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# Kicking Away the Ladder: Infant Industry Promotion in Historical Perspective[1]

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ABSTRACT *This article introduces a new dimension in the debate on infant industry promotion by pointing out that, historically, the developed countries themselves did not develop on the basis of free trade policy and laissez-faire industrial policy that they currently recommend to, or even force upon, the developing countries. It first critically examines the "official history of capitalism", which sees the last few centuries as a continuous, if sometimes disrupted, advance of the free trade system. Then it shows how virtually all of today's developed countries, especially the UK and the USA, the supposed homes of free trade, used tariff protection and subsidies to develop their industries when they were in catching-up positions. It then criticizes the orthodox counter-argument that, while using protection in the early days of their economic development, today's developed countries never used it as much as today's developing countries have done. Finally, pointing out that the supposedly "good" policies of free trade and laissez-faire industrial policy have led to a collapse in growth in the developing countries during the last two decades, the article argues for a total rethink on trade policy and, more broadly, development strategy, for developing countries. Above all, it recommends that the global rules need to be rewritten in such a way that developing countries are allowed more actively to use tariffs and subsidies for infant industry promotion in accordance with their development strategy.*

## 1. Introduction

There is currently great pressure on developing countries from the developed countries, and the international development policy establishment (IDPE) that they control, to adopt a set of "good policies" to foster their economic development. As is well known, these "good policies" basically consist of conservative macroeconomic policy, liberalization of international trade and investment, privatization and deregulation.[2]There have been heated debates on whether these recommended policies are appropriate for the developing countries. However, curiously, even many of those who are sceptical of their applicability to developing countries take it for granted that these were the policies that were used by the developed countries in order to achieve economic development.

This cannot be further from the truth. The historical fact is that when they were developing countries themselves the developed countries used virtually none of the policies that they are recommending to developing countries. Nowhere is this dis-

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crepancy between historical facts and today's conventional wisdom bigger than in the area of industrial, trade and technology policies.

## 2. Official History of Capitalism

According to the "official history of capitalism" that informs today's debate on globalization and economic development, the world economy developed in the following way over the last few centuries (see, e.g. Bhagwati, 1985, 1998; Sachs & Warner, 1995).

From the 18th 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. In particular, once it had abandoned its deplorable agricultural protection (the Corn Laws) and other remnants of old mercantilist protectionist measures in 1846, it was able to play the role of the architect and hegemon 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 labour; 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 World War I. In response to the ensuing instability of the world economic and political system, countries started to erect trade barriers again. In 1930, the USA 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, fn. 10). The world free trade system finally ended in 1932, when Britain, hitherto the champion of free trade, succumbed to temptation and reintroduced tariffs. The resulting contraction and instability in the world economy and then finally World War II destroyed the last remnants of the first liberal world order.

After World War II, so the story goes, some significant progress was made in trade liberalization through the early GATT (General Agreement on Trade and Tariffs) talks. However, unfortunately, *dirigiste* approaches to economic management dominated the policy-making 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 neo-liberalism, which emphasize 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 the 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 neo-liberal direction.

When combined with the establishment of new global governance institutions represented by the WTO, these policy changes at the national level have created a new global economic system, comparable in its (at least potential) prosperity only to the earlier "golden age" of liberalism (1870–1914).[3]

As we shall see, this is 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 19th Century can indeed be described as an era of *laissez-faire*.

To begin with, there was a period in the late 19th Century, albeit a brief one, when

**Table 1.** Average tariff rates on manufactured products for selected developed countries in their early stages of development (weighted average; in percentages of value)[a]

| | 1820[b] | 1875[b] | 1913 | 1925 | 1931 | 1950 |
|---|---|---|---|---|---|---|
| Austria[c] | R | 15–20 | 18 | 16 | 24 | 18 |
| Belgium[d] | 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[e] | 8–12 | 4–6 | 13 | 20 | 21 | 26 |
| Italy | n.a. | 8–10 | 18 | 22 | 46 | 25 |
| Japan[f] | R | 5 | 30 | n.a. | n.a. | n.a. |
| Netherlands[d] | 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. |
| UK | 45–55 | 0 | 0 | 5 | n.a. | 23 |
| USA | 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. n.a.–not available.
[a] 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 the *weighted* average figures that Bairoch provides.
[b] These are very approximate rates, and give range of average rates, not extremes.
[c] Austria–Hungary before 1925.
[d] In 1820, Belgium was united with the Netherlands.
[e] The 1820 figure is for Prussia only.
[f] 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 USA. The World Bank table cited in note a gives Japan's *unweighted* average tariff rate for *all goods* (not just manufactured goods) for the years 1925, 1930, 1950 as 13%, 19%, 4%.

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 practise 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). The obvious exception was the USA, which maintained very high tariff barriers even during this period. However, given that the USA was still a relatively small part of the world economy, it may not be totally unreasonable to say that this was as close to free trade as the world has ever got.

More importantly, the scope of state intervention before World War I was limited by modern standards. States at the time had limited budgetary policy capability because there was no income tax in most countries[4] and the balanced budget doctrine dominated. They also had limited monetary policy capability because many countries did not have a central bank,[5] 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 paradoxical consequence of these limitations was that tariff protection was far more important as a policy tool in the 19th Century than it is in our time.

Despite these limitations, as we shall see, virtually all now-developed countries (NDCs) actively used interventionist industrial, trade and technology (ITT) policies aimed at promoting—not simply "protecting", it should be emphasized—infant industries during their catch-up periods.[6]

## 3. Catching-up and Infant Industry Promotion in the NDCs

### *3.1 Britain*

Contrary to the popular myth that depicts it as a country that first developed on the basis of free market and free trade, Britain was an aggressive user, and in certain areas a pioneer, of activist policies intended to promote infant industries.

Such policies, although limited in scope, date back to the 14th Century (Edward III) and the 15th Century (Henry VII) in relation to woollen manufacturing, the leading industry of the time. England was then an exporter of raw wool to the Low Countries, and various British monarchs tried to change this by, among other things, protecting the domestic woollen manufacturers, taxing raw wool exports and poaching skilled workers from the Low Countries.[7]

Between the 1721 trade policy reform of Robert Walpole, Britain's first Prime Minister, and the repeal of the Corn Laws in 1846, Britain implemented aggressive ITT policies. During this period, it actively used infant industry protection, export subsidies, import tariff rebates on inputs used for exporting and export quality control by the state—policies that are these days typically associated with Japan and other East Asian countries (see Brisco, 1907, on Walpole's trade policy). As we 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, and when it was significantly ahead of its competitor nations in technological terms.

Britain moved significantly, although not completely, to free trade with the repeal of the Corn Laws in 1846. The repeal of the Corn Laws is now commonly regarded as the ultimate victory of the classical liberal economic doctrine over wrong-headed mercantilism (see, e.g. Bhagwati, 1985), but many historians see it as an act of "free trade imperialism" intended to "halt the move to industrialisation on the Continent by enlarging the market for agricultural produce and primary materials" (Kindleberger, 1978, p. 196). Indeed, this is exactly how many key leaders of the campaign to repeal the Corn Laws, such as the politician Richard Cobden and John Bowring of the Board of Trade, saw their campaign.[8]

In short, contrary to 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", as the eminent economic historian Paul Bairoch put it (Bairoch, 1993, p. 46). It is for this reason that Friedrich List, the 19th Century German economist who is (mistakenly—see below) known as the father of modern "infant industry" theory, argued that the British preaching for free trade is equivalent to someone who has already climbed to the top "kicking away the ladder" with which he/she climbed. He is worth quoting at length on this point.

> 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 tenden-

> cies 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. 295–296)

### *3.2 USA*

If Britain was the first country successfully to launch a large-scale infant industry promotion strategy, its most ardent user was the USA—Paul Bairoch once called it "the mother country and bastion of modern protectionism" (Bairoch, 1993, p. 30).

Indeed, the first systematic arguments for infant industry were developed by US thinkers like Alexander Hamilton, the first Treasury Secretary of the USA, and the now-forgotten economist Daniel Raymond (Corden, 1974, chapter 8; Freeman, 1989). In fact, Friedrich List, the supposed intellectual father of infant industry protection argument, first learned about the argument during his exile in the USA during the 1820s (Henderson, 1983; Reinert, 1998). Many US 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.[9]

Between 1816 and the end of World War II, the USA 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, US industries were the most protected in the world until 1945. Even the Smoot-Hawley tariff of 1930, which Bhagwati portrays as a radical departure from a historic free trade stance, only marginally (if at all) increased the degree of protectionism in the US 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 USA since the Civil War, albeit in the upper region of this range. It is only in relation to the brief "liberal" interlude of 1913–29 that the 1930 tariff bill can be interpreted as increasing protectionism, and even then 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 named in recognition that free trade was in the "British" interest (Luthin, 1944, pp. 610–611; Frayssé, 1994, 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. 391–392; 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).[10]

It was only after World War II, with its industrial supremacy unchallenged, that the USA liberalized its trade (although not as unequivocally as Britain did in the mid-19th Century) and started championing the cause of free trade—once again proving List right in his "ladder-kicking" metaphor. The following quote from Ulysses Grant, the Civil War hero and the President of the USA during 1868–76, 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, the President of the USA, 1868–76, cited in Frank, 1967, p. 164)[11]

### *3.3 Other Countries*

The UK and USA may be the more dramatic examples, but similar pictures emerge in relation to other NDCs (for further details, see Chang, 2002, chapter 2). Almost all used some form of infant industry promotion strategy when they were in catching-up positions.

Interestingly, it was the UK and the USA, the supposed homes of free trade policy, and not countries like Germany or Japan—countries which are usually associated with state activism—that used tariff protection most aggressively. Tariff protection was relatively low in Germany (see Table 1), and Japan's tariff was bound below 5% until 1911 due to a series of unequal treaties that it was forced to sign upon opening in 1853. Of course, tariff figures do not give a full picture of industrial promotion efforts. During the late 19th and the early 20th Centuries, while maintaining a relatively low *average* tariff rate, Germany accorded strong tariff protection to strategic industries such as 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 to promote public–private co-operation.

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 18th Century and therefore did not need much protection. Also, note that the Netherlands had deployed an impressive range of interventionist measures up until the 17th Century in order to build up its maritime and commercial supremacy (Boxer, 1965). 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 (see below). More interestingly, the Netherlands abolished its 1817 patent law in 1869 on the grounds 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 (Schiff, 1971).

Finally, while tariff protection was, in many countries, a key component of this strategy, it was by no means the only, and not necessarily the most important, component. 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 support and the promotion of institutions for public–private co-operation. 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 19th Century, but many of them have a longer 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

The few neo-liberal economists who are aware of the records of protectionism in the NDCs try to avoid the obvious conclusion—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 those used by most NDCs in the past.

For example, Little *et al.* (1970, pp. 163–164) argue 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]". Similarly, World Bank (1991, p. 97, Box 5.2) argues that "[a]lthough industrial countries did benefit from higher natural protection before transport costs declined, the average tariff for twelve industrial countries[12] ranged from 11 to 32 percent from 1820 to 1980 … In contrast, the average tariff on manufactures in developing countries is 34 percent".

This argument sounds reasonable, but is actually highly misleading in an important sense: the productivity gap between today's developed countries and developing countries is much greater than the gap between the more developed NDCs and the less developed NDCs in earlier times.

Throughout the 19th 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 UK) 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 USA) and the least developed ones (e.g. Ethiopia, Malawi, Tanzania) is in the region of 50 or 60 to one. Middle-level developing countries like Nicaragua (US$2060), India (US$2230) and Zimbabwe (US$2690) have to contend with productivity gaps in the region of 10 or 15 to one. Even for quite advanced developing countries like Brazil (US$6840) or Columbia (US$5580), the productivity gap with the top industrial countries is about five to one.

Currently developing countries will thus have 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 that accorded to the NDC industries in the past.[13]

For example, when the USA accorded over 40% average tariff protection to its industries in the late 19th Century, its per capita income in PPP terms was already about three-quarters that of Britain. This was when the "natural protection" accorded by distance, especially important for the USA, was considerably higher than today. Compared with this, the 71% trade-weighted average tariff rate that India had just before the WTO agreement, despite the fact that its per capita income in PPP terms was only about 1/15 that of the USA, 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 US 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 around 15–20%, 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 USA.

Thus, *given the productivity gap*, even the relatively high levels of protection that prevailed in the developing countries until the 1980s, do not seem excessive by historical standards. 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 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 industrial, trade and technology 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. 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 the currently developing countries.

If this is the case, the currently recommended package of "good policies", emphasizing the benefits of free trade and other *laissez-faire* ITT policies, seems at odds with historical experience, and the NDCs 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" can be to argue that the activist ITT 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 record of the developing countries over the last two decades makes this line of defence untenable. It depends on the data we use, but roughly speaking, per capita income in developing countries grew at 3% per annum between 1960 and 1980, but at only about 1.5% between 1980 and 2000. Even this 1.5% is reduced to 1% if we take out India and China, which have *not* pursued liberal ITT policies recommended by the developed countries.

Neo-liberal economists are therefore faced with a paradox here. The developing countries grew much faster when they used "bad" policies during 1960–80 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* 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 the NDCs are in effect "kicking away the ladder" by which they have climbed to the top. This "ladder-kicking" may be done genuinely out of (misinformed) goodwill. Some NDC policy-makers and scholars who make the recommendations may sincerely believe that their countries had developed through free trade and other *laissez-faire* policies and want the developing countries to 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 more unshakeable than self-interest.

Whatever the intention 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 or so. 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.

The historical facts about the developmental experiences of the developed countries must 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 18th Century Britain, 19th Century USA, or 20th 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 conditionalities attached to financial assistance from the IMF and the World Bank or from the donor governments should be radically changed. These conditionalities should be based on the recognition that many of the policies that are considered "bad" are in fact not so, and that there can be no universal "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 they did during the 1960s and 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.

## Notes

1. This article is based on the first two chapters of my new book, *Kicking Away the Ladder—Development Strategy in Historical Perspective* (Chang, 2002). Further details, including bibliographical sources, can be found in the book.
2. More recently, there has been an emphasis on "good institutions" as well. This has come about because of the recognition on the part of the IDPE that what they see as "good

policies" have failed to produce good economic results in most developing countries because of the absence of supporting institutions, such as strong private property rights, a politically independent central bank and political democracy. As a result of this new thinking, increasingly the international financial institutions (e.g. the IMF, the World Bank) and many donor governments are attaching "governance-related conditionalities" to their loans and grants. This issue is explored further in chapter 3 of Chang (2002).

3. Renato Ruggiero, the first Director-General of the WTO, argues that thanks to this new world order we now have "the potential for eradicating global poverty in the early part of the next [21st] century—a utopian notion even a few decades ago, but a real possibility today" (Ruggiero, 1998, p. 131).
4. Britain was the first country to introduce a permanent income tax, which happened in 1842. Denmark introduced income tax in 1903. In the USA, 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 reinstated 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.
5. The Swedish Riksbank was nominally the first official central bank in the world (established in1688), but until the mid-19th Century, it could not function as a proper central bank because it did not have a 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 19th Century, the central banks of France (1848), Belgium (1851), Spain (1874) and Portugal (1891) gained note issue monopoly, but it was only in the 20th 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 US 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. 95–96) for further details.
6. 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 forced the less developed countries to 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, "illegal" poaching of workers and smuggling of contraband machinery. See Chang (2002, pp. 51–58) for further details.
7. In a now almost forgotten book, *A Plan of the English Commerce* (1728), the famous 18th Century merchant, politician and author of the novel *Robinson Crusoe*, Daniel Defoe, describes how the Tudor monarchs, especially Henry VII (1485–1509) and Elizabeth I (1558–1603), transformed England from a country relying heavily on raw wool export to the Low Countries into the most formidable woollen manufacturing nation in the world through deliberate state intervention.
8. Cobden argued: "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).
9. 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, 1937 [1776], pp. 347–348).

10. 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).
11. I am grateful to Duncan Green for drawing my attention to this quote.
12. They are Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, the UK and the USA.
13. Of course, this is not to say that all industries should get the same degree of protection, determined by the national productivity gap with the advanced countries. To begin with, some industries will have smaller productivity gaps with their advanced country competitors than others. Also, even with similar productivity gaps, different industries are likely to have different capabilities to close the gaps, depending on their human and organizational capabilities. Moreover, for political and other reasons, governments may have differential abilities to "discipline" firms that fail to raise productivity despite protection. In the end, the desirable pattern of protection will be one where different industries receive different degrees of protection, depending on their respective productivity gaps, learning capabilities and political situations.

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