

Globalization, 1870-1914

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Section 1. Measuring and explaining globalization

1.1. Introduction

The period from 1870 to 1914 represented the high water mark of 19th century globalization, which as Chapter 4 in the previous volume showed had been developing since the end of the Napoleonic Wars. This chapter will explore several dimensions of this globalization, as well as its effects on the European economy. Since the topic is vast, our focus will be on the links between Europe and the rest of the world, rather than on the growing integration of the European economy itself, although that will be alluded to at several stages during the chapter.

Nineteenth century globalization involved increasing transfers of commodities, people, capital and ideas between and within continents. There are several complementary ways to measure increasing international economic integration. The most straightforward is simply to measure the growing volume of these international flows, perhaps scaled by measures of economic activity more generally: for example, the ratio of commodity trade to GDP, or the number of migrants per head of population. A more direct measure of integration is provided by the cost of moving goods or factors of production across borders, and this cost will show up in international price gaps. Because it is less easy to measure integration in the international ‘markets’ for ideas and technology, these flows are often not discussed in economists’ accounts of globalization, but they are sufficiently important that they will be briefly considered here, problems of measurement notwithstanding.

Having documented the increasing integration of international markets in the late 19th century, we then discuss some of the effects of this unprecedented globalization. Finally, we turn to the question of how sustainable the relatively liberal 19th century world economy was: could globalization have continued unabated after 1914, had World War I not intervened, or were there forces that would have undermined open markets even had that cataclysm not occurred?

1.2. Trade, 1870-1914

Transport costs have long been seen as the main driver of trade growth during this period. Steamships did not replace sailing ships, but they became more and more important, increasing in regularity and speed. The opening of the Suez Canal in 1869 allowed their usage in Euro-Asian trade, and implied a dramatic shift in favour of steam and against sail (since sailing ships could not be used on the Canal route: see Fletcher 1958). Freight rates declined steadily, as a result of constant technical improvements, while the reduction of internal transport costs through the development of railways linked inland producers and consumers to ports, and hence to other countries and continents. Since overland transport was much more expensive than water transport, such improvements were crucial for the development of international as well as domestic markets. For example, based on Harley (1980, 1990), we can divide the cost of transporting wheat from Chicago to Liverpool into the

Chicago to New York City cost, and the New York to Liverpool cost. Between 1866 and 1870 the former was equivalent to 17.2% of the Chicago wheat price, and the latter to just 11.6% of the Chicago price. By 1909-13, these ‘freight factors’ had declined to 5.5% and 4.7% respectively (Findlay and O’Rourke 2007, p. 382). Thus, the 18.6 percentage point decline in the Chicago-Liverpool freight factor during this period can be decomposed into an 11.7 percentage point decline in the Chicago to New York component, and a 6.9 percentage point decline in the trans-oceanic component.

In addition, peace between the main powers between 1871 and 1914 promoted trade (Jacks 2006). The development of European formal and informal empires increased extra-European trade through the reduction of trade barriers, the inclusion of colonies in currency unions, and the better protection of (European) property rights (Mitchener and Weidenmier 2007). Meanwhile, the gradual spread of the gold standard dampened exchange rate fluctuations and reduced uncertainty in trade. Recent econometric work clearly shows that the gold standard promoted trade between countries participating in it: by up to 30%, according to López-Córdova and Meissner (2003) (for different estimates, see also Estevadeordal *et al.* 2003 and Flandreau and Maurel 2005). The gradual spread of the gold standard during the late 19th century was thus one of the factors underlying that period’s trade boom. Whether international currency arrangements such as the Latin Monetary Union (LMU) and Scandinavian Monetary Union (SMU) had an additional positive effect on trade is a matter of controversy. López-Córdova and Meissner (2003) find that such monetary ‘unions’ did promote trade between their members, but Estevadeordal *et al.* (2003) find no such effect. According to Flandreau and Maurel (2005), the SMU boosted trade but the LMU one did not, and indeed Flandreau (2000) argues that trade promotion was in any case not an aim of the LMU.

The major force operating in the opposite direction was trade policy, and in particular the anti-globalization ‘backlash’ that will be discussed later in this chapter, which applied particularly to trade in agricultural products. Notwithstanding this trend, intra-European and extra-European trade grew rapidly during the 19th century. In most sectors, it reached a high point in 1913. European trade roughly quadrupled in real terms between 1870 and 1913, with the increase being slightly higher in Eastern than in Western Europe, albeit from a substantially smaller base (Maddison 2001, p. 362). The export to GDP ratio of France, Germany and the United Kingdom (in 1990 prices) increased by approximately 50 %, while the Spanish ratio more than doubled (*ibid*, p. 363). As shown in Figure 1.1.1, the geographical structure of European trade was fairly stable. Intra-European trade declined slightly, from 71 % to 68 % of European trade. The share of trade with North America declined as well, whereas the share of Africa more than doubled, presumably reflecting the incorporation of most of that continent into European empires. This increased diversification of European exports continued a trend that had started in the early 19th century, although the United Kingdom was the only country that exported more outside Europe than in Europe. (NB: If we knew total European nominal GDP, we could compute an extra-European openness rate)

Europe was a net exporter of manufactures and a net importer of primary products (Table 1.1). As can be seen, however, this masks important differences between regions. At one extreme lay the United Kingdom, very heavily specialised in manufacturing and largely reliant on imported food and raw materials. The rest of Northwestern Europe was similarly specialised, but in a much less extreme fashion. The rest of Europe, however, still exported primary products and imported manufactures, net. On the other hand, Eastern and Southern Europe were far more similar to North America, another agricultural region beginning to industrialise, than to Oceania, Latin America or Africa, which exported virtually no manufactured goods. Note also that this specialization dampened somewhat over time, as European's primary deficit and manufactured surplus rose more slowly than total European trade. This was probably the result of the relative decline of European industrialization rates compared with the rest of the world, especially the United States. European commodity trade was in deficit throughout the period (Yates 1959). This must have been balanced by some net exports of services, but these have not been estimated. To give an idea of their magnitude, the United Kingdom surplus in business services trade averaged over \$800 million during 1911-13, as compared with a figure for total European exports of just under \$11 billion in 1913 (Imlah 1952 and Maddison 2001).

Price convergence remains the best indicator of international commodity market integration. It is well documented for this period, especially across the Atlantic. Liverpool wheat prices exceeded Chicago prices by 57.6% in 1870 but by only 15.6% in 1913. London-Cincinnati price differentials for bacon were 92.5% in 1870, over 100% in 1880, 92.3% in 1895, but 17.9% in 1913 (reflecting the introduction of modern refrigeration technology relatively late in this period). Price gaps for manufactured goods (which were initially dearer in the United States) were falling as well: from 13.7% in 1870 to -3.6% in 1913 for cotton textiles, from 75% to 20.6% for iron bars, from 85.2% to 19.3% for pig iron, and from 32.7% to -0.1% for copper (O'Rourke and Williamson 1994, p. 900). Liverpool cotton prices exceeded Bombay prices by 57 % in 1870 and by only 20 % in 1913 (Collins 1996), and exceeded their Alexandria equivalents by 42.1% in 1824-1832, by 40.8% during 1863-1867, but by just 5.3% during the last decade of the 19th century (Issawi 1966, pp.447-8). Similar price convergence can be observed between London, Calcutta and Rangoon (Collins 1996).

Recent research, focussed on the international wheat market (e.g. Federico and Persson 2007, Jacks 2005), has added greatly to our understanding of this phenomenon. First, a great deal of the total price convergence experienced during this period was due to domestic market integration, driven by railroads. Metzger (1974) has documented an impressive decline in grain price dispersion within Russia after 1870, while Hurd (1975) and Williamson (1974, p.259) do the same for India and the United States respectively. The implication is that studies looking at increasing integration between port cities understate the convergence of the period.

Second, studies focussing on the Anglo-American comparison can overstate the price convergence of the period, since elsewhere in Europe agricultural protection raised barriers to trade in

grain and other commodities, beginning in the 1870s (Bairoch 1989, O'Rourke 1997). Thus, Federico and Persson (2007) show that while prices converged among free trade countries during our period, there was a substantial increase in price dispersion between free trade and protectionist countries, with the result that overall price dispersion actually increased. Falling transport costs implied that potential market integration was increasing during this period, but politicians always had the possibility of muting or even reversing this via protectionist policies (O'Rourke 2002). Thus, it is not surprising that authors such as Federico and Persson, and Jacks (2005), have recently started to point out that overall commodity price convergence was if anything more impressive between 1830 or 1840 and 1870 than in the more intensively studied 1870-1913 period (Volume 1, Chapter 4). Whether these findings can be generalised to commodities other than grains is a matter for further research. In a rare example of a study going beyond grains, Klovland (2005) confirms that protectionism seems to have disrupted Anglo-German price convergence for cereals, but that convergence continued after the 1880s for a range of other commodities, which is consistent with the anti-trade backlash of the late 19th century being a disproportionately agricultural phenomenon, industrial protectionism notwithstanding.

1.3. Capital flows, 1870-1914

International capital market integration was also extremely impressive during this period. Europe was the world's banker (Feis 1930), and those regions with good access to European capital such as the US, Canada, Argentina and Australia prospered most between 1870 and 1913. There was also a smaller, but still important, transfer of capital from the Western European core to the more peripheral economies of Central and Eastern Europe.

Before turning to some more precise measures of capital market integration, some simple statistics may illustrate our main point. For the UK, by far the most important capital exporter, Edelstein (2004, p. 193) estimates that 32% of net national wealth was held overseas in 1913. This reflects four decades in which foreign investment as a percentage of (domestic) savings averaged roughly one third, and often reached more than 50% in a given year (Table 1.2). As British savings oscillated between 10% and 14% of GDP, the UK committed, on average, some 4% of its GDP to capital formation abroad over a period of more than 40 years, an unprecedented phenomenon.

France and Germany exported less capital than England, and their capital accumulation abroad remains less impressive even when accounting for differences in GDP levels. What matters more in our context is the extent to which Europe as a whole dominated foreign investment. In 1914, England (42%), France (20%) and Germany (13%) combined accounted for 75% of total foreign investment. Half of the remaining 25% was held by Belgium, the Netherlands, and Switzerland, the other European countries with sizeable amounts of capital invested abroad (Maddison 1995: 65). Another way of appreciating Europe's role as the world's banker is to look at the percentage of foreign-owned capital stock in capital importing countries. In the case of Argentina, for instance, Taylor (1992) estimated that 50% of the 1913 capital stock was owned by foreigners, most of whom

were Europeans.

What form did the foreign investment take and what was it used for? Roughly three quarters of European investment before World War I was portfolio investment, i.e. investment in bonds and shares rather than foreign direct investment (FDI) (Edelstein 2004, p. 195). This is very different from today's era of FDI-dominated global capital markets and requires an explanation. Informational asymmetries were certainly greater a hundred years ago than today, and increased the agency problems associated with many types of investment. This is the key factor for Bordo, Eichengreen and Irwin (1999) in explaining the composition of overseas investment then as opposed to now. Debt is less risky for investors than equity, and thus a more uncertain environment led to more bond purchases and fewer direct investments. Informational problems also explain the sectoral composition of investment. The lion's share of portfolio investment was used for government bonds and railway bonds (UK: 35% + 22% of total portfolio investment; Germany: 49% + 33% of total portfolio investment)¹, with most of the remainder going into extractive industries and social overhead projects other than railways (such as public utilities, urban infrastructure and transport etc.). As Bordo *et al.* point out, it was easier to monitor a railway company (since the key numbers involved, miles of track laid and passengers and goods carried, were easily available) than manufacturing or commercial firms. It was also presumably relatively easy to gather information about the trustworthiness and expenditure and revenue patterns of a foreign government. Furthermore, given that the most pressing need was for transportation and social infrastructure, it may have been inevitable that portfolio investment dominated FDI by such a wide margin, since such investments have probably always lent themselves better to portfolio investment. Finally, while as we will see later the first modern multinationals began to make their appearance during this period, the intangible assets which ultimately motivate such investments (e.g. proprietorial knowledge, brand-names, and so on) were probably less important then than now (Caves 1996).

What kinds of evidence can we muster to compare the integration of global capital markets over time? There are at least three that have been used in the literature, and all tell the same story: capital market integration has traced out a U-shape over the past 150 years (Obstfeld and Taylor 2004). Capital markets became more integrated during the late 19th century; they disintegrated after 1914; and they recovered those losses during the last two or three decades of the 20th century.

The first measure simply looks at the sizes of the capital flows involved. According to Obstfeld and Taylor (2004, p. 55), foreign assets accounted for 7% of world GDP in 1870, but for nearly 20% during 1900-14, which represents impressive integration. There followed a period of disintegration: the figure was only 8% in 1930, just 5% in 1945, and still only 6% in 1960. However, it then shot up to 25% in 1980, 49% in 1990, and 92% in 2000. On this measure it was not until some time in the 1970s that the pre-1914 level of integration was recouped. These figures represent stocks of foreign assets, but Obstfeld and Taylor also present evidence on the flow of net foreign investment,

¹ Stone 1999, p. 403 (Table 54); Esteves 2007, p. 34 (Table 4).

as measured by the absolute value of the current account, scaled by GDP. Again, the U-shaped pattern emerges from the data, with the difference that on this measure pre-1914 levels of capital flows have not yet been recouped. The stock and flow data may in part yield different results because while the former is gross, the latter is net, and the extent of two-way flows of short-term investments between markets is one feature of today's capital markets that is completely unprecedented.

The second approach looks at price convergence. As capital market integration progresses, price gaps – bonds spreads in the language of financial markets – should decline to the point where they reflect only differences in risk between the assets under consideration. Several studies² have shown that bond spreads between peripheral economies, be they in Europe or not, and the North-Western European core countries of England, France, and Germany fell, on average, from some 5% on 1870 to only 1% on 1914 (Figure 1.2), *less* than today (Mauro, Sussman and Yafeh 2002). Even more compelling evidence of integration emerges if price gaps between *identical* assets decline. For example, Garbade and Silber (1979) show that trans-Atlantic price spreads on US '5-20' bonds fell immediately after the introduction of the trans-Atlantic telegraph in 1866. Obstfeld and Taylor (2004, pp. 89-91) find that US-UK interest rate differentials were "small and steady" before World War I, widened during the two World Wars and the interwar period, and narrowed during the 1980s and 1990s, consistent with the U-shaped pattern mentioned earlier.

The third approach uses quantity data and was first suggested by Feldstein and Horioka (1980). International capital mobility breaks the link between domestic savings and domestic investment, as domestic savings can be invested abroad and foreign capital can go into domestic investment. Consequently, the weaker the relationship between domestic savings and domestic investment, the higher is international capital mobility. Figure 1.2 shows one of the many implementations of Feldstein and Horioka's basic idea, and it confirms the existence of a U-shaped pattern of integration, disintegration and reintegration.

All three indicators of global financial integration show that capital market integration increased substantially between 1870 and 1914, but that this was not a continuous process. As is true today, there were reversals which potentially subjected capital-receiving countries to 'sudden stops' (Calvo 1998). A first wave of financial integration came to an end with the Baring crisis of 1891. Capital receded dramatically for roughly a decade before massive foreign lending resumed again around the turn of the century. Financial integration was at its peak immediately before the outbreak of World War I.

What explains late 19th century capital market integration and what accounts best for the size and the direction of capital flows? Some of the reasons suggested by economic historians are more controversial than others, while confusion among competing theories is increased by the fact that some studies are concerned with accounting for bond spreads, while others attempt to explain the sizes and direction of flows. Without doing too much injustice to a large body of literature, we can

² E.g. Flandreau and Zumer (2004), Mauro, Sussman, and Yafeh (2002).

distinguish between political, institutional and more purely economic explanations for late 19th century capital market integration.

To begin without the risk of controversy: everyone agrees that the absence of military conflict among the main lending countries – England, France, Germany, the US, Netherlands, Belgium and Switzerland – between the Franco-Prussian War and World War I helped to create and stabilise an atmosphere conducive to foreign lending. The second political explanation, by contrast, has been highly controversial. Marxists have long argued that late 19th century capital exports and imperialism are only two sides of the same coin. The argument runs as follows: excessive saving at home, generated by a highly unequal distribution of income, required outlets in underdeveloped countries, as domestic investment would have been subject to Marx's law of the falling rate of profit. This idea pioneered by J.A. Hobson, allowed Lenin to declare imperialism to be the highest stage of capitalism. The contention of a connection between empire and capital exports was subsequently discredited³, only to be resuscitated recently. In a twist to the historiography, the almost forgotten Marxist theory of a connection between empire and capital exports has been revived, but this time by revisionist historians arguing for a more benign interpretation of imperialism. For example, Ferguson and Schularick (2006) argue that members of the British Empire benefited from their colonial status through substantially reduced interest rates, presumably as a result of more secure property rights.

Table 1.3 shows the destinations of English, French and German capital exports. It certainly raises doubts about whether colonial affiliation truly mattered for the size and the direction of capital flows. All English colonies combined (excluding Canada, Australia and New Zealand) received a paltry 16.9% of English capital exports, which is less than what the US alone received (20.5%). The French and German experiences suggest the same, with colonies receiving only 8.9% and 2.6%, respectively, of the overall capital exports of their respective mother countries.

Turning to economic institutions and policies, a great deal of attention has been devoted to the gold standard (Bordo and Kydland 1995, Bordo and Rockoff 1996) and, more recently, to sound fiscal policies (Flandreau and Zumer 2004). Adherence to gold is seen as having promoted global financial integration in two ways. First, it eliminated exchange-rate risk. Second, it signalled that the government concerned would pursue conservative fiscal and monetary policies, which assured potential investors that returns were reasonably safe.

While there has been much debate about whether it was gold standard adherence *per se* or sound fiscal policy that mattered more, proponents of both positions probably agree that economic institutions and policies can only facilitate capital imports, but never attract them if there is no genuine interest on the part of investors in what a specific country has to offer. This brings us to economic fundamentals as the main determinant in explaining the size and direction of flows.

What explains the fact that more than 50% of British capital exports went to areas of recent settlement? British foreign investment headed mainly for regions where natural resources could be

³ Among others, in a detailed econometric study by Obstfeld and Taylor (2003).

exploited, not necessarily where labour was cheap (as would have been the case in Africa and Asia). Investment demand in the areas of recent settlement was high due to capital (and labour) requirements associated with frontier expansion. If New World land was to produce food for European consumers, and raw materials for factories, railways had to make it accessible, land had to be improved, and housing and infrastructure had to be provided for the new frontier communities.

This explanation for the direction of capital flows between 1870 and 1914 certainly matches nicely the data on British capital exports (Table 1.3). Clemens and Williamson (2004a) provide econometric evidence in favour of this view, showing that British capital exports went to countries with abundant supplies of natural resources, immigrants, and young, educated, urban populations. They also find that gold standard adherence and membership of the British Empire helped attract capital inflows, *ceteris paribus*, but these two variables mattered far less in explaining capital flows than did endowments, despite all the ink that has been spilt on discussing them. Supply and demand imbalances across countries, rather than the presence or absence of frictions leading to price gaps between markets, were what was really crucial. Clemens and Williamson did not have the data to provide a similar analysis for French and German capital exports, however, and this is unfortunate since the French and the German cases were somewhat different. While foreign investment into Africa and Asia was rather unpopular in all three countries, France and Germany sent 61.1% and 53.3%, respectively, of their capital exports to other European countries. Investment into areas of recent settlement, by contrast, played a substantially reduced role for both countries. According to a recent paper by Esteves (2007), however, economic fundamentals were as important for German investors as they were for British ones during this period.

1.4. Migration, 1870-1914

It is in the area of migration that the late 19th century was most impressively globalized, even compared with today. At the beginning of the century, intercontinental migration was still dominated by slavery: during the 1820s, free immigration into the Americas averaged only 15,380 *per annum*, about a quarter of the annual slave inflow. Twenty years later, the free inflow was more than four times as high as the slave flow, at 178,530 *per annum* (Chiswick and Hatton 2003, p.68), and the numbers rose to more than a million *per annum* after 1900 (Figure 1.3), with Italians and Eastern Europeans adding to the traditional outflow from northwest Europe. Some of the country-specific migration rates were enormous (Table 1.4): during the 1880s, the decadal emigration rate per thousand was 141.7 in Ireland, and 95.2 in Norway, while an emigration rate of 107.7 per thousand was recorded in Italy in the first decade of the 20th century. There were also significant migrations within Europe, for example from Italy to France, and from Ireland to Britain. The average Western European *annual* outmigration rate was 2.2 per thousand in the 1870s and 5.4 per thousand for the 1900s, very large numbers that are, for example, far in excess of any reasonable projections of African emigration between now and 2030 (Hatton and Williamson 2005, p. 261).

The causes of this mass migration are by now well understood, thanks in particular to the work of Hatton and Williamson (1998, 2005). On one level, the causes are obvious: the New World was endowed with a higher land-labour ratio than Europe, and hence American and Australian workers earned higher wages than their European counterparts. For example, British real wages in 1870 were less than 60% of wages in the New World destinations relevant to British workers, whereas the equivalent figure for Irish workers was just 44%, and for Norwegian workers was just 26% (Hatton and Williamson 2005, p. 55). The gains from migration were thus potentially enormous, and once the new steam technologies had lowered the cost of travel sufficiently, mass emigration became inevitable. This was particularly so since 19th century immigration policy was relatively liberal, notwithstanding the policy developments which we will note later on.

On another level, there is the issue of what determined the timing of emigration streams from different European countries: why did emigration from relatively rich countries such as Britain take off before emigration from poorer countries such as Italy, where the gains to migrants were presumably higher? What explains the fact that so few Frenchmen and women emigrated, while so many Irish and Italians left? What explains the initial rise, and subsequent decline, of emigration rates in several countries, documented in Table 1.4? Hatton and Williamson provide a simple econometric explanation for all these questions, which can be represented in Figure 1.4. EM is a downward-sloping function relating emigration rates from a given European economy to home wage rates: as home wages rise, emigration rates should fall, *ceteris paribus*. The initial rise in emigration rates experienced in the typical economy (say from e_0 to e_1) must then have been due to rightward shifts in the emigration function, from EM to EM', since wages were rising (say from W_0 to W_1), not falling, in late 19th century Europe. In turn, such rightward shifts were caused by a variety of factors. First, would-be emigrants were initially constrained by the cost of trans-oceanic transport, but as transport costs fell, more migrants were able to leave their homelands. Second, these poverty traps could also be overcome by previous emigrants sending home remittances or pre-paid tickets, thus directly financing the cost of travel. This meant that emigration rates tended to increase as countries built up stocks of emigrants overseas, the so-called *friend and relatives effect*. Third, as Chapter 5 indicates, fertility rates were on the rise throughout Europe during this period, leading to an increase in the supply of young, mobile adults. And finally, it has often been argued that the industrialisation documented in Chapter 3 led to workers being detached from the land, again increasing their mobility.

Rising fertility, structural transformation and falling transport costs thus increased emigration rates, initially in the richer economies whose workers could best afford the cost of transport, and then in poorer economies as living standards rose across the continent. This emigration was initially self-reinforcing, as a result of the friends and relatives effect: all these factors led to EM shifting rightwards. But eventually, the emigration function stabilised, and when this happened, emigration became self-limiting: by lowering labour supply at home, it pushed up real wages (say from W_1 to W_2), and economies thus moved up their EM schedules, experiencing lower emigration rates (e_2).

Hatton and Williamson show that low French and high Irish emigration rates can be explained without appealing to weird cultural behaviour in either country, since this one-size-fits-all European model fits most countries perfectly satisfactorily. Thus, high Irish emigration rates can be explained by the Famine of the 1840s, which created a large Irish migrant stock in the New World, while low French rates can be explained by such factors as a precocious fertility transition. Economic rationality turns out to do a pretty good job of explaining European emigration during this period.

1.5. Trade in knowledge, 1870-1914

Globalization is not simply about the movement of goods or factors of production. It also includes technological transfers and the deepening of other intellectual exchanges.

Technology circulated relatively freely in the late 19th century. In Europe and in the Atlantic world, despite laws forbidding the emigration of skilled workers (repealed in the United Kingdom in 1825) and machinery exports (repealed in the United Kingdom in 1842), technologies had been circulating for a long time. Textile mills around the world used similar machines, often imported from Britain (Clark 1987, p. 160). Ship building, iron and steel, telegraph and telephone technologies transferred quickly, unless slowed by adaptation issues. Europe was internally exchanging new technologies, diffusing them – both to European offshoots and to the rest of the world –and receiving new technologies, mainly from the United States. Japan was an especially keen learner (Jeremy 1991).

Several new factors increased the speed and the reach of technological transfers. Migration was easier. Imperialism allowed European entrepreneurs to invest overseas, taking advantage of low wages, with no fear of expropriation by hostile governments. The decline in transport and communication costs helped the diffusion of ideas, new goods and machines. This last effect was especially important because more and more technology was embedded in machines rather than in individual know-how, even if training was still necessary. Firms could now export capital goods on a large scale. For example, Platt, a Lancashire firm, exported at least 50 % of their cotton spinning machines between 1845 and 1870 (Clark and Feenstra 2003). Explicit policies aiming at import substitution encouraged domestic technological emulation with mixed success. Japan was able to replace its English suppliers of textile machinery, but France had difficulties in replacing its American telephone suppliers, and had to postpone the diffusion of this important good.

To circumvent these restrictions and better protect their intellectual property, several firms set up production in foreign countries and transformed themselves into multinationals during this period. Sometimes, the motive was to produce inside protected markets: for example, by 1911 International Harvester was producing harvesting machines in France, Germany, Russia and Sweden as a result of those countries' protectionist policies (Wilkins 1970, pp. 102-3). Ericsson, a Swedish firm, and Western Electrics, an American firm, both had to establish overseas branch plants in order to win telephone contracts in various European countries (Foreman-Peck 1991). Sometimes direct foreign investment arose simply because, as the theory of the firm predicts, it proved difficult or impossible to

transfer intangible assets such as new technologies abroad at 'arms length', via the market: thus, Singer's attempts to profit from its invention of the sewing machine to a French merchant proved a complete disaster, the latter refusing to pay what he owed, or even disclose how many sewing machines he was producing (*ibid.*, pp. 38-9).

The diffusion of technologies was also helped by the creation of international scientific and technical organizations. The Institution of Naval Architects was founded in 1860 in the United Kingdom, but organized meetings in different countries and through its membership created an international network of professional and learned bodies (Ville 1991). The number of international scientific conferences and organizations increased dramatically (**Error! Reference source not found.** 1.5). Paradoxically however, at the same time science was seen as one of the weapons in the struggle between European nations. Besides straightforward military applications, academic activity was used a diplomatic weapon. Inviting foreign scientists and participating in scientific congress was part and parcel of the rivalry between France and Germany, as each hoped to tighten their links with allied and neutral countries, especially the United States (Charle 1994, ch. 8).

Governments increased formal technical cooperation. The International Telegraph Union was founded in 1865 and the Universal Postal Union in 1874. Humanitarian cooperation was expanded as well: the Red Cross was founded in 1863 and the first Geneva Convention signed in 1864. Most sovereign states, both European and non-European, joined these global institutions. Another form of rising globalization was the diffusion of popular forms of international exchanges and competitions. The World Fairs were official showcases for the technical prowess of each nation. The 1876 World Fair in Philadelphia was the first not to take place in Europe, and included official exhibitions from Japan and China. The first Venice Biennale took place in 1895. The first modern Olympics took place in 1896. The first five Nobel prizes were awarded in 1901 (English 2005).

Labour movements were increasingly globalized as well. Socialist ideals rejected nationalism and advocated the international defence of the interests of labour. The first international was founded in 1864 and the second in 1889, the latter having Japanese and Turkish members. The significance of these events is difficult to assess. International, especially pan-European, scientific and cultural cooperation between individuals had existed for a long time. *De facto* agreements about the rules of war and the management of public goods – e.g. the high seas – pre-dated the first globalization. To some extent, the heyday of elite cultural globalization was before 1870. The issue of nationalist cultural identity gained in importance in the second half of the 19th century, leading to the fragmentation of cultural activities as they become more popular. The formalization of cultural and scientific discourse can be seen both as a weak attempt to stem the rise of nationalism, and as a way to accommodate the inclusion of more diverse actors into the high spheres of European society and culture. In the end, of course, it was too fragile to stand against the forces of nationalism.

Section 2. The effects of late 19th century globalization

2.1. Globalization and factor price convergence

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

Let us begin with the within-country evidence. According to Heckscher-Ohlin logic, the land-abundant New World should have exchanged food and raw materials for European manufactured goods, and trade should have led to the wage-rental ratio, w/r , converging internationally. In land-abundant and labour-scarce New World economies, where w/r was high, w/r should have declined, as farmers found new overseas outlets for their output, and manufacturing suffered from foreign competition. In land-scarce European economies, where w/r was low, it should have increased, as workers were hired by expanding manufacturing industries, and land rents were undermined by imports of cheap food. Furthermore, trade should have led to absolute factor price convergence, with cheap European wages catching up on high New World wages, and expensive European land falling in price relative to cheap New World land.

By and large, these predictions hold good for the late 19th century (O'Rourke, Taylor and Williamson 1996, O'Rourke and Williamson 1999, Williamson 2002a). Between 1870 and 1910, real land prices fell in countries such as Britain, France and Sweden -- in Britain by over 50% -- while land prices soared in the New World. There was certainly absolute convergence in the returns to land during this period. Furthermore, the 40 years after 1870 saw substantial relative factor price convergence, with wage-rental ratios rising in Europe, and falling in the New World (Williamson 2002a, Table 4, p. 74). In Europe, the British ratio increased by 1910 to 2.7 times its 1870 level; the Irish ratio increased by a factor of 5.6, the Swedish ratio by a factor of 2.6, and the Danish ratio by a factor of 3.1. The increase was less pronounced in protectionist economies: the ratio increased by a factor of 2.0 in France, 1.4 in Germany, and not at all in Spain. This suggests a link between trade and factor price trends, which is confirmed by both econometric evidence and CGE simulations (O'Rourke and Williamson 1994; O'Rourke, Taylor and Williamson 1996). In turn, these wage-rental ratio trends implied that the European income distribution was becoming more equal, since landowners were typically better off than unskilled workers.

In addition to these Heckscher-Ohlin predictions, there was a more mundane reason why declining transport costs were good for European workers. In an era where a large fraction of a labourer's budget was still spent on food, cheaper transport meant cheaper food, and thus higher real wages. What was bad for farmers was directly beneficial to urban workers, then as now, and this explains why, by and large, socialist parties tended to support free trade in Europe at this time. Britain was a country where workers could be expected to particularly benefit from free trade: not only did it lower the price of food, but any negative impact on agricultural labour demand would have only a

small effect on the overall labour market, given agriculture's small share in overall employment there (just 22.6% in 1871). Thus, O'Rourke and Williamson (1994) estimate that British real wages rose by 43% between 1870 and 1913, and that no fewer than twenty percentage points of this increase can be directly attributed to declining transport costs. On the other hand, in more agricultural economies the net impact of cheap grain on wages could have been negative, if it sufficiently depressed agricultural employment and wages (O'Rourke 1997).

While trade had a profound impact on land rents and relative factor prices, migration was the dimension of globalization that probably had the greatest impact on European workers' living standards during this period. Emigration due to poverty can be a source of great sadness for the families and communities left behind. It can be difficult therefore for people to admit that emigration may in fact have been hugely beneficial for peripheral and impoverished economies, and yet this is precisely what basic economic theory would suggest: lower the supply of labour, and its price should rise.

Figure 1.6 shows the (PPP-adjusted) wages of unskilled male urban workers in three countries of mass emigration, Ireland, Italy and Norway. Between 1870 and 1910, emigration lowered the Irish labour force by 45%, the Italian labour force by 39%, and the Norwegian labour force by 24% (O'Rourke and Williamson 1999, Table 8.1). The wages are measured relative to wages in the leading European economy of the day, Britain. The figure shows that living standards in these three economies did not just rise during the late 19th century: they rose more rapidly than in Britain. In Ireland, for example, real wages rose from 73% to 92% of British wages during this period, while Norwegian wages rose from 48% to 95%. This represents impressive convergence. In Italy there was no convergence until the turn of the century, which is exactly when Italian emigration rates exploded, attaining levels of over 100 per thousand per decade; thereafter, real Italian wages rose from 40% of British wages in 1900, to 56% in 1913. Figure 1.7 repeats the exercise, this time reporting the three countries' wages relative to wages in the US. The figure shows that Norwegian wages continually converged on US wages, while Italian wages converged after 1900; Irish wages converged over the period as a whole, although very rapid US growth in the final two decades of the period implied Irish divergence after 1895 or so.

Clearly, living standards in these peripheral emigrant economies rose very rapidly in the late 19th century, more rapidly even than in core economies like Britain and the US. At a minimum, emigration did not prevent convergence; more positively, econometric and simulation studies show that emigration was an important source of living standard convergence for countries such as Ireland. To what extent can these findings be generalised? Taylor and Williamson (1997) calculate the labour market impact of migration in 17 Atlantic economy countries between 1870 and 1910, taking care to take account of return migration rates, which varied from country to country. According to their analysis, which makes use of econometrically estimated labour demand elasticities and information on labour's share of income, emigration raised Irish wages by 32%, Italian by 28% and Norwegian by

10%. International real wage dispersion fell by 28% between 1870 and 1910, reflecting a convergence of poorer countries on the rich, but in the absence of the mass migrations international real wage dispersion would have increased by 7%. Wage gaps between New World and Old in fact declined from 108 to 85% during the period, but in the absence of the mass migrations they would have risen to 128% in 1910. The results suggest that more than all (125%) of the real wage convergence between 1870 and 1910 was attributable to migration. Even when allowance is made for the possibility that capital may have chased labour, lowering the impact of migration on capital-labour ratios, migration emerges as a major determinant of living standards convergence, explaining about 70% of the convergence. Mass migration accounted for all of Ireland's and Italy's convergence on the United States, and for 65-87% of their convergence on Britain. The biggest lesson of 19th century migration history is that emigration is of major benefit to poor economies (a point stressed by Williamson 2002b).

2.2. Capital flows and peripheral development

Assuming identical production functions with capital and labour as the only inputs, lower wages in the European periphery should have been due to lower capital-to-labour ratios, which in turn should have implied higher returns to capital. Did the European periphery attract capital imports as this logic suggests, and, if so, did these capital imports have the desired effect of raising the capital-to-labour ratio and hence wages?

We shall start with Sweden, one of the few cases for which we have relatively reliable data. Capital imports after 1870 served to make the Swedish capital stock 50% bigger than it would have been in their absence. It has been estimated that these capital flows increased Swedish real wages by 25% (O'Rourke and Williamson 1999). Sweden may have been the European country that benefited most from capital imports before World War I. Denmark and Norway also benefited, albeit on a reduced scale as capital imports there were substantially smaller.

Results for the Scandinavian countries cannot be easily replicated for other countries in the European periphery, as a result of poor or contradictory data. This may be illustrated with reference to Austria-Hungary, by far the largest peripheral economy in pre-1914 Europe bar Russia. Looking from the "outside", i.e. considering the foreign investment of the European core countries to Austria-Hungary, the dual monarchy seems to have enjoyed substantial capital imports (Table 1.3). A recent reconstruction of the Austro-Hungarian balance-of-payments, by contrast, concluded that, over the period 1880-1913, Austria-Hungary exported rather than imported capital (Morys 2006). Similar uncertainty surrounds the Italian, the Spanish and the Portuguese cases, while there are indications that Ireland, another peripheral economy, also exported capital after 1870.

Even if some of the peripheral economies might turn out on closer examination to have imported capital, the general question remains: Why was the European periphery not able to attract more capital from the European core? This is the 19th century equivalent to what has become known

as the Lucas paradox: capital usually flows to rich rather than to poor countries today, despite the fact that wages are lower in poor countries (Lucas 1990). Three explanations have been offered to explain the Lucas paradox for late 19th century Europe. First, lower labour productivity in the periphery can potentially explain why capital did not flow to the poorer European countries (Clark 1987). However, such an answer only begs the question as to why labour productivity was lower in the European periphery. Second, non-adherence to gold might have dissuaded foreign investors. In support of the latter theory it is worth pointing out that the Scandinavian countries had the best record of adherence to gold among the peripheral economies. And finally, as the earlier discussion of British capital exports suggests, it may simply be that these countries were not as attractive to investors as the land-abundant territories of the New World.

2.3. Capital exports and core welfare

We now turn to the capital exporting core countries and ask what were the effects of capital flows on welfare levels there. Superficially, the answer seems straightforward. As investors preferred foreign investment opportunities to domestic ones based on their relative profitability, capital exports should have been beneficial to the core countries, lowering GDP but raising GNP. However, others have argued that channelling funds abroad could have harmed the domestic economy. This is exactly the charge that the 1931 Macmillan Report leveled against British capital exports before World War I. It argued that the City of London systematically discriminated against domestic borrowers, preferring instead to channel funds into overseas ventures. British industry, starved of capital, grew more slowly than it would otherwise have done. In other words, to the long debated question as to why late Victorian Britain failed (as measured by its growth performance relative to the US and Germany, its main economic rivals at the time) another debate was added: Did late Victorian capital markets fail?

In a monumental study, Edelstein (1987) showed that overseas portfolio investments yielded a higher realized return than domestic portfolio investment during 1870 – 1913. This result was true even when adjusting for risk. While this finding “cleared” late Victorian capital markets of any wrongdoing, the question still lingered as to whether Britain could have done better by retaining more savings in the domestic economy, for example by imposing a tax on capital exports as suggested by Temin (1987). But here one has to question what were the real constraints facing the late Victorian British economy. Research has shown that entrepreneurs had strong internal sources of funding and easy access to local, provincial financing (as opposed to the London Stock Exchange). Rather, what was missing was the highly skilled workforce required to take full advantage of the opportunities offered by the Second Industrial Revolution. Restrictions on overseas capital exports almost certainly would not have been the best way to encourage domestic, scientifically based industry; publicly supported general and technical education and, more controversially, tariffs might have been.

The debate on the alleged trade-off between capital exports and domestic industry has also frequently neglected the positive externalities of European overseas investments benefiting European

consumers. Since much of the investment went into the construction of railways and other social overhead projects, it implied cheaper imports of food stuff and raw materials, which represented a major contribution to European core welfare.

2.4. Imperialism and European welfare

In 1880, European colonies (not including any part of Russia) ranged over 24.5 million square kilometres and had 312 millions inhabitants. In 1913, they ranged over 52.5 square kilometres, more than a third of the earth's land surface, and had 525 millions inhabitants. The United Kingdom, France, the Netherlands, Spain and Portugal had been colonial powers for a long time. Belgium, Germany and Italy now joined them. The United Kingdom controlled more than 80% of these colonized territories in 1880, and still more than 60% in 1913 (Etemad 2006).

As noted earlier, Lenin, inspired by Hobson and others, suggested that the mature European economic system could only be sustained through imperialism. These arguments have been discredited. Capital exports to colonies were important, but not dominant. Europe was self-sufficient in coal and nearly self-sufficient in iron ore and other minerals. Textile raw materials were more of an issue as cotton, for example, could not be produced in Europe in great quantities; but it was largely supplied by the United States. Colonial empires did not represent vital outlets for European goods either, absorbing less than 15% of all Western European exports (Bairoch 1993).

Yet, it is true that *one* of the driving forces behind imperialism was the influence of European traders, who saw in political control a way to facilitate their economic exchanges with African and Asian producers and consumers. Some industrialists also believed that the creation of a reserved market would be a suitable answer to international competition, and they managed to convince certain politicians, like Joseph Chamberlain (British Colonial Secretary from 1895 to 1903), Jules Ferry (French Prime Minister from 1880 to 1881 and from 1883 to 1885) and Francesco Crispi (Italian Prime Minister from 1887 to 1891 and from 1893 to 1896).

It is not certain that empires represented a net benefit for the European powers. The debate has been centred on the British Empire as it was by far the largest, and was the only empire controlling economically advanced settler colonies. According to Davis and Huttenback (1986, p. 107), private British investment in the empire after 1880 yielded higher returns than did investment in the domestic economy, but smaller returns than investments in foreign countries. The direct cost of empires was limited, as the United Kingdom, like the other colonizers, tried to have its colonies pay for themselves and provided mainly disaster relief, funds for military campaigns, and shipping and cable subsidies. The indirect military cost was more important since, India excepted, the British Empire contributed very little to general military spending. While all these points have been extensively debated, the final word must go to Avner Offer (1993), who makes the obviously correct point that the military debts of the French and British empires were paid in full during the First World War.

To determine the effect of Empire on European welfare, it is crucial to decide on the appropriate counterfactual (Edelstein 2004). Without formal imperialism, would Africa, Canada, South Asia and Oceania have been as developed as they actually were, but with the ability to erect high tariff barriers against European exports, as did the United States? Or would they have been substantially less developed and less involved with the world economy? Was the alternative to a British Canada the United States, or Argentina? In the absence of empire, would the African states (as some imperialists feared) have remained independent backward territories, mostly closed to foreign trade like Ethiopia? Depending on the answer to such questions, Edelstein has shown that the benefits of Empire for the United Kingdom might have been somewhere between 0.4% and 6.8% of its GDP in 1913, up from -0.2% to 4.5% in 1870. These figures probably overestimate the benefits of imperial trade, as Edelstein supposes that there would have been no re-direction of trade to compensate for lower imperial demand, but they do not take into account any impact of empire in facilitating emigration from the United Kingdom, especially to Oceania. No such calculation has been made for other European countries. Their empires were much smaller, but as they were not committed to free trade, they could manipulate the terms of trade to maximize their commercial profits. For example, Portugal gained foreign currency from re-exporting African products through Lisbon. The net result was different for each country, but on the whole, whether positive or negative, it was probably small compared to the size of domestic economies (see the various case studies in O'Brien and Prados de la Escosura 1998).

Even if the global economic effect of empires was small, they might have had an important redistributive role. Certainly, the military and state apparatus benefited everywhere, while there was an obvious cost to taxpayers. In the United Kingdom, Cain and Hopkins (2001) have argued that the economic benefits of imperialism accrued mainly to “gentlemanly capitalists”, the financial and rentier interests of London and South-East England, to the detriment of more “modern” forces in the country such as industrial entrepreneurs. Elsewhere, some industrial exporting groups certainly benefited as well. On the whole, the European benefits from imperialism were small and uncertain. More importantly, they were probably smaller than the costs of imperialism for colonized countries, although this remains an under-explored field of research.

2.5. Openness and growth: the tariffs and growth debate

Today's conventional wisdom, backed by many statistical studies (such as Sachs and Warner 1995), is that free trade promotes growth and that protection slows it, although there have been a number of influential dissenters from this consensus, such as Rodríguez and Rodrik (2001). Yet economic historians have long been struck by the fact that some of the late 19th century's most rapidly-growing economies, such as Germany and the United States, were in fact highly protectionist, whereas free trade Britain seemed to be losing ground relative to these newcomers. Of course, it may be the case that the spread of new industrial technologies to the European mainland and North

America might have sparked rapid growth there, even in the absence of protection. Perhaps Germany and the United States would have grown even more rapidly than they actually did in the absence of protection. Such considerations have not prevented such prominent economic historians as Paul Bairoch from stating that “protection = economic growth and expansion of trade; liberalism = stagnation in both” (Bairoch 1989, p. 69).

Multiple regression analysis can evaluate such claims more precisely, by examining the correlation between protectionism and economic growth, controlling for other factors that might influence growth. By using panel data, it is furthermore possible to control for unmeasured differences across countries that are invariant over time (by adding country dummy variables to the specification). O’Rourke (2000) provided such an analysis for ten rich countries between the 1870s and the Great War, including seven European economies: Denmark, France, Germany, Italy, Norway, Sweden and the UK. His surprising finding was that there was a clear positive partial correlation between average tariffs and growth for this sample of countries: in one specification, a one standard deviation increase in the average tariff was associated with a 0.74% increase in annual growth rates, a large effect (O’Rourke 2000, p. 465). Not surprisingly, such a finding has been challenged by other scholars. For example, Irwin (2002) argues that this positive correlation is a coincidence, driven by the fact that the frontier economies of the time, such as the US, Canada and Australia (the three non-European countries in this sample) had both a high growth potential and a high reliance on import tariffs as a source of government revenue. (On the other hand, if this argument is correct, then introducing country dummy variables into the analysis should lower or eliminate the positive correlation between tariffs and growth, whereas in fact it strengthens it.) Clemens and Williamson (2004b) broaden the analysis by including 35 countries in their sample, including such poorer European countries as Austria-Hungary, Greece, Portugal, Russia, Serbia and Spain, as well as a variety of Asian, Middle Eastern and Latin American countries. They find that while the overall correlation between tariffs and growth was indeed positive, the correlation was *negative* for the poorer European countries. Protectionism may have helped a country such as Germany during this period, perhaps by fostering industrialisation there, but it did little good in countries such as Greece or Serbia, if these results are to be believed. Quite why the same policy should have had different effects in different countries is a question which these statistical exercises do not answer, but it should be noted that Friedrich List himself, the great German protectionist thinker, maintained that

Measures of protection are justifiable only for the purpose of furthering and protecting the internal manufacturing power, and only in the case of nations which through an extensive and compact territory, large population, possession of natural resources, far advanced agriculture, a high degree of civilisation and political development, are qualified to maintain an equal rank with the principal agricultural manufacturing commercial nations, with the greatest naval and military powers (Part Two, Ch, 26).

If free trade was not a universal panacea, then neither was protectionism, it appears.

Section 3. The sustainability of late 19th century globalization

3.1. Backlash

3.1.1. Trade

As we saw in Chapter 4 of Volume 1, 19th century European trade policy trends initially reinforced the impact of falling transport costs. Things were different after the 1870s, however, as a result of the growing impact of intercontinental trade on factor prices highlighted above. As we have seen, this hurt European landed interests, and wherever these were powerful enough, the legislative reaction was predictable. In Germany, Bismarck protected both agriculture and industry in 1879; in France, tariffs were raised in the 1880s, and again in 1892; in Sweden, agricultural protection was re-imposed in 1888 and industrial protection was increased in 1892; in Italy, moderate tariffs were imposed in 1878, followed by more severe tariffs in 1887 (although this was not enough to prevent mass emigration from the countryside: see Kindleberger 1951). Figure 1.8 gives *ad valorem* equivalent tariffs for the four major European grains (wheat, barley, oats and rye) in three countries, France, Germany and Sweden. In all three countries, tariffs on individual grains at times exceeded 50%, which represents heavy protection by any standard.

There were exceptions to this pattern of liberalisation followed by a reversion to protection. Liberalization was both shorter and less dramatic in Iberia. Some small countries remained relatively liberal: the Netherlands, Belgium, Switzerland, and Denmark, which transformed itself from a grain-exporter to a grain-importing exporter of animal products (*ibid.*). The United Kingdom also maintained free trade, despite the efforts of Joseph Chamberlain. As a grain-exporter, Russia hardly feared free trade in agricultural products, but it was the first to backtrack from what had in any event being a rather half-hearted liberalization, increasing tariffs substantially in 1877, 1885 and again in 1891. The purpose was to stimulate industrialization, and tariffs were combined with export subsidies for cotton textile producers. Austria-Hungary also shifted sharply towards protectionism in the 1880s. The Balkan countries had inherited liberal tariff policies from their Ottoman masters, but they too gradually moved towards higher protection, albeit at a slower pace than the Germans or Russians (Bairoch 1989).

Exactly why not all food-importing countries reverted to agricultural protection has sparked a large political science literature (e.g. Gourevitch 1986, Rogowski 1989). Economic considerations were surely important: it seems as though countries such as Denmark and the United Kingdom which retained agricultural free trade were less vulnerable to the price and rent reductions which globalization implied. In the Danish case grain prices had been low to begin with, while the country was exceptionally well suited to meet the growing British demand for butter, eggs and bacon, in part due to the success of its cooperative societies. In the British case, agriculture had already shrunk

significantly (Chapter 3), and further decline had little impact on the overall economy (O'Rourke 1997). Elsewhere, it seems that globalization undermined itself. Moreover, this switch towards protectionism would turn out to be permanent. Countries such as Germany, and in particular France, have remained strongly in favour of agricultural protection up to the present day (Tracy 1989).

3.1.2. Immigration

Meanwhile, something similar was happening in the land-abundant countries of the New World. While emigration was good for European workers, as we have seen, the immigration of millions of predominantly unskilled workers was bad news for their counterparts overseas. Hatton and Williamson (1998) show that immigration lowered unskilled wages in the United States, although this is clearly a *ceteris paribus* finding, since economic growth was raising living standards generally during this period. Nonetheless, the effects could be large. According to the Taylor and Williamson (1997) estimates cited earlier, immigration lowered US unskilled real wages by 8%, relative to what they would have been in its absence; they lowered Canadian real wages by 15%; and they lowered Argentinian real wages by 21%. Counterfactual or not, such impacts did not go unnoticed at the time, and the result was a political backlash, resulting in gradually tightening restrictions on immigration in the main destination countries (Timmer and Williamson 1998). For example, in 1888 the United States banned all Chinese immigration for twenty years, while in 1891 it banned the immigration of persons "likely to become public charges" as well as those "assisted" in passage (*ibid.*, p. 765). The screw continued to be tightened on immigration until 1917, when a literacy test was imposed on would-be migrants, a provision which effectively blocked much of the low-skilled immigration of the day. Very similar trends can be discerned in Canada and Argentina as well. This shift away from a relatively *laissez faire* immigration policy was to prove extremely long-lasting, with the result that European economies no longer had available to them the safety valve of overseas emigration that had helped sustain living standards during the population boom and slow transition to modern growth of the late 19th century.

3.1.3. Democracy, the gold standard and capital flows

Global financial integration switched from an all-time high to a low virtually overnight in the summer of 1914. Does it follow that pre-war levels of capital market integration would necessarily have been sustained in the absence of war?

Widespread – by 1913 almost universal – adherence to the gold standard was a central pillar of the pre-World War I financial system. Adherence to the gold standard implied a commitment to a policy of external balance, even when this conflicted with domestic economic imbalances, notably unemployment. According to Eichengreen (1992), one of the factors that undermined attempts to reinstate the gold standard after 1918 was the fact that the war had given a boost to the extension of the franchise, and thus to workers' political power: it was no longer clear that gold standard discipline

– i.e. raising the discount rate when needed – would be adhered to if this conflicted with domestic policy objectives. However, Eichengreen also notes that the franchise was already being extended before the war in many countries, and that unemployment was becoming a growing social issue. One can therefore speculate that even in the absence of war, this political factor would have ultimately succeeded in undermining the gold standard, and with it the foundations of the pre-war international financial system. Furthermore, according to Karl Polanyi (1957, p. 234) such a political development might well have been inevitable, since “Socialism is, essentially, the tendency inherent in an industrial civilization to transcend the self-regulating market by consciously subordinating it to a democratic society”. To this extent, one might yet again see globalization as having undermined itself.

Several objections could be raised against such reasoning, however. First, the single largest push for universal suffrage and democratisation came, as Eichengreen says, in the wake of World War I, not as a result of globalisation. Second, even if the gold standard had proved unsustainable, this would not necessarily have implied the end of global financial integration. In today’s world, most capital circulates among rich countries which are (with the notable exception of the euro zone) no longer connected by fixed exchange rates. Indeed, as Obstfeld and Taylor (2004) point out, abandoning fixed exchange rates makes it possible for countries to pursue both independent monetary policies and a commitment to open capital markets. It was the attempt to combine fixed exchange rates with Keynesian macroeconomic policies which, in their view, condemned mid-20th century capital markets.

Yet another question is whether the magnitude of capital flows experienced before World War I was sustainable. We have pointed out that frontier expansion was one of the main reasons for the massive capital exports, and frontier expansion, by definition, has to come to a halt at some point. Still, the areas of recent settlement were destined to remain the land-abundant countries for some time to come, and hence could have continued to attract European capital (and labour). Even today, population density in the US remains at 10% the level of the UK and Germany.

3.2. How sustainable was the ‘Great Specialisation’?

Even if policy had not intervened to mute late 19th century globalization, a trend which as Chapter 6 will show accelerated during and after World War I, there are reasons to wonder whether the international economy of the late 19th century, with its highly developed international division of labour, could have been sustained. As we saw above, the Industrial Revolution had led to an extremely asymmetric world economy. Northwest Europe largely exported manufactured goods, and imported food and primary products not just from Eastern Europe, but from the rest of the world. In turn, Asia, Africa, Australia and Latin America exported virtually no manufactured goods, and their primary product exports were largely directed towards Europe. It seems inevitable that this stark asymmetry between North and South would have had to have come to an end at some stage (Robertson 1938). Southern export growth was to a large extent driven by the extension of frontiers,

just as in the American West, with hitherto uncultivated land being cleared to produce rice (as in Burma), cocoa (as in Ghana), or other primary products. Eventually, these frontiers would inevitably be exhausted, as they were being exhausted by the end of this period in New World economies such as the United States (where the frontier was officially declared “closed” in 1890). Once this had happened, continuing population growth would lead to the onset of diminishing returns, forcing up the price of the South’s primary exports. Meanwhile, declining transport costs meant that modern industry would no longer be tied to coalfields and sources of iron ore, implying that it could spread to low wage regions. Notably, several ‘Southern’ countries, notably Japan, but also India, Mexico, Brazil and others, were beginning to industrialize by the end of the period. All this suggests that the North-South division of labour which underlay the late 19th century world economy would ultimately have become blurred.

In addition, as we have seen there were powerful political forces which were undermining that international economy as well. However, it would be wrong to portray European governments of this period as being faced with a binary choice between open and closed international markets. Their options were not restricted to resisting or giving into protectionist anti-globalization backlashes. Rather, there was a range of complementary domestic policies which governments could – and did – put in place during this period in order to shore up support for liberal international policies. Thus, Huberman and Lewchuk (2003) show that there was extensive government intervention in European labour markets in the late 19th century, a period that also saw a sustained rise in social transfers and the beginnings of what eventually evolved into the modern welfare state (Lindert 2004). A range of labour market regulations was introduced across the continent, for example prohibiting night work for women and children, prohibiting child labour below certain ages, and introducing factory inspections. The period also saw the widespread introduction of old-age, sickness and unemployment insurance schemes. Moreover, this ‘labour compact’ was more widespread in the more open European economies. Huberman and Lewchuk interpret this finding as providing support for the argument that unions were persuaded to back free trade, or openness more generally, in return for pro-labour domestic policies. In related work, Huberman (2004) finds that working hours in Europe and her offshoots declined between 1870 and 1913 as a result of labour legislation and union pressure, and that the decline was greatest in small open economies such as Belgium, where the Labour Party supported free trade after 1885 (Huberman 2007). Not only did governments not indulge in a race to the bottom during the late 19th century globalization boom: in some cases governments cooperated so as to ensure a general raising of standards. Such was the case, for example, with the Franco-Italian labour accord of 1904, which raised labour standards in Italy as a quid pro quo for granting Italian workers in France benefits which their French colleagues already enjoyed.

To some extent, therefore, late 19th century governments successfully managed the political challenges posed by globalization, sometimes defusing protectionist demands by means of domestic legislation, and sometimes giving into them. World trade might have grown more slowly after 1914

than it did before, even had war not intervened, and the political challenges facing governments might have been exacerbated; but the 1920s and 1930s would have been utterly different had it not been for the Great War, to which we now turn.

3.3. World War I: devil ex machina?

Whether globalization was sustainable or not, it was cut short by the advent of World War I in the summer of 1914. As discussed in Chapter 6, the war disrupted the international economic system beyond repair.

Some Marxists have maintained that the development of international capitalism linked to globalisation was the central cause of the war, mainly because it exacerbated imperialist conflicts that would ultimately lead to it. Yet, the immediate causes of World War I were clearly unrelated to any imperialist rivalry for the control of the world economy. The Moroccan crises (1905 and 1911) between France and Germany heightened tensions, but both were resolved peacefully. Italy conquered Libya in 1912 without too many difficulties. The immediate cause of World War I is to be found, obviously, in the conflict between Austria-Hungary and Serbia following the assassination of Archduke Franz Ferdinand on June 28, 1914 in Sarajevo. Austria-Hungary was not trying to impose its economic domination on Serbia, but was trying to protect its great power status in the Balkans. Furthermore, business groups were mostly cautious and pacifistic. The City as a group was clearly pacifist, no French businessman ever recommended war as a way to check German economic dynamism, and even the bellicosity of German business groups as whole is not proven. International glass and chemical cartels formed in the 1900s showed that peaceful co-existence between business interests in different countries was possible. As Niall Ferguson (2005) points out, the outbreak of war came as a complete shock to financial markets, despite the best efforts of those prophesying doom.

Globalization, by increasing international inter-dependency, dramatically increased the actual costs of war. Norman Angell made precisely this point in 1910 in a very successful book (Angell 1910). Ex-post, he seems to have been vindicated, at least to the extent that the costs of World War I were far greater than any conceivable benefits, even for the victors (Ferguson 1998). Rowe (2005) has also pointed out that the fact that globalization tended to raise wages in 19th century Europe made it more costly for states to maintain large standing armies, unless they relied on conscription; but that the opportunity cost of conscription was therefore also rising for workers, implying growing anti-militarism, especially among socialist parties. This would not on the face of it seem to have been an environment conducive to large-scale military adventures, although some conservative Germans saw in war a way to stop the rise of socialism and democracy following the major social-democrat electoral victory in 1913 (Fischer 1975 (1969)).

Yet, by increasing inter-dependency, globalization also increased the vulnerability of European states, especially given Western European reliance on large-scale imports of food and raw materials (Offer 1989). British planners, concerned to maintain food supplies in time of war,

perceived that Germany might also be vulnerable, and began to view naval blockades as a potentially useful offensive weapon in time of war; German planners reached similar conclusions and the two nations embarked on a naval arms race. This vulnerability also meant that German worries that the Reich could only lose a drawn-out, defensive war, and especially a two-front war. This encouraged it to gamble on a quick victory against France. According to Rowe, the fact that states now found it more difficult to maintain large armies also heightened the sense of insecurity which military planners felt, and made it more difficult for them to credibly deter aggression. Paradoxically, Rowe concludes (p. 446) that “Europe did not go to war despite globalization’s constraints on military force in prewar Europe; Europe went to war because these constraints undermined the very foundations on which European peace rested.”

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Table 1.1. World trade, 1876-1880 and 1913 (millions of dollars)

	Primary products					
	1876-80			1913		
Region	Exports	Imports	Balance	Exports	Imports	Balance
UK	117	1362	-1245	760	2596	-1836
Northwestern Europe	840	1800	-960	3064	5894	-2830
Other Europe	750	515	235	1793	1689	104
Europe	1707	3677	-1970	5617	10179	-4562
USA and Canada	600	330	270	2101	1542	559
Oceania				455	129	326
Latin America				1531	595	936
Africa				680	307	373
Asia	1413	575	838	1792	949	843
Total	3720	4582	-862	12176	13701	-1525
	Manufactures					
	1876-80			1913		
Region	Exports	Imports	Balance	Exports	Imports	Balance
UK	865	225	640	1751	601	1150
Northwestern Europe	1080	450	630	3318	1795	1523
Other Europe	210	330	-120	578	1133	-555
Europe	2155	1005	1150	5647	3529	2118
USA and Canada	100	190	-90	734	891	-157
Oceania				9	370	-361
Latin America				51	879	-828
Africa				26	451	-425
Asia	35	1285	-1250	461	1247	-786
Total	2290	2480	-190	6928	7367	-439

Source: Yates (1959), pp.226-32. Note that world trade does not balance due to unrecorded trade.

Table 1.2. Foreign Investment of England, France and Germany, 1870 - 1913

	England			France			Germany		
	Saving / GDP	Foreign Investment / GDP	Foreign Investment as % of Saving	Saving / GDP	Foreign Investment / GDP	Foreign Investment as % of Saving	Saving / GDP	Foreign Investment / GDP	Foreign Investment as % of Saving
1870 – 79	12.3%	4.0%	32.5%			23.9%			10.2%
1880 – 89	12.2%	4.7%	38.5%			5.1%			18.8%
1890 – 99	11.0%	3.4%	30.9%			16.5%			12.1%
1900 – 09	12.6%	3.7%	29.4%			19.1%			8.3%
1905 – 14	13.1%	6.5%	49.6%			17.3%			7.5%
Net national wealth held overseas in 1914	32.1%								
Share of global foreign investment	41.8%			19.8%			12.8%		

Sources: Edelstein (1982, 2004), Feis (1930), Jones & Obstfeld (2001), Lévy-Leboyer & Bourguignon (1990), Maddison (1995, 2003).

Table 1.3. Destination of English, French and German Foreign Investment 1870 - 1913

	England	France	Germany
Europe			
Russia	3.4%	25.1%	7.7%
Ottoman Empire	1.0%	7.3%	7.7%
Austria-Hungary	1.0%	4.9%	12.8%
Spain and Portugal	0.8%	8.7%	7.2%
Italy	1.0%	2.9%	17.9%
Other Countries	2.5%	12.2%	
Total (Europe)	9.7%	61.1%	53.3%
Areas of recent settlement (outside Latin			
USA	20.5%	4.4%	15.7%
Canada	10.1%		
Australia	8.3%		
New Zealand	2.1%		
Total	41.0%	4.4%	15.7%
Latin America			
Areas of recent settlement		13.3%	16.2%
Argentina	8.6%		
Brazil	4.2%		
Total (areas of recent settlement)	53.8%		
Other countries			
Mexico	2.0%		
Chile	1.5%		
Uruguay	0.8%		
Cuba	0.6%		
Total (Latin America)	17.7%	13.3%	16.2%
Africa	9.1%	7.3%	8.5%
Asia			
India	7.8%	4.9%	4.3%
Japan	1.9%		
China	1.8%		
Total (Asia)	11.5%	4.9%	4.3%
Rest	11.0%	9%	2%
Total	100.0%	100.0%	100.0%
Colonies	16.9%	8.9%	2.6%

Notes: Numbers for Russia and the Ottoman Empire include investment into non-European parts.

Sources: Esteves (2007), Feis (1930), Stone (1999).

Table 1.4. Migration Rates by Decade (per 1000 mean population)

Country	1851-60	1861-70	1871-80	1881-90	1891-00	1901-10
European Emigration Rates						
Austria-Hungary			2.9	10.6	16.1	47.6
Belgium				8.6	3.5	6.1
British Isles	58.0	51.8	50.4	70.2	43.8	65.3
Denmark			20.6	39.4	22.3	28.2
Finland				13.2	23.2	54.5
France	1.1	1.2	1.5	3.1	1.3	1.4
Germany			14.7	28.7	10.1	4.5
Ireland			66.1	141.7	88.5	69.8
Italy			10.5	33.6	50.2	107.7
Netherlands	5.0	5.9	4.6	12.3	5.0	5.1
Norway	24.2	57.6	47.3	95.2	44.9	83.3
Portugal		19.0	28.9	38.0	50.8	56.9
Spain				36.2	43.8	56.6
Sweden	4.6	30.5	23.5	70.1	41.2	42.0
Switzerland			13.0	32.0	14.1	13.9

Source: Hatton and Williamson (1998: Table 2.1).

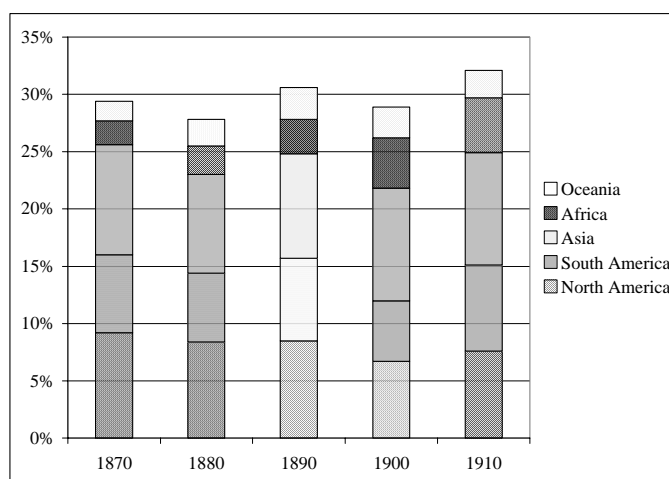


Figure 1.1: Continental shares in Europe's extra-European exports

Source: Bairoch (1974).

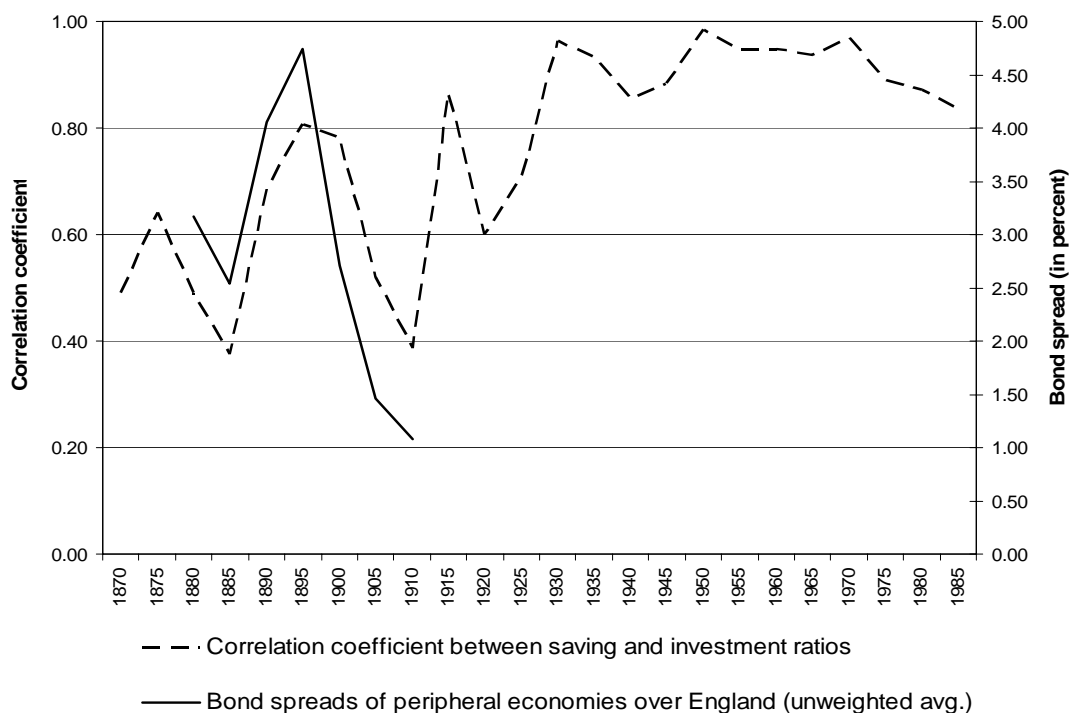


Figure 1.2. Levels of international capital mobility and bond spreads of peripheral economies over England, 1870-1985 (quinquennia).

Source: Cross-section correlation coefficient between saving and investment ratios based on Taylor (1996). Bond spreads of peripheral economies: Spreads of Argentina, Austria-Hungary, Brazil, Greece, Italy, Portugal, Spain and Russia over England (unweighted average), own calculations based on Flandreau & Zumer (2004).

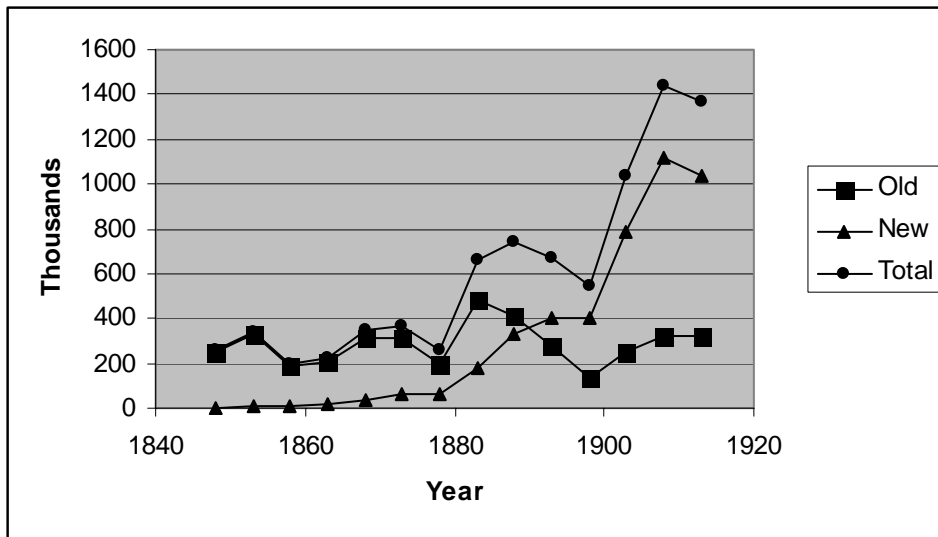


Figure 1.3. Average annual overseas emigration from Europe, 1846-1915

Source: Kirk (1946), p. 279. Note: 'Old' consists of Britain and Ireland, Germany, Scandinavia, France, Switzerland and the Low Countries. 'New' consists of Italy, Austro-Hungarian Empire, Russian Empire, Iberia and the Balkans.

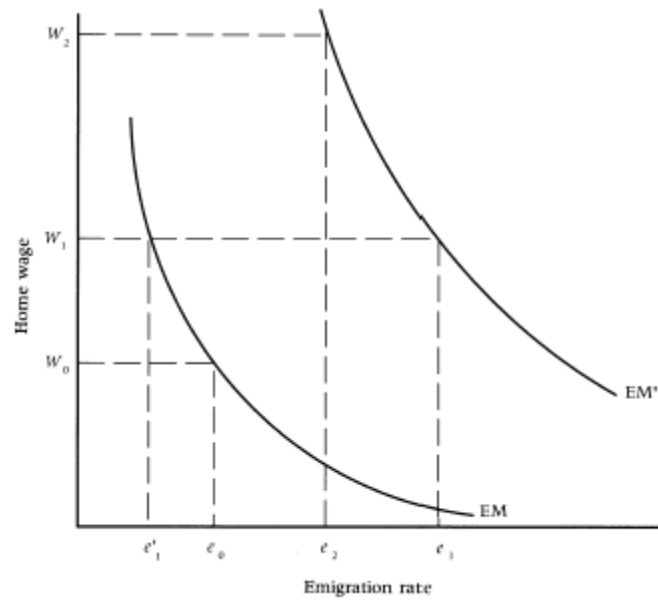


Figure 1.4. A stylised model of emigration

Source: Hatton and Williamson (1994, p. 542).

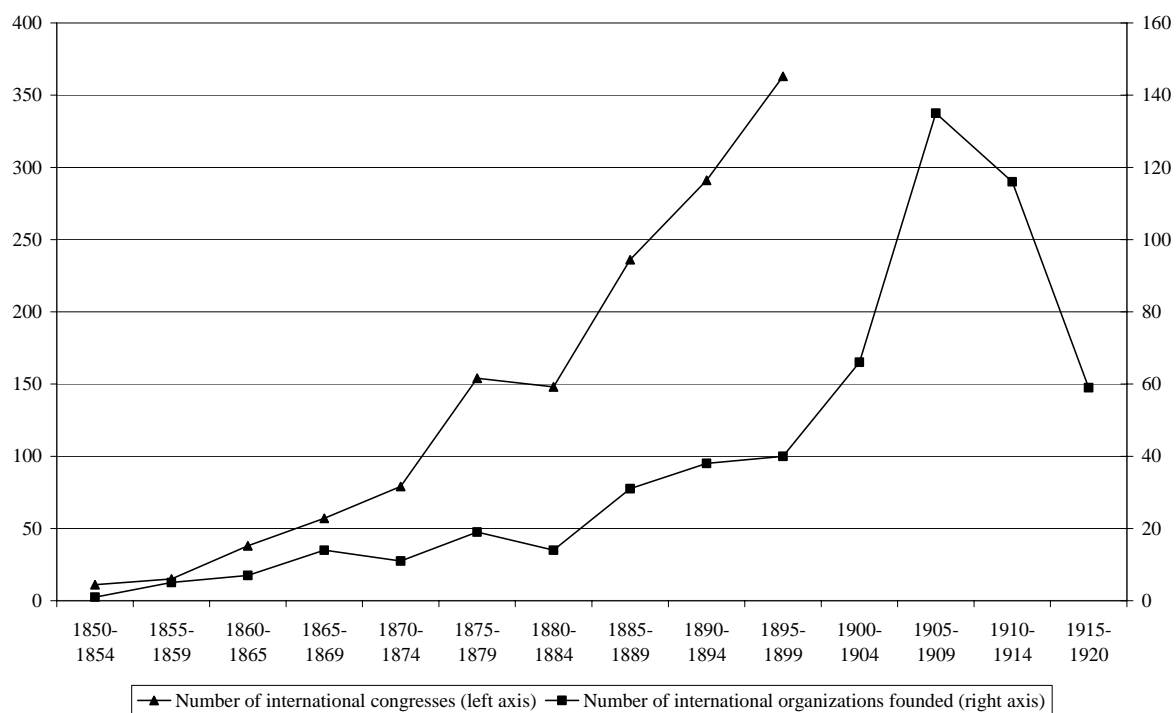


Figure 1.5: The rise of the international scientific community

Sources: Union des Associations Internationales, *Les Congrès Internationaux de 1681 à 1899 / International Congresses 1681 to 1899*, Bruxelles, 1960; Union des Associations Internationales, *Les 1.978 Organisations Internationales fondées depuis le Congrès de Vienne*, Bruxelles, 1957.

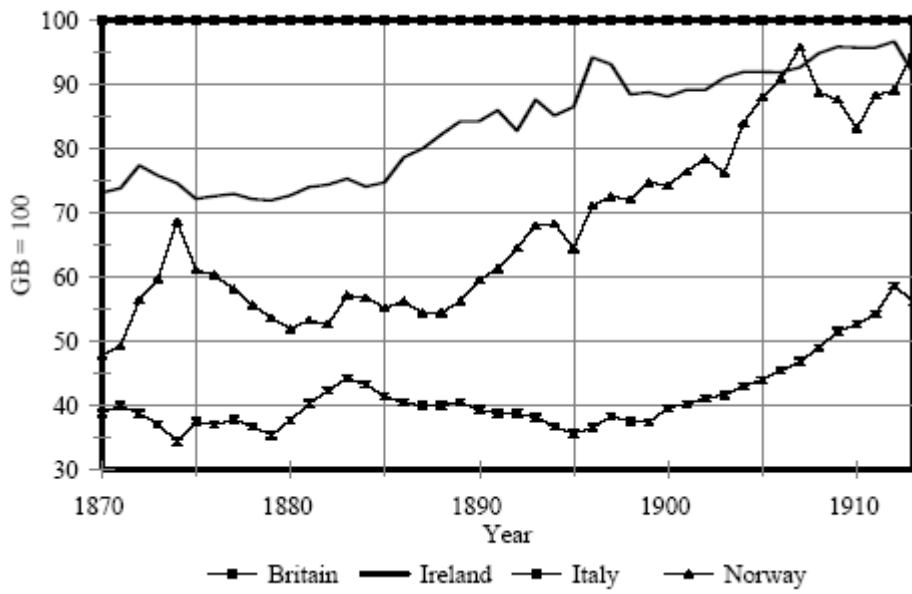


Figure 1.6. Wages relative to Britain, 1870-1913

Source: Williamson (1995), amended in O'Rourke and Williamson (1997).

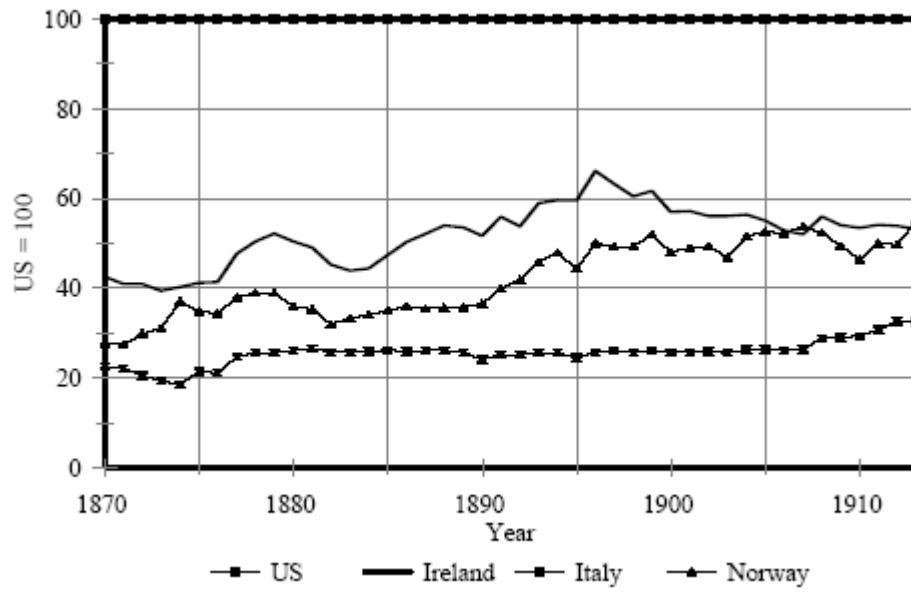


Figure 1.7. Wages relative to Britain, 1870-1913

Source: Williamson (1995), amended in O'Rourke and Williamson (1997).

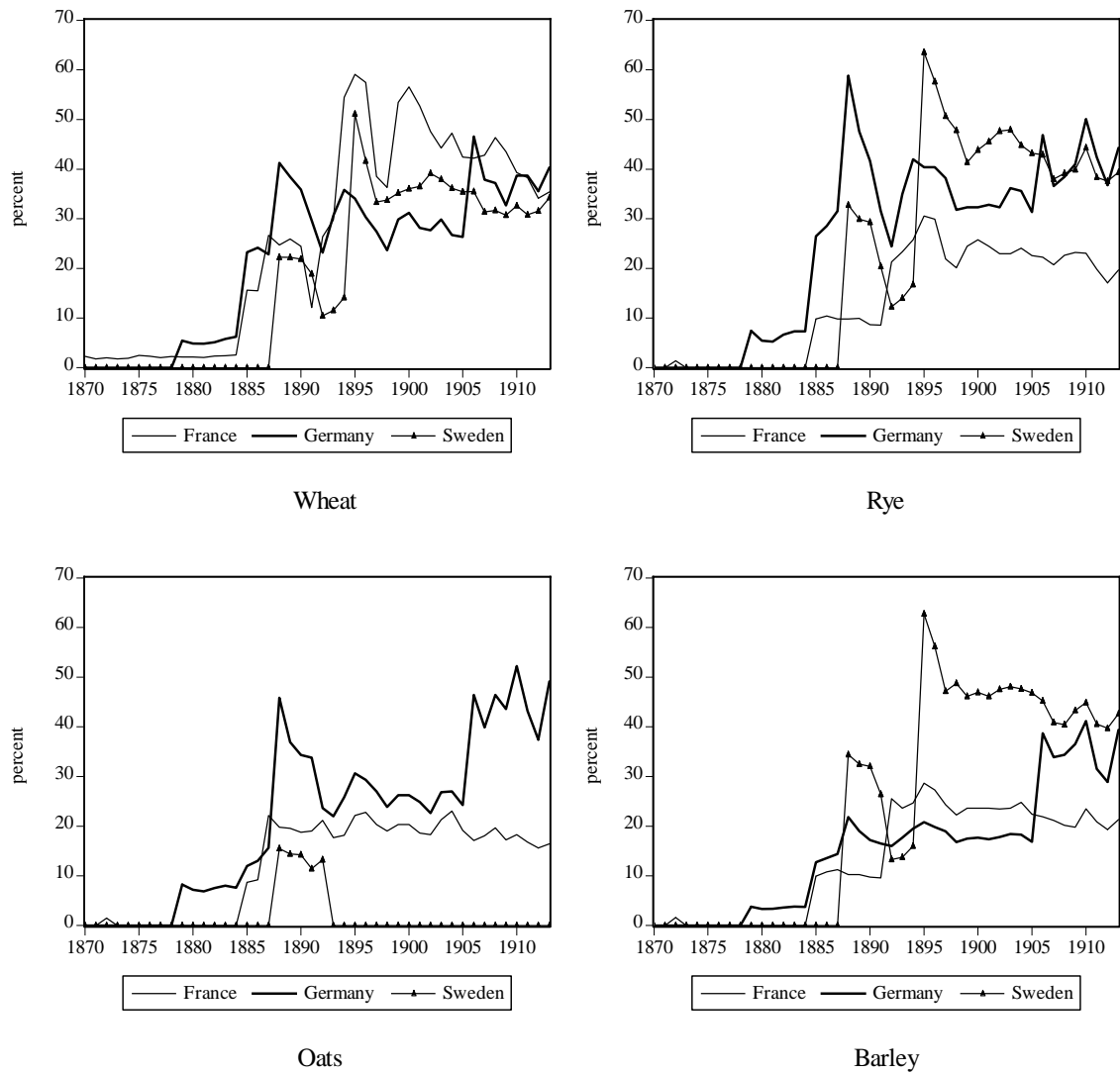


Figure 1.8. European grain tariffs 1870-1913

(*ad valorem* equivalent, percent)

Source: data underlying O'Rourke (1997).