Trade and Empire, 1700-1870

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1. Introduction. The causes of European expansion

One of the most striking features of the early modern period was European expansion, both overseas in the Americas, Africa and Asia, and overland in Asia. Given the relatively impoverished condition of Europe at the turn of the millennium, and its peripheral status at the time, geographically, economically, and politically, it is worth asking what were the factors which led to Europe conquering (much of) the rest of the world, rather than *vice versa*?

This is one of those vital historical questions that is simply to vast to be answered satisfactorily. Nevertheless, we can make some progress by making two conceptual distinctions. The first is between *necessary* and *sufficient* conditions for European expansion. As we will see, there were certain factors which probably facilitated European expansion, and may even have been necessary for it, but which cannot on their own have ensured it, since we can discern the same factors at work in other regions of the world. Second, we need to distinguish between *capacities* and *incentives*. Other regions of the world may at various times have had the technological and military capacity to expand overseas, but never saw this as being worth their while. In Europe, on the other hand, there were overwhelming military and economic incentives for individual states to extend their influence abroad.

Among the factors that may have been necessary for European expansion, but was surely not sufficient, was what Eric Jones (2003) has termed the European states system. According to Jones, the existence of numerous natural frontiers within Europe, such as the Alps, the Pyrenees and the English Channel, meant that it was difficult for any one state to dominate the continent as a whole. This in turn implied a strenuously competitive economic, political and military environment, meaning that military innovations were rapidly diffused across the region, and giving Europe a "comparative advantage in violence". The Chinese failure to produce modern guns (Landes 2006) can thus be taken as an example of what can happen when military competition was lacking. Further evidence in support of the "military competition" thesis comes from the experience of the Ottoman Empire, who faced enemies on multiple fronts, hemmed in as they were between the Safavids, Russians, and Western Europeans. The Ottomans remained relatively competitive militarily for centuries, were willing to make use of foreign

technical expertise, and had economic and political institutions possessed of a considerable capacity for innovation (Pamuk 2004).

However, Europe was not the only politically fragmented region of the world during the early modern period. There were several states in Southeast Asia, for example, and interestingly enough new military technologies diffused rapidly there, an example of which is the practice of mounting cannon on elephants. India was also politically fragmented when the first Europeans sailed there, and this has traditionally been seen as a source of *weakness* for the subcontinent, rather than strength, helping to explain why a tiny state such as Portugal was able to impose itself in the region, by playing off one Indian polity against another. Similarly, the Islamic World had been politically fragmented since 750, when the Abbasids overthrew the Umayyad caliphate, but that world region also eventually succumbed to European power.

One reason why political and military competition may have disproportionately favoured Europe is that is was located in the right place (Findlay and O'Rourke 2007, Jones 2003). Its marginal location on the Eurasian continent had saved it from the ravages of the Mongol invasion, and the Pax Mongolica which followed not only stimulated the development of European long distance trade, but opened European eyes to the riches of East Asia, giving them for the first time a sense of Eurasia as a geographical whole. The Mongol shock that was so destructive in the Islamic World was thus greatly beneficial to Western Europe in the long run.[1] Another geographical advantage enjoyed by Europe was its relative proximity to the Americas. Western Europe was far more likely to "stumble across" this vast continent than any other Eurasian region: while it is understandable that European mariners might have sought a western passage to the Indies, no Chinese admiral in his right mind would have sought an eastern passage to the Middle East or Africa. An even more important geographical advantage enjoyed by Europe, according to Felipe Fernández-Armesto (2006), was the Europeans' privileged access to "the favourable winds and currents" of the Atlantic, which was the "highway to the rest of the world." By contrast, the conditions facing Asian navigators

[1] According to J. R. S. Phillips (1998, p. 246), "With only a little exaggeration we might say that the ultimate legacy of the Asian and Eastern European conquests of Genghis Khan and his followers in the thirteenth century was the mutual discovery of Europeans and of the Native American peoples at the end of the fifteenth."

were much less favourable: as Fernández-Armesto succinctly puts it, “To start worldwide ventures, it was vital to be in the right place” (p. 149). And once Europeans had stumbled on New World resources, or a maritime passage to Asia, inter-state competition then ensured that the opportunities thus afforded would be exploited to the full.

It is wrong to claim that Western Europe alone had the technological capacity to mount large-scale overseas expeditions. During the reign of the Sung dynasty, which came to power in China in 960, large ocean-going vessels were built which were well in advance of their time, while the government invested in port facilities, lighthouses and other maritime infrastructure. This dynasty was destroyed by the Mongols in the thirteenth century, but when a new Chinese dynasty, the Ming, came to power in 1368, they resumed where their predecessors had laid off. As is well known, the Muslim eunuch admiral Zheng He (or Cheng Ho) launched a series of massive armadas to Southeast Asia, India, Sri Lanka, the Middle East and Africa, starting in 1405. The ships were far bigger than anything seen in the West at that time, with some larger than 1500 tons, five times the largest of Vasco da Gama’s ships. The fleets could number hundreds of ships, with crews of 30,000 men or more. As Ronald Findlay (1992) emphasises, the Ming certainly had the capacity to project power overseas, but did they have the incentive?

Here, the answer may well be ‘no’. On the one hand, the threats which the Chinese Empire faced came from overland, and on strategic grounds there was certainly a good case to be made for made for concentrating the empire’s might along the borders with Central Asia. Indeed, during the early modern period, when European states were expanding in the Americas and Asia, the Chinese Qing dynasty was advancing into Central Asia, crushing the Zunghar Mongols in the process and annexing vast new territories. On the other hand, the potential benefits from maritime exploration were probably weaker for the Chinese than for the Europeans. Famously, Zheng He brought back a giraffe from his African voyages, which no doubt was a welcome addition to the Zoo in the imperial capital, but which hardly constituted a compelling strategic reason to continue the expeditions. With its geographical and climatic diversity, as well as its size, China was far more self-sufficient than any Western European state. By contrast, European merchants and states faced powerful incentives, first to seek out direct routes to

sub-Saharan gold deposits, bypassing the Muslim middlemen who controlled the trans-Saharan trade; next to gain access to abundant supplies of African slaves, and use these on the sugar plantations of newly-discovered offshore African islands; later to circumnavigate Africa, thus attaining Asian spice markets directly, and again cutting out Muslim (and Venetian) middlemen; and finally to fully exploit the resources of the New World, once these had been discovered. All of these activities were in principle extremely lucrative, and the mutual dependence of Power and Plenty during this period, to use the language of Jacob Viner (1948), meant that states as well as merchants had a powerful incentive to pursue them. Trade profited traders, but also yielded revenues to the state; while the state needed revenues to secure trading opportunities for its merchants, by force of arms if necessary. Trade and empire were thus inextricably linked in the minds of European statesmen during the early modern period.

In this respect at least, Russia's overland expansion across Asia, which would prove to be the most long-lasting imperial adventure of the period, was similar to the more familiar Iberian conquests in Latin America, or French and British adventures in North America or Asia. As was the case in French North America, furs were the most important commodity exploited here, and as was the case for all the European empires of the early modern period, the state was both an investor in the imperialistic enterprise, providing troops and other necessary infrastructure, and a major financial beneficiary, gaining a tenth of the best pelts. At one point, Russia's overland empire even became a sea empire, when the depletion of animals forced hunters to seek out beaver and sea otter furs in Alaska, which was only sold to the United States in 1867. Elsewhere, empire yielded financial benefits by providing control over precious metal supplies (in Latin America); giving access to abundant supplies of slaves (Africa); allowing the cultivation of warm-climate crops such as tobacco and cotton, and selling these on to consumers in Europe (North and South America); or allowing control over trade routes, or better yet the sources of supply of scarce commodities such as spices (in Asia). The Ottoman Empire, with its attempted expansion into Central and Eastern Europe, may be the exception that proves the rule, in that the financial inducement for these ventures is not immediately obvious. The Ottomans did however actively intervene to prevent the Portuguese from obtaining a monopoly of the spice trade in the Indian Ocean, fighting

the interlopers both directly along the Persian Gulf, and indirectly via their support for the sultan of Acheh, from where pepper continued to be exported to Ottoman-held territory, and from there to Venice. This allowed the Ottomans to continue enjoying the rents from the transit trade which European imperialists in Asia were so actively seeking, at least until the appearance of the Dutch and English in the Indian Ocean in the 17th century. The Ottomans were thus also sensitive to the mutual dependence of Power and Plenty, which was not a peculiar European pathology during this time, but a general feature of the Eurasian geopolitical landscape at a time when the Military Revolution was making warfare more and more expensive, and leading to a decline in the number of states that were militarily viable at any given time (Roberts 1967).

2. Mercantilism, empires and trade

We now address the issue of why European countries chose to build empires and then kept them over time. This question leads necessarily to others: Did empires pay? How were the costs and benefits from empire distributed? Since in Section 3 we will look in depth at the British case, we here pay special attention to France, Portugal and Spain.

Why empires? The issue of what motivated European nations to build an empire has long been the subject of controversy. "The establishment of the European colonies in America and the West Indies arose from no necessity: and though the utility which has resulted from them has been very great, it is not altogether so clear and evident", wrote Adam Smith (1776, ii, 68). Several hypotheses have been put forward, ranging from the purely economic to the purely political, with several intermediary cases as well. Among the more economic explanations is the widely accepted view that in the absence of (integrated) international markets, due partly to high transaction and transportation costs (caused largely by insecurity, in an age of widespread piracy and warfare), overseas expansion permitted the creation of reserved markets, thus intertwining conquest and trade. This is not so dissimilar from the Vinerian account of the dependence of Plenty on Power, and vice versa, which we encountered above: if Spanish merchants, say, were to be able to trade in a given area, the Spanish government would have to make this possible by excluding other merchants and governments from that area, since otherwise the Spanish would themselves be excluded.

However, other explanatory hypotheses have been also put forward. For example, in response to the question as to why, once the technological constraints that impeded long-distance oceanic voyages had been removed, only some European countries established colonies overseas, John Elliott (1990) proposed a historical explanation based on previous histories of expansion. Iberian plunder, settlement, and colonization in the Americas, in this view, represented a follow-up to the re-conquest ('reconquista') of territories previously under Muslim control, while England's overseas expansion in the 17th century followed the conquest of Ireland in the previous century. Why did other countries in Europe join them? Here Elliott points to competition between European nation-states, which triggered an emulation process leading to the seizure and occupation of New World lands. In this scenario, the fact that all of Europe eventually became involved in the overseas expansion would arguably have been, at least in part, unintended.

Another view points to the inter-connections between empire and nation-state building, with countries within Europe struggling not to be left behind. This interpretation regards as 'economistic' and anachronistic the widely held view that states and merchants needed reserved markets and supply sources in an uncertain world. In this view, as Stanley Engerman (1998) notes, the colonies would not have represented an investment, but rather the costs paid for non-economic ends.

Not all colonial powers behaved the same when settling and colonizing overseas. Natural resource endowments and factor proportions in the New World regions under their control conditioned Iberian and English subsequent behaviour. As Elliott (1990: 53) put it, and as Acemoglu, Johnson, and Robinson (2002) further developed later, while "the prime concern of the Spaniards was to extract its rich mineral deposits and the labour and tribute of their indigenous peoples", the English in North America could only "develop with their own labour, or with that of imported slaves" –a factor, by the way, missing in the classic article by Engerman and Sokoloff (2002) - "the resources of a ... virgin continent" A similar behaviour to the British can be found in the River Plate, in the Spanish empire.

While it is unclear what triggered European expansion, another still unsettled and major question is whether empires paid, and how the costs and benefits of building and

sustaining an empire were distributed in each particular society. In the next section we will argue that trade mattered in the long run for the sustainability of the British Industrial Revolution. But what have more narrowly focussed studies had to say about the costs and benefits of other European empires?

To provide a measure of the costs of acquiring and maintaining an empire at the national level represents a task most probably doomed to failure. Moreover, the possible aggregate gains (or losses) of empire in terms of income and power have to be contrasted with their distribution among individuals or social groups. Moreover, to complicate things further, these variables all varied not only across countries, but over time as well.

The costs of empire for early modern European nations are undeniable, since colonies needed to be acquired, settled, and defended. Wars, losses of life and ships represented -from a purely economic perspective- labour and (broad) capital diverted from alternative uses within the domestic economy. War costs translated into government consumption that had to be financed through taxes, inflation, or public debt. As regards the latter, it has been claimed for the case of Britain that private investment was 'crowded out' during the Napoleonic Wars, resulting in lower growth and welfare (Williamson 1984). Besides, the colonial system involved navigation laws that, either in Spain or England, imposed an implicit tax on national consumers, as they usually had to pay a price above that of the most efficient producer or, at least, a higher price due to the trans-shipment of goods via the metropolis.

Crucial to any cost-benefit assessment of empire is the question of whether there was unemployment of resources in the economy. In a full employment situation, allocating resources to exports had an opportunity cost, as they could have been alternatively used in production for the domestic market. This 'comparative advantage' scenario has been used to describe the role of empire in 18th century Britain (Thomas and McCloskey 1981), with the predictable outcome of downplaying its contribution – and that of trade in general- to growth and welfare (see Section 3). The alternative Smithian 'vent for surplus' scenario would increase the contribution of trade (and hence empire) to growth, seeing it as allowing the employment of resources with practically no

opportunity cost (see O'Brien and Engerman 1991 on the English case).[2] The critical issue here is whether the economy under consideration experienced unemployment or not. An eclectic solution is to provide upper (unemployment) and lower (full employment) bounds for the impact of empire. Nonetheless, both models tend to produce small numbers, and the contribution of empire or trade to growth usually remains relatively modest compared with the expansion of domestic market. The impact would be greater, however, if some dynamic spinoffs or externalities were introduced into the assessment.[3]

So far, trade and empire have been implicitly assumed to amount to the same thing. The question, however, is whether the benefits of trade could have been obtained without the burden of empire. Surely a generally free trading situation would have been preferably to one in which each country engaged on a mercantilistic strategy which might indeed have been individually rational, from a military or even economic viewpoint, but which produced a collectively sub-optimal outcome? From a historical point of view, however, one can ask: is this really a realistic counterfactual, in a world without a collective security regime? Not according to Findlay and O'Rourke (2007), who argue that for the individual European state, pondering what such a unilateral conversion to peaceful free trade might bring, 'in the absence of … a clearly defined hegemonic power, military defeat and exclusion from foreign markets seems a plausible answer'.

How have the literatures on individual European countries dealt with these questions? Lets us take three examples.

France

In the case of 18th century France, Butel and Crouzet (1998) have depicted imperial expansion in America (and Asia) as a non-negligible contribution to growth, that was however concentrated both by region –in the Atlantic ports (Bordeaux, Nantes and

[2] This approach has also been used to obtain an upper bound estimate of the effects of the loss of empire in the case of Spain (Prados de la Escosura 1993).

[3] As Engerman (1998) points, these external effects could be: internal to the firm, so that increased demand leads to a lowering of costs; economies external to the firm but internal to the industry (i.e. the expansion of wholesale and retail distribution networks); economies external to the firm and the industry, but internal to the economy (external economies, with vertical disintegration and increased specialization, enhanced productivity in the economy).

Le Havre) and their immediate hinterlands- and by sector (the textile industry, shipbuilding, sugar refining, and shipping).

On the eve of the French Revolution, trade with colonies dominated France's total foreign trade, its share having markedly increased since the beginning of the 18th century. Between 1716 and 1787 colonial exports jumped from 4.3 to 22.1% of total exports. Nonetheless, the size of total trade was small, representing less than one-fifth of GDP, with exports being less than 10%, while total colonial trade only reached 6% of GDP (a figure that should, perhaps, be raised given the indirect trade with the Spanish colonies).[4]

Colonies, nonetheless, represented a significant market for French industry, since exports to them were equivalent to 45% of the total increase in manufactured exports during the 18th century. While such figures should be tempered by the fact that on the eve of the French Revolution exports only represented 7% of industrial output, and colonial exports even less (only 2.5%), the impact of these exports was however concentrated in a few sectors (linens especially). Butel and Crouzet also stress the feedbacks from colonial trade to non-exporting industries, including sugar refining, shipbuilding and its ancillary activities, as well as to the shipping industry, since transportation was on French ships.

Between 1716 and 1787 colonial imports (mostly sugar, coffee and other tropical groceries) jumped from 13.5 to 37.4% of total French imports. Domestic consumption of colonial produce was limited, and a large share of French imports from the colonies was re-exported. The distribution of colonial profits was unequal. Colonial trade was especially profitable for the planters and merchants involved. But once government expenditures for the defence of the colonies are taken into account, the overall benefits of colonial expansion are less clear.

A more optimistic voice is that of Guillame Daudin (2006), who has addressed the issue of how much did colonial profits contribute to capital formation in France prior to the Revolution. Daudin (2006) has estimated that total profits from overseas economic relations represented from between 9.5% and 11.5% of the total income from investment. His static assessment of the contribution of the overseas sector to the French economy suggests that, had the sector not existed, capital income would have been reduced by up

[4] Daudin (2006) reckons that French trade with the West Indies plus a smaller portion with Spanish colonies amounted to almost half the total at the end of the Ancien Régime.

to 8% (but national income by less than 2%). Consequently, overseas expansion benefited especially the owners of capital. In a further conjectural exercise, Daudin reckons that the net gains linked to the overseas sector represented up to 6% of French savings, which would have been sufficient to increase the rate of economic growth from 6 to 7.6% implying that, by 1790, the level of per capita GDP would have been up to 3% higher. In an alternative, upper bound computation, singling out the decisive role of the overseas sector, Daudin conjectures that, in the 18th century, without intercontinental trade the "French stock of capital would have been nearly 30 % smaller, French growth per capita would have been 0.21 percentage points smaller (one-third of total growth), and French GDP would have been 8% smaller".

Given the Ancien Regime's keen interest in colonies, it is ironic that their major implications for France may have been domestic and political.[5] Due to the financial difficulties that the defence of the Caribbean colonies represented, the First French Empire contributed substantially to the fiscal crisis of the state (1763-89), and thus represented, according to Butel and Crouzet (1998), one of the causes of the French Revolution that not only destroyed the monarchy, but also triggered the Napoleonic Wars and, hence, the destruction of empire.

Iberia

The cases of Portugal and Spain share some common features. A recurrent issue in the literature is whether these countries did not develop because, in building their empires, the metropolitan economy was disregarded, or because the vast resources generated by the empires were not put to proper use. The fact is, however, that in order to realise the potential inherent in the discovery of the resource-abundant but labour-scarce Americas, the Iberian powers required continuous investment in social overhead capital (ports, roads, housing, internal transportation, oceanic shipping) and the establishment of new political and commercial organisations. This task was mainly undertaken by the Spaniards and Portuguese, while benefiting the rest of Europe, for at least the first 150 years after Columbus's historical voyages (O'Brien and Prados de la Escosura 1998).

[5] As we also find for the case of Spain (see section 4.2)

As regards the 18th century, the question of whether the empire absorbed resources (defence, administration) that could have been allocated to productive investment and, therefore, represented a significant opportunity cost (Fontana 1991), or whether in fact such costs were a pre-requisite for economic development, has been hotly debated. Economic progress in a context of financial stability and high public expenditure (but balanced budgets) is a depiction of Spain under King Charles III (1759-1788) that fits well in a mercantilist world (Tedde 1990). Moreover, the composition of public expenditure in Spain was not far from that of Britain, especially in time of war.[6]

In Iberia, the construction of the absolutist state and the rise of the seaborne trade were closely intertwined. The colonies played a crucial role in supporting the state until the end of empire, supplying the means for the rise of a strong political centre, which concentrated power without being drawn into extensive bargaining with its more prominent subjects and institutions. As a result, the political system had comparatively few representative institutions. In early modern Europe state power was constrained by the crown's needs to raise taxes. The more kings depended on taxes, the less sovereign and autonomous they became. In Spain, as in Portugal, bullion not only underpinned regal power but augmented the incomes of the aristocracy, and thereby reduced their need to increase taxation and rents from the population. Public revenues from the Indies were important not just because of their quantity, but because they constituted readily available resources and an indispensable source of credit. Furthermore, American bullion overcame the institutional impediments to the transfer of revenues across regional and constitutional boundaries. In Portugal, for example, the tax on gold accounted for some 10% of public revenue in 1716, while by the 1760s, just before the gold and diamond mines started to decline, it provided a fifth of state receipts. Brazil supplied around 40% of government tax returns at the time of the Marquis of Pombal. In Spain, prior to the Napoleonic Wars, the Crown revenues from colonial origin (including the surplus from colonial chests and those derived from customs duties) represented one-fourth of the total. Thus, the colonial empire helped to consolidate and stabilise traditional institutions

[6] During war years such as 1776-83, defence, debt service and civil administration represented, respectively, 62, 30, and 8%t of government expenditure in Britain, and 62, 21, and 17% in Spain. In the period of peace, 1784-92, discrepancies emerged and the corresponding percentages were 31, 56, and 13% in Britain and 57, 20, and 23% in Spain. It clearly appears that Spain did not manage to cut down the burden of defence expenditures in peace time (see O'Brien 1988, Merino 1987 and Tedde 1990).

and structures of power, status and property rights within Iberia. By contrast, in England the mutual dependence of Power and Plenty led to the strengthening of merchant interests: according to Voltaire, Britain's trade success and relative freedom reinforced each other in a virtuous circle: "trade, which has made richer the citizens of England, has helped to make them free, and this freedom has, in turn, enlarged trade" (cited in Findlay and O'Rourke 2007, p. 347; see also Braudel 1992 and Acemoglu, Johnson and Robinson 2005).

In the 18th century there was a growing need for silver in Europe due to economic growth and an ongoing adverse balance of trade with Asia. At the time, the mines of Spanish America supplied nearly 90% of world output. In the metropolis, nonetheless, the inflow of specie, gold in Portugal and silver in Spain, possibly provoked an episode of 'Dutch disease' similar to the one described for 16th century Spain by Forsythe and Nicholas (1983) and Drelichman (2005). More importantly, perhaps, domestic institutional factors (restrictions imposed on the free use of land and on admission to the industrial crafts, administrative controls and economic interference by the state) hindered specialisation and productivity growth.

The 18th century Portuguese empire was centred on Brazil. From the 1650s onwards, the recovery of trade was supplemented by the discovery of gold and diamond mines, and Brazil became the major source of income for the Portuguese monarchy. Although Brazil never ceased to be a plantation economy (growing sugar, tobacco, and later cotton and coffee), in the first half of the 18th century gold became by far the most vital resource of the Portuguese empire. The dramatic consequences of diminishing gold and diamond resources started to be felt in the 1760s. After a period of crisis and uncertainty, the recuperation of the economy was partly based upon the growth of trade with Asia, but fundamentally on the renewal of trade with Brazil. Portugal profited from a new expansion in the European demand for cotton and sugar. In the last years of the 18th century, the neutrality of Portugal in the French Wars proved to be particularly rewarding and created a period of prosperity for the Portuguese empire. However, this was to be a short-lived prosperity. Facing contradictory demands from France and England, Portugal was eventually invaded and occupied by French troops in 1807.

During the next few years, struck first by the British blockade at sea and then by war, the empire collapsed.

How important was the empire for the Portuguese economy? Industrial exports were almost entirely sent to the colonies and their significance varied from one sector to another. In the case of the linen industry, for example, around 15% of its output was exported to Brazil in the early 19th century (Pedreira 1993). However, more important was Portugal's position as an entrepôt between Europe and Brazil. In the final days of the Atlantic empire, between 1796 and 1806, re-exports accounted for more than half of the trade with Brazil, while almost two-thirds of total exports to foreign nations consisted of Brazilian goods. In Pedreira's view (1998), the colonial system contributed to the Portuguese economy by supplying the metropolis with foodstuffs (sugar, coffee and rice) and raw materials (mainly hides, cotton, dyewood and tobacco) and markets for domestic production (manufactures, wine, etc.), and also via the re-export and slave trades, as well as the transfer of private and public incomes from the empire to the metropole.

The empire had also consequences for Portuguese resource endowments. While emigration might have deprived the country of manpower, skills and entrepreneurship, since emigrants were young males, more literate and ambitious than average, it also made possible the colonisation of new territories, opening new markets and providing luxuries and tropical groceries at lower costs. Furthermore, migration eased economic conditions in the more densely populated areas, especially in the Northwest. In the 18th century, Brazil became something of a frontier. The empire helped to shape the distribution of Portuguese population in the centuries to come: demographic growth now converged on the coast, while the urban population concentrated in Lisbon.

In the case of Spain, trade with America increased between 1714 and 1796, especially during the late 18th century. Though not great in macroeconomic terms, trade promoted monetization and market orientation at a time of growing population pressure and rising land rents, promoting the utilisation of idle resources. Trade with America also stimulated industry and services and, in particular, promoted shipbuilding and its associated activities (iron, timber, cordage industries). Exports to the colonies imparted a stimulus to some industries and regions, but the small share of industrial goods and commercial services supplied to Latin America by Spanish and Portuguese firms and

merchants before the break up of their empires after 1808 stands in contrast to the linkages forged between the British economy and her overseas territories and markets between 1688 and 1815.

Recent research has tended to downplay the gains Spain obtained from colonial trade (Prados de la Escosura 1993). The composition of colonial imports suggests that the possibility of increasing production by reallocating resources would have been small, and that most gains possibly resulted from an improvement in consumption patterns. By 1792, over 60% of retained imports consisted of cocoa and sugar. Furthermore, these colonial products could have been acquired on international markets. Consequently, gains from the colonial trade would only occur if, given colonial rule, Spain acquired the same commodities at lower prices. Furthermore, Spain's dependency on the colonies for raw materials was very small (raw cotton and dyestuffs only represented 4% of retained imports for domestic consumption in 1792). This small proportion can of course be seen as a measure of the weakness of domestic manufacturing. In the Catalan cotton textile industry (one of the most dynamic industries at the end of the 18th century), European cotton yarn imports were of greater importance than colonial raw cotton imports, suggesting how weak the Catalan spinning industry was at the time.

Industrial exports, concentrated in a few sectors (textiles: 36.6% in 1792; iron and steel: 3.2%; paper: 4.4%; and food: 22.3%) stimulated industrial expansion and were associated with some external economies in their regions of origin. Colonial protectionist legislation made Spanish manufactures artificially competitive on the Spanish American market. An upper bound computation suggests that exports of domestic manufactures to the colonies made a 5% contribution to industrial value added before the Napoleonic Wars.

Growth and trade in the early modern era: quantitative evidence

Recent research has suggested that Europe's trade with the rest of the world grew at a historically unprecedented rate during the early modern period. O'Rourke and Williamson (2002a) calculate average growth rates of 1.26% per annum during the 16th century, 0.66% per annum during the 17th, and 1.26% growth during the 18th, or 1.06%

per annum overall. These figures are broadly consistent with Jan de Vries's (2003) more recent calculation of tonnage returned from Asia to Europe: according to him, this grew at 1.01% per annum during the 16th century, 1.24% during the 17th 1.16% during the 18th and at 1.1% overall. An average growth rate of roughly 1% per annum over a period of three centuries was an impressive achievement relative to what had gone before, and led to Europe, or at least the colonial powers of Western Europe, becoming more open, albeit from very low levels. According to Angus Maddison (2003), Western European GDP grew at roughly 0.4% per annum between 1500 and 1820, implying rising ratios of intercontinental trade to GDP.[7]

Perhaps surprisingly, this increase in trade volumes was not accompanied by any evidence of commodity price convergence between Europe and the rest of the world, at least according to the data that have been analysed up to now (O'Rourke and Williamson 2002b). Figure 4.1 shows price gaps for pepper and cloves between Amsterdam and Southeast Asia (that is, the ratio of the Amsterdam to the Asian prices). There is no evidence of price convergence before the 19th century, and indeed there is evidence of substantial price divergence for cloves in the 1650s, which coincides nicely with the establishment of Dutch control over clove supplies around that time. Mercantilist monopolistic and monopsonistic policies could have directly prevented price convergence during this period, as the figures for cloves suggest, but mercantilism also created an international political environment in which wars were frequent, and the peaks in the clove price gaps during the first and second Anglo-Dutch wars, as well as the Seven Years War of 1756-63, lend credence to this view (see also Section 4). If the intercontinental trade expansion of the early modern period was not due to commodity price convergence, then it must primarily have been due to either outward shifts in demand or supply, and O'Rourke and Williamson (2002a) conclude that between a half and two-thirds of the boom was in fact due to demand expansion, a claim that has however been hotly contested (Flynn and Giráldez 2004).

As we will see, the 19th century experience was rather different, with substantial commodity price convergence between markets driven by sharply declining transport

[7] Indeed the Maddison (2003) figures represent an upper bound, given the lower growth figures (around 0.1% per year) calculated by van Zanden (2005) and Álvarez-Nogal and Prados de la Escosura (2007).

costs. Another difference between the early modern and modern periods concerns the commodity composition of trade. As Table 4.1 shows, European imports from the rest of the world during the former period were mostly high value-to weight commodities, which could bear the cost of transport because they were not produced in Europe at all, or only with some difficulty. There was a gradual evolution, to be sure. During the 16th century, silver and spices were the dominant imports from the Americas and Asia respectively, and these were clearly extremely high-value goods. Around the middle of the 17th century Indian textiles became the leading European import from Asia, but these were often luxury items, and the European textile industry was still uncompetitive relative to Indian weavers. Around the same time, "colonial goods" such as sugar and tobacco were becoming more important components of the New World's exports, but these were warm-climate commodities that could not easily be grown in Western Europe. There was thus an evolution in the nature of intercontinental trade during the early modern period, towards bulkier commodities, but the period before the 19th century did not, for the most part, involve large scale inter-continental trade in basic, heavy commodities such as wheat which could be easily grown both inside and outside Europe.

Nonetheless, econometric evidence suggests that this trade was still important enough to have affected growth rates during the early modern period. One indication of economic success in pre-industrial economies is the urbanization rate, since urbanization was associated with a shift away from agricultural activities towards industry or services. The urbanization rate in the "Atlantic" European economies (England, France, the Netherlands, Portugal, and Spain) was just 10.1% in 1500, less than in the rest of Western Europe (11.4%) or Asia (11.5%) (Acemoglu *et al*. 2005, p. 549). By 1800, urbanization was higher in Atlantic Europe (19.8%) than in the other two regions (16.9% in the rest of Western Europe, and 8.9% in Asia). Maddison's GDP data also suggest that growth was faster in the five main overseas colonial powers (which were more engaged in intercontinental trade than the nations of central and Eastern Europe) than elsewhere. Allen (2003) has provided an econometric account of growth in early modern Europe, in which he treats trade as an exogenous variable, reflecting the importance of military might in grabbing trade for individual states in the mercantilist era: as he says (p. 414), "some countries were successful in the race for empire, while others were not." He finds

a strong positive relationship between trade and growth in early modern Europe, concluding that "the intercontinental trade boom was a key development that propelled north-western Europe forwards" (p. 432).

None of this is to deny that a regime of multilateral free trade would have been preferable to mercantilism. As we will see, the removal of mercantilist restrictions was one of the reasons underlying the rapid growth of world trade during the 19th and 20th centuries. The results do suggest that in a mercantilist world, it was important to be on the winning side in military conflicts: as David Ormrod (2003, p. 341) puts it, "the limits to growth in the premodern period were determined by geopolitics: by state power and the extent of naval protection available for merchant shipping in distant waters."

3. Trade, empire and the Industrial Revolution

Chapter 1 provided a broad overview of Europe's transition to modern economic growth. In this section we focus on one particular aspect of this transition, and ask: what was the role of trade during this breakthrough? And if trade and empire were inter-related, what was the role of empire? More narrowly, what was the impact of trade and empire on the British Industrial Revolution? To what extent did that epochal event depend not just on the Hargreaves of this world, but on the Hornblowers?

The economic and historical literature on this issue has largely been shaped by the dominant economic theories of the time. One particularly influential strand of thought has been inspired by the assumption of Classical economists, from Smith to Marx, that growth depends on investment, which depends on savings, which depends on profits (since workers were assumed to be too poor to save, and landlords too frivolous). In a famous book, the future Prime Minister of Trinidad and Tobago, Eric Williams, argued that Atlantic slave trade profits financed the Industrial Revolution. His evidence, which was largely anecdotal, consisted of enumerating cases in which those associated with slavery made investments in domestic British industry (Williams 1966). The classic quantitative responses to Williams were made by Engerman (1972) and O'Brien (1982), both of whom measured the profits associated with the slave trade (or, in the case of O'Brien, with Britain's trans-oceanic activities more generally), and found these profits

to have been too small to have possibly mattered. For example, O'Brien found that the total profits accruing to those engaged in trade and commerce with the 'periphery' in 1784-86 amounted to £5.66 million. If 30% of these profits were saved and reinvested, then that would have financed roughly 15% of British gross investment during that period. Since 15% was, for O'Brien, a small figure, the Williams thesis 'foundered on the numbers' (p. 16). The rhetoric of the article was classically cliometric, in that O'Brien made a series of assumptions, all of which were biased in favour of the Williams thesis he was trying to overturn. First, he focussed just on British trade and investment, since Britain was more heavily engaged in trade with the periphery during this time than any other European country: thus, if British trade was too small to matter, then this was *a fortiori* true for Europe as a whole. Second, his choice of a 30% reinvestment rate was an upper bound, since savings rates of 20-30% were 'on the high side' even for capitalists. Third, the calculation assumed that if the capital invested in trade with the periphery had not been employed there, it could have found no alternative use, and that British profits would thus have been smaller by the entire £5.66 million. If profit rates half as high had been available to domestic investors, then the loss from not investing abroad would have been just £2.83 (=5.66/2) million, and peripheral profits would only have financed 7% of gross investment. If profits had been as high at home as abroad, and if the demand for capital were perfectly elastic, then there would have been no reduction in profits if colonial investments had been unavailable, and the contribution of the periphery to domestic investment would have been precisely zero.

There is moreover a more fundamental problem with the Williams thesis, which is that as we saw in Chapter 1, technological change rather than capital accumulation was the driving force behind the Industrial Revolution. By focussing on profits as the possible link between overseas trade, empire and slavery on the one hand, and European growth on the other, Williams and others have been barking up the wrong channel. If Marxist economic theory is ill-suited to explain the Industrial Revolution, then so too is Keynesian theory, by definition, since Keynes was concerned with the short run determination of output and employment, not with long run economic growth. This has not prevented various historians from attempting to argue that overseas demand exogenously boosted British industrial output during the transition to modern growth. As

almost 60% of British cotton textile exports went to non-European countries during 1784-6 (Davis 1979), such a claim is understandable. However, as Mokyr (1977) pointed out, growth is ultimately a supply-side phenomenon, and indeed if growth had been due to rising overseas demand, then Britain's terms of trade should have increased during the Industrial Revolution, whereas in fact they fell, reflecting the cost-reducing nature of the innovations concerned (Figure 4.2). Figure 4.3, taken from Findlay and O'Rourke (2007, p. 332), and based on the analysis in Findlay (1982), makes the point in a simple manner. According to Crafts and Harley (1992), industrial output rose by roughly 235% between 1780 and 1831, while GDP rose by roughly 135%. If the income-elasticity of demand was unity, and foreign incomes rose at the same rate as British ones, then the demand for British manufactures at constant prices rose by roughly 135%. This can be illustrated by the outward shift of demand from D to D' (ignore D" and D"' for now). If the industrial supply curve were vertical, it would have shifted out by 235%, intersecting D' at the new equilibrium, denoted by point 'B'. The available data on the British terms of trade suggest that at this point, relative manufactured goods prices were (very roughly speaking) 55% lower than in the initial equilibrium A. If the elasticity of supply were unity, on the other hand, the supply curve would have shifted out (at constant prices) by 290% (=135+100+55), far more than the 135% outward shift in demand.

Economists inspired by Keynesian and Marxist economics have thus not made much headway in unravelling any possible link between trade and the Industrial Revolution. Neither have cliometricians trained in static neoclassical theory, who have attempted to measure the deadweight loss which would have arisen had British or European trade with the rest of the world been restricted or even abolished during the 18th and early 19th centuries. As is well known, such deadweight losses are typically small, and thus, as previously mentioned, Thomas and McCloskey (1981) argued that through the miracle of substitutability a British economy closed to foreign trade would have produced far fewer cotton textiles, but more beer, at a minimal welfare loss. According to Harley (2004, pp. 194-5) self-sufficiency in Britain in 1860 would have lowered British national income by no more than 6%, and what was true for Britain was presumably even more true for Europe as a whole. However, the static trade models upon which such

calculations are based assume a fixed technology and given endowments, and cannot thus say anything about the relationship between trade and growth.

Findlay (1990) provides a simple general equilibrium model of the late 18th century Atlantic economy which, although it is static, can still help in thinking about how trade really mattered during the Industrial Revolution. That revolution was initially heavily concentrated in cotton textiles, and British imports of raw cotton came exclusively from outside Europe, and particularly from the Americas (Davis 1979, pp. 39-41). The American supply was highly elastic, as a result of the then seemingly limitless endowment of New World land, and the highly elastic supply of slave labour. The Industrial Revolution meant a large increase in the demand for raw cotton, and hence a rise in its price at home and abroad, implying a deterioration in Britain's terms of trade. The elasticity of American supplies, largely a result of elastic labour supplies, minimised this terms of trade loss – in the absence of slaves and New World land, relative raw cotton prices would have increased by more than they actually did, potentially choking off growth in this crucial sector. The existence of overseas markets also implied a higher demand for cotton textiles, and a more elastic demand as well. As can be seen from Figure 4.3, a given supply shift due to industrial innovation would have had a smaller output effect, and reduced cotton textiles prices by even more than was actually the case, in such a case (compare the case when demand shifts from D to D', with the case when demand shifts from D'' to D''').

Not only did trade ensure that a given supply side impulse travelled further; it also probably ensured more innovation, in line with Smith's famous dictum that the division of labour depends on the extent of the market. After all, innovation was driven by a desire to make profits, and was an expensive activity: as Allen (2006) points out, innovators such as Richard Arkwright had to spend considerable sums on what would nowadays be termed research and development. In turn, such large fixed costs implied a need for innovators to make profits, just to break even, and larger markets would have helped innovators recoup those fixed costs (Grossman and Helpman 1991, pp. 242-6). Furthermore, Desmet and Parente (2006) show that larger markets imply more elastic demand curves for individual monopolistically competitive firms, assuming Lancaster (1979) ideal preferences. Thus a given price-reducing innovation will imply larger sales

and revenue increases in larger markets, meaning that as markets expand, innovation becomes more likely. While this mechanism has yet to be quantified, it is surely the case that a closed Britain (even a closed Britain miraculously enabled to grow cotton) would never has experienced as much innovation as was in fact observed. Unlike China or the Mughal Empire, it was simply too small to rely on its domestic markets. As it was, increases in exports were equivalent to 21% of the total increase in GDP between 1780 and 1801 Crafts (1985, p. 131), while Cuenca Esteban (1997, p. 881) estimates that as much as "50 to 79 percent of additional industrial production could have been exported in the much debated period 1780 to 1801", more than the already very large 46.2% implicit in Crafts' figures (O'Brien and Engerman 1991, p. 188). 60% of additional textiles output was exported between 1815 and 1841, according to Harley (1999, p. 187).

Furthermore, by the late 18th century manufacturing was spreading across Western Europe, and English manufacturers were finding themselves increasingly excluded from markets in Germany, France, Sweden and elsewhere (Davis 1962). Not surprisingly, therefore, between 1780 and 1801 the Americas accounted for roughly 60% of additional British exports (O'Brien and Engerman 1991, p. 186). British innovators were thus crucially dependent on overseas markets as their industries expanded. The implication, in a mercantilist world in which nations systematically excluded their enemies from protected markets, is that British military success over the French and other European rivals was an important ingredient in explaining her subsequent rise to economic prominence: certainly not a sufficient condition, since domestic conditions had to be right in order to spur innovation in the first place, but possibly a necessary one.

4. The transition to modernity

4.1. The Revolutionary and Napoleonic Wars

If the international trading system was a crucial ingredient allowing the Industrial Revolution to be sustained, then it is not less true that the Industrial Revolution would go on to transform that system. It did so in two ways. First, the new steam technologies associated with the Industrial Revolution, as well as advances in metallurgy and engineering, led to dramatic declines in transport costs, especially after the 1840s or so. This implied a dramatic increase in international commodity market integration, and

permitted large-scale inter-continental trade in basic, low-value, bulky commodities as well as the higher-value commodities that had traditionally been shipped between Europe and the rest of the world. In fact, the main impact of the New World's colonization and settlement on European living standards took place in the 19th century, as a result of the transport revolution that allowed mass shipments of foodstuffs from the Americas to Europe, and of workers in the opposite direction (O'Rourke and Williamson 1999). Second, since the Industrial Revolution was initially concentrated in Europe, it led to a Great Divergence in income levels between that continent and the rest of the world (Chapter 11), and to a Great Specialisation as well, with Northwest Europe specialising more and more in manufactured goods, and importing food and raw materials from the European Periphery and the rest of the world. (However, the deterioration of Britain's terms of trade represented a transfer of the fruits of the Industrial Revolution to the rest of the world –or at least to her trading partners- which might tend to exonerate trade from having had a direct impact on the Great Diversion: see Clark 2007). While these trends would only reach completion in the decades after 1870 (Volume 2, Chapter 1), they had their origins earlier in the century.

The globalization of the late 19th century had political as well as technological origins, and paradoxically some of those origins can be found in the Revolutionary and Napoleonic wars of 1792-1815, which in and of themselves constituted a severe setback to the international economy. Revolutionary France declared war on Austria and Prussia in 1792, and on Great Britain in 1793. Almost immediately, France banned imports of British goods, while Britain blockaded French ports. Both sides were motivated by a mercantilistic desire to prevent the other from exporting, and thus earning precious metals: famously, in 1810, when Britain was suffering from poor harvests, Napoleon authorized food exports to his enemies, in the hope that this would drain them of precious metals. By contrast, the blockades of World War I were much more modern affairs, in which the participants correctly perceived that their opponents needed food, raw materials and military supplies in order to prosecute the conflict successfully, and thus attempted to prevent the enemy from importing, not exporting (Chapter 6, Volume 2).

The disruption to trade did not just involve France and her enemies, but eventually came to encompass the entire European continent. When Russia, Sweden,

Prussia and Denmark formed a 'League of Armed Neutrality' in December 1800, in an attempt to protect their merchant shipping, Britain banned all trade with the League (excepting Prussia) and attacked Copenhagen. The League was dissolved in 1801. More importantly, French victories over Austria and Russia in 1805, Prussia in 1806, and Russia in 1807, allowed Napoleon to extend the ban on trade in British goods to virtually the entire continent. Britain responded by issuing a series of 'Orders in Council', as a result of which neutral ships (and in particular American ones) could no longer export French colonial goods to France without putting in at a British port first. Since any ship having put in at a British port was subject to seizure by the French, this put the Americans in an impossible position, and Thomas Jefferson responded with an Embargo Act which banned all trade between the United States and Europe during 1808 and early 1809. Further trade-related friction would lead to the so-called 'War of 1812' between Britain and the United States, which would severely disrupt trade, above all in 1814; while the slave revolt in Saint-Domingue, which culminated in Haitian independence in 1804, and a series of revolts in Latin America were other factors disrupting international trade during this period.

In a classic book, Eli Heckscher (1922) argued that Napoleon's continental blockade of British goods was ineffective, as a result of smuggling and bureaucratic corruption. Crouzet (1987), on the other hand, argues that the blockade was effective when whole-heartedly enforced. Obviously official trade statistics cannot discriminate between these two positions, since if the blockade was undermined by smuggling, this would hardly show up in the trade returns. Relative prices, on the other hand, do not lie: they faithfully record conditions of relative scarcity and abundance in particular markets at particular times, and have the further advantage of being easily available, largely as a result of the endeavours of the interwar International Scientific Committee on Price History (Cole and Crandall 1964).

Table 4.2 shows that the relative prices of imports rose systematically during the Revolutionary and Napoleonic wars, compared with their long run (quadratic) trends, particularly during 1807-14, the high point of the conflict. What makes this evidence of disintegration particularly compelling is that particular relative prices moved in opposite directions in various countries, depending on the pattern of international trade. For

example, the price of wheat rose by over 40% during 1807-14 relative to textiles in Britain, which imported wheat and exported textiles, but it fell in France, which was a wheat exporter and cotton textile importer. Similarly, the price of raw cotton rose relative to textiles in Europe, but fell substantially in the United States. According to this table, relative prices of non-European commodities such as raw cotton, sugar and pepper rose particularly substantially in Continental Europe during the war. They rose by a lot less in Britain, which is not surprising given the Royal Navy's control of the seas, and in countries like Germany they only rose after 1807, when Napoleon's blockade policies were extended to the continent as a whole. Presumably this international economic disintegration exacted a welfare cost on European economies during this period, although any estimates of the welfare loss are going to depend on the model used to calculate them. O'Rourke (2007) estimates annual welfare losses of around 2-3% for France between 1807 and 1814, and around 1-2% for Britain.

Furthermore, political economy mechanisms ensured that the trade disruptions of the war were to a certain extent 'locked in' by the political process following the resumption of peace in 1815. While the blockades and embargoes may have implied overall welfare losses, standard trade theory also suggests that they should have had substantial distributional effects, producing winners as well as losers. In food-importing Britain, for example, trade disruption had implied rising agricultural prices, and thus higher rents, and the politically powerful landlord class was not about to see those gains evaporate. The result was the Corn Law of 1815, which effectively blocked grain imports for most of the following seven years. In France, meanwhile, cotton textile manufacturers had benefited from the reduction in British competition during the war, and were able to obtain protection from the French government afterwards. According to Crouzet (1964), the war saw a long-run shift in the orientation of French industry, from the outward-focussed Atlantic industries of the 18th century, located along the western coastline, and based on New World markets and raw materials, to the import-substituting, inland, protectionist industries that subsequently dominated. Another classic example of the same phenomenon is the European sugar beet industry, which was given an important boost by Napoleon when the British blockades cut off supplies of tropical cane sugar. This new industry soon became dependent on government subsidies and protection, since

once the wars had ended it became uncompetitive relative to cane sugar producers. North-South disputes regarding Northern protection for sugar growers remain an important obstacle for trade negotiators even today, nearly two centuries after Napoleon's initiative promoting sugar beet cultivation.

Despite all of this, the wars played an important role in modernising the international trading system. First, as mentioned, they coincided with a series of revolts in French and Iberian America which led to the virtual disappearance of European imperialism in that continent. We will shortly turn to the economic effects of this on the former colonisers. From the point of view of the international trading system, the abolition of the old mercantilist restrictions controlling trade between the New and Old Worlds led to a more multilateral trading system, in which each nation was free to compete on increasingly equal terms for foreign markets. For example, after the French invasion and occupation in 1807 and the British blockade, the Portuguese empire collapsed, the royal family fled to Brazil, and the colonial system was suspended in 1808 and never reinstated. In 1808 trade with Brazil was opened to all friendly nations, and in 1810 a treaty of commerce was signed with Britain. Thus the share of British manufactured exports going to Latin America had been just 0.06% during the mid-1780s, but was 6.3% in 1814-16, and 15% in the mid-1820s (Davis 1979, p. 88). Similarly, the wars dealt a crippling blow to the Dutch VOC, already severely weakened as a result of the fourth Anglo-Dutch war of 1780-84, and which was abolished in 1799. In 1806 the Dutch government permitted free trade with Asia for the first time since 1602 (although in the context of the blockades of the period, this was more symbolic than anything else). Meanwhile, rising consumer prices made it more difficult to justify the English EIC's monopoly on the Indian trade, which was abolished in 1813.

By 1815, therefore, the mercantilist system which had defined trade during the early modern period had crumbled. Equally, the long-run geopolitical impact of the wars was also favourable to globalization in the long run. First, British hegemony at sea meant that once Britain had switched to free trade, by mid-century, the Royal Navy would provide a guarantee of open trading conditions for everyone. Second, the wars of 1792-1815 were so costly that they led to a surprisingly durable peace settlement, set in place by the Congress of Vienna. The system held a series of congresses and conferences

which essentially managed to keep the peace between the European Great Powers until the Crimean War of the 1850s. Despite that conflict, the series of wars associated with Italian and German unification, and the fact that the long 19th century ended with the disaster of 1914-18, it is nonetheless the case that battlefield deaths as a proportion of Europe's population were seven times higher in the 18th century than they were in the 19th (Schroeder 1994, p.vii).[8] This provided a broadly favourable political context within which the new transportation technologies associated with the Industrial Revolution could permanently transform the nature of international trade.

4.2. The loss of empire

While the dismantling of former European empires may have been beneficial on average to the development of the international economy, it was certainly represented a traumatic shock for former colonial powers. In this section we briefly look at the economic implications of this shock, before resuming our account of the rise of 19th century globalization. The emancipation of the colonies on the American continent at the beginning of the 19th century marks the end of the Iberian *Ancien Régime*, and opened the way to liberal revolutions in Spain and Portugal with largely unexplored consequences for the economic development and international position of Iberia. On the other hand, economic backwardness in 19th century Spain, as in the case of Portugal, has often been seen as the outcome of the loss of empire, which had a negative impact on public finance and foreign trade as well as on investment and industrial development.

By 1827, once Brazil had severed her links to Portugal and declared full independence, real domestic exports represented just two-thirds of their average level in 1796/1806. However, this conceals the contraction by one-third of industrial exports, while foodstuffs exported increased by one-half. Services suffered more, contracting it is suggested by one-fifth in real terms between the same dates. On the whole, Pedreira (1993) suggests that the loss of Brazil had an upper bound impact of up to 8% of GDP. For example, Portugal could no longer be an entrepôt for the produce of Brazil. A widespread consensus views Portugal as being now confined to the role of supplier of

[8] However, the transition from the absolutism of the *Ancien Régime* to more liberal societies was not without a cost. Revolutions and civil wars, such as the Iberian Miguelist and Carlist wars, plagued Western Europe during the first half of the 19th century.

foodstuffs and raw-materials, with no opportunities for specialisation within the more dynamic industrial sector. However, since the old colonial system did not bring Portugal to the verge of modern industrialisation, its breakdown can hardly be blamed for the country's failure to join the first comers to industrialisation: colonial markets may have been necessary for British industrial growth, but they were by no means sufficient either there or elsewhere. Portugal could, indeed, re-orient its economy towards Britain by selling its primary produce in exchange for manufactures, within the context of improving terms of trade.

In contrast to Great Britain and the thirteen North American colonies, where commercial links were immediately and vigorously renewed after their independence (Shepherd and Walton 1976), Spain and the new Latin American republics practically cut ties (except for the trade which used Cuba as an entrepôt). From the beginning of the war with Britain in October of 1796, Spain maintained almost no link between the colonies and the metropolis for more than two decades. The subsequent decline in domestic exports (roughly 25% between 1784/96 and 1815/20) can be attributed almost exclusively to the fall in colonial commerce (which shrank by 40%). The consequence was a noticeable alteration in the geographical composition of trade, ending the long-standing equilibrium distribution of domestic exports between the colonies and Europe (roughly one-third and two-thirds, respectively), and establishing a new distribution that continued throughout the 19th century (with foreign markets absorbing four-fifths of them). Retained imports of colonial goods for domestic consumption (which had represented one-third of total imports for the domestic market) were cut by half, but this was offset by imports from Europe. The collapse of trade with the empire was particularly significant for services (financial, insurance, transportation), as is revealed by the contraction of real re-exports by three-fifths between 1784/96 and 1815/20. The Spanish balance of trade also felt the effects of colonial independence. Before the loss of empire, Spain had a deficit on current account with foreign countries that was balanced by a corresponding surplus in colonial trade. With colonial emancipation this balancing mechanism disappeared, with deflationary consequences for the domestic economy. Fortunately, a favourable terms of trade – resulting from an improvement vis-à-vis Europe, more than matching a deterioration with respect to the colonies -- increased the

purchasing power per unit of exports by 20% between 1784/96 and 1815/20, and allowed Spain to avoid further deterioration in the balance of payments on current account.

Government revenues were also seriously affected. While total revenues rose slightly, external revenues (about a quarter of all government revenue prior to the Napoleonic Wars) contracted by one-third in real terms, representing less than 10% of public revenues by 1815-20. Part of the decline was attributable to the suspension of the so called 'Indies remittances', the silver surplus from the colonial treasuries sent to Spain, which represented about 20% of public revenues in the early 1790s. The remainder of the decline in external revenues was accounted for by a decrease in customs duties.[9]

It is not possible to measure Spain's real cost from the loss of her colonies. Nevertheless, in order to obtain rough estimates we will bias our computation in favour of the generally accepted view that the emancipation of the colonies represented a significant loss to the Spanish economy. The first assumption to be made is that the productive resources embodied in exportables did not have alternative uses in the domestic economy. In other words, we will accept that the decline in exports due to the move to independence of Hispanic America was not compensated for by an increase in exports to other parts of the world or an increase in output for the metropolitan market. A similar assumption applies to the services (shipping, insurance, mercantile) provided by Spanish subjects in the colonial trade. In contrast to the non-colonial trade, almost totally carried on non-Spanish ships, Spanish colonial legislation ensured that the Indies trade used only national shipping. Therefore, with the decline of Spanish American trade, a decline in Spanish maritime services closely followed. The loss in revenues due to the cessation of precious metal shipments, and the reduction of customs duties resulting from colonial independence are also taken into account.[10]

In order to simplify matters, we assume that the colonial demand for imports and the European demand for Spanish American goods were price inelastic, and that the use of public revenues from the colonies was fully productive and was entirely allocated to

[9] Again, the comparison with Britain shows that customs revenues contributed to a similar extent before the Napoleonic Wars: (17 percent in Spain (Merino 1987) and an average of 22 percent in Britain over 1786-95 (Beckett and Turner 1990).

[10] That is, the decline in export duties following the fall in Spanish domestic exports and re-exports to the colonies, and the loss from the re-exportation of colonial goods.

the domestic economy. Based on these assumptions, the hypothetical loss to the Spanish economy from the emancipation of the colonies was not more than 8% of national income. Furthermore, these estimates are biased upwards and provide an upper bound, as we have assumed that factors of production previously employed in the colonial trade became idle with the loss of empire.

It could be argued, as did Williams in the British case, that the profits from colonial trade represented a high proportion of the funds used to finance investment in Spain, and that their disappearance represented a serious handicap for the accumulation of capital necessary for the modernization of the Spanish economy. However, an upper bound estimate of the contribution made by the profits from colonial trade to total capital formation is below 18% by 1784/96.

The long term consequences of the loss of the colonies depended on the flexibility and dynamic nature of the industry concerned. For example, the Basque iron and steel industry became uncompetitive from the 1770s onward. The colonial market accounted for at least a third of Basque production at the end of the 18th century, since demand from Spanish America, together with domestic demand, seems to have offset the decline in European demand. A similar situation appears in the case of Valencia silk. Between the 1790s and the 1820s net exports of raw silk rose while net imports of silk textiles increased. Catalan shipping was another case of an industry which had grown under colonial protection and suffered afterwards. Such was not the case of Catalan cotton textiles, however, which developed further once the colonial market had been lost.

The decline in manufactured exports (textiles, paper, iron and steel) following the loss of the colonies emphasises the lack of competitiveness of Spanish industries and helps in understanding the decline in trade between Spain and her ex-colonies up to 1836. Spain could not offer the Latin American consumer either the prices or the quality of her Western European competitors, specifically Great Britain. Colonial emancipation definitely had negative effects (particularly in the short term) on the Spanish economy. Trade in goods and services fell sharply and investment levels also declined. Domestic industry lost a protected market. The Government's fiscal difficulties increased significantly as a result of the loss of revenue and an inflexible tax system. However, it is to other limitations on industrial expansion, and the State's weak domestic tax base, that

we should look for an understanding of the post-imperial failure. The more competitive and flexible sectors of the economy eventually adapted to new circumstance, particularly commercial agriculture which orientated supply towards the growing markets in Western Europe. The loss of the colonies seems to have had a less profound and widespread impact upon the Spanish economy than the historical literature has suggested. Indeed, if there were links between Latin American independence and the fall of the *Ancien Régime* and the Liberal Revolution in Spain, as has been suggested, then the loss of the colonies could have contributed significantly to the economic and social modernization of Spain

4.3. The effects of the Industrial Revolution

The new technologies of the Industrial Revolution facilitated globalization in several ways. Geopolitically, the Industrial Revolution led to a dramatic increase in the relative power of Europe and her most important overseas offshoot, the United States. Shallow-draft armed steamboats, breech-loading rifles, and (by the end of the century) machine guns all helped Europeans defeat non-industrial enemies, while quinine facilitated the settlement of territories thus conquered. The half-century following Waterloo saw major European imperial advances in India, North Africa and elsewhere, as well as the infamous Opium Wars which forcibly opened Chinese markets to trade. Meanwhile, the United States expanded overland across North America, while Russia continued to expand in Asia. By and large, European states used the power which industrialisation had given them to force more or less free trade on their imperial possessions or on nominally independent nations such as China, Japan and Siam, leading the historian Niall Ferguson to coin the phrase "Anglobalization" to describe this period in international economic history (Ferguson 2003).

Economic historians have tended to emphasise a more direct implication of the Industrial Revolution for globalization, namely the reduction in transport costs which new technologies such as the steamship and railroad implied. According to Knick Harley (1988), while the freight rates applied to British imports had fluctuated widely, but around a fairly constant trend, between 1740 and 1840, they started dropping steadily after that date. 1840 does seem like a turning point, at least insofar as trade between the Americas and the best-documented European country, Britain, is concerned. One

implication of falling transport costs is that, other things being equal, these should lead to declining price gaps for identical commodities in different markets. Figure 4.4 shows that while the Anglo-American wheat price gap had fluctuated widely (like transport costs) between 1840 or so, after that date it started to drop dramatically; and it was precisely after 1840 that large-scale shipments of wheat between the United States and Britain began.

Panel (a) of Figure 4.5 shows a further implication of these trends, this time for income distribution (O'Rourke and Williamson 2005). Prior to 1840, the ratio of wages to land rents in Britain had behaved as though it were determined in a closed economy. Clearly, Britain was not closed prior to 1840, but still the figure shows precisely the qualitative trends that would have been expected if it had been. The land-labour ratio steadily fell, as a rising population pressed on fixed land supplies; the relative price of food increased, as a result of a growing population demanding more food, and diminishing returns to agriculture; and the wage-rental ratio fell, as labour became more abundant and land became relatively scarcer. After 1840, by contrast, the land-labour ratio continued to fall, and at an accelerating rate, as population boomed, but the relative price of food stopped rising, and eventually started to fall, while the wage-rental ratio actually started to rise. The fact that relative food prices stopped rising is consistent with their being increasingly determined by prices in the New World and Ukraine, as grain flowed into Britain in greater and greater amounts from these land-abundant destinations. Similarly, Heckscher-Ohlin logic suggests that this cheaper food helps to explain the turn-around in the wage-rental ratio, with cheap food putting land rents under pressure and helping to boost workers' real wages: effectively, at a certain point, inter-continental trade helped boost the British (and by extension the European) land endowment sufficiently that it started to have an influence on European factor prices. In this respect 19th century globalization was a new phenomenon, and as we will see in Chapter 1, Volume 2, this would eventually have important political repercussions.

4.4. The move to liberalism and commodity market integration

Not surprisingly, given what we have seen already, European trade policies were typically very protectionist in the aftermath of the Napoleonic Wars. The initial

exceptions to this general rule were smaller countries such as the Netherlands, which following the abolition of the VOC during the war adopted a relatively liberal trade policy in 1819, and Denmark, which had already abolished import prohibitions and adopted low tariffs as early as 1797. The first major economy to liberalize was Britain, where power was shifting to export-oriented urban interests. A series of liberal reforms in the 1820s and 1830s were followed by Robert Peel's historic decision to abolish the Corn Laws in 1846, and move the United Kingdom to a unilateral free trade policy stance, against the objections of landlords and much of his own Tory party (Schonhardt-Bailey 2006). The years after 1846 saw further moves towards liberalization in countries such as Austria-Hungary, Spain, the Netherlands, Belgium, Sweden, Norway and Denmark (Bairoch 1989, pp. 20-36). As Accominotti and Flandreau (2006) show, average tariffs were falling throughout the 1850s in the major European powers.

An important further breakthrough came in 1860, with the Anglo-French Cobden Chevalier treaty. This treaty abolished all French import prohibitions as well as the British export duty on coal, and lowered British tariffs on wine. The treaty also established most-favored-nation (MFN) relations between the two countries, and laid the basis for a series of further bilateral trade deals between the countries of Western Europe, all of which incorporated an MFN clause. Even though tariff-cutting was already underway in Europe by the time of the treaty (ibid), the non-discriminatory nature of the MFN principle greatly strengthened the multilateral nature of the 19th century trade regime. MFN clauses also implied that bilateral concessions were automatically generalized to all participants in this network of treaties, which must have speeded up tariff reductions during this period. According to Bairoch (1989), average tariffs on the European mainland had fallen to some 9-12% by the mid-1870s, by which stage "Germany had virtually become a free trade country" (p. 41).

New transport technologies and more liberal trade policies combined to provide a massive stimulus to international trade worldwide. As we saw earlier, overall intercontinental trade grew at a little over 1% per annum between 1500 and 1800. By contrast, since the end of the Napoleonic Wars world has grown at an average rate of about 3.5% per annum (Maddison 1995), although there have been sizable fluctuations in this rate over time. The same impression of a dramatic break with the past emerges when

we look at international commodity price convergence. As we have seen, there was little or no intercontinental price convergence prior to 1800. For example, Figure 4.1 showed little or no price convergence for cloves and pepper between Southeast Asia and the Netherlands prior to the Napoleonic Wars. However, that figure also showed dramatic price convergence along this route for the two commodities once the wars had ended. The Amsterdam-Sumatra pepper price ratio fell from 4.4 in the 1820s (around the same level as in the 1630s) to around 2.1 in the 1880s, and the clove price ratio, which had exceeded 10 between the 1660s and 1770s, stood at 8.9 in the 1810s, but just 1.9 in the 1820s (O'Rourke and Williamson 2002b).

There exists a vast array of evidence documenting intercontinental price convergence more generally during the 19th century. Figure 4.4 showed Anglo-American wheat price gaps collapsing after 1840 or so, while in a recent paper David Jacks concludes that there is evidence of a "truly international market for wheat from around 1835" (Jacks 2005, p. 399). His evidence is particularly important, since to date the literature has tended to focus on the period between 1870 and 1913, whereas in fact "much of the action in price convergence seems to have taken place well before mid-century" (ibid.). International integration seems to have progressed throughout the 19th century, rather than being a feature of the late 19th century alone. The years between 1780 and 1840 were thus truly revolutionary ones, not just for European politics and the European economy, but for the international trading system of the world as a whole.

Table 4.1. Composition of European overseas imports, 1513-1780

Panel A. Imports from Asia to Lisbon, 1513-1610 (% by weight)						
	1513-19	**1523-31**	**1547-8**	**1587-8**	**1600-3**	**1608-10**
Pepper	80.0	84.0	89.0	68.0	65	69.0
Other spices	18.4	15.6	9.6	11.6	16.2	10.9
Indigo	0.0	0.0	0.0	8.4	4.4	7.7
Textiles	0.2	0.0	0.0	10.5	12.2	7.8
Misc.	1.4	0.4	1.4	1.5	2.2	4.6
Total	100.0	100.0	100.0	100.0	100.0	100
Panel B. Imports of VOC into Europe, 1619-1780 (% by invoice value)						
	1619-21	**1648-50**	**1668-70**	**1698-1700**	**1738-40**	**1778-80**
Pepper	56.5	50.4	30.5	11.2	8.1	9
Other spices	17.6	17.9	12.1	11.7	6.1	3.1
Textiles	16.1	14.2	36.5	54.7	41.1	49.5
Tea and coffee				4.2	32.2	27.2
Drugs, perfumes and dye-stuffs	9.8	8.5	5.8	8.3	2.8	1.8
Sugar		6.4	4.2	0.2	3.7	0.6
Saltpetre		2.1	5.1	3.9	2.6	4.4
Metals	0.1	0.5	5.7	5.3	1.1	2.7
Misc.		0.2	0.1	0.4	2.3	1.7
Total	100.0	100.0	100.0	100.0	100.0	100
Panel C. Imports of English East India Company into Europe, 1668-1760 (% of invoice value)						
	1668-70	**1698-1700**	**1738-40**	**1758-60**		
Pepper	25.25	7.02	3.37	4.37		
Textiles	56.61	73.98	69.58	53.51		
Raw silk	0.6	7.09	10.89	12.27		
Tea	0.03	1.13	10.22	25.23		
Coffee	0.44	1.93	2.65			
Indigo	4.25	2.82				
Saltpetre	7.67	1.51	1.85	2.97		
Misc.	5.15	4.52	1.44	1.65		
Total	100	100	100	100		
Panel D. Estimated annual sales of colonial imports, England and Netherlands, 1751-4						
	Total sales (1000 pesos)		**Percentage of sales**			
			From Asia	**Of total**		
Textiles	6750		41.7	21.1		
Pepper	1100		6.8	3.4		
Tea	2800		17.3	8.7		
Coffee	1000		6.2	3.1		
Spices	1850		11.4	5.8		
Misc.	2700		16.7	8.4		
Total from Asia	16200		100.0	50.5		
			From America	**Of total**		
Sugar	8050		50.8	25.1		
Tobacco	3700		23.3	11.5		
Misc.	4100		25.9	12.8		
Total from America	15850		100.0	49.5		
Total overseas imports	32050			100.0		

Source: Findlay and O'Rourke (2007, pp. 308-9).

Table 4.2 Price impact of Napoleonic Wars
(percentage increase in relative price relative to peace-time counterfactual)

Relative price	Country	War	Blockade
Panel A. Intra-European			
Wheat/textiles	Britain	19.03	41.35
Textiles/wheat	France	16.58	19.84
Textiles/wheat	Germany	6.74	5.71
Panel B. Europe-Asia			
Pepper/wheat	France	66.53	216.36
	Britain	-27.22	-8.21
	Holland	1.41	119.46
Pepper/textiles	France	19.10	109.82
	Britain	-13.37	29.74
	Holland	15.13	167.37
Panel C. Europe-Americas			
Sugar/wheat	France	63.31	195.03
	Britain	16.31	-2.90
	Holland	17.87	165.10
	Germany	2.43	143.09
Raw cotton/wheat	France	-6.46	114.28
	Britain	-10.96	-26.17
	Holland	-9.47	11.45
	Germany	-28.7	67.89
Sugar/textiles	France	26.70	125.59
	Britain	38.44	37.25
	Holland	25.27	214.64
	Germany	-4.04	129.95
Raw cotton/textiles	France	-19.76	78.81
	Britain	6.43	4.93
	Holland	-2.31	31.23
	Germany	-33.2	58.82
Textiles/Raw cotton	USA	106.01	182.51
Wine/raw cotton	USA	28.59	137.05
Rouen cloth/silver	Peru (Arequipa)	12.92	91.58
Paper/silver	Peru (Arequipa)	53.19	120.79
Paper/silver	Peru (Lima)	46.87	111.77

Source: O'Rourke (2006).

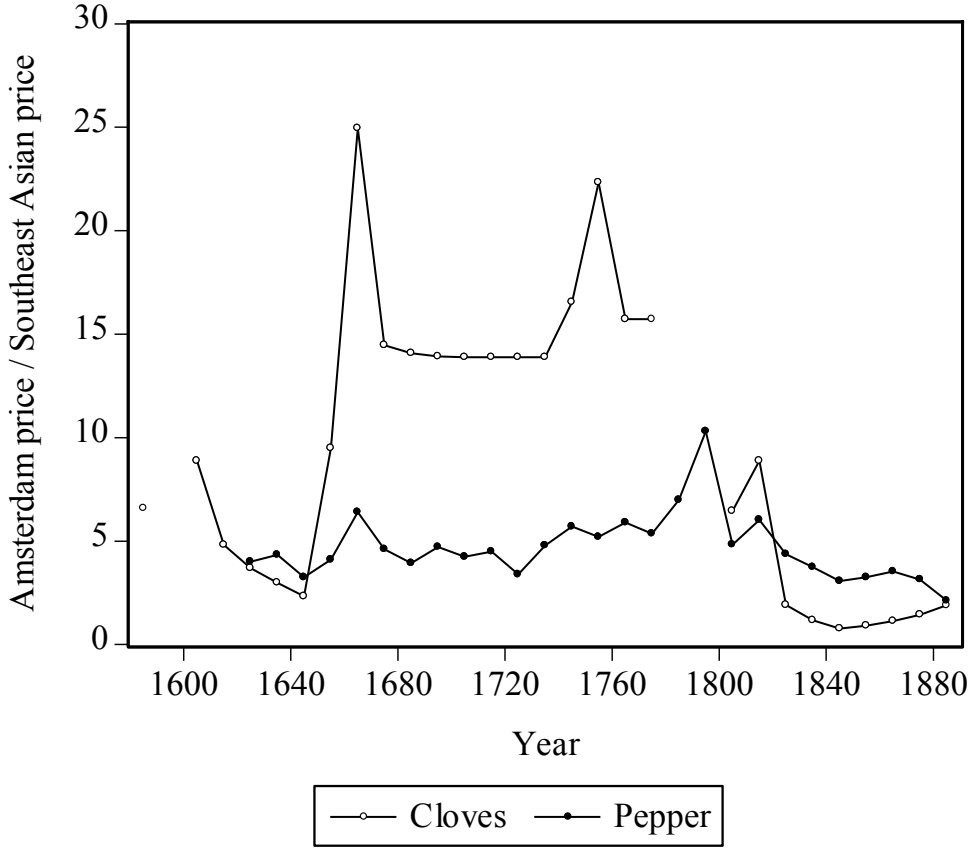


Figure 4.1. Spice markups, Amsterdam versus Southeast Asia, 1580-1890

(Amsterdam price / Southeast Asian price)

Source: Bulbeck et al. (1998).

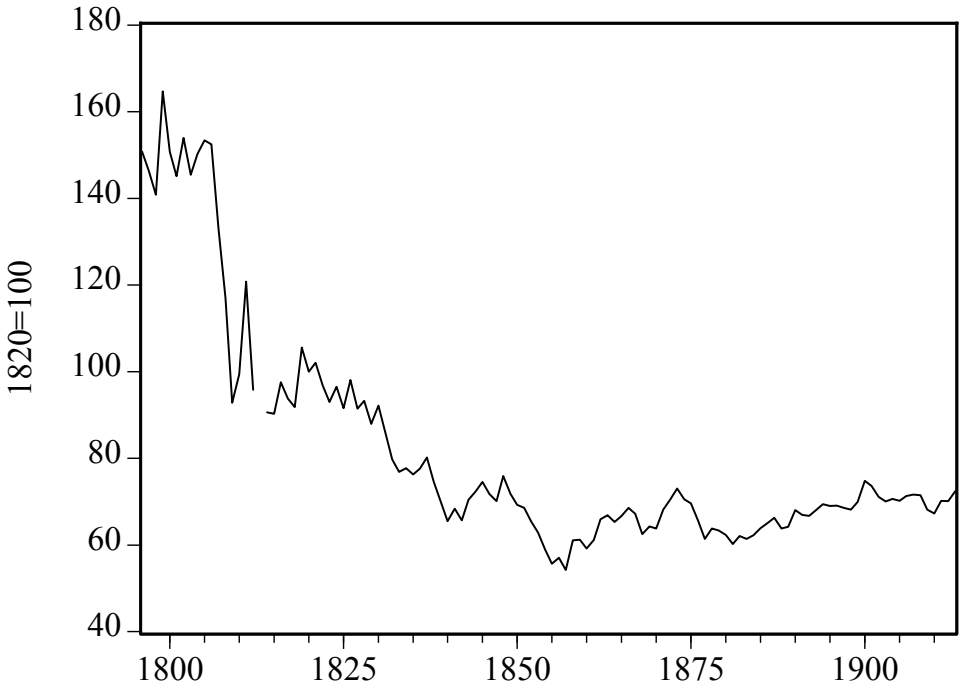


Figure 4.2. British terms of trade, 1796-1913

(1820=100)

Source: Findlay and O'Rourke (2007), p. 332.

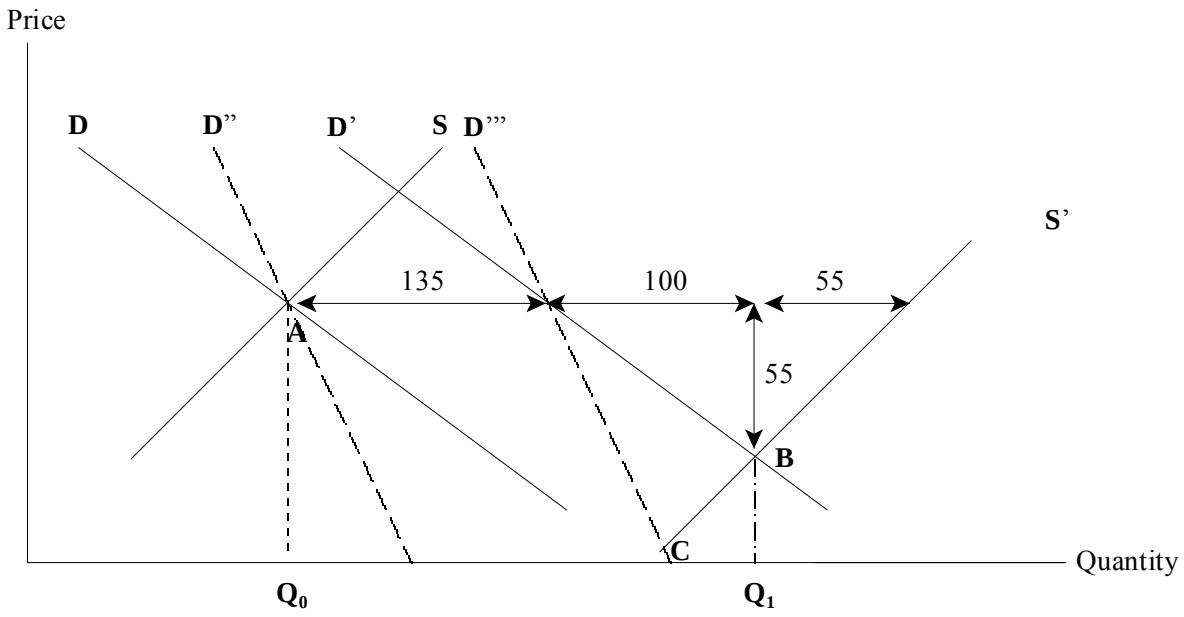


Figure 4.3. Demand versus supply during the Industrial Revolution

Source: Findlay and O’Rourke (2007), p. 306.

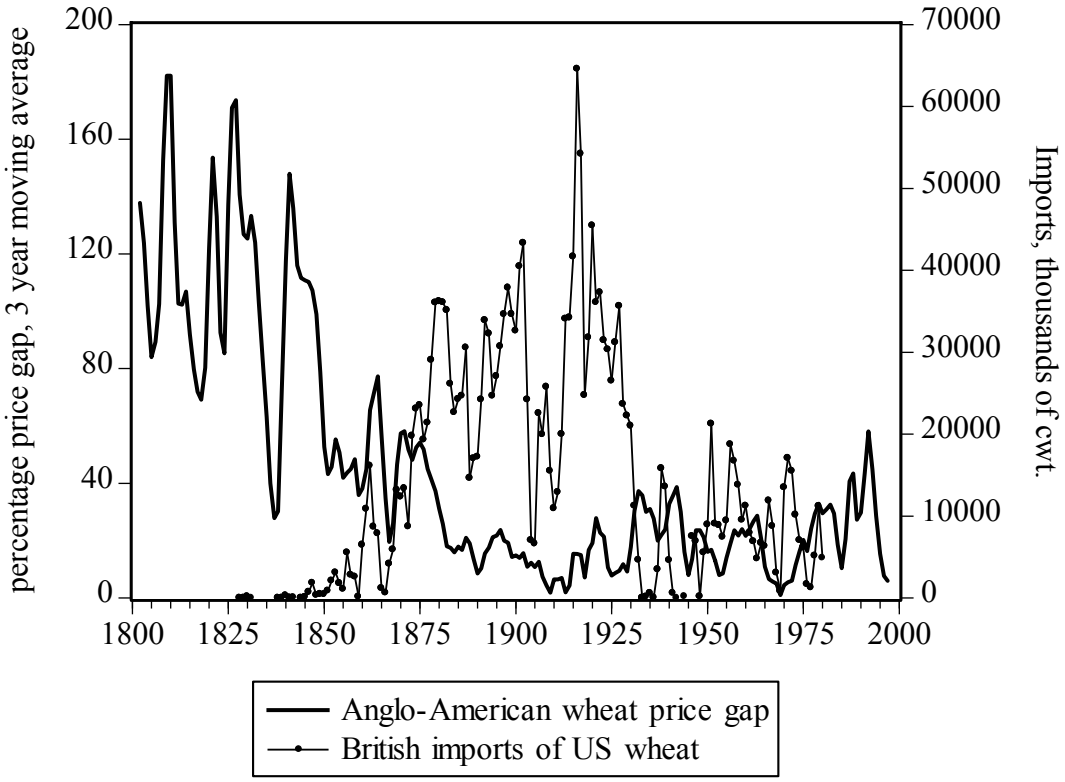
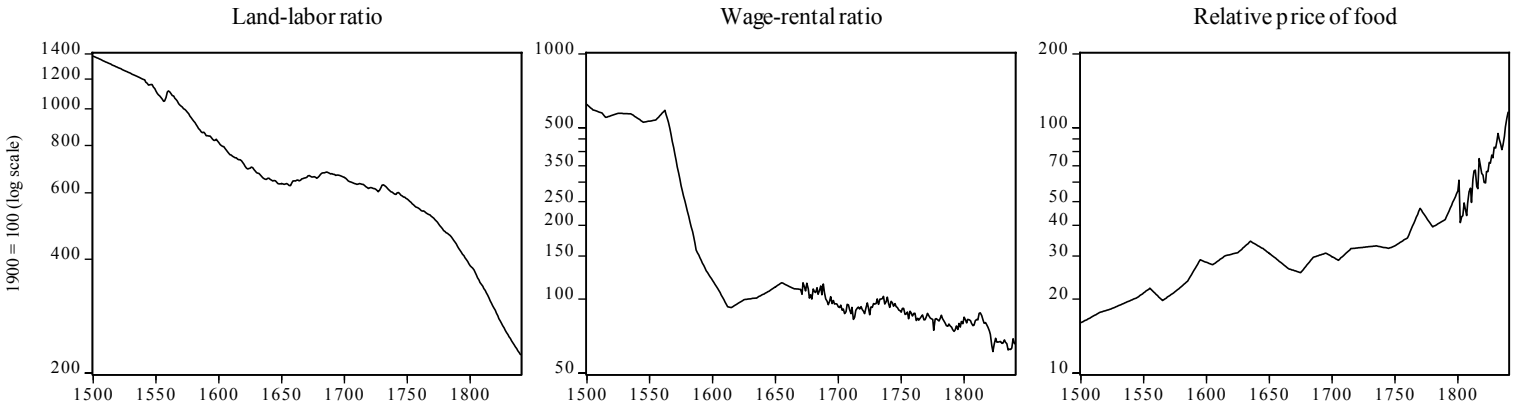
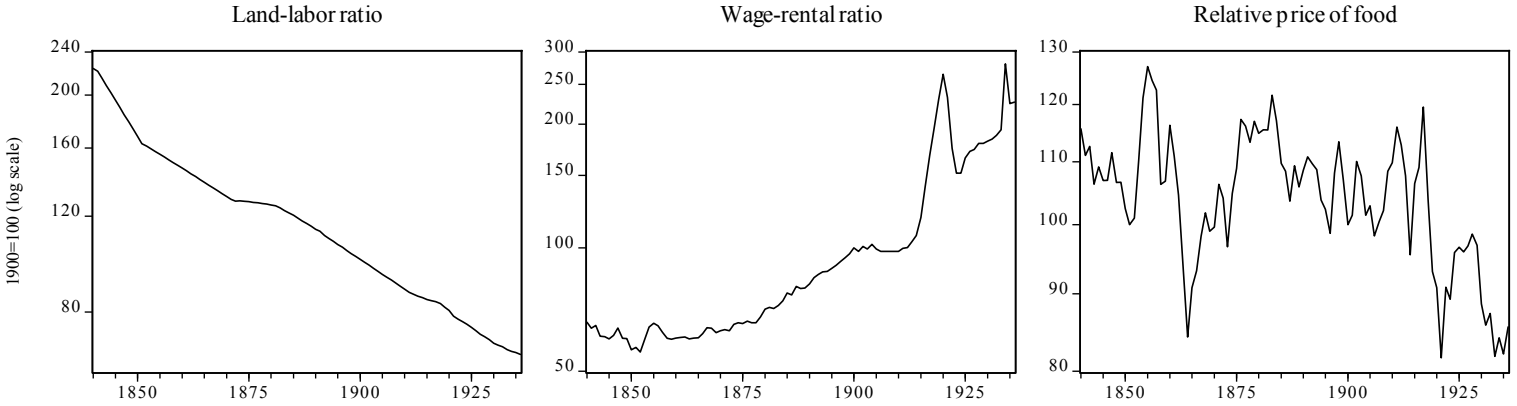


Figure 4.4. Anglo-American wheat trade, 1800-2000

Source: O'Rourke and Williamson (2005), Figure 3, p. 10.



Panel A. 1500-1840



Panel B. 1840-1936

Figure 4.5. Endowments and relative prices, Britain 1500-1936

(1900=100)

Source: O'Rourke and Williamson (2005).

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