Free trade: a dead end for underdeveloped economies*

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Abstract
In the last decades, the international institutions of finance and trade (IMF, World Bank, WTO, OECD) have become ever stronger supporters of free trade as a means of achieving economic development in the so-called developing countries. They argue that free trade will enable these countries to realise their "comparative advantages" (assumed to be in agricultural goods), which will – in turn – lead to higher economic growth and development. By contrast, this paper argues that the theory of comparative advantage, which presupposes balanced trade between countries, is a model of a *substitution effect at given technology* by opening for trade. In other words, the theory of comparative advantage is another version of the story of *static efficiency*, without any consideration or explanation of *dynamic efficiency*, i.e. long-term technical change and productivity growth, which is essential in economic development. With reference to Verdoorn's and Kaldor's "growth laws" it is argued that dynamic efficiency is closely related to industrial growth. Moreover, because industrial goods have higher income elasticity (higher than unity) than agricultural goods (lower than unity), there is a positive feedback mechanism from domestic and international demand for industrial goods to the Verdoorn-Kaldor "laws" of productivity growth. A brief review of the historical development experience of England, the United States, Germany, Japan, South Korea and Taiwan shows that international learning and protectionist policies, including support of domestic industries, were essential in their industrialisation strategies. It is argued that in order to achieve economic development, the poor countries need freedom to implement a strategy in the same manner as the now industrial countries did it. Such a policy is today prevented by the international finance and trade institutions. Available data indicates that the claim that poor countries have a comparative advantage in agricultural goods, is highly dubious. This is also indicated for example by the fact that the developing countries as a group are great net food importers, and that that 42 of the 50 least developed countries were net food importers in the period 1996-2001. A further liberalisation of trade in agricultural goods will therefore harm rather than help the poorest countries. The paper concludes by stating in nine points an alternative to the development policy presently advocated by the international finance and trade organisations.

Keywords
Comparative advantage, free trade, dynamic vs. static efficiency, international specialisation, industrialisation, economic development/underdevelopment.

1. Introduction

In the last decades, the international institutions of finance and trade (IMF, World Bank, OECD and, not least, the WTO) have become ever stronger supporters of free trade as a means of achieving economic development in the so-called developing countries. It is argued that free trade will enable developing countries to realise their "comparative advantages", which will – in turn – lead to higher economic growth and development. With reference to the theory of comparative advantage the advocates of free trade hold that liberalisation of international trade and the specialisation it leads to, will make all countries to winners and none to losers. In 1998, Renato Ruggiero, the first Director-General of the WTO, praised "the borderless economy's potential to equalize relations between countries and regions", and asserted that there is now "the potential for eradicating global poverty in the early part of the next century – a utopian notion even a few decades ago, but a real possibility today" (Ruggiero 1998: 130-131). At the risk of being characterised as "unenlightened"[1], I will question these claims in the present paper.

2. The theory of comparative costs

When David Ricardo first formulated the theory of comparative costs, in 1815, he used it to argue for a solution of a particular problem in England at that time. The high rate of industrialisation necessitated that agriculture could produce an increasing food surplus to feed the rapidly growing industrial working class. However, in Ricardo's view the expansion of agricultural output lead to cultivation of ever less fertile land or to more intensive production with lover productivity of labour on already cultivated land. At a given real (subsistence) wage in terms of food, this would lead to increasing land rent and a declining profit rate in both agriculture and industry. (The ratio of the price of food to the price of industrial goods would rise, which – at the given real wage in terms of food – would result in a higher product wage and lower rate of profit, and hence lower accumulation of capital in industry.)

As a solution to this problem, Ricardo suggested free imports of corn, which would lead to lower relative price of food, lower land rent, lower product wage in industry, and a higher rate of profit both in agriculture and industry. As a result, accumulation of industrial capital would rise, at the same time as industry would get access to larger markets for its products abroad (Ricardo 1966: 25-41).[2]

Ricardo underpinned this argument with his theory of "comparative costs", using as an example an imagined situation of production of cloth and wine in England and Portugal.[3]

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[1] "By emphasizing the virtues of free trade, we also emphasize our intellectual superiority over the unenlightened who do not understand comparative advantage" (Krugman 1993a: 362).

[2] It is worth noting that Ricardo wrote his pamphlet *An Essay on the Influence of a low Price of Corn on the Profits of Stocks* in the same year as the British parliament adopted strong restrictions on imports of corn, the so-called *Corn Laws*, in 1815. These laws were abolished only in 1846.

[3] Since a lower price of corn was Ricardo's great concern, it is bit strange that he used wine in his example. Maybe he did that in order to avoid provoking unnecessarily the aristocratic landowners in England?

Before trade between the two countries (i.e. in autarky), he assumed the situation shown in table 1. It is worth noting that, in his example, Portugal has an *absolute* cost advantage, expressed in higher productivity of labour for both goods. On the other hand, England has a potential relative or *comparative* cost advantage in the production of cloth, because its cost disadvantage in production of cloth (11% higher labour cost than Portugal) is lower than in the production of wine (50% higher labour cost). If Ricardo had assumed that the ratios of labour costs for wine and cloth were equal in England and Portugal, for example with a cost of wine production of 108 man years (instead of 80 man years) in Portugal, there would not have been any *comparative* cost advantage. However, Portugal would still have enjoyed an *absolute* cost advantage, with 29% higher labour productivity than England in the production cloth as well as wine.

Table 1: Ricardo's example of wine and cloth[4]

	England	Portugal
Given quantity of cloth	100 man years	90 man years
Given quantity of wine	120 man years	80 man years

After opening for free trade, there would be a total specialisation in Ricardo's example, so that England would use 220 man years to produce 10% more cloth than the two countries had produced in autarky. On the other hand, Portugal would use 170 man years to produce 6.25% more wine than the two countries had produced in autarky. In other words, by realising their comparative advantages, the two countries would increase their total output and income.

Ricardo based his theory on differences in relative costs without specifying what could be the reasons for such differences. In the neoclassical variety of the theory, which is mainly associated with the names of Heckscher, Ohlin, Stolper and Samuelson, the difference in relative costs is explained exclusively by one circumstance, namely relatively unequal endowments (or scarcities) of labour and capital (cf. e.g. Bhagwati 1969). The neoclassical variety of the theory usually assumes that the production function for each good has labour and capital as inputs and is identical in the two countries, which implies that absolute cost advantage is excluded *a* priori. This means that disparities in income levels between different countries are explained by differences in factor endowments, while differences in technical knowledge are ignored.

Moreover, it is assumed that there is full employment in both economies both before and after opening for free trade. On these assumptions, the effect of comparative advantage can be presented as opportunity cost associated with a production possibility frontier, and it can be shown that with opening for trade, the country with relatively more capital per worker will specialise in production and export of the more "capital intensive" good, while the country with relatively more labour will specialise in the production and export of the more "labour

[4] Cf. Ricardo 1951: 135.

intensive" good.[5] It can also be shown that free trade *alone* (no factor mobility) will eventually lead to an equalisation of factor prices (wage and profit) between the two countries. However, due to the assumption of diminishing marginal productivities and correspondingly concave production possibility frontiers, there will in general not be full specialisation in the neoclassical model.

3. The question of adjustment mechanism

Ricardo was well aware the comparative advantages would be realised only if trade between England and Portugal was balanced. For that reason, he used much of chapter 7 in his *Principles* to explain the adjustment mechanism leading to balanced trade. On this point he had recourse to David Hume's (1752) price-specie flow theory. After opening for trade, England would have an absolute cost disadvantage and import both wine and cloth from Portugal. This would give rise to a net flow of bullion (as payment for the imports) from England to Portugal. As a result, the price level in Portugal would rise while that in England would decline until trade between the two countries was balanced and they would realise their comparative advantages (Ricardo 1951: 137-149).

Also in the neoclassical version of the theory, balanced trade is – of course – necessary to achieve gains from comparative advantage. However, instead of demonstrating this point, they rather assume that the real exchange rate, i.e. the terms of trade (determined by the ratio of the price levels and the nominal exchange rate), will adjust so that trade is balanced in the long run. Let me cite statements from two representative textbooks: "In the very long run there is the expectation that trade will be balanced so that the value of exports equals the value of imports" (Dernburg 1989: 29). "How should we think of the long-run real exchange rate? In the long run, we can reasonably assume that trade will be roughly balanced. (…) If trade is balanced in the long run, the long-run exchange rate must be such as to ensure trade balance" (Blanchard 1997: 276). This implies that foreign trade will be automatically balanced and comparative advantages will be realised in "the long run", if prices and the exchange rate are allowed to change freely. In that case a government does not need, and should not, make any effort to rectify any "short-term" trade deficit.

Here it may be noted that the mechanism of *quantity adjustment* in international trade suggested by John Maynard Keynes, is not of much help for the believers in comparative advantage and free trade (cf. Keynes 1964: 333-339). Strongly simplified, Keynes's argument is as follows: When Portugal and England in Ricardo's example are opened for free trade, Portugal will at the outset enjoy large export surpluses owing to its absolute advantage. These surpluses will in turn lead to higher effective demand, higher output, employment and income in Portugal. On the other hand, England's net imports imply a contraction of effective

[5] For this reason, the so-called "Leontief paradox" was a big surprise to the neoclassical economists. In articles first published in 1953 and 1956, Leontief found that the United States (regarded as the most well capital-endowed country in the world) is exporting labour intensive goods and importing capital intensive goods. (Cf. Leontief 1966: 68-133).

demand, lower output, lower employment and lower income. Since imports depend on the level of income, England's imports will decline, which is the actual adjustment of the trade deficit. This will in turn have a negative impact on the level of income and employment in Portugal. The most probable outcome is therefore idle productive capacities and unemployment in both countries. In other words, they are not on their production possibility frontiers. Therefore, static efficiency looses its meaning, and there is no reason to believe that prices are such that comparative advantages are realised.

Blanchard defines the long run as "10 years or more" (1997: 276). However, for example the United States, has had great foreign trade deficits in all years sine 1976, amounting to a total of US$ 3390 billion in the period 1976-2003. On the other hand, Japan has had trade surpluses in all years since 1965, except in the oil crisis year of 1974, with an accumulated surplus of US$ 1332 billion in the period 1977-2003. Norway has had great surpluses in all years since 1989, while the "developing country" Tanzania has suffered large deficits in all years since 1968.[6] In a recent report on the least developed countries (LDCs), UNCTAD states that, "An important feature of LDC economies is that they almost all have persistent and high trade deficits. In the period 1999-2001, the trade deficit was over 10 per cent of GDP in 25 out of 44 LDCs for which data are available, and over 20 per cent of GDP in 8 of them" (UNCTAD 2004: iii). Only in the period 1998-2002, the total trade deficit of the LDCs amounted to more than 32 billion US$ (ibid.: 9).This indicates that comparative advantages are not realised and that *absolute advantage* plays an important role in international trade.

In spite of such evidence, the self-proclaimed "enlightened" economist Paul Krugman gives the following advice to his colleagues teaching undergraduate students: "… we need to teach them that trade deficits are self-correcting and that the benefits of trade do not depend on a country having an absolute advantage over its rivals" (Krugman 1993b: 26. See also f.n. 1 above).

4. The effect of specialisation under free trade on technical progress and productivity growth

Let us now for a while – despite the evidence indicating the opposite – accept the claim that foreign trade will be balanced so that comparative advantage is realised and the corresponding specialisation takes place. A crucial question is then whether this specialisation is to the advantage of all participating countries, as the advocates of free trade claim.

The first thing to note, is that the gain from comparative advantage and specialisation is a *once-and-for-all effect*. As we saw in Ricardo's example, as a result of opening for trade and total specialisation, the production of cloth would increase by 10%, while production of wine would increase by 6.25%. Indeed, nothing more happens. The theory of comparative advantage has nothing to say about technical change and productivity growth over time,

[6] Sources: OECD, *National Accounts 1960-1988*, Paris 1990; and IMF, *World Economic Outlook*, several issues.

which is actually what matters for any economy. In the neoclassical theory of comparative advantage, trade specialisation is a short-term *substitution effect at a given technology*. In other words, the theory of comparative advantage is another version of the story of *static efficiency*, without any consideration or explanation of *dynamic efficiency*, i.e. technical change and productivity growth in the long term.

The once-and-for-all growth in Ricardo's example is not more than the average annual growth rate of China's GDP in the last 10 years (8.6% per year from 1994 to 2004). The figures in table 2 show that from 1913 to 1989, for example Japan's GDP per capita rose by 1256%. The corresponding figure for the USA was 277%, for Finland 707%, for Norway 694% and Sweden 509%. Compared with these figures, the static once-and-for-all growth effect of specialisation under free trade is quite insignificant, which indicates that growth over time must be explained by entirely different forces than comparative advantage and the corresponding static efficiency (cf. also Pasinetti 1981: 245-271; and 1988). Not free trade, but technical progress is the crucial factor in order to achieve high economic growth.

Table 2: GDP per capita (purchasing power $ at 1985 US prices), 1820-1989

				Percent growth		
	1820	1913	1989	1820-1913	1913-1989	1820-1989
Austria	1041	2667	12585	156	372	1109
Finland	639	1727	13934	170	707	2081
France	1052	2734	13837	160	406	1215
Germany	937	2606	13989	178	437	1393
Italy	(960)	2087	12955	117	521	1250
Japan	(588)	1114	15101	89	1256	2468
Norway	(856)	2079	16500	143	694	1828
Sweden	947	2450	14912	159	509	1475
UK	1405	4024	13468	186	235	859
USA	1048	4854	18317	363	277	1648

Note: The figures refer to GDP per capita within the geographic boundaries of the years cited.
Figures in brackets are rough estimates made by extrapolation or inference rather than hard evidence.
For Norway, it was assumed that the 1820-1870 movement was the same proportionately as in Sweden.
Source: Maddison (1991: 6-7).

However, specialisation under free trade has important effects on technical change and the corresponding growth of labour productivity which are not considered, or even admitted, by the proponents of free trade. We have seen that under free trade, the country with comparative advantage in the production of primary goods will specialise in the production of such goods, while the country with comparative advantage in industrial goods will specialise in those goods. This pattern of specialisation leads to dramatically different rates of technical change in the two countries. There are three basic "laws" of economic growth which have been widely tested and confirmed in industrialised as well as underdeveloped economies, using both cross-section (between countries) and time series data. The three laws, which are often

called Verdoorn's and Kaldor's growth laws after the economists who first enunciated them, are as follows:[7]

(1) There is a strong positive correlation between the growth of manufacturing output and the growth of GDP.
(2) There is a strong positive correlation between the growth of manufacturing output and the growth of labour productivity in that sector.
(3) There is a strong positive correlation between the growth of manufacturing output and the growth of labour productivity in the economy outside manufacturing.

The second and third law imply that the country with relatively high growth rate of manufacturing productivity will have a relatively high growth rate of labour productivity in the economy as a whole. These laws show that *in any economy, manufacturing industry is the dynamic centre of technical change and productivity growth*. In contrast to agriculture, industry is characterised by economies of scale and has positive synergy effects on the other sectors of the economy. This means that countries which are highly industrialised, will in general have a much higher growth rate of labour productivity and of GDP per capita than countries without industry. When a non-industrialised country is opened for free trade with an industrialised country, the industrialised country will specialise in industrial products, whereas the non-industrialised country will have to specialise in agricultural goods and other products from the primary sector. As a result, the industrialised country will attain increasing economic lead over the non-industrialised country. In other words, as opposed to what the advocates of free trade claim, specialisation under free trade will lead to ever increasing differences in GDP per capita between developed and underdeveloped economies.

Now we can also see that it is not neoclassical "comparative advantage" which is the crucial issue: *The actual comparative advantage of the developed economy is that it is industrialised, whereas the comparative disadvantage of the underdeveloped economy is that it is non-industrialised. It is precisely this difference which impels specialisation between countries under free trade*.[8] Moreover, this difference is operative irrespective of the neoclassical comparative advantage. The underdeveloped economy may well have a neoclassical comparative advantage in industrial goods, produced by a tiny and rudimentary industrial sector, as the figures in table 4 of part 7 of this paper indicate. However, under free trade, the underdeveloped economy will be compelled to specialise in agricultural products, because the industrialised economy has a tremendous technological and industrial lead (cf. table 4).

[7] Verdoorn's path-breaking article was first published in 1949 in the Italian journal *L'Industria* under the title "Fattori che regolano lo sviluppo della produttivitá del lavoro". In 2002, it was published in English translation (Verdoorn 2002). See also Kaldor (1967: 3-23, 73-83; 1978: 100-138). For a summary and critical assessment, see e.g. McCombie and Thirlwall (1994: 155-222).

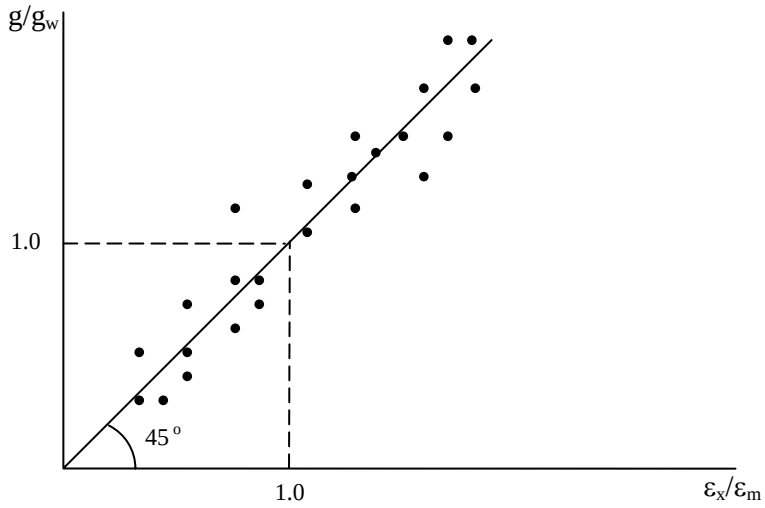
[8] This is reflected in a confused and twisted manner in discussions of the so-called "natural resource curse".

5. International demand, trade and growth

The country specialising in the production of industrial goods will have an advantage not only in terms of technical change, but also in terms of international demand owing to differences in income elasticities. In 1857, the German economist Ernst Engel presented what has since been called Engel's Law: It states that the income elasticity of food and other primary goods is in general lower than unity, while the income elasticity of industrial products is generally higher than unity. As a country's average income rises, a declining income proportion will therefore be spent on food, which Engel considered as a good index of economic development.

Engel's Law has important implications for international trade. On the assumption that the real exchange rates are fairly stable in the long run,[9] and that there are no supply constraints but idle capacities, it can be shown that a country's long-term growth rate of GDP divided by the growth rate of its trading partners is approximately equal to the income elasticity of demand for its exports divided by the income elasticity of demand for its imports. When g is the growth rate of the country in question, g_w is the growth rate of its trading partners, ε_x is the income elasticity of demand for exports, and ε_m is the income elasticity of demand for imports, this relationship can be presented as in figure 1.

Figure 1: "Krugman's 45 degree rule"



The relation in figure 1 has, quite unjustified, been given the name "Krugman's 45-degree rule".[10] This relation means that both foreign trade and domestic growth are determined by

[9] That this is the case for the relationship between industrialised and underdeveloped economies, has been shown by Paul Bairoch (1975: 111-134; 1993: 111-118). In an important article, Paul Krugman has made the same conclusion with respect to trade among industrialised countries: "… the surprising thing about long term trends in real exchange rates is their absence" (Krugman 1989: 1045).

[10] Cf. Krugman (1989: 1032); and McCombie and Thirlwall (1994: 388). It is unjustified because it is simply a dynamic version of Harrod's foreign trade multiplier, dating as far back as 1933 (Harrod 1933). As far as I know, the relation in figure 1 was first used by Prebisch (1959: 253). Krugman has no reference, either to Harrod

international demand. In other words, economic growth is demand constrained by the balance of payments, or, as McCombie and Thirlwall express it, "…for many countries the evidence suggests that growth is demand constrained by the balance of payments before supply constraints bite" (McCombie and Thirlwall 1994: 390). Owing to trade imbalances, observations of ratios of actual income elasticities and ratios of growth rates for particular countries are of course generally not exactly on the 45 degree line. However, most of the least developed economies will exhibit values of $\varepsilon_x/\varepsilon_m$ and g/g_w less than unity, while these ratios are higher than unity for most of the industrialised countries. Moreover, the process of economic development involves a movement up along the 45-degree line, through structural change of the economy, where the production and exports of industrial goods with high income elasticity of demand become increasingly predominant.

This implies that there is a strong feedback mechanism from domestic and international demand determined by income elasticities to the Verdoorn-Kaldor laws of productivity growth: High international and domestic long-term demand growth for advanced industrial goods leads to higher output in the industrial sector, which – in turn – leads to higher productivity growth in that sector, as well as in the economy as a whole. However, in particular in countries at a low level of industrialisation this process has to be initiated and supported by deliberate government policies. It cannot come about by leaving everything to the market forces, through a policy of free trade. In sharp contrast to most influential economists of our age, the great strategists of the industrialisation of Europe and the United States were entirely aware of this. And, as Friedrich List pointed out in 1841, it also applied to England:

> "Under George I, the English statesmen had long ago understood what is the basis of a nation's size. At the opening of the Parliament in 1721, the ministers made the King say the following: 'It is evident that nothing contributes as much to public wealth as the export of industrial goods and import of foreign raw materials.' For centuries, this has been the leading principle of English trade policy, in the same manner as it was earlier the leading principle of Venice. This is still just as valid today as it was in the time of Queen Elisabeth. The fruitfulness of this principle is evident to all the world" (List 1959: 76).

6. Historical experience

Among economists there is a widespread belief that England adhered to economic liberalism and free trade throughout its period of industrialisation. That is not true. By means of a systematic government policy, starting at least as early as under Elisabeth I (1558-1603),

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or Prebisch. It may be noted that Krugman actually rejected Engel's Law and reversed the causation, postulating that faster growth in a country leads to greater supply of exports which causes what he calls the "apparent" income elasticity of demand for exports to be higher and the "apparent" income elasticity of imports to be lower: "I am simply going to dismiss *a priori* the argument that income elasticities determine growth, rather than the other way round" (Krugman 1989: 1037). For a criticism of Krugman, see McCombie and Thirlwall (1994: 388-391).

England made a transition from a strong dependency of exports of raw wool to the Netherlands, to becoming the largest textile producer in the world. In the 16th century exports of raw wool and semi-finished wool products were forbidden, while the production of textiles was supported in various ways. A law of 1699 forbade exports of wool products from the English colonies and contributed to suffocating the Irish textile production. In 1700, the English government prohibited all imports of cotton products from India. Under King George I, whom List refers to in the quotation above, the import duty on raw commodities was strongly reduced or completely removed. The export duties on industrial goods were abolished, and instead the government introduced export subsidies on several industrial goods. At the same time, the import duties on industrial goods were raised considerably (cf. Chang 2002: 19-22).

Table 3 shows that England had high import duties on industrial goods (45-55%) as late as in 1820, when the country had long ago attained industrial leadership. The great change in England's trade policy took place only in 1846, when both the Corn Laws and import duties on many industrial goods were abolished. However, at that time England had attained a solid technological lead over all countries in the world. This was the basis for what has later been called England's "imperialism of free trade" (Gallagher and Robinson 1953).

Table 3: Average tariff rates on imported manufactured products. (Weighted average in % of import value)

	1820	1875	1913	1925	1931	1950
France	+	12-15*	20	21	30	18
Germany[a)]	8-12	4-6*	13	20	21	26
Italy	n.a.	8-10*	18	22	46	25
Japan	+	ca. 5	30	n.a.	n.a.	n.a.
Denmark	25-35	15-20	14	10	+	3
Sweden	+	3-5	20	16	21	9
Austria[b)]	+	15-20	18	16	24	18
United States	35-45	40-50	44	37	48	14
United Kingdom	45-55	0	0	5	+	23

[a)] In 1820: Prussia; in 1950: Federal Republic of Germany.
[b)] Before 1925: Austria-Hungary.
+ Numerous and important restrictions on imports of manufactured products, which make all calculations of average tariff rates not significant.
* Had reduced tariffs in 1875 owing to free trade agreement with Great Britain.
Source: Bairoch (1993: 40).

When the continental countries in Europe and the United States carried out their "catching up" industrialisation in the 19th century, they had influential economic theorists who formulated industrial strategies in stark contrast to the economic liberalism in Great Britain. I have not found one single influential economist in the United States or Germany before 1914 who was in favour of free trade.[11]

[11] Among influential US economists who argued against free trade and were active well into the 20th century, were Richard T. Ely (1854-1943), founder of the American Economic Association in 1885, and John R. Commons (1862-1945).

In the United States, Alexander Hamilton, the first finance minister of the Federation (1789-1795), was an early prominent spokesman for industrialisation under protectionism. He rejected the view that free trade leads to higher economic growth and welfare for all participating countries. Hamilton introduced the concept of *infant industries*, and argued strongly that late industrialisation is not possible without protective tariffs. Much as a result of his influence, the USA became the "mother country and bastion of modern protectionism" (Bairoch 1993: 32). In 1789, USA introduced import tariffs on industrial goods varying between 7 and 10%. In the subsequent years, tariff rates were increased steadily, and in 1816, the US import duties on nearly all industrial goods reached 35%. In 1829-31, import tariffs accounted for more than 50% of total import value and 54.4% of the value of dutiable imports. In 1908-13, when the USA had in fact caught up with England's industrial productivity lead, tariffs accounted for 14% of total imports and 37.7% of dutiable imports. As late as in 1925, in the middle of the interwar period of trade liberalisation, US tariffs on industrial goods amounted to 37% of the import value (cf. table 3). Indeed, no other country in history has accomplished a more protectionist policy during its industrialisation than the United States.

In Germany, Friedrich List (1789-1846) was the most authoritative spokesman for industrialisation under protectionism. He adopted Hamilton's argumentation on infant industries and elaborated a theory of the conditions for development of productive forces. A central point in his theory is that free trade between countries on different levels of development, measured by average labour productivity, would result in great gains for the most developed country and lead to economic stagnation or decline in the less developed country. Like Hamilton, he was not an adversary of all trade, but argued that in order to develop productive forces, foreign trade had to be regulated and adapted to the nation's level of economic development (List 1959:228, 45). Import duties should not only protect (*Schutzzoll*), but also "bring up" industry (*Erziehungszoll*). However, the German industrialisation strategy was not as strongly focused on import duties as the American strategy. As table 3 shows, Germany's average import duty on industrial goods was relatively low in the whole period 1820-1913.[12] On the other hand, the German state was active in using other types of support and promotion of industry, such as assigning monopoly rights, establishing industrial cartels, providing export subsidies, importing industrial experts and skilled labour, establishing large banks and making large investments in coal production and railway and road construction (Hallgarten und Radkau 1981: 25-28; Chang 2002: 32-35).

Historical data shows that both the USA and Germany achieved rapid industrialisation and high growth rates of GDP under the shelter of strong tariff protection. Paul Bairoch points out that, throughout the 19th century and up to 1920, the USA had the highest economic growth in

[12] However, the table conceals the fact that there was a strong increase of import duties from the late 1870s until ca. 1885. Mainly the iron and steel industry and parts of agricultural production were protected by quite high customs duties (cf. e.g. Hallgarten und Radkau 1981: 49-50).

the world, at the same time as it was the most protectionist country in the world. He also shows that the best growth period in the time span 1830-1910 was 1870-1910 when protectionism was particularly strong (Bairoch 1993: 51-53). In the period 1870-1912, the GDP in the USA rose by 3.9% per year, in Germany by 2.8% per year, but in England by only 1.8% (Maddison 1991: 208-211). Paul Bairoch made a comparative study of growth in the "developed" Great Britain on the one hand and the "less developed" countries France, Germany and Italy on the other hand, during the period of free trade (1860-ca. 1880) and the period of protectionism (ca. 1880-1914). His conclusion:

> "From the analysis of data actually available it clearly appears that free trade had radically different effects in the two types of countries. In the 'developed' country, the effects were on the whole positive, since it was during this period (1860-ca. 1880) that United Kingdom's economic growth was speediest. For the 'less developed countries', the results were negative. In all the three cases, the effects of the free trade period were the very opposite of those predicted by the liberal theories: Deceleration of economic growth, of innovation and of investment. (...) The reintroduction of protective tariffs (around 1880-1890) in the 'less developed' countries coincided in each case with a total reversal of the economic trends: growth accelerated and the pace of innovation and investment speeded up" (Bairoch 1972: 211).[13]

Bairoch commented that his conclusion is relevant for the contemporary underdeveloped economies: "… the experience of continental Europe in the 19th century should urge caution upon those who are in charge of these countries' economic policies and who want to embark on increased foreign trade with economies which enjoy substantially higher levels of agricultural or industrial productivity" (Bairoch 1972: 244).

The experiences of late industrialisation in the USA and Germany are not at all unique. In the 1850s, Japan was compelled by the military force of western countries to turn to a policy of free trade. Ironically, the pressure first came from the USA which was then the most protectionist country in the world (Allen 1981: 23). However, at the turn of the century Japan was strong enough to free itself from the "unequal treaties", and after 1910 the government adopted several customs reforms in order to protect infant industries. In 1913, Japan's average tariff rate on manufactured imports was 30% (cf. table 3). As late as in 1968, the import duty on small and large cars was 40% and 35%, respectively. These import duties had come down to 20% in 1971 and 6.4% in 1974 (Tsuru 1994: 113). The import duties were reduced slowly as industry became more competitive on the world market. The export share of total car production rose from 4.2% in 1960, to 16.2% in 1967, and 43.9% in 1974 (Tsuru 1994: 83).

[13] An econometric study which included more countries in the same period, supports Bairoch's result: "It appears that the Bairoch hypothesis (that tariffs were positively associated with growth in the late 19th century) holds up remarkably well, when tested with recently available data, and when controlling for other factors influencing growth" (O'Rourke 2000: 473).

Also South Korea, Taiwan and China have industrialised under solid protection of import duties and other import restrictions on industrial and agricultural products, as well as export subsidies for industries. With regard to South Korea, Alice Amsden concluded at the end of the 1980s that, "tariff barriers and nontariff barriers have comprised a key ingredient in Korea's industrial policy. Even imports 'liberalized' in the mid-1980s are subject to an average tariff rate that may approximate 30%" (Amsden 1989: 145).[14]

It is noteworthy that Japan, South Korea and Taiwan have in addition had higher import duties on agricultural goods than any other countries, and that these duties increased until the early 1980s. For rice, which is the main staple food in these countries, Japan had an average import duty of 249% in 1980-82, whereas the import duties in South Korea and Taiwan were 154% and 144%, respectively, in the same period. For the seven-eight most important agricultural products, the weighted average import duty in 1975-1982 was 148% for Japan, 143% for South Korea and 43% for Taiwan (cf. Anderson and Hayami 1986: 22).[15] These import duties played an important role for the countries' development strategy, in three ways. First, they resulted in a high self sufficiency of food, and therefore dampened the pressure on the foreign accounts which would have been the upshot of lower duties and higher imports. Second, they led to some equalisation of the income levels in industry and agriculture. Third, and maybe most important, they kept down the migration from agriculture, so that these countries avoided mass unemployment in the urban areas during their industrialisation phase.[16]

Initially, these countries followed an industrialisation strategy of protected import substitution. As their industries became more competitive, they changed to export oriented industrialisation with a slow reduction of import barriers for industrial goods. However, until recently, agriculture has been given high import protection, and during a long period, export industries were supported by subsidies and cheap credits (cf. e.g. Amsden 1989; Wade 1990).

In the last two decades, econometric studies trying to show that there is a negative relationship between import protection and economic growth have proliferated. In a critical survey of the most important contributions to this literature, Rodríguez and Rodrik (2000) demonstrate with own data for the period 1975-1994 that for particularly many developing countries there was a positive relationship between "direct measures of trade restrictions" (average duties and the share of imported goods under import quotas) and economic growth.

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[14] On Taiwan, see e.g. Wade (1990: 119-124, 127-137).

[15] For Japan, these products were rice, wheat, barley, soybeans, beef, pork and chicken. For south Korea and Taiwan, the same products plus maize.

[16] In spite of this, agriculture was a source of "unlimited supplies of labour" (W.A. Lewis). For example in Japan, the labour force in agriculture declined from 17.8 million (53.4% of total labour force) in 1947, to 11.1 million (23.5% of total) in 1965, and 6.7 million (12.9% of total) in 1974. Correspondingly, the labour force in industry increased from 7.4 million (22.3% of total) in 1947, to 22.5 million (43.3% of total) in 1974 (cf. Tsuru 1994: 87-88).

For their whole sample, also including many industrialised countries, they did not find any significant relation (Rodríguez and Rodrik 2000: 2, 81). One may be tempted to ask whether this is the reason why many of the studies Rodríguez and Rodrik criticise, show a striking and groundless imagination in devising so-called alternative indicators of "trade openness", as well as in including or excluding control variables.[17] On the hoped-for positive relationship between "trade openness" and economic growth, controlled for other factors that influence growth, Rodríguez and Rodrik conclude that, "We view the search for such a relationship as futile" (Rodríguez and Rodrik 2000: 61).

7. Development through agricultural specialisation under free trade?

The underdeveloped economies today have many similarities with the developed economies before they were industrialised. Because underdeveloped economies are not industrialised, labour productivity is low throughout the economy, and the growth rate of GDP is very low. This is their actual comparative disadvantage vis-à-vis the industrialised countries. That the underdeveloped economies have a comparative advantage in agricultural products in the neoclassical sense represents no remedy to this disadvantage. In the discussion of Verdoorn's and Kaldor's laws (in part 4), we saw that countries with a high level of industrialisation and, therefore, a high growth rate of industrial productivity, will also have a relatively rapid productivity growth in agriculture.

Thus, in the period 1950-1990, the growth rate of industrial labour productivity in developed economies was on average 3.5% per year, while labour productivity in agriculture rose by an average 5.4% per year in the same period. By contrast, in the underdeveloped economies except China, labour productivity in agriculture increased by an average of only 1.3% per year in that period, which was considerably less than the growth rate of population (Bairoch 1993: 150-152).

Paul Bairoch has estimated that around 1950, agricultural labour productivity in the developed economies, measured in net calories, was about seven times higher than in the underdeveloped economies, while unit labour costs were 15-20 times higher. In other words, labour cost per unit was between two and three times higher in the developed economies than in the underdeveloped. In 1990, agricultural labour productivity in the developed economies had become 37 times higher than in the underdeveloped, while the unit labour costs had become between 22 and 28 times higher. This means that the average labour cost per produced unit in agriculture had become considerably *lower* in the developed economies than in the underdeveloped (Bairoch 1997: 56-57). In other words, the industrial economies had attained an absolute advantage in their trade with the underdeveloped economies.

[17] One of the studies in fact uses a "direct measure of trade restrictions", i.e. average (ad valorem) duty, however on imports and exports combined: "The coefficient on average duties is now insignificant and has the 'wrong' sign [i.e. negative. R.S.]. If we introduce import and export duties separately, import duties in fact get a positive and significant coefficient (contrary to the expected negative coefficient) and export duties are insignificant" (Rodríguez and Rodrik 2000: 41-42).

Table 4: The relationship between labour productivity in the agricultural and industrial sector in groups of countries ranked according to GNP per capita, 1994. Figures in current U.S.$

	(1) Share of tot. labour force in agr. %	(2) GNP per capita	(3) Prod. of labour in agricult.[4)]	(4) Prod. of labour in industry	(4) : (3)
(I) Low-income economies[1)]	69%	380	311	1741	5.6
(II) Middle-income economies[2)]	31%	2592	1920	7870	4.1
(III) High-income economies[3)]	4.6%	23670	22680	54740	2.4
(II) : (I)	0.45	6.8	6.2	4.5	
(III) : (I)	0.07	62.3	72.9	31.4	
(III) : (II)	0.15	9.1	11.8	7.0	

1) 51 countries with GNP per capita not exceeding 750 U.S.$ in 1994.
2) 57 countries with GNP per capita between 750 and 8500 U.S.$ in 1994.
3) 25 countries with GNP per capita above 8500 U.S.$ in 1994. (Five of these countries, viz. Portugal, Spain, Israel, Canada and Switzerland, are not included in the productivity figures for lack of data.)
4) The productivity figures have been estimated from figures for total GDP and total labour force, and figures for sectoral (percentage) distribution of GDP and labour force, respectively. The percentages for the distribution of the labour force are 1990-figures. The World Bank report from which the data is collected notes that, 'Labor force numbers in several developing countries reflect a significant underestimation of female participation rates' (p. 227). The figures for the sectoral distribution of the labour force are from 1990, because the World Bank stopped collecting this data after 1990.
The *agricultural sector* includes: agriculture, forestry, hunting and fishing.
The *industrial sector* comprises: mining, manufacturing, construction, and electricity, water and gas.

Source: Estimates made on the basis of data in World Bank: *World Development Report 1996*, Selected World Development Indicators, tables 2, 4 and 12.

Table 4, containing data from 1994, shows some main features of the difference between developed and underdeveloped economies. The countries with the largest share of the total labour force in agriculture are also the poorest measured by GNP per capita. The underdeveloped countries are typical "agrarian economies" precisely because of extremely low agricultural labour productivity. The agricultural labour productivity in these countries is so low that they are increasingly less able to feed their own populations. In the period 1990-1999, food production per capita declined in 24 of the 51 least developed countries (UNCTAD 2002: 250). Although the poorest economies have only an insignificant industrial sector with an extremely low technological level and correspondingly low labour productivity, the difference between labour productivity in industry and agriculture is larger in these countries than in the developed economies. It is also noteworthy that although industry in the underdeveloped economies is quite primitive, a transfer of labour power from agriculture to industry at the given technology will lead to a marginal increase in labour productivity by a factor of 5.6 or 460% (cf. last column in table 4). This means that even

underdeveloped economies with a technologically backward and low-productive industry are better off then economies at a still lower industrial level.

In 1994, average agricultural labour productivity was almost 73 times higher in the 20 richest counties (i.e., broadly, the OECD countries) than in the 51 poorest countries. On the other hand, average productivity in industry was "only" 31 times higher (cf. columns 3 and 4 in table 4). This data witnesses the absurdity of the model of comparative advantage. Because, if it is reasonably correct, it indicates – contrary to what the advocates of free trade claim – that the 51 poorest countries in the world (the LDC), with only a quite rudimentary industrial sector, have as a group a comparative advantage in the production of industrial goods. This, again, confirms Paul Bairoch's point that the developed economies enjoy an absolute advantage in their trade with the underdeveloped economies.

The changes in the last 50 years in the productivity and cost ratios between developed and underdeveloped economies can explain a dramatic shift from earlier surpluses, or at least balances, to large deficits in the less developed countries' trade in agricultural goods. Table 5 shows this development for the three major food grains, maize, rice and wheat. North America (USA and Canada) experienced a steady increase in their net exports from 23 million tonnes in 1950 to 110 million tonnes in 1990, and subsequently a decline to 82 million tonnes in 2002. In the same period, Western Europe changed from considerable net imports to surpluses or approximate balances in the period 1990-2002. On the other hand, Latin America experienced a shift from balance in the 1950s to considerable net imports in the period 1990-2002. Asia increased its net imports from 6 million tonnes in 1950 to 81 million tonnes in 1990 and 55 million tonnes in 2002, mainly owing to China's increasing imports. The development in Africa is the most dramatic. The continent with the highest share of the total labour force in agriculture had balance in the 1950s, but subsequently its net imports rose in every decade, to reach 46 million tonnes in 2002 (table 5). On the other hand, in 2002 the developed economies (i.e. basically the OECD countries) had total net exports of 91 million tonnes of maize, rice and wheat, while the rest of the world had a correspondingly large net import.[18]

Table 5: World trade in food grains (maize, rice and wheat), 1950-1990. Million tonnes

Region	1950	1960	1970	1980	1990	2002
North America	+ 23	+ 39	+ 56	+ 130	+ 110	+ 82
Western Europe	– 22	– 25	– 22	– 9	+ 27	– 3
Eastern Europe & USSR	0	0	– 2	– 44	– 35	+ 26
Latin America	+ 1	0	+ 4	– 15	– 10	– 14
Africa	0	– 2	– 4	– 17	– 25	– 46
Asia	– 6	– 17	– 37	– 63	– 81	– 55
Australia & New Zealand	+ 3	+ 6	+ 8	+ 19	+ 14	+ 14

(Pluss-sign = net export; minus-sign = netto import.)
Sources: For 1950-1990, Brown (1995): 105. For 2002, FAO's database, cf. footnote 30.

[18] Source: http://apps.fao.org/faostat, April 2005.

The underdeveloped countries with market economy, except Argentina, increased their total annual net import of food grains from 4 million tonnes in 1948-52 to 90 million tonnes in 1990-94 (Bairoch 1997: 75). Since the early 1990s, the 50 LDCs' total net import of food has increased every year and reached a value of 4 billion US$ in 2001. In the period 1996-2001, 42 of the 50 LDCs were net importers of food. In the same period, the LDCs' commercial imports of food accounted for 19.9% of their total merchandise imports and 124.4% of their total merchandise exports. At the same time, 39 of the 50 LDCs had trade deficits, which on average accounted for 9.7% of their total GDP (UNCTAD 2004: 111-112, 108).

There has been a similar development for the export crops of underdeveloped economies. In 1985, the underdeveloped countries as a group became for the first time net importers of cotton. When Malaysia is kept apart, the underdeveloped economies had large export surplus of oil seeds until 1950. However, in the period 1978-82 they had an average deficit of 1.2 million tonnes per year, which rose to 3 million tonnes per year in 1988-92 (Bairoch 1993: 152-156). In general, the 50 LDCs are today unable to export more agricultural goods, and are instead dependent on large imports from the industrialised countries.

There can be little doubt that the main reason for this inability is the increasing productivity and cost gap between developed and underdeveloped economies. However, it is also due to the mounting export subsidies of agricultural products, especially in the USA and the European Union (EU). The British aid organisation Oxfam estimated in 2002 that the export price of wheat was 46% lower than the production costs in the USA and 34% below the production costs in the EU. Also typical tropical products are granted huge export subsidies. For example, the EU was with 6 million tonnes the world's largest exporter of sugar in 2002. Due to import duties, the price of white sugar within the EU in 1999/2000, was 2.6 times higher than the world market price. And due to subsidies, the EUs export price was 70% lower than the production costs (Rice 2004: 262; Oxfam 2002: 17). It has been estimated that after a removal of the subsidies, the EU would export 5 million tonnes less and import 7 million tonnes more of white sugar per year than under the present system. This difference of 12 million tonnes represents 10% of the present total sugar consumption in the world (Rice 2004: 283).

In the USA, another typical tropical product, cotton, benefits from enormous export subsidies. The 25000 cotton farmers who received subsidies amounting to 3.9 billion US$ in 2000/01 for a production value of about 3.5 billion US$, are paid a price which is 70% higher than the world market price. As a result of these subsidies, the USA increased its share of the world cotton market from 16% in the early 1990s to more than 20% at the end of the decade. This policy has led to economic ruin for several hundred thousand smallholders, especially in Mali, Burkina Faso, and Benin. A joint study of the International Cotton Advisory Committee and FAO has estimated that a removal of the US export subsidies on cotton would result in a 10%

reduction of production in the USA and a 26% increase of the world market price (cf. Oxfam 2002: 21-22).

In addition, it seems that the USA use their food aid programme (mainly the so-called PL-480 programme) to dump food on the world market. This is indicated by changes in the relationship between the world market price and the volume of food aid. For wheat, the world market price reached a peak of 0.20 US$ per kg in 1996/97, which was a year of relative scarcity. In the same year the aid consignments of wheat reached a low of 3.5 million tonnes. On the other hand, in 1999/2000, which was a year of relative abundance, the world market price of wheat was 0.12 US$ per kg (i.e. 40% lower than in 1996/97). However, in that year the aid consignments of wheat reached a peak of 8 million tonnes (i.e. 128% more than in 1996/97). That the world market price and the aid volume of wheat move so strongly in a countercyclical manner is a strong indicator that food aid is to a large extent a concealed form of subsidised export (cf. Oxfam 2002: 16).

A removal of all export subsidies for agricultural products will of course have a severe impact on the livelihood of many ten thousands farmers in the USA and Europe, and measures will be needed to compensate the losses of these farmers. One possible measure would be to shift the subsidies to farmers in the North towards the production of energy dedicated crops. De La Torre Ugarte and Dellachiesa who have suggested this measure, argue that, “the land used to grow grasses and grains for energy production could be shifted back into food production with relative ease, …when an increased food supply is required” (De La Torre Ugarte and Dellachiesa 2005: 6). Most important, such a measure would be environmentally sound and reduce the industrial countries’ dependency on fossil fuels.

But even if the developed countries remove all export subsidies on agricultural products (as they absolutely should), we are left with the fact that agricultural labour productivity is lowest and food shortage and undernourishment are most frequent in countries which have the highest share of total labour force in agriculture and are thus “specialised” in the production of food. One of the basic principles of the WTO is “reciprocity”. If industrialised economies remove import restrictions on food products from the underdeveloped economies, then the latter countries have to do the same vis-à-vis the developed countries. However, a further liberalisation of the world trade in agricultural products will have serious negative effects in particular on the poorest peasants in the underdeveloped economies. The transnational food corporations in the surplus countries of North America and Oceania will flood the underdeveloped economies with cheap agricultural products. Smallholders in the marginal agriculture of underdeveloped economies will be pressured out of the market, being unable to sell any surplus at a reasonable price. They will either be locked up in a subsistence agriculture or compelled to migrate to urban areas where they will add to the population pressure and unemployment. In the latter case, the food imports of underdeveloped economies will increase even more, and the problems of trade deficits and foreign debt will increase.

In order to achieve economic development, the poor countries need freedom to implement a development strategy in the same manner as the now industrialised countries did it. That means, first, that it should be possible for them to use import protection both for their industry and their agriculture, at the same time as they are granted free market access especially for their industrial products in the developed economies. But this contradicts WTO's principle of reciprocity. Second, the industrialised countries must grant the underdeveloped economies much easier access to technical knowledge. However, that contradicts WTO's rules of intellectual property rights (cf. the TRIPS agreement). On paper, the large international finance and trade institutions, IMF, the World Bank and WTO should foster and support economic development in the poorest countries. However, not least through their strong pressure for free trade, they have become unilateral instruments for the interests of industrialised countries and serious obstacles for economic progress in the poorest countries.

8. Concluding points

1. Absolute advantage owing to disparities in productivity levels and economies of scale play an important role in international trade.
2. Under free international trade, the most developed countries will increase their productivity leadership over the less developed countries, and international income gaps will widen.
3. The major and primary source of international gains is *international learning* leading to technical progress and increased labour productivity, not international trade (cf. Pasinetti 1981: 245-276; and 1988). The basic problem of underdeveloped economies is, therefore, not lack of mobility of goods (i.e. trade restrictions), but lack of international mobility of technical knowledge. This problem has been magnified by WTOs rigid rules for "intellectual property rights", stated in the TRIPS agreement.
4. International learning may or may not be associated with trade. However, *free* trade and the consequent division of labour between economies on different levels of development, tends to exclude international learning.
5. The issue is not *whether* to protect, but *how* to protect and promote industry in order to ensure dynamic efficiency (i.e. technical progress leading to higher labour productivity). In capitalist economies, competition is an important driving force of innovations (cf. Marx 1976: 431-438; Schumpeter 1954: 81-86; Baumol 2002; Bhaduri 2004). Therefore, a certain degree of competition is necessary to attain dynamic efficiency. However, competitive pressures have to be adapted to the level of industrial development. In this sense, Raul Prebisch argued that, "Industrialization needs a dynamic policy of protection …" (Prebisch 1959: 269).
6. As opposed to what neoclassical economists claim, a policy for long-term growth and development should not be "neutral" with respect to industries to be supported. Moreover, in their trade policies, governments of less developed economies should not focus on static comparative advantage. In order to obtain the highest possible gains from international trade, they should instead specialise in producing those goods with

high income elasticities of demand for which they can achieve the highest rates of growth in labour productivity.

7. The rich countries should abolish all restrictions on imports of industrial products from the LDCs. The only requirements should be that these countries have ratified and practice ILOs international labour standards, that the products satisfy internationally adopted requirements with regard to health and safety, and that the production neither directly nor indirectly is detrimental to the environment (e.g. does not affect rain forests negatively).
8. At the same time, the industrialised countries must accept that the LDCs protect their industries against imports.
9. There should be a total and strictly controlled prohibition of subsidised exports of agricultural goods. However, both industrialised and underdeveloped economies should have the right to protect their own agricultural production insofar as it is for domestic production.

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