European Growth Prospects: an Historical Perspective

Nicholas Crafts

Catch-Up Growth

- Diffusion of technology is the key

- **Social capability** and **technological congruence** are useful concepts

- Institutions and policy matter

- Continual reform is typically required but may be 'too difficult'; catch-up is often incomplete

European Integration

- A key context for growth both during and after the Golden Age

- EU income levels in 2000 26% higher than if integration still at 1950 level (Badinger, 2005)

- It's more than just welfare Δs (Frankel & Romer, 1999)

- Each round has seemed positive although some claims oversold (Baldwin, 2006); but will EMU turn out to be have been the step too far with negative implications?

Phases of West-European Growth

- *1950-1973*: rapid catch-up growth; gaps with USA in Y/P and Y/HW falling quickly

- *1973-1995*: catch-up in Y/P ceases but catch up in Y/HW continues

- *Post-1995*: Europe no longer catching up but falling behind; Y/HW grows faster in USA

Real GDP/person as % of USA level, 1960-2010
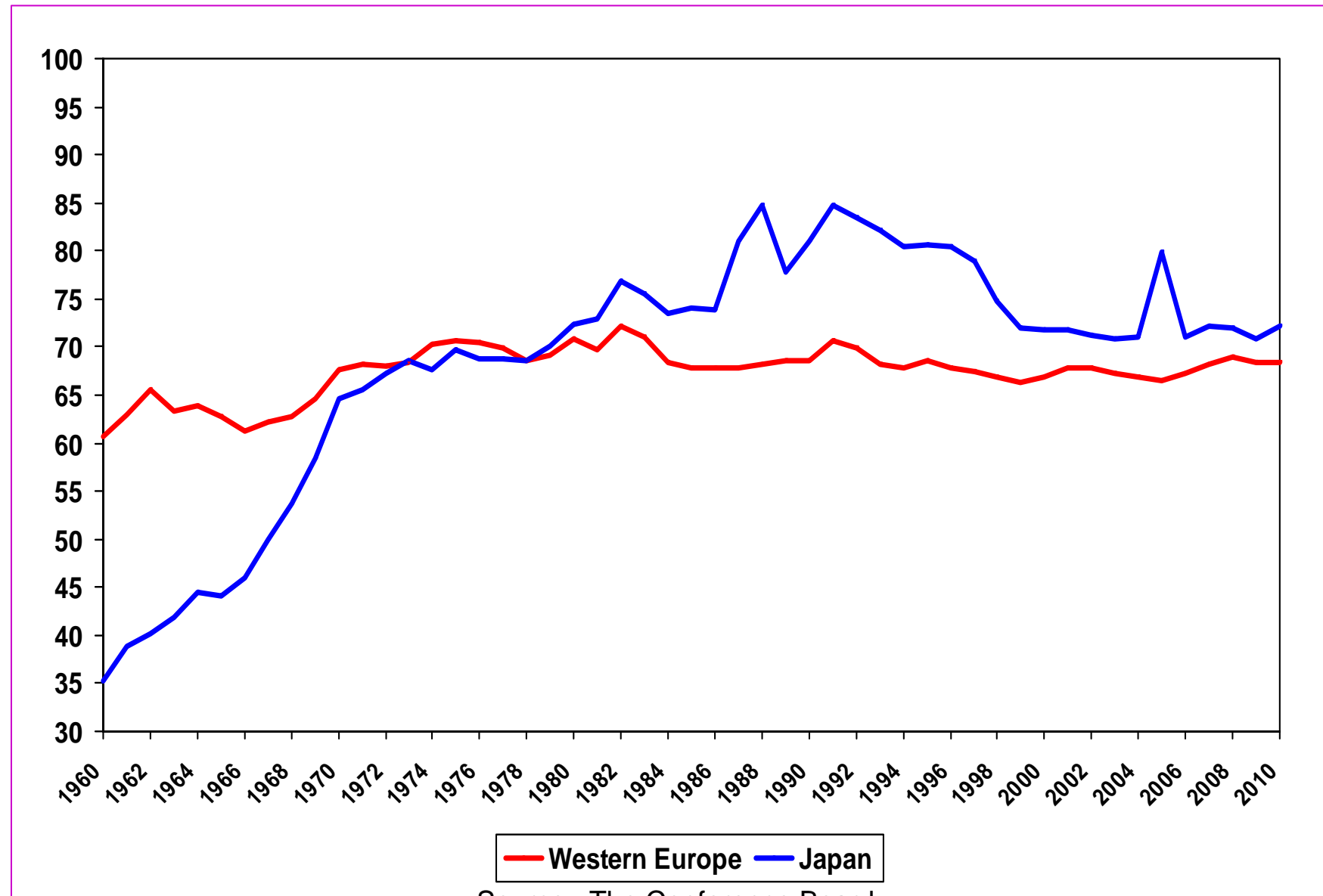
Source: The Conference Board
(2011)

Real GDP/person as % of USA level, 1960-2010

Legend: South Korea, Portugal, Italy
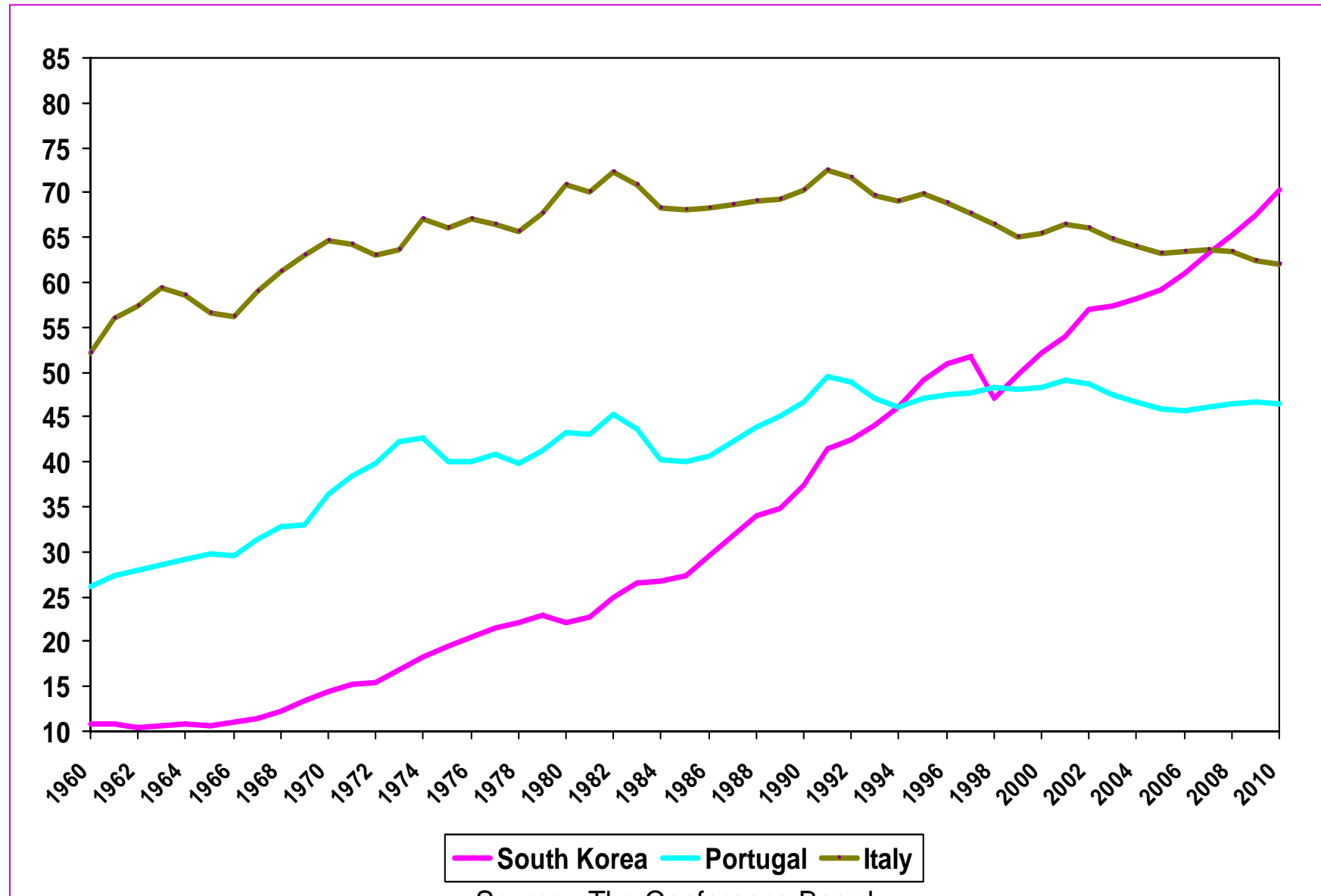
Source: The Conference Board
(2011)

Changes in Economic Environment since the Golden Age

- Globalization
- Rise of Asia
- ICT
- Financial crises

→ need to adjust, premium on flexibility, shifts in comparative advantage but threat seemed modest relative to opportunity…does it still?

Impacts of GPTs on Growth

- ICT much bigger impact on American growth in recent past than steam ever had on UK growth

- Costs of computing have fallen much faster than did costs of electrical or steam power

- **ICT is historically remarkable** in Europe as well as USA

- Society seems to be getting better at exploiting GPTs more rapidly

Total Steam Contribution to Growth of Labour Productivity (% per year)
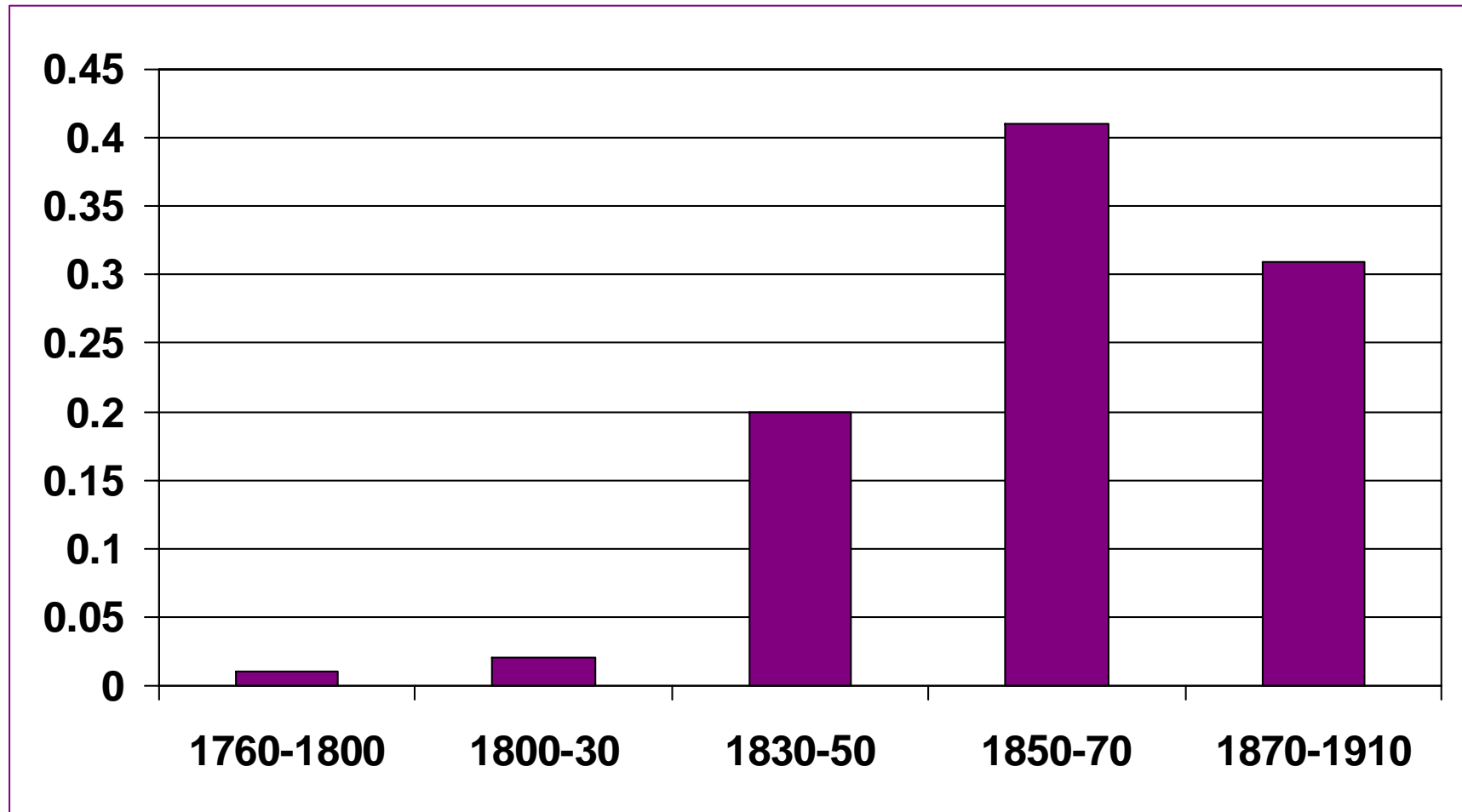
Source: Crafts (2003); includes railway, steamships, steam engines

Capital Cost and Annual Cost per Steam Horsepower per year (£ current)

	Capital Cost	Annual Cost
1760	42	33.5
1800	56	20.4
1830	60	20.4
1850	37	13.4
1870	25	8.0
1910	15	4.0

Note: the estimates are for a benchmark textile mill in a low coal cost region like Manchester

The Computer and the Dynamo
David (1991)

- The big impact of commercial electricity on American productivity was in the 1920s, 40 years after Edison

- TFP spillovers a key aspect of the 1920s ' productivity surge; factory design improved through learning externalities in transition from drive shafts to wires

- Across manufacturing sectors, change in TFP growth strongly correlated with change in electric motors

- Impact of TFP spillovers is to raise Y/L growth in manufacturing by 2.4, whole economy by 0.7 pp per year

Contributions to U.S. Labour Productivity Growth (Crafts, 2002; Oliner et al., 2007)

	Electricity		*ICT*
1899-1919	**0.40**	1973-1995	**0.74**
1919-1929	**0.98 (0.28)**	1995-2006	**1.45**

Real Hedonic Price Index for Electric Motors in Sweden (Edquist, 2010)

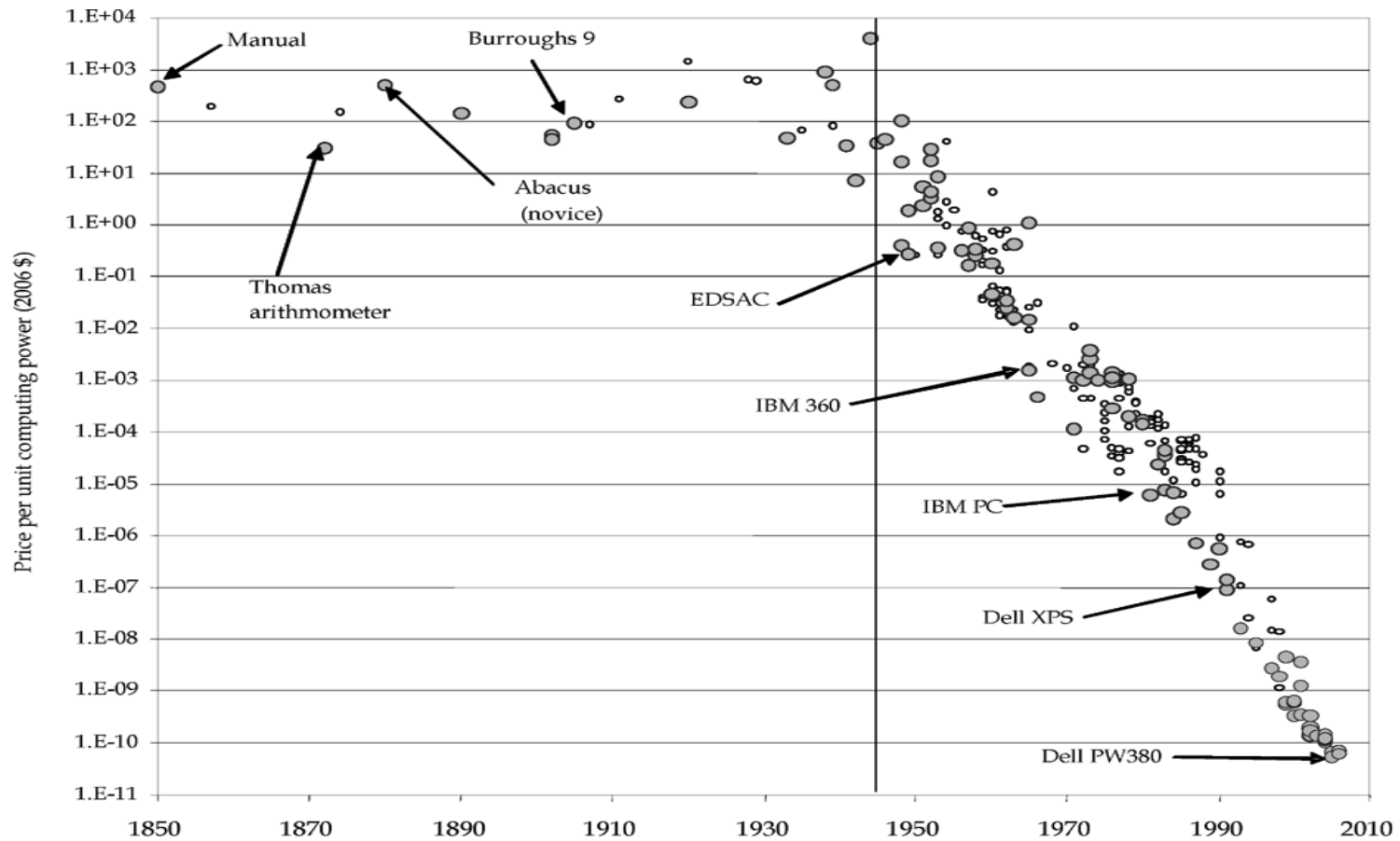| 1901	100
1914	65.4
1925	61.5
1935	55.7

FIGURE 3
THE PROGRESS OF COMPUTING MEASURED IN COST PER COMPUTATION PER
SECOND DEFLATED BY THE PRICE INDEX FOR GDP IN 2006 PRICES

Notes: The larger circles are estimates that have been judged relatively reliable, while the small circles are estimates in the literature that have not been independently verified. The vertical line is placed at 1944, which is the estimated breakpoint in productivity growth.

Source: Nordhaus (2007)

Sources of Labour Productivity Growth in Market Sector, 1995-2005 (% per year)

	Labour Quality	ICTK/ HW	Non-ICT K/HW	TFP	Y/HW Growth
France	0.4	0.4	0.4	0.9	2.1
Germany	0.1	0.5	0.6	0.4	1.6
Italy	0.2	0.3	0.5	-0.7	0.3
Spain	0.4	0.3	0.5	-0.8	0.4
Sweden	0.3	0.6	1.1	1.6	3.6
UK	0.5	0.9	0.4	0.8	2.6
USA	0.3	1.0	0.3	1.3	2.9

Source: Timmer et al. (2010)

Long-Run Growth in No-ICT-Production Country (Oulton, 2010)

$$y = Ak_{NICT}{}^{\alpha}k_{ICT}{}^{\beta}$$

In one-sector model, steady-state growth is TFP growth divided by labour share of income

In two-sector model this is augmented by additional term which is $\beta\Delta p/p$ divided by labour's share

So in two-sector case growth depends on how fast relative price of ICTK falls and ICT income share which depends on social capability

ICT Effects and Long-Run Growth
if Δp/p = - 7% (% per year)

|	ICT-Use Own β	ICT-Use Swedish β	ICT-Output
France	0.48	0.68	0.17
Germany	0.44	0.68	0.33
Italy	0.36	0.70	0.19
Spain	0.53	0.76	0.10
Sweden	0.70	0.70	0.24
UK	0.60	0.66	0.16
USA	0.70	0.71	0.22

Source: Oulton (2010)

Europe and ICT

- European countries have generally not matched USA in ICT contribution to growth

- **"American diagnosis"** is too much regulation, too much taxation, too little competition (the 'corporatist legacy')

- Low ICT-use in some countries implies scope for faster growth if social capability is improved

- **ICT-using services** (e.g., distribution) have been **Europe's Achilles Heel** and may be where regulation has slowed diffusion most

Regulation and the contribution of ICT-using services to aggregate productivity growth

ICT using services, 1996-2001
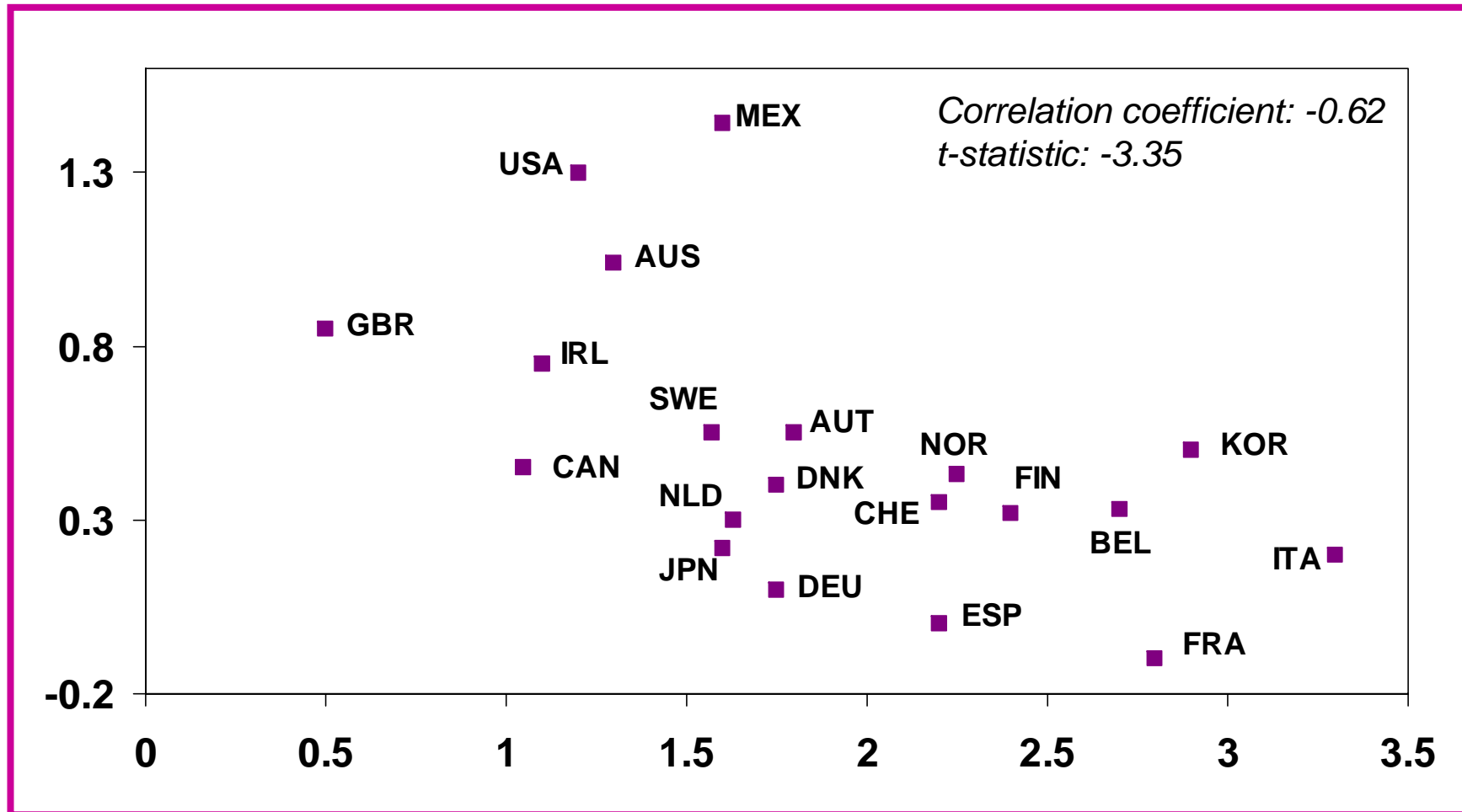
Product market regulation (inward-oriented), 1998

Source: Nicoletti & Scarpetta (2005)

Social Capability and ICT

- Standard American criticisms of Europe at least equally valid for 20 years before 1995

- **Social capability depends on requirements of the technological epoch**

- It is not that there is more regulation but rather that existing regulation is more costly in the ICT world

- It is not that there is less human capital but more that high-quality workers matter more for ICT

Pre-Crisis Business as Usual

- Europe was underperforming but growth would continue at 1.5 -2% with scope for boost from supply-side reform especially in 'laggards'(which could potentially raise ICT-use effect inter alia)

- Standard list of **desirable reforms** include strengthening competition, improve educational systems, reduce 'distortionary' taxes, reduce employment protection (Bouis and Duval, 2011; Arnodl et al., 2011)

Impact of the Financial Crisis

- Agreed that level of output falls appreciably

- Much less clear what happens to trend growth, especially in a really big crisis

- Does it make **'desirable reforms' more likely?**

Lessons from the 1930s

- Competition suffered

- Protectionism increased

- Competitive devaluations widespread

- Sovereign default proliferated

- Workers demanded employment protection

- Government got bigger and regulation intensified

Devaluation in the 1930s

- In absence of coordinated monetary expansion, **very good for early recovery**; staying on the gold standard made things much worse

- Regain control of interest rate, change inflationary expectations, remove need for money wages to fall, increase international competitiveness, improve fiscal arithmetic

- "Devalue and default" was good for individual country growth but undermined integration of markets

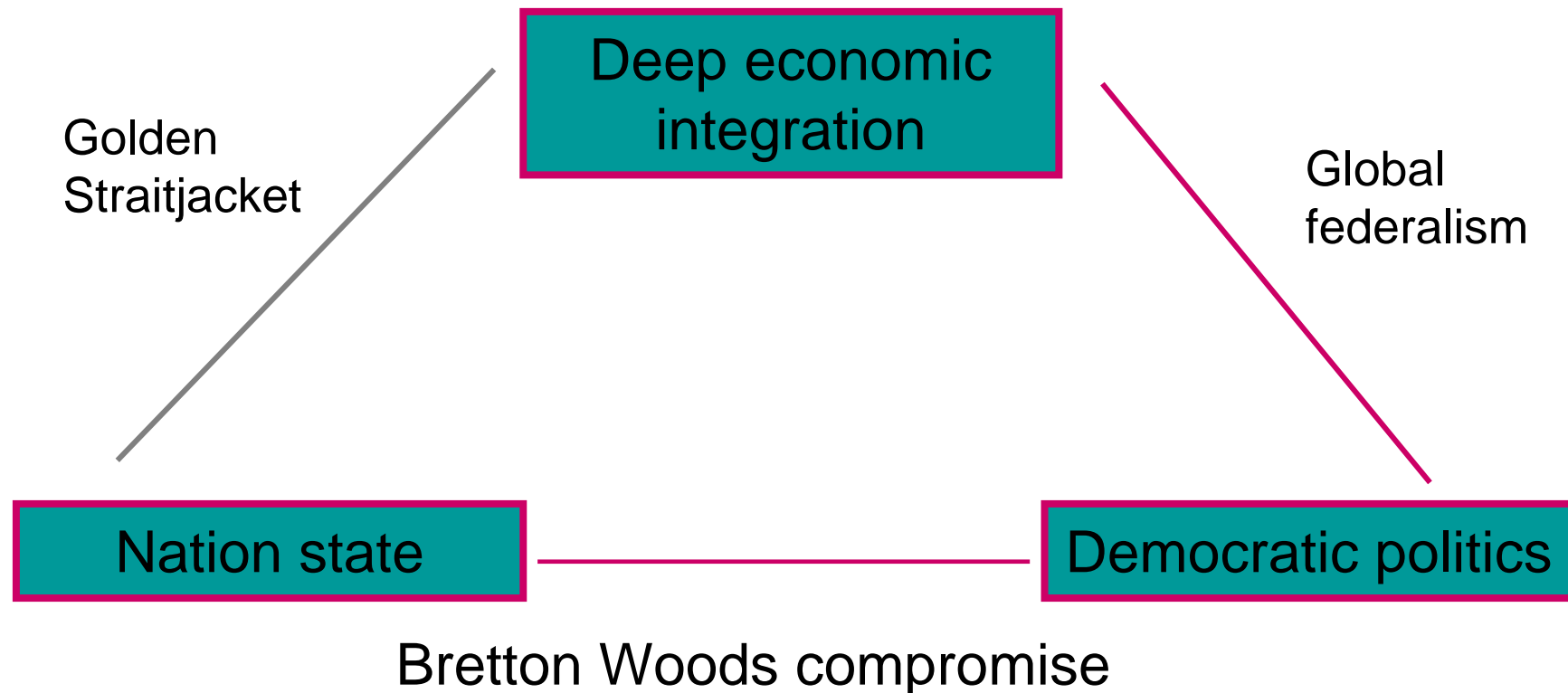# Changes in Exchange Rates and Industrial Production, 1929-1935
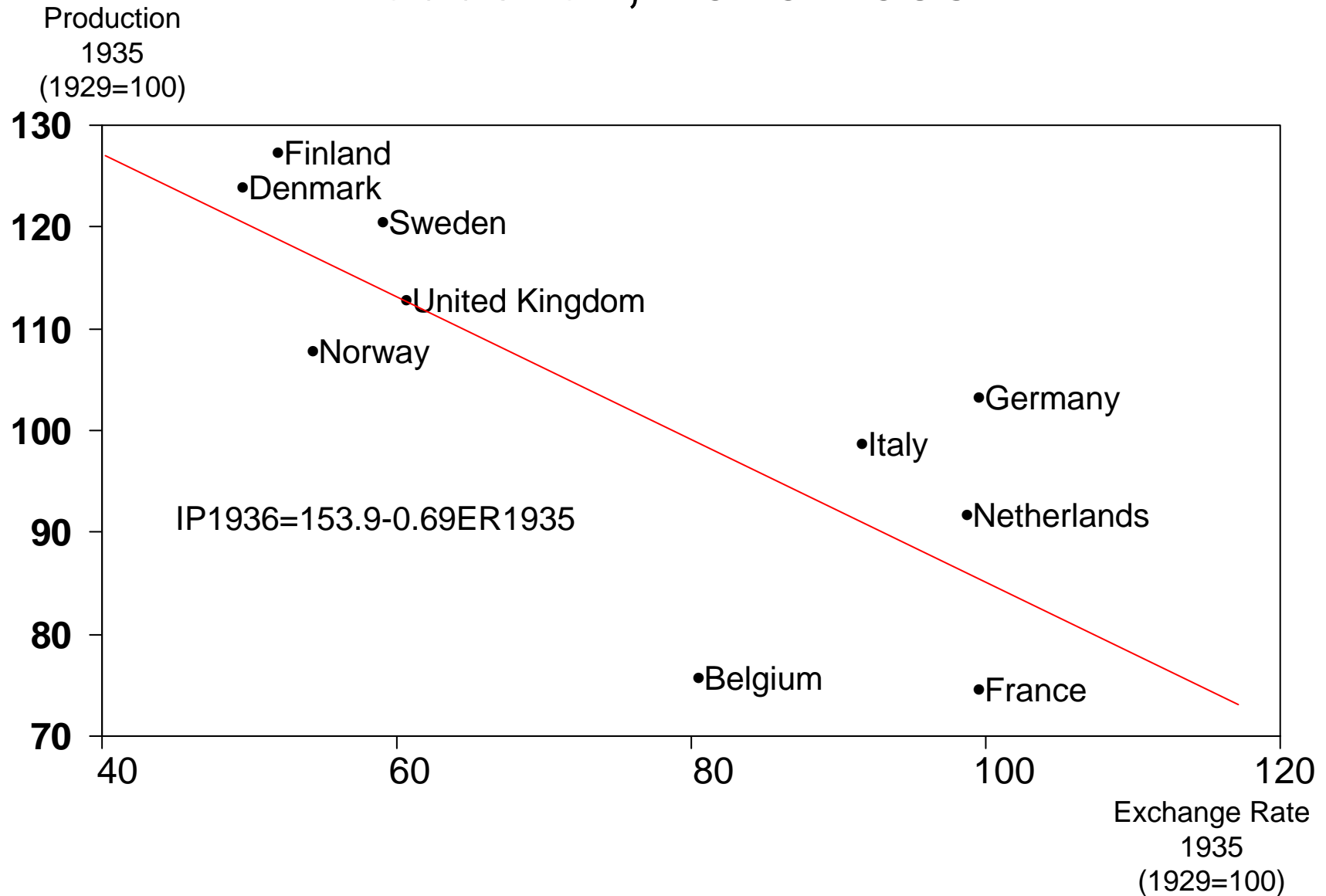
What Explains Timing of Exit from Gold Standard? (Wolf, 2008)

- Probit estimation of hypotheses based on currency-crisis literature based on monthly data

$$\lambda_{it} = g(\beta_t, \gamma_i \mathbf{X}_{tij})$$

- **More likely** to leave if main trading partner does, democracy, central bank independent, returned to GS at high parity and longer on gold; **less likely** to leave if high cover ratio, strong banks, less deflation

- Model predicts departures very well; France under least pressure to exit in early 1930s

The Political Trilemma of the World Economy

Deep economic integration

Golden Straitjacket

Global federalism

Nation state

Democratic politics

Bretton Woods compromise

Pick two, any two

The Gold Standard and Rodrik's Trilemma

- Gold standard can be thought of as a 'straitjacket' that combines 'deep economic integration' and 'nation state'

- In 19th century this choice was OK in absence of 'democratic politics'

- In the 1930s, working-class votes matter and choosing 'democratic politics' and 'nation state' involves rowing back from 'deep economic integration' and abandoning the gold standard

The Slide to Protectionism

(Eichengreen & Irwin, 2010)

- Financial crisis of 1931, not Smoot-Hawley, the trigger for trade war

- Countries that devalued were less likely to adopt protectionist measures in the 1930s; protectionism starts to recede when gold standard abandoned

- Protection can be interpreted as 2nd-best macroeconomic policy management when fiscal and monetary policy constrained

- If fiscal policy available or exchange rates flexible, world recession less of a threat to world trade

Protectionism in 2008/9

- Trade volume fell spectacularly but protectionism much less far-reaching than in 1930s

- Changes in Overall Trade Restrictiveness Index quite small and imply volume of world trade fell by 0.4% (about 2% of total) (Kee et al., 2010)

- Maybe this reflects absence of fixed exchange rates and availability of macroeconomic policy responses unlike the 1930s (Eichengreen & Irwin, 2010)

This Time Its Different? It Depends On

- strength of institutions to withstand 1930s-type pressures

- escape route for Eurozone crisis countries

- whether crisis leads to retreat from the market rather than addressing market failures in banking

- whether EMU collapses as gold standard did

- **NB**: in any case unlikely to be positive either for European integration or desirable reforms … which looks like a growth rate effect