IMEP 2013 Lectures 3 and 4

Factor prices, migration and two centuries of globalisation

Dr Michael Hatcher

Michael.Hatcher "at" glasgow.ac.uk

Outline of today's lectures

Lecture 3

- The Heckscher-Ohlin model
- Applying the H-O model to the 19th century Atlantic economy
- Were Heckscher and Ohlin right?
- Migration and convergence

Lecture 4

- 19th and 20th century globalisation compared
- 20th century globalisation myths
- What explains the 'globalisation gap'?

Lecture 3

Factor prices and the first globalisation: Were Heckscher and Ohlin right?

Key reading: O'Rourke and Williamson, Chapters 4 and 8

The Heckscher-Ohlin model

- The H-O model predicts a country's trade patterns will be related to its factor endowments – labour, capital, land
- Commodities which are intensive in scarce factors will be imported, and those intensive in abundant factors will be exported
- Example: late 19th century US was a big exporter of grain, which is intensive in land and capital but not labour
- In a *closed economy* where land is more abundant than labour, domestic wages will relatively high and the rental rate on land relatively low, due to diminishing returns
- The home price level p and the foreign price level $p*$ need not be equal. Let's suppose $p_1 < p_1*$ for good 1 (land intensive) and $p_2 > p_2*$ for good 2 (labour intensive).

The Heckscher-Ohlin model

What will happen if this economy opens up to trade?

- The first part of the answer comes from the diagram in Lecture 2: in the absence of transport costs or other barriers to trade, commodity prices will be equalised: $p_1 = p_1*$ and $p_2 = p_2*$
- Basically, p_1 rises due to extra demand from abroad (for our exports), and p_2 falls due to extra competition (from imports)
- And the rise in demand for good 1 raises demand for domestic land and so raises its rental rate, while the fall in demand for good 2 lowers the home demand for labour, and with it domestic wages
- The opposite willl happen to wages and land rents in countries that trade with the domestic economy, due to specialisation
- Therefore, the H-O model implies *factor price convergence*

The Heckscher-Ohlin model

- H-O implies trade has distributional implications even if factors are immobile internationally:

  Free Trade $\Longrightarrow$ Price Convergence $\Longrightarrow$ Factor Price Convergence

- Second half of 19th century was consistent with free(-ish) trade and commodity price convergence, but was there factor price convergence?
- Applying the H-O model to this period implies:

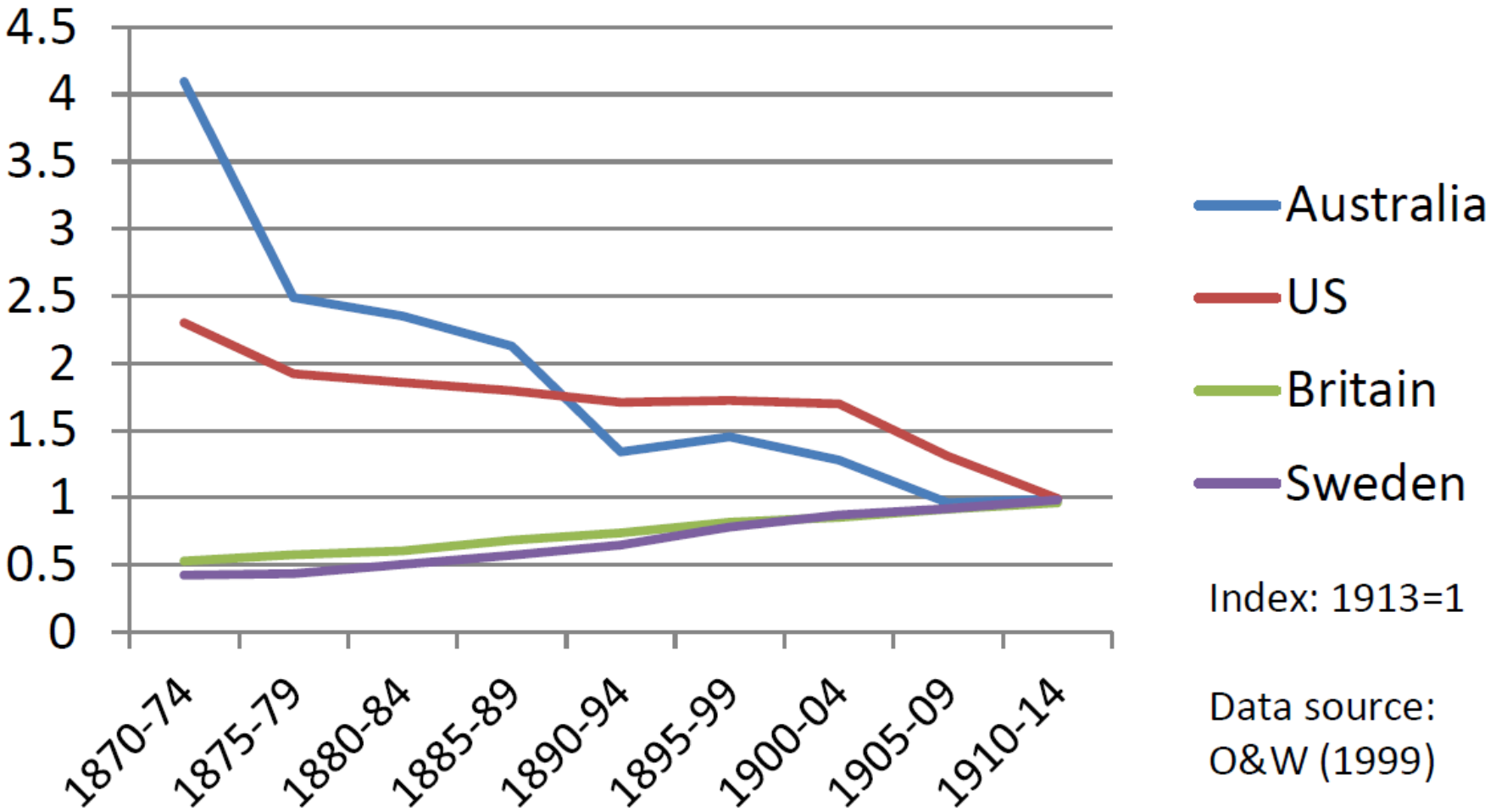
Winners	**Losers**
New World land	European land
European labour	New World labour

- Wages rose everywhere but H-O suggests:

$$\frac{w^{NW}}{r^{NW}} \Downarrow \frac{w^{EUR}}{r^{EUR}} \Uparrow \quad \Longrightarrow \quad \textit{relative factor price convergence}$$

Relative factor price convergence

- Atlantic economy wage-rental ratios 1870-1914 (O&W 1999, Table 7)



Assessing the H-O model using data

- 1. Did land rents converge internationally?
  2. Did land rents move in absolute terms?
  3. Was there relative factor price convergence?

- And the answers (O&W, pp. 59-64):
  1. Land rents converged. Real land prices rose by over 400% in Australia and more than 250% in US. UK, French and Swedish land prices fell.
  2. European land prices and rents did not always decline in absolute terms as H-O predicts – eg rose in Denmark, stable in Germany
  3. Relative factor price convergence occured between 1870 and 1913 (previous slide). New World wage-rental ratios fell sharply and we saw rising wage-rental ratios in Europe.

- **Overall verdict – the data appear consistent with H-O**

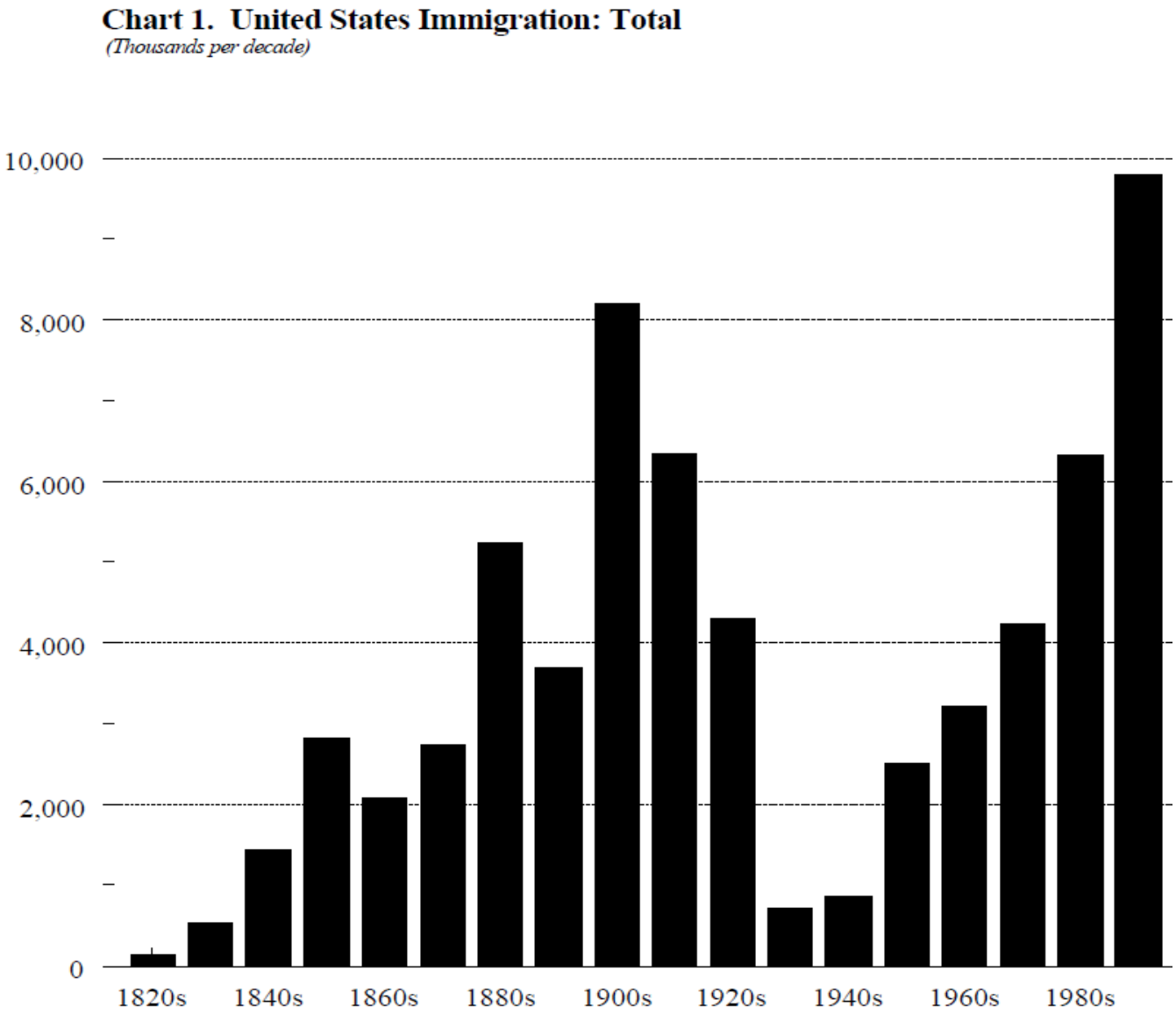
Assessing the significance the above findings

- The H-O model looks about right, but correlation does not prove causation, and several factors other than commodity prices were changing simultaneously:
  1. Technical progress was rapid and should have affected wages and rents
  2. There was mass migration from Europe to the New World
- To show that their findings are robust (ie not sensitive) to these critcisms, O&W simulate a general equilibrium model and conduct an econometric analysis (pp. 64-73)
- Both these analyses suggest that H-O is right, so we can be fairly confident in our conclusion

Migration and the 19th century Atlantic economy

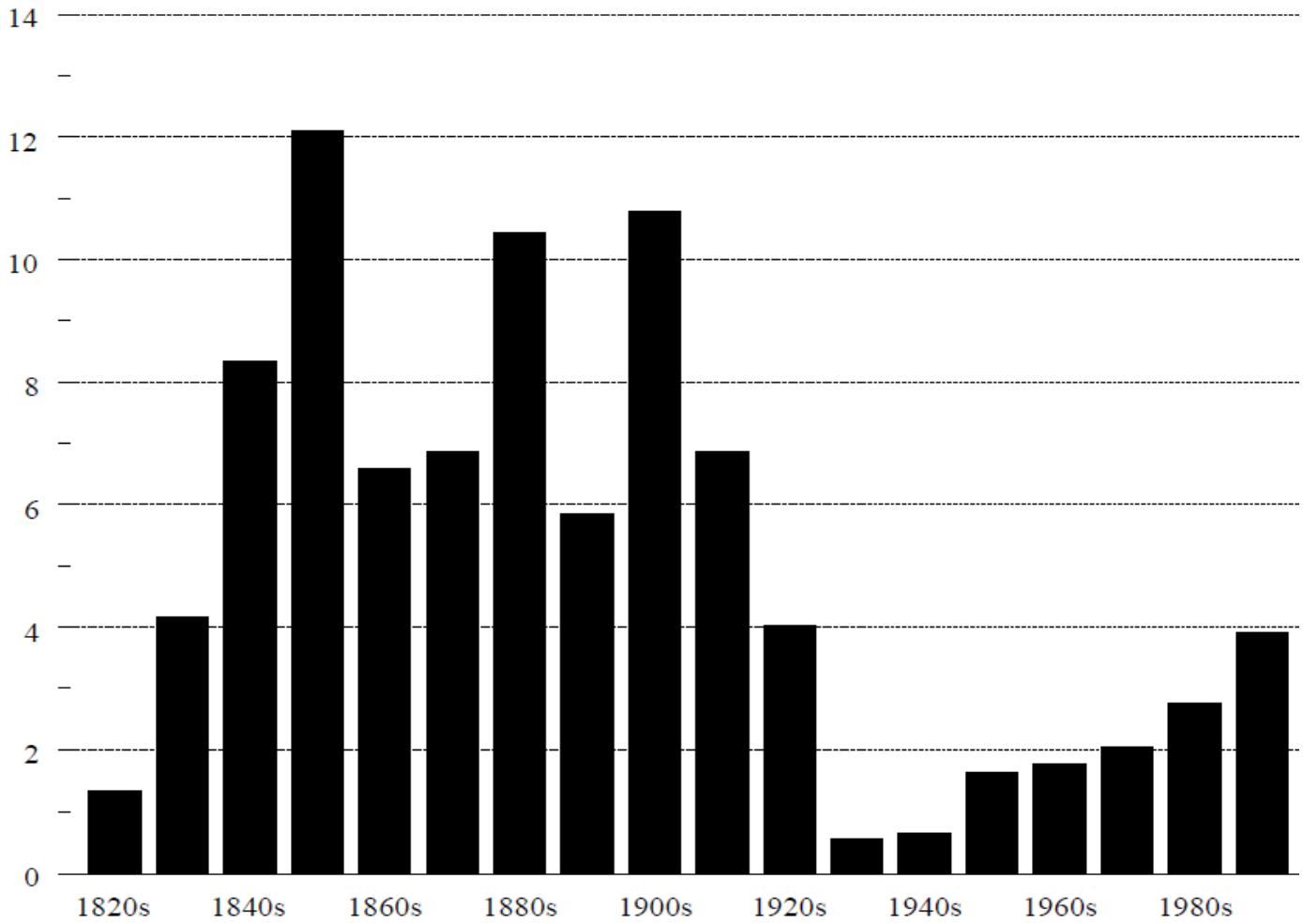
- In the century after 1820 around 60 million Europeans moved to the New World (O&W, p. 119), attracted by higher wages and better living standards
- Eg in 1848 Andrew Carnegie moved from Dunfermline to Allegheny, Pennsylvania, and then on to Pittsburgh where he established the Carnegie Steel Company, sold for $480m in 1901!
- O&W conclude that commodity price convergence led to factor price convergence, but this DOES NOT mean migration had no role – it just tells us that there would have been a significant convergence even if migration had remained constant
- So, what was the impact of migration on 19th century convergence?

Immigration Chart 1: US, 1820s-1990s (Mussa, 2000)



Immigration Chart 2: US, 1820s-1990s (Mussa, 2000)

Chart 2. United States Immigration as a Percent of Resident Population



US immigration: key points

- The US was the main New World nation Europeans migrated to. For data on other New World nations, see O&W Table 7.1, p. 122.
- Chart 1 shows that the *absolute* level of immigration was similar during G1 and G2
- However, the US population has grown substantially over the past two centuries. If our aim is to understand the *relative* importance of immigration, we need to look at the population share of immigrants.
- Chart 2 shows the share of immigrants in the US population
- The difference is striking: immigration was far more important in relative terms during G1!

The causal link between migration and convergence

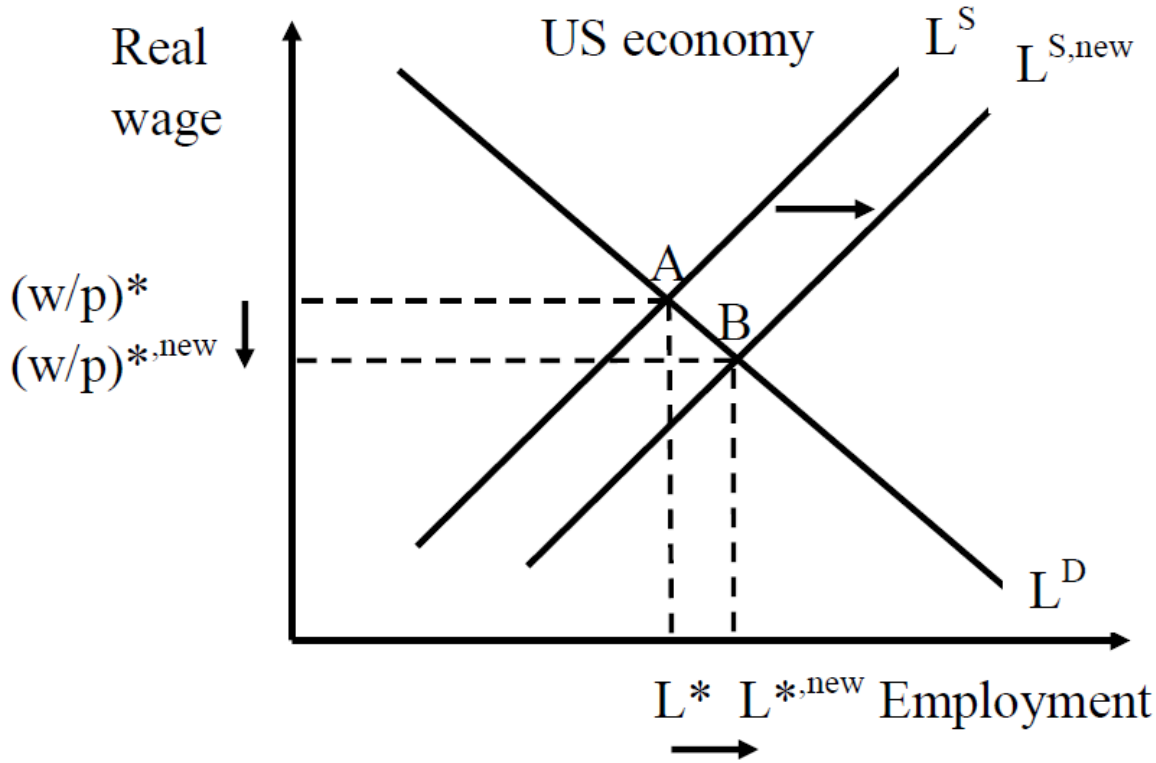
- Migrations certainly appear to have been large enough to have significant distributional effects, but what do the data have to say about the causal impact of migration on convergence?
- In Ch. 8, O&W argue that the contribution of mass migration to Atlantic economy convergence was "very large" (p. 145)
- Some supporting evidence:
  1. From the Great Famine until WWI, Irish real wages rose relative to wages in the UK and the US (Fig 8.2)
  2. Simulating the Irish economy suggests emigration after the Great Famine may have accounted for 1/2 real wage growth (p. 152)
  3. According to simulation results, emigration from Sweden 1870-1910 increased urban real wages by 12.3% (p. 154)

The causal link between migration and convergence

- Some further supporting evidence from O&W:
  1. Due to mass immigration, US urban wages were between 8% and 15% lower than they would have been (p. 156)
  2. Taylor and Williamson (1997) estimate a model with migration using econometrics. They find that emigration raised Irish wages by 32%, and that immigration lowered Canadian wages by 16% (O&W, Table 8.1).
  3. In a model where migration does not affect capital flows, mass migration explains 125% of Atlantic economy real wage convergence! However, this figure is reduced to 70% in a more realistic model where labour supply changes alter capital flows (p. 165).
- All in all, migration explains more than 2/3 of real wage convergence in the Atlantic economy between 1870 and 1910. Other forces, like those in the H-O model, account for 30% of convergence.

The economics of migration and convergence

,



- Immigrants increase US labour supply to $L^{S,new}$, lowering real wages
- Emigration from Ireland reduces labour supply, raising real wages
- Ireland starts from a lower initial wage, so real wages converge

Lecture 4...

- In the next lecture we will compare and contrast the main features of 19th century globalisation and 20th century globalisation
- We will also look at some globalisation myths and the controversial issue of the 'globalisation gap'

THE END

Lecture 4

The first and second eras of globalisation compared

Key readings:

1. Martin Wolf: Is today's globalisation different from what has gone before?
2. Baldwin and Martin (1999) – Two waves of globalisation: superficial similarities, fundamental differences

The big picture in the Atlantic economy

The post-1870 Atlantic economy can be split into 3 regimes:

1. Globalisation 1 (G1), 1870-1914: the *belle epoque*
2. Interwar retreat from globalisation, 1914-50: the *dark ages*
3. Globalisation 2 (G2), 1950-present: the *renaissance*

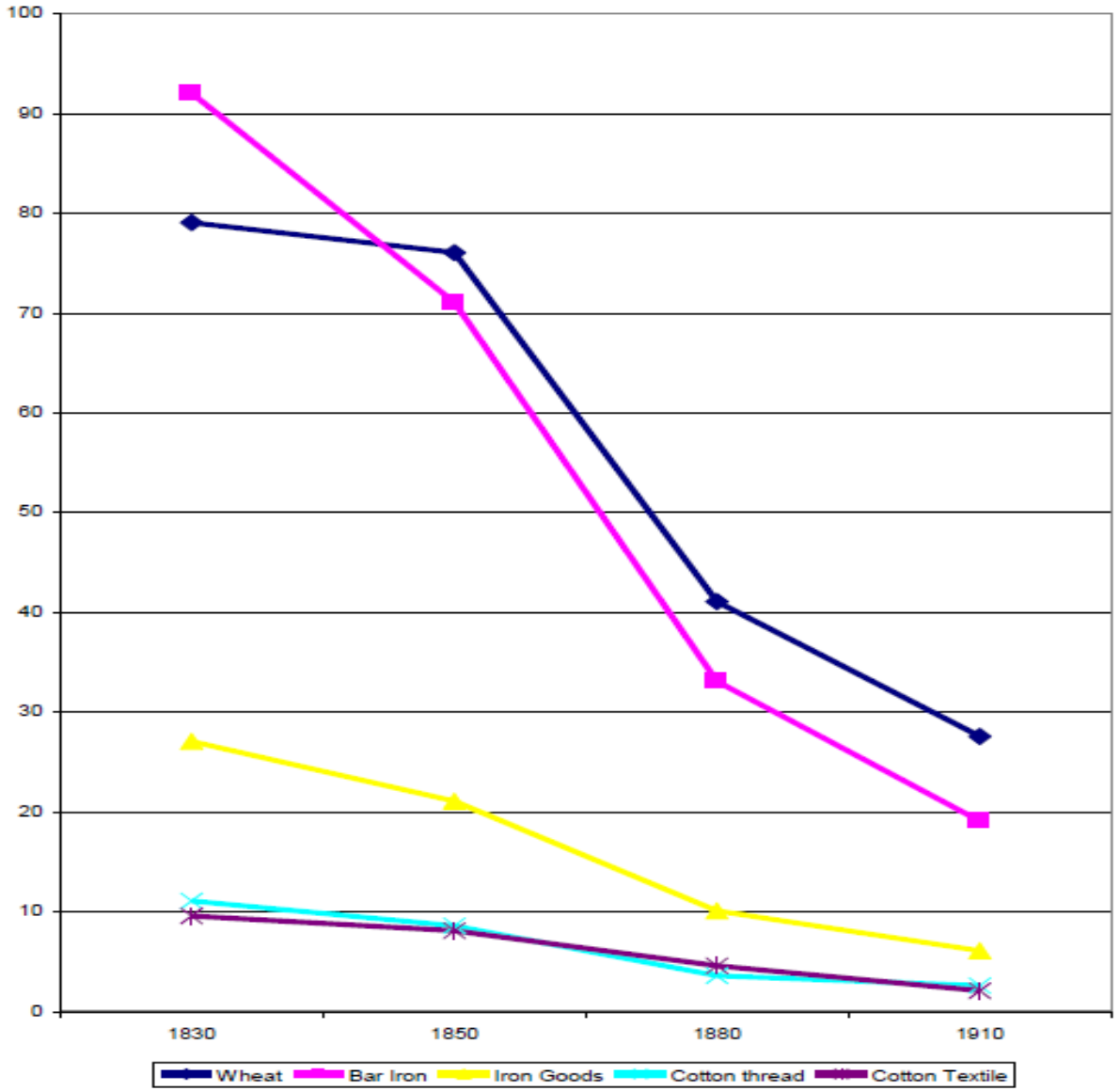
- G1 and G2 were periods of booming trade, large capital flows and substantial migration
- They were also periods of rapid economic growth, declining transport costs, and relatively liberal trade policy
- **But how do they compare when we look at the details?**

19th and 20th century globalisation compared

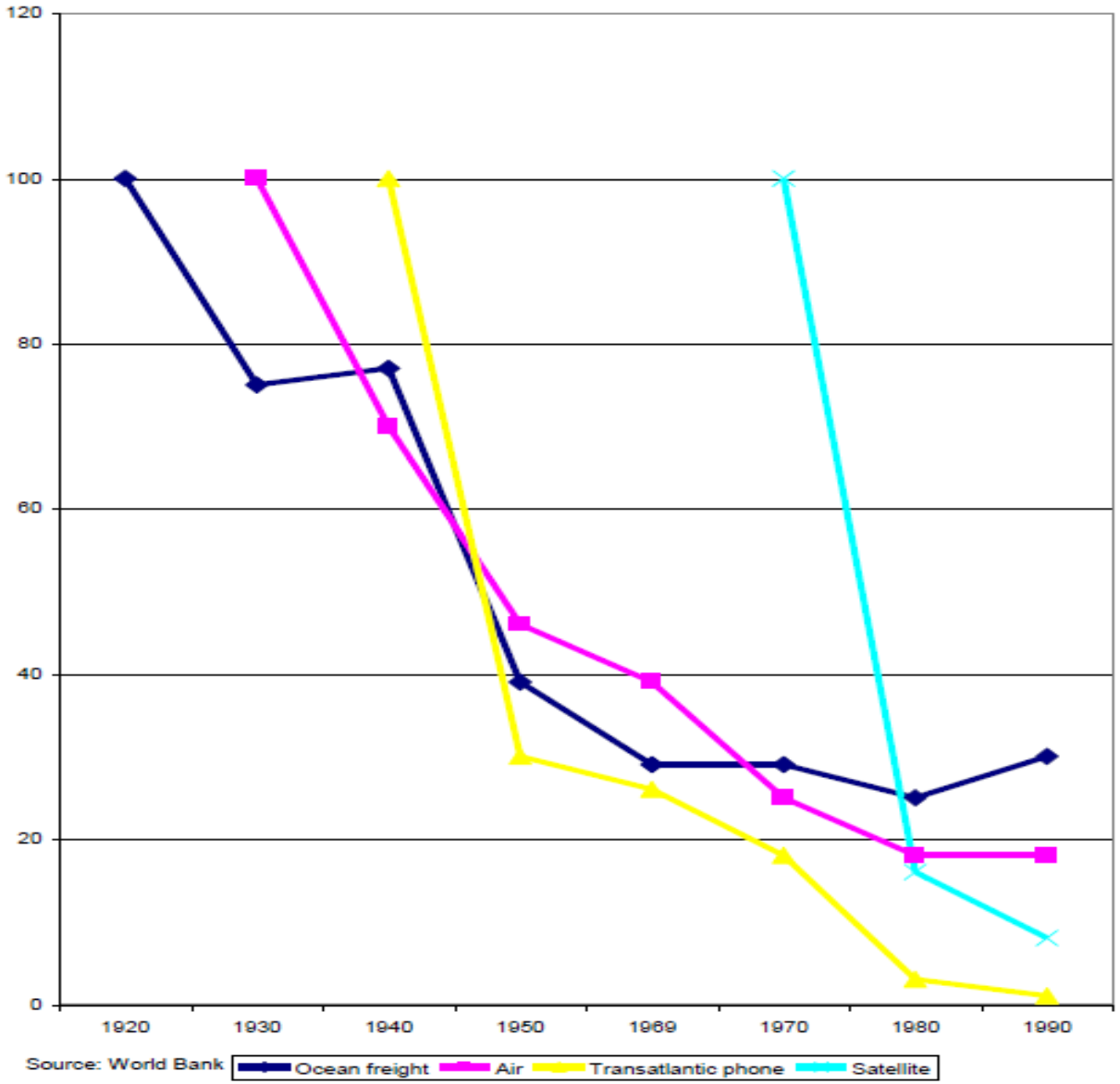
Key points

- Transport costs declined dramatically during G1 and G2, but the decline seems to have been more rapid during G1
- Trade was a key feature of both G1 and G2, but probably more important during G2 (Wolf tables 1-3; BM Table 11)
- Capital flows were substantial in both periods, but their composition has changed (Wolf p. 8)
- Main difference – migration was "mass" in G1 but not G2

Transport costs 1830-1910 (Wolf Fig 2)



Transport costs 1920-1990 (Wolf Fig 3)



Trade shares in the Atlantic economy

- Trade expanded rapidly after the Interwar Period of protectionism

Table 1 – Total trade to GDP 1870-1995[a] (% of GDP)

Country	1870	1910	1950	1995
UK	41	44	30	57
US	14	11	9	24
Sweden	28	40	30	77
Canada	30	30	37	71
Australia	40	39	37	40

(a) See Baldwin & Martin (1999), Table 11.

19th and 20th century globalisation compared

Differences in more detail I

- In the 1990s only the US had a high immigration rate at 4% of initial population (Wolf p. 9)
- A century earlier immigration rates were much higher:
  Argentina – 26%, Australia – 17%, US – 9%
- Although trade was important in both G1 and G2, the private sector's role has been much larger in G2 than G1 (B&M, p. 15)
- We can see this from the size of the inward stock of FDI and its rapid rise from \$594b in 1982, to \$1761b in 1990, to \$4772b in 1999
- For other indicators of the importance of multinational companies, see Wolf Table 9

19th and 20th century globalisation compared

Differences in more detail II

- Much of the reduction in 20th century transport costs appears to have happened in the Interwar Period, but there have been substantial reductions in communication costs in G2
- For instance, as Head and Mayer (2013, p. 1209) note:
  1. **International telephone costs** fell by 90% from 1980 to 2010
  2. **Internet-based communcation** has reduced the monetary cost of long-distance information flows to almost zero
- Later in the lecture we will consider the impact this has had upon global trade and whether it is really true that 'The World is Flat'

19th and 20th century globalisation compared

Other differences

- Trade policy was more liberal during G2 (Wolf p. 10). Lindert and Williamson (2001) find that 74% of commodity price convergence was due to trade policy, and 26% to lower transport costs.

- During G1 we had the Gold Standard – a fixed exchange rate regime. This stability seems to have encouraged long-term capital flows. But capital flows in recent decades have been short-term (B&M, 3.2.2).

- The rise of multinational companies and global institutions during G2

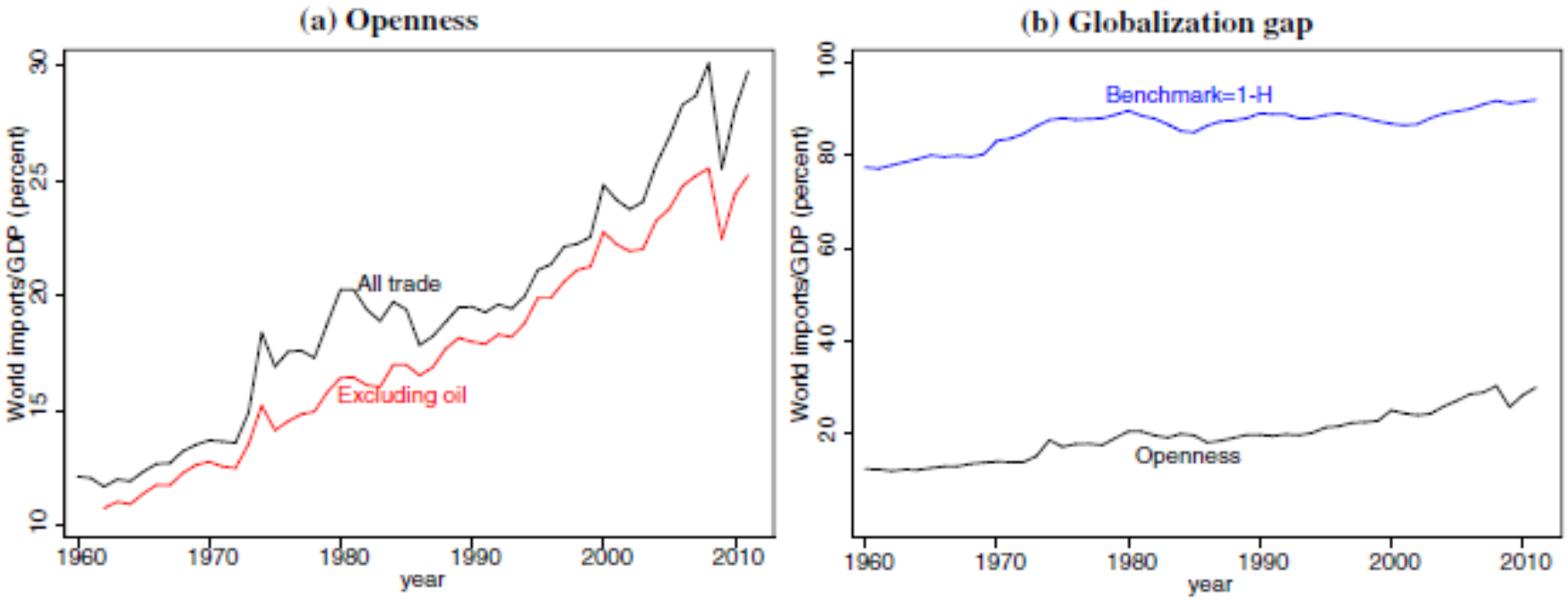
- The rise of the welfare state in G2. Wolf argues that this is probably neutral for globalisation, but well-targeted welfare could reduce hostility to globalisation by compensating the 'losers'.

20th century globalisation myths

- Popular books such as *The World is Flat* and *The Death of Distance* give the impression that globalisation and technological innovations have all but levelled the global playing field
- However, the data suggest this is an exagerration – trade shares have not risen in all cases (Table 1) and by some measures capital markets look less integrated than during G1 (eg B&M, Fig 3)
- Further evidence is provided by Head and Mayer (2013) – next slide

20th century globalisation myths

- Rising openness (ie trade) has not closed the 'globalisation gap'



Source: Head and Mayer (2013, Fig 1)

20th century globalisation myths

- The globalisation gap remains substantial because the predicted ('benchmark') level of openness in a world economy with no trade impediments has risen at the same rate as the actual level of openness
- Head and Mayer (2013, pp. 1199–1208) provide convincing evidence that this is because distance matters – trade declines with the distance over which trade takes place (the 'Gravity Law')
- Of course, we should expect this to the extent that freight transport costs rise with distance (making long-distance exports less profitable), but the large distance effects we see are far too large to be explained by freight costs or tariffs

What explains the globalisation gap?

- The large gap between the actual level of globalisation and its potential value must therefore be due to 'dark' sources of resistance to globalisation – eg unobserved or difficult to observe trade costs
- Head and Mayer discuss some possibilities:
  1. **Border compliance costs (p. 1214)** – eg customs clearance
  2. **Border effects (pp. 1211–16)** – eg trade between Canadian provinces is much larger than trade between Canadian provinces and US states the same distance apart
- Border compliance costs appear to be non-trivial, but they are not large enough to explain the globalisation gap
- Border effects are much larger and ubiquitous, so this is a leading explanation. But what are the causes of the border effect?

What explains the globalisation gap?

- **Explanations for the border effect (pp. 1216–29)**
  1. Imperfect information – familiarity declines with distance
  2. Home bias – localised tastes which are historically determined
  3. Distribution networks – physical (eg bridges), social (eg language and norms) and psychological (eg due to past conflicts)
- All three explanations appear to have some explanatory power, with (1) and (2) looking particularly promising
- But it is important to identify the relative importance of each because (1) suggests that there are gains from trade, while (2) implies that significant additional trade would not be welfare-enhancing
- As we shall see later in the course, border effects are also important for understanding exchange rates

Next time...

- In the next lecture we will study the impact of globalisation on economic growth and inequality
- In particular, we will be interested in whether globalisation has led to convergence or divergence in income levels within and across countries
- This is a very controversial issue!
- We are also going to look at globalisation and capital markets in greater detail
- **Advance reading:** Lindert and Williamson (2001)

References

- Baldwin, R.E. and Martin, P. 2013. Two waves of globalisation: superficial similarities, fundamental differences. NBER working paper 6904.
- Head, K. and T. Mayer 2013. Innis Lecture: What separates us? Sources of resistance to globalization. *Canadian Journal of Economics* 46(4), pp. 1196–1231.
- Lindert, P.H. and J.G. Williamson 2001. Does globalization make the world more unequal? NBER working paper 8228. Available at http://www.nber.org/papers/w8228
- Mussa, M. 2000. Factors driving global economic integration. http://www.imf.org/external/np/speeches/2000/082500.htm
- O'Rourke, K.H. and J.G. Williamson. Globalization and history: the evolution of a nineteenth-century Atlantic economy, MIT press.

References...continued

- O'Rourke, K.H. and J.G. Williamson 1999. The Hecksher-Ohlin model between 1400 and 2000: when it explained factor price convergence, when it did not, and why. NBER working paper 7411. Available at http://www.nber.org/papers/w7411
- Taylor, A.M. and J.G. Williamson 1997. Convergence in the age of mass migration. *European Review of Economic History* 1, pp. 27-63.
- Wolf, M. 2001. Is today's globalisation different from what has gone before? (Available on Moodle)