Globalization and Inequality, Past and Present

Jeffrey G. Williamson

The late nineteenth and late twentieth centuries shared more than globalization and economic convergence. The trend toward globalization in both centuries was accompanied by changes in the distribution of income as inequality rose in rich countries and fell in poor ones. Between one-third and one-half of the rise in inequality since the 1970s in the United States and other member countries of the Organization of Economic Cooperation and Development (OECD) has been attributed to global economic forces, about the same as a century earlier. It appears that the inequality produced by global economic forces before World War I was responsible in part for the retreat from globalization after the war. What does this retreat imply for the future? Will the world economy once again retreat from globalization as the rich OECD countries come under political pressure to cushion the side effects of rising inequality?

Economic growth after 1850 in the countries that now belong to the Organization for Economic Cooperation and Development (OECD) can be divided into three periods: the late nineteenth century belle epoque, the dark middle years between 1914 and 1950, and the late twentieth century renaissance. The first and last epochs were characterized by rapid growth; economic convergence as poor countries caught up with rich ones; and globalization, marked by trade booms, mass migrations, and huge capital flows. The years from 1914 to 1950 are associated with slow growth, a retreat from globalization, and economic divergence. Thus history offers an unambiguous positive correlation between globalization and convergence. When the pre–World War I years are examined in detail, the correlation turns out to be causal: globalization was *the* critical factor promoting economic convergence (Williamson 1996a).

Because contemporary economists are now debating the impact of the forces of globalization on wage inequality in the OECD countries, the newly liberalized Latin American regimes, and the East Asian "tigers," it is time to

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ask whether the same distributional forces were at work during the late nineteenth century. A body of literature almost a century old argues that immigration hurt American labor and accounted for much of the rise in income inequality from the 1890s to World War I. The decision by a labor-sympathetic Congress to enact immigration quotas shows how important the issue was to the electorate. An even older literature argues that cheap grain exported from the New World eroded land rents in Europe so sharply that landowner-dominated continental parliaments raised tariffs to protect domestic growers from the impact of globalization. But nowhere in this historical literature had anyone constructed data to test three contentious hypotheses with important policy implications:

> *Hypothesis 1:* Inequality rose in resource-rich, labor-scarce countries such as Argentina, Australia, Canada, and the United States. Inequality fell in resource-poor, labor-abundant agrarian economies such as Ireland, Italy, Portugal, Scandinavia, and Spain. Inequality was more stable among the European industrial leaders, including Britain, France, Germany, and the Lowland countries, all of whom fell in between the rich New World and poor Old World.
> *Hypothesis 2:* If the first hypothesis is true, a second follows: these inequality patterns can be explained largely by globalization.
> *Hypothesis 3:* If this second hypothesis holds, then these globalization-induced inequality trends help explain the retreat from globalization between 1913 and 1950.

This article reviews the historical debate about the first globalization boom in the late nineteenth century and attempts to tie it to the current debate about the globalization boom in the late twentieth century. The two debates are strikingly similar. They also share a shortcoming in the empirical analysis: nobody has yet explored this issue with late nineteenth century panel data across poor and rich countries, and, with the important exception of Wood (1994), few have done so for the late twentieth century debate either (Burtless 1995, p. 813). Indeed, until very recently, most economists had focused solely on the American experience. The central contribution of this paper is to explore a database for the late nineteenth century that includes both rich and poor countries or, in the modern vernacular, North and South.

It appears that globalization did contribute to the implosion, deglobalization, and autarkic policies that dominated between 1913 and 1950. Indeed, during these years of trade suppression and binding migration quotas, the connection between globalization and inequality completely disappeared. It took the globalization renaissance of the early 1970s to renew this old debate.

Globalization and Inequality in the Late Twentieth Century

From 1973 through the 1980s, real wages of unskilled workers in the United States fell as a result of declining productivity growth and an increasing disparity in wages paid to workers with different skills (Kosters 1994; Freeman 1996). This difference was manifested primarily by higher wages for workers with advanced schooling and age-related skills. The same trends were apparent elsewhere in the OECD in the 1980s, but the increase in wage gaps was typically far smaller. The widening of wage inequalities coincided with the forces of globalization, both in the form of rising trade and increased immigration, the latter characterized by a decline in the skill levels of migrants (Borjas 1994). Trade as a share of gross national product in the United States increased from 12 percent in 1970 to 25 percent in 1990 (Lawrence and Slaughter 1993), while exports from low-income countries rose from 8 percent of total output in 1965 to 18 percent in 1990 (Richardson 1995, p. 34). These developments coincided with a shift in spending patterns that resulted in large trade deficits in the United States.

The standard Heckscher-Ohlin trade model makes unambiguous predictions: every country exports those products that use abundant and cheap factors of production. Thus a trade boom induced by a drop in tariffs or in transport costs will cause exports and the demand for the cheap factor to boom as well. Globalization in poor countries should favor unskilled labor; globalization in rich countries should favor skilled labor. Lawrence and Slaughter (1993) explored this wage inequality and concluded that there was little evidence to support the standard trade model explanation. Instead, the authors concluded that technological change was an important source of rising wage inequality. Hot debate ensued, with no resolution in sight.

This strand of the debate stressed the evolution of labor demand by skill, ignoring the potential influence of supply. Borjas (1994) and Borjas, Freeman, and Katz (1992) took a different approach, emphasizing instead how trade and immigration augmented the supply of labor in the United States. They first estimated the implicit labor supply embodied in trade flows, since imported goods increase the effective labor supply in the importing country. Similarly, exports imply a decrease in the effective labor supply in the exporting country. In this way, the huge U.S. trade deficit of the 1980s implied a 1.5 percent increase in the labor force, and because most of the imported goods used unskilled labor, it also implied a work force characterized by an increasing ratio of unskilled to skilled labor. Between the 1960s and the 1980s, an increasing proportion of immigrants to the United States were from developing nations, which meant that a far higher fraction were relatively unskilled just when there were more immigrants.

These shifts in the supply of labor produce the desired qualitative result for the purposes of this study—wage inequality between skill types. The quantitative result, at least in George Borjas' (1994) hands, also seems to be large: he estimates that 15 to 25 percent of the relative decline in the wages of high-school graduates compared with those of college graduates is attributable to globalization forces, of which trade accounts for one-third, immigration, two-thirds. He also estimates that 30 to 50 percent of the decline in the wages of high-school dropouts relative to the wages of all other workers is attributable to these same forces. Hatton and Williamson (1995; 1997) show that a century earlier, immigration was a far more dominant influence on U.S. inequality than was trade, and furthermore, that trade and migration influenced relative wages in practically every country involved in the globalization experience.

Thus far the discussion has focused mainly on the United States, perhaps because rising inequality and immigration have been greatest there. But the question is not simply why the demand for unskilled labor in the United States and even Europe was depressed in the 1980s and 1990s (Freeman 1995, p. 19), but whether the same factors were *stimulating* the relative demand for low-skill labor in developing countries. This is where Adrian Wood (1991, 1994, ch. 6; 1995b) enters the debate. Wood was one of the first economists to systematically examine inequality trends across industrial and developing countries.

Wood distinguishes three skill types: uneducated workers, those with a basic education, and the highly educated. The poor South has an abundance of uneducated labor, but the supply of workers with basic skills is growing rapidly. The rich North, of course, is well endowed with highly educated workers; its supply of labor with basic skills is growing slowly. Wood assumes that capital is fairly mobile and that technology is freely available. As trade barriers fall and the South improves its skills through the expansion of basic education, it produces more goods that require only basic skills, while the North produces more high-skill goods. It follows that the ratio of the unskilled to the skilled wage should rise in the South and fall in the North. The tendency toward the relative convergence of factor prices raises the relative wage of workers with a basic education in the South and lowers it in the North, producing rising inequality in the North and falling inequality in the South.

Wood concludes that the decline in the relative wages of less-skilled northern workers is caused by the elimination of trade barriers and the increasing abundance of southern workers with a basic education. He also dismisses skill-using technological change as a potential explanation for rising inequality because labor and total factor productivity growth both slowed during the period. Wood also argues that the pattern of increasing wage inequality in the North favors a trade explanation because there is no cross-country association between inequality trends and technological progress.

Wood's research has met with stiff critical resistance.[1] Since his book appeared in 1994, more has been learned about the link between inequality and globalization in developing countries. Economic theory argues that poor countries should become more egalitarian in the face of globalization, unless demographic or industrial revolution forces offset it. A recent review by Davis (1996) reports the contrary, and a study of seven countries in Latin America and East Asia shows that wage inequality typically did not fall after trade liberalization but rather *rose* (Robbins 1996). This apparent anomaly has been strengthened by other studies, some of which have been rediscovered since Wood's book appeared (Michaely, Papageorgiu, and Choksi 1991). Almost twenty years ago Krueger (1978) studied ten developing countries covering the period through 1972, and her findings were not favorable to the simple predictions of standard trade theory. Her conclusions have been supported by Bourguignon and Morrisson (1991) and by recent work on the impact of Mexican liberalization on wage inequality (Feenstra and Hanson 1995; Feliciano 1996). None of these studies is very attentive to the simultaneous role of emigration from these countries, however, leaving the debate far from resolved.

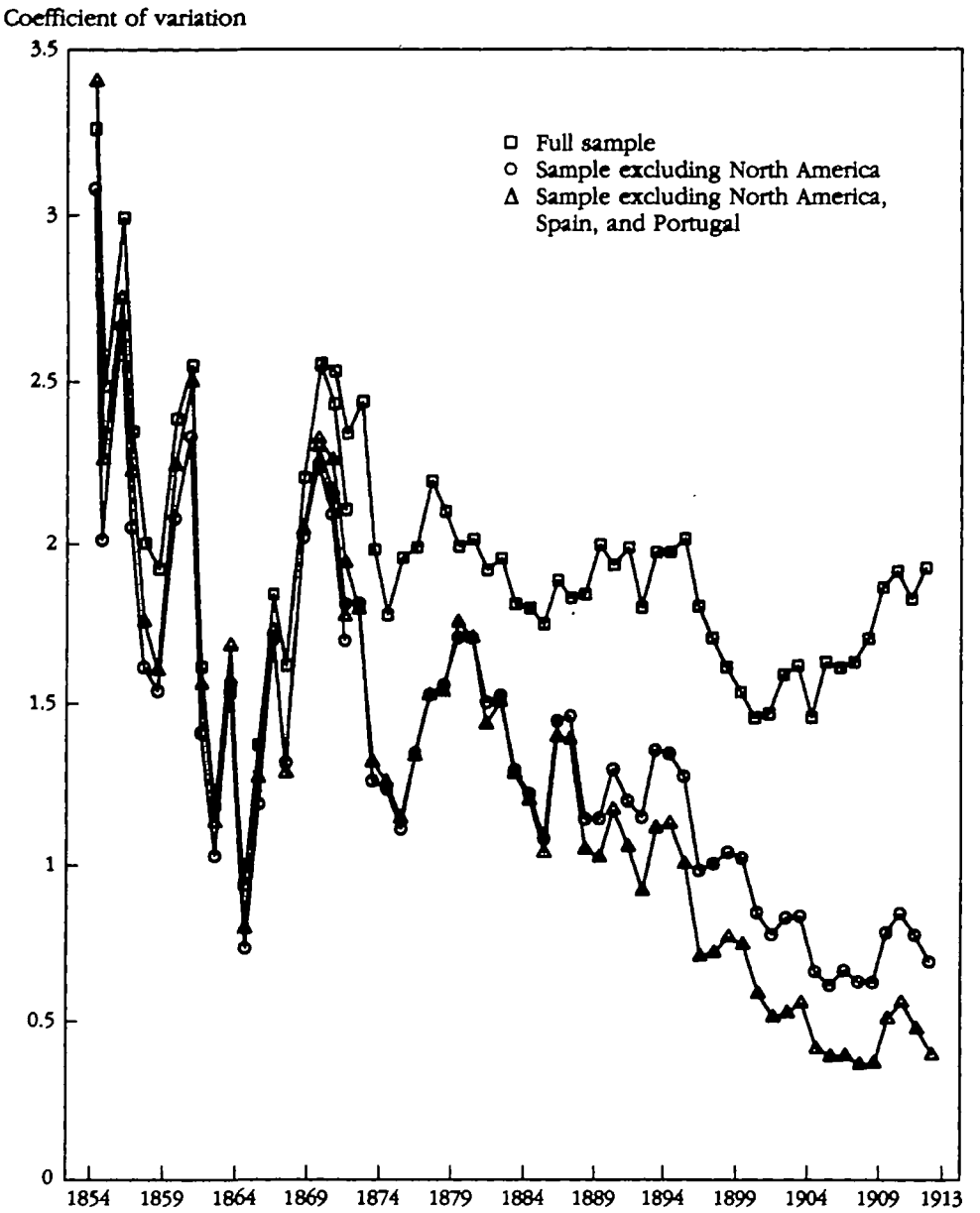
Globalization and Inequality in the Late Nineteenth Century

The spread between real wages from 1854 to 1913 in fifteen countries is shown in figure 1.[2] The downward trend confirms what new-growth theorists call convergence, that is, a narrowing in the economic distance between rich and poor countries. The convergence is more dramatic when America and Canada—which were richer—or when Portugal and Spain—who failed to play the globalization game—are excluded. Convergence of gross domestic product (GDP) per worker hour has been reported elsewhere, based on Maddison's (1991) data. Most of this convergence was the combined result of the trade boom and the prequota mass migrations (Hatton and Williamson 1995; O'Rourke and Williamson 1994, 1995, 1996, and forthcoming; Taylor and Williamson 1997; Williamson 1995, 1996a).

Trade Issues

The late nineteenth century was a period of dramatic integration of commodity markets: railways and steamships lowered transport costs, and Europe moved toward free trade in the wake of the 1860 Cobden-Chevalier treaty. These developments implied large trade-induced price shocks that affected every European participant. The drop in grain prices was the canonical case: wheat prices

Figure 1. *Real Wage Dispersion, 1854–1913*



Note: Wage data are urban, male, purchasing-power-parity adjusted.
Source: Williamson (1996a, figure 1).

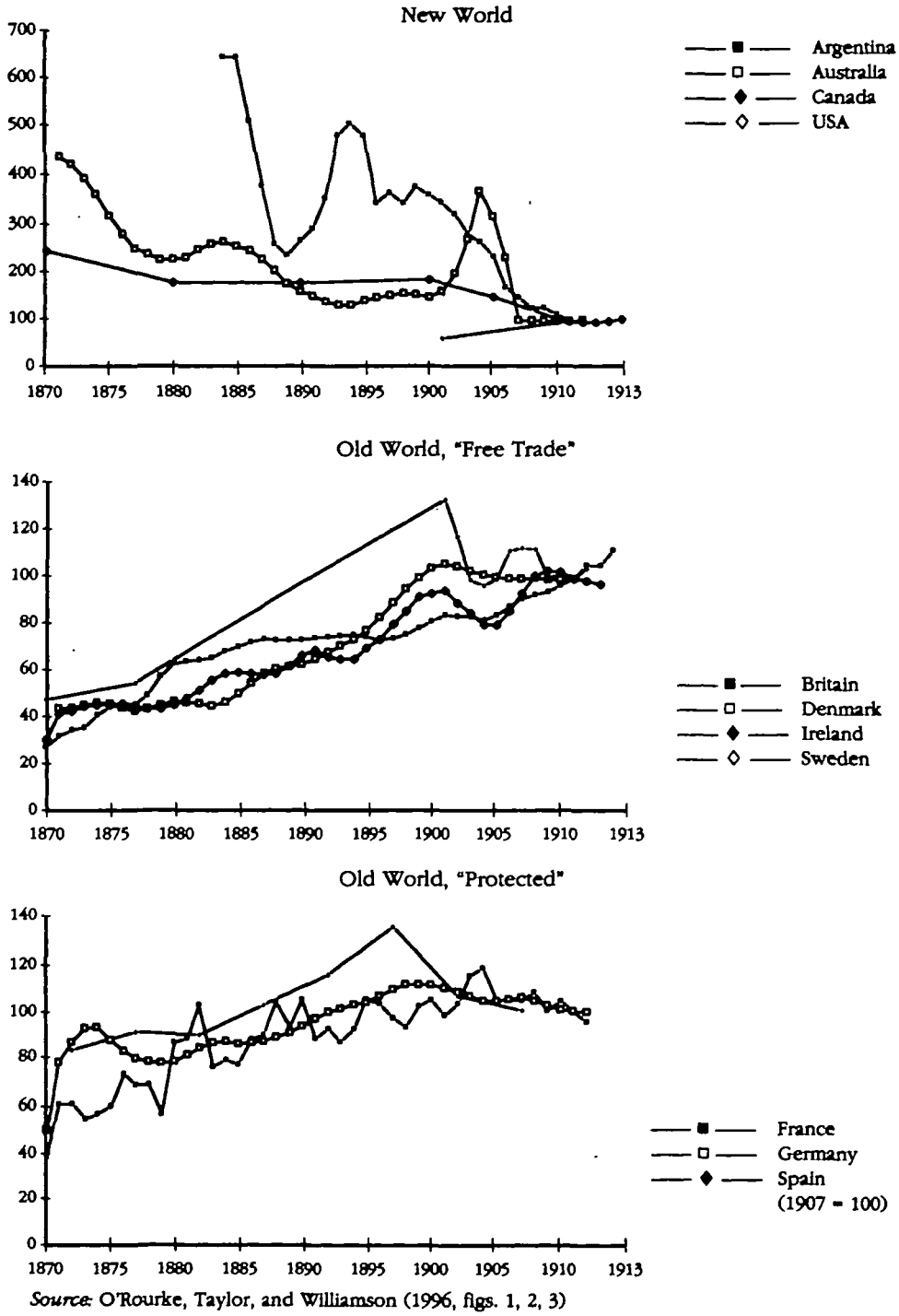
in Liverpool were 60 percent higher than those in Chicago in 1870, for example, but they were less than 15 percent higher in 1912, a decline of forty-five percentage points. The commodity price differential declined by even more when the spread is measured from wheat-growing regions outside of Chicago. Furthermore, prices of all tradables, not just grain, were affected. It should be stressed that these globalization price shocks were *far* larger than those embedded in the infamous 1930 Smoot-Hawley tariff or any other U.S. tariff in the past century.[3] They were also larger than the decline in OECD tariff barriers induced by the General Agreement on Tariffs and Trade after the 1940s, events which triggered the globalization boom of the last quarter century. World Bank studies report that tariffs on manufactures imported by industrial countries fell from 40 percent in the late 1940s to 7 percent in the late 1970s, a drop of thirty-three percentage points. Wood (1994, p. 173) uses this example to advertise just how revolutionary world commodity market integration has been in recent decades, but even this spectacular drop is smaller than the forty-five percentage-point decline in trade barriers between 1870 and 1913 caused by improvements in transport.

The standard trade model argues that, as countries everywhere expand the production and export of goods that use their abundant (and cheap) factors relatively intensively, the resultant market integration would lead to an international convergence of factor prices. Under this theory, then, the late nineteenth century trade boom accounted for 10 to 20 percent of the convergence in GDP per worker hour and in the real wage.[4] It also had distributional implications for poor countries: it meant rising wages for unskilled workers relative to land rents and skilled wages. For rich countries, it meant that unskilled wages fell relative to land rents and skilled wages.

Migration Issues

The correlation between real wages or GDP per worker hour and migration rates is positive and highly significant. The poorest Old World countries tended to have the highest emigration rates, while the richest New World countries tended to have the highest immigration rates. The correlation is not perfect since potential emigrants from poor countries often found the cost of the move too high, and some New World countries restricted inflows of such migrants. But the correlation is still very strong. Furthermore, the effect on the labor force was very important, augmenting the New World labor force by almost 37 percent and reducing the Old World labor force by 18 percent (at least among the emigrant countries around the European periphery), much larger than U.S. experience in the 1980s. One estimate suggests that mass migrations explain about 70 percent of the real wage convergence in the late nineteenth century

Figure 2. *Ratio of Unskilled Wages to Land Values, 1870–1913* (1911 = 100)



Source: O'Rourke, Taylor, and Williamson (1996, figs. 1, 2, 3)

(Williamson 1996a; Taylor and Williamson forthcoming). This estimate, in contrast with the contemporary debate about immigration in the 1980s, which focuses only on immigration into Europe and the United States, includes the total impact on rich receiving countries *and* poor sending countries.

Because the migrants tended to be unskilled, and increasingly so toward the end of the century, they flooded the receiving countries' labor markets at the bottom of the skill ladder. Thus immigration must have lowered unskilled wages relative to those of skilled artisans and educated white-collar workers and relative to land rents. These immigration-induced trends implied increased inequality in rich countries, while emigration-induced trends must have moved in the opposite direction and reduced inequality in poor countries.

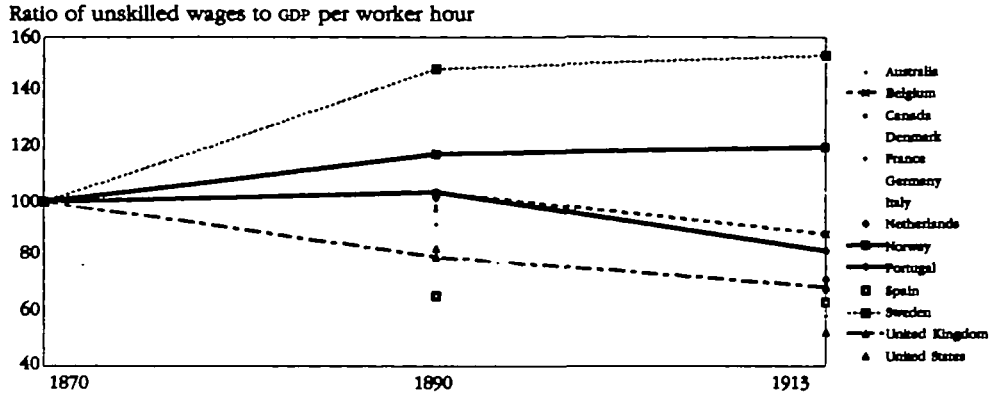
So much for plausible assertions. What were the facts?

Establishing the Facts, 1870–1913

How did the typical unskilled worker near the bottom of the distribution do relative to the typical landowner or capitalist near the top, or even relative to the skilled blue-collar worker and educated white-collar employee near the middle? The debate over inequality in the late twentieth century has fixed on wage inequality, but a century earlier, land and landed interests were far more important sources of income, so they need to be added to the inquiry. (I believe this is true throughout the developing world, certainly its poorer parts.[5]) In any case, two kinds of evidence are available to document nineteenth century inequality trends so defined: the ratio of unskilled wages to farm rents per acre, and the ratio of the unskilled wage to GDP per worker hour.[6] Everyone knows that farm land was abundant and cheap in the New World, while scarce and expensive in the Old World. And labor was scarce and expensive in the New World, while abundant and cheap in the Old World. Thus, the ratio of wage rates to farm rents was high in the New World and low in the Old. What everyone *really* wants to know, however, is how the gap evolved over time: Are the trends consistent with the predictions of the globalization and inequality literature? Was there, in Wood's language, relative factor price convergence in the late-nineteenth century, implying rising inequality in rich countries and declining inequality in poor countries? Figure 2 supplies some affirmative answers.

In the New World the ratio of wage rates to farm rents plunged. By 1913 it had fallen in Australia to a quarter of its 1870 level; in Argentina to a fifth of its mid-1880 level; and in the United States to less than half of its 1870 level. In the Old World the reverse occurred, especially where free trade policies were pursued. In Great Britain the ratio in 1910 had increased by a factor of 2.7 over its 1870 level, while the Irish ratio had increased even more, by a factor of 5.5. The Swedish and Danish ratios had both increased by a factor

Figure 3. *Normalized Inequality Levels, 1870–1913*



Note: Inequality levels are normalized by setting the ratio of unskilled wages to GDP per worker-hour at 1870 = 100.

Source: Williamson (1996b).

of 2.3. The surge was less pronounced in protectionist countries, increasing by a factor of 1.8 in France, 1.4 in Germany, and not at all in Spain.

Because landowners tended to be near the top of the income distribution pyramid,[7] this evidence confirms Hypothesis 1: inequality rose in the rich, labor scarce New World and fell in the poor, labor-abundant Old World. There is also some evidence that globalization mattered: countries that were open to trade absorbed the biggest distributional changes; those that retreated behind tariff walls sustained the smallest distributional changes.

So much for wage-rental ratios. What about the ratio of the unskilled worker's wage (w) to the returns on *all* factors per laborer, or GDP per worker hour (y). Changes in w/y measure changes in the economic distance between the working poor near the bottom of the distribution and the average citizen in the middle of the distribution.

Figure 3 summarizes the wide variance across the fourteen countries in the sample. Powerful Danish and Swedish equality trends establish the upper bound, 1913 = 244 (the index rises above 100); powerful Australian and U.S. *in*equality trends establish the lower bound, 1913 = 53 (the index falls below 100).[8]

An alternative way to standardize these distributional trends is simply to compute the annual percentage change in the index between 1870 and 1913, which ranges from +0.97 and +0.98 for Denmark and Sweden to −1.22 and −1.45 for Australia and the United States. It is plotted against the 1870 real wage in figure 4, and it offers a stunning confirmation of the first hypothesis: Between 1870 and 1913 inequality rose dramatically in rich New World countries such as Australia and the United States; inequality fell dramatically in

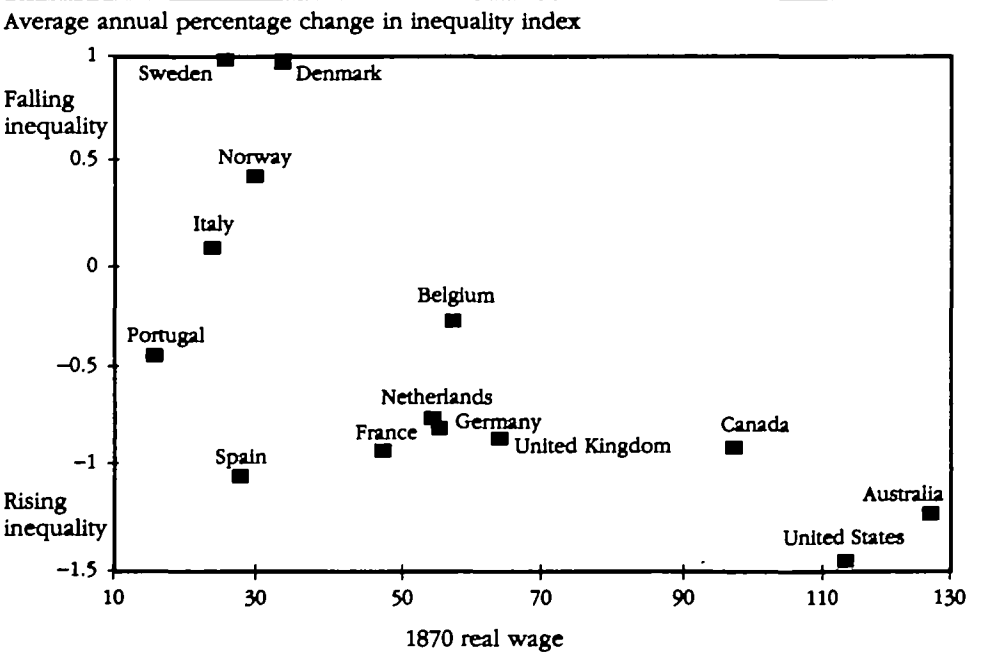
poor, newly industrializing countries such as Norway, Sweden, Denmark, and Italy; inequality fell only modestly in middle-income, industrial economies such as Belgium, France, Germany, the Netherlands, and the United Kingdom.

The Impact of Globalization on Inequality Trends, 1870–1913

Theory suggests that globalization can account for this key stylized fact: In an age of unrestricted international migration, poor countries should have the highest emigration rates and rich countries should have the highest immigration rates; in an age of liberal trade policy, poor countries should export labor-intensive products and rich countries should import labor-intensive products. Theory is one thing: fact is another. What evidence on trade and migration in the late nineteenth century supports this (apparently plausible) globalization hypothesis?

I start with trade effects. There was a retreat from trade liberalism after 1880, and the retreat included France, Germany, Italy, Portugal, and Spain. In the absence of globalization forces, poor labor-abundant countries that protect do-

Figure 4. *Initial Real Wages vs. Inequality Trends, 1870–1913*

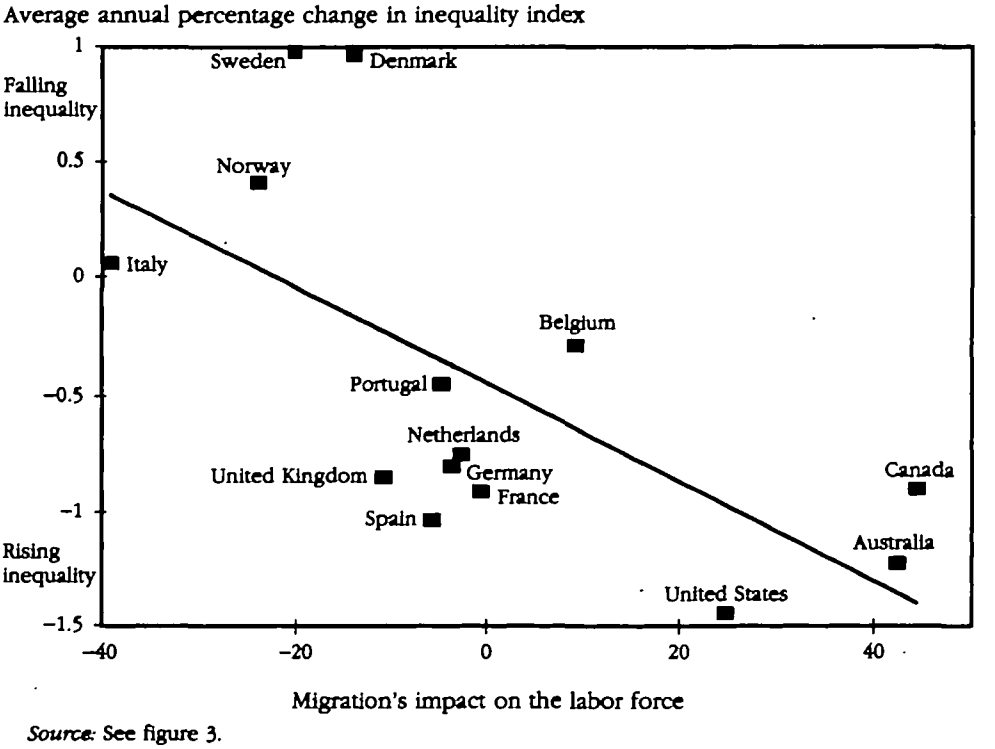


Note: Real wage in 1870 relative to an index where United Kingdom = 100 in 1905.
Source: See figure 3.

mestic industry should raise the returns to scarce factors (such as land) relative to abundant factors (such as unskilled labor). In the face of globalization forces, the same countries should at least mute the rise in the relative scarcity of unskilled labor and thus stem the fall in inequality. The evidence seems to be roughly consistent with these predictions. That is, the correlation between rising inequality and initial labor scarcity turns out to be better for 1870–90—an environment of shared liberal trade polices—than for 1890–1913—an environment of rising protection on the Continent.[9]

I turn next to the impact of mass migration. As indicated above, the impact of mass migration on labor supplies in sending and receiving countries between 1870 and 1910 ranged from 37 percent for three New World destination countries (Canada at 44 percent absorbing the largest supply of immigrant labor) to −18 percent for six poor European sending countries (Italy at −39 percent losing the largest share of its labor supply). Migration's impact on the receiving country's labor force is also known to be highly correlated with an initial scarcity of labor, although not perfectly (Hatton and Williamson 1994). Migration is therefore a prime candidate in accounting for the distribution trends. Figure 5 plots the

Figure 5. *Inequality Trends vs. Migration's Impact on Labor Force, 1870–1913*



Source: See figure 3.

result: where immigration increased the receiving country's labor supply, inequality rose sharply; where emigration reduced the sending country's labor supply, inequality declined.

Unfortunately it is impossible to decompose globalization effects into trade and migration using this information because the correlation between migration's impact and initial labor scarcity is so high. Yet an effort has been made by constructing a trade-globalization-impact variable as the interaction of initial labor scarcity and "openness." The result is that the impact of migration is still powerful, significant, and of the right sign: when immigration rates were small, inegalitarian trends were weak; when emigration rates were big, egalitarian trends were strong; when countries had to accommodate heavy immigration, inegalitarian trends were strong. In the Old World periphery, where labor was most abundant, the more open economies had more egalitarian trends, just as the Heckscher-Ohlin trade model would have predicted. It appears that the open economy tigers of that time enjoyed benign egalitarian effects, while those among them opting for autarky did not. In the Old World industrial core, this effect was far less powerful. It appears that open economy effects on income distribution were ambiguous among the land-scarce industrial leaders in Europe where the farm sector was relatively small.[10] Heckscher and Ohlin would have predicted this result too. In the labor scarce New World, however, the more open economies also had more egalitarian trends, which is certainly *not* what Heckscher and Ohlin would have predicted. The result is not significant, however.

Overall, I read this evidence as strong support for the impact of mass migration on income distribution and as weak support for the role of trade. This empirical exercise explains about two-thirds of the variance in distributional trends across the late nineteenth century. What forces could possibly account for the remaining third, forces that were also highly correlated with initial labor scarcity and GDP per worker-hour? Late twentieth century critics of the globalization thesis have argued that the answer lies with technological change. Lawrence and Slaughter (1993) contend that a skill-using bias in the United States has driven rising inequality. Wood counters that it cannot be so because inequality in the United States and the other OECD countries was on the rise just when the slowdown in productivity was in full swing. Whichever view the reader believes, it is important to remember that we are searching for an explanation that can account simultaneously for falling inequality in the South, rising inequality in the North, and some mixture among the newly industrializing countries in the middle. But is there any reason to believe that technological change should be unskilled labor-saving in rich countries and unskilled labor-using in poor countries?

This issue has been explored at length (O'Rourke, Taylor, and Williamson 1996) using the data on the ratio of wages to land rent shown in figure 2.

Almost by definition, industrial revolutions embody productivity growth that favors industry. Because industrial output makes little use of farmland, industrialization instead raises the relative demands for labor and capital. Industrial revolutions tend, therefore, to raise wages relative to land rents. According to this prediction, more rapid industrialization in Europe than in the New World should also have raised the wage-rental ratio by more in Europe. Such events should have contributed to a convergence in the prices of factors of production, including a rise in real wages in Europe relative to those in the New World. This prediction would be reinforced if productivity advance in the late nineteenth century New World was labor-saving and land-using, as the above hypothesis suggests and as economic historians generally believe (Habakkuk 1962; David 1974; di Tella 1982). The prediction would be further reinforced if productivity advance in the Old World was land-saving and labor-using, as economic historians generally believe.

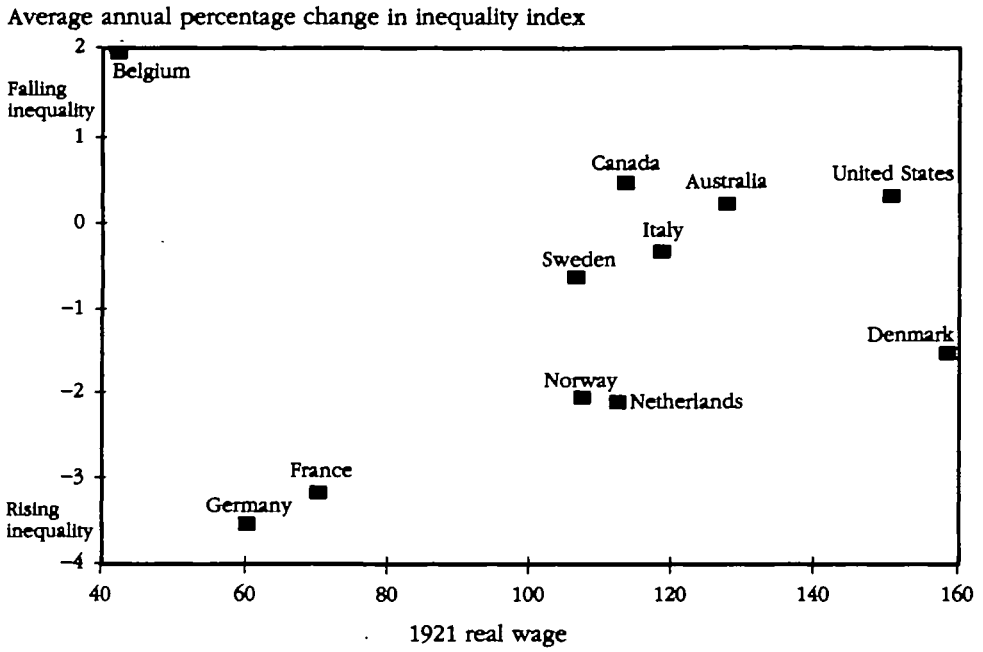
O'Rourke, Taylor, and Williamson's results (1996, table 4) are striking. The combination of changes in land-labor ratios and capital deepening accounted for about 26 percent of the fall in the wage-rental ratio in the New World, but for none of its rise in the Old World. Commodity price convergence and Heckscher-Ohlin effects accounted for about 30 percent of the fall in the New World wage-rental ratio and for about 23 percent of its rise in the Old World. Advances in productivity, as predicted, were labor-saving in the labor-scarce New World and labor-using in the labor-abundant Old World. Labor-saving technologies appear to have accounted for about 39 percent of the drop in the wage-rental ratio in the New World, while labor-intensive technologies accounted for about 51 percent of its rise in the Old World, powerful technological forces indeed.[11] Globalization accounted for more than half of the rising inequality in rich countries and for a little more than a quarter of the falling inequality in poor ones. Technology accounted for about 40 percent of the rising inequality in rich countries in the forty years before World War I, and about 50 percent of the decline in inequality in poor countries.

Establishing the Inequality Facts, 1921–38

What happened after World War I, when quotas were imposed in immigrating countries, capital markets collapsed, and trade barriers rose?

First, wage differentials between countries widened. Some of the differences were war-related, and some were due to the Depression, but even in the 1920s the trend was clear. Second, the connection between inequality and the forces of globalization was broken (see figure 6). Inequality rose more sharply in poorer countries than in richer countries, where in four cases, it actually declined.

Figure 6. *Initial Real Wage vs. Inequality Trends, 1921–1938*



Note: The real wage in 1921 relative to an index where the United Kingdom = 100 in 1927.
Source: See figure 3.

Some Things Never Change

At least two events distinguish the late nineteenth century period of globalization from that of the late twentieth century. First, a decline in inequality seems to have been significant and pervasive in the poor, industrial latecomers in the late nineteenth century sample. This move toward equality has not been universally true of the Latin American and East Asian countries recently studied by other researchers. Second, mass migration appears to have had a more important effect than trade on inequality in the late nineteenth century. Except for the United States, and perhaps West Germany, this phenomenon does not seem to have been true of the late twentieth century, although it should be noted that no economist has assessed the impact of emigration on wages and inequality in Turkey, Mexico, the Philippines, or other developing countries in which net outmigration has been significant over the past quarter century or so.

Some things never change, and that fact implies a warning. Globalization and convergence ceased between 1913 and 1950. It appears that rising inequality in rich countries induced by globalization was responsible, at least in part,

for the interwar retreat from globalization. The connection between globalization and inequality was also broken between World War I and 1950. Rising inequality in the rich countries stopped exactly when immigration was choked off by quotas, global capital markets collapsed, and the international community retreated behind high trade barriers. Are these interwar correlations spurious? The pre–WWI experience suggests not.

Is there a lesson from this history? Will the world economy soon retreat from its commitment to globalization just as it did almost a century ago?

Notes

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1. See, for example, Baldwin and Cain (1994), Bergstrand and others (1994), Bhagwati and Dehejia (1994), Bhagwati and Kosters (1994), Borjas and Ramey (1994), Freeman (1995), Freeman and Katz (1994), Krugman and Venables (1995), Leamer (1994, 1995), Richardson (1995), Wood (1995a, 1995b), and World Bank (1995).

2. Before 1870 the full sample includes Australia, Belgium, Brazil, France, Germany, Great Britain, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden, and the United States. After 1870, the sample includes Argentina, Canada, Denmark, and Italy.

3. The Smoot-Hawley tariff of 1930 is infamous for its alleged contribution to the Great Depression. Yet the *ad valorem* tariff equivalent levels were 42.5 percent under Smoot-Hawley, an increase of only 8 percentage points over the levels implied by the 1922 Tariff Act (Irwin 1995, table 1). A tariff-induced 8-percentage-point increase seems tiny compared with a 45-percentage-point decrease in cost as a result of declining transport charges before World War I—one-sixth the magnitude in fact!

4. Commodity price convergence accounts for about three-tenths of real wage convergence between the United States and Britain during the twenty-five years after 1870 and about one-tenth of the convergence between the United States and Sweden over the four decades after 1870; however, Anglo-American commodity price convergence effects were swamped by other forces after 1895, and they made only a modest contribution to Anglo-Swedish real wage convergence over the four decades as a whole (O'Rourke and Williamson 1994, 1995). O'Rourke, Taylor, and Williamson (1996) turned to econometric analysis of wage-rental trends in seven countries (including Britain and Sweden) to search for the average case. They found that commodity price convergence could explain about a quarter of wage-rental convergence between the New World and the Old World. These estimates are close to the 10–15 percent reported by Richardson (1995, p. 36) for the contribution of trade to rising United States inequality from the 1970s.

5. As far as I am aware, recent studies of the globalization-inequality connection in developing countries focus almost exclusively on wage inequality, and sometimes only on *urban* wage inequality. I think this is a big mistake for countries where rural wage employment is signifi-

cant and where landed interests are powerful. Surely the economic position of landlords and rural labor matters in economies where agriculture is one-fifth, one-quarter, or even one-third of the economy.

6. O'Rourke, Taylor, and Williamson (1996) constructed a panel database documenting the convergence of the ratio of unskilled wages to farm rents per acre among late nineteenth century countries (figure 2): four New World countries—Argentina, Australia, Canada, and the United States; four free-trade Old World countries—Denmark, Great Britain, Ireland, and Sweden; and three protectionist Old World countries—France, Germany, and Spain.

7. This was certainly true of Europe, Argentina, and the American South, but less true for the American Midwest and Canada, where the family farm dominated.

8. The equality index is normalized by setting *w/y* 1870 = 100.

9. In addition, the slope on an estimated inequality–real-wage regression line is far steeper in 1890–1913 without the protected five (France, Germany, Italy, Portugal, and Spain) than with them. We saw the same contrast when comparing wage-rental ratio trends between four Old World countries with free trade and three Old World countries that are protectionist (figure 2).

10. This was *not* true in England during the 1830s when the Corn Laws can be shown to have had inegalitarian implications and thus that repeal had egalitarian implications (Irwin 1988; Williamson 1990; O'Rourke 1994). England had a very different economic structure and mix of political interest groups in the 1830s compared with the 1880s, a half century later.

11. The residual was 5.1 percent for the New World and 27.5 percent for the Old.

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