correlation and causation

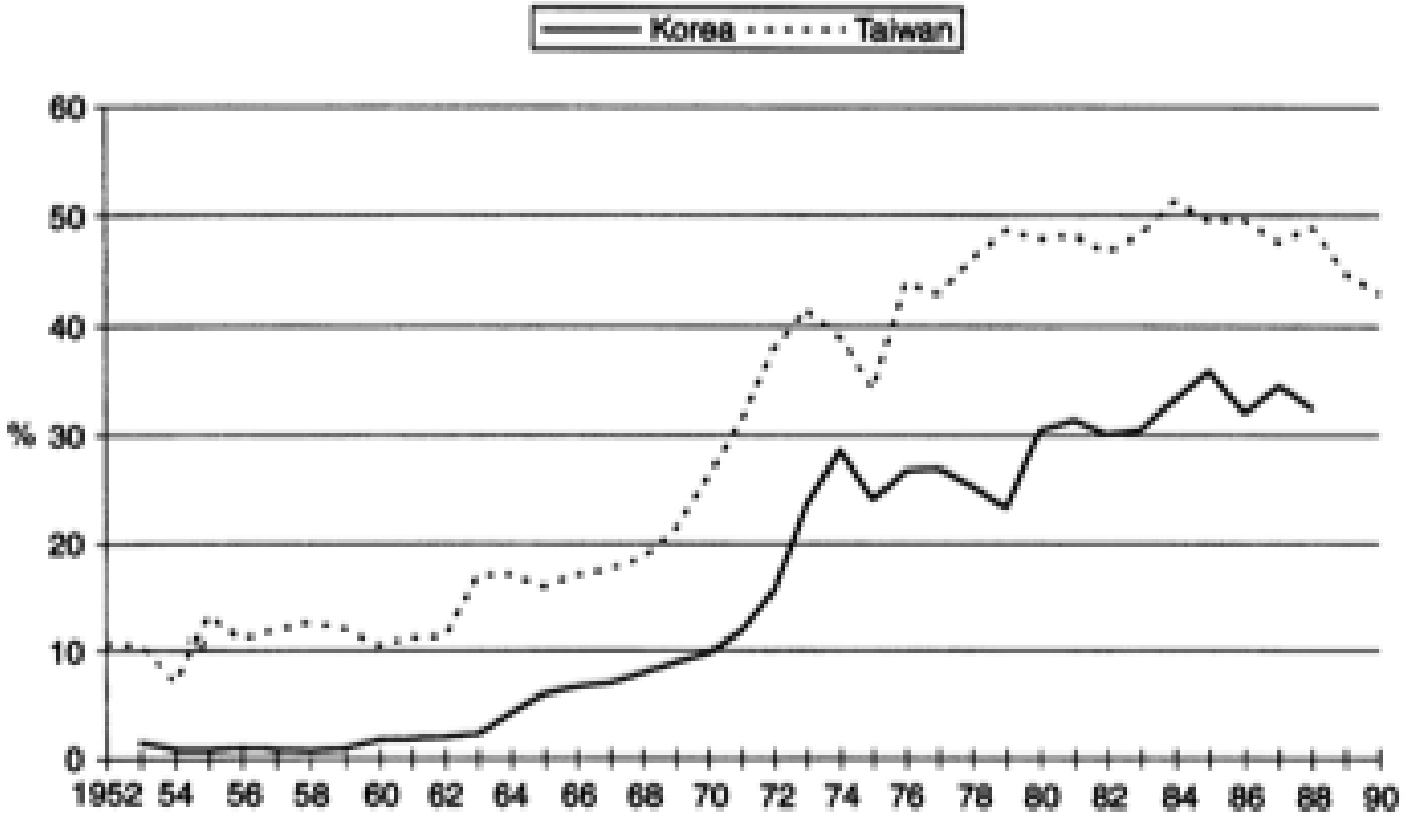


Figure 2. Export/GDP ratios, 1952–90

Source: Council for Economic Planning and Development, *Taiwan Statistical Data Book*, 1982 and 1992; Economic Planning Board, *Major Statistics of the Korean Economy*, various issues; IMF, *International Financial Statistics*.

Source: Rodrik (1995)

Investment and growth

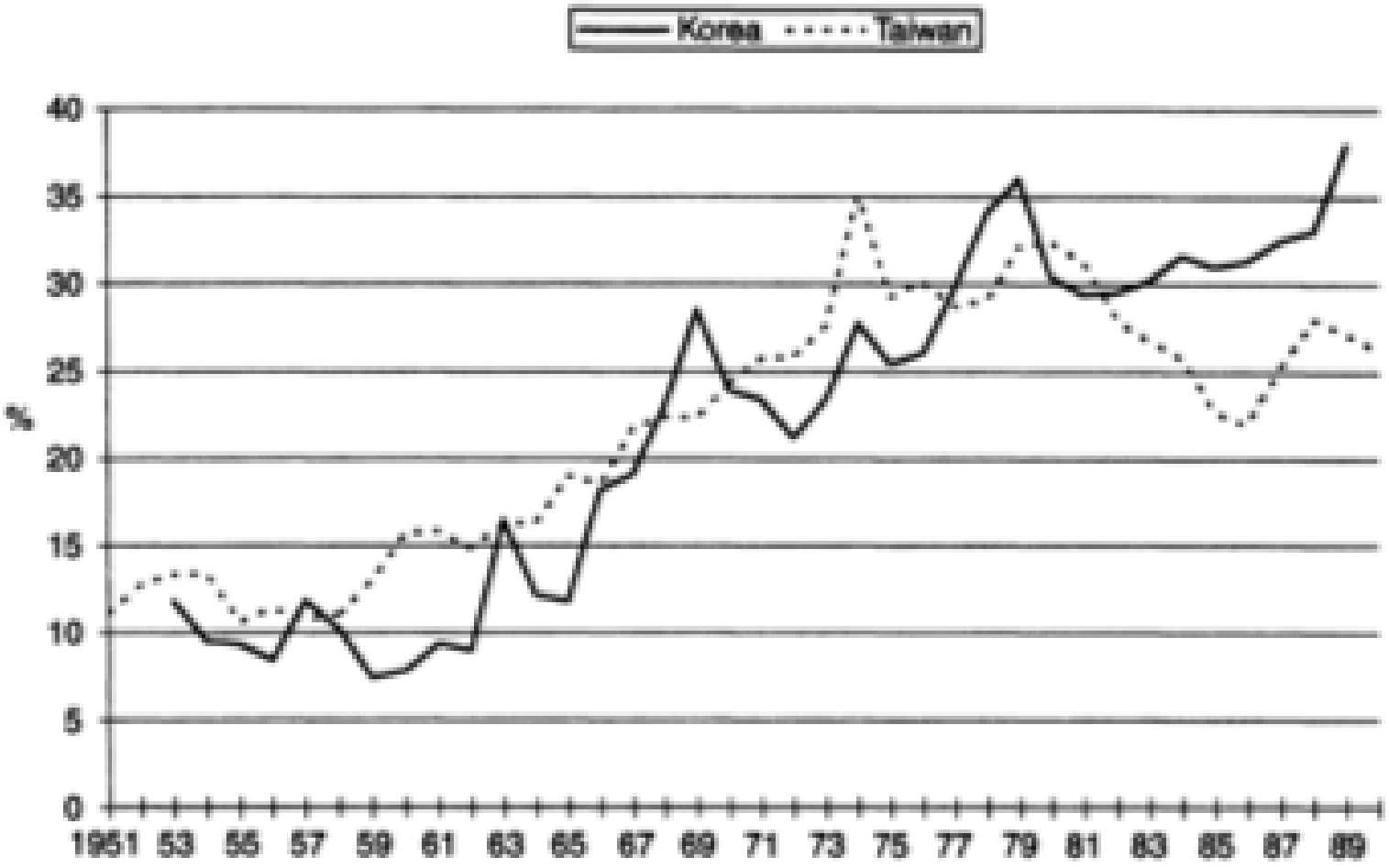


Figure 3. Investment/GDP ratios, 1951–90
Source: Penn World Table 5.5.

Source: Rodrik (1995)

Trade essential, but investment the key

Figure 9. Imports and investment: Korea, 1960–88
Sources: Penn World Table 5.5 and Economic Planning Board, *Major Statistics of the Korean Economy*, various issues.

Source: Rodrik (1995)

The spread of industry

- Required cheaper transport to give countries access to raw materials
- But also in many cases coincided with protectionism and active industrial policy
- There is some statistical evidence suggesting that this relationship may have been causal
- Could be rationalised in terms of “big push” arguments

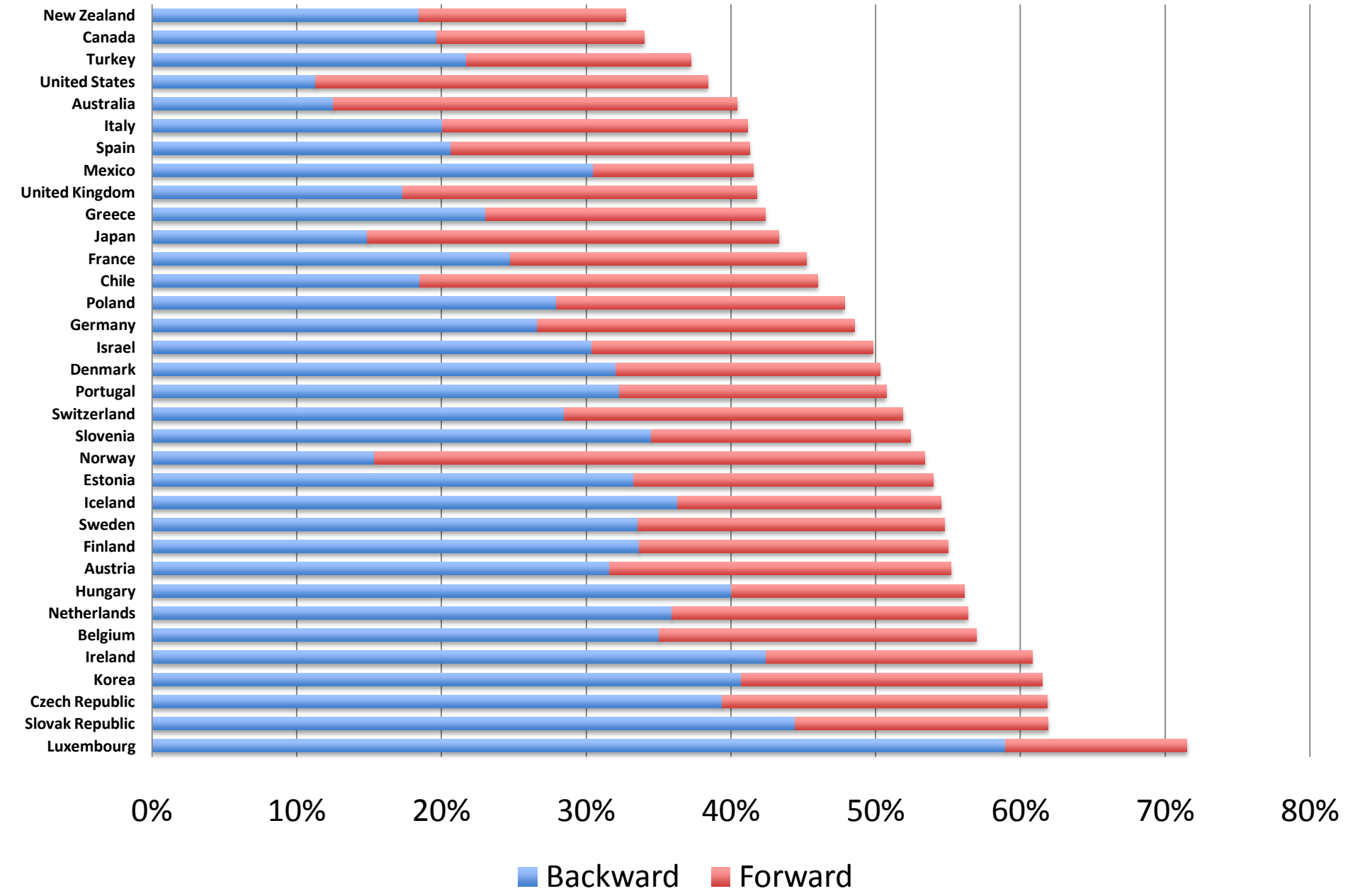
4. The second unbundling: gambling on globalization

All changed, changed utterly: the iPhone

Country	Components	Manufacturers	Costs
Chinese Taipei	Touch screen, camera	Largan Precision, Wintek	$ 20.75
Germany	Baseband, power management, transceiver	Dialog, Infineon	$ 16.08
Korea	Applications processor, display, DRAM memory	LG, Samsung	$ 80.05
United States	Audio codec, connectivity, GPS, memory, touchscreen controller	Broadcom, Cirrus Logic, Intel, Skyworks, Texas Instruments, TriQuint	$ 22.88
Other	Other	Misc.	$ 47.75
		Total	**$ 187.51**

Source: OECD/WTO (2012)

GVC Participation Index 2009 (OECD 2013): % of exports



GVC Participation Index 2009 (OECD 2013): % of exports

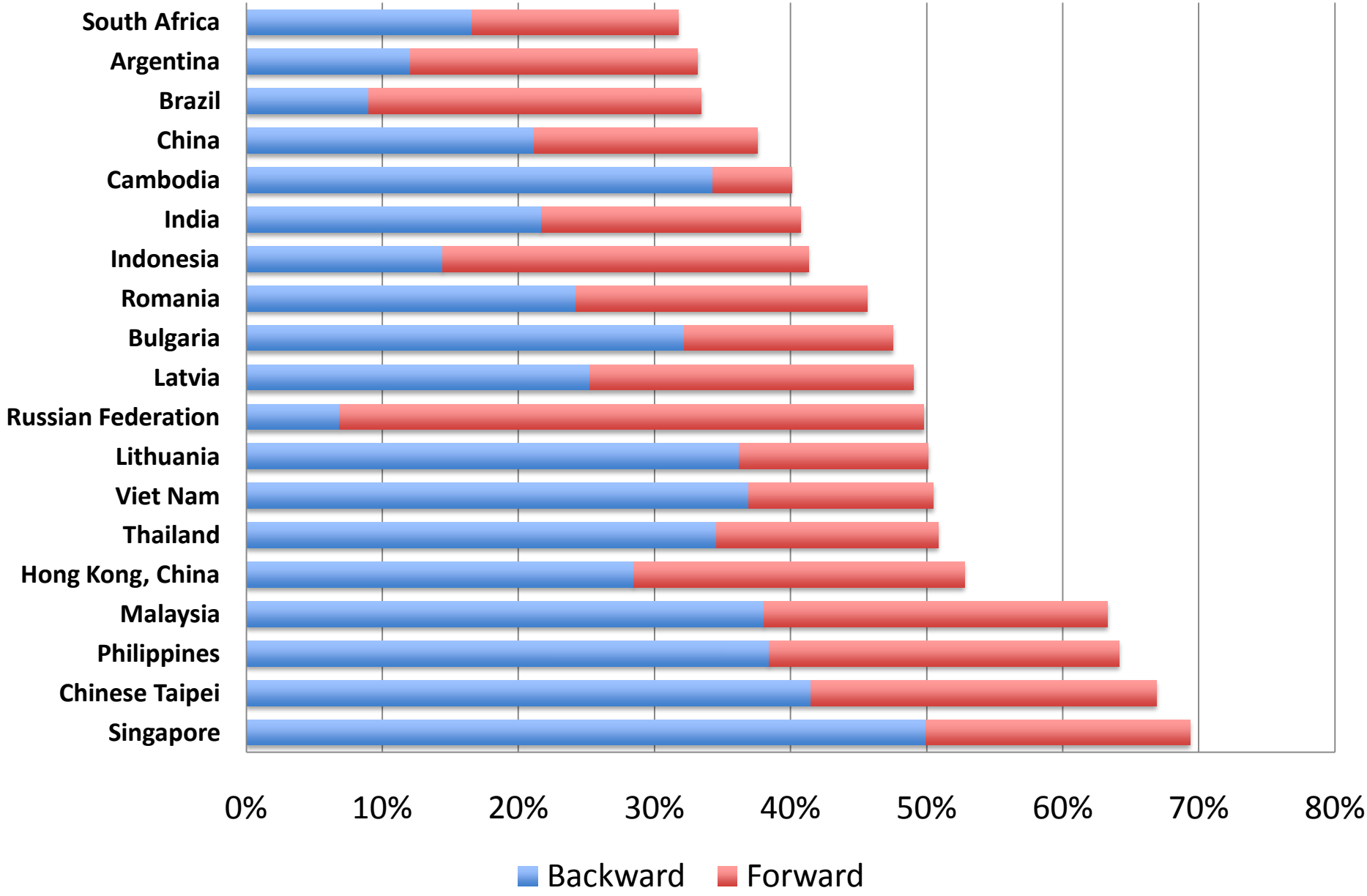
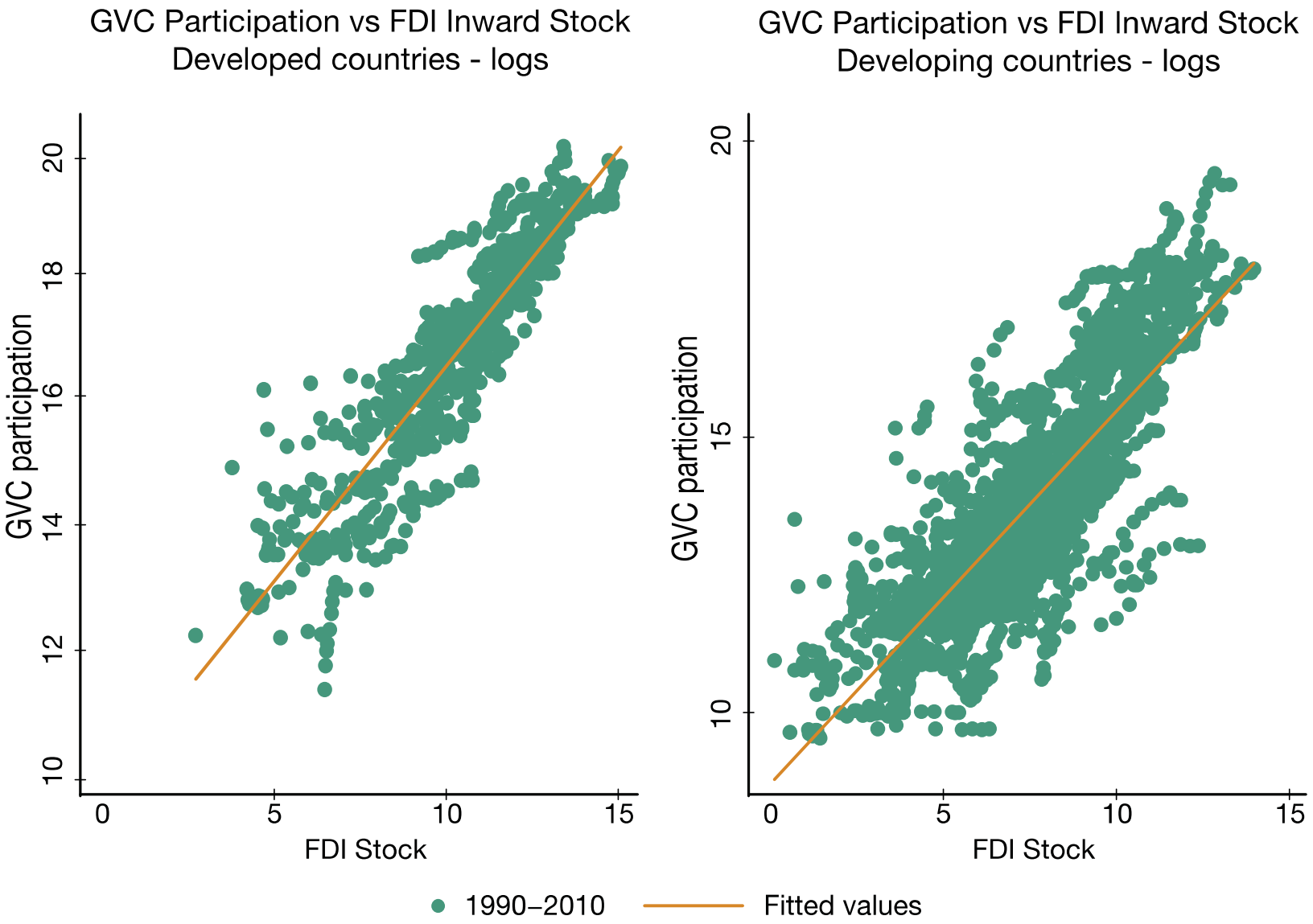


Figure 2. FDI and GVC participation, developed and developing countries, 1990-2010



Source: UNCTAD, *World Investment Report 2013 – GVCs: Investment and Trade for Development*.

Source: OECD/WTO/UNCTAD 2013

Baldwin (2012): The 2nd unbundling

- Multinationals splitting production, transferring technology
- No need to develop entire industrial base
  - No more big push arguments: find a niche
  - Joining supply chains, attracting investment (government may matter, but in different ways)
- The entire strategy is predicated on globalization continuing: what can we say about this?

5. The future of globalization

The future of globalization

- Globalization is neither new nor irreversible
- Shifts, shocks and shock absorbers
  - Financial shocks: the Great Depression
  - Comparative advantage shifts: rail, steamships and frontiers
  - Geopolitical shifts: Germany and Japan
- Ways in which today is different, and lessons for the future

Financial shocks: the Great Depression

- Was not caused by Smoot-Hawley: rather the Depression led to protectionism
- Adherence to gold standard: contractionary impulses generalised
- Lack of shock absorbers: can’t lower interest rates and government deficits also seen as risky

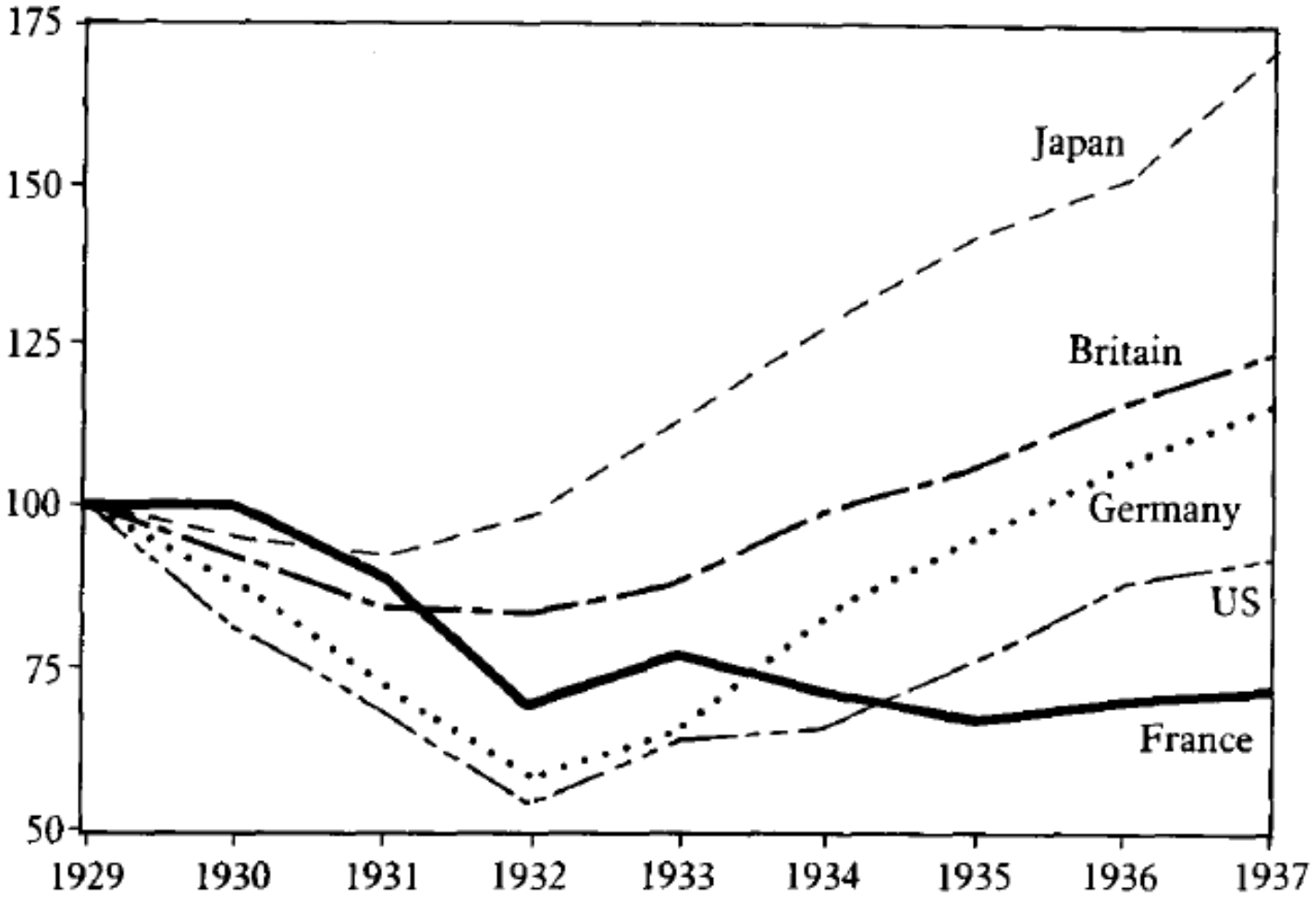
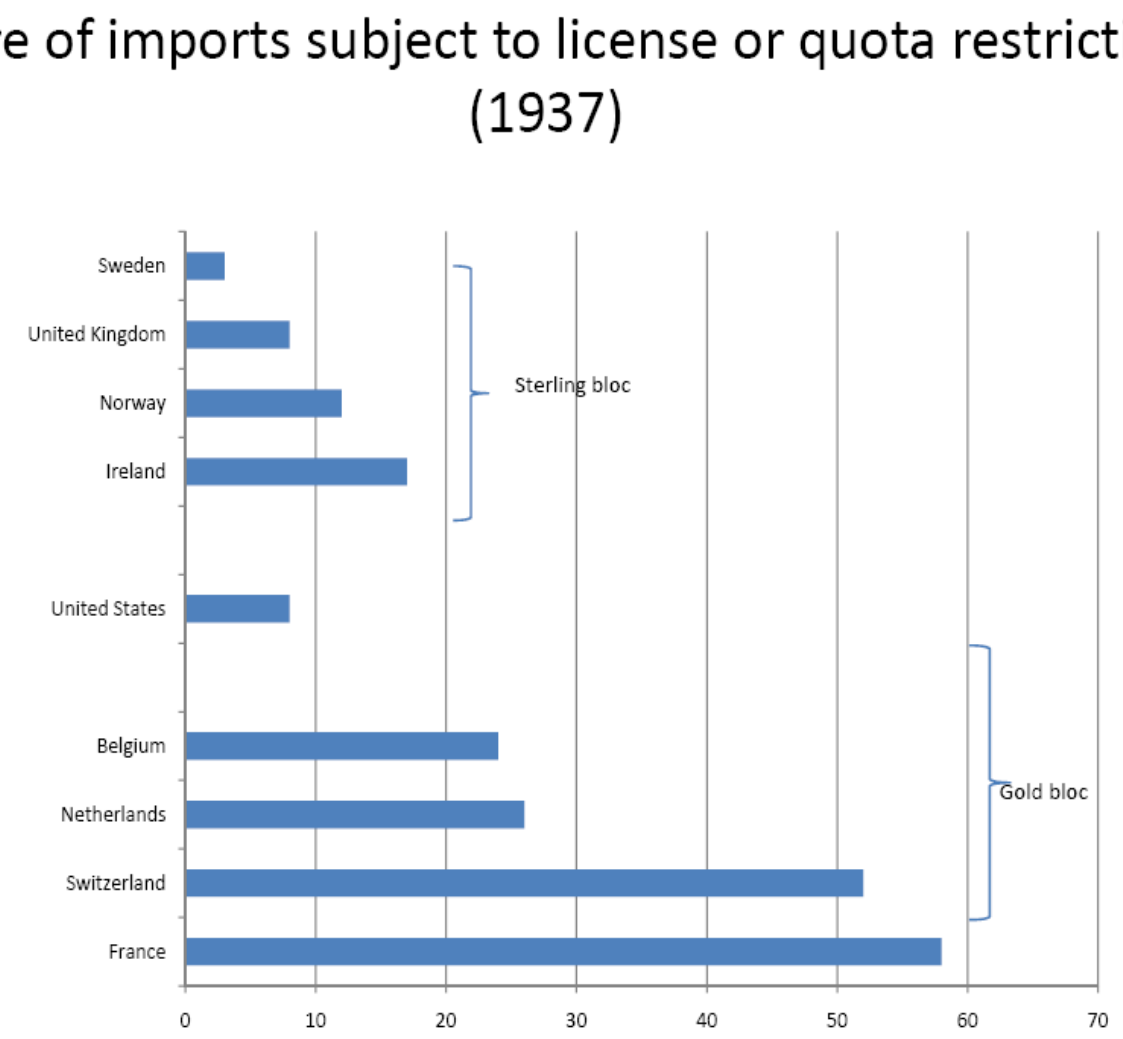


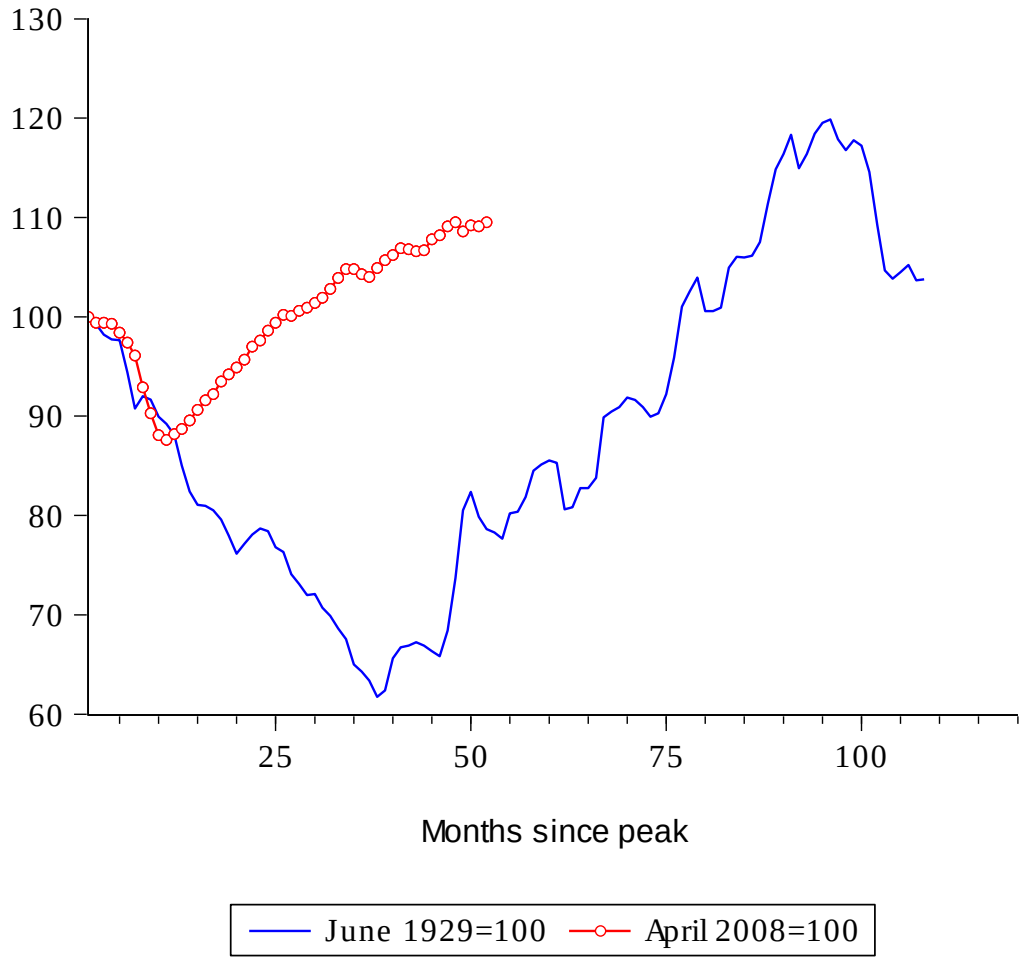
Figure 5. *Indices of industrial production, 1929-1937* (1929 = 100)
Source: League of Nations, *World production and prices, 1937/8*, p. 44.

Share of imports subject to quantitative restrictions on trade



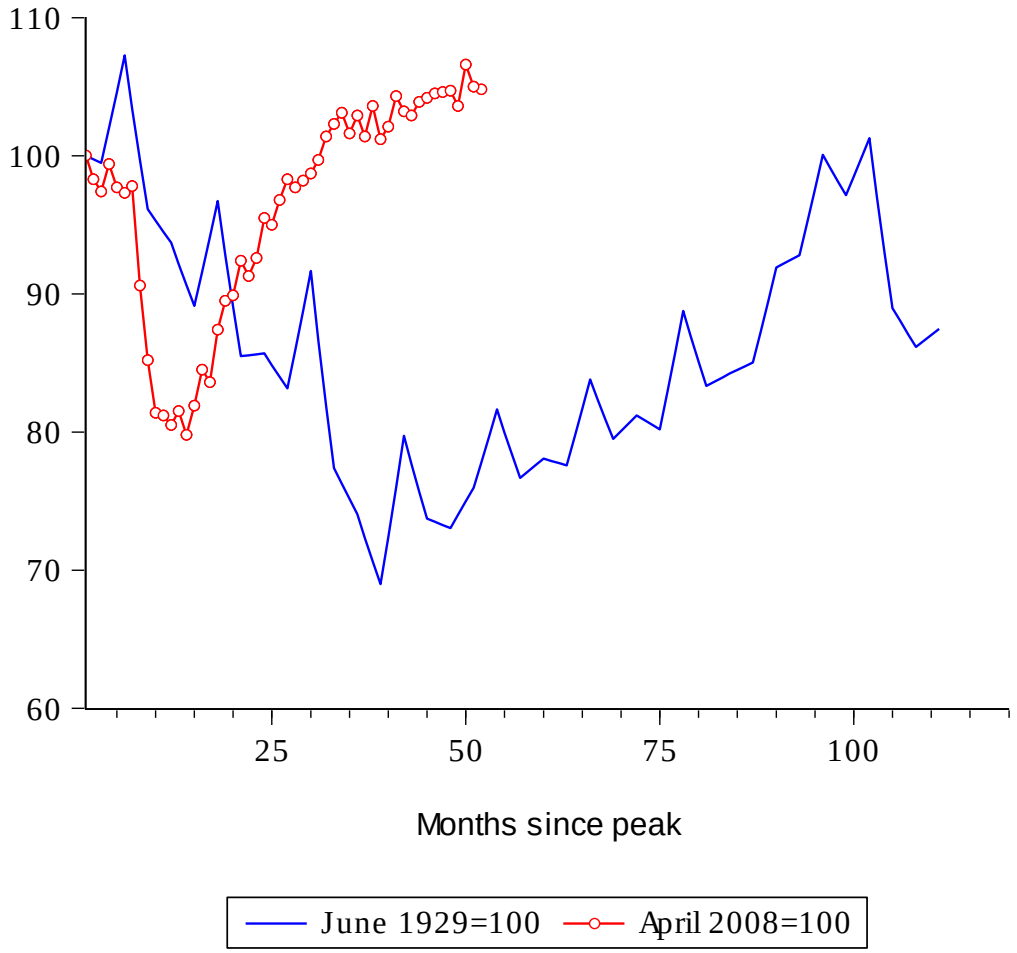
Source: Eichengreen and Irwin (2010).

World industrial output during two global crises



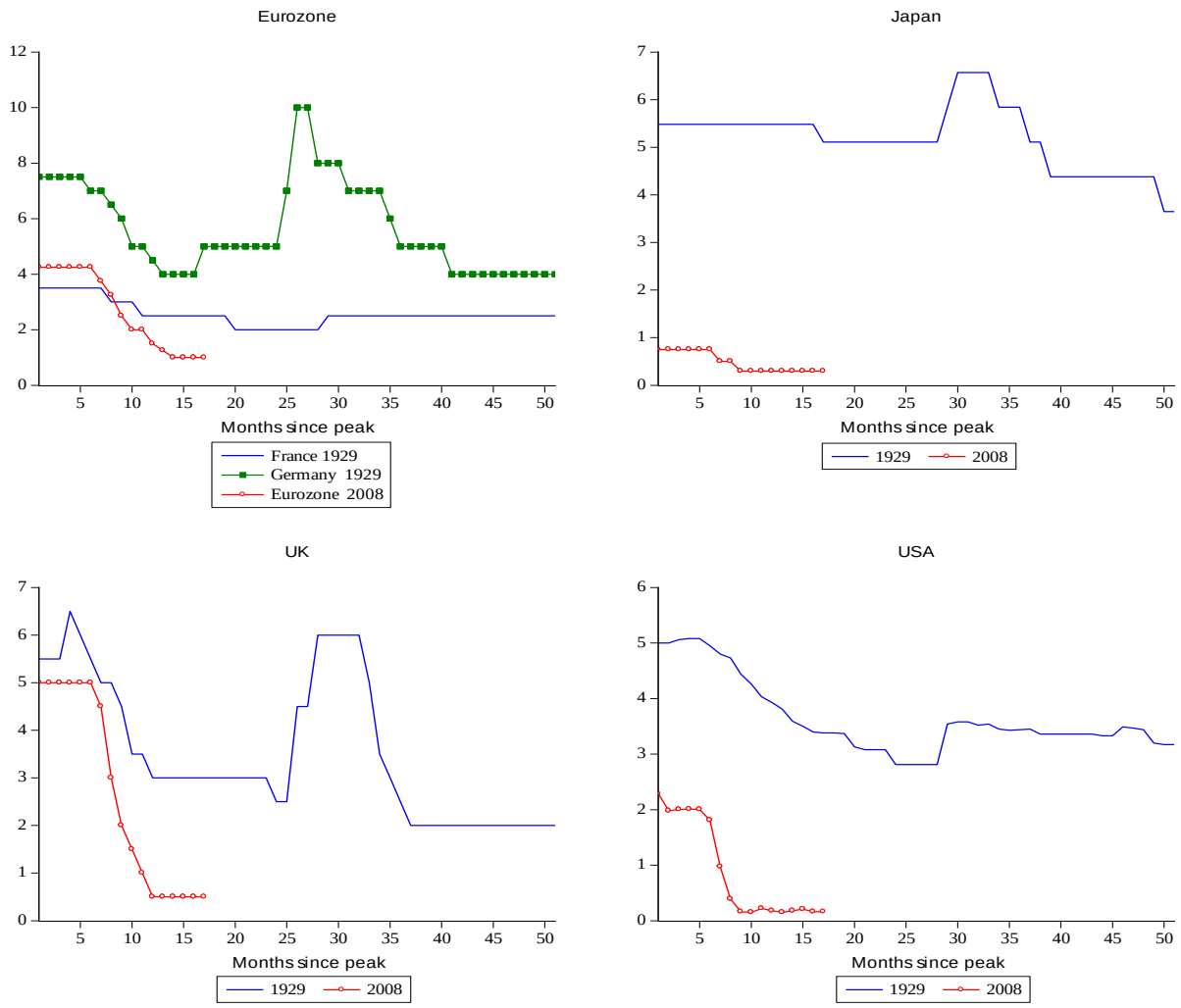
Source: Eichengreen and O'Rourke (2009), updated September 2012

World trade during two global crises



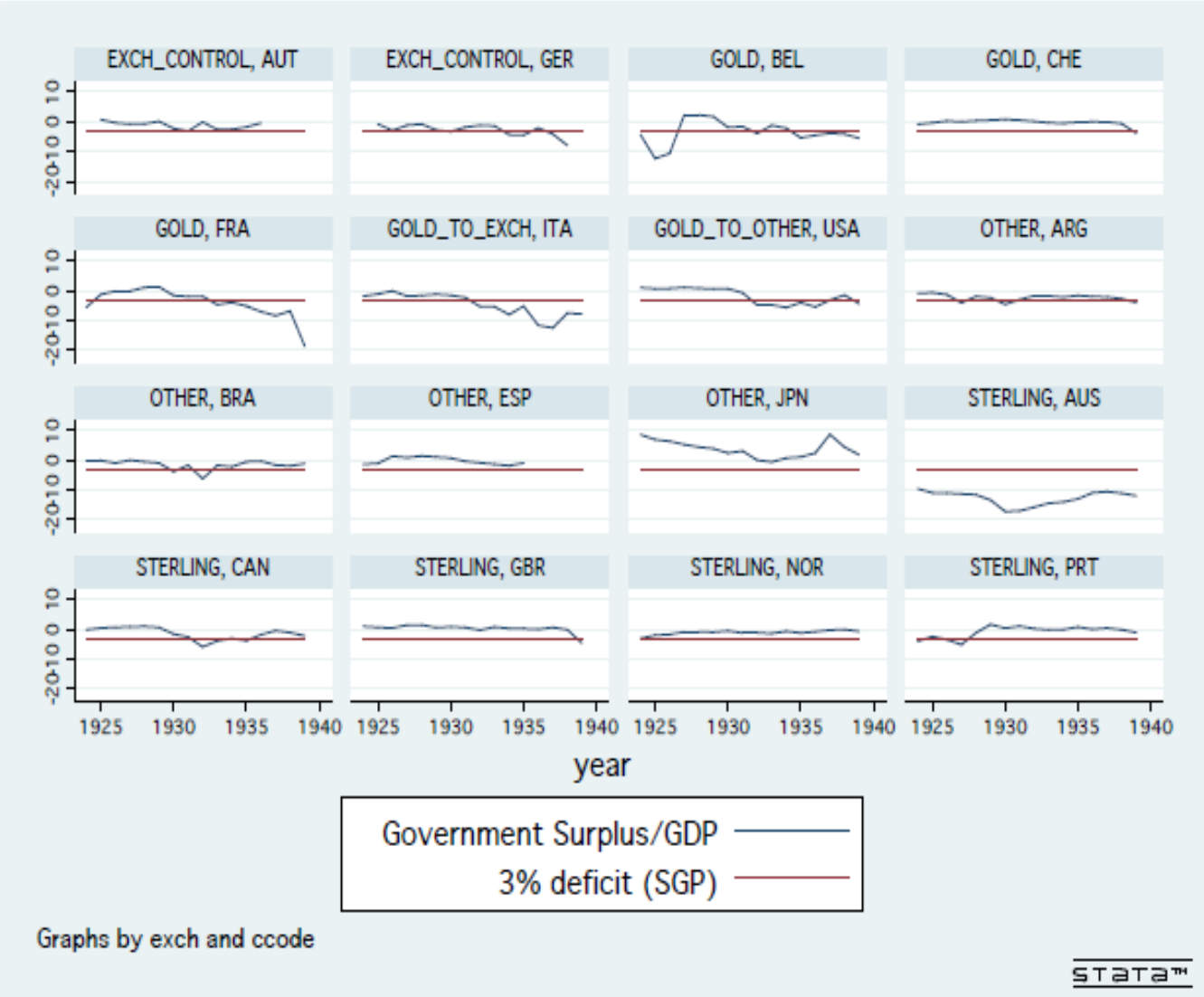
Source: Eichengreen and O'Rourke (2009), updated September 2012

Central bank discount rates during two crises



Source: Almunia et al. (2010).

Interwar budget deficits, by country



Source: Almunia et al. (2010).

19th century transport revolutions: how globalization can undermine itself

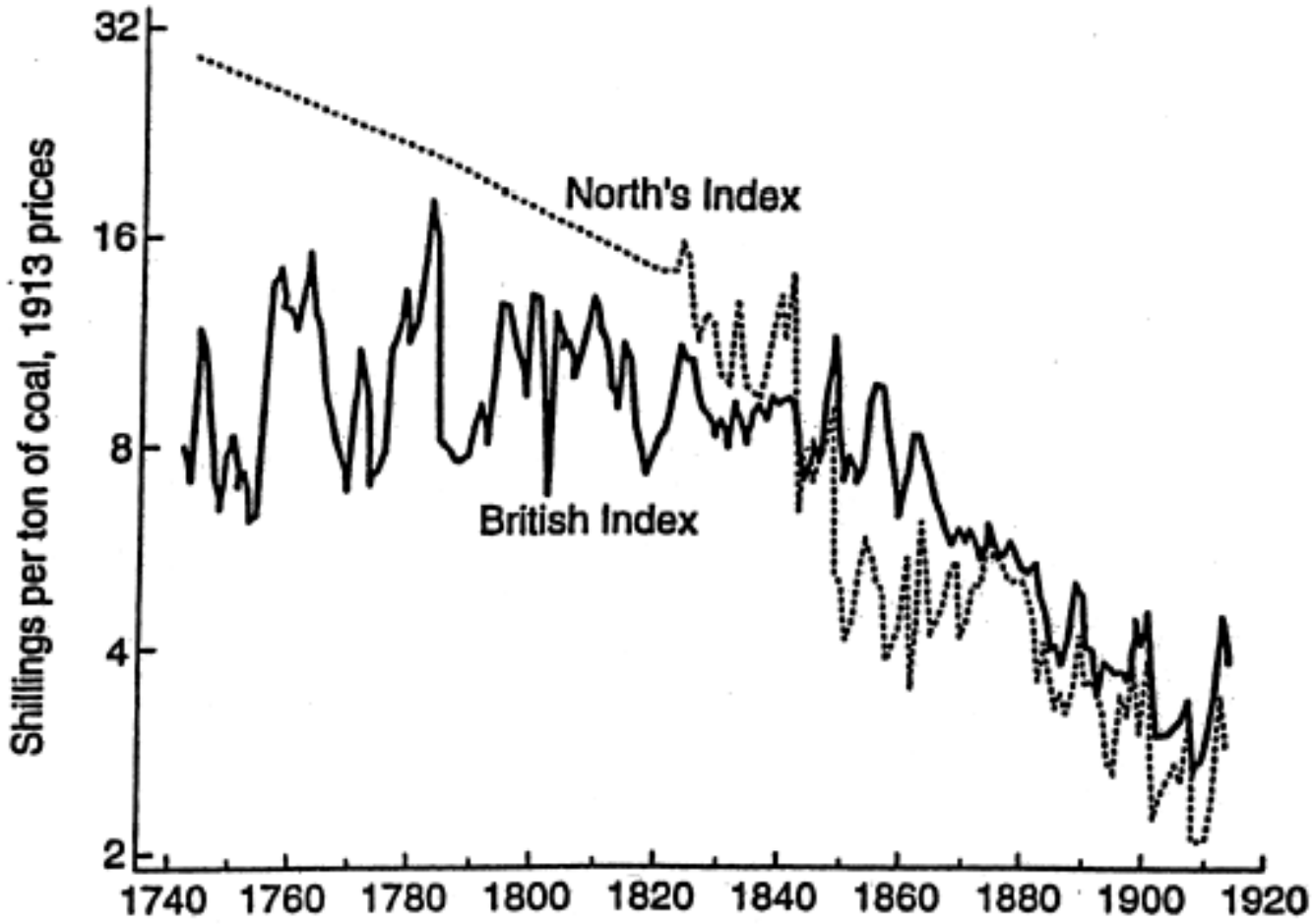
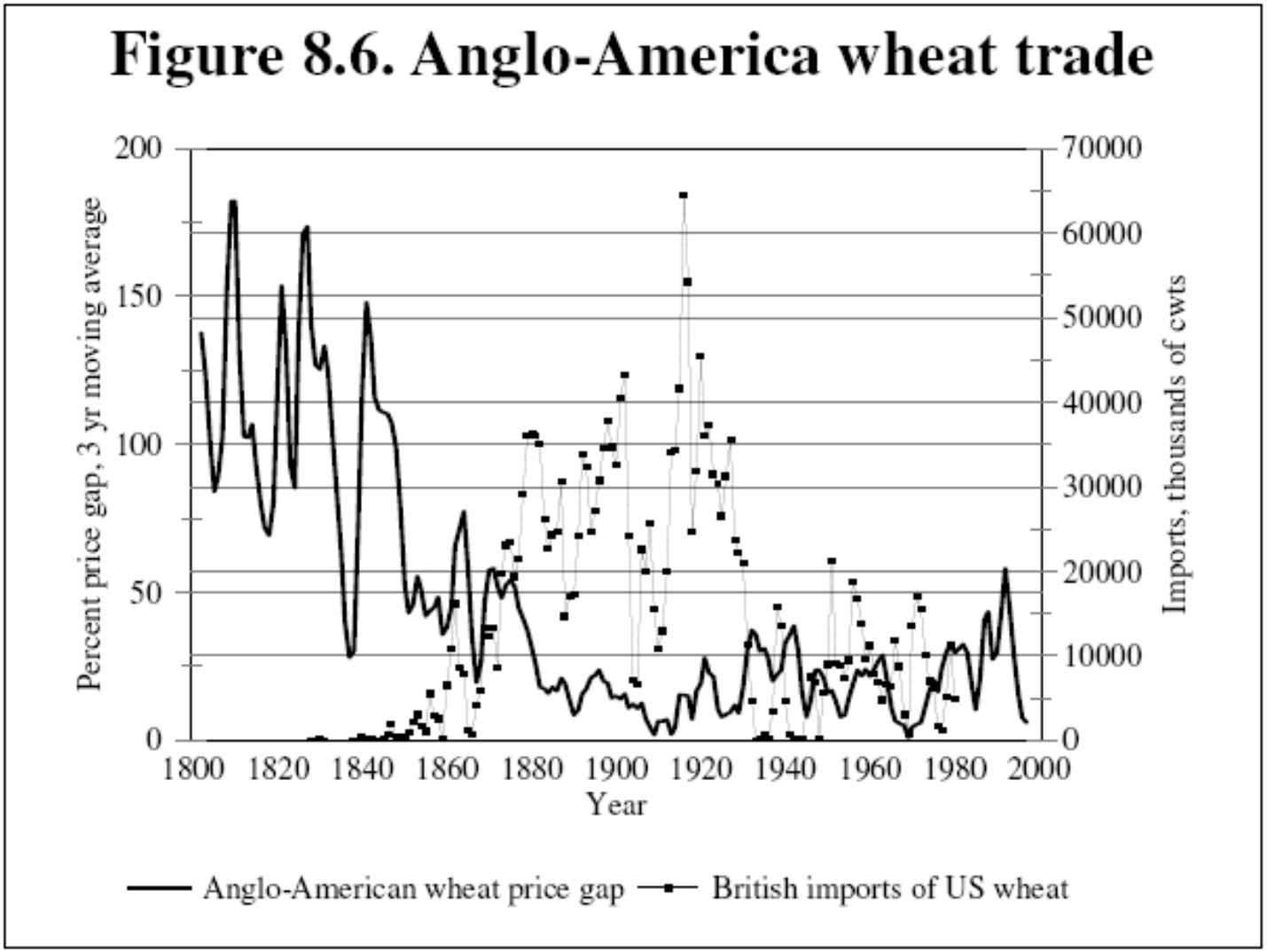


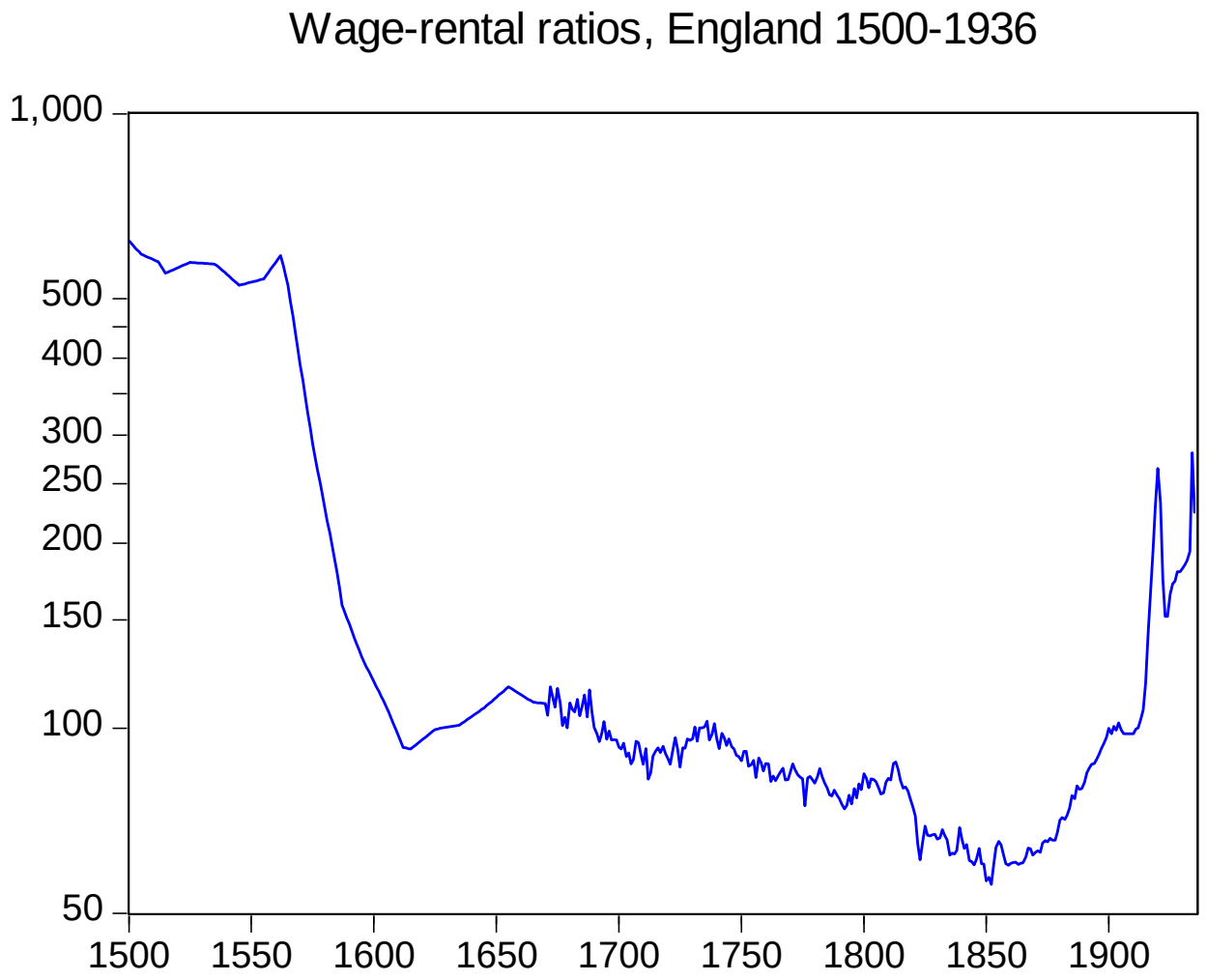
Figure 7. *Freight rate indexes, 1741–1913.*

Source: Harley (1988, figure 1), nominal rates deflated by UK GNP deflator.

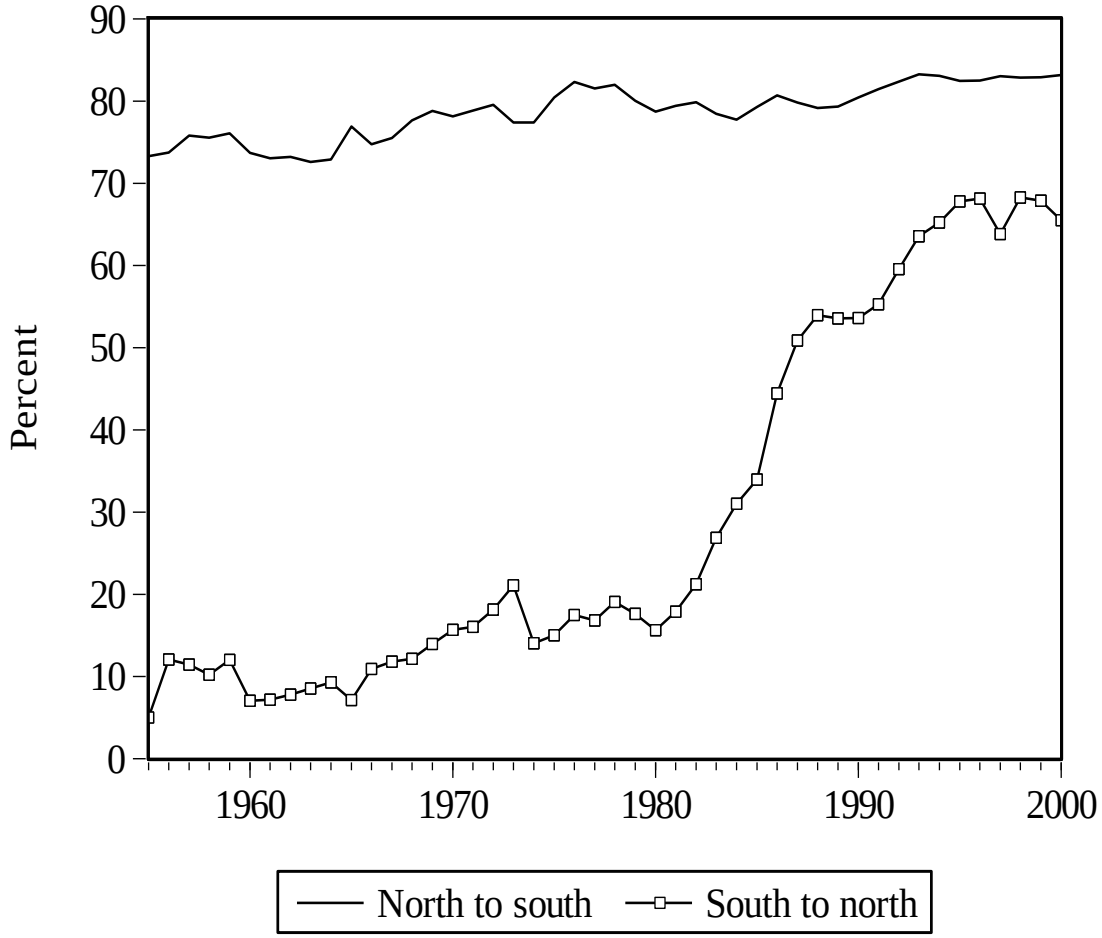
And commodity price convergence for ‘competing commodities’



And distributional shifts



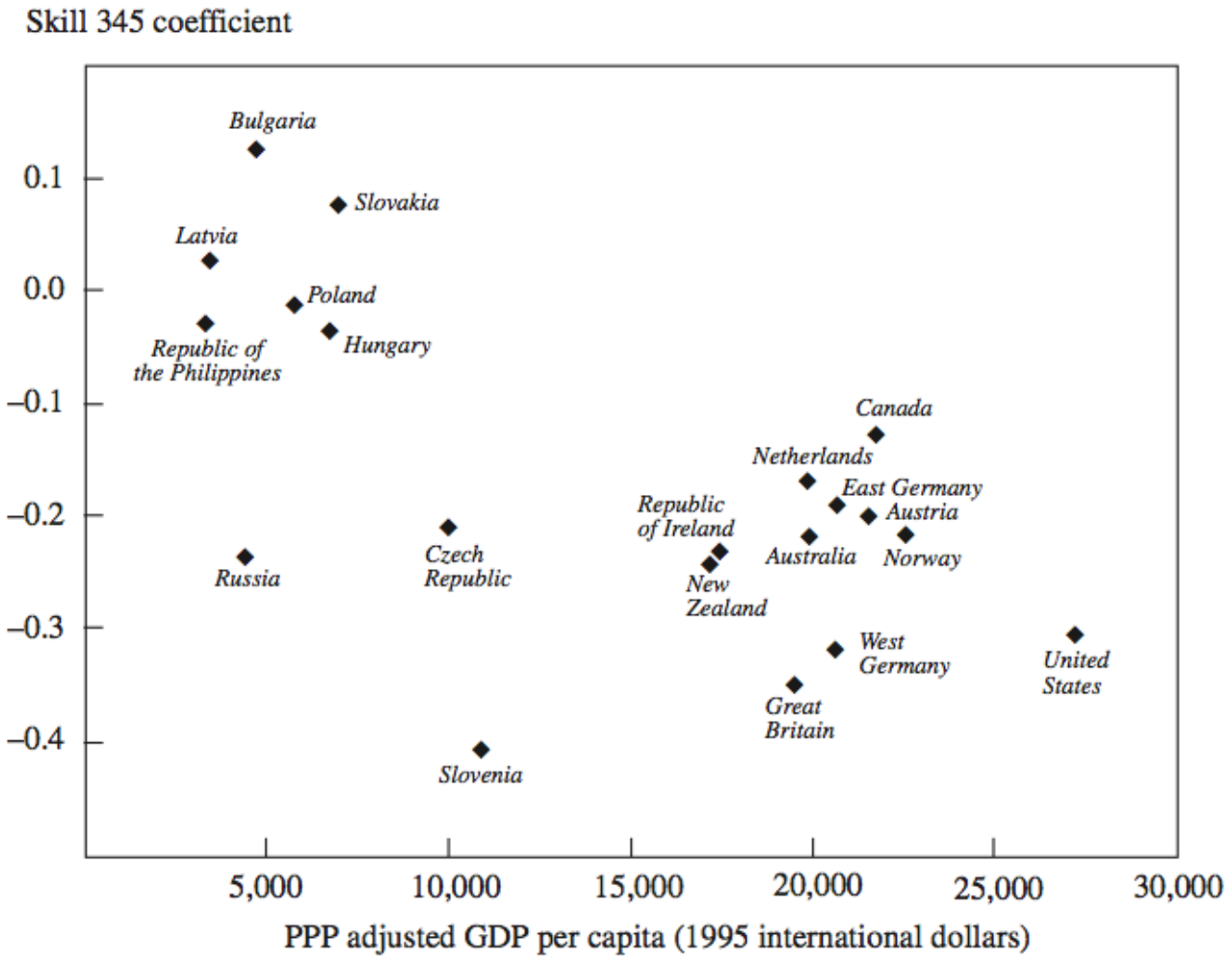
Manufactured products' share of North-South trade



Source: UNCTAD Handbook of Statistics Online

The high-skilled are pro-free trade in rich countries, not in poor countries

Figure 1. Skill, Protectionism, and GDP



Source: O'Rourke and Sinnott (2001)

France 2005

- Clearly many factors explain the No vote
- But in part a rejection of market/globalization
- Blue collar workers voted No, white collar workers voted Yes
- Similar in Ireland

Table 1
The Sociopolitical Support for the "No" in the Last Two European Referenda

% of No	Maastricht Treaty (1992)	European Constitution Treaty (2005)
Whole sample	49	55
Gender		
Men	48	57
Women	50	53
Profession		
Farmers	62	70
Shopkeepers, Craftsmen	49	51
Professionals	33	35
Middle management and assimilated	38	53
Clerical workers	53	67
Blue-collars	61	79
Retired	46	44
Age		
18–24 years old	49	56
25–34 years old	52	55
35–44 years old	49	61
45–59 years old	47	62
60–69 years old	45	44
70 years old and more	**	42
Sector of activity		
Private sector	50	56
Public sector	49	64
Independent	56	58
Unemployed	59	71
Students	41	46
Partisan proximity		
Extreme Left	70	94
Communist Party	81	98
Socialist Party	22	56
Greens	43	60
UDF	39	24
RPR/UMP	59	20
National Front	92	93

Source: IPSOS, exit polls

Source: Brouard and Tiberj 2006

Atlantic Charter, August 1941

Fifth, they desire to bring about the fullest collaboration between all nations in the economic field with the object of securing, for all, improved labor standards, economic advancement and social security

Libanius, 4th century

God did not bestow all products upon all parts of the earth, but distributed His gifts over different regions, to the end that men might cultivate a social relationship because one would have need of the help of another. And so he called commerce into being, that all men might be able to have common enjoyment of the fruits of the earth, no matter where produced

1914 is a problem for this thesis

"The economies of both Britain and Germany came to depend on hundreds of merchant ships that entered their ports every month. Overseas resources, the security of the sea lanes and the economics of blockade affected the war plans of the great powers and influenced their decision to embark on war." (Offer 1989)

Lessons drawn from WWI

- Hitler on trade vs imperial autarky
- Barnhart (1987) on Japan
- Search for self-sufficiency can feed on itself: oil, rubber, natural resources
- Crucial shock absorber: guarantee that no matter what, you can buy what you need at going rate on world markets
- Multiple equilibria

Atlantic Charter, August 1941

Fourth, they will endeavor, with due respect for their existing obligations, to further the enjoyment by all States, great or small, victor or vanquished, of access, on equal terms, to the trade and to the raw materials of the world which are needed for their economic prosperity;

The Malacca dilemma

"the Lord of Melaka has his hand on the throat of Venice" (Tome Pires, early 16th century)

"It is no exaggeration to say that whoever controls the Strait of Malacca will also have a stranglehold on the energy route of China" (China Youth Daily, June 15, 2004)

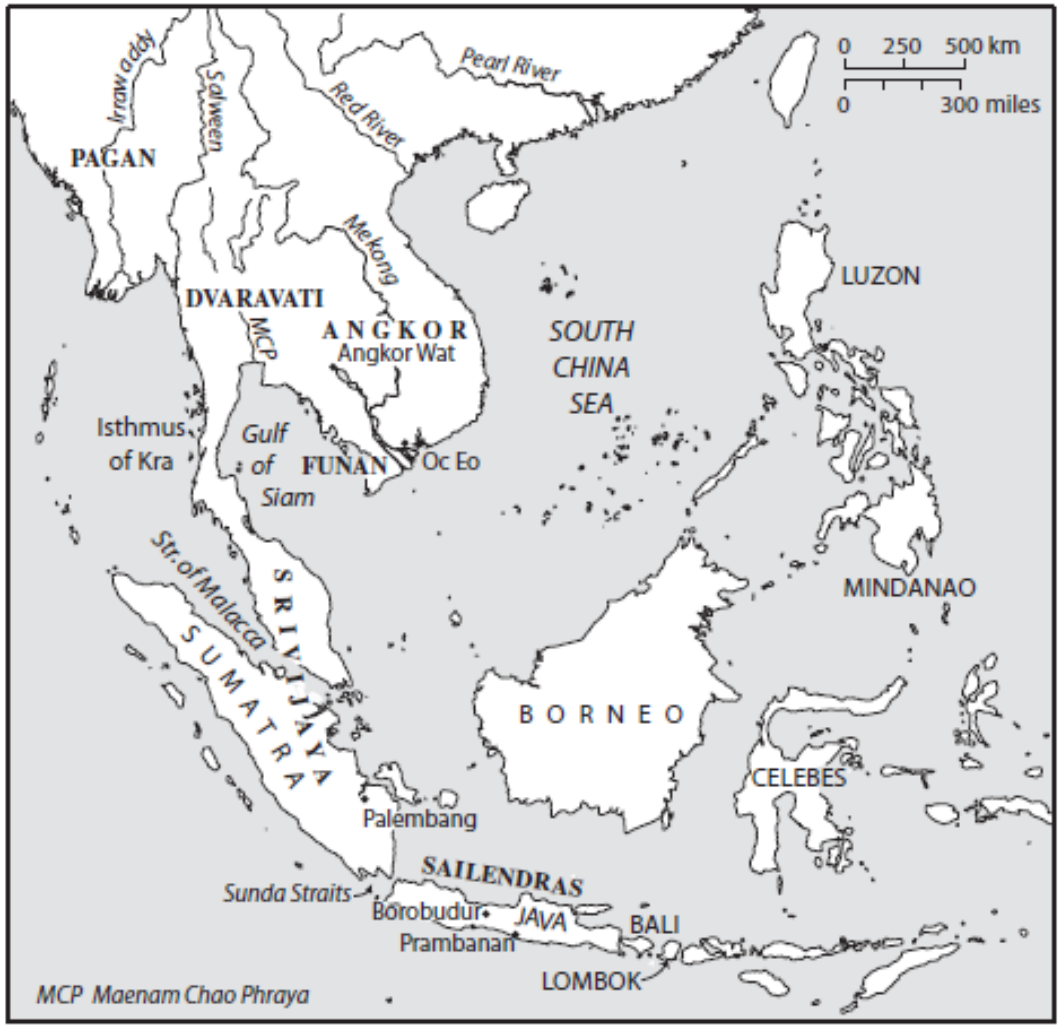


FIGURE 1.6. Southeast Asia.

Straws in the wind

- Rare earths
- Grain and petroleum export bans
- Madagascar 2008: “We want to plant corn there (Madagascar) to ensure our food security. Food can be a weapon in this world,” said Hong Jong-wan, a manager at Daewoo. “We can either export the harvests to other countries or ship them back to Korea in case of a food crisis.”

Lessons

- Countries' industrial development strategies now intimately linked to globalization. **This is new.**
- Political economy of trade very different now than in 1914 or 1929
  - MNCs
  - WTO
- The system was remarkably resilient after 2008

However

- Openness could still come under threat from
  - Future macroeconomic and financial shocks (or a continuation of our present crisis)
  - Distributional shifts
  - Geopolitical shifts
- The system still needs macroeconomic, distributional and strategic shock absorbers: too much rigidity can be dangerous.
- The state and the market are complements: cutting back too much on the latter may place the former at risk
- **The biggest loser from such a development would be the developing world**