Real Wages and Relative Factor Prices in the Third World 1820-1940: The Mediterranean Basin

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Abstract

By 1914, there were very big economic gaps between the European industrial core and countries around the Mediterranean Basin. When did the gaps appear? Can they be explained by lags in the diffusion of the industrial revolution after 1770, or did the gaps appear much earlier? What about the first great globalization boom after about 1870? Which countries in the Mediterranean Basin started catching up, which fell further behind, and which held their own? What role did globalization and demographic forces play? Conventional quantitative evidence, like Agnus Maddison's GDP data, is often too incomplete to confront these central questions. In an effort to suggest a new research agenda for the region, this essay uses a new data base on real wages and relative factor prices for six of the major regions around the basin -- Portugal, Spain, Italy (North and South), the Balkans, Turkey and Egypt.

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Convergence and Divergence before World War I

Two important features of the world economy since 1970 also characterized the economy in the late 19th century. First, there was rapid globalization a century ago too: capital and labor flowed across national frontiers in unprecedented quantities, and commodity trade boomed as transport costs dropped sharply. Second, the late 19th century underwent an impressive convergence in living standards, at least within most of what we would now call the OECD club, but what historians call the Atlantic economy. Poor countries around the European periphery tended to grow faster than the rich industrial leaders at the European center, and often even faster than the richer countries overseas in the New World. This club excluded most of the Third World and eastern Europe, and even around this limited periphery there were some who failed to catch up. Nonetheless, convergence dominated.

It was not always that way: divergence was the case earlier. The Atlantic economy in the first half of the previous century was characterized by high tariffs, modest commodity trade, no mass migrations, and an underdeveloped global capital market. Two profound shocks occurred in this environment still hostile to liberal globalization policy: early industrialization in Britain which then spread to a few countries on the European continent; and resource "discovery" in the New World, set in motion by sharply declining transport costs linking overseas suppliers to European markets, so much so that real freight rates fell by an enormous 1.5 percent per annum between 1840 and 1910 (O'Rourke and Williamson, 1998, ch. 3). These two shocks triggered a divergence in real wages and living standards across the Atlantic economy that lasted until the middle of the century (Williamson 1996).[1]

Figure 1 shows that the striking convergence which started in mid-century continued up to 1914: a plot of the dispersion of real wages is given there, documenting what the modern macro economists call

[1] Robert Allen (1998a, 1998b) argues that the divergence within Europe started much earlier. This evidence will be discussed below.

beta-convergence. The line with the diamonds on the upper left of Figure 1 is based on a 13-country Atlantic economy sample including Australia, Belgium, Brazil, France, Germany, Great Britain, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden and the United States. The dashed line in Figure 1 documents convergence for an expanded 17-country Atlantic economy sample, now including in addition Argentina, Canada, Denmark and Italy. This measure shows the convergence tide ebbing around 1900. If we exclude Canada and the United States, two "exceptional" rich countries which bucked the convergence tide, convergence continues rapidly up to 1914 (the 15-country sample plotted with the triangles). If we exclude in addition two Mediterranean Basin countries which failed, Portugal and Spain, convergence up to 1914 is faster still (the 13-country sample plotted with the squares).

The western Mediterranean Basin did very badly during this age of convergence, as Gabriel Tortella (1994) has recently summarized so well. Spain and Portugal fell far behind the growth rates recorded in the rest of the European periphery, defined here to include Denmark, Ireland, Italy, Norway, Portugal, Spain and Sweden. Real wages crawled upwards at only about 0.4 percent a year in Iberia, while they surged at almost 2.3 percent per year elsewhere around the periphery (O'Rourke and Williamson 1997, Table 2). Thus, workers in Spain and Portugal missed out on the first great growth and convergence boom. A wide growth gap also appears for real GDP per capita (Maddison 1995), which averaged 0.9 percent per annum for Spain and Portugal and 1.42 percent per annum elsewhere around the periphery, but note that the growth gap was much bigger for wages than for GDP per capita, implying that Iberian workers suffered the most.[2] Italy in the central Mediterranean did somewhat better, but even that performance fell below the average for the periphery. Italian real wage growth was 1.7 percent per year, below the 2.3 percent achieved everywhere else around the non-Iberian periphery, while the real GDP per worker rates were 1.3 versus 1.7. Furthermore, the really impressive growth in Italy was up

[2] Standard trade theory makes the prediction that factor prices converge (or diverge) far faster than does GDP per capita or GDP per worker. See the next section.

North in the industrial triangle, the South lagging far behind.

So it seems that the western Mediterranean failed to share in the late 19th century Atlantic economy's growth and convergence, and that the center only shared in part of it. What about the eastern Mediterranean? How did the Balkans do? What about the shrinking Ottoman Empire, the core that eventually became modern Turkey? What about Egypt? Did communities around the Mediterranean Basin undergo very different growth experience? And if so, why?

These are the questions that motivate half of this essay. They are in the tradition of W. Arthur Lewis who posed with such clarity the question as to whether the core pulled the periphery along during this first great globalization boom (Lewis 1969, 1978a, 1978b). It was he, together with Alexander Gerschenkron (1952), who first tried to break economic history's tenacious fixation on the industrial leaders, Lewis focusing on the Third World and Gerschenkron on European late comers like Italy and eastern Europe.

The other half of this essay asks when the great divide between the North and South first appeared. By the end of our period, there were huge gaps in living standards and GDP per capita between the agrarian Mediterranean Basin and the industrial northwest of Europe. When did the great divide open up? During the late 19th century growth boom? During the first industrial revolutionary decades between 1780 and 1850? Even before? And what are the explanations? The timing and location of industrial revolutions, population growth, globalization, the collapse of efficient political systems, or all of the above?

These are not questions that could have been attacked very well even only two decades ago since the data had not been gathered in such a way as to make these comparative judgments possible. Now we have enough to make some real progress, although it will have to wait for another paper: this one dwells instead on the new factor price and living standard data, and the agenda for the Mediterranean Basin they suggest.

Convergence and Divergence of What?

Most economists who have written about the comparative growth of nations have used GDP per capita or per worker to measure catching up and convergence. This and other essays of mine favor instead real wage rates (purchasing-power-parity adjusted, and typically for urban unskilled workers). I can think of at least four good reasons why it is a mistake for the convergence debate to have ignored wages and other factor prices, especially for the previous century and earlier.

First, the pre-WWI real wage data are of far better quality than the GDP data, and they are certainly available for a wider sample. Indeed, Angus Maddison (1995) is able to document real GDP per capita starting only with 1900 for Egypt and 1913 for both Yugoslavia and Turkey. Even when Maddison's data are available for countries around the Mediterranean, there are enormous gaps in the time series: for example, the Italian series leaps from 1820 to 1870 and the Spanish from 1820 to 1850. As this essay will show, real wages for northern and southern Italy can be documented from 1500, Spain from 1500, Turkey from 1527, Portugal from 1850, Egypt from 1858, and the Balkans from 1867. Furthermore, these time series are typically available annually, so that epochs and major turning points can be identified with much greater clarity.

Second, income distribution matters, and wage rates (especially when combined with other factor prices) offer a window to look in on distribution issues. Real people earn wages or skill premia or profits or rents, not that statistical artifact known as GDP per capita. GDP per worker hour may sound like a good measure of aggregate productivity, but surely the living standards of ordinary workers as captured by real wages are a better indicator of the economic well-being of the vast majority in any society. By averaging all incomes, macro economists (and economic historians that mimic them) throw away

valuable information.

Third, factor price movements help us understand the sources of convergence or divergence. For example, productivity catch-up in a poor country is more likely to increase all factor prices equally than is mass emigration (easing population pressure on the land) or an export boom for agricultural products (increasing the demand for land). The open economy forces which were important in driving late 19th century convergence -- trade, migration and capital flows -- operated directly on factor prices, and thus only indirectly on GDP per capita.[3] An exclusive focus on GDP per capita misses most of the story.

Fourth, and possibly most important, economic change nearly always involves winners and losers, a fact which is crucial in accounting for the evolution of policy and the survival of empires. Changes that would increase GDP per capita but would also cause losses to some politically powerful group are often successfully resisted, and examining the behavior of factor prices is a good way to start the search for the sources of such political resistance.

The Real Wage Hierarchy Around the Turn of the Century

Table 1 puts together two sets of estimates of the real wage structure around the Mediterranean and between it and the European industrial leader, Britain. The assessment is made around the turn of the century. Panel A offers some estimates from three parts of the Balkans as well as a weighted average of the three regions that made up the much-diminished Ottoman Empire at that time. The Balkan estimates are taken from Ljuben Berov (1978) while the Ottoman estimates are taken from Korkut Boratav, Gunduz Okcun and Sevket Pamuk (1985). All of the estimates in Panel A calculate urban wages from this part of the Mediterranean relative to urban wages in Britain. More importantly, all the regional wage

[3] For a summary, see Williamson (1996), and O'Rourke and Williamson (1998).

relatives in Panel A are calculated at the prevailing exchange rate. It is well-known that the use of exchange rates, dominated by tradable goods, is inferior to the use of purchasing-power-parity, the latter constructed from workers' market baskets. Panel B uses purchasing-power-parity, and it seems to matter. According to Panel B, Turkey had a real wage only 21.9 percent of Britain in the 1890s, while Panel A suggests it was 40 percent for the Ottoman Empire. Similarly, Panel B reports that on average Serbian real wages over the three decades 1867-1901 were 24.1 percent of Britain, while Panel A reports a figure of about 33 percent for the West Balkans (which includes Serbia). The figures in Panel A seem too high, and thus I will favor the Panel B estimates in what follows.

The real wage hierarchy within the Mediterranean Basin around the turn of century is clear enough, and those estimates in Panel B of Table 1 seem to be consistent with qualitative accounts. Northern Italy was, of course, at the top of the heap and industrialization had taken a much firmer root there than anywhere else, perhaps only with the exception of Catalonia. Real wages in northern Italy were from a third to a half of those in Britain, depending on whether we look at the 1890s or at the immediate pre-war years, the fifteen or twenty years in between allowing for some impressive catching up in the Italian North and for some serious Edwardian failure in Britain. Spain and central Italy were tied for second, both not much more than a third of British real wages. (Note that Spain had also improved it's relative position considerably from the 1890s to just before the Great War.) Portugal was next, at about one quarter of Britain, with Serbia and Turkey not too far behind. If Serbia and Turkey were poor, southern Italy was even poorer, only about a fifth of Britain. Egyptian city construction workers were at the bottom of the hierarchy with real wages less than a seventh of those earned by their counterparts in urban Britain.

Thus, by the end of the late 19th century, there were huge real wage and living standard gaps between the Mediterranean Basin and the industrial core in northwestern Europe. Furthermore, there were huge gaps around the Mediterranean itself. Real wages earned by Spanish workers were almost

twice those earned at the eastern end of the Mediterranean. The gap between northern Italy and the rest of the Mediterranean was even bigger, ranging from four times Egypt, 2.5 times Turkey, 2.7 times the Italian South and 1.4 times Spain.

When Did the North-South Gap Open Up?

When did these gaps open up? Did it happen during the globalization boom after 1870, some exploiting it well, some exploiting it badly, and some exploiting it not at all? Did they open up instead during the century containing the first industrial revolution after the 1770s? Or did they open up even earlier?

The Mediterranean vs Scandinavia Shortly Before 1850

One paper in this volume explores the size of the North-South gap at two points along the periphery shortly before 1850. Jaime Reis (1998) documents standard of living differences between Denmark and Sweden on the one hand, and Portugal, Spain, Greece and some pre-unification Italian states on the other. Reis (1998, Table 7) documents that by the 1840s infant mortality was already 45 percent higher in the east and central Mediterranean (Spain, Portugal and Italy) than in Scandinavia (Denmark, Norway, Sweden and Finland), the adults who survived were significantly shorter (Reis, 1998, Table 6), and agricultural output per capita was almost 50 percent lower (Reis, 1998, Table 4). Of course the gaps between the east and central Mediterranean and the more industrial European Northwest were even bigger. But what about the eastern part of the Mediterranean, and what about before the 1840s?

A Century of Mediterranean Experience 1770s-1870s

There are two long real wage time series documenting performance in urban labor markets in the central and eastern part of the Mediterranean, dating from around the start of the first industrial revolution when the Wealth of Nations first appeared. They are both plotted in Figure 2. The Turkey time series 1775-1870 is from Sevket Pamuk and refers to the real daily wages of unskilled construction workers in Istanbul, where 1875=100. The series is described in the next section, but it is not extended beyond 1875 in Figure 2 since I believe the source -- palace and pious institutions -- no longer reflects private labor markets beyond that point. The northern Italy time series 1775-1875 is from Robert Allen (1998a) and it too refers to the real daily wage of unskilled construction workers in towns. The series documents labor markets in Florence and Milan, and 1875=100 here as with the Istanbul series.

Figure 2 makes two critical points. First, there is absolutely no evidence of real wage growth over the century at either location in the Mediterranean. The evidence seems, therefore, to confirm the prediction of the pre-industrial classical model restated by W. Arthur Lewis in terms of elastic labor supplies (Lewis 1954).[4] Second, there is considerable real wage instability in both time series, and that instability gives us the opportunity to explore whether these labor markets were integrated or segmented.

There are, of course, many ways to test the labor market integration hypothesis, but the time series on real wages in northern Italy towns and in Istanbul clearly favor segmentation: the correlation is never statistically significant after 1820, and before 1820 it is negative. The breakdown of real wage correlations into nominal and cost of living correlations is also interesting. While nominal wages between the two regions were never significantly correlated, the cost of living was, at least most of the time. There were distinct regimes of cost of living correlations between urban labor markets in Turkey

[4] When the real wage is regressed on time and time squared, the results reject any evidence of significant and positive real wage growth over the full century. The adjusted R-squared for northern Italy is zero, and all t-statistics are less than unity. The adjusted R-squared for Istanbul is 0.10, and no t-statistic exceeds 1.2.

and northern Italy: during the French Wars (here 1775-1819), the cost of living was positively correlated, and significant at the 5 percent level; between 1820 and 1854, the correlation is again positive, and significant at the 10 percent level; however, between 1855 and 1874, the correlation is negative, but insignificant. This is a puzzling statement about the behavior of commodity markets since intuition would have predicted the opposite. I would have expected segmentation during the French Wars and integration during the initial globalization boom after 1850. Future research will have to sort this puzzle out. However, the evidence supporting labor market segmentation between the center and eastern Mediterranean is powerful, a finding which is certainly consistent with the facts of very low over-the-border labor migration in this part of the Mediterranean prior to the 1870s (see below).

Figure 3 and Table 2 differ from Figure 2 in two ways. Previously, we set the wage series 1875=100. Now we use the Table 1 (Panel B) purchasing-power-parity estimates to establish explicit wage relatives throughout the period. Thus, the gaps between the wage series reflect (I hope) true differences in urban workers' living standards around the Mediterranean Basin. Furthermore, all the series plotted in Figure 3 are relative to Britain,[5] so the figure actually measures the real wage gaps between these four locations in the Basin and the European industrial leader. Furthermore, we now add real wage time series for Spain (1830-1870) and Portugal (1850-1870), both taken from my own data base. The two critical points which emerged from Figure 2 seem to be confirmed by the addition of the shorter Spanish and Portuguese time series in Figure 3. First, there was no real wage growth between 1830 and 1870 in Spain or between 1850 and 1870 in Portugal: thus, the wage gap between Iberia and Britain increased up to 1870. What was true of the western part of the Mediterranean Basin was also true of the central and eastern parts: real wages in urban Turkey and northern Italy fell relative to Britain over the half century after 1820. However, most of the decline (a further rise in the North-South gap and thus

[5] The real wage series for Britain 1830-1870 is taken from the revisions of my Atlantic economy data base (Williamson 1995, revised). The extension to 1820 relies on Lindert and Williamson (1983, Table 3; 1985, Table 1).

greater real wage divergence) took place from 1820 to mid-century. Second, formal statistical tests show that real wages across these countries are very poorly correlated before and after the Crimean War. Of the six possible pairwise correlations involving Turkey, Italy, Spain and Portugal over the four decades 1830-1870, none show a significant correlation. In short, there is absolutely no evidence of labor market integration in the Mediterranean, and plenty of evidence of segmentation. This was not the case for the Atlantic economy (Williamson 1995; O'Rourke and Williamson 1998), and I suspect the reason is that the Iberian and the eastern Mediterranean economies were simply not participating in the late 19th century mass migration.

The evidence suggests, therefore, that over the century after 1775 real wages were fixed at some low-level steady state everywhere around the Mediterranean Basin. But, as modern growth theory can now show (Barro and Sala-I-Matin 1995), the "equilibrium" did not imply the same steady state living standards everywhere around the Basin. The evidence also suggests that there was considerable short run instability around the long run steady state fixed wage, and the absence of correlation between real wages from these four urban parts of the Basin is consistent with the hypothesis of labor market segmentation. Finally, the real wage evidence suggests the secular rise in the North-South gap ceased around mid-century, remaining stable up to 1870.

The North-South Gap Since the Middle Ages

In two recent papers, Robert Allen (1998a, 1998b) has exploited wage and price data which scholars first started collecting for Strasbourg and southern England. In 1929, the International Scientific Committee commissioned similar studies covering all of England, Germany, France, Austria, Poland and Spain (Cole and Crandall 1964). Belgium and Italy were added later. Allen was able to find sufficient material to reconstruct real wages over the four centuries 1500-1913 for London, Florence, Milan, Naples, Valencia, Madrid and ten other European cities, many of the remainder in central and eastern

Europe. The wages are for urban laborers and craftsmen, the rates of pay are daily, and they are expressed in grams of silver. The same is true of commodity prices, but Allen uses those prices and fixed market baskets to construct true purchasing-power-parity adjusted wages across these cities. His market baskets contain a wide range of commodities including oils, animal fats, grains, bread, meats, wine, beer and fuel.

Allen's careful attention to these purchasing-power-parity issues makes it possible for him (and us) to say something concrete about living standard convergence and divergence over the very long run in Europe. Allen's real wage evidence that speaks directly to the North-South gap is summarized in Table 3. Note in particular the series for three Italian cities relative to London -- Florence and Milan up north and Naples down south -- plus two Spanish cities -- coastal Valencia and inland Madrid. Note also the addition of a penultimate column which reports real (daily) wages in Istanbul, and an ultimate column which reports Istanbul relative to London. These Istanbul real wage figures are from Sevket Pamuk and they are based on construction accounts of the palace and semi-official pious foundations. To complicate the comparison with Allen's European observations, Pamuk uses a different (although very comprehensive[6]) market basket, making purchasing-power-parity comparisons impossible. However, Table 1 suggests that between 1867 and 1901 real wages in Turkey towns were 22.4 percent of those in Britain. Using that benchmark, Table 3 reports in the last column Istanbul real wages relative to London which are likely to be more comparable to those in the rest of the table.

Although these data may have their limitations, they certainly speak clearly to the issue. The central message is that the North-South gap was <u>not</u> the product of the late 19th century globalization surge, and we shall have far more to say about that later in this essay. Instead, the North-South gap was the product of two events: the 17th and 18th century pre-industrial British economic success while the

[6] The Istanbul worker's market basket includes coal, wood, nails, imported woolen cloth, local woolen cloth, chick peas, flour, honey, rice and cooking oil.

Mediterranean economies underwent retardation; and Britain's industrial revolutionary gains up to the mid 19th century while the Mediterranean economies pretty much stagnated. Retardation in the western and central Mediterranean between 1500 and 1850 was ubiquitous and comprehensive. The only exception was Madrid, where living standards for the urban unskilled fell by only 19 percent between 1550/99 and 1750/99, and where all of that fall and more was recovered up to 1800/49.[7] Madrid appears to have been atypical. Living standards fell by 59 percent in Florence and Milan between 1500/49 and 1800/49, by 49 percent in Valencia between 1500/49 and 1750/99, and by 53 percent in Naples between 1500/49 and 1800/49. Even the magnitudes of the decline are very similar across these three parts of the Mediterranean, suggesting that there were similar forces at work.

The eastern end of the Mediterranean does not appear to have shared in this retardation. Pamuk's real wage estimates for Istanbul were stable between 1500/49 and 1750/99, and they even rose a bit up to 1800-49. Why the difference between Istanbul and the rest of the Mediterranean Basin? Perhaps the answer is simply that living standards were so low in Istanbul in the 16th century that a further fall was impossible: a low level subsistence equilibrium trap had been reached. The interesting question for the eastern Mediterranean is why it was so far behind in 1500. The interesting question for the rest of the Mediterranean is why it lost its big economic advantage after 1500, and the advantage they lost was not just relative to Britain and the other leaders up north, but in terms of absolutes.

Naples, Valencia, Florence and Milan seem to have shared a common experience between 1500 and 1850: living standards of urban wage earners were cut about in half. Furthermore, most of the decline took place in two discrete steps: in Florence and Milan, 40 percent of the decline over the 250 years took place between 1600/49 and 1700/49, while the remaining 60 percent took place between 1700/49 and 1800/49; in Naples, much like Florence and Milan, 45 percent of the decline took place between 1600/49

[7] The remainder of this paragraph uses unskilled real wages in Panel A to illustrate the decline, but almost exactly the same figures emerge when those in Panel B for skilled craftsmen are used.

and 1750/99, while the remaining 55 percent took place between 1750/99 and 1800/49; and in Valencia 77 percent of the decline took between 1500/49 and 1650/99, while the remaining 33 percent took place between 1650/99 and 1750/99. As we have seen, there was no secular decline in Madrid, and unskilled workers in Istanbul simply maintained a miserable living standard.

While urban living standards fell in the western and central parts of the Mediterranean Basin, they rose, although modestly, London. Thus, while in the early 16th century real wages in urban Spain and urban Italy were roughly comparable with those in London when unskilled urban workers are used in the comparison (or even higher than those in London when skilled urban craftsmen are used in the comparison), they had collapsed to less than half that level in the late 18th and early 19th century. Even in Madrid, where living standard retardation failed to take place, real wages for skilled craftsmen had fallen from above those in London to only three-quarters of them in the late 18th century.

Thus, most of the North-South gap which Table 1 documents for the 1890s and just prior to the Great War was not just the product of some uneven timing of industrial revolutions or of some inability to exploit the globalization boom after 1850 or 1870. Instead, the gap was in large part the product of pre-industrial events during the three centuries between 1500 and 1800.

This finding for the North-South gap is consistent with what Allen finds for the European periphery more generally. While we stress relative economic decline of the western and central parts of the Mediterranean, Allen (1998a, Tables 5 and 6) shows the same for the eastern European cities of Augsburg, Gdansk, Krakow, Leipzig, Lwow, Strasbourg, Vienna and Warsaw. Meanwhile, Amsterdam and Antwerp shared London's economic success.

What about Istanbul? The eastern Mediterranean seemed to be bucking the retardation tide between 1500 and 1850. Perhaps it was some combination of demography, policy, and globalization forces. Perhaps, but a simpler explanation is more likely. Unskilled urban labor in the eastern Mediterranean was at subsistence, so there were no living standard levels to lose after 1500. Unskilled

urban labor in the central and western Mediterranean had far higher living standards, and plenty to lose.

W. Arthur Lewis Revisited:

Did the Core Pull Along the Periphery During the First Globalization Boom?

In his Janeway Lectures given twenty years ago, W. Arthur Lewis (1978a) offered a number of arguments and observations on the nature of economic growth around the third world periphery during the globalization boom prior to the Great War. As Lewis pointed out, the Third World had two options in dealing with the challenge of industrialization in northwest Europe -- industrialization and direct competition with European manufactures in third world home markets, or primary product export and complementary supply to satisfy booming industrial demands in European markets. Lewis made a number of additional assertions which have motivated much of the research on the Third World since then, but, with the exception of trade data (Lewis 1978a, 1978b; Hanson 1980), it has been based largely on weak evidence. Here is a selective list of questions suggested by Lewis's work which might usefully organize new comparative research on the Mediterranean Basin:

> [1] Is there any evidence of catching up around the Mediterranean Basin after 1870? Did living standards grow faster in the Mediterranean regions that opted to industrialize behind protective walls or in those that opted for liberal policies open to trade and factor flows?
>
> [2] Lewis thought elastic labor supplies implied that real wages would be stable or at least lag behind. He also thought that elastic labor supplies were reinforced in the primary product exporting tropical countries by immigration. Is there any evidence from the Mediterranean that supports the thesis?
>
> [3] The Lewis model implies rising inequality, but its source is the rising profit share in GDP as the industrial sector expands. Is there any evidence of rising inequality in the Mediterranean

during the half century prior to the Great War? If so, can it be explained by the Lewis model or might it have been driven by something else?

[4] The something else might be globalization: Heckscher and Ohlin (trans. in Flam and Flanders 1991) thought that globalization and export booms should favor the abundant factor. Was this land or labor in the Mediterranean, and did it have that effect?

Now, can the new data base on real wages and relative factor prices speak to these questions? This section deals with the first, while the remainder of this essay deals with the other three.

The real wage data for 1870-1940 are plotted in Figure 4 relative to Great Britain.[8] Those readers who have strong priors about British failure will be reassured upon learning that an alternative figure (and Table 4) looks pretty much the same where each country's real wage is plotted relative to the average of Britain, France and Germany. The Basin real wage data are also summarized in Table 4 where they are reported as averages for the 1870s, the 1890s, 1909-1913 and the 1930s. The first panel reports each country relative to Great Britain (using the PPP-adjusted benchmarks in Table 1), the second relative to the United States (where the USA/Britain relative is from my Atlantic economy real wage data base), the third relative to the average of Britain, France and Germany (where the France/Britain and the Germany/Britain relatives are also from my Atlantic economy real wage data base), and the fourth relative to the average of those three plus the United States. The last panel reports per annum growth rates of the real wages.

The variety in growth performance is considerable. Between the 1870s and the 1890s, two countries were catching up, and both of them were in the east. Turkey and Egypt both recorded real wage growth almost double that of France, Germany and the United States, and a quarter more than Britain. This was very strong catch up indeed. Italy caught up as well, but not at the same fast rate as Egypt and Turkey: Italy's growth rate up to the 1890s was only slightly higher than Britain, but almost double that

[8]The wage and price data for Egypt, Turkey and Serbia can be found in Appendices 1-3.

of the United States. The others did badly. As we know, Spanish real wages deteriorated. Portugal and Serbia recorded modest real wage growth, well below the industrial leaders. There was no catch up in these three parts of the Mediterranean, but rather fall back.

Thus, there is no consistent evidence of catching up around the Mediterranean Basin between the 1870s and the 1890s. While Italy, Egypt and Turkey underwent catching up, Portugal, Spain and the Balkans underwent falling back. Nor is there any evidence supporting the Lewis thesis that the countries who adopted a more active industrialization strategy did better than those that did not. The more industrial and protectionist Portugal and Spain failed, the latter badly, while Italy did modestly well. The less industrial and open Egypt and Turkey did exceptionally well. A policy of export growth in an environment more open to trade seemed to work much better up to the 1890s than a policy of industrialization in an environment more closed to trade.

To complicate matters, however, growth performance around the Mediterranean changed dramatically between the 1890s and World War I. Real wage growth in Egypt and Turkey collapsed: both underwent a deterioration in real wages up to 1909/13. The same was true for Portugal and Serbia: what modest real wage growth there was up to the 1890s, evaporated thereafter. In contrast, real wage growth in Spain surged from a pre-1890s deterioration to a post-1890s growth in excess of 2 percent per annum, and Italy managed to raise it's catching up growth rate of 2.14 percent per annum to an even more impressive catching up rate of 2.37 percent per annum. Why the dramatic switch in real wage performance at so many points around the Basin before and after the 1890s? Did the open economies suffer unfavorable price shocks after the 1890s, or did closed-economy industrialization policies finally begin to pay off in the Basin? I suspect it was unfavorable price shocks, and the paper by Jose Morilla-Critz, Alan Olmstead and Paul Rhode (1998) in this volume has much to say about that fact.

Globalization does not seem to have had any consistent positive impact on economic performance around the Basin between 1870 and World War I. There is no evidence of consistent catch

up or of fall back. Yet, in the interwar period, the collapse of growth at the European industrial center did translate into an even poorer performance almost everywhere around the Basin except for Spain. Why then would the interwar collapse at the center translate consistently into even bigger economic troubles around the Mediterranean periphery when the pre-war globalization boom had such uneven effects around the same periphery?

Growth in the Mediterranean Basin from the 1870s to the 1930s underwent considerable variance across countries and over time. While this essay does not launch the analysis, it suggests that globalization, demographic pressure, policy and other events must have played complex and probably offsetting roles. The economic history of the Basin seems to offer an especially difficult challenge to conditional convergence analysis. The trick will be to document potential right-hand side variables, but hopefully they can be approximated in future work by the 1870 real wage, the rate of population growth, proxies for an open commitment to world trade, external price shocks, proxies for the rate of technical change, economic geography variables and others that have appeared recently in the new growth literature.

Mediterranean Migration and Catch Up

Mass migration helped push real wage convergence along in the Atlantic economy. The poorest European countries tended to have the highest emigration rates, the richest new world countries tended to have the highest immigration rates, and the European industrial leaders tended to lie in the middle with net migration close to zero. However, and this qualification is very important, the correlation was far from perfect: potential emigrants from poor countries often found the cost of the move more than they

could finance; furthermore, some new world countries restricted the inflow from Asia and certain countries along the poor European periphery. Typically, however, the labor force impact was very big (Taylor and Williamson 1997; O'Rourke and Williamson 1997; Williamson 1997). Mass migration after 1870 served to augment the 1910 new world labor force by an enormous 49 percent, to reduce the 1910 labor force in the emigrant countries around the European periphery by a very large 22 percent, and to reduce the 1910 labor force in the European industrial core by tiny 2 percent. Mass migration by itself probably explained about 70 percent of the real wage convergence in the late 19th century Atlantic economy (Taylor and Williamson, 1997; O'Rourke and Williamson, 1998, ch. 8).

Could the absence of mass migration explain the absence of catch up in the Mediterranean? Kevin O'Rourke and I (1997) concluded recently that emigration from Italy explained an enormous share of its convergence on Britain and America. But the catch up would have been considerably more impressive had Italian return migration been more modest. One of the reasons why Italian catch up was delayed until the 1890s and only modest thereafter, was that the net emigration rate was modest compared to what a country that poor should have recorded. We also concluded that the emigration rate from Spain and Portugal between 1870 and 1910, compared to what should have been, was even lower. Indeed, a significant share of the rise in the real wage gap between Iberia and Britain can be explained by Iberian "under-emigration", as much as a tenth for Spain and a quarter for Portugal. Under-emigration was hardly the only force at work (Tortella 1994; O'Rourke and Williamson 1997), but it was one of the reasons why Iberia missed a chance to catch up on the industrial leaders prior to the Great War. Timothy Hatton and I (1998, Chp. 3) have shown that most of the explanation for the low Iberian emigration rates was, quite simply, poverty and the constraints that it placed on the ability of the poor to move. The higher-paid Italian worker was better able to release some of that constraint, but apparently not all of it (Faini and Venturini 1994). The low Iberian emigration rate can also be explained by discrimination and problems of cultural assimilation in the receiving regions. Finally, as Blanca Sanchez-Alonso (1998)

shows so clearly in her paper in this volume, it may also have been due to tariff amd exchange rate policy.

What role did mass migration play elsewhere in the Mediterranean? The problem here, of course, is that we have so little solid information for the Balkans, Turkey, Egypt and other regions in the eastern and southern parts of the Mediterranean. Ferenczi and Willcox (1929), for example, were able to document almost nothing useful for our purposes, although the qualitative evidence for Egypt suggests no net emigration at all from that country. But suppose we were to assume that the United States gross immigration rate was a good mirror reflecting the total net emigration rate from the eastern Mediterranean (both "rates" calculated relative to the sending country's population).[9] Indeed, Figure 5 shows that, for eleven members of the Atlantic economy, the correlation between the estimated total impact of mass migration on the 1910 labor force and the US gross immigration rate was high (0.90).[10] Suppose the regression underlying Figure 5 is used to predict the impact of mass emigration from Bulgaria, Greece, Romania, Serbia and Turkey, five eastern regions for which the United States authorities reported gross immigration statistics (Appendix 4)? The point estimates[11] on how much the 1910 labor force at home might have been reduced by net emigration between 1870 and 1910 are: Bulgaria not at all; Romania 0.27 percent; Greece 5.81 percent; Serbia 3.38 percent; and Turkey 15.89 percent. Based on qualitative evidence, the figure for Egypt is zero. Turkey seems to have exploited emigration possibilities

[9]Somewhere between 60 and 70 percent of the overseas migration from Europe went to the United States.

[10]The correlation in Figure 5 is much higher when the outlier Italy, with its enormous return migration rate, is excluded. Including Italy, the correlation drops to 0.64.

[11]These are point estimates, but their credibility must be gauged by the wide ranges which should be embracing those points. The wide ranges are generated by regressions with and without Spain, Italy and Portugal, the bigger numbers without. They can be widdened still further by taking by one standard deviation on either side of the point estimate, as Appendix 4 shows.

far better than its Balkan neighbors or Egypt (as it also did in the post-World War II guestworker era), but even the labor force impact of emigration in Turkey was lower than the average around the European periphery, 22 percent, and that average includes the under-emigrating Iberians and Italians. We can tentatively conclude from this that all of these countries in the eastern part of the Mediterranean -- just like Portugal and Spain in the western part -- missed out on an important catching up opportunity prior to the Great War.

Mass migration in the Atlantic economy played an important role in forging a global labor market prior to 1914, but it seems that most of the Mediterranean Basin wasn't part of it.

Hints and Hunches about Inequality Trends 1870-1939

Eli Heckscher and Bertil Ohlin argued that the integration of global commodity markets would lead to convergence of international factor prices, as countries everywhere expanded the production and export of commodities which used their abundant (and cheap) factor intensively. Evidence from the Atlantic economy seems to be consistent with Heckscher and Ohlin: the trade boom led to rising wage/rental ratios in labor-abundant Europe, and falling wage/rental ratios in the land-abundant New World; as a consequence, conditions improved for the poor unskilled worker relative to the rich landlord in much of Europe, while the opposite was true of the New World (O'Rourke, Taylor and Williamson 1996; Williamson 1997, 1998d). Did the Mediterranean Basin behave more like the New World or the Old World? Was the Mediterranean Basin labor or land abundant? Certainly labor in the Mediterranean was poor compared to the New World and to the European industrial core, but the real question is whether the ratio of effective labor to effective land endowments were big or small in the Mediterranean compared with trading partners in industrial Europe. Guided by the historical insights of Gregory Clark (1987) and the theoretical insights of Robert Lucas (1990) -- poverty does not necessarily mean cheap

and abundant labor -- my guess is that the Mediterranean had large effective land/labor ratios. If the countries in the Basin were relatively land abundant in this sense, then they should have specialized in land-intensive products and thus should also have undergone a decline in their wage/rental ratios in response to trade booms; that is, the demand for land should have enjoyed a boom compared with labor. All of this is pure speculation, of course, awaiting confrontation with evidence.

Mass migration mattered too, and, in the Atlantic economy, probably a lot more. Immigrants in high-wage countries tended to be unskilled, and became increasingly so as the late 19th century unfolded. Thus, they flooded labor markets at the bottom in destination countries, lowering the unskilled wage relative to the skilled wage, as well as relative to white collar incomes, entrepreneurial returns and land rents. Mass migration implied rising inequality in labor scarce, resource rich countries. However, mass migration implied falling inequality in those poor low-wage countries that were sending the emigrants abroad. Emigration and trade should, therefore, both have moderated inequality in poor countries around the European periphery. In contrast, they should have had the opposite effect in the Mediterranean if my assertion about the effective land/labor ratio is correct. On the other hand, the previous section suggests that the emigration forces were likely to have been far weaker in the Mediterranean than they were in the Atlantic economy. Thus, the trade forces may well have dominated in the Mediterranean.

So much for globalization. What about labor surplus? In his famous model of the labor surplus economy, W. Arthur Lewis (1954) showed how early industrialization could create inequality (and also a rising surplus to finance domestic-savings-constrained accumulation). Stable real wages implied rising profit shares economy-wide. According to this model, the worker fails to share in GDP per capita growth since elastic labor supplies keep wages and living standards stable. The labor surplus model has also been used to predict stable real wages in Latin America since it has been alleged that mass migration from the Mediterranean served to create an elastic labor supply in, for example, both Argentina and Brazil (Diaz-Alejandro 1970: 21-2; Leff 1992:6). In fact, the model appears to have failed for Latin

America (Taylor 1994) and to have failed for Italy and Iberia (Hatton and Williamson 1998, Chp. 3), but perhaps it might do better in the eastern Mediterranean. The Lewis model is quiet about what happens to land rents, but the classical model from which it was derived clearly predicted a rise in rents. It follows that the globalization and the Lewis models both predict falling wage/rental ratios and rising inequality in the Mediterranean. Discriminating empirically between these competing views will prove difficult.

Complete income distributions at various benchmarks between the mid-19th century and World War II are available only for a few countries and dates, but even if such data were available, it is not obvious that they would be the best way to search for the underlying causes of changing inequality. Our interest here is factor prices: wages, rents and the structure of pay. How did the typical unskilled worker near the bottom of the distribution do relative to the typical landowner or capitalist near the top, or even relative to the typical skilled blue collar worker or educated white collar employee near the middle of the distribution? The modern debate over OECD inequality has a fixation on wages, but since land and landed interests were far more important to late 19th century inequality trends -- especially in the more agrarian Mediterranean Basin -- we need to add them to any distribution inquiry. In any case, we have two kinds of evidence available to document inequality trends prior to the Great War: changes in the ratio of the unskilled wage to farm land rents (or land values), and changes in the ratio of the unskilled wage to GDP per worker hour.

The wage/rental ratio plunged in the New World, where it had been initially high (Figure 6, first panel). One study has it that the Australian ratio had fallen to one-quarter of its 1870 level by 1913, the Argentine ratio had fallen to one-fifth of its mid-1880 level, and the US ratio had fallen to less than half of its 1870 level (O'Rourke, Taylor and Williamson 1996). In Europe, the (initially low) wage/rental ratio surged up to World War I (Figure 7, first panel). The British ratio increased by a factor of 2.7 over its 1870 level, while the Irish ratio increased by even more. The Swedish and Danish ratios both increased by a factor of 2.3. Not surprisingly, the surge was more pronounced in free trade countries than in the

three protectionist countries which can be documented: the ratio increased by a factor of "only" 1.8 in France, 1.4 in Germany, and not at all in Spain (Figure 7, second panel).

Landowners were at the top of the distribution in Europe (and, one must assume, the Mediterranean). The falling wage/rental ratio in the rich, labor scarce New World is consistent with the hypothesis that inequality rose there, while the rising wage/rental ratio is consistent with the belief that inequality was falling in poor, labor abundant Europe. There is also some evidence that globalization mattered: European countries staying open to trade absorbed the biggest distributional hit; European countries retreating behind tariff walls absorbed the smallest distributional hit (Williamson 1997; O'Rourke and Williamson 1998, Chp. 9).

Now, what about the Mediterranean? Here I have evidence for only two countries: Spain, who refused to play the globalization game, and Egypt, who played it with enthusiasm. The Spanish wage/rental ratio in the second panel of Figure 7 was fairly stable from 1870 to 1909,[12] but the Egyptian ratio was not.[13] The second panel of Figure 6 documents a spectacular fall in the Egyptian wage/rental, driven by the cotton export boom which drove up land values and rents. Even if we purge the decline to 1895 as being too steep to believe, the ratio still more than halves from 1895 to World War I. Egypt seems to share the rising inequality witnessed even in the richer primary producers in the New World. However, and in contrast with the New World, my guess is that emigration and other demographic events had very little to do with the collapse in the Egyptian wage/rental ratio, and trade had everything to do with it.[14]

What about the ratio of the unskilled worker's wage (w) to the returns on <u>all</u> factors per laborer as

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[12]The Spanish wage/rental ratio is revised from the earlier one reported in O'Rourke, Taylor and Williamson (1996), since the wage series has been revised.

[13]The Egyptian rent series is taken from Appendix 1.

[14]See the pioneering work on this topic by Bent Hansen (1991a, 1991b).

measured by, say, Angus Maddison's (1995) estimates of GDP per worker-hour (y)? Changes in this ratio measure changes in the economic distance between the working poor near the bottom of the distribution and the average citizen in the middle of the distribution. It turns out that this statistic is highly correlated with more comprehensive inequality measures in the few cases where both are available in the Atlantic economy. In any case, here's the inequality tale that the ratio w/y tells for the Atlantic economy over the four decades prior to the Great War. The index rises from 100 to about 153 for Denmark and Sweden, and falls to 53 or 58 for Australia and the United States. An alternative way to standardize these distributional trends up to 1913 is to compute the annual percentage change in the index for each country relative to its 1870 base: the per annum rates range from +0.97 and +0.98 for Denmark and Sweden, to -1.22 and -1.45 for Australia and the United States. This measure of inequality change is plotted against the 1870 real wage in Figure 8, and it offers strong confirmation of the globalization hypothesis: between 1870 and 1913, inequality rose dramatically in rich, land abundant, labor scarce new world countries like Australia, Canada and the United States; inequality fell dramatically in poor, land scarce, labor abundant, newly industrializing countries like Norway, Sweden, Denmark and Italy; inequality was more stable in the European industrial economies like Belgium, France, Germany, the Netherlands and the United Kingdom; and inequality was also more stable in the poor European economies which failed to play the globalization game, like Portugal and Spain.

What about in the eastern end of the Mediterranean? Figure 9 shows what little evidence we have, Egypt 1880-1939, and Serbia and Turkey 1913-1939. The w/y ratio declined throughout, and the magnitudes were not unlike those recorded by Australia and the United States. The Serbian ratio fell to 57 percent of its 1913 level by 1929, and to 41 percent of its 1914 level, enormous falls over such a short period. The Turkish ratio fell by 11 percent over the same period. While volitile in the short run, the Egyptian ratio fell over the six decades between 1880 and 1939. Between 1880-1889 and 1900-1909, it fell by more than 28 percent, and between 1900-1909 and 1930-1939 by more than 14 percent. Limited

though this evidence may be, it offers support for the view that inequality was on the rise at the eastern end of the Mediterranean during the late 19th century and the interwar years.

What explains the rising inequality? Was it labor surplus, trade booms, or policy? As I argued early in this section, rising inequality is consistent with both Lewis' labor surplus model and the Heckscher-Ohlin globalization model (revised to accommodate Clark-Lucas effective endowment adjustments). This essay will duck this question about the sources of inequality trends, but it is added to that lengthening agenda.

An Agenda for the Future

Factor price data is far more abundant for the Mediterranean prior to 1914 than are GDP and other macro performance indicators. With these new data, we are now able to say quite a bit about the behavior of real wages in six parts of the Mediterranean during the globalization boom from 1870 to the Great War: Portugal, Spain, Italy (north, center and south), the Balkans, Turkey and Egypt. We are also able to say quite a bit about real wage behavior in Portugal, Spain, northern Italy and Turkey between 1820 and 1870. Furthermore, we can say quite a bit about real wage behavior over the three centuries before 1820 in Istanbul, Florence, Milan, Naples, Madrid and Valencia. This real wage performance in the Mediterranean can also be compared with Britain and with what eventually became the rest of the industrial leaders in Europe.

That's an amazing amount of evidence which previous scholarship has pretty much ignored, but researchers are greedy and they always want more. What's missing is more comprehensive evidence on the returns to other factors of production like land. The labor surplus model and conventional trade theory both predict falling wage/rental ratios in those parts of the Mediterranean where the forces of world trade were allowed to have an impact and where emigration was choked off by poverty, but this

prediction can only be documented for Egypt. Where the forces of world trade were not allowed to have an impact one might expect much more stable trends, but this prediction can only be documented for Spain. We need more evidence on farm land rents and values earlier in time and across a wider range of countries. And what about the premium on skills? If Gabriel Tortella is right in asserting that schooling scarcity helps explain poor growth performance in Iberia and Italy, then the premium on skills should have been high, thus reflecting that scarcity. Assuming he's right -- which I doubt -- was the skill premium driven up even higher when so many economies in the Mediterranean got caught up in the late 19th century globalization boom? Can the premium be proxied by urban-rural wage gaps? If so, it can be retrieved from the same sources which supply the (urban unskilled) real wage data reported elsewhere in this essay.

However limited, this new factor price data base can speak to these inequality issues and to a number of growth and labor market issues which I repeat here in the form of an explicit agenda for the future:

[1] How did the Mediteranean Basin (sending Latin emigrants) perform relative to Latin America (receiving Latin immigrants) between 1820 and 1940? Did the rising gap between the North and South in Europe have its counterpart between Latin America and the Mediterranean, Iberia and Italy in particular?[15]

[2] While the Mediterranean labor market may have become increasingly segmented from that of the Atlantic economy, what about labor market segmentation <u>within</u> the region? Can the poor correlations between urban labor markets around the Mediterranean after 1820 be explained by "different shocks" or by the absence of migrations working effectively at the margins?

[3] Real wages in the western and central parts of the Mediterranean were on par with real wages in

[15]I hope to offer the answers to this and other related questions in a forthcoming paper (Williamson 1998b).

London and Amsterdam around 1500, but they collapsed thereafter. Why the collapse while there was an upwards creep in pre-industrial England? And why wasn't the pre-industrial real wage collapse in the west and central parts of the Mediterranean shared by the east, at least as documented by Istanbul? Was it simply that real wages and living standards there were already at a low-level equilibrium, or did the east avoid the unfavorable economic and demographic shocks which beset the west and central Mediterranean?

[4] Why did the interwar collapse at the center translate into an even bigger collapse almost everywhere around the Mediterranean periphery, while the pre-1914 globalization boom did not translate into ubiquitous catching up? Why the asymmetry?

[5] Emigration made an enormous contribution to real wage growth in the poor sending parts of Europe, and it hastened their convergence on the industrial leaders. Emigration from Iberia was much smaller, and it was tiny from much of the eastern parts of the Mediterranean. Does this fact help explain why the Mediterranean failed to undergo catch up prior to 1914?

[6] Why the rise in inequality in the eastern Mediterranean while it was falling in much of the labor-abundant European periphery?

[7] How did living standards behave in Asia and Latin America compared with the Mediterranean?[16]

These are only some of the questions suggested by this new factor price data for the Mediterranean. The list is long, but the answers appear to be within reach.

[16]I hope to offer answers to this and related questions in a forthcoming paper (Williamson 1998c).

References

Allen, R. [1998a], "The Great Divergence: Wages and Prices from the Middle Ages to the First World War," paper presented to the **Conference on Regions**, Queens University, Kingston, Canada (March 6-7).

--- [1998b], "Notes Toward a Simple Model of European Wages, 1300-1910," Department of Economics, University British Columbia, Vancouver, Canada (March).

Barro, R. J. and X. Sala-i-Matin [1995], **Economic Growth** (New York: McGraw-Hill).

Berov, L. [1978], "La salaire des ouvriers qualifies dans les pays Balkaniques au cours de la periode capitalisme manufacturier et de la revolution industrielle," **Etudes Balkaniques**, no. 1: 30-54.

Boratav, K; A. G. Okcun; and S. Pamuk [1985], "Ottoman Wages and the World Economy, 1839-1913," **Fernand Braudel Center Review** Vol. VIII, 3 (Winter): 379-406.

Bowley, A. L. [1900], "The Statistics of Wages in the United Kingdom during the Last Hundred Years," **Journal of the Royal Statistical Society**, 63, Part III.

Brown, E. H. P. and S. V. Hopkins [1955], "Seven Centuries of Building Wages," **Oxford Economic Papers**, New Series, 22: 195-206.

Clark, G. [1987], "Why Isn't the Whole World Developed? Lessons from the Cotton Mills," **Journal of Economic History** 47: 141-73.

Cole, A. and R. Crandall [1964], "The International Scientific Committee on Price History," **Journal of Economic History**, 24: 381-88.

Diaz-Alejandro, C. F. [1970], **Essays on the Economic History of the Argentine Republic** (New Haven, Conn.: Yale University Press).

Faini, R. and A. Venturini [1994], "Italian Migrations: The Pre-War Period," in T. J. Hatton and J. G. Williamson (eds.), **Migration and the International Labor Market 1850-1939** (London:

Routledge).

Ferenczi, I. and W. F. Willcox [1929], **International Migrations, Vol. I** (New York: National Bureau of Economic Research).

Flam, H., and M. J. Flanders [1991], **Heckscher-Ohlin Trade Theory** (Cambridge, Mass.: MIT Press).

Gerschenkron, A. [1952], "Economic Backwardness in Historical Perspective," in B. Hoselitz (ed.), **The Progress of Underdeveloped Areas** (Chicago: University of Chicago Press).

Hansen, B. [1991a], **The Political Economy of Poverty, Equity, and Growth: Egypt and Turkey** (New York: Oxford University Press).

--- [1991b], "Factor Prices in Egypt and Some Major Developed Countries from 1900 to WWII," in R. Ransom (ed.), **Research in Economic History** (Greenwich, Conn.: JAI Press).

Hanson, J. R. [1980], **Trade in Transition: Exports from the Third World 1840-1900** (New York: Academic Press).

Hatton, T. J. and J. G. Williamson [1997], "Italian Emigration in a Globally Integrating Atlantic Economy," Department of Economics, Harvard University (June).

--- [1998], **The Age of Mass Migration: An Economic Analysis** (New York: Oxford University Press).

Issawi, C. [1961], "Egypt since 1800: A Study of Lopsided Development," **Journal of Economic History** 21: 1-25.

Leff, N. H. [1992], "Economic Development in Brazil, 1822-1913," **First Boston Working Paper** FB-92-02, Columbia University.

Lewis, W. A. [1954], "Economic Development with Unlimited Supplies of Labour," **Manchester School of Economic and Social Studies** 22: 139-91.

--- [1969], **Aspects of Tropical Development** (Uppsala: Wiksell).

--- [1978a], **The Evolution of the International Economic Order** (Princeton, N.J.: Princeton University Press).

--- [1978b], **Growth and Fluctuations 1870-1913** (Cambridge: Allen and Unwin).

Lindert, P. H. and J. G. Williamson [1983], “English Workers’ Living Standards During the Industrial Revolution: A New Look,” **Economic History Review**, Second Series, 36: 1-25.

--- [1985], “English Workers’ Real Wages: Reply to Crafts,” **Journal of Economic History** 45: 145-53.

Lucas, R. E. [1990], “Why Doesn’t Capital Flow from Rich to Poor Countries?” **American Economic Review** 80: 92-6.

Maddison, A. [1991], **Dynamic Forces in Capitalist Development** (Oxford: Oxford University Press).

--- [1995], **Monitoring the World Economy 1820-1992** (Paris: OECD Development Centre Studies).

Morilla-Critz, J.; A. Olmstead; and P. Rhode [1998], “Horn of Plenty: The Globalization of Mediterranean Horticulture and the Economic Development of Southern Europe 1880-1930, " this volume forthcoming.

O’Rourke, K. H. and J. G. Williamson [1997], “Around the European Periphery 1870-1913: Globalization, Schooling and Growth,“ **European Review of Economic History** 1: 153-90.

--- [1998], **Globalization and History** (Cambridge, Mass.: MIT Press, forthcoming).

O’Rourke, K. H.; A. M. Taylor; and J. G. Williamson [1996], “Factor Price Convergence in the Late 19th Century,” **International Economic Review** 37: 499-530.

Reis, J. [1998], “How Poor Was the European Periphery Before 1850? The Mediterranean vs Scandinavia,” this volume forthcoming.

Sanchez-Alonso, B. [1998], “What Slowed Down the Mass Migration from Spain in the Late 19th Century?”, this volume forthcoming.

Taylor, A. M. [1994], "Mass Migration to Distant Southern Shores," in T. J. Hatton and J. G. Williamson (eds.), **Migration and the International Labor Market, 1850-1939** (London: Routledge).

Taylor, A. M., and J. G. Williamson [1997], "Convergence in the Age of Mass Migration," **European**

Review of Economic History 1: 27-63.

Tortella, G. [1994], “Patterns of Economic Retardation and Recovery in South-Western Europe in the Nineteenth and Twentieth Centuries,” **Economic History Review** 47: 1-21.

Yousef, T. [1998], “De-Globalization, Divergence and Inter-War Egypt,” **Journal of Economic History** (forthcoming).

Williamson, J. G. [1995], "The Evolution of Global Labor Markets Since 1830: Background Evidence and Hypotheses," **Explorations in Economic History** 32: 141-96.

--- [1996], “Globalization, Convergence and History,” **Journal of Economic History** 56: 277-306.

--- [1997], “Globalization and Inequality, Past and Present,” **World Bank Research Observer** 12: 117-35.

--- [1998a], “Real Wages and Relative Factor Prices in the Third World 1820-1940: Asia,” **HIER Discussion Paper**, Department of Economics, Harvard University (forthcoming).

--- [1998b], “Real Wages and Relative Factor Prices in the Third World 1820-1940: Latin America,” **HIER Discussion Paper**, Department of Economics, Harvard University (forthcoming).

--- [1998c], “Real Wages and Relative Factor Prices in the World Economy 1820-1940,” paper to be presented to the **Conference on 20th Century Growth**, Valencia, December 13-14.

--- [1998d], “Globalization, Labor Markets and Policy Backlash in the Past,” **Journal of Economic Perspectives** (forthcoming).

Table 1

The Real Wage Hierarchy Near the Turn of the Century

Region	Real Wage Relative to Britain (%)			
	1867-1901	1890-1899	1900-1913	1909-1913
A. Prevailing Exchange Rates:				
Center-East Balkans	33.5			
West Balkans	32.8			
South Balkans	45.1			
Ottoman Empire		40.0	41.0	
B. PPP - Adjusted Benchmarks:				
Turkey	22.4	21.9		21.5
Serbia	24.1	20.4		21.2
Egypt	13.7	13.8		13.8
Northern Italy	38.7	37.7		54.7
Central Italy				37.9
Southern Italy				20.3
Portugal	28.1	23.6		24.6
Spain	33.0	27.0		38.7

Sources and Notes to Table 1:

Regional definitions:

Center-East Balkans = Turkey in Europe (including Constantinople), Bulgaria, and Macedonia in Yugoslavia;
West Balkans = remainder of Yugoslavia (e.g, Serbia, Croatia etc) and Albania;
South Balkans = continental Greece and Thrace;
Ottoman Empire = limited to (weighted average of) northern Greece, northern Syria and present day Turkey;
Turkey = present day Turkey;
Central Italy = unweighted average of Tuscany, Marches, Umbria and Lazio;
Nothern Italy = unweighted average of all compartimenti north of Tuscany and Marches;
Southern Italy = unweighted average of all compartimenti south of Lazio.

Panel A: The three entries for the Balkans are from Berov (1978), relative to Bowley's (1900) London figures, master masons' wages. The Center-East and West Balkan ratios reported in the table are taken directly from Berov's Table 5, and appear to be calculated at prevailing currency exchange rates. The South Balkans ratio is based on Balkan regional relatives reported in Berov's Table 3, and are based on silver wages. The entry for the Ottoman Empire is from Boratav, Okcun and Pamuk (1985, Table 2), weighted across three major Ottoman regions and composed of skilled construction workers (weighted by 2) and common labor (weighted by 1), and relative to the Brown-Hopkins (1955) figures for building craftsmen and labourers in Southern England. Calculated at prevailing gold standard rate of exchange. Boratav, Okcun and Pamuk (1985, p. 389) are critical of Berov's (1978) estimates, which seems a bit odd since Berov's skilled nominal wages rise by 50% between 1825/49 and 1900/12 in the Center-East Balkans, while the Boratav, Okcun and Pamuk Figure 1 (p. 386) implies an increase of about 66%, not so different from Berov.

Panel B: The entries for northern Italy, Spain, and Portugal (all relative the Great Britain) are taken from revisions of my 1995 estimates (Williamson 1995, revised in O'Rourke and Williamson 1997), unskilled urban workers, purchasing-power-parity (PPP) adjusted. The entries for central and southern Italy are calculated using the 1911 Mortara index of development (Hatton and Williamson 1997, Table 3) where those regions are reported relative to the north, and where the ratio is then applied to the northern Italy entry for 1909-1913. The entries for Turkey, Serbia and Egypt are benchmarked relative to each other and to Italy based on the Maddison (1995) GDP per capita estimates for 1913 (all PPP-adjusted at the GDP level). They are then backcast to the earlier periods using the real wage series reported elsewhere in this essay.

Table 2

Urban Real Wages Relative to Britain in the Mediterranean Basin 1830-1870 (%)

Years	Turkey	Northern Italy	Spain	Portugal
1820-24	31.2	67.2		
1825-29	21.2	58.7		
1830-34	22.5	52.6	51.6	
1835-39	21.2	49.7	46.4	
1840-44	14.3	46.2	51.4	
1845-49	17.3	41.8	50.0	
1850-54	17.7	36.3	54.2	32.1
1855-59	15.0	31.4	49.3	31.3
1860-64	16.9	37.9	49.3	36.0
1865-69	14.1	39.4	46.0	31.0
1870	16.6	37.8	44.8	26.9

Sources: The Turkish (Istanbul) and northern Italian (Florence and Milan) data are described in Table 3, although the Turkish figures here use interpolation for missing years. The data for Britain, Spain and Portugal are taken from revision of my 1995 database (O'Rourke and Williamson 1997). The relation-to-Britain benchmark is from the data underlying Table 1.

Table 3.
The North-South Gap Since the Middle Ages

						Relative to London (%)						
	London	Florence & Milan	Valencia	Madrid	Naples	Florence & Milan	Valencia	Madrid	Naples		Istanbul	Istanbul Relative to London (%)
A. Fixed budget deflated urban unskilled wages, in grams of silver, daily												
1500-49	5.2	4.9	5.3	—	5.3	94.2	101.9	—	101.9	1500-49	0.75	14.4
1550-99	4.8	4.5	3.6	4.2	4.0	93.8	75.0	87.5	83.3	1550-99	0.69	14.4
1600-49	4.7	4.8	3.8	3.9	5.2	102.1	80.9	83.0	110.6	1600-49	0.61	13.0
1650-99	5.7	—	3.3	—	—	—	57.9	—	—	1650-99	0.63	11.1
1700-49	6.3	3.7	3.4	4.7	5.1	58.7	54.0	74.6	81.0	1700-49	0.77	12.2
1750-99	5.7	2.7	2.7	3.4	4.0	47.4	47.4	59.6	70.2	1750-99	0.70	12.3
1800-49	5.7	2.0	—	5.0	2.5	35.1	—	87.7	43.9	1800-49	0.87	15.3
1850-99	8.6	2.5	—	5.0	—	29.1	—	58.1	—	1850-99	1.18	13.7
1900-13	11.4	4.1	—	5.5	—	36.0	—	48.2	—	1900-11	2.40	21.1
B. Fixed budget deflated urban skilled wages (building craftsmen), in grams of silver, daily												
1500-49	8.0	9.1	8.2	8.4	9.5	113.8	102.5	105.0	118.8	1500-49	1.53	19.1
1550-99	7.1	8.9	4.8	8.3	6.4	125.4	67.6	116.9	90.1	1550-99	1.25	17.6
1600-49	7.4	8.8	4.5	9.6	7.4	118.9	60.8	129.7	100.0	1600-49	0.91	12.3
1650-99	8.6	7.5	5.0	9.4	—	87.2	58.1	109.3	—	1650-99	1.09	12.7
1700-49	8.8	7.0	5.1	10.2	7.4	79.5	58.0	115.9	84.1	1700-49	1.23	14.0
1750-99	8.9	5.1	4.1	6.8	5.9	57.3	46.1	76.4	66.3	1750-99	1.17	13.1
1800-49	9.3	3.9	—	9.0	4.4	41.9	—	96.8	47.3	1800-49	1.75	18.8
1850-99	13.5	4.5	—	9.8	—	33.3	—	72.6	—	1850-99	2.26	16.7
1900-13	16.9	8.4	—	9.2	—	49.7	—	54.4	—	1900-11	4.42	26.2

Source: All but Istanbul: Panel A from Allen (1998a), Table 6, p. 36, Panel B from Allen (1998a), Table 5, p. 35. Istanbul is taken from personal correspondence with Sevket Pamuk dated June 6, 1998, based on construction accounts of the palace and semi-official pious foundations. Pamuk's real wage is calculated for both skilled and unskilled urban construction workers, but the same COL deflator is used for both. The benchmark for calculating the two Istanbul columns is 1850-99. That is, we use Table 1 to establish benchmark values for Istanbul relative to London, then use Appendix 2 to project Istanbul real wages back to 1850 and my revised Atlantic economy data to project London real wages back to 1850. This is enough information to establish a benchmark 1850-99 and to generate the relatives in the last column and the absolutes (in deflated silver wages, now comparable to Allen's London) in the penultimate column.

Table 4

Real Wage Performance in the Mediterranean Basin
By Decades 1870s - 1930s

Decade	Spain	Italy	Portugal	Turkey	Serbia	Egypt
A. Relative to Great Britain						
1870s	39.7	37.3	28.7	20.4	25.6	11.9
1890s	27.0	37.7	23.6	21.9	20.4	13.8
1909-1913	38.7	54.7	24.6	21.5	21.2	13.8
1930s	61.8	49.1	25.9	16.2	16.3	9.6
B. Relative to the United States						
1870s	23.3	22.2	17.0	12.3	15.1	7.1
1890s	18.2	25.4	15.8	14.7	13.8	9.3
1909-1913	21.9	30.9	13.9	12.2	12.0	7.8
1930s	32.0	25.6	13.4	8.4	8.3	5.1
C. Relative to Average of Britain, France and Germany						
1870s	45.1	42.6	32.7	23.3	29.2	13.6
1890s	33.2	46.3	28.9	26.9	25.1	16.9
1909-1913	43.9	62.0	27.9	24.4	24.0	15.7
1930s	72.7	57.8	30.5	19.0	19.3	11.3
D. Relative to Average of Britain, France, Germany and USA						
1870s	36.5	34.6	26.5	19.0	23.6	11.1
1890s	27.5	38.4	24.0	22.3	20.8	14.0
1909-1913	35.1	49.5	22.3	19.5	19.2	12.5
1930s	54.9	43.7	23.0	14.4	14.4	8.6

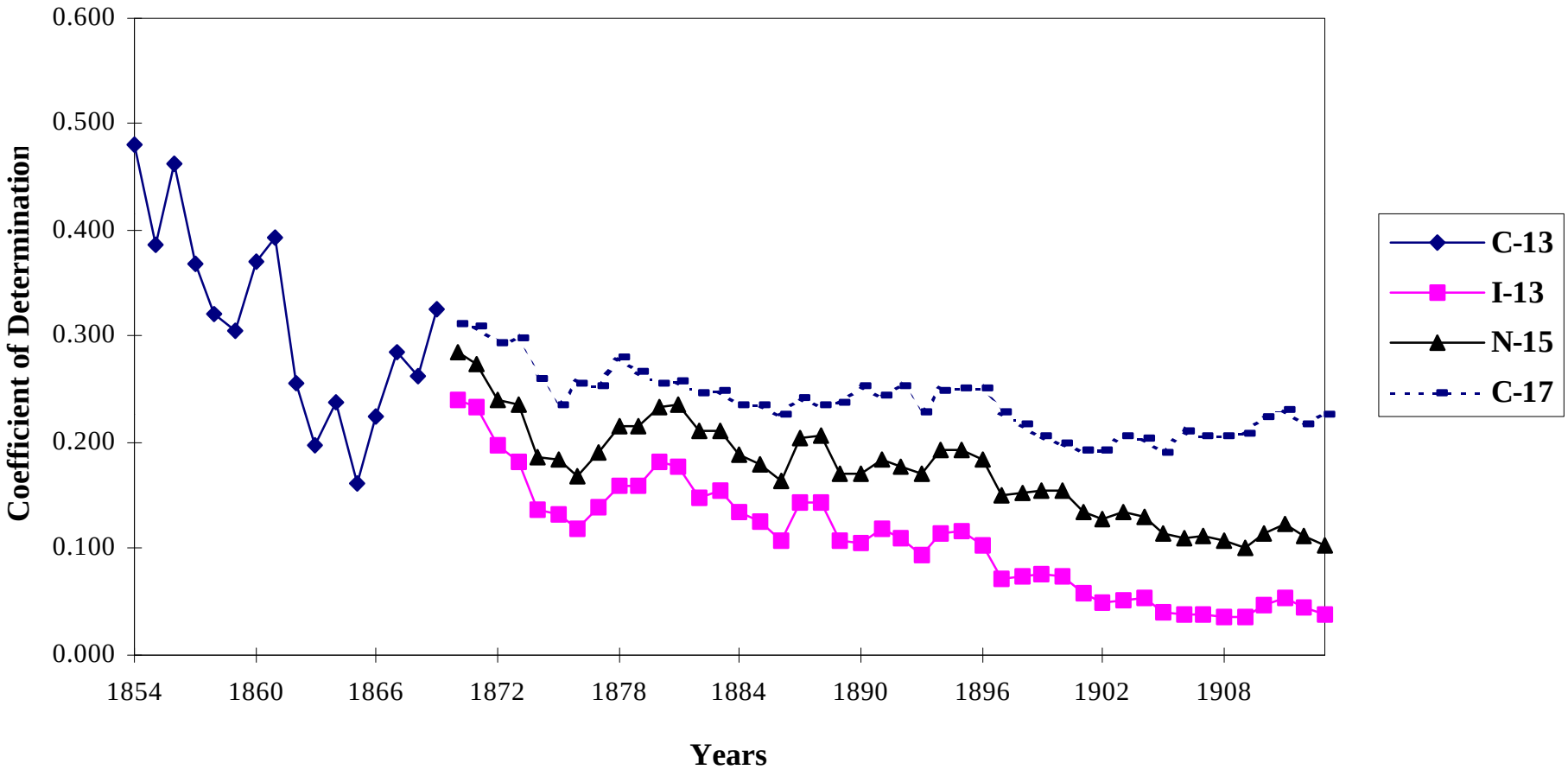
Table 4

Real Wage Performance in the Mediterranean Basin
By Decades 1870s - 1930s
(Continued)

Period	Spain	Italy	Portugal	Turkey	Serbia	Egypt	France	Germany	Britain	USA
E. Per Annum Growth Rate (%)										
1870s-1890s	-0.14	+2.14	+0.80	+2.51	+0.66	+3.11	+1.26	+1.27	+2.07	+1.22
1890s-1909/13	+2.26	+2.37	+0.03	-0.34	-0.02	-0.21	+0.33	+0.77	-0.26	+0.86
1909/13-1930s	+3.63	+0.18	+0.94	-0.54	-0.46	-0.84	+0.50	+0.29	+0.68	0.06

Sources. Egypt, Serbia and Turkey are from Appendices 1-3. The remaining countries are from my revised Atlantic economy database.

Figure 1
International Real Wage Dispersion, 1854-1913



Source: Williamson (1995, Table A2.1; revised in O'Rourke and Williamson, 1997)

Figure 2
Real Wage Indices (1875=100) for Turkey and Northern Italy (1775-1875)

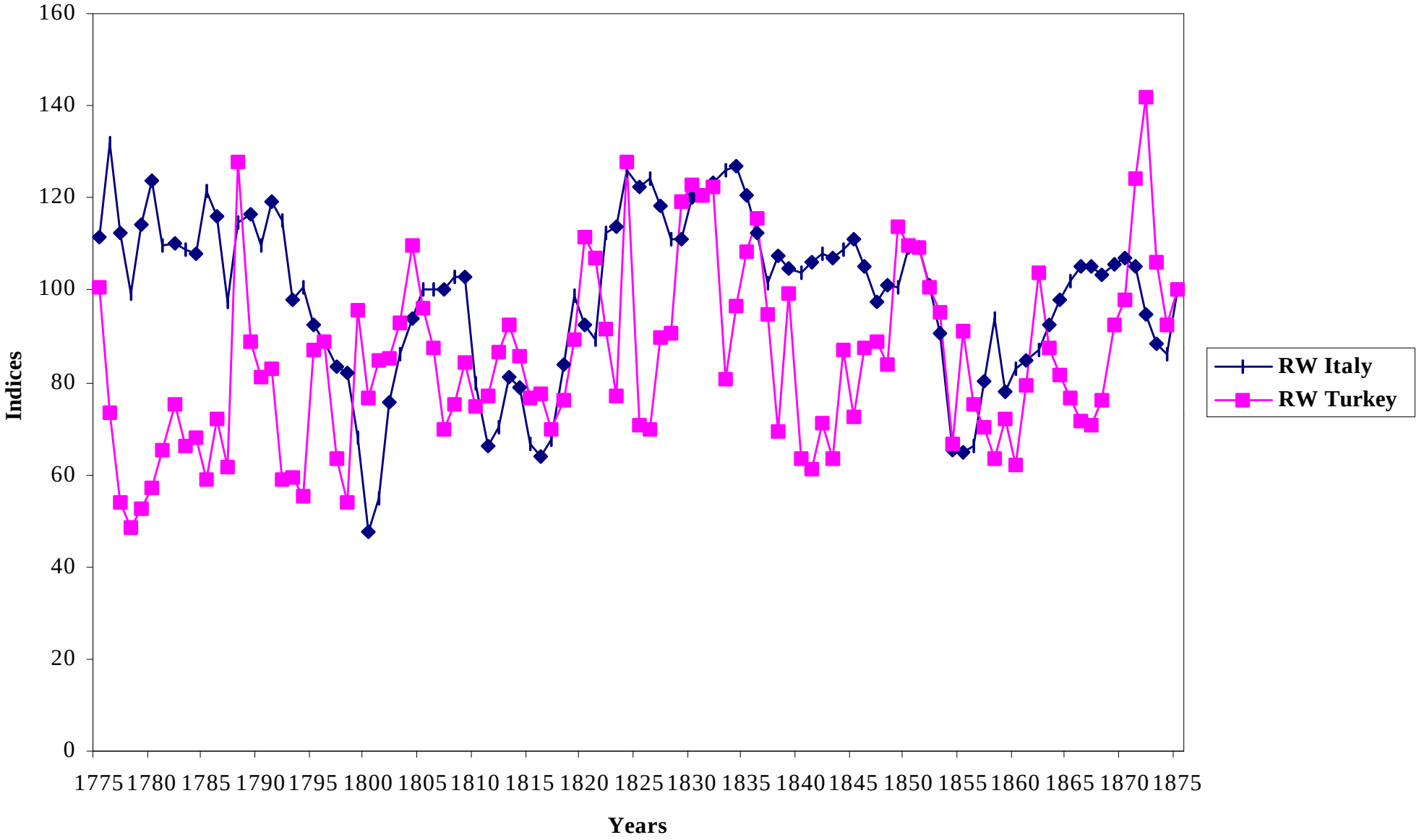
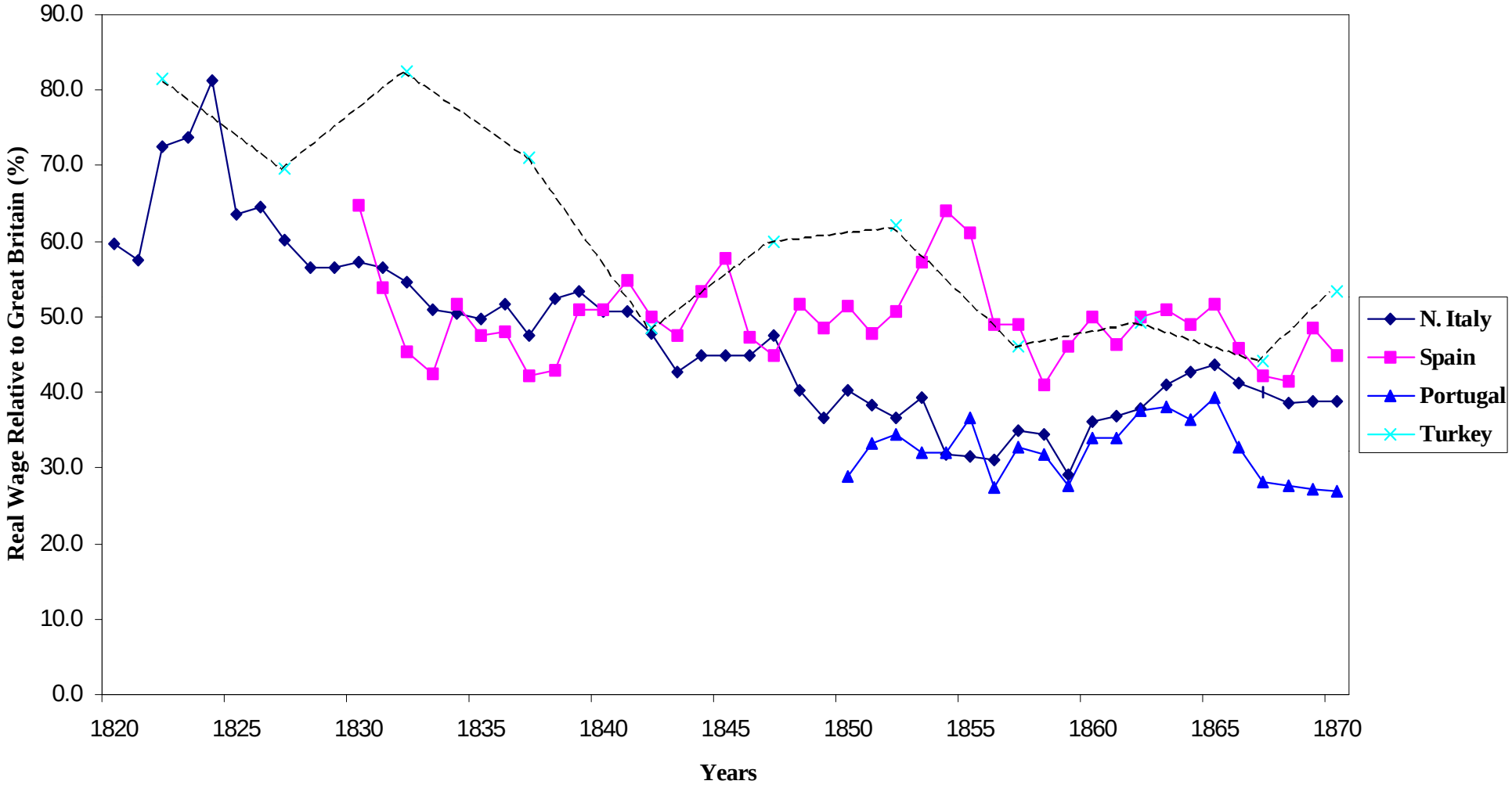
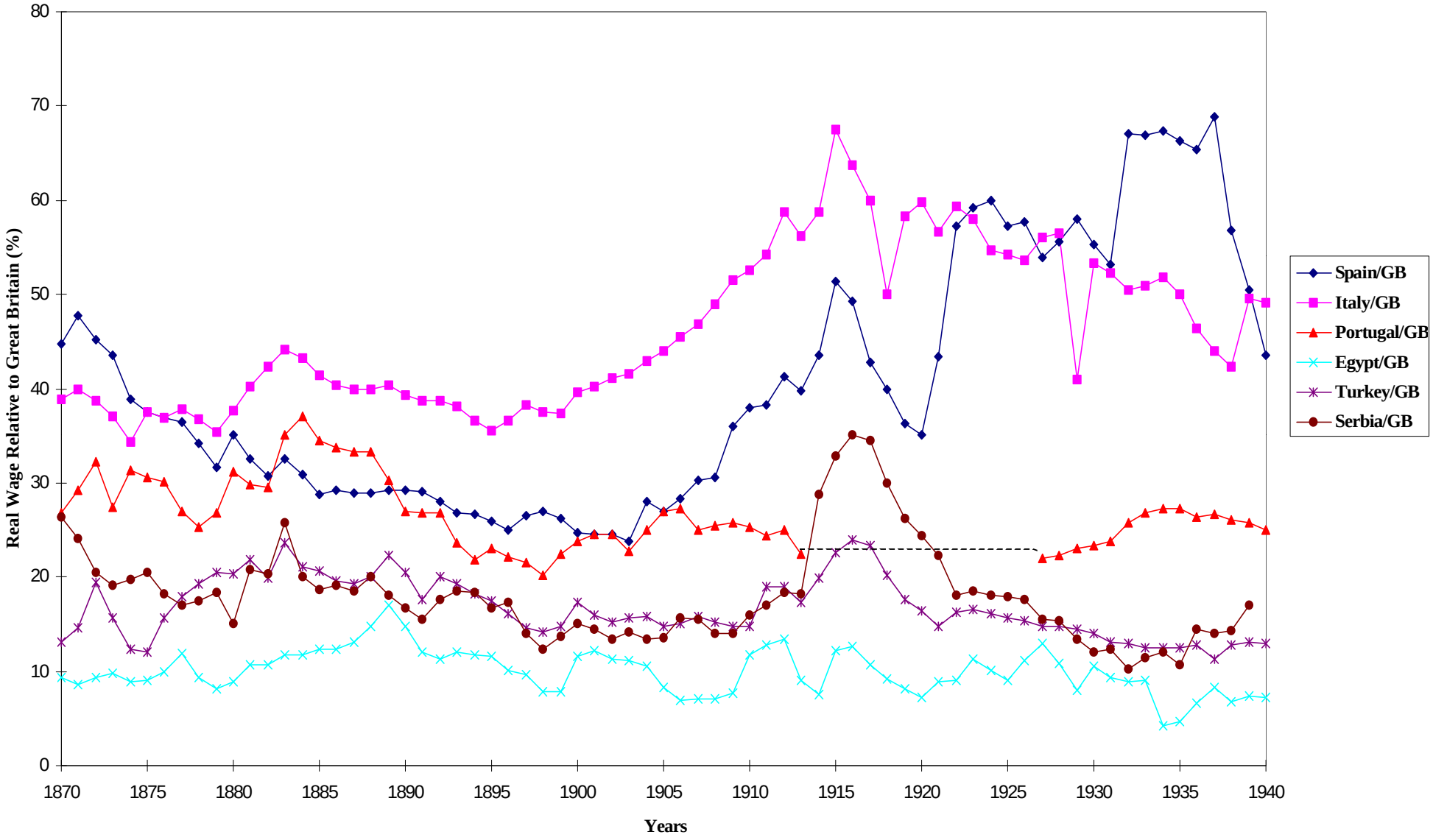


Figure 3
Urban Real Wages Relative to Great Britain, 1820-1870
(in percent)



Source: See Table 3.2. Interpolated data included in figure.

Figure 4
Real Wages in the Mediterranean Basin Relative to Great Britain, 1870-1940
(in percent)



Note: Interpolated data included in figure

Figure 5

The Correlation Between Emigration's Labor Force Impact in the Sending Country and the US Immigration Rate from that Country, 1870-1910: Eleven Atlantic Economies

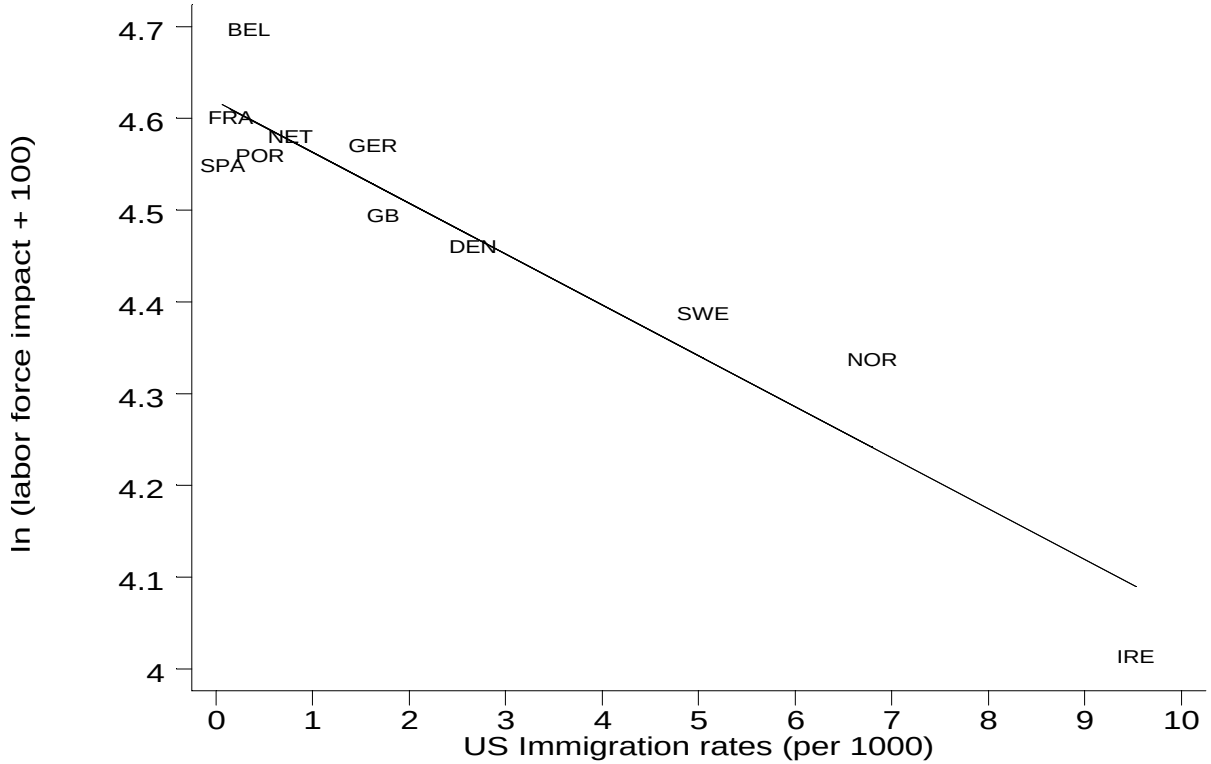


Figure 6

New World Wage/Rent Ratios: 1870-1914 (1911=100)

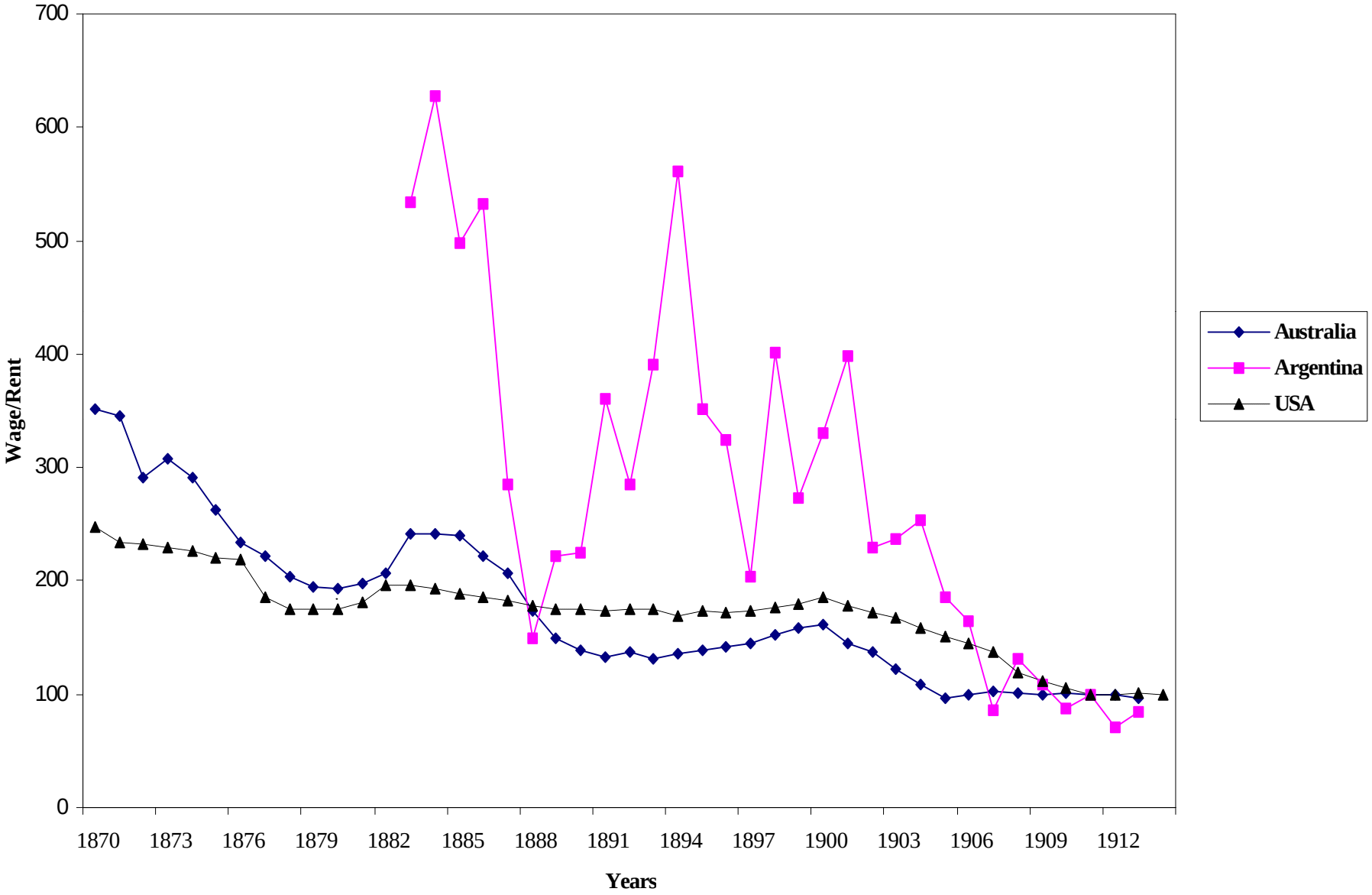


Figure 7

Free Trade Old World, Wage/Rent Ratios: 1870-1914 (1911=100)

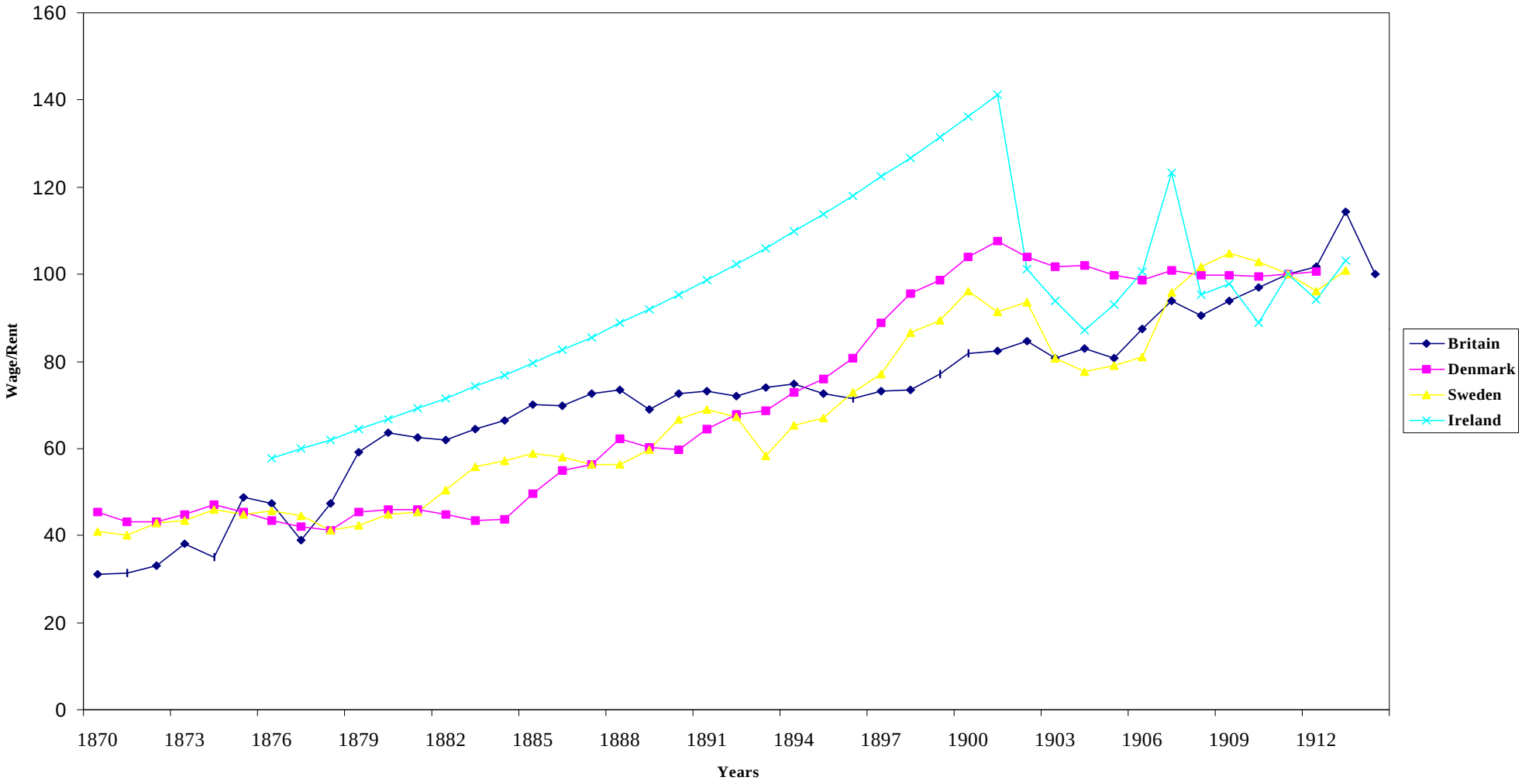


Figure 8

Protected Old World, Wage/Rent Ratios: 1870-1913 (1911=100)

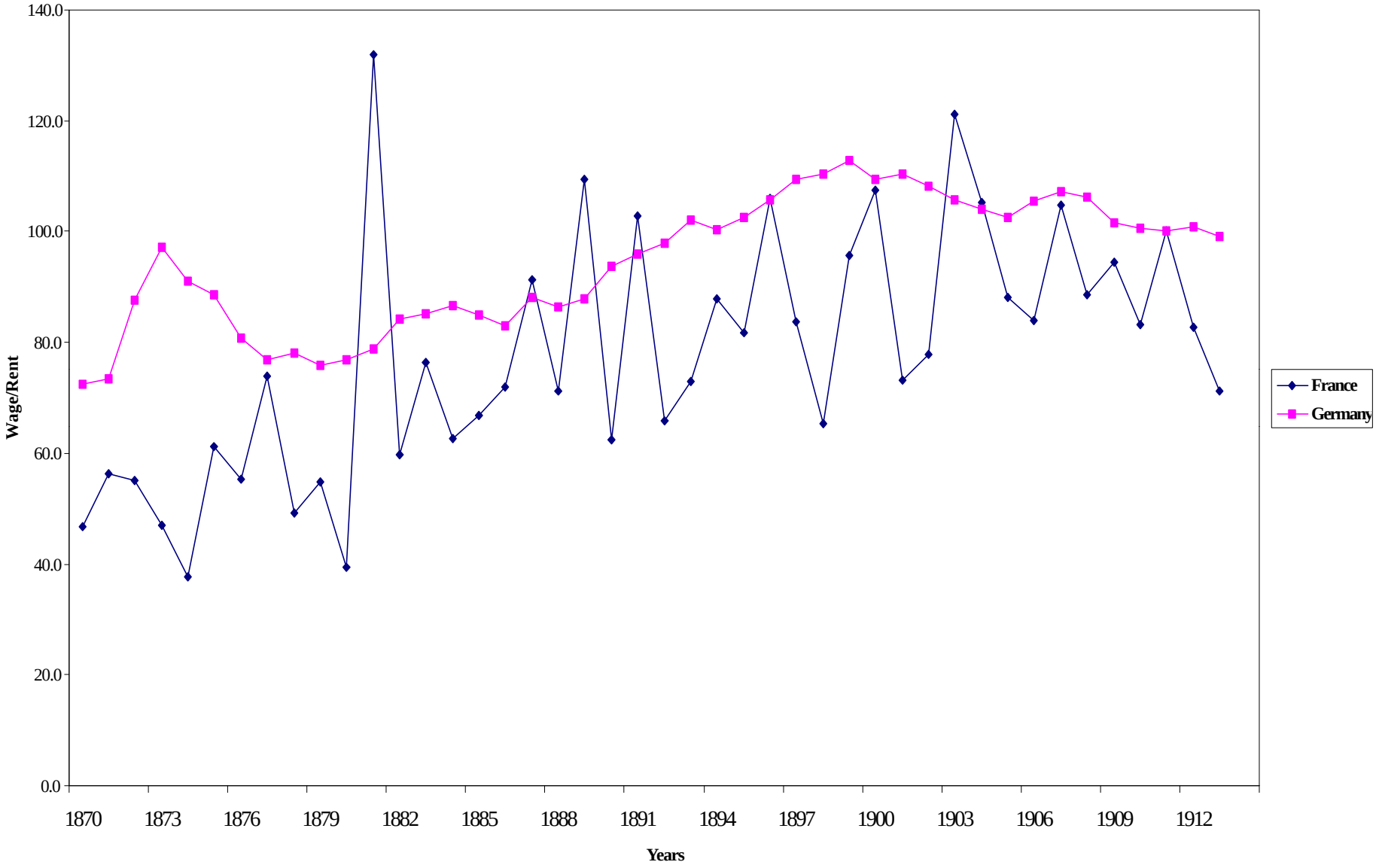


Figure 9

Wage/Rent Ratios: Egypt and Spain, 1885-1914 (1909=100)

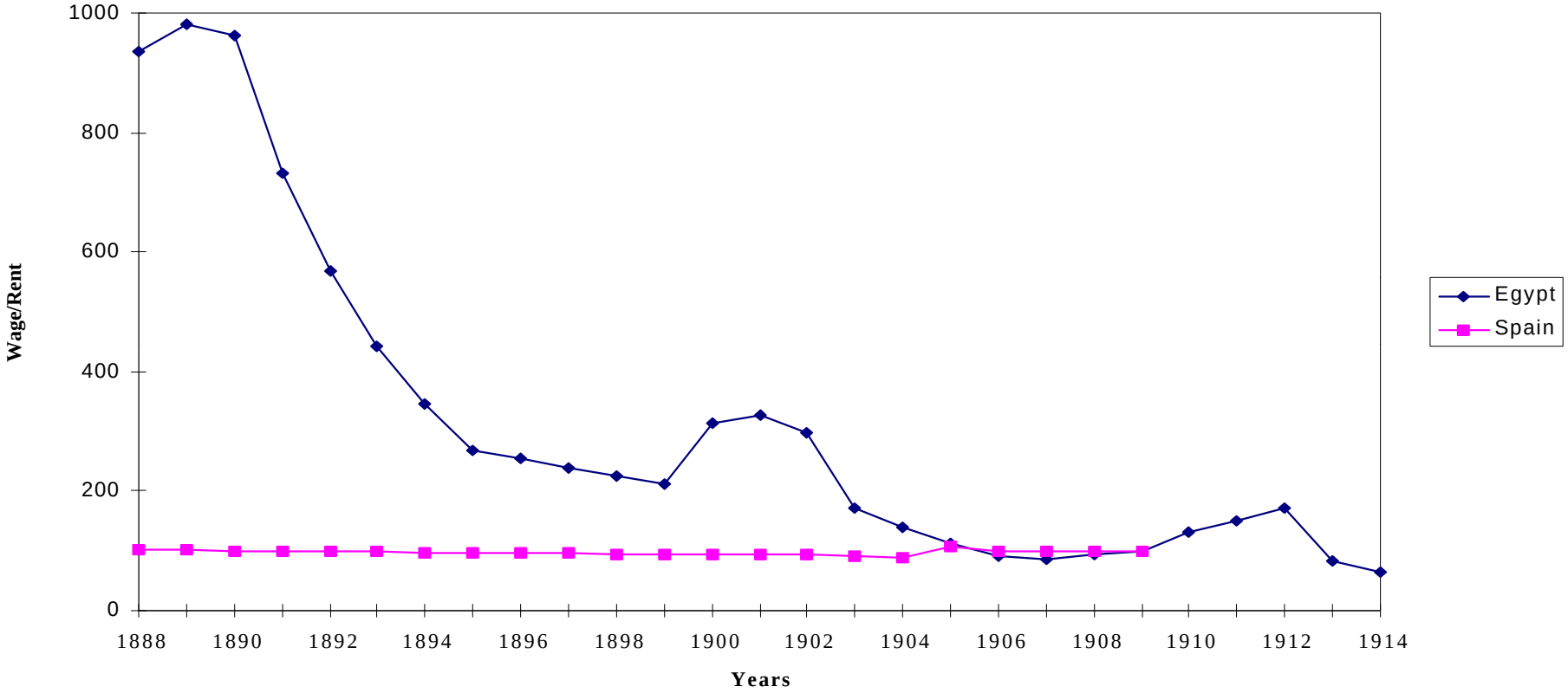
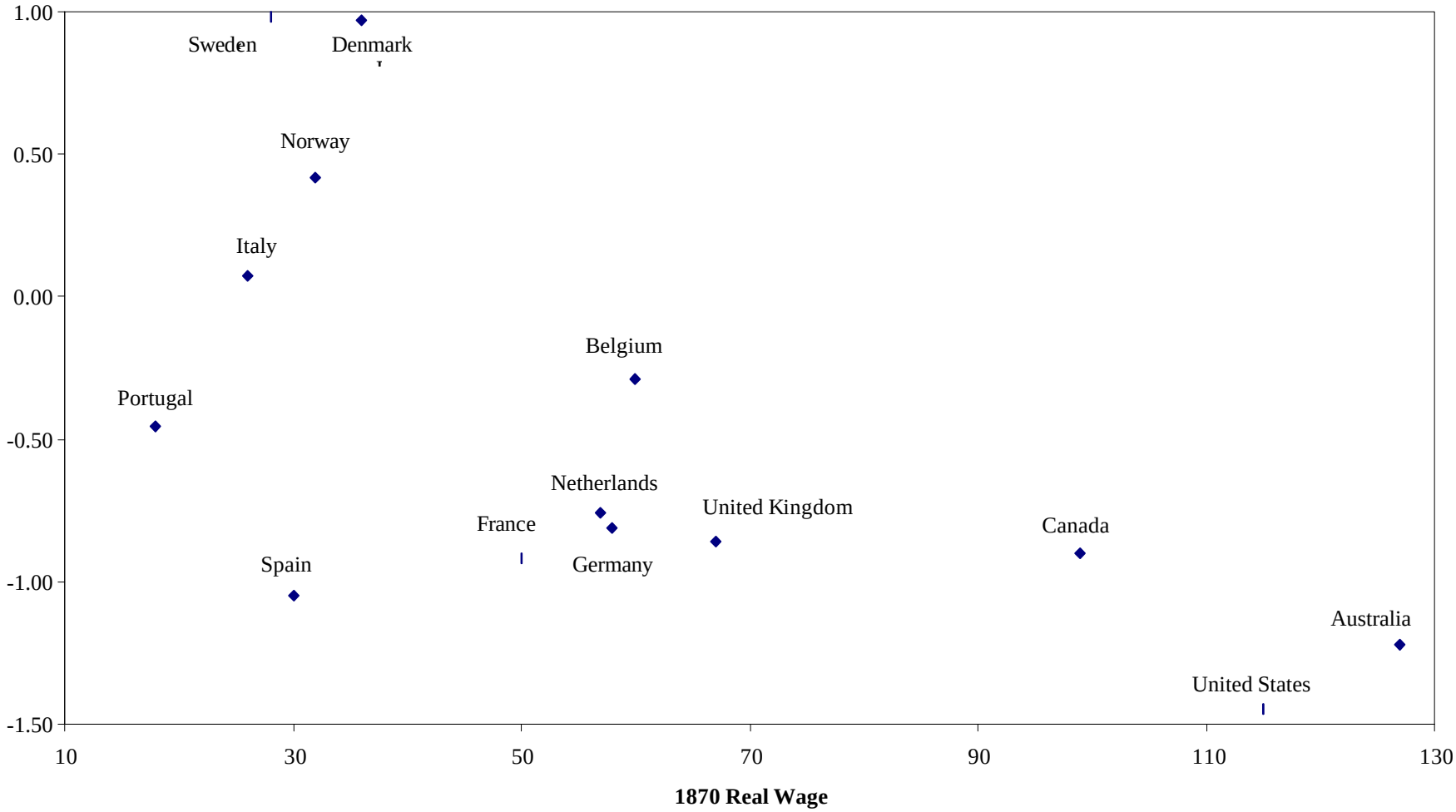


Figure 10

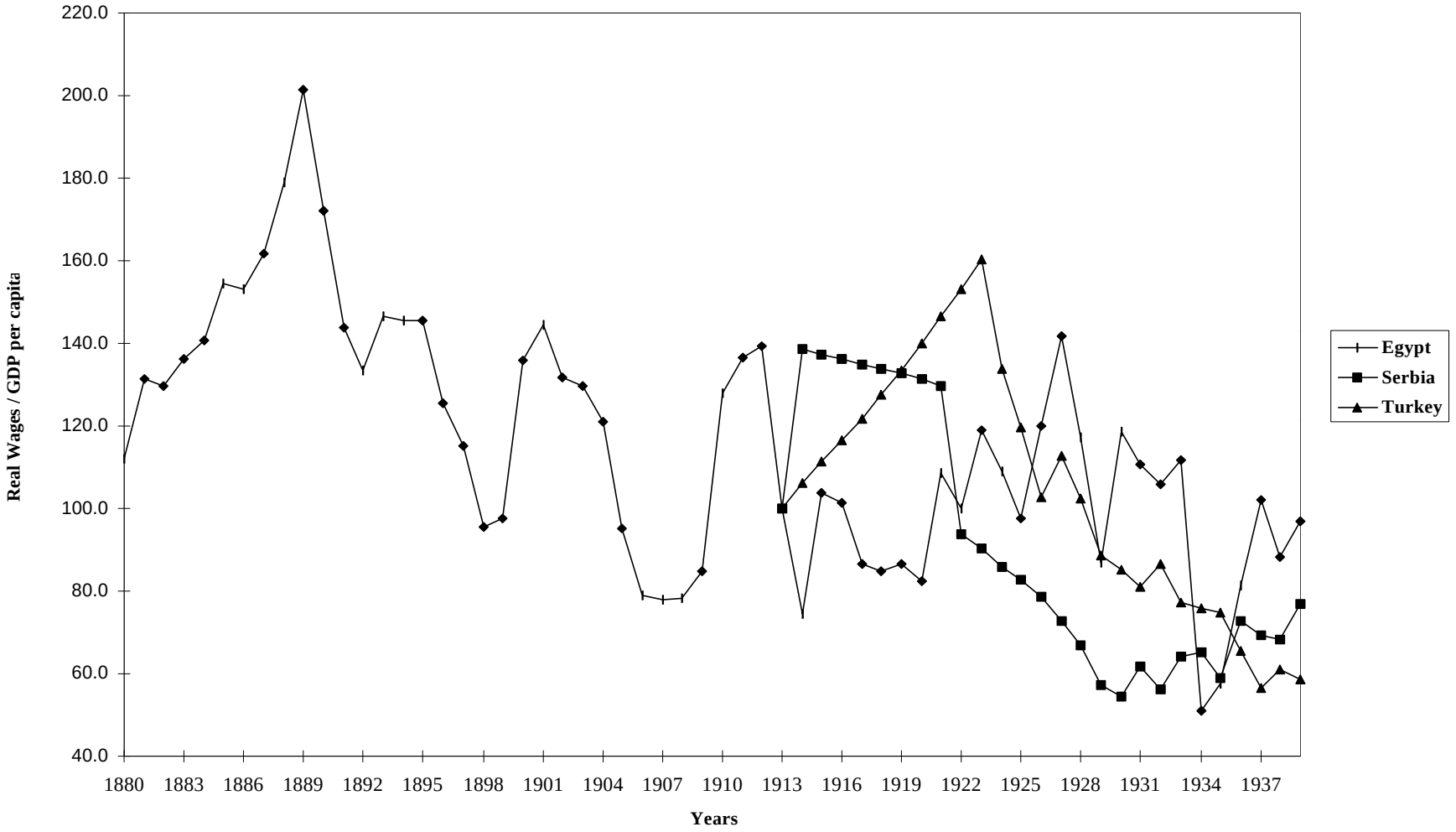
Initial Real Wages v/s Inequality Trends in the Atlantic Economy 1870-191
(average annual percentage change in inequality index)



Note: The real wage in 1870 is relative to the United Kingdom =100 in 1905.

Figure 11

Real Wages / GDP per capita, Egypt, Serbia and Turkey, 1880-1939 (1913=100



Sources: GDP per capita figures for Egypt are from Yousef (1998). The same figures for Turkey and Serbia are from Maddison (1995), suitably interpolated. The real wage data are taken from the app Discussion Paper 1842 (July 1998).