Kicking Away the Ladder: The "Real" History of Free Trade

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1. Introduction

Central to the neoliberal discourse on globalization is the conviction that free trade, more than free movements of capital or labor, is the key to global prosperity. Even many of those who are not enthusiastic about all aspects of globalization—ranging from the free-trade economist, Jagdish Bhagwati, advocating capital control to some non-governmental organizations (NGOs) accusing the developed countries for not opening up their agricultural markets—seem to agree that free trade is the most benign, or at least a less problematic, element in the progress of globalization.

Part of the conviction in free trade that the proponents of globalization possess comes from the belief that economic theory has irrefutably established the superiority of free trade, even though there are some formal models which show free trade may not be the best. However, even the builders of those models, such as Paul Krugman, argue that free trade is still the best policy because interventionist trade policies are almost certain to be politically abused. Even more powerful for the proponents of free trade, is their belief that history is on their side. After all, the defenders of free trade ask, isn't free trade how all the world's developed countries have become rich? What are some developing countries thinking, they wonder, when they refuse to adopt such a tried and tested recipe for economic development?

A closer look at the history of capitalism, however, reveals a very different story (Chang, 2002). As we shall establish in some detail in this paper, when they were developing countries themselves, virtually all of today's developed countries did not practice free trade (and *laissez-faire* industrial policy as its domestic counterpart). Rather, they promoted their national industries through tariffs, subsidies, and other measures. Particularly notable is the fact that the gap between "real" and "imagined" histories of trade policy is the greatest in relation to Britain and the United States, which are conventionally believed to have reached the top of the world's economic hierarchy by adopting free trade when other countries were stuck with outdated mercantilist policies. These two countries were, in fact, often the pioneers and frequently the most ardent users of *interventionist* trade and industrial policy measures in their early stages of development.

Debunking the myth of free trade from the historical perspective demonstrates that there is an urgent need for thoroughly re-thinking some key conventional wisdom in the debate on trade policy, and more broadly on globalization.

2. The "Official History of Capitalism" and Its Limitations

The "official history of capitalism," which informs today's debate on trade policy, economic development, and globalization, goes like the following.

From the eighteenth century, Britain proved the superiority of free-market and free-trade policies by beating interventionist France, its main competitor at the time, and establishing itself as the supreme world economic power. Especially once it had abandoned its deplorable agricultural protection (the Corn Law) and other remnants of old mercantilist protectionist measures in 1846, it was able to play the role of the architect and dominant influence of a new "liberal" world economic order. This liberal world order, perfected around 1870, was based on *laissez-faire* industrial policies at home; low barriers to the international flows of goods, capital, and labor; and macroeconomic stability, both nationally and internationally, guaranteed by the Gold Standard and the principle of balanced budgets. A period of unprecedented prosperity followed.

Unfortunately, according to this story, things started to go wrong with the First World War. In response to the ensuing instability of the world economic and political system, countries started to erect trade barriers again. In 1930, the United States also abandoned free trade and raised tariffs with the infamous Smoot-Hawley tariff, which Jagdish Bhagwati called "the most visible and dramatic act of anti-trade folly" (Bhagwati, 1985, p. 22, footnote 10). The world free trade system finally ended in 1932, when Britain, hitherto the champion of free trade, succumbed to the temptation and re-introduced tariffs. The resulting contraction and instability in the world economy, and then finally the Second World War, destroyed the last remnants of the first liberal world order.

TABLE 1. AVERAGE TARIFF RATES ON MANUFACTURED PRODUCTS FOR SELECTED DEVELOPED COUNTRIES IN THEIR EARLY STAGES OF DEVELOPMENT

(weighted average; in percentages of value)[1]

	1820[2]	1875[2]	1913	1925	1931	1950
Austria[3]	R	15–20	18	16	24	18
Belgium[4]	6–8	9–10	9	15	14	11
Denmark	25–35	15–20	14	10	n.a.	3
France	R	12–15	20	21	30	18
Germany[5]	8–12	4–6	13	20	21	26
Italy	n.a.	8–10	18	22	46	25
Japan[6]	R	5	30	n.a.	n.a.	n.a.
Netherlands[4]	6–8	3–5	4	6	n.a.	11
Russia	R	15–20	84	R	R	R
Spain	R	15–20	41	41	63	n.a.
Sweden	R	3–5	20	16	21	9
Switzerland	8–12	4–6	9	14	19	n.a.
United Kingdom	45–55	0	0	5	n.a.	23
United States	35–45	40–50	44	37	48	14

Source: Bairoch (1993), p. 40, table 3.3.

Notes:

R= Numerous and important restrictions on manufactured imports existed and therefore average tariff rates are not meaningful.

1. World Bank (1991, p. 97, Box table 5.2) provides a similar table, partly drawing on Bairoch's own studies that form the basis of the above table. However, the World Bank figures, although in most cases very similar to Bairoch's figures, are *unweighted* averages, which are obviously less preferable to *weighted* average figures that Bairoch provides.
2. These are very approximate rates, and give range of average rates, not extremes.
3. Austria-Hungary before 1925.
4. In 1820, Belgium was united with the Netherlands.
5. The 1820 figure is for Prussia only.
6. Before 1911, Japan was obliged to keep low tariff rates (up to 5%) through a series of "unequal treaties" with the European countries and the United States. The World Bank table cited in note 1 above gives Japan's *unweighted* average tariff rate for *all goods* (and not just manufactured goods) for the years 1925, 1930, 1950 as 13%, 19%, 4%.

After the Second World War, so the story goes, some significant progress was made in trade liberalization through the early General Agreement on Trade and Tariffs (GATT) talks. However, unfortunately, *dirigiste* approaches to economic management dominated the policymaking scene until the 1970s in the developed world, and until the early 1980s in the developing world (and the Communist world until its collapse in 1989).

Fortunately, it is said, interventionist policies have been largely abandoned across the world since the 1980s with the rise of neoliberalism, which emphasized the virtues of small government, *laissez-faire* policies, and international openness. Especially in the developing world, by the late 1970s economic growth had begun to falter in most countries outside East and Southeast Asia, which were already pursuing "good" policies (of free market and free trade). This growth failure, which often manifested itself in economic crises of the early 1980s, exposed the limitations of old-style interventionism and protectionism. As a result, most developing countries have come to embrace "policy reform" in a neoliberal direction.

When combined with the establishment of new global governance institutions, represented by the World Trade Organization (WTO), these policy changes at the national level have created a new global economic system, comparable in its potential prosperity only to the earlier "golden age" of liberalism (1870–1914). Renato Ruggiero, the first director-general of the WTO, thus argues that, thanks to this new world order, we now have "the potential for eradicating global poverty in the early part of the next [twenty-first] century—a utopian notion even a few decades ago, but a real possibility today" (1998, p. 131).

As we shall see later, this story paints a fundamentally misleading picture, but no less a powerful one for it. And it should be accepted that there are some senses in which the late nineteenth century can indeed be described as a *laissez-faire* era.

To begin with, there was a period in the late-nineteenth century, albeit a brief one, when liberal trade regimes prevailed in large parts of the world economy. Between 1860 and 1880, many European countries reduced tariff protection substantially (see table 1). At the same time, most of the rest of the world was forced to practice free trade through colonialism and through unequal treaties in the cases of a few nominally "independent" countries (such as the Latin American countries, China, Thailand [then Siam], Iran [then Persia], and Turkey [then the Ottoman Empire], and even Japan until 1911). Of course, the obvious exception to this was the United States, which maintained very high tariff barriers even during this period (see table 1). However, given that the United States was still a relatively small part of the world economy, it may not be totally unreasonable to say that this is as close to free trade as the world has ever come.

More importantly, the scope of state intervention before the First World War was quite limited by modern standards. States had limited budgetary policy capability because there was no income tax in most countries and the balanced budget doctrine dominated. They also had limited monetary policy capability because many of them did not have a central bank, and the Gold Standard restricted their policy freedom. They also had limited command over investment resources, as they owned or regulated few financial institutions and industrial enterprises. One somewhat paradoxical consequence of all these limitations was that tariff protection was far more important as a policy tool in the nineteenth century than it is in our time.

Despite these limitations, as we shall soon see, virtually all of today's developed countries—or now-developed countries (henceforth NDCs)—actively used interventionist trade and industrial policies aimed at promoting, not simply "protecting," it should be emphasized, infant industries during their catch-up periods.

3. History of Trade and Industrial Policies in Today's Developed Countries

3.1. Britain

As the intellectual fountain of the modern *laissez-faire* doctrines and as the only country that can claim to have practiced a total free trade at least at one point, Britain is widely regarded as having developed without significant state intervention. However, this cannot be further from the truth.

Britain entered its post-feudal age (thirteenth to fourteenth centuries) as a relatively backward economy. It relied on exports of raw wool and, to a lesser extent, of low-value-added wool cloth to the then more advanced Low Countries (Ramsay, 1982, p. 59; Davies, 1999, p. 348). Edward III (1312–1377) is believed to have been the first king who deliberately tried to develop local wool cloth manufacturing. He only wore English cloth to set an example, brought in the Flemish weavers, centralized trade in raw wool, and banned the import of woolen cloth (Davies, 1999, p. 349; Davis, 1966, p. 281).

Further impetus came from the Tudor monarchs. The famous eighteenth-century merchant, politician, and the author of the novel, *Robinson Crusoe*, Daniel Defoe, describes this policy in his now-almost-forgotten book, *A Plan of the English Commerce* (1728). In this book, he describes in some detail how the Tudor monarchs, especially Henry VII (1485–1509), transformed England from a raw-wool exporter into the most formidable woolen-manufacturing nation in the world (pp. 81–101). According to Defoe, from 1489, Henry VII implemented schemes to promote woolen manufacturing, which included sending royal missions to identify locations suited to wool manufacturing; poaching skilled workers from the Low Countries; increasing duties on the export of raw wool; and even temporarily banning the export of raw wool (Ramsay, 1982, provides further details).

For obvious reasons, it is difficult to establish the exact importance of the above-mentioned infant industry promotion policies. However, without them, it would have been very difficult for Britain to make this initial success in industrialization, without which its Industrial Revolution may have been next to impossible.

Virtually all of today's developed countries actively used interventionist trade and industrial policies aimed at promoting, not simply "protecting," infant industries during their catch-up periods.

The most important event in Britain's industrial development, however, was the 1721 policy reform introduced by Robert Walpole, the first British prime minister, during the reign of George I (1660–1727). Prior to this, the British government's policies were, in general, aimed at capturing trade and generating government revenue. Even the promotion of woolen manufacturing was partly motivated by revenue considerations. In contrast, the policies introduced after 1721 were deliberately aimed at promoting manufacturing industries. Introducing the new law, Walpole stated, through the king's address to the Parliament: "it is evident that nothing so much contributes to promote the public well-being as the exportation of manufactured goods and the importation of foreign raw material" (as cited in List, 1885, p. 40).

The 1721 legislation, and the supplementary policy changes subsequently made, included the following measures (for details, see Brisco, 1907, pp. 131–33, p. 148–55, pp. 169–71; McCusker, 1996, p. 358; Davis, 1966, pp. 313–4). First of all, import duties on raw materials used for manufactures were lowered, or even altogether dropped. Second, duty drawbacks on imported raw materials for exported manufactures were increased. Third, export duties on most manufactures were abolished. Fourth, duties on imported foreign manufactured goods were raised. Fifth, export subsidies (then called "bounties") were extended to new export items like silk products and gunpowder, while the existing export subsidies to sailcloth and refined sugar were increased. Sixth, regulation was introduced to control the quality of manufactured products, especially textile products, so that unscrupulous manufacturers would not damage the reputation of British products in foreign markets. What is very interesting is that these policies, as well as the principles behind them, were uncannily similar to those used by countries like Japan, Korea, and Taiwan during the post-war period (see below).

Despite its widening technological lead over other countries, Britain continued its policies of industrial promotion until the mid-nineteenth century. As we can see from table 1, Britain had very high tariffs on manufacturing products even as late as the 1820s, some two generations after the start of its Industrial Revolution.

By the end of the Napoleonic War in 1815, however, there were increasing pressures for free trade in Britain from the increasingly confident manufacturers. Although there was a round of tariff reduction in 1833, the big change came in 1846, when the Corn Law was repealed and tariffs on many manufacturing goods abolished (Bairoch, 1993, pp. 20–21).

The repeal of the Corn Law is now commonly regarded as the ultimate victory of the classical liberal economic doctrine over wrong-headed mercantilism. Although we should not underestimate the role of economic theory in this policy shift, it is probably better understood as an act of "free trade imperialism" (the term is due to Gallagher & Robinson, 1953) intended to "halt the move to industrialization on the Continent by enlarging the market for agricultural produce and primary materials" (Kindleberger, 1978, p. 196). Indeed, many leaders of the campaign to repeal the Corn Law, such as the politician Richard Cobden and John Bowring of the Board of Trade, saw their campaign precisely in such terms (Kindleberger, 1975, and Reinert, 1998). Cobden's view on this is clearly revealed in the following passage: "The factory system would, in all probability, not have taken place in America and Germany. It most certainly could not have flourished, as it has done, both in these states, and in France, Belgium, and Switzerland, through the fostering bounties which the high-priced food of the British artisan has offered to the cheaper fed manufacturer of those countries" (*The Political Writings of Richard Cobden*, 1868, William Ridgeway, London, vol. 1, p. 150; as cited in Reinert, 1998, p. 292).

Symbolic as the repeal of the Corn Law may have been, it was only after 1860 that most tariffs were abolished. However, the era of free trade did not last very long. It ended when Britain finally acknowledged that it had lost its manufacturing eminence and re-introduced tariffs on a large scale in 1932 (Bairoch, 1993, pp. 27–8).

Thus seen, contrary to the popular belief, Britain's technological lead that enabled this shift to a free trade regime had been achieved "behind high and long-lasting tariff barriers" (Bairoch, 1993, p. 46). And it is for this reason that Friedrich List, the nineteenth-century German economist who is mistakenly (see section 3.2 below) known as the father of modern "infant industry" theory, wrote the following passages.

> "It is a very common clever device that when anyone has attained the summit of greatness, he *kicks away the ladder* by which he has climbed up, in order to deprive others of the means of climbing up after him. In this lies the secret of the cosmopolitical doctrine of Adam Smith, and of the cosmopolitical tendencies of his great contemporary William Pitt, and of all his successors in the British Government administrations.
>
> Any nation which by means of protective duties and restrictions on navigation has raised her manufacturing power and her navigation to such a degree of development that no other nation can sustain free competition with her, can do nothing wiser than *to throw away these ladders* of her greatness, to preach to other nations the benefits of free trade, and to declare in penitent tones that she has hitherto wandered in the paths of error, and has now for the first time succeeded in discovering the truth [italics added]" (List, 1885, pp. 295–6).

3.2. United States of America

As we have just seen, Britain was the first country to successfully use a large-scale infant industry promotion strategy. However, its most ardent user was probably the U.S.; the eminent economic historian Paul Bairoch once called it "the mother country and bastion of modern protectionism" (Bairoch, 1993, p. 30). This fact is, interestingly, rarely acknowledged in the modern literature, especially coming out of the United States. However, the importance of infant industry protection in U.S. development cannot be over-emphasized.

From the early days of colonization, industrial protection was a controversial policy issue. To begin with, Britain did not want to industrialize the American colonies, and duly implemented policies to that effect (e.g., banning of high-value-added manufacturing activities). Around the time of independence, the southern agrarian interests opposed any protection, and the northern manufacturing interests wanted it, represented by, among others, Alexander Hamilton, the first Secretary of the Treasury of the United States (1789–1795).

In fact, it was Alexander Hamilton in his *Reports of the Secretary of the Treasury on the Subject of Manufactures* (1791) who first systematically set out the infant industry argument, and not the German economist Friedrich List, as it is often thought (Corden, 1974, ch. 8; Reinert, 1996). Indeed, List started out as a free trade advocate and only converted to the infant industry argument following his exile in the U.S (1825–1830) (Henderson, 1983, Reinert, 1998). Many U.S. intellectuals and politicians during the country's catch-up period clearly understood that the free trade theory advocated by the British classical economists was unsuited to their country. Indeed, it was against the advice of great economists like Adam Smith and Jean Baptiste Say that the Americans were protecting their industries.

In his *Reports*, Hamilton argued that the competition from abroad and the "forces of habit" would mean that new industries that could soon become internationally competitive ("infant industries") would not be started in the United States, unless the initial losses were guaranteed by government aid (Dorfman & Tugwell, 1960, pp. 31–32; Conkin, 1980, pp. 176–77). According to him, this aid could take the form of import duties or, in rare cases, prohibition of imports (Dorfman & Tugwell, 1960, p. 32). He also believed that duties on raw materials should be generally low (p. 32). We can see close resemblance between this view and the view espoused by Walpole (see section 3.1 above)—a point that was not lost on the contemporary Americans, especially Hamilton's political opponents (Elkins & McKitrick, 1993, p. 19).

Initially, the United States did not have a federal-level tariff system, but when the Congress acquired the power to tax, it passed a liberal tariff act (1789), imposing a 5% flat rate tariff on all imports, with some exceptions (Garraty & Carnes, 2000, pp. 139–40, p. 153; Bairoch, 1993, p. 33). And despite Hamilton's *Reports*, between 1792 and the war with Britain in 1812, the average tariff level remained around 12.5%, although during the war all tariffs were doubled in order to meet the increased government expenses due to the war (p. 210).

A significant shift in policy occurred in 1816, when a new law was introduced to keep the tariff level close to the wartime level—especially protected were cotton, woolen, and iron goods (Garraty & Carnes, 2000, p. 210; Cochran & Miller, 1942, pp. 15–16). Between 1816 and the end of the Second World War, the U.S. had one of the highest average tariff rates on manufacturing imports in the world (see table 1). Given that the country enjoyed an exceptionally high degree of "natural" protection due to high transportation costs at least until the 1870s, we can say that the U.S. industries were literally the most protected in the world until 1945.

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Even the Smoot-Hawley Tariff of 1930, which Bhagwati in the above quote portrays as a radical departure from a historic free-trade stance, only marginally (if at all) increased the degree of protectionism in the U.S. economy. As we can see from table 1, the average tariff rate for manufactured goods that resulted from this bill was 48%, and it still falls within the range of the average rates that had prevailed in the United States since the Civil War, albeit in the upper region of this range. It is only in relation to the brief "liberal" interlude of 1913–1929 that the 1930 tariff bill can be interpreted as increasing protectionism, although even then it was not by very much (from 37% in 1925 to 48% in 1931, see table 1).

In this context, it is also important to note that the American Civil War was fought on the issue of tariffs as much as, if not more than, on the issue of slavery. Of the two major issues that divided the North and the South, the South had actually more to fear on the tariff front than on the slavery front. Abraham Lincoln was a well-known protectionist who had cut his political teeth under the charismatic politician Henry Clay in the Whig Party, which advocated the "American System" based on infrastructural development and protectionism, thus recognizing that free trade was in the "British" interest (Luthin, 1944, pp. 610–11; Frayssé, 1986, pp. 99–100). Moreover, Lincoln thought the blacks were racially inferior and slave emancipation was an idealistic proposal with no prospect of immediate implementation (Garraty & Carnes, 2000, pp. 391–92; Foner, 1998, p. 92). He is said to have emancipated the slaves in 1862 as a strategic move to win the war rather than out of some moral conviction (Garraty & Carnes, 2000, p. 405).

It was only after the Second World War, with its industrial supremacy unchallenged, that the U.S. liberalized its trade (although not as unequivocally as Britain did in the mid-nineteenth century) and started championing the cause of free trade—once again proving List right on his "ladder-kicking" metaphor. The following quote from Ulysses Grant, the Civil War hero and president of the United States from 1868 to 1876 clearly shows how the Americans had no illusions about ladder-kicking on the British side and their side.

> "For centuries England has relied on protection, has carried it to extremes and has obtained satisfactory results from it. There is no doubt that it is to this system that it owes its present strength. After two centuries, England has found it convenient to adopt free trade because it thinks that protection can no longer offer it anything. Very well then, Gentlemen, my knowledge of our country leads me to believe that within 200 years, when America has gotten out of protection all that it can offer, it too will adopt free trade." (Ulysses S. Grant, president of the United States, 1868–1876, cited in A.G. Frank, *Capitalism and Underdevelopment in Latin America*, New York, Monthly Review Press, 1967, p. 164).

Important as it may have been, tariff protection was not the only policy deployed by the U.S. government in order to promote the country's economic development during its catch-up phase. At least from the 1830s, it supported an extensive range of agricultural research through the granting of government land to agricultural colleges and the establishment of government research institutes (Kozul-Wright, 1995, p. 100). In the second half of the nineteenth century, it expanded public educational investments—in 1840, less than half of the total investment in education was public, whereas by 1900 this figure had risen to almost 80%—and raised the literacy ratio to 94% by 1900 (p. 101, especially f.n. 37). It also promoted the development of transportation infrastructure, especially through the granting of land and subsidies to railway companies (pp. 101–102).

And it is important to recognize that the role of the U.S. federal government in industrial development has been substantial even in the post-war era, thanks to the large amount of defense-related procurements and research and development (R&D) spending, which have had enormous spillover effects (Shapiro & Taylor, 1990, p. 866; Owen, 1966, ch. 9; Mowery & Rosenberg, 1993). The share of the U.S. federal government in total R&D spending, which was only 16% in 1930 (Owen, 1966, pp. 149–50), remained between one-half and two-thirds during the postwar years (Mowery & Rosenberg, 1993, table 2.3). The critical role of the U.S. government's National Institutes of Health (NIH) in supporting R&D in pharmaceutical and biotechnology industries should also be mentioned. Even according to the U.S. pharmaceutical industry association itself (see http://www.phrma.org/publications), only 43% of pharmaceutical R&D is funded by the industry itself, while 29% is funded by the NIH.

3.3. Germany

Germany is a country that is today commonly known as the home of infant industry protection, both intellectually and in terms of policies. However, historically speaking, tariff protection actually played a much less important role in the economic development of Germany than that of Britain or the United States.

The tariff protection for industry in Prussia before the 1834 German customs union under its leadership (*Zollverein*), and that subsequently accorded to German industry in general remained mild (Blackbourn, 1997, p. 117). In 1879, the Chancellor of Germany, Otto von Bismarck introduced a great tariff increase in order to cement the political alliance between the *Junkers* (landlords) and the heavy industrialists—the so-called "marriage of iron and rye." However, even after this, substantial protection was accorded only to the key heavy industries, especially the iron and steel industry, and industrial protection in general remained low (Blackbourn, 1997, p. 320). As it can be seen from table 1, the level of protection in German manufacturing was one of the *lowest* among comparable countries throughout the nineteenth century and the first half of the twentieth century.

The relatively low tariff protection does not, however, mean that the German state took a *laissez-faire* approach to economic development. Especially under Frederick William I (1713–1740) and Frederick the Great (1740–1786) in the eighteenth century, the Prussian state pursued a range of policies to promote new industries—especially textiles (linen above all), metals, armaments, porcelain, silk, and sugar refining—by providing monopoly rights, trade protection, export subsidies, capital investments, and skilled workers from abroad (Trebilcock, 1981, pp. 136–52).

From the early nineteenth century, the Prussian state also invested in infrastructure—the most famous example being the government financing of road building in the Ruhr (Milward & Saul, 1979, p. 417). It also implemented educational reform, which not only involved building new schools and universities but also the re-orientation of their teaching from theology to science and technology—this at a time when science and technology was not taught in Oxford or Cambridge (Kindleberger, 1978, p. 191).

There were some growth-retarding effects of Prussian government intervention, such as the opposition to the development of banking (Kindleberger, 1978, pp. 199–200). However, on the whole, we cannot but agree with the statement by Milward & Saul (1979) that "[t]o successive industrialising countries the attitude taken by early nineteenth-century German governments seemed much more nearly in touch with economic realities than the rather idealised and frequently simplified model of what had happened in Britain or France which economists presented to them" (p. 418).

After the 1840s, with the growth of the private sector, the involvement of the German state in industrial development became less pronounced (Trebilcock, 1981, p. 77). However, this did not mean a withdrawal of the state, rather a transition from a directive to a guiding role. During the Second Reich (1870–1914), there was further erosion in state capacity and involvement in relation to industrial development, although it still played an important role through its tariff policy and cartel policy (Tilly, 1996).

3.4. France

Similar to the case of Germany, there is an enduring myth about French economic policy. This is the view, propagated mainly by British liberal opinion, that France has always been a state-led economy, kind of an anti-thesis to *laissez-faire* Britain. This characterization may largely apply to the pre-Revolutionary period and to the post-World War II period in the country's history, but not to the rest of it.

Table 2. Protectionism in Britain and France, 1821–1913 (measured by net customs revenue as a percentage of net import values)		
Years	Britain	France
1821–1825	53.1	20.3
1826–1830	47.2	22.6
1831–1835	40.5	21.5
1836–1840	30.9	18.0
1841–1845	32.2	17.9
1846–1850	25.3	17.2
1851–1855	19.5	13.2
1856–1860	15.0	10.0
1861–1865	11.5	5.9
1866–1870	8.9	3.8
1871–1875	6.7	5.3
1876–1880	6.1	6.6
1881–1885	5.9	7.5
1886–1890	6.1	8.3
1891–1895	5.5	10.6
1896–1900	5.3	10.2
1901–1905	7.0	8.8
1906–1910	5.9	8.0
1911–1913	5.4	8.8

Source: Nye (1991), p. 26, Table 1.

French economic policy in the pre-Revolutionary period—often known as *Colbertism*, named after Jean-Baptiste Colbert (1619–1683), the famous finance minister under Louis XIV—was certainly highly interventionist. For example, in the early eighteenth century, the French state tried to recruit skilled workers from Britain on a large scale and encouraged industrial espionage.

The Revolution, however, significantly upset this course. Milward & Saul (1979) argue that the Revolution brought about a marked shift in French government economic policy, because "the destruction of absolutism seemed connected in the minds of the revolutionaries with the introduction of a more *laissez-faire* system" (p. 284). Especially after the fall of Napoleon, the *laissez-faire* policy regime got firmly established and persisted until the Second World War.

For example, challenging the conventional wisdom that pitches free-trade Britain against protectionist France during the nineteenth century, Nye (1991) examines detailed empirical evidence and concludes that "France's trade regime was more liberal than that of Great Britain throughout most of the nineteenth century, even in the period from 1840 to 1860 [the alleged beginning of full-fledged free trade in Britain]" (p. 25). Table 2 shows that, when measured by net customs revenue as a percentage of net import values (which is a standard measure of protectionism, especially among the historians), France was always less protectionist than Britain between 1821 and 1875, and especially until the early 1860s.

What is interesting to note is that the partial exception to this century and a half period of "liberalism" in France under Napoleon III (1848–1870) was the only period of economic dynamism in France during this period (Trebilcock, 1981, p. 184). Under Napoleon III, the French state actively encouraged infrastructural developments and established various institutions of research and teaching (Bury, 1964, ch. 4). It also modernized the country's financial sector by granting limited liability to, investing in, and overseeing modern large-scale financial institutions (Cameron, 1953).

On the trade policy front, Napoleon III signed the famous Anglo-French trade treaty (the Cobden-Chevalier treaty) of 1860, which heralded the period of trade liberalism on the Continent (1860–1879) (see Kindleberger, 1975, for further details). However, as we can see from table 2, the degree of protectionism in France was already quite low on the eve of the treaty (it was actually *lower* than in Britain at the time), and therefore the resulting reduction in protectionism was relatively small.

The treaty was allowed to lapse in 1892 and many tariff rates, especially ones on manufacturing, were raised. However, this had little positive effects of the kind that we saw in the similar move in countries like Sweden at the time (see section 3.5 below), because there was no coherent industrial upgrading strategy behind this tariff increase. Especially during the Third Republic, the French government was almost as *laissez-faire* in its attitude toward economic matters as the then very *laissez-faire* British government (Kuisel, 1981, pp. 12–13).

It was only after the Second World War that the French elite got galvanized into re-organizing their state machinery in order to address the problem of the country's (relative) industrial backwardness. During this time, especially until the late 1960s, the French state used indicative planning, state-owned enterprises, and what is now somewhat misleadingly known as "East-Asian-style" industrial policy in order to catch up with the more advanced countries. As a result, France witnessed a very successful structural transformation of its economy, and finally overtook Britain (see Shonfield, 1965 and Hall, 1986).

3.5. Sweden

Sweden did not enter its modern age with a free trade regime. After the end of the Napoleonic wars, its government enacted a strongly protective tariff law (1816), and banned the imports and exports of some items (Gustavson, 1986, p. 15). However, from about 1830 on, protection was progressively lowered (p. 65), and in 1857, a very low tariff regime was introduced (Bohlin, 1999, p. 155; also see table 1).

This free trade phase, however, was short-lived. Sweden started using tariffs as a means to protect the agricultural sector from American competition since around 1880. After 1892, it also provided tariff protection and subsidies to the industrial sector, especially the newly-emerging engineering sector (Chang & Kozul-Wright, 1994, p. 869; Bohlin, 1999, p. 156). Because of this switch to protectionism, the Swedish economy performed extremely well in the following decades. According to a calculation by Baumol et al. (1990), Sweden was, after Finland, the second fastest growing (in terms of GDP per work-hour) of the sixteen major industrial economies between 1890 and 1900, and the fastest growing between 1900 and 1913 (p. 88, table 5.1).

Tariff protection and subsidies were not all that Sweden used in order to promote industrial development. More interestingly, during the late nineteenth century, Sweden developed a tradition of close public-private cooperation to the extent that was difficult to find parallel in other countries at the time, including Germany with its long tradition of public-private partnership. This first developed out of state involvement in the agricultural irrigation and drainage schemes (Samuelsson, 1968, pp. 71–76). This was then applied to the development of railways from the 1850s, telegraph and telephone in the 1880s, and hydro-electric energy in the 1890s (Chang & Kozul-Wright, 1994, pp. 869–70; Bohlin, 1999, pp. 153–55). Public-private collaboration also existed in certain key industries, such as the iron industry (Gustavson, 1986, pp. 71–72; Chang & Kozul-Wright, 1994, p. 870). Interestingly, all these resemble the patterns of public-private collaboration for which the East Asian economies later became famous (Evans, 1995, is a classic work on this issue).

The Swedish state made great efforts in facilitating the acquisition of advanced foreign technology, including state-sponsored industrial espionage. However, more notable was its emphasis on the accumulation of "technological capabilities" (see Fransman & King (eds.), 1984, and Lall, 1992, for pioneering works on this issue). It provided stipends and travel grants for studies and research, invested in education, helped the establishment of technological research institutes, and provided direct research funding to industry (Chang & Kozul-Wright, 1994, p. 870).

> It was only after the Second World War that the French elite got galvanized into re-organizing their state machinery in order to address the problem of the country's (relative) industrial backwardness.

Swedish economic policy underwent a significant change after the electoral victory of the Socialist Party in 1932 (which has been out of the office for less than ten years since then) and the signing of the "historical pact" between the union and the employers' association in 1936 (the *Saltsjöbaden* agreement) (see Korpi, 1983). The policy regime that emerged after the 1936 pact initially focused on the construction of a system where the employers will finance a generous welfare state and high investment in return for wage moderation from the union.

After the Second World War, use was made of the regime's potential for promoting industrial upgrading. In the 1950s and the 1960s, the centralized trade union, LO (*Landsorganisationen i Sverige*) adopted the so-called Rehn-Meidner Plan (LO, 1963, is the document that set out the strategy in detail). This introduced the so-called solidaristic wage policy, which explicitly aimed to equalize wages across industries for the same types of workers. It was expected that this would generate pressure on the capitalists in low-wage sectors to upgrade their capital stock or shed labor, while allowing the capitalists in the high-wage sector to retain extra profits and expand faster than it would otherwise have been possible. This was complemented by the so-called active labor market policy, which provided retraining and relocation supports to the workers displaced in this process of industrial upgrading. It is widely accepted that this strategy contributed to Sweden's successful industrial upgrading in the early post-war years (Edquist & Lundvall, 1993, p. 274).

3.6. The Netherlands

The Netherlands was, as it is well known, the world's dominant naval and commercial powers during the seventeenth century, its so-called "Golden Century," thanks to its aggressive "mercantilist" regulations on navigation, fishing, and international trade since the sixteenth century. However, it showed a marked decline in the eighteenth century, the so-called "Periwig Period" (*Pruikentijd*), with its defeat in the 1780 Fourth Anglo-Dutch War marking the symbolic end to its international supremacy (Boxer, 1965, ch. 10).

A policy paralysis seems to have gripped the Netherlands between the late seventeenth century and the early twentieth century. The only exception to this was the effort by King William I (1815–1840), who established many agencies providing subsidized industrial financing (Kossmann, 1978, pp. 136–38; van Zanden, 1996, pp. 84–85). He also strongly supported the development of a modern cotton textile industry, especially in the Twente region (Henderson, 1972, pp. 198–200).

However, from the late 1840s, the country reverted to a *laissez-faire* regime, which lasted until the Second World War. As we can see in table 1, except for Britain in the late nineteenth century, and Japan before the restoration of tariff autonomy, the Netherlands remained the least protected economy among the NDCs. Also, the country abolished the patent law (which was first introduced in 1817) in 1869, inspired by the anti-patent movement that swept Europe at the time, which condemned patent as just another form of monopoly (Schiff, 1971, Machlup & Penrose, 1950). Despite international pressures, the country refused to re-introduce the patent law until 1912.

Because of this switch to protectionism, the Swedish economy performed extremely well in the following decades.

On the whole, during this extreme *laissez-faire* period, the Dutch economy remained rather sluggish, and its industrialization remained relatively shallow. According to the authoritative estimate by Maddison (1995), measured in 1990 dollars, it was the second richest country in the world even after Britain in 1820, even after a century of relative decline ($1,756 vs. $1,561). However, a century later (1913), it was overtaken by no less than six countries—Australia, New Zealand, the United States, Canada, Switzerland, and Belgium—and almost by Germany.

It was largely for this reason that the end of World War II saw the introduction of more interventionist policies (van Zanden, 1999, pp. 182–84). Especially up to 1963, rather active trade and industrial policies were practised. These included: financial supports for two large firms (one in steel, the other in soda); subsidies to industrialize backward areas; encouragement of technical education; encouraging the development of the aluminium industry through subsidized gas; and the development of key infrastructures.

3.7. Switzerland

Switzerland was one of the earliest industrializers of Europe—starting its Industrial Revolution barely twenty years later than Britain (Biucchi, 1973, p. 628). It was a world technological leader in a number of important industries (Milward & Saul, 1979, pp. 454–55), especially in the cotton textile industry, where it was deemed technologically more advanced in many areas than Britain (Biucchi, 1973, p. 629).

Given this very small (if at all) technological gap with the leader country, infant industry protection was not necessary for Switzerland. Also, given its small size, protection would have been more costly for the country than would have been the case for bigger countries. Moreover, given its highly decentralized political structure and very small size, there was little room for centralized infant industry protection (Biucchi, 1973, p. 455).

However, Switzerland's *laissez-faire* trade policy did not mean that its government had no sense of strategy in its policymaking. Its refusal to introduce a patent law until 1907, despite strong international pressure, is such an example. This anti-patent policy is argued to have contributed to the country's development—especially by allowing the "theft" of German ideas in the chemical and pharmaceutical industries and by encouraging foreign direct investments in the food industry (see Schiff, 1971, and Chang, 2001).

3.8. Japan and the East Asian Newly Industrialized Countries

Soon after it was forced open by the Americans in 1853, Japan's feudal political order collapsed and a modernizing regime was established after the so-called Meiji Restoration of 1868. The role of the state since then has been crucial in the country's development.

Until 1911, Japan was *not* able to use tariff protection, due to the "unequal treaties" that barred it from having tariff rates over 5%. Therefore, the Japanese state had to use other means to encourage industrialization. To start with, it established state-owned "model factories" (or "pilot plants") in a number of industries—notably in shipbuilding, mining, textile, and military industries (Smith, 1955, and Allen, 1981). Although most of these were privatized by the 1870s, it continued to subsidize the privatized firms, especially in shipbuilding (McPherson, 1987, p. 31, pp. 34–35). Subsequently, it established the first modern steel mill, and developed railways and telegraph (McPherson, 1987, p. 31; Smith, 1955, pp. 44–45).

Following the ending of the unequal treaties in 1911, the Japanese state started introducing a range of tariff reforms intended to protect infant industries, make imported raw materials more affordable, and control the imports of luxury consumption goods (McPherson, 1987, p. 32). During the 1920s, under strong German influence (Johnson, 1982, pp. 105–106), it started encouraging "rationalization" of key industries by sanctioning cartel arrangements and encouraging mergers, which were aimed at restraining "wasteful competition," achieving scale economies, standardization, and the introduction of scientific management (McPherson, 1987, pp. 32–33). These efforts were intensified in the 1930s (Johnson, 1982, pp. 105–115).

Despite all these developmental efforts, during the first half of the twentieth century, Japan was on the whole *not* the economic superstar that it became after World War II. According to Maddison (1989), between 1900 and 1950, Japan's per capita income growth rate was only 1% p.a.. This was somewhat below the average for the sixteen largest NDCs that he studied, which was 1.3% p.a., although it must be noted that part of this rather poor performance was due to the dramatic collapse in output following defeat in the Second World War.

Between the end of World War II and the early 1970s, Japan's growth record was unrivalled. According to the data from Maddison (1989, p. 35, Table 3.2), between 1950 and 1973, per capita GDP in Japan grew at a staggering 8%, more than double the 3.8% average achieved by the sixteen NDCs mentioned above (the average includes Japan). The next best performers among the NDCs were Germany, Austria (both at 4.9%) and Italy (4.8%), while even the East Asian "miracle" developing countries like Taiwan (6.2%) or Korea (5.2%) came nowhere near Japan, despite the bigger "convergence" effect that they could expect given their greater economic backwardness.

In the economic successes of Japan and other East Asian countries (except Hong Kong), interventionist trade and industrial policies played a crucial role. Notable are the similarities between their policies and those used by other NDCs before them, including, above all, eighteenth -century Britain and nineteenth-century United States. However, it is also important to note that the policies used by the East Asian countries (and indeed those used by some other NDCs, like France) during the postwar period were a lot more sophisticated and fine-tuned than their historical equivalents.

They used more substantial and better-designed export subsidies (both direct and indirect) and much less export taxes than in the earlier experiences (Luedde-Neurath, 1986; Amsden, 1989). Tariff rebates for imported raw materials and machinery for export industries were much more systematically used than in, for example, eighteenth-century Britain (Lueede-Neurath, 1986).

Coordination of complementary investments, which had been previously done in a rather haphazard way (if at all), was systematized through indicative planning and government investment programs (Chang, 1993 and 1994). Regulations of firm entry, exit, investments, and pricing intended to "manage competition" were a lot more aware of the dangers of monopolistic abuses and more sensitive to its impact on export market performance, when compared to their historical counterparts, namely, the late nineteenth and early twentieth-century cartel policies (Amsden & Singh, 1994; Chang, forthcoming).

The East Asian states also integrated human capital and learning-related policies into their industrial policy framework more tightly than their predecessors had done, through "manpower planning" (You & Chang, 1993). Regulations on technology licensing and foreign direct investments were much more sophisticated and comprehensive than in the earlier experiences (Chang, 1998).

Subsidies to (and public provision of) education, training, and R&D were also much more systematic and extensive than their historical counterparts (Lall & Teubal, 1998).

3.9. Summary

The following picture emerges from our examination of the history of today's developed countries.

First of all, almost all NDCs used some form of infant industry promotion strategy when they were in catching-up positions. Interestingly it was the United Kingdom and the United States—the supposed homes of free trade policy, and not countries like Germany or Japan, countries that are usually associated with state activism—that used tariff protection most aggressively.

> Following the ending of the unequal treaties in 1911, the Japanese state started introducing a range of tariff reforms intended to protect infant industries, make imported raw materials more affordable, and control the imports of luxury consumption goods.

Of course, tariff figures do not give a full picture of industrial promotion efforts. During the late nineteenth and early twentieth century, while maintaining a relatively low *average* tariff rate, Germany accorded strong tariff protection to strategic industries like iron and steel. Similarly, Sweden provided targeted protection for the steel and the engineering industries, while maintaining generally low tariffs. Germany, Sweden, and Japan actively used non-tariff measures to promote their industries, such as establishment of state-owned "model factories," state financing of risky ventures, support for R&D, and the development of institutions that promote public-private cooperation.

The exceptions to this historical pattern are Switzerland and the Netherlands. However, these were countries that were already on the frontier of technological development by the eighteenth century and therefore did not need much protection. Also, it should be noted that the Netherlands had deployed an impressive range of interventionist measures up until the seventeenth century in order to build up its maritime and commercial supremacy. Moreover, Switzerland did not have a patent law until 1907, flying directly against the emphasis that today's orthodoxy puts on the protection of intellectual property rights. More interestingly, the Netherlands abolished its 1817 patent law in 1869, on the ground that patents were politically-created monopolies inconsistent with its free-market principles—a position that seems to elude most of today's free-market economists—and did not introduce a patent law again until 1912.

It must be pointed out that tariff protection was in many countries a key component of this strategy, but was by no means the only, and not necessarily the most important, component in the strategy. There were many other tools, such as export subsidies, tariff rebates on inputs used for exports, conferring of monopoly rights, cartel arrangements, directed credits, investment planning, manpower planning, R&D supports, and the promotion of institutions that allow public-private cooperation. These policies are thought to have been invented by Japan and other East Asian countries after World War II, or at least by Germany in the late nineteenth century, but many of them have a long pedigree.

Finally, despite sharing the same underlying principle, there was a considerable degree of diversity among the NDCs in terms of their policy mix, suggesting that there is no "one-size-fits-all" *model* for industrial development.

4. Comparison with Today's Developing Countries

Those few neoliberal economists who are aware of the records of protectionism in the NDCs try to avoid the obvious conclusion—namely, that it can be very useful for economic development—by arguing that, while some minimal tariff protection may be necessary, most developing countries have tariff rates that are much higher than what most NDCs used in the past.

For example, Little et al. (1970) argues that "[a]part from Russia, the United States, Spain, and Portugal, it does not appear that tariff levels in the first quarter of the twentieth century, when they were certainly higher for most countries than in the nineteenth century, usually afforded degrees of protection that were much higher than the sort of degrees of promotion for industry which we have seen, in the previous chapter, to be possibly justifiable for developing countries today [which they argue to be at most 20% even for the poorest countries and virtually zero for the more advanced developing countries]" (pp.163–64). Similarly, World Bank (1991) argues that "[a]lthough industrial countries did benefit from higher natural protection before transport costs declined, the average tariff for twelve industrial countries ranged from 11 to 32% from 1820 to 1980. . . . In contrast, the average tariff on manufactures in developing countries is 34%" (p. 97, Box 5.2).

This argument sounds reasonable enough, but is actually highly misleading in one important sense. The problem with it is that the productivity gap between today's developed countries and the developing countries is much greater than what existed between the more developed NDCs and the less developed NDCs in earlier times.

Throughout the nineteenth century, the ratio of per capita income in purchasing power parity (PPP) terms between the poorest NDCs (say, Japan and Finland) and the richest NDCs (say, the Netherlands and the United Kingdom) was about two or four to one. Today, the gap in per capita income in PPP terms between the most developed countries (e.g., Switzerland, Japan, the United States) and the least developed ones (e.g., Ethiopia, Malawi, Tanzania) is typically in the region of fifty or sixty to one. Middle-level developing countries like Nicaragua ($2,060), India ($2,230), and Zimbabwe ($2,690) have to contend with productivity gaps in the region of ten or fifteen to one. Even for quite advanced developing countries like Brazil ($6,840) or Columbia ($5,580), the productivity gap with the top industrial countries is about five to one.

This means that today's developing countries need to impose much higher rates of tariff than those used by the NDCs in earlier times, if they are to provide the same degree of actual protection to their industries as the ones accorded to the NDC industries in the past.

For example, when the United States accorded over 40% average tariff protection to its industries in the late nineteenth century, its per capita income in PPP terms was already about three-fourths that of Britain. And this was when the "natural protection" accorded by distance, which was especially important for the U.S., was considerably higher than today. Compared to this, the 71% trade-weighted average tariff rate that India used to have just before the WTO agreement, despite the fact that its per capita income in PPP terms is only about one-fifteenth that of the United States, makes the country look like a champion of free trade. Following the WTO agreement, India cut its trade-weighted average tariff to 32%, bringing it down to the level below which the United States average tariff rate never sank between the end of the Civil War and World War II.

To take a less extreme example, in 1875, Denmark had an average tariff rate of 15 to 20%, when its income was slightly less than 60% that of Britain. Following the WTO agreement, Brazil cut its trade-weighted average tariff from 41% to 27%, a level that is not far above the Danish level, but its income in PPP terms is barely 20% that of the United States.

Thus seen, *given the productivity gap*, even the relatively high levels of protection that had prevailed in the developing countries until the 1980s do not seem excessive by historical standards of the NDCs. When it comes to the substantially lower levels that have come to prevail after two decades of extensive trade liberalization in these countries, it may even be argued that today's developing countries are actually less protectionist than the NDCs in earlier times.

5. Lessons for the Present

The historical picture is clear. When they were trying to catch up with the frontier economies, the NDCs used interventionist trade and industrial policies in order to promote their infant industries. The forms of these policies and the emphases among them may have been different across countries, but there is no denying that they actively used such policies. And, in relative terms (that is, taking into account the productivity gap with the more advanced countries), many of them actually protected their industries a lot more heavily than what the currently developing countries have done.

If this is the case, the current orthodoxy advocating free trade and *laissez-faire* industrial policies seems at odds with historical experience, and the developed countries that propagate such a view seem to be indeed "kicking away the ladder" that they used in order to climb up to where they are.

The only possible way for the developed countries to counter this accusation of "ladder-kicking" will be to argue that the activist trade and industrial policies that they had pursued used to be beneficial for economic development but are not so any more, because "times have changed." Apart from the paucity of convincing reasons why this may be the case, the poor growth records of the developing countries over the last two decades makes this line of defense simply untenable. It depends on the data we use, but roughly speaking, per capita income in developing countries grew at 3% per year between 1960 and 1980, but has grown only at about 1.5% between 1980 and 2000. And even this 1.5% will be reduced to 1%, if we take out India and China, which have not pursued liberal trade and industrial policies recommended by the developed countries.

So, if you are a neoliberal economist, you are faced with a paradox. The developing countries grew much faster when they used “bad” trade and industrial policies during 1960–1980 than when they used “good” (at least “better”) policies during the following two decades. The obvious solution to this paradox is to accept that the supposedly good policies are actually *not* good for the developing countries but that the “bad” policies are actually good for them. This gets further confirmation from the fact that these “bad” policies are also the ones that the NDCs had pursued when they were developing countries themselves.

Given these arguments, we can only conclude that, in recommending the allegedly good policies, the NDCs are in effect “kicking away the ladder” by which they have climbed to the top beyond the reach of the developing countries. I do accept that this “ladder-kicking” may be done genuinely out of (misinformed) goodwill. Some of those NDC policy-makers and scholars who make the recommendations may sincerely believe that their own countries developed through free trade and other *laissez-faire* policies and want the developing countries benefit from the same policies. However, this makes it no less harmful for the developing countries. Indeed, it may be even more dangerous than “ladder-kicking” based on naked national interests, as self-righteousness can be even more stubborn than self-interest.

The historical picture is clear. When they were trying to catch up with the frontier economies, the NDCs used interventionist trade and industrial policies in order to promote their infant industries.

Whatever the intention is behind the “ladder-kicking,” the fact remains that these allegedly good policies have not been able to generate the promised growth dynamism in the developing countries during the last two decades. Indeed, in many developing countries, growth has simply collapsed.

So what is to be done? While spelling out a detailed agenda for action is beyond the scope of this article, the following points may be made.

To begin with, the historical facts about the developmental experiences of the developed countries should be more widely publicized. This is not just a matter of “getting history right,” but also of allowing the developing countries to make informed choices. I do not wish to give the impression that every developing country should adopt an active infant industry promotion strategy like eighteenth-century Britain, nineteenth-century United States, or twentieth-century Korea. Some of them may indeed benefit from following the Swiss or Hong Kong models. However, this strategic choice should be made in the full knowledge that historically the vast majority of the successful countries used the opposite strategy in order to become rich.

In addition, the policy-related conditions attached to financial assistance from the International Monetary Fund and the World Bank, or from the donor governments should be radically changed. These conditions should be based on the recognition that many of the policies that are considered bad are not, and that there can be no “best practice” policy that everyone should use. Second, the WTO rules and other multilateral trade agreements should be rewritten in such a way that a more active use of infant industry promotion tools (e.g., tariffs, subsidies) is allowed.

Allowing the developing countries to adopt the policies (and institutions) that are more suitable to their stages of development and to other conditions they face will enable them to grow faster, as indeed it did during the 1960s and the 1970s. This will benefit not only the developing countries but also the developed countries in the long run, as it will increase the trade and investment opportunities available to the developed countries in the developing countries. That the developed countries are not able to see this is the tragedy of our time.

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Endnotes

i Britain was the first country to introduce a permanent income tax, which happened in 1842. Denmark introduced income tax in 1903. In the United States, the income tax law of 1894 was overturned as "unconstitutional" by the Supreme Court. The Sixteenth Amendment, allowing federal income tax, was adopted only in 1913. In Belgium, income tax was introduced only in 1919. In Portugal, income tax was first introduced in 1922, but was abolished in 1928, and re-instated only in 1933. In Sweden, despite its later fame for the willingness to impose high rates of income tax, income tax was first introduced only in 1932. See Chang (2002, p. 101) for further details.

ii The Swedish Riksbank was nominally the first official central bank in the world (established in1688), but until the mid-nineteenth century, it could not function as a proper central bank because it did not have monopoly over note issue, which it acquired only in 1904. The first "real" central bank was the Bank of England, which was established in 1694, but became a full central bank in 1844. By the end of the nineteenth century, the central banks of France (1848), Belgium (1851), Spain (1874), and Portugal (1891) gained note issue monopoly, but it was only in the twentieth century that the central banks of Germany (1905), Switzerland (1907), and Italy (1926) gained it. The Swiss National Bank was formed only in 1907 by merging the four note-issue banks. The U.S. Federal Reserve System came into being only in 1913. Until 1915, however, only 30% of the banks (with 50% of all banking assets) were in the system, and even as late as 1929, 65% of the banks were still outside the system, although by this time they accounted for only 20% of total banking assets. See Chang (2002, pp. 94–97) for further details.

iii Moreover, when they reached the frontier, the NDCs used a range of policies in order to help themselves "pull away" from their existing and potential competitors. They used measures to control transfer of technology to its potential competitors (e.g., controls on skilled worker migration or machinery export) and made the less developed countries open up their markets by unequal treaties and colonization. However, the catch-up economies that were not formal or informal colonies did not simply sit down and accept these restrictive measures. They mobilized all kinds of different "legal" and "illegal" means to overcome the obstacles created by these restrictions, such as industrial espionage, poaching of workers, and smuggling of contraband machinery. See Chang (2002, pp. 51–9) for further details.

iv It is also said that George Washington insisted on wearing the then lower-quality American clothes rather than the superior British one at his inauguration ceremony. Both episodes are reminiscent of the policies used by Japan and Korea during the post-war period to control "luxury consumption," especially concerning imported luxury goods. On this, see Chang (1997).

v In 1840, Bowring gave the advice to the member states of German *Zollverein* that they should grow wheat and sell it to buy British manufactures (Landes, 1998, p. 521).

vi Even when the existence of high tariff is acknowledged, its importance is severely downplayed. For example, in what used to be the standard overview piece on U.S. economic history until recently, North (1965) mentions tariffs only once, only to dismiss it as an insignificant factor in explaining the U.S. industrial development. He argues, without bothering to establish the case and by citing only one highly biased secondary source (the classic study by F. Taussig, 1892), "while tariffs became increasingly protective in the years after the Civil War, it is doubtful if they were very influential in affecting seriously the spread of manufacturing" (p. 694).

vii In his *Wealth of Nations*, Adam Smith wrote: "Were the Americans, either by combination or by any other sort of violence, to stop the importation of European manufactures, and, by thus giving a monopoly to such of their own countrymen as could manufacture the like goods, divert any considerable part of their capital into this employment, they would retard instead of accelerating the further increase in the value of their annual produce, and would obstruct instead of promoting the progress of their country towards real wealth and greatness" (Smith, 1973 [1776], pp. 347–48).

viii Bairoch (1993, p. 17) credits Hamilton for inventing the term, "infant industry."

ix According to Elkins & McKitrick (1993), "[a]s the Hamiltonian progress revealed itself …—a sizeable funded debt, a powerful national bank, excises, nationally subsidised manufactures, and eventually even a standing army—the Walpolean parallel at every point was too obvious to miss. It was in resistance to this, and everything it seemed to imply that the 'Jeffersonian persuasion' was erected" (p. 19).

x In response to a newspaper editorial urging immediate slave emancipation, Lincoln wrote: "If I could save the Union without freeing any slave, I would do it; and if I could save it by freeing all the slaves, I would do it; and if I could do it by freeing some and leaving others alone, I would also do that" (Garraty & Carnes, 2000, p. 405).

xi However, it should be noted that the United States never practiced free trade to the same degree as Britain did in its free trade period (1860 to 1932). It never had a zero-tariff regime like Britain and it was much more aggressive in using "hidden" protectionist measures. These included: VERs (voluntary export restraints); quotas on textile and clothing (through the Multi-Fibre Agreement); protection and subsidies for agriculture (cf. the repeal of the Corn Law in Britain); and unilateral trade sanctions (especially through the use of anti-dumping duties).

xii I am grateful to Duncan Green for drawing my attention to this quote.

xiii Shapiro & Taylor (1990) sum this up nicely: "Boeing would not be Boeing, nor would IBM be IBM, in either military or commercial endeavours without Pentagon contracts and civilian research support" (p. 866).

xiv Interestingly, the re-orientation of teaching is similar to what happened in Korea during the 1960s. See You & Chang (1993) for further details.

xv However, this attempt backfired and propelled the British to introduce a ban on the emigration of skilled workers, and especially on the attempt to recruit such workers for jobs abroad ("suborning") in 1719 (see Chang, 2001, for further details).

xvi If anything, the new tariff regime was actually *against* such a thing. The author of this tariff regime, the politician Jules Méline, was explicitly against large-scale industrialization, in the belief that France should remain a country of independent farmers and small workshops (Kuisel, 1981, p. 18).

xvii The sixteen countries are, in alphabetical order, Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Sweden, Switzerland, Britain, and the United States.

xviii The 16 countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Sweden, Switzerland, the UK, and the U.S.

xix Japanese GDP (not per capita) in 1945 is estimated to have fallen to 48% of the peak reached in 1943. This was, however, less dramatic than what Germany experienced, where 1946 GDP was only 40% of the peak reached in 1944 or Austria, where the 1945 GDP was only 41% of the peaks reached in 1941 and 1944. See Maddison (1989, pp. 120–121, Table B-2).

xx There is an extensive literature on this now. See Johnson (1984) and Chang (1993) for the earlier phase of the debate. See Akyuz et al. (1998) and Chang (forthcoming, 2003), for the more recent phase.

xxi With the recent crisis in Korea and the prolonged recession in Japan, it has become popular to argue that activist trade and industrial policies have been proved mistaken. While this is not the place to go into this debate, a few points may be made (for a criticism of this view, see Chang, 2000 and forthcoming). First of all, whether or not we think the recent troubles in Japan and Korea are due to activist ITT policies, we cannot deny that these policies were behind their "miracle." Second, Taiwan, despite having used activist ITT policies, did not experience any financial or macroeconomic crisis. Third, all informed observers of Japan, regardless of their views, agree that the country's current recession cannot be attributed to government industrial policy—it has more to do with factors like structural savings surplus, ill-timed financial liberalization (that led to the bubble economy), and macroeconomic mismanagement. Fourth, in the case of Korea, industrial policy was largely dismantled by the mid-1990s, when the debt buildup that led to the recent crisis started, so it cannot be blamed for the crisis. Indeed, it may be argued that, if anything, the demise of industrial policy contributed to the making of the crisis by making "duplicative investments" easier (see Chang et al., 1998).

xxii They are Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

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