

International Capital Mobility and the Impact of International Migration: Lessons from Historical Experience¹

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Abstract

This paper was prepared for the conference on “Labour and Capital Flows Following Enlargement” to be held in Warsaw on 30-31 January 2006, and supported by the International Monetary Fund, the Joint Vienna Institute and the National Bank of Poland. This paper provides additional background and detail to support the conference presentation. The paper outlines some historical evidence on the economic effects of immigration and its links to policy. I first examine the relationship between migration and capital flows in the age of mass transatlantic migration before 1914. I then assess the effects of immigration on wages and employment with and without international capital mobility in this and later historical periods. The paper then explores the links between these economic effects and the evolution of immigration policy. It concludes with some comparisons of the effect of immigration in the past and in the present.

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¹ The paper draws heavily on my collaboration with Jeff Williamson, and particularly on material that appeared in our two books (Hatton and Williamson, 1998 and 2005a).

1. Introduction

Assessing the economic effects of immigration is an important issue. One reason is that those effects are likely to feed into policy and hence it is important to know who is affected, and by how much. In democratic countries, where holders of labour have most of the votes, the focus of much research has been to identify the effects of immigration on wage and employment outcomes for non-immigrants. While this has been an important part of the research agenda on current and recent immigration, it has also occupied economic historians interested in the age of mass migration before 1914. Indeed, this period of large transatlantic migration, free of immigration policy barriers, may offer insights for those interested in relaxing policy constraints in the present.

A central focus here is the effect of international capital flows. As is well known, the late nineteenth century was not only a time of free movement of labour but also a time of free capital movements. So it is natural to ask whether international capital flows magnified or attenuated the wage and employment outcomes of international migration.

The rest of the paper is organised as follows. I first explore the correlations between the international movements of labour and capital in what might be called the Greater Atlantic Economy of the late nineteenth century. I then examine some counterfactuals to quantify the effects of migration with and without international capital mobility. This is followed by an overview of the effects of immigration on the labour market, both in the nineteenth century and in some more recent contexts. The historical evolution of immigration policy is then linked to the labour market outcomes of immigration and to the presence or absence of international capital mobility. The paper concludes with some comments about the similarities and differences in the effects of immigration between the late nineteenth century and the present, and their possible implications for immigration policy.

2. Did Capital and Labour Flow in the Same Direction or in Opposite Directions?

In the past, did capital chase labour internationally or did international capital flows move in the opposite direction to international migrants? As we shall see, this has important implications for the effects of migration on sending and receiving economies. The simplest two-factor Heckscher-Ohlin model predicts that the two factors, capital and

labour, should move in opposite directions: capital scarce countries attract capital and labour scarce countries attract labour. The real world is more complicated of course, not least because there may be more factors, specific factors, and differences in technology. If we are interested in the wider consequences of mass migration then it is important to know whether international capital flows mitigate or worsen the effects of migration on key variables such as real wages.

So, did labour and capital flow in the same direction or in opposite directions in the age of mass migration before the First World War? Table 1 compares decade average rates of intercontinental emigration or immigration with the net capital flow from or to the same country. The migration flows (per thousand of the source or receiving country population) are measured gross and they ignore flows within continents. The capital flow data is constructed from balance of payments statistics. As the Table shows, migration inflows were typically accompanied by capital inflows in the economies of the New World. In Europe, the principal sources of foreign investment, the UK and Germany also had major outward flows of migrants, but elsewhere the picture is more mixed. In countries like Sweden and Finland persistent outward flows of migrants were accompanied by persistent inward flows of foreign capital.

It is more appropriate to measure migration net of return migration and to take into account the substantial flows of migrants within Europe, but unfortunately the data is more limited. However it is possible to make such adjustments for a more limited sample for the 1890s and 1900s. The relationship between total net migration and net capital flows is depicted in Figure 1. Again, apart from the New World countries and Britain and Germany in the Old World, the pattern is somewhat mixed. Thus, on balance, the evidence does not support the view that capital and labour flowed in opposite directions across international borders. That might seem to imply that capital flows eased the effects on real wages and other variables that would otherwise be induced by international migration. However, we need to ask a counterfactual question: would immigration countries have received less capital, or exported more capital, if they had also received fewer immigrants?

3. How Much Difference Did Capital Mobility Make?

What were the effects of large-scale immigration flows in the age of mass migration before the First World War? It is important to establish these magnitudes, especially the effects on the real wages of non-immigrant workers, because they relate directly to policy. A question less often asked is what were the effects on the incomes and wages of those who were left behind in the sending countries? Did mass migrations reduce the real wage in receiving countries and increase the real wage in sending countries and if so by how much? And did the process of international migration lead to convergence across countries in wages and living standards? Such estimates are often based on partial equilibrium analysis, but this seems inappropriate for such large international flows that are likely to have had substantial economy-wide effects.

Over the last ten years a number of studies have examined the effects of mass migration using computable general equilibrium models. The effects of migration on real wages for the United States and Great Britain from one such study appear in Table 2 (see Hatton and Williamson, 1998, p.Ch. 9, 10). The underlying structures are multi-sector competitive general equilibrium open economy models that include three factors (labour capital and land). A key characteristic of the models is that land is an input only to agriculture. Agriculture and manufacturing produce tradable goods, with manufactures imperfectly substitutable in international trade, while services are non-traded. These are static models calibrated for a particular date, and the counterfactual exercise is to increase (or reduce) the labour force by the amount contributed by international migration for a period up to that date.

Our calculations indicate that, if there had been no immigration to the US from 1870 to 1910 (from all sources, not just Britain), the 1910 labour force would have been about 27 percent smaller. Similarly, in the absence of emigration from the Britain between 1870 and 1910 (to all destinations, not just the US), the British labour force would have been 16 percent larger than it actually was in 1910.² The counterfactual results are that the US real wage would have been 34.0 percent higher than it actually was

² Here, Great Britain excludes Ireland, which was part of the UK at that time. The counterfactual labour force calculations take account of the differences in participation rates between immigrants (or emigrants) and the respective native populations, which result from the age and sex selectivity of migration. They also take into account contribution to the labour force of the children of migrants. If the children of the migrants are ignored, the US labour force would have been about 18 percent smaller in the absence of immigration and the British labour force would have been about 10 percent larger in the absence of emigration.

in 1910 and the British real wage would have been 12.2 percent lower (Table 2). These results depend largely on the fact that land and labour are held at their actual values in 1910 and there are strong diminishing returns to labour. As a result, the rate of return on capital falls by 23.8 percent in the US and rises by 12.7 percent in Britain.

But what if we allow capital to be perfectly mobile internationally? That amounts to assuming that capital chased labour across the Atlantic, responding to the immigration-induced incipient increase in returns in the US and the emigration-induced incipient fall in returns in Great Britain. If, instead, we hold the rate of return on capital constant then capital flows mitigate the effects of diminishing returns on real wages. As Table 2 shows, this dramatically reduces the effect of migration on real wages. In the absence of immigration the US real wage would be 9.2 percent higher (in an economy that would now have much less capital), and in the absence of emigration the British real wage would be only 6.6 percent lower than it actually was. Although these effects are much smaller, they are still substantial. This is mainly because land, which was a very important factor of production, remains fixed.³

Similar results have been obtained for other countries, notably Ireland. Post-famine Ireland was a poor and largely agricultural country, which experienced massive emigration. Even after the immediate effects of the famine of the 1840s the population continued to fall—from 6.5 million in 1951 to 4.4 million in 1911. At the same time the share of the Irish labour force in agriculture declined, while real wages (both rural and urban) grew more rapidly than almost anywhere else in Europe. On a conservative estimate, the Irish labour force would have been 49 percent higher in 1911 had it not been for the emigration that took place from 1851.⁴ In the absence of emigration, urban real wages would have been 19 percent lower and agricultural wages 16 percent lower (Boyer et al., 1994, p. 235).⁵ But if capital were allowed to flow into Ireland in response to the now larger labour force, the effects on the real wage would be much smaller—a 6 percent

³ For the effects on land rents and the wage rental ratio see O'Rourke et al. (1994). For a wider analysis of wage rental ratios in the Atlantic economy, see O'Rourke and Williamson, (1999).

⁴ This counterfactual estimate of the Irish population in 1911 is described as conservative because it allows for some of the emigrants to be 'replaced' through a higher birth rate (hence less emigration would imply fewer births). If this effect is not allowed to operate then the counterfactual population would be 123 percent higher than the actual level in 1911.

⁵ It is also worth noting that in this counterfactual scenario GNP increases by 42 percent while GDP per capita falls by 5 percent; land rents still rise by as much as 39 percent.

fall in both rural and urban real wages. Again the effects of migration on wages are greatly attenuated in the presence of capital mobility.

In 1870 the average real wage in five New World countries was 108 percent higher than the average wage in 12 Old World countries, but by 1910 that gap had fallen to ‘only’ 85 percent.⁶ There was also some convergence within Europe so that, overall, a 17-country index of dispersion fell by 28 percent between 1870 and 1910. The effects of international migration on real wage dispersion across the 17 Atlantic Economy countries can be seen in Table 3. These counterfactuals are obtained from factor demands derived from a three-factor production function (see Taylor and Williamson, 1997). As Table 3 shows, in the absence of international migration between 1870 and 1910, there would have been divergence rather than convergence: dispersion would have increased by 7 percent rather than decreasing by 28 percent. And most of that fall was due to the gap between the New World and the Old World which would have risen from 108 percent to 128 percent rather than falling from 108 percent to 85 percent.

As in the general equilibrium calculations, these effects are sharply attenuated when capital is allowed to be mobile. In the absence of capital mobility 119 percent of the real wage convergence is ‘explained’ by migration (i.e. migration more than explains the convergence); in the presence of capital mobility only 41 percent is explained by migration. Similar results are observed for the more modest convergence that occurred in GDP per capita and GDP per worker. Migration explains 50 percent of the convergence in GDP per capita with capital immobile but only 19 percent with capital mobile. Thus (not surprisingly) international capital mobility makes an enormous difference to the effect of migration on real wages and GDP per capita.

4. Why the Effects of Immigration are so difficult to Observe

The results outlined above all indicate that immigration reduces real wages in the host country and emigration raises real wages in the origin country. But these estimates depend on the assumptions built into the models. They are not an independent test of the effects of migration on wage rates. In the contemporary literature there has been a long

⁶ The countries are: New World: Argentina, Australia, Brazil, Canada, United States; Old World: Belgium, Denmark, France, Germany, Great Britain, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden.

debate about the effects of immigration on the wages and /or employment rates of non-immigrant workers. Most of the econometric results suggest that the effects of immigration on wages are negligible—in sharp contrast to the effects described above. These studies have been based on the so-called spatial correlations approach, which seeks to find the effects of immigration by correlating wage (or employment rate) changes with immigrant inflows across local areas *within* the receiving country. The debate about the validity of this method is well rehearsed and will only be treated briefly here.⁷

One important critique is that, if there is a national labour market in which non-immigrant workers are mobile across localities, the effect of immigration will not be restricted to the cities or regions where immigrants locate. If in response to immigrant inflows, native workers flow out to other regions (or fewer flow in than otherwise would) then the wage and employment effects will be spread across the entire economy and will not be identified by measuring the relationship between immigration and economic outcomes observed across localities as in the spatial correlations approach. This debate was originally stimulated by the apparent absence of wage and employment effects in Miami following the Mariel boatlift that brought 125,000 Cubans to the city in 1980, adding about 7 percent to its labour force (Card 1990).

Since then there has been a long empirical debate about the possible compensating effects of internal migration. The current state of play is best summarised by two papers, both on the US, that take opposing views. In his analysis of census data, Card (2001) finds little evidence that immigration into major cities caused onward migration. Immigration caused changes in the skill mix but these in turn had little effect on relative wages. By contrast Borjas (2003) estimates the outcomes of immigration for the native born by skill/experience groups at the national level (hence avoiding spatial mobility effects). He finds that immigration reduces the earnings for the same native-born skill/experience group, and hence that the labour demand curve does indeed slope down.

Some additional evidence on the relationship between immigration and onward mobility is offered for panel data on British regions in Table 4. The result indicates that a net immigration 100 foreign citizens into a region reduced net immigration from regions

⁷ For summaries of the relevant literature, see Borjas (1994, 1999) and Hatton and Williamson (2005a), Ch. 14.

elsewhere in Britain by 43. Two lessons may be drawn from this. One is that it is useful to control for demand side variables that determine internal migration. But more importantly, the Table 4 result is just for the six southern regions: those where immigrants make a significant mark on the labour market. When all regions are included the displacement effect becomes much weaker. This is not surprising. For the northern regions immigration flows are very small in comparison with the other shocks to labour supply and labour demand. The greater the size of the immigration shock the clearer is its effect on the labour market.

Did the same internal mobility response apply in the past? Our evidence for the United States suggests that it did. Table 5 gives an estimate of the effects, by decade, of immigration to the Eastern and Midwestern states of the United States. This estimate has a striking correspondence to the contemporary estimate for the UK. It suggests that every 100 immigrants arriving in an Eastern state displaced 40 native-born into other states. An important feature of that era was the great westward migration within the US, which became a mass movement in the late nineteenth century. While most historians see it as a pull from the West, we see it partly as an immigration-induced push from the East. As in the more recent context, it is important to focus on regions and localities where there are large immigration shocks; otherwise the displacement effects will be lost in a myriad of other influences.

If the displacement effect had been one-for-one we would observe no relative labour market effects of immigration in gateway cities and states—even though there may be substantial effects at the national level. But these two studies suggest a displacement coefficient of around 0.4—an effect that is far from fully offsetting. We should still observe *some* imprint of immigration on local wage or employment outcomes. Hence other mechanisms are needed to explain the modest (or zero) effects found in so many studies. Those effects could come from trade in goods or they could come through internal capital mobility. Unfortunately there is little evidence on the latter. However, it seems reasonable to suppose that if capital is fairly mobile between countries, then it would be at least as mobile within countries. If capital mobility attenuates wage effects at the national level then it should be an even more powerful source of adjustment at the local level.

5. The Labour Market Effects of Effects of Big Immigration Shocks

The preceding discussion suggests that we should be looking for big migration shocks in order to clearly discern the effects of immigration (or possibly emigration) on real wages and other variables of interest. And in order to avoid confounding the effects of migration with the causes of migration, they need to be exogenous shocks or ‘natural experiments’. Unfortunately, the age of mass migration before 1914 offers few useful cases to examine. Although migrations were very large they were also very persistent and they were driven largely by economic incentives.⁸

A number of more recent natural experiments have been examined, and these have sometimes been interpreted as supporting the modest-immigration-effects-on-wages school of thought. Yet closer inspection suggests that these widely cited cases illustrate quite large wage effects, especially if we focus on the economy-wide effects rather than on the results of using the spatial correlations approach. The first case is the inflow into metropolitan France from Algeria following the latter’s independence. These immigrants were largely French-born expatriates fleeing the regime change and about 900,000 of them flooded into France during the year 1962, adding 1.9 percent to the population and 1.6 percent to the labour force. Hunt (1992) found that the overall effect was to reduce the real wage by 1.3 percent and to increase the unemployment rate by 0.3 percentage points. Thus, the Algerian immigration shock was sufficiently large to have a clear effect on the French labour market.

Larger still was the influx of Portuguese *retornados* when independence struggles in Angola and Mozambique came to a climax in 1974-6. This caused a spike in net immigration to Portugal that peaked at 40 per thousand in 1975.⁹ The 600,000 Portuguese *retornados* added 7 percent to the Portuguese population over these few years. Carrington and di Lima (1996, p. 344) found that the influx of *retornados* reduced the Portuguese real wage by 5-9 percent for every 10 percent addition to the labour force. The aggregate

⁸ The Great Irish famine might seem like a good natural experiment. However, it was not exogenous to the Irish economy and hence the effects of emigration on Ireland would be hard to distinguish from other effects of the famine. While it might be possible to look at the effect of famine migration on the US economy, data constraints would make this a difficult task.

⁹ It is also worth noting the persistent net out-migration during the guestworker era and the reversal of that trend after the *arbeitsstopp* that ended the era in 1973/4.

effect can be seen in Figure 2 where Portuguese real wages and employment are plotted as ratios to her two closest neighbours, Spain and France. This comparison is complicated by the recession of the mid-1970s, which was particularly severe in Spain, and so the comparison with France may be more informative. The *retornados* were absorbed slowly into employment; in 1981 their unemployment rate was 14 percent compared with 6 percent for other workers. But that difference diminished and, as Figure 2 shows, relative employment rose and the relative real wage fell as the immigrants were gradually absorbed.

Perhaps an even clearer example is the case of Russian Jews moving to Israel when the Soviet Union lifted its restriction on emigration late in 1989. In the decade before 1990 Israel's immigration rate averaged 3.7 per thousand of the Israeli population. In 1990-1 it surged to 35 per thousand and then continued at 10-15 per thousand for the rest of the decade. This immigration shock added 610,000, equivalent to 7 percent of the population, in the first two years, and by the mid-1990s the influx amounted to a million or about 12 percent of the population. The effects on the labour market were equally dramatic: the working age population increased by 8 percent up to 1992 and by 16 percent up to 1997. The aggregate data suggests that this influx left a clear mark on the labour market.¹⁰ Figure 3 plots percentage deviations from logarithmic trends, calculated for the pre-shock period 1980-1989. The labour force was more than 15 percent above trend by the mid-1990s. Employment rose more slowly at first, as the immigrants were absorbed gradually into employment, but by the mid 1990s it was more than 20 percent above trend.¹¹ Relative to its trend, the real wage plunged in the early 1990s and then hovered at about 10 percent below trend for the rest of the decade.

These cases provide clear and decisive evidence that immigration shocks have negative effects on real wages. But what about international capital flows? Did these serve to mitigate the effects on wages that we have observed? For Israel the sudden increase in labour supply reduced the capital to labour ratio and increased the return on capital. As a result, gross investment in machinery and equipment increased from 12

¹⁰ For studies of the economic outcomes of this immigration shock see Friedberg (2001) Cohen and Hsieh (2000) and Eckstein and Cohen (2003)

¹¹ In 1991 the unemployment rate was 37.3 percent among immigrants, compared with 9 percent among non-immigrants. The difference evaporated over the 1990s and by 2000 it was just two percentage points — 10.4 percent for immigrants and 8.4 percent for non-immigrants.

percent of the stock in the 1980s to 19 percent in 1994-6 (Cohen and Hsieh, 2000, p. 19). This accumulation response was financed largely from abroad. As Figure 4 shows, the current account deficit as a percentage of GDP increased by about 8 percentage points between 1990 and 1996. It is reasonable to conclude that in the absence of access to international capital markets adjustment would have been more painful and the wage effects would have been much larger. In contrast, adjustments through induced changes in the composition of output and the structure of trade do not seem to have been important.¹²

6. Why did the International Labour Market Stay so Open for so Long?

I have argued here that large-scale immigration has tended to reduce economy-wide real wages, both in the recent past and in the more distant past. In democratic economies where most of the votes are held by the owners of labour, that might be expected to lead to strong anti immigrant tendencies. That in turn suggests a paradox. Why did the economies that absorbed the mass migrations of the late nineteenth century stay so open to immigration for so long?

The end of the era of free immigration is traditionally seen as the closing of the door by the United States, with the imposition of a literacy test in 1917 followed by the first quota Act in 1921, and further tightening of the quota in 1924 and 1828. As Goldin (1994) puts it:

The American policy of virtually unrestricted immigration was transformed, almost overnight, into a quota system that would last, virtually unchanged, until 1965. The ultimate switch in policy is not hard to explain. The perplexing part of the legislative history of immigration restriction is its timing. More astonishing than the closing of the door in 1921 is that it remained open despite twenty-five years of assault during which 17 million immigrants from among the poorest nations in Europe found refuge in America (1994, p. 223).

Other New World countries were also tightening their immigration controls, with the decisive shifts coming a little later—in the early 1930s.

¹² Although the immigrants were more highly skilled than the natives, no shift in the output composition towards skill intensive sectors took place (Cohen and Hsieh, 2000, p. 15). One reason for this apparently counter-intuitive result is that the Russian immigrants were unable to use their skills effectively because many of the lacked fluency in Hebrew.

How can we explain why immigration controls were not imposed earlier? One part of the answer is suggested by Figure 5. This is an average of an index of the stance of immigration policy for five New World countries (Argentina, Australia, Brazil, Canada, USA). The index for each country varies from +5 (highly restrictive immigration policy) to -5 (strong pro-immigration policy). These indices are based on a variety of measures including such things as limiting the types of immigrants and the rights of immigrants, as well as imposing head taxes, literacy tests and immigration quotas, while on the negative side are measures to encourage immigrants such as subsidised passages and land grants. This index illustrates that restrictive immigration measures were on the rise before 1917—hence there was some hint of a policy backlash even before the quotas. Nevertheless, these measures did little to stem the immigrant tide until the real exclusionary policies were enacted, beginning in the second decade of the twentieth century.

Timmer and Williamson (1998) have examined the determinants of these measures of policy stance for the five countries. They find that policy became more restrictive as the number of immigrants increased, as the wage of unskilled workers fell relative to average income, and as the share of immigrants from ‘poor’ countries increased. They interpret the results as reflecting the downward pressure on real wages, particularly at the lower end of the skill distribution. In addition they find a high degree of persistence in policy, suggesting that policy responded to these forces with fairly long lags. Finally, they suggest that there was some direct policy spillover from one country to another especially from the leader, the United States.

That still leaves the question of why the most draconian policies were so long delayed—despite the accumulation of anti-immigration forces in the late nineteenth century. In the United States a series of bills were presented to congress aiming to restrict immigration by proposing a literacy test. As early as 1897 the vote was very close but the anti-immigration lobby did not finally gain the upper hand until Congress overrode the presidential veto on the literacy test in 1917. Looking across US cities, Goldin (1994) found that wage growth was slower the greater was the growth in the proportion of

immigrants.¹³ She also found that the greater the wage effect, the more likely that the local representative in Congress would vote to restrict immigration (Goldin, 1994, p. 254). The results seem to be consistent with correlates of policy noted by Timmer and Williamson.

The fact that there was a series of very tight votes suggests that it would not have taken very much to tip the balance in favour of restriction, perhaps as early as 1897. That would have required somewhat larger wage effects. The findings outlined above suggest that in the nineteenth century the wage effects of immigration were attenuated by capital mobility. In the absence of capital mobility the wage effects would have been much greater. Although the US had become a (marginal) net capital exporter by the turn of the twentieth century, the stock of foreign investment in the US far exceeded the stock of US investment abroad. In the absence of those cumulative flows the negative effects of immigration on the wage would have been greater. If so, then it seems highly likely that the literacy test would have been imposed twenty years earlier than it was.

What about the other New World countries? The literacy test first introduced in Natal in 1997 was adopted by the newly Federated Australia in 1901 and by Canada in 1910. But quantitative restrictions waited until the 1930s when they were introduced by Australia and South Africa in 1930, followed by New Zealand in 1931, Canada in 1932 and Brazil in 1934. This severe tightening of immigration policies is often seen as a response to the Great Depression, although the latter probably acted as a trigger that unleashed the effects of much longer-term trends. But there is another feature that is usually neglected in the account of immigration policy: these economies continued to be capital importers in the 1920s. In the 1930s, international capital flows dried up completely, and it therefore become much harder to absorb immigrants without substantially reducing the wages of natives.

7. Are there any Lessons for East-West Migration in Europe?

What are the lessons from history? Clearly there are certain strong parallels between the effects of mass migration in the past and in the present. But it is the job of

¹³ This may seem inconsistent with the argument presented earlier that internal migration served to dissipate the effects of immigration on wages across the entire economy. But since the displacement effect is less than one there may still be *some* local effect.

the economic historian to warn against over-simple isomorphisms. Three major differences are worth highlighting--and all stem changes in economic structure that have occurred over the last century.

In the late nineteenth century immigration had significant wage effects even in the presence of capital mobility. The main reason is that at that time land (and natural resources more generally) were a much more important input to aggregate production than they are today. With open capital markets, the less important are non-mobile factors such as land, the smaller should be the wage effects of immigration. Consequently, in destination countries, the policy backlash that arises from wage effects should be smaller today than it was a century ago. On the other hand in the less developed world where land and agriculture loom much larger, emigration is still likely to increase the real wage of those left behind, just as it did in Ireland and elsewhere in Europe in the late nineteenth century.¹⁴

While land has become less important, skills have become more important. And if we think of unskilled emigrants moving from a poorer to a richer country, then skill may be thought of as a country-specific factor just as land was in the nineteenth century. But there is one big difference. Skilled workers have votes and they are now in the majority in most developed countries whereas in the late nineteenth century landowners were in the minority. If skilled and unskilled labour are treated as different factors of production then the evidence suggests that the effect of unskilled immigration on skilled wage rate is ambiguous and most empirical studies find it to be small. Those studies that do find negative wage effects mainly find them in the unskilled segment of the labour market. Hence the negative labour market effects may have less impact on public opinion in aggregate, and therefore on policy, than they did a century ago.

The third change is perhaps the most important for policy, and this concerns the effects of immigration on welfare budgets. A century ago most welfare states were miniscule, but they grew rapidly in the 1930s and by the 1970s welfare spending loomed large in the almost all western economies (Lindert 2004). It is also clear that less skilled immigrants are more likely to be a burden on the welfare state. Thus the average native-born worker in a relatively rich country may be negatively disposed to immigration, not

¹⁴ For evidence of the effect of migration on real wages in Africa, see Hatton and Williamson (2003).

because of the labour market competition (as was the case in the late nineteenth century when the median worker was unskilled), but because of the likely effects on the welfare budget and therefore on his or her tax liability.¹⁵

Such arguments are supported by the evidence on public opinion offered by the ISSP's 1995 module on National Identity. These data have been widely analysed and the results will be treated only briefly here.¹⁶ Table 6 reports the average score for anti-immigration attitudes in the more developed countries in the survey. These scores range from 1 'immigration [to the respondent's country] should be increased a lot', to 5 'immigration should be reduced a lot'. The results show that, on this measure, attitudes in most countries are mildly anti-immigration.

Table 7 presents regression results that have much in common with earlier studies, with the difference that these include country-level variables as well as individual-level variables. Measures of 'patriotism' and 'chauvinism' derived from other attitudinal questions have the expected positive effects, supporting the view that prejudice matters.¹⁷ Other notable results are that second generation immigrants and those with high education (more than a secondary education) are significantly less hostile to immigration than those without these characteristics. The latter result seems consistent with the notion that the more skilled have less to fear from immigration. Thus, just as the owners of land would have been pro-immigration a century ago, the owners of skills are somewhat more pro-immigration today. As stressed, earlier the difference is that the owners of skill command more votes now than the owners of land did a century ago.

The results for the country level variables are more tentative since the list of countries is short. Nevertheless they support the view that the richer and the more unequal the country, the more hostile are attitudes to immigration. Perhaps more important, attitudes are more anti-immigration the more immigrants there are and the larger is the welfare state. One interpretation of these results is that the skill gap between natives and immigrants is greater the richer is the destination country, while the more

¹⁵ It is also important to recognise the limited franchise in many countries before 1914 (see Hatton and Williamson, 2005b)

¹⁶ For more detailed discussion of these data and econometric results using them, see Mayda (2004); O'Rourke and Sinnott (2004).

¹⁷ We follow O'Rourke and Sinnott (2004) in defining these variables. Dustmann and Preston (2000) provide other evidence of prejudice towards certain racial groups using British data.

inequality there is, the poorer are immigrants and the more they are likely to depend on welfare. Furthermore the larger is immigration and the bigger is the welfare state, the more costly this is likely to be for the average voter.

Thus, in a world of capital mobility, the wage effects of immigration are likely to be attenuated and, in a world where skill matters, the skilled have less reason to fear the labour market impacts from (largely unskilled) immigration. In contrast to a century ago, the threat to the public purse has become increasingly important. Even if in reality these fiscal costs are small, they nevertheless loom large in shaping public attitudes to immigration.

8. Conclusion

The main findings of this paper may be summarised as follows:

- The historical evidence suggests that migrants and international capital flows have often moved in the same direction, rather than in opposite directions.
- International capital flows have typically mitigated the effects of international migration on real wages, both in the past and in the present
- Nevertheless immigration had marked wage effects in both eras, notwithstanding the results obtained from the spatial correlations approach.
- In the late nineteenth century capital mobility, by attenuating the impact of immigration on wages, helped to stave off restrictive immigration policy.
- In the present, negative attitudes towards immigration are underpinned not just by the potential wage and employment effects but also by concerns about the potential implications for welfare state expenditures.

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Table 1
Intercontinental Gross Migration and Net Capital Flows, 1860s to 1900s

M=Out-migrants per 1000 population per annum

K=Net capital outflow percent of GDP per annum

		1860s	1870s	1880s	1890s	1900s
Austria -Hungary	M	-	0.29	1.06	1.61	4.76
	K					
Belgium	M	-	-	0.86	0.35	0.61
	K					
British Isles	M	5.18	5.04	7.02	4.38	6.53
	K	3.47	3.79	5.55	2.95	4.56
Denmark	M	-	2.06	3.94	2.23	2.82
	K	0	-0.37	-2.12	-2.56	-2.94
France	M	0.12	0.15	0.31	0.13	0.14
	K	3.45	2.85	-1.80	-0.37	3.33
Germany	M	-	1.47	2.87	1.01	0.45
	K	0	1.43	2.30	1.60	1.32
Netherlands	M	0.59	0.46	1.23	0.5	0.51
	K	6.80	-5.28	2.14	1.80	2.46
Norway	M	5.76	4.73	9.52	4.49	8.33
	K	0	0.08	1.07	-4.46	-4.64
Sweden	M	5.76	4.73	9.52	4.12	4.2
	K	-1.60	-2.06	-4.48	-1.36	-2.89
Switzerland	M		1.3	3.2	1.41	1.39
	K					
Finland	M			1.32	2.32	5.45
	K	-5.48	-6.42	-6.35	-5.65	-5.60
Italy	M		1.05	3.36	5.02	5.69
	K	-2.91	0.12	-1.36	1.65	2.13
Portugal	M	1.9	2.89	3.8	5.08	5.69
	K					
Spain	M			3.62	4.38	5.66
	K	-1.88	-1.03	-0.68	0.72	0.28
Canada	M	-8.32	-5.48	-7.84	-4.88	-16.76
	K	0	-7.31	-7.22	-5.06	-7.58
United States	M	-6.49	-5.46	-8.58	-5.3	-10.2
	K	0	-0.54	-1.15	0.33	0.28
Argentina	M	-9.91	-11.7	-22.17	-16.39	-29.18
	K	0	0	0	-3.72	-4.24
Brazil	M		-2.04	-4.11	-7.23	-3.38
	K					
Australia					-9.08	-16.31
		-16.97	-7.20	-12.17	-7.74	-3.36

Sources: Migration data from Ferenczi and Willcox, (1929) pp.200-1 and 209. Data for balance of payments residual kindly supplied by Alan Taylor (see Taylor, 2002).

Table 2
Counterfactual General Equilibrium Effects of Migration on Real Wages

	Effect on 1890 economy of no migration from 1870 to 1890		Effect on 1910 economy of no migration from 1870 to 1910	
	Capital Immobile	Capital Mobile	Capital Immobile	Capital Mobile
United States	+14.4	+3.7	+34.0	+9.2
Great Britain	-8.8	-4.7	-12.2	-6.6

Source: Hatton and Williamson (1998), p. 212. Counterfactuals use a three-sector open economy computable general equilibrium model for each country. The counterfactual with capital immobile holds the capital stock at its actual value; the counterfactual with capital mobile holds the rate of return on capital constant.

Table 3
Migration and Economic Convergence in the Atlantic Economy, 1870-1910

	Dispersion (1870 =100)		Convergence explained, 1870-1910 (percent of total)	
	Actual, 1910	Counterfactual, 1910	Capital Immobile	Capital Mobile
Real Wages	72	107	119	41
GDP per capita	82	91	50	19
GDP per worker	71	91	72	23

Source: Taylor and Williamson (1997), pp. 40, 42. . The counterfactuals are derived from a three factor production function (labour, capital and land) calibrated for seventeen countries of the Greater Atlantic Economy. The measure of dispersion used is the variance divided by the mean squared. The baseline counterfactuals reproduced here assume that: that the elasticity of factor substitution is 1; that the relative participation migrants to non-migrants is 1.65 and that the effective worker ratio (or relative efficiency) of immigrants to non-immigrants is 0.8.

Table 4
Immigration and Internal Migration: UK Regions by Year, 1981-2000

$$\text{NetMigR}_t = -0.43 \text{NetImR}_{t-1} + 0.44 \text{LogVacs}_t - 0.13 \text{LogUnR}_t + 2.78 \text{LogEarn}_{t-1}$$

(2.1) (2.3) (0.3) (2.4)

$$- 0.83 \text{LogHseP}_t + 0.94 \text{DLogHseP}_t; \text{ Adj } R^2 = 0.92$$

(2.2) (1.7)

Note: ‘t’ statistics in parentheses.

Sample: Balanced panel of region/years. The regions are: Greater London, Rest of the Southeast, East Anglia, East Midlands, West Midlands and South West.

Variable definitions: NetMigR = net migration rate into the region from elsewhere in the UK, per 1000 of the region’s population; NetImR = net immigration from abroad of foreign citizens per 1000 of the region’s population; LogVacs = log of the region’s vacancy inflow rate; LogUnR = Log of the region’s unemployment rate; LogEarn = Log average earnings of full time equivalent workers in the region; LogHseP = log of average house price in the region; ΔLogHseP = change in log house price.

Method: OLS regression; fixed region effects and year dummies included but not reported. Note that, because year dummies are included, this is equivalent to defining the logs of vacancies, unemployment, lagged earnings and house prices as log ratios to the UK mean.

Source: Hatton and Tani (2005: Table 5); further details of the specification and the data are given there.

Table 5
Immigration and Internal Migration: US States by Decade, 1870-1910

$$\text{NetMigR}_t = -0.40 \text{NetImR}_t + 0.44 \text{EmpGrth}_t + 0.16 \text{ShrMf}_t + 0.07 \text{ShrUrb}_t$$

(2.6) (5.2) (0.3) (1.3)

$$- 0.01 \text{Shr15-24}_t + 0.01 \text{LogEarn}_t; R^2 = 0.84$$

(1.5) (0.3)

Note: ‘t’ statistics in parentheses.

Sample: Balanced panel of changes across 14 States by 3 decades. The States are those located in New England, the Mid-Atlantic and East North Central.

Variable definitions: NetMigR = net migration rate into the State from elsewhere in the US between censuses, per 1000 of the region’s population; NetImR = net immigration from foreign born between censuses per 1000 of the region’s population; LogVacs = log of the region’s vacancy inflow rate; LogUnR = Log of the region’s unemployment rate; EmpGrth = Rate of growth of manufacturing employment across the decade; ShrUrb = proportion of population urban at beginning of decade; Shr1524 = share of population aged 15-24 at beginning of decade; LogEarn = real earnings in manufacturing at beginning of decade .

Method: Instrumental variables regression, instrumenting NetImRand EmpGrth; decade dummies included but not reported.

Source: Hatton and Williamson (1998, P. 168); further details of the specification and the data are given there.

Table 6
Attitudes Towards Immigration, 1995/6

Country	Anti-Immigration opinion	No of observations	Country	Anti-Immigration opinion	No of observations
Australia	3.768	2318	Japan	3.373	1000
Austria	3.808	923	Netherlands	3.822	1864
Canada	3.311	1310	New Zealand	3.737	950
Germany	4.270	1630	Norway	3.845	1333
Great Britain	4.060	955	Spain	3.385	1014
Ireland	3.073	919	Sweden	3.970	1132
Italy	4.148	1020	USA	3.880	1090
			All countries	3.770	17458

Source: Based on data from the 1995 International Social Survey (ISSP) module on national identity. These figures are the average attitude towards immigration and imports on a five point scale where respondents were asked whether the number of immigrants/imports into their country should increased a lot (1), increased a little (2), kept the same (3), reduced a little (4), or reduced a lot (5).

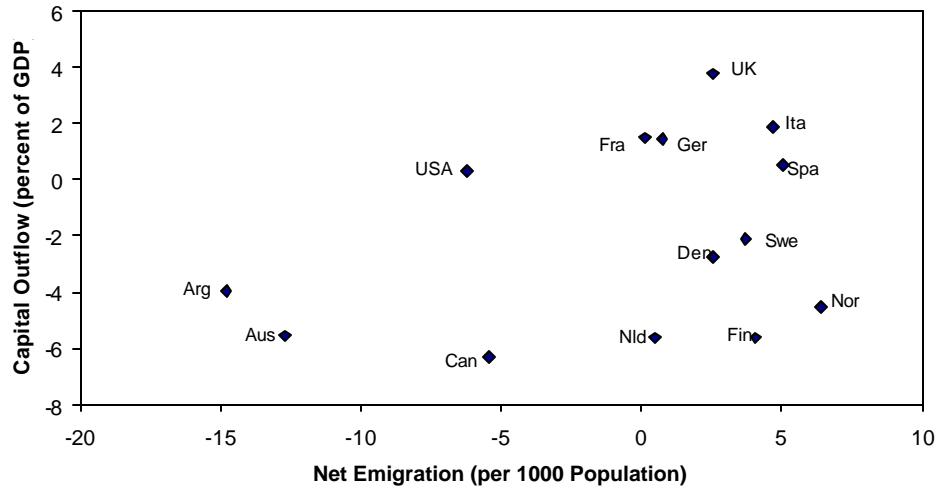
Table 7
The Determinants of Anti-Immigration Attitudes

Explanatory Variable	Coefficient (t-statistic)	Explanatory Variable	Coefficient (t-statistic)
<i>Individual-level variables</i>		<i>Country-level variables</i>	
'Patriotism'	0.055 (1.81)	Log GDP Per Capita	0.692 (2.58)
'Chauvinism'	0.374 (8.23)	Inequality	1.850 (2.26)
Foreign-born	-0.035 (0.32)	Log Population	0.077 (1.51)
2 nd Generation Immigrant	-0.283 (6.21)	Welfare Expenditure /GDP	0.047 (7.26)
Female	0.035 (1.13)	Share of Pop. Foreign	0.044 (3.13)
Age/100	0.009 (0.07)		
Married	0.038 (1.77)		
Highly Educated	-0.219 (7.13)	R ²	0.207
Employed	-0.008 (0.51)	No of obs	14820

Notes: The countries included are those listed in Table 6 above. The number of observations is reduced due to missing data for some of the individual level explanatory variables. t-statistics in parentheses are from robust standard errors clustered by country.

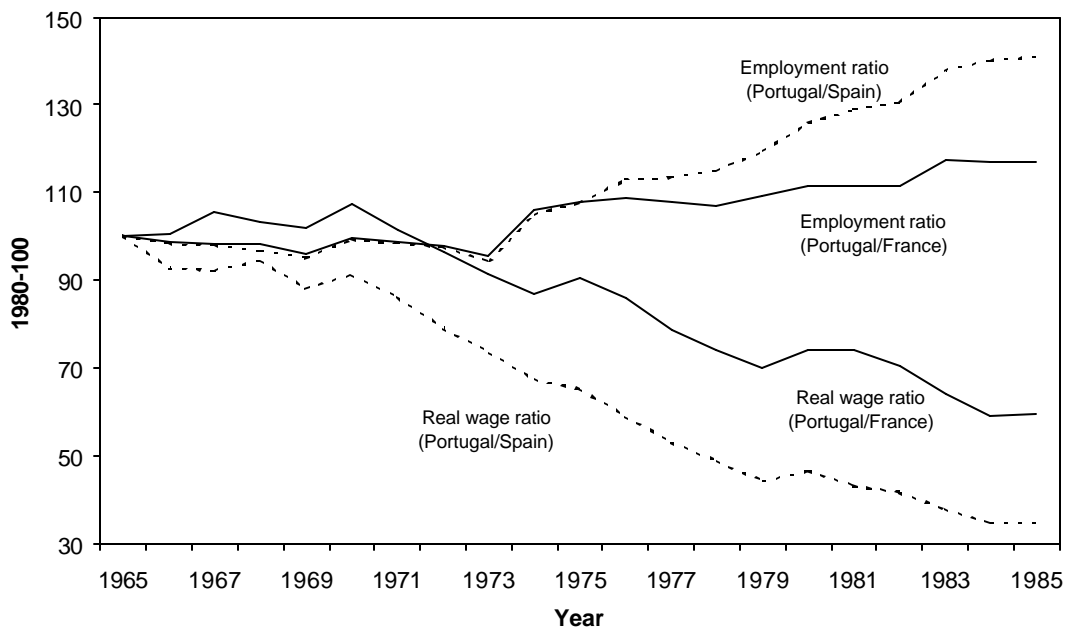
Sources: ISSP survey as Table 6 above. For further details see Hatton and Williamson (2005b)

Figure 1
Emigration and net Capital Flows, 1891-1910



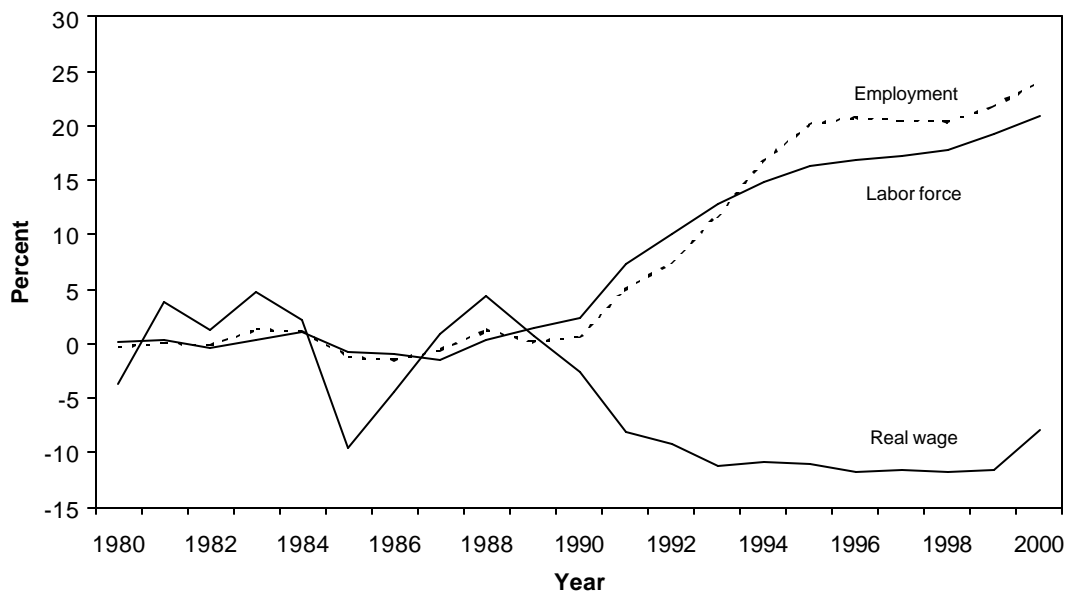
Sources: See notes to Table 1.

Figure 2
Relative Employment and Real Wages in Portugal 1965-1985



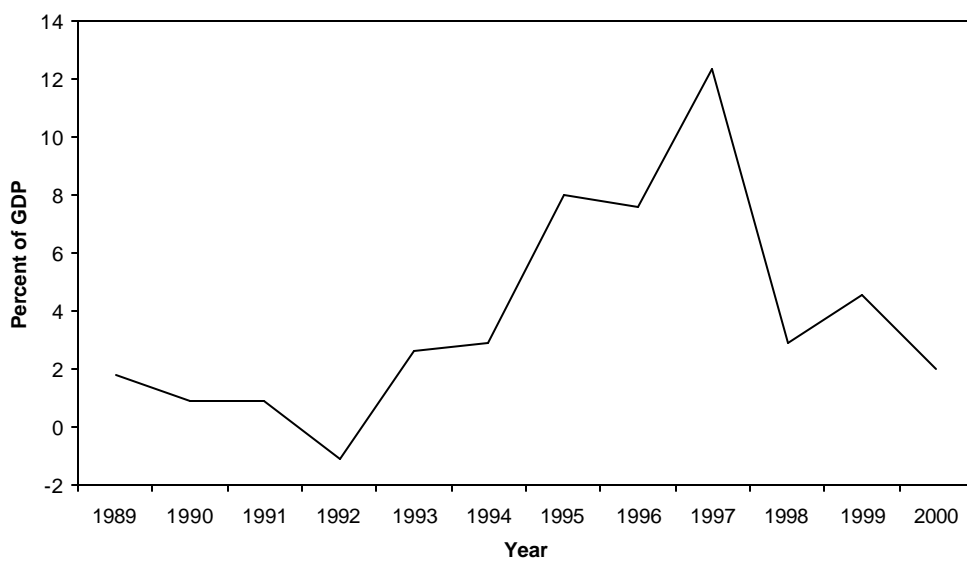
Source: Hatton and Williamson (2005a), p. 304

Figure 3
Labor Supply and the Real Wage in Israel, 1980-2000
 (deviations from 1980-89 trend)



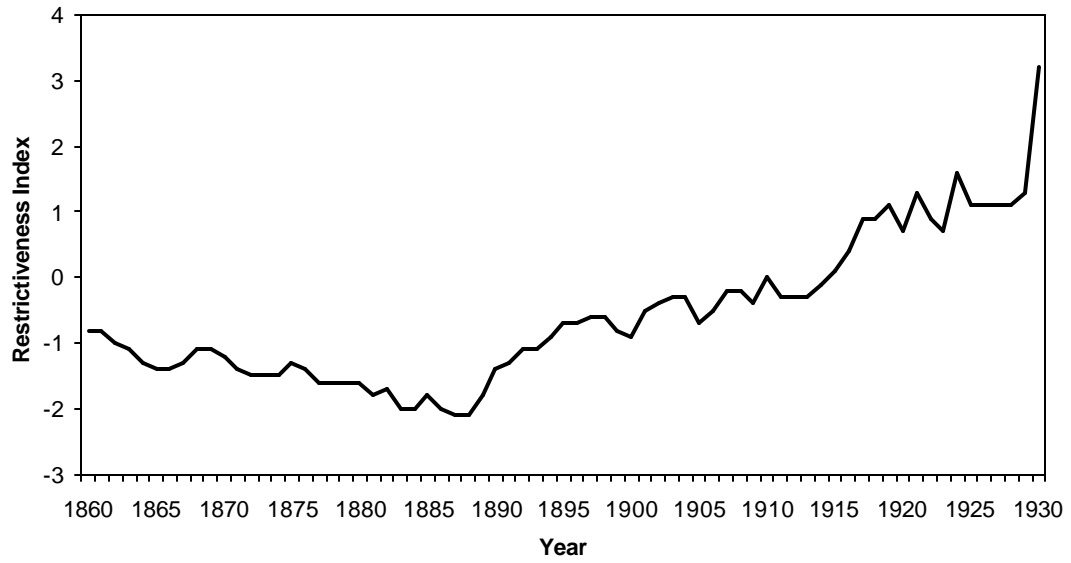
Source: Hatton and Williamson (2005a), p. 300.

Figure 4
Capital Imports to Israel, 1989-2000



Source: <http://www.bankisrael.gov.il/deptdata/mehkar/doch00/eng/app00e.htm>

Figure 5
New World Immigration Policy Index 1860-1930



Source: Hatton and Williamson (2005b).