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WHAT DETERMINES IMMIGRATION'S IMPACT?
COMPARING TWO GLOBALCENTURIES

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ABSTRACT

Can history shed light on the modern debate about immigration's labor market impact in high wage economies? This paper examines the relationship between migration and capital flows in the age of mass migration before 1914, the so-called first global century. It then assesses the effects of immigration on wages and employment with and without international capital mobility in first global century and today, that is, the second global century. The paper then explores the links between these economic relationships and immigration policy. It concludes with an explanation for the apparent difference in immigration's impact in the two global centuries, and thus on policy.

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1. INTRODUCTION

The impact of immigration on native-born workers has been under debate ever since the Irish flooded British cities early in the first industrial revolution. Over the two centuries since then, interest heightened as democracy began to give labor the vote. When labor got the majority of the votes, analysis focused increasingly on identifying the effects of immigration on wage and employment outcomes for non-immigrants, or what we will call here the native-born. While this question has thus become an important part of the research agenda on recent immigration, it has also occupied economic historians interested in the age of mass migration before 1914, or what has come to be called the first global century. Indeed, we think that the first global century -- free of quotas and other policy barriers – often offers clearer insights in to the impact of immigration than does the present global century. When making the comparison between these two global centuries, however, one must take care to control for the state of the world capital market. That is, we need to know whether international capital flows magnifies or attenuates the wage and employment outcomes of international migration. Once we have the answer, we are better armed to make an assessment of immigration's impact conditional on whether we are looking at historical episodes where capital flows freely across borders or not.

The rest of the paper is organized as follows. First, it explores the correlations between the international movements of labor and capital in the late nineteenth century greater Atlantic economy. Next, it poses some counterfactuals to quantify the effects of migration in the presence and absence of international capital mobility. This is followed by an overview of the effects of immigration on the labor market, in both global centuries. The historical evolution of policy is then linked to labor market outcomes of immigration in the presence and 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 implications for immigration policy.

2. DID CAPITAL CHASE LABOR IN THE FIRST GLOBAL CENTURY?

Did capital chase after labor in the past or did it move in the opposite direction? The answer has important implications for the effects of migration on labor markets in sending and receiving economies. The simplest two-factor Heckscher-Ohlin (HO) model predicts that capital and labor should move in opposite directions: capital scarce countries should attract capital and labor scarce countries should attract labor. Of course, the real world is made much more

complicated by the presence of specific factors – like natural resources – as well as by differences in technology.

So, did labor and capital flow in the same or opposite directions in the first global century before World War I? 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, while the capital flows are constructed from balance of payments statistics. As the table shows, migration inflows were typically accompanied by capital inflows in the New World economies. The principal sources of foreign capital, the UK and Germany, also had major outward flows of migrants, but elsewhere in Europe 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.

[Table 1 and Figure 1 about here]

It would be more appropriate to measure population movements *net* of return migration and also to take into account the substantial migrations within Europe, but such data are much scarcer for the first global century. It is, however, possible to make such adjustments for a more limited sample from the 1890s and 1900s. The relationship between total *net* migration and *net* capital flows is depicted in Figure 1. The overseas countries absorbed both capital and labor, and five European nations sent out both (France, Germany, Italy, Spain and the UK), but the other five European countries in the sample sent out labor but not capital (Scandinavia and the Netherlands). While the correlation is hardly perfect, it does appear that capital chased after labor in the first global century. In any case, the evidence certainly does not support the conventional HO prediction that capital and labor flow in opposite directions. Figure 1 also implies that, in the labor scarce overseas economies, capital flows muted any downward pressure on real wages and any upward pressure on unemployment rates among the native-born that would otherwise have been induced by the mass migration. That is, while immigrants augmented labor supplies, capital inflows financed accumulation and thus augmented labor demand.

3. HOW MUCH DIFFERENCE DID CAPITAL MOBILITY MAKE IN THE FIRST GLOBAL CENTURY?

What were the effects of mass migration before World War I? It is important to establish these magnitudes since they relate directly to the evolution of policy at that time. After all, quotas and other immigration restrictions were imposed in all labor scarce overseas economies after the

First World War. Thus, we need to know whether the dramatic policy change was driven by perceptions of immigration's labor market impact.

A question less often asked is how the incomes and wages of those left behind in the sending countries were affected. 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 decade or so, a number of studies have examined the effects of mass migration using computable general equilibrium (CGE) models. The effects of migration on real wages for the United States and Great Britain from one such study appear in Table 2 (Hatton and Williamson 1998: Chps. 9, 10). The calculations use a multi-sector competitive general equilibrium open economy model based on three factors (labor, capital, and land). A key characteristic of the CGE model is that land is specific to agriculture and immobile. Furthermore, the model has three sectors: agriculture and manufacturing produce tradable goods (with manufactures imperfectly substitutable in international markets), while services are non-tradable. The CGE is calibrated for a particular date, and the counterfactual explores the impact of increases (or reductions) in the host country labor force by the amount contributed by international migration for a period up to that date.

[Table 2 about here]

Our calculations indicate that had there been no US immigration from 1870 to 1910 (from any source, not just Britain), the 1910 labor force would have been about 27 percent smaller. Similarly, in the absence of emigration from the Britain between 1870 and 1910 (to any destination, not just the US), the British labor force would have been 16 percent larger than it actually was in 1910.[1] The counterfactual suggests that the US real wage would have been 34 percent higher than it actually was in 1910 and the British real wage would have been about 12 percent lower (Table 2). These results depend largely on the fact that land and capital are held at their actual values in 1910 and that there are strong diminishing returns to labor. As a result, the US rate of return on capital falls by almost 24 percent in the absence of immigration and the British rate rises by almost 13 percent in the absence of emigration.

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[1] Great Britain excluded Ireland. The counterfactual labor 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 labor force of the children of migrants. If the children of the migrants are ignored, the US labor force would have been about 18 percent smaller in the absence of immigration and the British labor force would have been about 10 percent larger in the absence of emigration.

But what if we allow capital to be perfectly mobile between countries? This assumption seems much more plausible than the assumption of world capital immobility made in the previous counterfactual. After all, we have seen (Figure 1) that capital chased after labor across the Atlantic, presumably responding to the immigration-induced increase in US returns and the emigration-induced fall in British returns. Suppose, therefore, we hold the host country rate of return on capital constant,[2] allowing capital flows to mitigate the effects of diminishing returns on real wages. Table 2 shows that capital mobility reduces dramatically the effect of migration on real wages. In the absence of immigration, the US real wage would have been about 9 percent higher (in an economy with much less capital), and in the absence of emigration, the British real wage would have been almost 7 percent lower than it actually was. The effects with capital mobility are much smaller than those without capital mobility, but they are still substantial. This is mainly because land, which was a very important factor of production in the US economy before 1914, remains fixed in the counterfactual.[3]

Similar results have been obtained for other countries. 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 Irish home population continued to fall—from 6.5 million in 1851 to 4.4 million in 1911. At the same time, the share of the Irish labor force in agriculture declined, while real wages (both rural and urban) grew more rapidly than almost anywhere else in Europe. A conservative estimate has it that the Irish labor force would have been 49 percent higher in 1911 had it not been for the emigration that took place after 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 labor force, the effects on the real wage would be much smaller—a 6 percent fall in both rural and urban real wages. Once again, experience from the first global century shows that the effects of migration on wages were greatly attenuated by capital mobility.

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[2] That is, we assume that the US was a price taker in world capital markets: it could get all the financial capital it wanted at the world interest rate.

[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.

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 85 percent.[6] That is, there was some wage convergence between the labor scarce New World and labor abundant Europe. There was also some convergence within Europe so that, overall, a 17-country index of real wage 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 a three-factor production function (Taylor and Williamson 1997). In the absence of the mass migration between 1870 and 1910, there would have been divergence rather than convergence in real wages: dispersion would have increased by 7 percent rather than decreasing by 28 percent (Table 3). Most of that fall was due to the changing gap between the New World and Europe which would have risen from 108 percent to 128 percent rather than falling from 108 percent to 85 percent, a difference of 43 percentage points.

[Table 3 about here]

Once again, 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 obtained 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. In short, international capital mobility in the first global century served to mute the impact of migration on real wages and GDP per capita by quite a bit.

4. WHY ARE THE EFFECTS OF IMMIGRATION SO DIFFICULT TO OBSERVE?

Economic theory and economic history both tell us that immigration reduced real wages in the host country and that emigration raised real wages in the origin country during the first global century. But both depend on the assumptions made in the analysis. We think the same is true of the contemporary literature, in which debate about the effects of immigration on the wages and employment rates of the native-born has been intense. Most modern studies suggest that the effects of immigration on wages are negligible—in sharp contrast to the effects described above for the first global century. These modern studies have been based on the so-called spatial

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

correlations approach, which seeks to isolate the effects of immigration by correlating wage (or employment rate) changes with immigrant inflows across local areas *within* the receiving country. Debate about the validity of this method is well rehearsed and thus will be treated only briefly here.[7]

One important critique of the spatial correlations approach is the following: If there is a national labor 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 move out to other regions (or fewer move in than otherwise) 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 following the Mariel boatlift that brought 125,000 Cubans to Miami in 1980, adding about 7 percent to its labor force (Card 1990). The current state of play in this debate is best summarized by two papers, both on the US, that take opposing views. In his analysis of census data, David Card (2001) finds little evidence that immigration into major cities caused the native-born to move out. Furthermore, he finds that while immigration caused changes in the skill mix, these had little effect on relative wages. In contrast, George 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 labor demand curve does indeed slope downwards to the right.

What support is there for the spatial displacement hypothesis? Table 4 provides some evidence on this issue, here for regions in the United Kingdom between 1982 and 2000. The result indicates that a net immigration of 100 foreign citizens into a region in the south of England reduced net immigration from other British regions by 43. Two lessons may be drawn from Table 4. First, it is essential to control for the demand side variables that determine internal migration when making the immigration impact assessment. Second, and even more important, Table 4 reports results for only the six (booming) southern regions since these were the ones where immigrants left a significant mark on labor markets. When *all* British regions are included, the measured displacement effect is much weaker. This result is hardly surprising since immigration was very small in the north compared with other shocks to labor supply and demand. The greater the size of the immigration shock the clearer is its effect on the labor market.

[Tables 4 and 5 about here]

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

Did the first global century see the same internal mobility response that we see in the second global century? Evidence from the United States suggests that it did. Table 5 gives an estimate of the effects, by decade, of immigration on the eastern and midwestern states. The estimate is strikingly similar to the contemporary estimate for the UK in Table 4. It suggests that for every 100 immigrants arriving in an eastern (gateway) state, 40 native-born were displaced to other states. An important feature of the first global century in the US was its great westward settlement, an internal migration which accelerated as the late nineteenth century progressed. Most historians see this migration as a land-induced pull from the west, while we see it as both pull from the west *and* an immigration-induced push from the east. In any case, whether looking at the past or the present, it is important to focus on regions and localities where there are large immigration shocks; otherwise the displacement effects will be lost in a thick fog of other influences.

If the displacement effect had been one-for-one, we would observe no relative labor market effects of immigration in gateway cities and states *at all*—even though there may have been substantial effects at the national level. But Table 4 and 5 suggest a displacement coefficient of around 0.4, an effect that is far from fully offsetting one-for-one. Thus, 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 mechanisms could come from internal trade in goods or from internal capital mobility. Unfortunately, there is little data available that measures regional capital mobility *within* countries. However, it seems reasonable to suppose that if capital is fairly mobile between countries, then it would be at least as mobile within countries. Since capital mobility attenuates immigration's wage effects at the national level, it should have an even greater attenuating effect at the local level.

5. THE LABOR MARKET EFFECTS OF BIG IMMIGRATION SHOCKS IN THE SECOND GLOBAL CENTURY

The preceding discussion suggests that we should be looking for big migration shocks in order to discern clearly the effects of immigration (or possibly emigration) on real wages, employment and other labor market variables of interest. Furthermore, they must be exogenous shocks or 'natural experiments' in order to avoid confounding migration cause and effect. Unfortunately, the first global century offers few useful cases: although the trans-Atlantic

migrations were very large, they were also driven largely by economic incentives. Thus, they can hardly be viewed as exogenous.[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. Closer inspection, however, suggests that these widely cited cases illustrate quite large wage effects, especially if we focus on the economy-wide estimates rather than those which use the spatial correlations approach. The first natural experiment is offered by 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 France during 1962, adding 1.9 percent to the population and 1.6 percent to the labor force. Jennifer 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 labor market. Indeed, it implies a labor demand elasticity of -1.3/+1.6 = -0.8, quite consistent with other aggregate labor demand elasticity estimates (Hammermesh 1993).

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. William Carrington and Pedro 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 labor force (implying a labor demand elasticity lying between -0.5 and -0.9). The aggregate effect can be seen in Figure 2 where Portuguese real wages and employment are plotted as ratios to her two closest neighbors, 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; even as late as 1981, their unemployment rate was 14 percent compared with 6 percent for other workers. But the gap diminished and, as Figure 2 shows, relative employment rose and the relative real wage fell as the immigrants were gradually absorbed.

[Figures 2, 3 and 4 about here]

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[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 from Portugal during the guestworker era and the reversal of that trend after the *arbeitstopp* in 1973/4.

An even clearer natural experiment is offered by the movement of Russian Jews to Israel when the Soviet Union lifted its restriction on emigration late in 1989. Israel's immigration rate averaged 3.7 per thousand of the population in the decade before 1990. It surged to 35 per thousand in 1990-1 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 labor 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 labor market.[10] Figure 3 plots percentage deviations from logarithmic trends, calculated for the pre-shock period 1980-1989. The labor 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. This implies a labor demand elasticity of -0.67, quite consistent with the estimates for France and Portugal cited above, ranging between -0.5 and -0.9. It is also consistent with the recent Borjas finding that US immigrants do indeed crowd out native-born and that "the labor demand curve *is* downward sloping" (Borjas 2003).).

These cases provide clear and decisive evidence that immigration lowers real wages. But what about international capital flows? Did they serve to mitigate the effects on wages in these modern cases, much like we observe for the first global century? The sudden increase in the Israeli labor supply reduced the capital-labor ratio and increased the return on capital. As a result, gross investment in machinery and equipment increased from 12 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. We conclude that labor market adjustments would have been much more painful and the wage effects would have been much larger in the absence of elastic international capital market responses. In contrast, adjustments

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[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.

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 LABOR MARKET STAY SO OPEN FOR SO LONG?

We have argued that large-scale immigration has tended to reduce economy-wide real wages, both in the recent and more distant past. In democratic economies where most of the votes are held by labor, it might be expected that immigration should generate strong anti-immigrant public opinion. This expectation suggests a paradox. Why did the late nineteenth century labor scarce economies 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 1928. As Claudia 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 also tightened their immigration controls, with the decisive shifts coming a decade later.

Why didn't immigration controls come sooner? Part of the answer is suggested by Figure 5, where we plot an average index of the immigration policy stance among five New World countries (Argentina, Australia, Brazil, Canada, US). The index for each country varies from +5 (strong anti-immigration policy) to -5 (strong pro-immigration policy). These indices are based on a variety of changing conditions like restricting the immigration of certain types of individuals, restricting immigrant rights upon arrival, imposing head taxes, applying literacy tests and immigration quotas, removing subsidies for passage, and no longer offering land grants to immigrants. The index illustrates that restrictive immigration measures were on the rise before 1917; hence, there is plenty of evidence confirming policy backlash even before the quotas.

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[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 them lacked fluency in Hebrew.

Nevertheless, these measures did little to stem the immigrant tide until the tougher exclusionary policies were enacted, beginning in the second decade of the twentieth century.

[Figure 5 about here]

Ashley Timmer and Jeffrey Williamson (1998) have examined the determinants of these measures of policy. They find that immigration 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 and ethnically different 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 it responded to these forces only with fairly long lags. Finally, they suggest that there was some direct policy spillover from one country to another especially from the United States, the big policy leader, to the small policy followers.

Given the accumulation of anti-immigration forces in the late nineteenth century, why were the most restrictive policies delayed so long? A series of bills were presented to US Congress aiming to restrict immigration by requiring that immigrants pass a literacy test. As early as 1897, the House vote favored restriction in the form of the Literacy Act but the anti-immigration Congress was not able to override the presidential veto until 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). Her results seem to be consistent with correlates of policy noted by Timmer and Williamson.

Given that anti-immigrant sentiment was so strong in US Congress, it would not have taken very much to tip the balance in favor of restriction. A collapse in world capital markets during the First World War and the interwar years offered one such 'tipping' trigger: since capital mobility helped mute the impact of immigration on real wages and unemployment, the reduction of capital mobility should have heightened the impact. This 'tipping' trigger is usually neglected in immigration policy accounts of this period. To repeat, most small New World economies were not able to import the same amounts of capital in the 1920s, and international capital flows dried up completely in the 1930s. It therefore became much harder to absorb immigrants without substantially reducing the wages of natives. The Great War offered another 'tipping' trigger, since it heightened some anti-European feelings. The Great Depression offered yet a third 'tipping' trigger, this time for the smaller policy-lagging New World countries. The literacy test

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

first introduced in Natal in 1897 was adopted by the newly Federated Australia in 1901 and by Canada in 1910. But quotas and other restrictions were to wait until the thirties when they were introduced by Australia and South Africa (1930), followed by New Zealand (1931), Canada (1932) and Brazil (1934). This severe tightening of immigration policies is often seen as a direct response to the Great Depression, but we think the latter acted instead as a trigger that unleashed the effects of much more fundamental and longer-term forces.

7. DOES HISTORY OFFER LESSONS FOR TODAY'S IMMIGRATIONS?

We have argued that there are strong parallels between the effects of mass migration in the past and present, but one must guard against unqualified history lessons. Three major differences between the first and the second global centuries suggest caution with lessons of history.

Late nineteenth century immigration had significant wage effects even in the presence of capital mobility. The main reason seems to be that land (and, more generally, natural resources) was a much more important input to aggregate production than it is today. The more open are capital markets, and the less important are immobile factors such as land, the smaller should be the wage effects of immigration. Consequently, the host country 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 poor Europe in the late nineteenth century.[14]

While land has become less important, skills have become more important. And if unskilled migrants (unskilled relative to host country natives) dominate the flow from poorer to richer countries, then skills might be viewed as an immobile factor just as land was in the nineteenth century. But there is one big difference. Skilled workers have votes and they now constitute the majority in most developed countries whereas landowners were in the minority in the late nineteenth century. If skilled and unskilled labor are treated as different factors of production then the evidence suggests that the effect of unskilled immigration on the skilled wage rate is ambiguous and most empirical studies find it to be small. Studies that find negative wage effects mainly find them in the unskilled segment of the labor market. Since the median voter in today's high wage host country is skilled, rather than unskilled – as was true in the first global

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

century, the negative labor market effects may have less impact on public opinion today, and therefore on policy, than they did a century ago.

The third change is perhaps the most important for policy, and this concerns the fiscal impact of immigration. A century ago, state welfare programs were miniscule, but they grew rapidly in the 1930s, and by the 1970s welfare spending loomed large in 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 because of labor market competition (as was the case in the late nineteenth century when the median voter was an unskilled worker), 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 counties 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'. This measure suggests that attitudes in most countries are mildly anti-immigration.

[Tables 6 and 7 about here]

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 were more pro-immigration a century ago (compared to other citizens), the owners of skills are more pro-immigration today (compared with other citizens). As we stressed earlier, the big difference between the two global centuries is that the owners of skills command more votes today than the owners of land did a century ago.

While the list of countries with the relevant data is short, what we do have supports the view that the richer and the more unequal the country, the more hostile are attitudes to immigration. More to the point, attitudes are more anti-immigration the more immigrants there

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[15] It is also important to recognize the limited franchise in many countries before 1914 (Hatton and Williamson 2005b).
[16] For more detailed discussion of these data and econometric results using them, see Mayda (2004), and 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.

are and the larger is the welfare state. The richer and more unequal is the host country, the more likely are poor immigrants to depend on welfare. The larger is immigration and the bigger is the welfare state, the more costly this is likely to be for the average host country voter.

In a world of capital mobility, the wage effects of immigration are attenuated. Since those capital market conditions prevailed both before 1914 and after 1970, they cannot therefore offer an explanation for the more restrictive policies today. In a world where skills matter, voters have less reason to fear the labor market impact from (relatively unskilled) immigration. Here again, this fact cannot therefore offer an explanation for the more restrictive policies today. What does offer an explanation for today's more restrictive immigration policies is the threat to the public purse. Even if these fiscal costs are smaller than the public thinks, the perception still shapes public attitudes towards immigration.[18]

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[18] We have made no mention of racism, patriotism and xenophobia since there is no reason to think that the intensity of these attitudes changed between the two global centuries.

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Table 1

Intercontinental Gross Migration and Net Capital Flows, 1860s to 1900s
M=immigrants per 1000 per annum; K=net capital outflow as 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	M				-9.08	-16.31
	K	-16.97	-7.20	-12.17	-7.74	-3.36

Sources: Migration data from Ferenczi and Willcox (1929: pp. 200-1, 209). Data for the balance of payments residual kindly supplied by Alan Taylor (Taylor 2002). Blanks indicate absence of data, but qualitative evidence suggests trivial flows.

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 (labor, 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, 1982-2000

$\textbf{NetMigR}_t = -0.43\ \textbf{NetImR}_{t\text{-}1} + 0.44\ \textbf{LogVacs}_t - 0.13\ \textbf{LogUnR}_t + 2.78\ \textbf{LogEarn}_{t\text{-}1}$
$\quad\quad\quad\quad\quad (2.1) \quad\quad\quad\quad (2.3) \quad\quad\quad\quad (0.3) \quad\quad\quad\quad (2.4)$

$\quad\quad\quad\quad -0.83\ \textbf{LogHseP}_t + 0.94\ \boldsymbol{\Delta}\textbf{LogHseP}_t; \quad \text{Adj } R^2 = 0.92$
$\quad\quad\quad\quad\ \ (2.2) \quad\quad\quad\quad\ \ (1.7)$

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).

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

$\textbf{NetMigR}_t = -0.40\ \textbf{NetImR}_t + 0.44\ \textbf{EmpGrth}_t + 0.16\ \textbf{ShrMf}_t + 0.07\ \textbf{ShrUrb}_t$
$\quad\quad\quad\quad\quad (2.6) \quad\quad\quad\quad (5.2) \quad\quad\quad\quad (0.3) \quad\quad\quad\quad (1.3)$

$\quad\quad\quad\quad -0.01\ \textbf{Shr15-24}_t + 0.01\ \textbf{LogEarn}_t; \quad R^2 = 0.84$
$\quad\quad\quad\quad\ \ (1.5) \quad\quad\quad\quad\ \ (0.3)$

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; EmpGrth = rate of growth of manufacturing employment across the decade; ShrMf = share of labor force in manufacturing at beginning of 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 NetImR and EmpGrth; decade dummies included but not reported.
Source: Hatton and Williamson (1998: p. 168).

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).
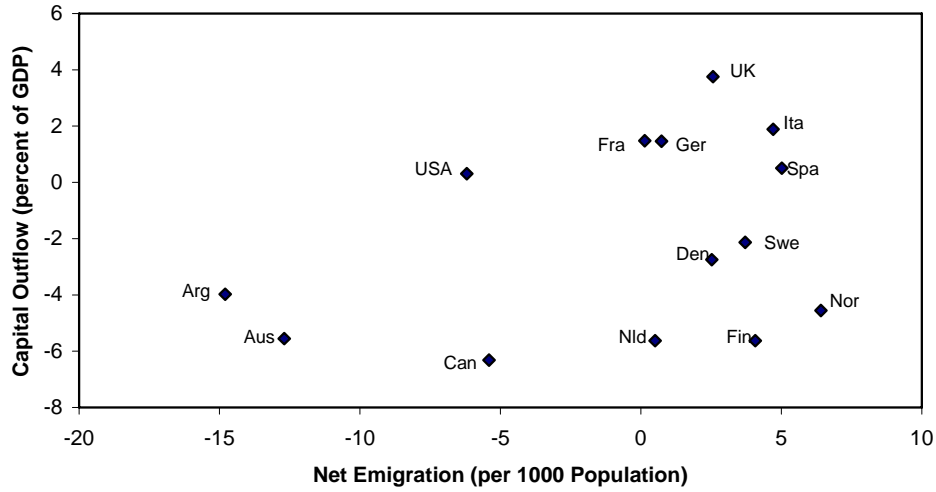
Table 7
The Determinants of Anti-Immigration Attitudes

Explanatory Variable	Coefficient (t-statistic)	Explanatory Variable	Coefficient (t-statistic)
Individual-level variables		*Country-level variables*	
'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)
2nd 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.
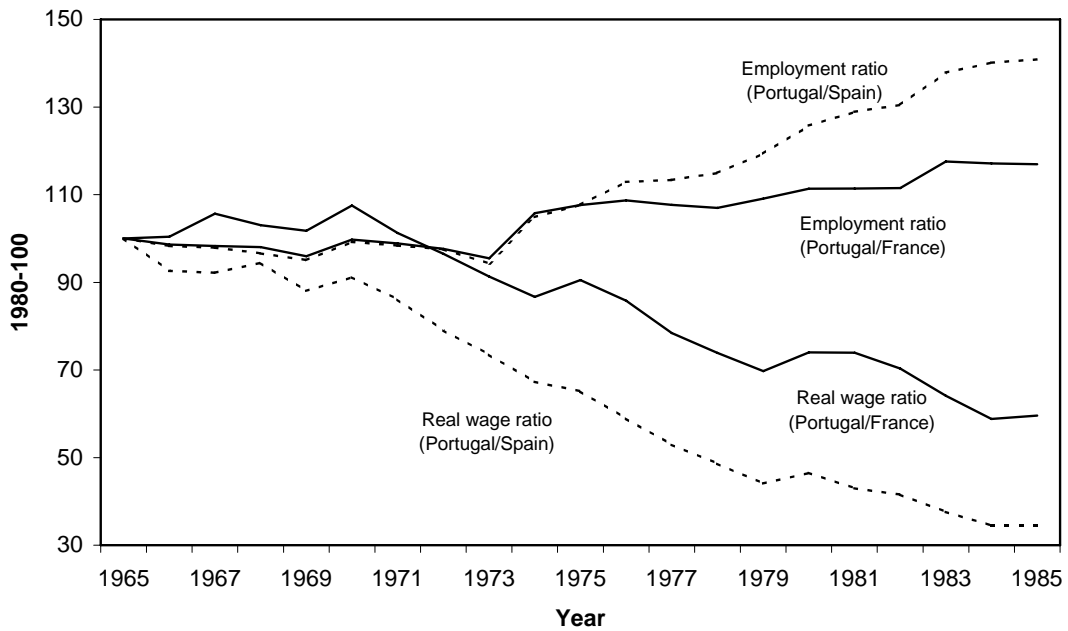*Sources*: ISSP survey as Table 6 above. Hatton and Williamson (2005b).
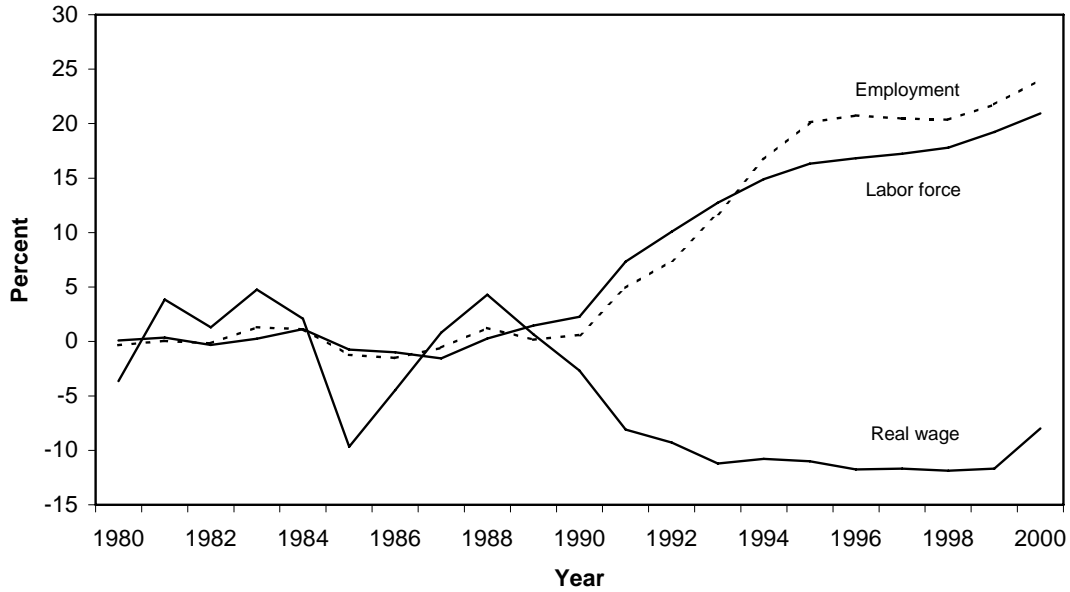
Figure 1
Emigration and net Capital Flows, 1891-1910

Sources: See notes to Table 1.

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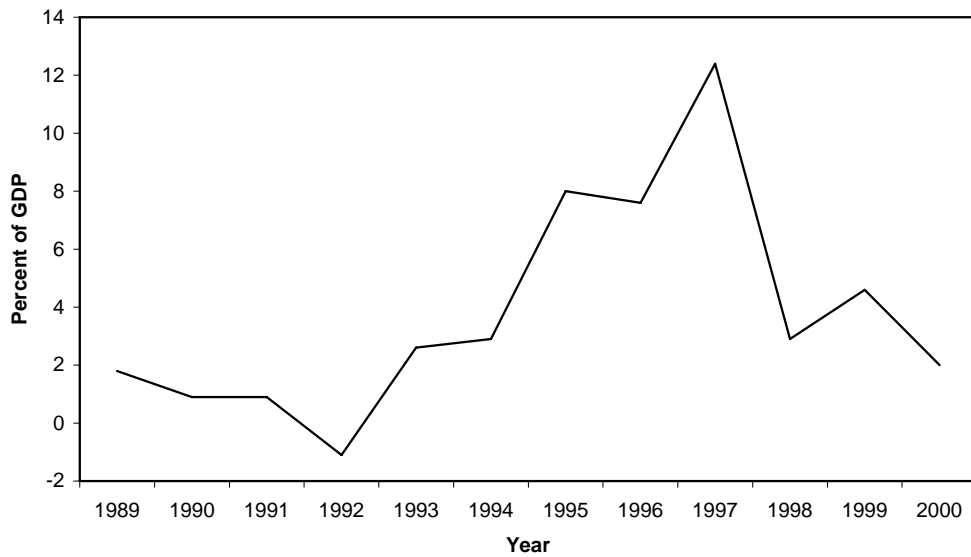**Relative Employment and Real Wages in Portugal 1965-1985**

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

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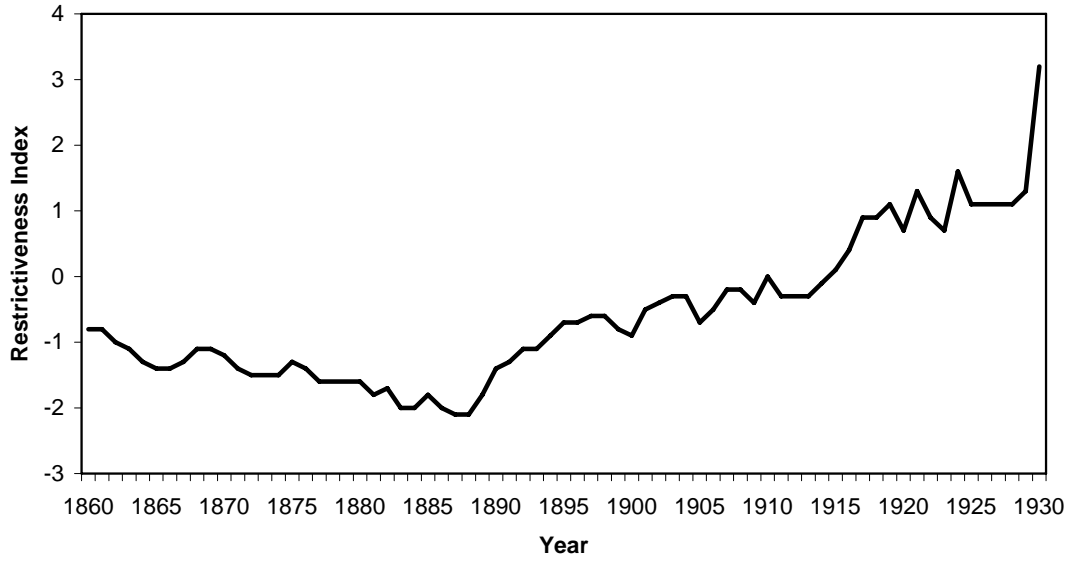(deviations from 1980-89 trend)

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).