

Globalization and Inequality: Historical Trends

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This paper surveys trends in both international economic integration and inequality over the past 150 years, as well as the links between them. In doing so, it distinguishes between (a) the different dimensions of globalization (trade, migration and capital flows); and (b) between-country and within-country inequality. Theory suggests that globalization will have very different implications for within-country inequality, depending on the dimension of globalization involved (e.g. trade versus factor flows), on the country concerned, and on the distribution of endowments; the historical record provides ample evidence of this ambiguous relationship.

International economic integration has largely followed a U-shaped path during this period, with late 19th century integration being followed by interwar disintegration, and post-1945 integration. The post-1945 recovery has been uneven, however, with some dimensions of integration remaining undeveloped relative to 1913 (e.g. migration), and with some countries not participating as fully in the recovery as others (in particular, certain developing countries such as India and China have higher trade barriers today than they did before World War I). Not enough is known about trends in 20th century international economic integration; for example, we lack the commodity price evidence for the 20th century which economic historians have used to document trade integration in the 19th century.

Total world inequality has been on the rise since 1820, driven entirely by a rise in between-country inequality (since within-country inequality declined over the period). Indeed, between-country inequality is the biggest source of overall inequality today. However, recent evidence suggests that there may have been an historic turning-point some time around 1980, with between-country divergence being replaced by convergence. Within-country inequality trends varied across countries in both the late 19th and late 20th centuries. The globalization boom of the late 19th century had large effects on income distribution: throughout the world, trade had the impact on the ratio of wages to land rents predicted by Heckscher and Ohlin. However, as Heckscher-Ohlin theory suggests the effect on inequality differed greatly across countries: broadly speaking, both trade

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and migration (but not capital flows) made the rich New World more unequal, and the (less rich) Old World more equal. The evidence on the links between within-country inequality and globalization in the late 20th century is mixed, with studies not distinguishing sufficiently between the different dimensions of globalization and its differential impact across countries.

The balance of evidence suggests that globalization has been a force for between-country convergence in both the late 19th and late 20th centuries; long run patterns of divergence are due to other factors (e.g. the unequal spread of the Industrial Revolution).

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Introduction

Does globalization lead to the world becoming a more equal place, or does it lead to the rich getting richer and the poor getting poorer? This question has assumed ever-greater importance with the emergence of the WTO as a force for trade liberalization throughout the world, with Europe moving towards increased economic integration, with the collapse of communism and the opening up of previously autarkic economies, and with renewed speculation regarding the formation of a pan-American free trade area. The question is increasingly being raised by opponents of globalization, but public debate on the issue can be frustratingly confused. Protestors are often vague about what globalization is, and fail to recognize that globalization has different dimensions, which may have different effects on inequality. Most seriously, they often define ‘globalization’ as encompassing many different phenomena, some of which have little or nothing to do with globalization as economists would define it (RODRIK 2000). Globalization as economists define it encompasses declining barriers to trade, migration, capital flows, foreign direct investment (FDI), and technological transfers. This paper will restrict itself to exploring the historical links which have existed between trade, migration and capital flows, on the one hand, and inequality on the other.

The paper will also distinguish between two separate dimensions of inequality: between-country inequality and within-country inequality¹. If we take the appropriate unit of observation to be the individual citizen anywhere in the world, then total world inequality will clearly depend on both between- and within-country inequality, with globalization potentially affecting both through quite different channels. What these channels

1 In so doing it is following in the footsteps of LINDERT and WILLIAMSON (2001).

might be will be the subject of a theoretical overview in the following section. The paper will then trace the evolution of globalization during the 19th and 20th centuries, distinguishing between the different dimensions involved. The next section will briefly document both types of inequality trend over the past two centuries. Finally, the paper will explore in greater detail the inequality experiences of the two most dramatic globalization episodes, the late 19th and late 20th centuries, and document what is known about the links between globalization and inequality during these two periods. It will then conclude with suggestions for further research.

1 Globalization and inequality: theoretical connections

1.1 Globalization and Within-Country Inequality

Our intuitions regarding the links between international economic integration and income distribution arise for the most part from the static neoclassical trade theory developed by ELI HECKSCHER and BERTIL OHLIN in the early years of the 20th century. Their basic insight was that trade patterns reflect differences in the distribution of endowments across countries, and that countries export goods embodying those factors of production with which they are well-endowed. Commodity market integration therefore leads to an increase in the demand for abundant (and cheap) factors of production, thus raising their price, while trade leads to the demand for scarce (and expensive) factors of production falling, thus lowering their price.

In a simple two-country two-factor two-good setting, with identical technology in both countries, trade and factor mobility should have identical effects on factor prices, and hence on income distribution. If the US is abundant in skilled labour, and Mexico is abundant in unskilled labour, then trade will increase US skilled wages, and Mexican unskilled wages; and it will lower US unskilled wages, and Mexican skilled wages. Thus trade leads to greater wage inequality in the US, and lower wage inequality in Mexico. It is also true, of course, that the migration of unskilled workers from Mexico to the US, or of skilled workers from the US to Mexico, will have identical effects on factor prices.

Things get more complicated once we move away from this very simple 2x2x2 framework. For example, if the US economy has superior technology, or superior endowments of a third factor of production, so that US

skilled wages are higher than Mexican wages, rather than lower, then while trade and unskilled migration may both raise wage inequality in the US and lower it in Mexico as before, skilled migration will also be from South to North, and will have the opposite effect on wage inequality in the two countries. In this case, some dimensions of globalization (trade and unskilled migration) have very different implications for inequality than others (skilled migration). Alternatively, it is important to recognize that not all developing countries (DCs) are identical: rather, they differ greatly in their endowments of capital, labour and skills (DAVIS 1996). The implication is that a middle-income country such as Mexico might be skill-abundant relative to countries like China and India; they might therefore protect their unskilled-labour-abundant sectors; and they might thus see skill premia rising on liberalization. There is in fact evidence that unskilled-labour-intensive sectors received the most protection in countries such as Mexico and Morocco prior to liberalisation (CURRIE and HARRISON 1997; HANSON and HARRISON 1999).

A third possibility is that liberalization and FDI might lead to new skill-intensive activities being introduced into DCs (FEENSTRA and HANSON 1996): under such circumstances, the relative demand for skilled labour would rise in the South. Finally, capital inflows to the DCs might increase the demand for skilled labour, if skilled labour is complementary to capital, and thus raise wage inequality; alternatively, if skilled labour and capital are complementary to some natural resource (e.g. minerals), then liberalization in a resource-rich DC might also increase skill premia and inequality overall (KANBUR 1999).

Thus far, the discussion has assumed that the only factors influencing the impact of globalization on inequality are countries' endowments and their technology. There is another crucial factor, however, which should be mentioned: the distribution of those endowments among a country's citizens. Take for example a positive trade shock in a land-abundant country, which raises the returns to land. Clearly, if land holdings are concentrated among a few large land-owners, this shock is likely to be a force for greater inequality. On the other hand, if the land belonged exclusively to poor peasant proprietors, such a shock might well imply greater equality. The fact that trade theory implies a link between globalization and factor prices, rather than inequality per se, with the distribution of endowments intervening between the two, is one of the problems facing applied researchers seeking to explain the behaviour of summary inequality measures such as the Gini coefficient.

In conclusion: the links between globalization and within-country income distribution are ambiguous. First, globalization affects factor prices differently in different countries, for standard HECKSCHER-OHLIN reasons. Second, different dimensions of globalization (e.g. trade versus factor flows) may have different implications for factor prices in a given country. Third, a given dimension of globalization (e.g. capital flows) may have ambiguous effects on factor prices in a given country, depending *inter alia* on patterns of complementarity or substitutability between factors of production. Finally, a given impact on factor prices can have different effects on inequality, depending on the distribution of endowments across individuals. Ultimately, these are issues which can only be resolved empirically.

1.2 Globalization and Between-Country Inequality

Static trade-theoretic arguments suggest that globalization affects factor prices in the first instance. However, these arguments also have implications for between-country inequality, in that, other things being equal, factor price convergence should bring per capita incomes closer together. Typically, however, between-country inequality is discussed in the context of dynamic growth theory, rather than static trade theory. Models endogenising the long-run growth rate, which have been developed in the past decade, are capable of deriving long-run growth effects of a number of policies, including trade policy. Their conclusion is that the implications of trade liberalization for convergence are theoretically ambiguous.

Numerous examples could be cited, but two will suffice. Both STOKEY (1991) and GROSSMAN and HELPMAN (1991, Chapters 6, 9) assume that North-South trade is driven by differences in relative endowments of skilled and unskilled labour; and both assume that trade drives factor price convergence, with wage inequality rising in the North and falling in the South. In Stokey's model, the growth mechanism is individuals investing in human capital: when trade leads to returns to skill in a small DC being lowered, this can reduce the incentive to acquire skills, and hence the DC growth rate. Trade may thus lead to divergence. However, GROSSMAN and HELPMAN take the endowment of human capital as exogenous, and assume that human capital is useful in that it is an input into R&D, which drives the growth process. In such a scenario, trade which lowers DC skilled wages, and increases developed country skilled wages, boosts DC technical progress, and lowers developed country technical progress, in that the cost of innovation declines in the DC (and increases in the developed coun-

try): trade leads to convergence. Once again, these issues can only be resolved empirically.

2 Trends in International Economic Integration

To casual commentators it seems obvious that today's globalization is unprecedented. However, the late 19th century was also a period of dramatic globalization, and the world economy was extremely well integrated in 1914, even by late 20th century standards (O'ROURKE and WILLIAMSON 1999). War brought all this to an end, and despite the efforts of politicians and organisations such as the League of Nations, the interwar period was to see further retreats into protectionism, the erection of barriers to immigration, the final breakdown of the gold standard, and a wave of international defaults. To a large extent, post-1945 integration can be seen as an attempt to recoup the losses of the interwar period: the question then becomes, at what point were these losses finally recouped, and when did integration start to progress beyond the levels achieved in 1914? I begin with a survey of commodity market integration (CMI), before progressing to international capital and labour markets.

2.1 International Commodity Market Integration

The 19th century saw a series of dramatic technological developments which were to have a profound impact on international trade, chiefly the steamship and railroad. The impact on transport costs was substantial: KNICK HARLEY's index of British ocean freight rates remains relatively constant between 1740 and 1840, before dropping by about 70% between 1840 and 1910 (HARLEY 1988). International transport costs probably fell by 45 percentage points between 1870 and 1913, while transport costs between the American Midwest and East Coast fell even more dramatically than trans-Atlantic transport costs (O'ROURKE and WILLIAMSON 1999).

Until the 1870s, trade policy reinforced these trends. Britain liberalized from 1815 to 1846, when she took the decisive step towards free trade. The years after 1860 saw significant European tariff-cutting: for example, by 1877 Germany "had virtually become a free trade country" (BAIROCH 1989, p. 41). In the late 1870s, however, cheap New World and Russian grain began depressing European land values, sparking a powerful Continental protectionist response. In the US, Northern victory in the Civil War

ensured high levels of protection for the rest of the century. On the other hand, in Asia declining transport costs did not have to contend with rising tariffs: China, Japan, Korea, Thailand, India and Indonesia all moved towards free trade, most forced to do so by colonial dominance or gunboat diplomacy.

What were the combined effects of transport cost and trade policy developments in the late 19th century? To answer this question we need to focus on international commodity price gaps, and the evidence is striking (O'ROURKE and WILLIAMSON 1999, Chapter 3). Trend estimates based on HARLEY's (1980) data show that Liverpool wheat prices exceeded Chicago prices by 58% in 1870, by 18% in 1895, and by 16% in 1913. Nor was this Anglo-American price convergence limited to the grain market: it can also be documented for bacon, cotton textiles, iron, copper, hides, wool, coal, tin and coffee. On the European Continent, tariffs impeded international price convergence, but in Asia trade policy strengthened the impact of technological developments: the cotton price spread between London and Bombay fell from 57% in 1873 to 20% in 1913, while the jute price spread between London and Calcutta fell from 35% to 4%, and the rice price spread between London and Rangoon fell from 93% to 26% (COLLINS 1996). CMI in the late 19th century was both impressive in scale, and global in scope: indeed, Third World economies were becoming more rapidly integrated with the rest of the world than their Atlantic economy counterparts during this period (WILLIAMSON 2000).

Transport costs continued to fall during the 20th century, but at a slower rate. ISSERLIS (1938) provides an index of British tramp freight rates from 1869 to 1936. Between 1869/71 and 1911/13 real trend freight rates fell by 34 percentage points. They increased sharply during the war, remaining abnormally high until 1920. While they fell up to 1925, they never attained their prewar levels, and rose thereafter, with the overall trend between 1921 and 1936 being broadly flat (at a level roughly equal to the 1869 level: FINDLAY and O'ROURKE 2001).

What of the post-1945 period? In the most careful study of the subject to date, DAVID HUMMELS (1999) concludes that ocean freight rates have actually increased. On the other hand, air freight rates declined dramatically in the 1950s, 1960s and 1980s, while declining more slowly in the 1990s, and rising in the 1970s. The result, predictably enough, has been a more than ten-fold increase in the ratio of air to ocean shipments in the years since 1962.

Table 1: Average tariffs on manufactured goods, selected countries, 1913–1998

	1913	1931	1950	1980	1998/99
Austria	18	24	18	14.6	NA
Belgium	9	14	11	NA	NA
Denmark	14	–	3	NA	NA
France	20	30	18	NA	NA
Germany	13	21	26	NA	NA
Italy	18	46	25	NA	NA
Netherlands	4	–	11	NA	NA
Spain	41	63	–	8.3	NA
Sweden	20	21	9	6.2	NA
UK	0	–	23	NA	NA
EU	NA	NA	NA	8.3	4.1
Russia	84	*	*	*	13.4 ^a
Switzerland	9	19	–	3.3	3.2 ^b
Australia	16	–	–	–	6
Canada	26	–	–	–	4.9
Japan	25–30	–	–	9.9	5.5
New Zealand	15–20	–	–	–	4.4
USA	44	48	14	7	4.5
Argentina	28	–	–	–	14
Brazil	50–70	–	–	–	15.2
Colombia	40–60	–	–	–	11.4
Mexico	40–50	–	–	–	12.6
China	4–5	–	–	–	17.4
India	approx. 5	–	–	–	34.2
Iran	3–4	–	–	–	–
Thailand	2–3	–	–	–	47.2 ^c
Turkey	5–10	–	–	–	0.25

Sources: BAIROCH (1989; 1993); World Development Indicators 2000.

Notes: NA = not applicable; – = not available;

* refers to the fact that the USSR ran such a restrictive trade policy that average tariffs were irrelevant;

a = 1997; b = 1996; c = 1993.

Relative to the 19th century, it thus follows that trade liberalization has played a much greater role in late 20th century CMI. *Table 1* gives average tariffs on manufactured products in a number of countries for which data are available back to 1913. It shows the interwar rise in protection, and the decline in tariff barriers since 1950. It also shows that for most of these countries tariffs are much lower today than in 1913. There are exceptions, however, notably Britain and certain Asian countries. Both China and India, for example, have much higher tariffs now than in 1913: an extre-

mely important qualification, given these countries' share of world population. Tariffs are much higher now in DCs than in rich countries, while the opposite was true of the late 19th century (although there have been substantial declines in Latin American tariffs since the early 1980s, and smaller declines in East Asia: RODRIK 1999).

Moreover, emphasising industrial tariffs overstates the extent to which industrial countries today have moved toward free trade, for two reasons. First, agricultural protection is very high in many rich countries (and higher than in 1913). COPPEL and DURAND (1999) report that it raises prices received by farmers by about 60% in Japan, 40% in the European Union, 15% in Canada, and 20% in the United States. Second, non-tariff protection (such as quotas, VERs, and technical barriers to trade) is much more prevalent today than a hundred years ago.

What have been the combined impact of the transport cost and trade policy developments documented above? Price gaps for identical commodities in different markets remain the best measure of market integration, but very little work has been done documenting these for the 20th century; moreover, obvious international sources of price data (e.g. the commodity price data to be found in the *World Bank Development Indicators* or the *IMF's International Financial Statistics*) reveal no discernible general trend towards commodity price convergence during the past four decades (FINDLAY and O'ROURKE 2001).

Overall, what can we conclude about CMI over the past 150 years? First, the late 19th century probably saw more dramatic progress towards CMI than did the late 20th century². Second, commodity markets are probably even better integrated today, but we do *not* have the empirical evidence to document this. Clearly, we need further research on this important issue.

2.2 International Capital Market Integration

Capital exports from the centre to the periphery were enormous in the late 19th century (O'ROURKE and WILLIAMSON 1999, Chapter 11). The share of British wealth overseas in 1870 was 17%, and it had increased to an im-

2 Indeed, BAIER and BERGSTRAND (2001) report that two-thirds of the late 20th century trade boom can be accounted for by income growth, suggesting that CMI had little to do with it. O'ROURKE and WILLIAMSON (2001) find something similar for the 1500–1800 period, which saw little or no CMI. There is no similar accounting for the rapidly globalizing 19th century, however.

pressive 33% in 1913. The flows were extremely large during peak years: as a share of British GDP they were 7.7% at the 1872 peak, 6.9% in 1888, and 8.7% in 1911. No OECD country, including the US, exported capital to that extent in the late 20th century. For example, Japanese and German current account surpluses in the mid- and late-1980s peaked at around 4 or 5% of GDP.

Foreign capital flows were equally important at the receiving end. To give just one example, net inward foreign investment as a share of gross fixed capital formation ranged from 10 to 20% amongst the major Third World importers in the decade prior to 1984, and was less than 10% of investment in DCs in the early 1990s³. The same statistic for the four decades between 1870 and 1910 was 37% for Canada (JONES and OBSTFELD 1997), it was about 70% for Argentina⁴ and perhaps as much as 75% for Mexico. By some measures, international capital flows have never been as important as they were in the late 19th century, despite all the rhetoric about the unprecedented nature of today's globalization.

Capital flows diminished in size during the 1920s, but things would soon get worse: with the onset of the Great Depression, a wave of default in DCs ensued, and capital flows to these countries remained limited for decades thereafter. Between 1945 and 1972, most of the limited capital flows that took place did so in the form of direct government and multinational institutional investment abroad. Since 1972, the global capital market has become increasingly important, but *Figure 1* places current trends into their proper historical context. It plots average current account shares in GDP (absolute values, 14 countries); while that share has been on the rise since the early 1970s, it is still only half of what it was in the late 1880s.

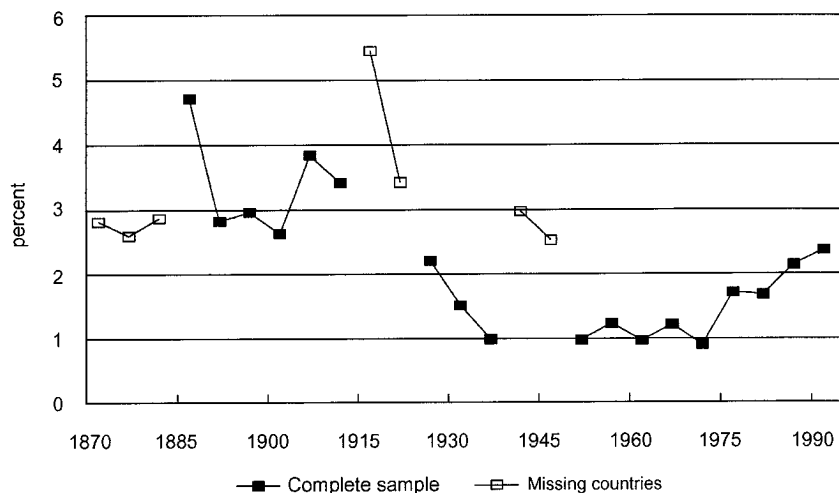
Figure 1 does, however, bias the picture somewhat, in that the 14 countries concerned are in the OECD, plus Argentina. Late 20th century current account imbalances were much greater in some DCs: for example, they averaged 6.1% of GDP in Malaysia between 1991 and 1997; 5.1% in Romania, 13.5% in Singapore, 6% in Thailand, and 18.9% in the Sudan. By contrast, the equivalent figure for Argentina between 1910 and 1913 was 11%, while it was 14.5% in Canada. Clearly, capital flows involving certain DCs were very high in both periods⁵.

3 For the latter statistic, see WORLD BANK (2000), p.121.

4 For the years 1885–1910; based on data kindly supplied by ALAN TAYLOR.

5 World Development Indicators; data kindly supplied by ALAN TAYLOR.

Figure 1: Capital flows, 1870–1992



Source: O'ROURKE and WILLIAMSON (1999)

So much for the size of flows: what about the extent of integration? Standard measures tell a consistent story: capital markets were highly integrated in the late 19th century, disintegrated during the interwar period, and are only now recovering the levels of integration experienced in 1913. This U-shaped pattern is apparent in data on real and nominal interest-rate differentials (OBSTFELD and TAYLOR 1998, 2001), while TAYLOR (1996) applies the FELDSTEIN-HORIOKA (1980) test to historical data, and finds that global capital markets were better integrated between 1870 and 1924 than they were between 1970 and 1989.

What of the composition of these flows? DUNNING (1993) estimates that about 35% of the stock of international long term debt in 1914 consisted of FDI. By contrast, FDI accounted for only 16.8% of private capital flows during 1973–1981, but 50.3% of private capital flows during 1990–1997 (WORLD BANK 2000, p. 126). According to both JONES (1996, p. 32) and BAIROCH and KOZUL-WRIGHT (1998, p. 46), the stock of FDI reached over 9% of world GDP in 1913, a figure only exceeded in the early 1990s (the figure stood at 16% in 1999: UNCTAD 2000, p. xvi). FDI is more important now, but we are talking about a quantitative, not a qualitative shift.

What proportion of these flows went to DCs? Between 1907 and 1913, British overseas lending was split evenly between what we would now

consider to be rich countries (North America, Australasia and Europe, including Eastern Europe) and the rest of the world (TAYLOR and WILLIAMSON 1994). According to *Table 2*, 62.8% of FDI was located in DCs in 1914: 32.7% in Latin America, 6.4% in Africa, and 20.9% in Asia (including 7.8% in China). These figures might suggest that 19th century capital flows were largely directed towards poor countries, and were thus a force for convergence. Looks can be deceiving, however: late 19th century capital flows were predominantly towards the resource-abundant New World, and were thus a source of divergence (CLEMENS and WILLIAMSON 2001)⁶.

Table 2: Regional distribution of FDI stock, 1914–1999

FDI by origin	1914	1938	1960	1999
Developed countries	100.0	100.0	98.9	89.9
North America	19.2	30.4	52.0	27.5
USA	18.2	27.7	48.3	23.8
Canada	1.0	2.7	3.8	3.7
Western Europe	75.4	63.9	42.1	54.1
UK	44.6	39.8	16.3	14
Germany	10.3	1.3	1.2	8.8
France	12.0	9.5	6.2	6.3
Other western Europe	8.6	13.3	18.3	25
Russia	2.1	1.7	0.0	0.2
Japan	2.1	2.8	0.8	6.2
Developing countries	0.0	0.0	1.1	9.8
Total	100	100	100	100

FDI by host	1914	1938	1960	1999
Developed countries	37.2	34.3	67.3	67.7
North America	16.0	16.8	37.6	26.3
USA	10.3	7.4	13.9	22.8
Canada	5.7	9.4	23.7	3.5
Western Europe	7.8	7.4	22.9	36.8
UK	1.4	2.9	9.2	8.3
Other Europe	9.9	1.6	0.9	2.4
Russia	7.1	0.0	0.0	0.3
Australasia and S. Africa	3.2	8.0	6.6	3.5
Japan	0.2	0.4	0.2	0.8
Developing countries	62.8	65.7	32.3	30.1
Latin America	32.7	30.8	15.6	10.2
Africa	6.4	7.4	5.5	2
Asia	20.9	25.0	7.5	17.7
China	7.8	5.8	0.0	6.4
India and Ceylon	3.2	5.6	2.0	0.4
Middle East	2.8	2.6	2.8	1.3

Source: DUNNING (1993); UNCTAD (2000).

6 Crucially, Latin American countries such as Argentina were relatively rich (and resource-rich) then.

However, the late 19th century saw a greater share of DFI going to DCs than did the 20th century. DCs still hosted almost two-thirds of investment in 1938, but their share collapsed to less than one third by 1960. By 1999 the figure stood at 30.1% (*Table 2*). Nor is this pattern limited to direct investment: according to OBSTFELD and TAYLOR (2001) a smaller proportion of internationally mobile capital was located in poor countries in 1997 than in 1913, illustrating “an important dimension in which the globalization of capital markets remains behind the level attained under the classical gold standard” (p. 51).

Most late 19th century investment was being used for social overhead investment, as is true of the Third World today: about 70% went into railroads, municipal sewage, telephones and other social overhead investments. Railroads alone accounted for about 41% of the total in 1913 (FEIS 1930: 27). The debt was issued largely by governments, as was also true of the Third World during most of the postwar years. But governments did not do a much larger share of the borrowing then than now: they accounted for maybe 40% of the investment flows in the late 19th century. By 1930 or so, 62% of London-based lending, and 80% of New York lending, was going to governments; governments got 80% of the flows as late as 1980, but only 33% in 1997 (WORLD BANK 2000, p. 127). In this respect, once again, the late 20th century has returned to late 19th century patterns.

However, the sectoral composition of capital flows has broadened, with far more going into industry and finance in the late 20th century than was true of the earlier period. This is certainly true of portfolio flows. In terms of FDI flows, in 1914 about 55% of the accumulated FDI stock was in the primary product sector; 20% in railroads; 15% in manufacturing; and 10% in trade, distribution, public utilities and banking (DUNNING 1993, p. 116). By contrast, in the 1990s only about 6% of EU FDI went to the primary sector, but 31% to manufactures, and 63% to services (BALDWIN and MARTIN 1999, p. 19), while about half of US FDI is in services, and about 35% in manufacturing (BORDO, EICHENGREEN and IRWIN 1999). The issue is important, since FDI can serve as a vehicle for technological transfer and thus hasten international convergence, as it did in Ireland during the 1990s. The changing sectoral composition of FDI over time suggests that FDI is probably playing a more important role in this regard in the late 20th century than it did in the late 19th (although this is mere speculation).

Furthermore, the composition of portfolio flows has changed dramatically. In the late 19th century such flows were overwhelmingly accounted for by bonds. During the lending boom of the 1970s, by contrast, bank lending accounted for almost two-thirds of the total flow, with both bond issues and portfolio equity flows being minimal. During the 1990s, the composition of flows has become far more balanced, with an almost equal split between direct and portfolio flows, and a fairly equal division within portfolio flows between bank lending, bond issues, and equity finance (WORLD BANK 2000, p. 126).

This broader range of financial assets traded clearly distinguishes the late 19th and late 20th centuries, as does the greater share of investment today in manufacturing and services. Other differences, highlighted by BORDO, EICHENGREEN and KIM (1998), include the huge volume of gross capital flows today. Although clear evidence on the late 19th century is lacking, it seems certain that the ratio of gross to net capital flows is much greater now than then, reflecting greater volumes of short run capital flows. Presumably, however, net long run flows matter more than gross short run flows for growth and income distribution. Finally, while much late 19th century FDI was undertaken by 'free-standing companies', incorporated in the core in order to carry on business within the periphery, FDI today occurs overwhelmingly within multinational corporations which do business in both home and host countries.

2.3 International Migration

It is in the area of migration that the late 19th century seems most clearly to have been more globalized than today. Although barriers to immigration were being erected by the end of the period (O'ROURKE and WILLIAMSON 1999, Chapter 10), by and large the late 19th century stands out as a relatively liberal interlude in terms of migration policy; once transport costs had fallen sufficiently relative to the average wage, the inevitable consequence was a huge intercontinental flow of people. Between 1820 and 1914, roughly 60 million Europeans emigrated to the New World; European emigration averaged 300,000 per annum in the three decades after 1846, more than doubled in the next two decades, and exceeded a million after the turn of the century (HATTON and WILLIAMSON 1998). Some of the country-specific migration rates were enormous: during the 1880s, the emigration rate per thousand was 141.7 in Ireland, and 95.2 in Norway, while the immigration rate per thousand was 85.8 in the

United States, and 221.7 in Argentina. In the first decade of the 20th century, emigration rates of 107.7 per thousand were recorded in Italy, while immigration rates per thousand were 167.6 in Canada, 118.4 in Cuba, 102 in the United States, and 291.8 in Argentina. There were also significant migrations within Europe and the New World, and emigration from Asia.

The UN has estimated that the world stock of migrants was 2.3% of the total world population in both 1965 and 1990. Within Western Europe, the share of migrants in the total population increased from 3.6% to 6.1% over the same period, while within North America, the migrant share increased from 6% to 8.6% (ZLOTNIK 1999, Table 1a, p. 47). By contrast, the foreign born accounted for 14.7% of the population of the United States, and 22% of the Canadian population in 1911 (US Department of Commerce 1975, p. 14; Historical Statistics of Canada series A260-61). Annual immigration to the United States averaged 770,000 during 1990–94 and 814,000 during 1995–96, implying decadal immigration rates of roughly 30 per thousand. Immigration in the early 1990s was proportionally higher in Canada, which saw decadal immigration rates of 70 to 80 per thousand in the early 1990s; rates of around 80 per thousand were also recorded in Germany during 1990–94; while rates of around 50 per thousand were recorded in both Germany and Australia during 1995–96. These are clearly fairly substantial flows, but they are dwarfed by those of the late 19th and early 20th century.

Once again, however, a caveat is in order. Labour market integration cannot be measured by the size of flows alone: the responsiveness of migration to given wage differentials is a better measure. Several papers have compared inter-regional migration responsiveness across countries, in the context of the debate on EMU (e.g. EICHENGREEN 1993; OBSTFELD and PERI 1998); but hardly any have calculated the changing responsiveness of migration to migration incentives over time. An exception is HATTON and WILLIAMSON (2001), which compares African (intra-continental) migration elasticities with the (inter-continental) elasticities obtaining in late 19th century Europe, and finds little difference between the two periods. More work along these lines is required before we can make definitive statements about trends in labour market integration over time.

Mass migration will have the greatest impact on between-country equality if it transfers population from poor to rich countries. In the late 19th century, migration was clearly of this form, since Europe was significantly poorer than the New World; however, emigration was initially higher

from the richer European regions, with the poorer southern and eastern regions only becoming involved with a lag. Something similar appears to have taken place in the late 20th century (CHISWICK and HATTON 2001). For example, the share of DC migrants in total US immigration rose from 50% in the 1960s, to 63% in the 1970s, 86% in the 1980s, and 80% in the early 1990s (ZLOTNIK 1999, Table 3). Similar trends are apparent in Canada, Australia and Europe (where migration from Eastern Europe has increased over time). Thus, in both periods mass migration was increasingly involving poorer countries, and thus potentially making a bigger contribution to convergence; the big question for the 21st century is to what extent will Africa begin participating in mass, inter-continental migration (HATTON and WILLIAMSON 2001).

The impact of migration on within-country inequality largely depends on the skill mix, as was suggested above. In the late 19th century, migration predominantly involved young, unskilled adults, with very high labour force participation rates; it thus had a large potential impact on inequality, lowering it in Europe and raising it in the New World. As the late 20th century progressed, the picture became increasingly similar, at least for the US: the skill profile of immigrants, relative to the native born, has declined dramatically since the mid-1960s (BORJAS 1999, Chapter 2).⁷ In several countries, however, policy has responded by encouraging more skilled immigration, often via temporary work permit programmes. In principle, this could lead to greater inequality in emigrant economies, and greater equality in immigrant countries: the opposite of what occurred in the late 19th century.

3 Inequality Trends

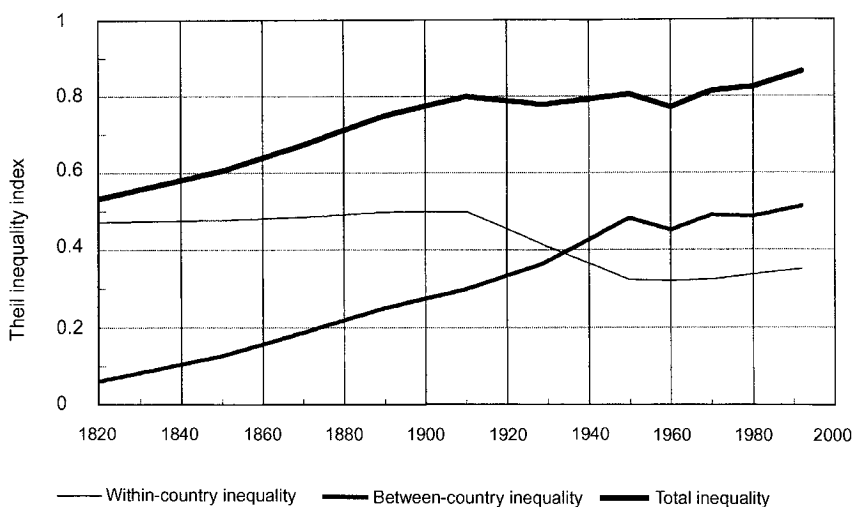
The previous section has documented a U-shaped trend in the extent of international economic integration, with integration in the late 19th century, followed by disintegration in the interwar period, and a recovery since World War 2. The recovery has been uneven, however, with some dimensions of integration remaining undeveloped relative to 1913 (e.g. migration), and with some countries not participating as fully in the recovery as others (in particular, certain DCs). The question now arises: what has been

7 Indeed, a higher proportion of immigrants were high school dropouts in 1998 than in 1990, reversing a steady downward trend in this figure since 1960 (BORJAS 1999, p. 21).

the inequality experience over the past two centuries, and to what extent can this experience be related to globalization trends?

The benchmark study of world income inequality trends over the past two centuries is a recent paper by FRANÇOIS BOURGUIGNON and CHRISTIAN MORRISSON (1999), which makes use of data on population, real GDP per capita, and vintile shares for 33 groups of countries between 1820 and 1992. *Figure 2* plots the resulting Theil coefficients for total world inequality, as well as a decomposition into that portion explained by between-country inequality, and that portion explained by within-country inequality. Several key lessons emerge from the figure.

Figure 2: World inequality, 1820–1992



Source: BOURGUIGNON and MORRISSON (1999)

First, world inequality has increased substantially since 1820. Between 1820 and 1910, a period of rapid growth and globalization, the Theil coefficient rose from 0.533 to 0.799, a rise of 0.266 (0.030 per decade) or 50%. Inequality remained fairly stable between 1910 and 1960, dipping during the 1950s, before resuming its rise after 1960, another period of rapid growth and globalization. Between 1960 and 1992, the Theil coefficient rose by 0.093 (0.029 per decade, roughly the same rate as the 19th century figure), or by 12%.

Second, the rise in total inequality over the period as a whole has been *entirely* driven by a rise in inequality between countries; indeed, within-country inequality declined over the period. Between-country inequality rose continuously from 1820 to 1950; it fell during the 1950s and 1970s, but rose during the 1960s and 1980s, and rose over the post-1960 period as a whole. This confirms PRITCHETT's (1997) finding that divergence, rather than convergence, characterises the long run aggregate growth record.

Third, the cessation of the trend towards greater overall inequality during the interwar period was not due to more favourable between-country inequality trends, since between-country inequality continued to rise rapidly. Rather, it was due to a dramatic decline in within-country inequality, which fell from 0.500 in 1910 to 0.323 in 1950, a 0.177 decline (or 35%) in 4 decades, or a 0.044 point decline per decade. It seems as though this interwar experience was an aberration, since within-country inequality trended very gently and continuously upwards both before 1910 and after 1950. Over the period as a whole, within-country inequality has declined sharply, as a result of this apparent step decline during the interwar period, and this is in clear contrast to between-country inequality, which has increased sharply.

Fourth, while within-country inequality was the dominant force driving total world inequality in 1820, its relative importance has declined over time, and since World War 2 between-country inequality has been the most important factor accounting for total inequality. This suggests that for those concerned with world inequality, while their focus should have been on domestic redistribution in the early 19th century, by now it should be firmly focussed on policies designed to help poor countries converge macroeconomically on the rich.

Moreover, such convergence may at last be happening. While the long run evidence clearly points to between-country divergence, recent papers suggest that this trend was replaced by convergence at the end of the 20th century. MELCHIOR, TELLE and WIIG (2000) calculate (population-weighted) Gini coefficients for world income distribution, using per capita income data for 115 countries. They find that the Gini coefficient fell from 0.59 in 1965 to 0.52 in 1997, with China's catch-up being crucial. SCHULTZ (1998) finds that between-country inequality started falling from the mid-1970s; BOLTHO and TONIOLO (1999) find that it started falling from 1980. A common feature of these papers is their use of PPP-adjusted data; the implication is that there has been what LINDERT and WILLIAMSON (2001)

refer to as an ‘epochal turning point’. According to SCHULTZ, the convergence since then has been strong enough that overall world inequality (both between- and within-country) has also started to decline⁸.

The question now arises: to what extent has globalization been responsible for any of these trends? We turn first to the globalization boom of the late 19th century.

4 Globalization and Inequality in the Late 19th Century

4.1 Factor Price Trends

As we have seen, the late 19th century was characterised by dramatically declining transport costs; by mass migration from the Old World to the New; and by large transfers of capital from the Old World to the New. How did each of these separate dimensions of globalization influence income distribution within and between countries?

Take the evidence on factor prices first, and begin with the within-country evidence. We have abundant evidence on late 19th century relative factor prices, compiled by O’ROURKE, TAYLOR and WILLIAMSON (1996), and JEFFREY WILLIAMSON, in a series of papers summarized in WILLIAMSON (1998, 2000). These papers present data on w/r , the ratio of the unskilled, urban wage to the returns to agricultural land. This was the key relative factor price in an era when agriculture was still an important component of the economy, and in which inter-continental trade was largely dominated by the exchange of resource- and land-intensive products for labour-intensive products such as manufactured goods. The metaphor which motivated Heckscher and Ohlin in the first place was one of the land-abundant New World exchanging food for European manufactured goods, and their logic suggests that in times of globalization, w/r should have converged internationally. In land-abundant New World economies, where w/r was high, it should have declined; and in land-scarce European economies, where w/r was low, it should have increased. Moreover, in absolute terms low European wages should have caught up with high New World wages; while low New World land prices should have caught up with high European land prices. By and large, these predictions hold good for the late 19th century.

8 But see MILANOVIC (1999) for a contrary view, albeit one based on only two years (1988 and 1993); see also DOWRICK and AKMAL (2001).

Between 1870 and 1910, real land price increases in Australia (over 400%) and the US (over 250%) were enormous, far greater than the biggest real land price increase in this sample of European countries (Denmark, where land prices increased by 45% between 1870–73 and 1910–13). Moreover, in three European countries – Britain, France and Sweden – land prices *fell*, in Britain by over 50%. There was certainly absolute convergence in the returns to land during this period. Meanwhile, wages in Europe were converging on New World wages (WILLIAMSON 1995), although this absolute wage convergence was more modest in scale, and there were poor countries who did not participate in the convergence experience. The net result was that the 40 years after 1870 saw substantial relative factor price convergence, with wage-rental ratios rising in Europe, and falling in the New World, just as HECKSCHER and OHLIN would have predicted (WILLIAMSON 2000, Table 3). By 1910, the Australian ratio had fallen to one quarter of its 1870 level, the Argentine ratio had fallen to one-fifth of its mid-1880 level, and the US ratio had fallen to half of its 1870 level. In Europe, the British ratio in 1910 had increased by a factor of 2.7 over its 1870 level; the Irish ratio had increased by a factor of 5.6; the Swedish ratio had increased by a factor of 2.6; and the Danish ratio by a factor of 3.1. This increase was less pronounced in protectionist economies: the ratio increased by a factor of 2.0 in France, 1.4 in Germany, and not at all in Spain.

The HECKSCHER-OHLIN predictions were also well born out by the experience of those Third World countries which participated in the late 19th century global economy (WILLIAMSON 2000, Table 4). In land-scarce economies such as Japan, Korea and Taiwan, the wage-rental ratio increased substantially, while it plummeted in land-abundant food exporting nations such as Argentina, Uruguay, Burma, Siam, Egypt and the Punjab. Relative factor price convergence was not limited to the present-day OECD region, it appears.

What was responsible for these trends, and in particular for the impressive wage-rental ratio convergence? O'ROURKE, TAYLOR and WILLIAMSON (1996) explore this issue econometrically, using data for seven countries between 1875 and 1914: Australia, Britain, Denmark, France, Germany, Sweden and the US. The results are supportive of HECKSCHER and OHLIN: the ratio of agricultural to manufacturing prices has the expected negative effect on wage-rental ratios for five of the seven countries, the exceptions being Australia and Denmark. It appears that CMI *was* important in driving factor price convergence during this period.

Moreover, other dimensions of globalization also contributed to the wage-rental convergence; in particular, migration increased wage-rental ratios in Europe and lowered them in the New World. However, international capital flows were probably a force for divergence during this period, rather than convergence, in that capital flowed from low-wage Europe to the high-wage New World, exacerbating rather than moderating wage-rental ratio differences.

4.2 Factor Price Convergence and Inequality in the Late 19th Century

What were the implications of these factor price movements for inequality? To a large extent, this depended on who owned the land. Typically, landowners were at the top of the income distribution, and so the globalization forces which raised wage-rental ratios in Europe should have made Europe more equal; while the same forces which lowered wage-rental ratios in the New World should have made those societies more unequal. Presumably the inequality impact was greater where land-holding was more concentrated, such as Latin America, than in societies where the family farm predominated, such as the northern United States, or Burma. Meanwhile, intercontinental migrants were typically unskilled; thus, immigration would have lowered unskilled wages and raised inequality in the New World, but raised unskilled wages and lowered inequality in Europe. Broadly speaking, globalization should have made the relatively poor Old World more equal, but at the expense of higher inequality in the affluent New World—precisely the same correlation as HECKSCHER-OHLIN thinking would predict today.

Complete income distributions are typically unavailable for the late 19th century, but WILLIAMSON (1997) constructed an alternative measure of inequality: the ratio of the unskilled wage to GDP per worker hour, w/y . This measure compares the income of those at the bottom of the distribution with a weighted average of all other relevant factor prices—skilled wages, but also returns to such factors as capital and land, which were highly relevant both 100 years ago and in the late 20th century Third World. WILLIAMSON found that while inequality fell dramatically (w/y increased, from 100 in 1870 to 153 or 154 in 1913) in poor European countries like Denmark and Sweden, where w was initially low, it rose substantially in rich New World economies like the US and Australia, where w was initially high (w/y fell, from 100 in 1870 to 53 or 58 in 1913). Inequality also fell sharply in poor economies like Norway and Italy, while remaining more

stable in the richer European economies, as well as in peripheral economies which remained aloof from globalization (such as Iberia).

The OECD evidence is thus consistent with the HECKSCHER-OHLIN prediction that globalization should have raised inequality in rich equal societies and lowered it in poor, unequal societies. The Third World evidence is more mixed, however. Wherever the data are available, they show w/y falling during the late 19th century – in Argentina, Brazil, Mexico, Uruguay, Japan, Burma, India, Indonesia, the Philippines, Taiwan and Thailand (WILLIAMSON 2000, Tables 4, 5). In the Latin American case, there is an explanation consistent with that given for other New World economies – globalization lowered wage-rental ratios, which should boost inequality. Furthermore, countries such as Argentina were not low-wage by late 19th century standards. In the Asian case, however, things are slightly more puzzling. First, inequality rose everywhere, even in undisputedly poor countries. Second, inequality rose not only in land-abundant areas such as Burma and Thailand, where wage-rental ratios fell, but also in land-scarce economies such as Japan and Taiwan, where wage-rental ratios rose. Presumably this anomaly is due to the fact that inequality trends were not just determined by globalization (and wage-rental ratios), but by other factors, such as demography and technological change, as well.

To summarize: there appears to be a causal relationship between globalization and within-country inequality for this period. Trade *did* have an impact on wage-rental ratios, just as theory says it should. Moreover, WILLIAMSON (1997) shows that there is a strong relationship between migration flows and movements in w/y , with w/y rising more (falling less) in countries that experienced more emigration (less immigration). However, the episode shows that the links between globalization and distribution are subtle and varied, just as was suggested earlier. *First*, globalization did have different effects on factor prices and inequality in different continents: trade raised w/r in Europe and lowered it in the New World, and migration raised w/y in Europe, and lowered it in the New World. This has to be born in mind when inspecting the average inequality trends in *Figure 2*: the dramatic egalitarian trends in some European countries during this period, and the equally dramatic inegalitarian trends in some New World countries at the same time, all of which were intimately linked to globalization, largely cancelled each other out in the aggregate. Thus, a regression of inequality on some measure of globalization which failed to take account of the very different links between the two variables in different continents might well incorrectly conclude that on balance there

was no link between globalization and inequality. *Second*, different dimensions of globalization had different effects on distribution, with migration raising European wages (for example), and capital flows lowering them. *Third*, the impact of a given factor price change on inequality (e.g. a rise in the return to land in land-abundant countries) depended on the distribution of endowments, as the contrast between Burmese or Ghanaian peasants landowners, on the one hand, and Argentine *estancia* owners on the other, makes fairly clear.

4.3 Globalization and Between-Country Inequality

The previous sections have already touched on some themes relevant to the links between globalization and between-country convergence, so this section can be brief. *Figure 2* suggested that between-country inequality rose substantially during the late 19th century, a period of rapid globalization. Moreover, while *relative* factor prices were converging internationally, and while there was absolute factor price convergence within the Atlantic economy, globally there was absolute factor price *divergence*, at least insofar as real wages were concerned. According to WILLIAMSON (1998, Tables 1, 2), real wages in Japan, Burma, India, Indonesia, Taiwan and Thailand all fell further behind British wages during this period, reflecting superior European growth. The question now arises: was globalization responsible?

O'ROURKE and WILLIAMSON (1997, 1999) explore the links between globalization and convergence for a sample of European and New World economies between 1870 and 1913. Their first finding mirrors a late 20th century one: while there may have been divergence for the world as a whole, there was convergence for this smaller sample of rich countries, although it was weak. However, it is the variety of country experiences that really stands out, rather than this general pattern: while some countries, like Ireland and Italy, converged on the leaders of the day (like the US and Britain) at about the expected rate, others (like the Scandinavians) converged much faster than expected, and still others, like the Iberians, did not converge at all.

O'ROURKE and WILLIAMSON then quantify the trade, migration and capital flows shocks which hit these economies during the late 19th century, and calculate the contribution of each of these forces to the patterns of convergence and divergence which the data reveal. In each case, the me-

thodology is the same: calculate the impact of trade, or migration, or capital flows, on real wages in a peripheral country, on the one hand, and in Britain and the US on the other. Infer what the impact of the shock on the real wage gap between core and periphery is, and express this change as a percentage of the total change in the wage gap. Mass migration and international capital flows explained between a third and a half of the Scandinavian catch-up on Britain, and between 48 and 88% of Scandinavia's catch-up on the USA; they explained over two-thirds of the Irish and Italian catch-up on Britain, and all of those two countries' catch-up on the USA. Moreover, the Iberian failure to converge on the leaders can in large part be attributed to their failure to import enough capital and send out enough people.

Globalization thus helped several peripheral European countries converge on the core, while insufficient globalization helps to explain Iberia's failure to converge. The crucial factor was migration, which accounted for some 70% of the total convergence experienced in the Atlantic economy during the period (TAYLOR and WILLIAMSON 1997); trade may have been important for within-country distribution, but it played a much more minor role insofar as between-country distribution was concerned⁹. It seems as though the rising between-country inequality of the late 19th century was *not* due to globalization.

5 Globalization and Inequality in the Late 20th Century

The HECKSCHER-OHLIN model provides a good guide to the late 19th century experience, in which trade was dominated by the exchange of food for manufactures, the two key regions were the Old and New Worlds, and the two key factors of production were land and labour. In the late 20th century context, the debate has often assumed that the two key factors are skilled and unskilled labour, and that the two key regions are the North and South. HECKSCHER-OHLIN logic implies that, under these conditions, globalization should imply rising skill premia and inequality in the North, and falling skill premia and inequality in the South (WOOD 1994).

These predictions have not been born out in practice: for example, although the HECKSCHER-OHLIN predictions were largely vindicated by the East Asian experience of the 1960s and 1970s, skill differentials seem to

9 And, as mentioned, capital flows were actually a force for divergence.

have widened in several Latin American countries following liberalization in the 1980s (ROBBINS 1996; WOOD 1997). Moving away from this small, oft-studied group of countries, the most comprehensive evidence on wage dispersion which we have comes from the ILO's October Surveys, summarised in FREEMAN and OOSTENDORP (2000). Consistent with many other studies, and with HECKSCHER-OHLIN theory, they find sharply rising wage inequality in Britain and the US; however, as many advanced countries saw wage dispersion falling as saw it rising between the mid-1980s and mid-1990s. Moreover, regression analysis found wage differentials actually falling in rich and upper middle income countries during the 1980s and 1990s, and rising in lower middle income countries (as well as former Communist countries): the opposite correlation to what theory would predict.

On the other hand, overall inequality measures have been on the increase in most of the OECD since the 1970s, and particularly from the mid-1980s (BURNIAUX and others 1998). Here again, however, there are exceptions, such as Denmark, Canada and France. The increased inequality is mostly due to widening labour earnings; as LINDERT and WILLIAMSON (2001) point out, if labour earnings are widening but wage differentials are not, then unemployment and hours reduction must be playing a large role in driving overall OECD inequality trends.

Among DCs, the picture is mixed. Inequality has been steadily declining in Latin America from the 1960s, despite what happened to skill differentials during the 1980s (*Table 3*); the patterns in Africa and the Pacific Rim are rather erratic, rising between the 1960s and 1970s, falling through the 1980s, and rising again between the 1980s and 1990s. On the other hand, within-country inequality has been rising in China and India since the mid-1980s, and this should dominate any population-weighted DC inequality index (LINDERT and WILLIAMSON 2001). And again, this rising within-country inequality trend in the South is not what simple 2x2 HECKSCHER-OHLIN models would lead us to expect.

Of course, these trends do not on their own disprove simple trade theory, since distribution is driven by many factors other than globalization. For example, political developments disfavours unions, or the entry of China with its vast reserves of unskilled workers into the world market, or the simultaneous and unrelated introduction of new technology disfavours unskilled workers, might account for the increased Latin wage inequality (WOOD 1997). Alternatively, such factors as demography, educa-

tional developments, democratization, the collapse of Communism, and so on, may have been the most important factors influencing inequality trends. As always, we need multivariate analysis to disentangle these separate effects from each other; it is to such studies that we now turn.

Table 3: Inequality in the late 20th century

	1960s	1970s	1980s	1990s
OECD				
Gini coefficient	34.7	33.6	32.6	33
Q5/Q1 ratio	6.94	6.64	6.2	6.49
No. of countries	12	19	20	13
Africa				
Gini coefficient	45.3	49.8	41.6	46.4
Q5/Q1 ratio	12.2	17.5	9.63	12.88
No. of countries	4	4	11	15
Latin America				
Gini coefficient	53.6	50.4	50.1	50
Q5/Q1 ratio	21.2	17	16.2	13.3
No. of countries	6	12	12	10
Pacific Rim				
Gini coefficient	37.4	39	38.5	39.2
Q5/Q1 ratio	8.28	8.96	7.88	8.14
No. of countries	6	9	10	7

Source: HIGGINS and WILLIAMSON (1999), based on DEININGER and SQUIRE (1996)

5.1 Within-Country Inequality and Globalization: Cross-Country Studies

Since the publication of DEININGER and SQUIRE's (1996) dataset, there has been a proliferation of articles exploring the determinants of late 20th century inequality across countries and over time. Many ask whether there is support for SIMON KUZNETS' (1955) prediction that in the initial stages of growth structural change boosts inequality, while in the later stages inequality moderates. It is, however, the relationship between inequality and openness which concerns us here; and the literature provides ambiguous answers. For example, when HIGGINS and WILLIAMSON (1999) regress inequality on openness (they use the SACHS and WARNER (1995) dummy variable), together with the KUZNETS variables and cohort size, the coefficient has a negative, but insignificant, sign. When, in addition, openness is interacted with dummy variables indicating whether a country is either in the bottom or the top third of the international labour pro-

ductivity distribution, the coefficient on openness becomes negative and significant, while the interaction terms are insignificant. The latter finding suggests that standard STOLPER-SAMUELSON theory is not applicable; the negative effect of openness on inequality suggests that globalization has a benign effect on income equality— but it turns out, however, that the size of this effect is modest.

On the other hand, BARRO (2000), using an expanded version of the DEININGER-SQUIRE data set, and a synthetic openness measure based on regressions of trade share on population, land area and trade policy, finds that openness is *positively* related to inequality. Moreover, an interaction term between openness and GDP per capita is negative and significant: openness raises inequality below per capita incomes of about \$13,000 (1985 US dollars), and lowers it at per capita incomes above that amount. This latter finding is of course at odds with the HECKSCHER-OHLIN prediction regarding trade and skill differentials.

SPILIMBERGO, LONDOÑO and SZÉKELY (1999) provide the empirical analysis of the DEININGER-SQUIRE data set most closely related to HECKSCHER-OHLIN thinking. Factor prices are related to endowments and traded goods prices; the latter depend on world endowments and trade policies. In their empirical specification, inequality is related to country endowments of capital per worker, arable land per worker, and skill intensity, relative to the ‘effective’ world endowment of the factor in question; to these endowment variables interacted with a synthetic trade openness measure; to openness itself; and to income and income squared.

Openness is positively correlated with inequality, although this finding is not robust to the choice of openness measure. Openness increases inequality in skill-abundant countries, consistent with the Anglo-American evidence and with the HECKSCHER-OHLIN model; however, openness reduces inequality in land- and capital-abundant countries, which is inconsistent with the HECKSCHER-OHLIN intuition that trade should increase the returns to land and capital in such countries, and thus raise inequality if these resources are unequally distributed.

In conclusion, the existing cross-country studies leave many questions regarding the links between openness and inequality unanswered. SPILIMBERGO, LONDOÑO and SZÉKELY find that the sign of the effect depends on the choice of openness indicator; and while HIGGINS and WILLIAMSON find that openness is negatively associated with inequality, BARRO finds a

positive association. The results do not seem to be robust to either equation specification or to the choice of openness indicator. Further research clearly seems warranted, although to date the finding that openness has at most a modest impact on inequality (in either direction) seems fairly robust.

Moreover, as O'ROURKE and WILLIAMSON (1999) stress, cross-country regressions can conceal as much as they reveal: the diversity of country experience is as interesting as average correlations. As we have already seen, differing relationships between openness and inequality in different countries may cancel each other out in the aggregate. Furthermore, there are many dimensions of openness, as we saw above, and each may have different effects on income distribution. We need to distinguish between these various dimensions of openness; see to what extent globalization has affected countries along each of these dimensions; and compute the effects of each of these shocks on inequality using well-specified economic models.

5.2 Between-Country Inequality and Globalization

An earlier section argued that there was no causal link between late 19th century globalization and between-country divergence: rather, globalization, and in particular migration, was a force for convergence. Is the same true of the late 20th century? If convergence has indeed replaced divergence since the mid-1980s, could globalization be responsible? In an oft-cited study, BEN-DAVID (1993) shows that there was substantial convergence between the original EEC 6 after 1950 and argues that there is a link between intra-EEC trade liberalisation and this convergence. For example, dispersion between Ireland, the UK and Denmark increased until the mid-1960s, when they started to liberalise *vis-a-vis* each other; dispersion between the three declined after 1973, when they joined the EEC. Turning to the world as a whole, SACHS and WARNER (1995) find that there is a strong tendency to convergence among countries pursuing open trade policies, but not among more closed economies.

However, these arguments are entirely *post hoc ergo propter hoc*. Moreover, BEN-DAVID's argument that post-war convergence must have been due to liberalisation, as there was no convergence prior to 1945, is incorrect, as O'ROURKE and WILLIAMSON (1999, Chapter 2) show, and as RODRIGUEZ and RODRIK (2001) point out. These correlations are fascinating

and suggestive, but we need rigorous model-based analysis if BEN-DAVID's argument is to be made convincingly; especially since SLAUGHTER (2001) finds no relationship between trade liberalization and convergence, using a more sophisticated difference-in-differences analysis¹⁰.

Moreover, the dimension of globalization which had the greatest impact on convergence one hundred years ago was not trade, but labour flows; political reality suggests that mass intercontinental migration will not be allowed to play the same role in the future. Capital flows and technological transfers, operating through trade or FDI (e.g. COE and HELPMAN 1995; KELLER 2001), will have to take up the slack. Work by ALAN TAYLOR on Latin America (e.g. TAYLOR 2000) suggests that capital flows can have a major impact on peripheral economies, where policy allows these to take place; unfortunately, late 20th century capital markets do not seem to have done as good a job at channelling savings towards DCs as their late 19th century counterparts. Ensuring that DCs benefit from these flows will be crucial in ensuring convergence in the future.

Conclusion

What have we learned thus far?

First, globalization can have an important impact on within-country income distribution, and did during the late 19th century. However, for the reasons outlined at the start of the paper, the relationship between globalization and inequality will vary depending on the country being considered, the dimension of globalization involved, and the distribution of endowments. The late 19th century experience illustrates these points very clearly, and there is no reason to suppose that things are different in the 20th century. It follows that searching for average relationships between summary measures of globalization and inequality across countries is a hazardous enterprise: results are likely to be sensitive to the countries chosen and the openness indicator used. In this light, the fact that the cross-country regressions surveyed above have thus far failed to yield robust correlations should come as no surprise.

10 Furthermore, RODRÍGUEZ and RODRIK (2001) have cast doubt on the SACHS-WARNER dummy variable; while it is always possible that countries which pursued open policies shared some other characteristic which made them more likely to converge on the core.

Second, the 19th century evidence indicates that globalization was positively associated with between-country convergence, although the fact that the general world environment is liberal does not ensure that poorer countries will catch up with the rich: for whatever reason, Iberia remained relatively isolated from international factor markets during this period, and paid the price. The late 20th century evidence is, as yet, inconclusive. If globalization is indeed associated with convergence, then why did both the late 19th and late 20th centuries experience so much between-country divergence (at least until the 1980s)? The answer, presumably, is superior technological progress in richer countries: globalization was not the culprit. LUCAS (2000) describes how divergence might coincide with globalization, in the context of a simple general model. The model assumes that countries randomly leave behind a pre-industrial past and embark on modern industrial growth, with the probability that this occurs depending on world income; and that when they do embark on such growth, they catch up on the economic leaders. The latter phenomenon may, as LUCAS suggests, be due to the diffusion of resources or ideas across borders (and, by implication, be positively related to international economic integration). The model predicts a world-wide KUZNETS curve, and the recent papers surveyed above suggest that while we were on the upward slope of the curve until recently, we may now have reached the turning point, and be experiencing convergence.

Third, there are many respects in which we simply do not know enough about these two phenomena, and the relationship between them. *First*, we do not have the commodity price data required to document the evolution of international commodity market integration across the 20th century. If the 19th century can yield such information to diligent scholars, then surely the 20th century can do the same.

Second, we need more information on factor prices, which according to theory are what should be linked to globalization in the first place. Furthermore, we need data not just on different categories of wages, but on the returns to land and capital. It is the availability of such factor price data which has allowed economic historians to clearly uncover the links between international integration and income distribution in the 19th century; aggregate measures of inequality, such as Gini coefficients, are too crude and are influenced by too many different factors for clean relationships to emerge cleanly from the data.

Third, when carrying out cross-country growth regressions, we need to do so in ways more consistent with trade theory. We need to interact our openness indicators with more country-level characteristics, as do SPILIMBERGO, LONDOÑO and SZÉKELY; even more importantly, maybe, we need to enter different openness measures into our regressions, and see if different dimensions of globalization have different effects. It would also be helpful if regressions could be run with factor price ratios on the left hand side, rather than aggregate inequality indicators.

Fourth, we need to supplement cross-country exercises with more country studies, since the impact of globalization on inequality differs so greatly across countries.

Finally, the evidence may provide grounds for some optimism regarding future inequality trends. The rise in inequality over the past 200 years has been mostly due to a rise in between-country inequality, which is now the dominant cause of overall inequality. This trend may now have been reversed; and the 19th century experience (and arguably the late 20th century experience as well) suggests that this decline will be accelerated by increased globalization.

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