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**Industrial Tariffs, International Trade and Development**

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**Industrial Policy**

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# **INDUSTRIAL TARIFFS, INTERNATIONAL TRADE AND DEVELOPMENT<sup>1</sup>**

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## **Introduction**

The past two decades have witnessed rapid liberalization of trade in industrial products in developing countries. Much of this has taken place unilaterally or as a result of bilateral and regional trade agreements or conditionalities attached to multilateral lending by the Bretton Woods Institutions. The Uruguay Round also resulted in the elimination of non-tariff barriers and reduction of industrial tariffs, but until now developing countries have enjoyed considerable freedom in the WTO in choosing which tariff lines to bind and where to bind them. As a result, in most of them tariffs have remained either unbound or bound at relatively high levels compared to applied rates.

This situation is set to change. A main objective pursued by developed countries in the current (Doha) round of negotiations on industrial products is to bind and reduce all tariffs so as to harmonize them both across countries and products. This would in effect translate unilateral liberalization by developing countries into WTO commitments, bring tariffs much closer to levels in developed countries, reduce tariff dispersion among different product categories, and result in further cuts in applied rates.

In the debate on the implications of these proposals for developing countries attention has focused on two issues: their immediate impact on trade, production and employment in the sectors affected by tariff cuts and increased market access; and their impact on government revenues from trade taxes, particularly where such taxes account for an important part of the budget. Less attention has been paid to the implication of tariff cuts for industrialization in developing countries and their participation in the international division of labor. While it is generally agreed that there may be temporary costs, there is also a widespread belief, in accordance with the prevailing orthodoxy, that proposed tariff reductions would be beneficial to developing countries when adjustment to a more liberal trade regime is completed and existing resources are fully redeployed and utilized according to new incentives.

For developing countries what matters is not one-off gains or losses resulting from reallocation of existing resources, but the longer-term implications of proposed binding and cuts in industrial tariffs for capital accumulation, technical progress and productivity growth since these hold the key to narrowing income gaps and catching up with richer countries. Even if there could be an instantaneous, costless adjustment to a new set of incentives allowing developing countries to fully mobilize their existing endowments and capabilities, an irreversible commitment to low tariffs across a whole range of sectors would carry the risk of locking them into the prevailing international division of labor.

It is true that tariff protection is not always the only or the best way to promote technologically advanced and dynamic industries. However, many of the more effective and first-best policy options successfully used in the past for industrial upgrading by today's mature and newly-industrialized countries are no longer available to developing countries because of their commitments in the WTO, notably in agreements on subsidies, TRIMs and TRIPs. The loss of freedom to use policy tools in these areas increases the risks entailed by narrowing policy autonomy further through irreversible commitments for deep cuts in industrial tariffs.

This paper focuses on the implications of the proposed multilateral regime for industrial tariffs for the industrialization of developing countries. The next section gives an overview of its key elements without going into technical details of various proposals. This is followed by a brief review of the historical experience of today's advanced countries regarding the use of tariffs in the course of their industrialization in comparison with the actual situation prevailing in developing countries today and the proposals put forward by industrial countries. Section D discusses the sectoral pattern and evolution of tariffs that may be needed in the course of industrial development in comparison with the constraints that would result from these proposals, and advances a simple alternative that can help reconcile policy

flexibility with multilateral discipline. This is followed by a critical evaluation of benefits claimed from tariff cuts to developing countries. The paper will conclude with a summary of the features that a multilateral regime for industrial tariffs needs to have in order to accommodate longer-term development trajectories of developing countries.

### **The multilateral regime for industrial tariffs as advocated by developed countries**

The multilateral regime for industrial tariffs advocated by developed countries would have four distinct features:<sup>2</sup>

First, all tariffs would ultimately be bound. While most developed countries have almost full binding coverage, this is not the case for the majority of developing countries, particularly outside Latin America. This would lead to a considerable reduction in the scope to use trade policy for industrialization, particularly since WTO commitments are not time-bound, to be renegotiated after a pre-specified period. Various rules that permit countries to resort to anti-dumping or safeguards measures are exceptional and temporary provisions. They are not designed to allow developing countries to pursue effective trade and industrial policies in order to promote competitive firms in more dynamic, high value-added sectors.

Second, whatever their initial positions, countries are expected to lower their tariffs over time in successive rounds. Indeed, an overarching objective pursued by some of the most advanced countries such as the United States is a rapid convergence to free trade in industrial products. Furthermore, with some minor exceptions, liberalization is to be pursued on a line-by line basis; that is, tariff cuts would be applied to all product categories.

The third feature advocated is to narrow tariff dispersion across countries. Currently the difference between average weighted bound tariffs of developed and developing countries is over 11 percent. This

would be reduced to some 4 percentage points in some proposals or disappear altogether in others (Laird *et al.* 2003). Again, there would be considerable compression of tariff dispersion among developing countries, with the standard deviation of average bound tariffs falling from more than 20 percentage points to less than 3 percentage points.<sup>3</sup>

Finally, the proposals seek a significantly compression of tariff dispersion across industrial products. On some proposals dispersion, as measured by standard deviation of bound tariffs, could fall by more than two thirds.<sup>4</sup> The EU has proposed to compress tariffs into a range with an overall cap of 15 percent. The consequences of such a move for developing countries could be much more serious than is commonly appreciated since it could severely reduce their ability to differentiate among industrial sectors in the provision of infant-industry support and protection.

### **A brief history of industrial protectionism: Good for the goose, but not for the gander**

#### *The goose*

These principles espoused by developed countries do not conform to their historical experience regarding the use of tariffs for industrialization. As documented in the literature on the economic history of Western Europe and its offshoots, protectionism was the rule, free trade the exception during the industrialization of today's mature economies (Bairoch 1993). While industrial leaders often favored free trade, followers used all kinds of policy tools to support and protect their infant industries in order to catch up with the more advanced economies (Wade 2003).

In the Western European core, following the widespread mercantilism that pervaded the earlier

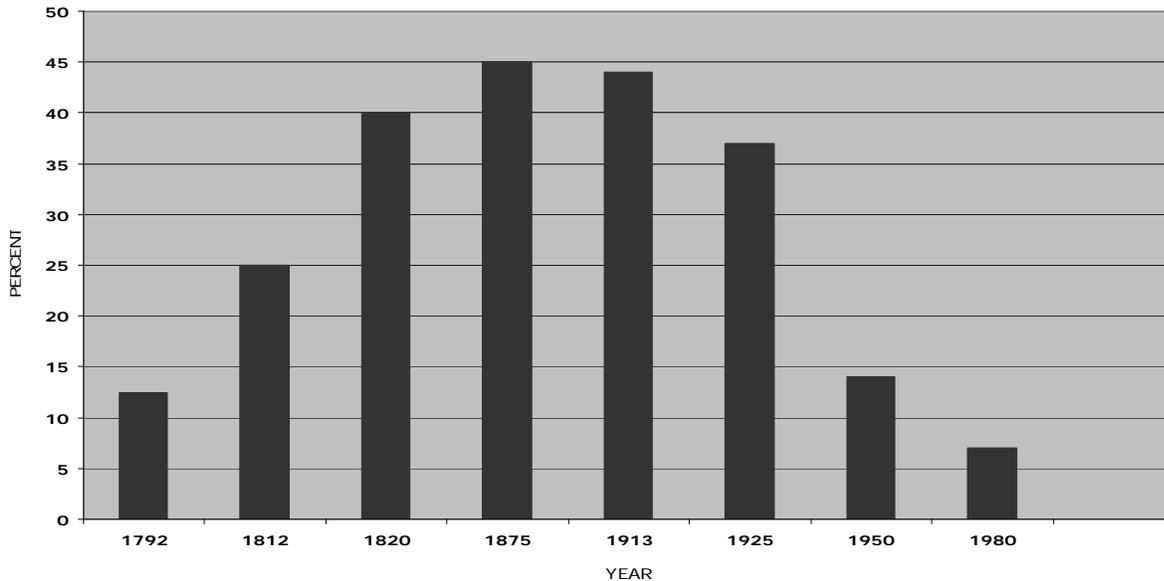
centuries, there was a brief period of free trade beginning in the 1840s.<sup>5</sup> This coincided with the emergence of Britain as the industrial hegemon, achieved under high barriers to imports, and started with the repeal of Corn Laws. Tariffs on manufactured imports were brought down to zero by the 1860s from levels as high as 50 percent in the 1820s. Liberal trade policy spread to Europe after the Anglo-French trade agreement of 1860. However, this episode of liberal trade policy was followed by a protectionist backlash in the late 1870s and early 1880s, leading to increases in industrial tariffs in several follower countries including Germany and France. In the period until the First World War, tariffs remained at relatively high levels outside Britain, the Netherlands and a few smaller European countries. In the interwar period, there was a proliferation of tariffs and non-tariff barriers, including in Britain which started to feel the competitive pressures from the newly emerging industrializers, notably Germany and the United States, and eventually resorted to high tariff barriers on the eve of the Second World War. The postwar era witnessed another wave of liberalization with gradual declines in industrial tariffs in the developed world, this time driven by the new industrial hegemon, the United States. However, “one of the elements which permitted this trend towards tariff liberalization was an incipient tendency to apply measures of a flexible nature (non-tariff measures) on an increasing scale, a tendency to manage trade in certain sensitive sectors, and a tendency to apply such restrictive measures on a discriminatory basis.”<sup>6</sup>

It is also notable that throughout its industrial development the United States was more protectionist than other early industrializers. It was indeed described as “the mother country and bastion of modern protectionism” (Bairoch 1993). From the beginning of the 19<sup>th</sup> century until the 1840s its average tariffs varied between 20 and 50 percent while its industrial tariffs were as high as 40 percent in 1820, a level which was generally maintained until the 1840s (Irwin 2003). The United States also entered a period of more liberal trade policy in the late 1840s, but its tariffs were still kept at much higher levels than in the

Western European core. Moreover, this liberal episode lasted even shorter, with average tariffs returning to 40-50 percent levels in the 1870s when custom duties accounted for more than 50 percent of the United States government revenue (Irwin 2002a). Until the First World War, tariffs were also higher in all other European offshoots including Australia, Canada, New Zealand, and Argentina than in the core countries (Irwin 2002b). In the United States there was a brief easing of tariffs around the First World War, before they were raised again to exceed 35 percent in the mid-1920s, and 48 percent with the onset of the Great Depression. It was only after the Second World War that the United States started to move to sustained trade liberalization, having successfully established its industrial dominance behind protectionist barriers. Even then, as noted by Chang (2002), “the USA never practiced free trade to the same degree as Britain did during its free-trade period (1860-1932).”

The historical evolution of industrial tariffs in the United States is described in Figure 6.1. Its average industrial tariffs were relatively low at its early stages of industrial development, rising rapidly in intermediate stages and falling with maturity. Figure 1 excludes two periods where tariffs temporarily diverged from their long-term path; that is, the liberal episode of 1846-1861, and the Smoot-Hawley increase during the Great Depression. However, not only were these extreme episodes temporary but, as noted above, declines in the former period and increases in the latter were quite moderate compared to levels prevailing previously.

**Figure 6.1 United States Industrial Tariffs (Average Applied Tariffs)**



Evidence shows that there was a strong correlation between protectionism and economic growth in the United States throughout the 19<sup>th</sup> century until the Second World War (Bairoch 1993; O'Rourke 2000; Clemens and Williamson 2001). Indeed during that period, not only did the United States have the highest tariffs, but also it was the fastest growing economy. Although it is true that the correlation between high tariffs and economic growth does not imply causality and there are many other factors than infant industry protection that contribute to rapid growth (e.g., Irwin 2000 and 2002b), it is notable that not only was the correlation valid for several Western European countries, but also it was robust after taking into account other factors affecting growth in cross-country regressions (O'Rourke 2000).

While the United States was protectionist across a wide range of industries, Japan (like Germany and Sweden) was more selective (Chang 2002), providing high levels of protection to capital-intensive and

high value-added sectors, including those producing machinery and equipment (World Bank 1993). Korea followed in the footsteps of Japan, except that it was less willing to move to free trade: “even by 1983, when Korea’s success had become an established fact, most sectors were still protected by some combination of tariffs and non-tariff barriers. While Korea utilized a variety of instruments, especially export targets and rebates, to ensure that exporters faced international prices for their tradable inputs, there was considerable protection of goods sold on the domestic market” (World Bank 1993).

### *And the gander*

Compared with the historical experience of mature and newly industrialized countries, trade policy in developing countries today appears to be unduly liberal. Table 6.1 makes a comparison of the historical experience of the three core Western European economies and the United States with the current situation in developing countries and least-developed countries (LDCs), and three large developing economies:

- At the end of the 19<sup>th</sup> century when per capita income (measured in purchasing power parity) in the United States was at a similar level as that in developing countries today (that is, some \$3,000 in 1990 dollars), its weighted average applied tariffs on manufactured imports was close to 50 percent, compared to 8.1 percent in developing countries and 13.6 percent in LDCs today.
- In 1950 when the United States was already an undisputed industrial hegemon with a per capita income of almost three times the per capita income of developing countries today, its average applied industrial tariff rate was higher not only than the average rate applied by developing

countries but also by LDCs today. This is also true, to varying degrees, for Germany, France and the United Kingdom.

- When the United States had the same levels of per capita income as Brazil or China today, its applied tariff rates were four times higher. When its per capita income was similar to India today (that is, around the mid 19<sup>th</sup> century), its average tariff was twice as high. Again, all Western European core economies had higher industrial protection than Brazil, China and India today when they had similar per capita income levels.

The figures in Table 6.1, however, do not fully reflect the extent of protectionism in industrial countries in the past in comparison with developing countries today. High tariffs in the earlier period came on top of much higher transportation and information costs than today, which provided natural protection from imports, particularly for the European offshoots (Clemens and Williamson 2001). Moreover, the productivity gap between industrial leaders and followers is much greater now than in earlier times (Chang 2002). For instance, even though the United States in 1913 had the same per capita income as Brazil today, it was already one of the most developed economies in the world with effectively no productivity gap with the industrial leader of the time, the United Kingdom. Since Brazil now faces a larger income gap with industrial leaders, the same level of tariffs would provide much less protection to its industry today than it did for the United States in the earlier period.

Although major industrial countries have had continuous tariff liberalization in the postwar era, the tariff levels reached by 1980 are not very much different from the average rate of applied tariffs in developing countries today. Furthermore, there was widespread resort to non-tariff measures which were

“applied to approximately one-quarter of Switzerland’s total imports and more than one-tenth of the imports of Japan, Norway and the European Economic Community”, even without the inclusion of voluntary export restraints in the inventory of non-tariff measures (UNCTAD TDR 1984). Some of the formulas currently proposed by developed countries imply that tariff cuts in developing countries would be much deeper cuts than those made by most major developed countries in the 30 years after the Second World War (Table 6.1).

**Table 6.1: Industrial tariffs: Historical comparison between developed and developing countries**

Country/Year		Per capita Income (at 1990\$)	Average applied tariffs (%)
US	1820	1257	35-45
	1875	2445	40-50
	1913	5301	44.0
	1950	9561	14.0
	1980	18577	7.0
Germany	1913	3648	13.0
	1950	3881	26.0
	1980	14113	8.3
France	1913	3485	20.0
	1950	5270	18.0
	1980	15103	8.3
UK	1913	5150	0
	1950	6907	23.0
	1980	12928	8.3

Developing Countries	2001	3260	8.1(2.1)*
LDCs	2001	898	13.6 (13.6)*
Brazil	2001	5508	10.4 (4.0)*
China	2001	3728	12.3 (1.2)*
India	2001	1945	24.3 (9.0)*

Source: Per capita income from Maddison (2001) at 1990 dollars based on multilateral PPP. The latest available figures (1998/99) are adjusted for subsequent growth to arrive at estimates for 2001. Tariffs for developed countries from Bairoch (1993, table 3.3, p. 40) and for developing countries Fernandez de Cordoba *et al.* (2004b, Appendix).

\* Average tariffs that would result from the application of a Swiss formula according to what Fernandez de Cordoba *et al.* (2004b) call "hard scenario".

The current push for greater harmonization of industrial tariffs across countries also stands in sharp contrast with the historical experience of today's industrial countries. Even though the leading industrial nations used their political, military and economic leverage throughout the 19<sup>th</sup> and much of the 20<sup>th</sup> centuries to promote liberalization-cum-harmonization in weaker countries, cross-country dispersion of tariffs was much greater than is the case today.

Lack of trade policy autonomy in colonies was a factor favouring greater harmonization of tariffs. There was indeed a high degree of correlation among the tariff levels of imperial powers and colonies throughout the 19<sup>th</sup> and 20<sup>th</sup> centuries. This was particularly true for British and Dutch colonies in Asia which operated under imperial tariff policies. This imperial dominance goes a long way in explaining why colonies in Asia kept much lower tariffs than independent Latin American countries through the 19<sup>th</sup> century until the Second World War. Tariffs in the former region were aligned to relatively liberal regimes in Britain and the Netherlands, while Latin American countries kept high tariffs in view of excessive protectionism in their main trading partner, the United States (Clemens and Williamson 2002b; and Williamson 2003).

Powerful countries also exerted a strong influence over tariff policies of independent but weak states through the so-called unequal treaties. This includes the gunboat diplomacy in Asia forcing Japan and China to open up their markets to the United States and Britain respectively, as well as the 1860 trade agreement imposed on the Ottoman Empire by Britain when the country defaulted on its external debt, and public finances were effectively taken over by the creditors.<sup>7</sup> Since the main objective in such instances was to make the weaker states open their markets, such treaties did not always promote harmonization, particularly when the imposing countries were protectionist. This was certainly the case when the United States forced Japan to open its markets while protecting vigorously its own.

An important factor that favors greater harmonization is that once countries establish industrial dominance behind protectionist walls, they tend to advocate free trade in order to *kick away the ladder* from the followers and consolidate their dominance, as argued by Chang (2002) reviving the term originally introduced by the German economist Friedrich List. As noted above this was certainly the case for Britain in the mid 19<sup>th</sup> century which led the liberalization drive in Europe. The United States followed a similar path a hundred years later.

Despite these tendencies making for greater liberalization-cum-harmonization, there was still considerable diversity among the contemporaneous industrializers in the core both during the 19<sup>th</sup> century and the first half of the 20<sup>th</sup> century. For instance, in the interwar period the cross- country dispersion of industrial tariffs was quite wide; tariffs ranged from zero in the United Kingdom to 6-10 percent in the Netherlands, 20 percent in Germany, 30 percent in France, 46-50 percent in Italy and the United States. As shown in table 6.2, the dispersion of tariffs among developed countries, as measured by standard deviation, was close to 11 percentage points even in 1875 when trade was relatively free. This figure almost doubled by 1913 after the globalization backlash, before coming down to 7 percentage points in 1950. Thus, cross-

country dispersion of industrial tariffs was quite high during the industrialization of today’s developed countries, not only in absolute terms but also relative to average tariffs (as demonstrated by the coefficient of variation in the last column of Table 6.2), coming down only after followers narrowed the development gap with the leaders.

For a broader range of countries, both in the core and the periphery, the dispersion was even larger. It was also in the wrong direction as tariffs in many poor countries in the periphery were lower than those in more advanced economies. For instance, a study contrasting the behaviour of tariffs over 1865 and 1938 in six regions found “enormous variance in levels of protection between the regional averages” (Williamson 2003). It is even more striking that, as shown in Table 6.2, the dispersion of average tariffs applied by developed and developing countries was much higher, both in absolute and relative terms, during the 19<sup>th</sup> century than at present, despite harmonizing influences associated with imperial rule and gunboat diplomacy in the earlier period. This is true whether one takes the figures during the liberalization episode (1870) or during the tariff backlash (1890). Table 6.2 also shows that the application of the non-linear Swiss formula could take “harmonization” between developed and developing countries much further than was ever achieved under imperial rule or gunboat diplomacy.

**Table 6.2: Average applied tariffs and their dispersion**

Sample	Year	Average applied tariff	Dispersion (percentage)	Coefficient of variation
Developed countries <sup>1</sup>	1875	12.1	10.8	0.9

Developed countries <sup>1</sup>	1913	23.1	21.8	0.9
Developed countries <sup>1</sup>	1950	15.8	7.1	0.5
<hr/>				
Developed and developing	1870	13.8	10.7	0.8
Developed and developing	1890	15.2	12.6	0.8
<hr/>				
Developed and developing	2001	9.3	5.7	0.6
Developed and developing	After harmonization	4.1	2.9	0.7

1. Industrial tariffs for 14 developed countries for 1875 and 1913, and 10 developed countries for 1950, calculated from Bairoch (1993: 40, table 3.3.).

2. All tariffs for 27 countries, calculated from Irwin (2002b: 27, Appendix table 1).

3. Industrial tariffs for 84 countries (excluding LDCs), calculated from Fernandez de Cordoba *et al.* (2004b: Appendix table A1). Harmonization refers to tariffs that would result from what the authors call "hard scenario."

## Industrial development and tariffs

### *Stages of industrial development*

The key question raised by multilateral negotiations on industrial tariffs is the extent to which the proposals put forward by developed countries would affect industrialization prospects of developing countries. In examining this issue, it is important to bear in mind that successful industrialization is a cumulative process involving movements from one stage to another through the establishment of new industries with higher value-added and technology contents. In the earliest stages of economic development, production and exports consist largely of primary commodities while imports comprise mainly manufactures, both capital and labor-intensive products. Exporting at such a stage provides a vent for surplus; that is, it allows

production to increase by making use of formerly unemployed resources because of lack of domestic demand. As these sectors enjoy natural resource-based comparative advantages of the kind emphasized by the Ricardian theory of trade, their mobilization does not call for specific support and protection.<sup>8</sup> It does, however, raise other policy issues linked to distribution of rents, particularly when foreign firms are involved (Prebisch 1950, Singer 1950).

How long a country can rely on the exploitation of natural resources before moving to industry depends, *inter alia*, on the relative size of its resource endowments. However, evidence strongly suggests that rich natural resources, even when combined with a well-developed human resource base, do not automatically lead to processing and diversification. Without active policies designed to promote and support such activities, being rich in natural resources can be detrimental to diversification away from unprocessed commodities. On the other hand, even though commodity processing provides early industrialization opportunities, the possibilities of maintaining rapid development through deepening and diversification in the primary sector are limited. Manufactures offer better growth prospects not only because they allow for a more rapid productivity growth and expansion of production, but also because they avoid the declining terms of trade that have frustrated the growth prospects of many commodity-dependent economies. Countries rich in natural resources can delay industrialization, but in general they cannot reach high income levels without a strong industrial base.<sup>9</sup>

The early stages of industrialization are characterized by sectoral specialization in exploiting endowments of natural resources and unskilled labor. This is followed by diversification into a wide spectrum of technologically more advanced activities, accompanied by increased internal integration through a dense set of linkages among sectors.<sup>10</sup> With industrial maturity there is again a move towards sectoral specialization, this time at the top end of the technology ladder. This pattern is also confirmed by

empirical evidence on the evolution of sectoral allocation of labor in the course of industrial development.

A study using data from a variety of sources covering a wide cross-section of countries found

robust evidence that economies grow through two stages of diversification. At first, labor is allocated increasingly equally between sectors, but there exists a level of *per capita* income beyond which the sectoral distribution of labor inputs starts concentrating again. In other words, the sectoral concentration of labor follows a U-shaped pattern in relation to *per capita* income.... The non-linearity holds above and beyond the well-known shifts of factors of production from agriculture to manufacturing and on to services.” (Imbs and Wacziarg 2000)

The turnaround from sectoral diversification to specialization occurs quite late in the development process around a per capita income of \$9,000.

During the initial expansion in resource-based and labor-intensive manufactures, the support and protection provided to industry will likely be phased out after a relatively short period of learning and expansion in world markets, since such sectors tend to be technologically less demanding. As traditional industries mature and become competitive, a new generation of infant industries would need to emerge and establish themselves. Indeed, an effective industrialization strategy should recognize that currently successful industries may, over time, confront difficulties in competing in international markets as domestic wages rise, low-cost competitors emerge, and the limits of learning and productivity growth are reached. Hence, more dynamic and skill- and technology-intensive industries would need to be promoted simultaneously as resource-based and labor-intensive manufacturing successfully carries the economy forward. Such an approach underpinned successful modern industrializers such as Korea which started to build up from an early date scale- and technology-intensive industries, including shipbuilding, steel and automotive industries. Rather than seeking to maintain competitiveness by keeping down wage costs or protecting traditional industries with high tariffs, they chose to upgrade rapidly as a way of raising productivity, exports and incomes.

Eventually these scale- and technology-intensive industries will have to compete with firms in more mature economies which enjoy the advantage of having begun sooner and progressed further on the technology ladder. But, as argued by Gomory and Baumol (2000) “entry into one of these industries, against an entrenched competitor, is slow, expensive, and very much an uphill battle if left entirely to free market forces.” They would thus need to be supported, including with industrial tariffs and various forms of subsidies, of the kind widely used in both mature and newly industrialized countries in the past. Such support would likely be higher and maintained for longer periods compared to less demanding, resource-based and labor-intensive manufacturing.

In this process, as new and more dynamic industries emerge, the traditional ones are phased out and may even be left entirely to countries at earlier stages of development. This pattern of modern industrialization, dubbed “the flying geese paradigm”, was originally formulated in Japan in the 1930s when it was still a comparatively poor economy (UNCTAD TDR 1996). It provides a description of the life-cycles of various industries in the course of economic development and their relocation from one country to another through trade and foreign direct investment (FDI) in response to shifts in competitiveness. In this process, imports from more advanced economies allow new goods and technology to be introduced in less advanced economies. The next stage is to promote indigenous industries to replace imports in meeting domestic demand, to be followed by exports. When a country loses competitiveness in a particular product, its domestic production is phased out and replaced by imports from the followers.<sup>11</sup>

While the flying geese paradigm assumes an outward-oriented strategy, it is not a market-driven process. Success in industrial upgrading would require policy intervention in the form of infant industry support and export promotion, in order to even the playing field with firms from more advanced economies. Initially there would be no need for tariffs on products for which the economy relies entirely

on imports. Subsequently, as indigenous industry is established, tariffs are introduced for infant-industry protection. And eventually protection and support would be removed as the industry matured. In this process, the economy goes through a series of overlapping industries according to their life cycles, constantly raising productivity as it moves up the technology ladder.

Similarly, building on the work of Young (1928), Kaldor (1966) described industrialization as a cumulative process going through four stages, based on a distinction between consumer and capital goods. In the first stage a local consumer goods industry emerges, substituting imported manufactured consumer goods. As competitiveness is established, the economy moves to the second stage, exporting consumables but still dependent on imported capital goods. The third stage is characterized by mass production and export of consumables combined with the emergence of a local industry to replace imported capital goods, to be followed by capital goods and technology exports. In this process, scale economies and learning play a crucial role. While industrialization follows a clear trajectory of progress, it does not converge to a predefined point. Rather, selection is involved across a whole range of industries and products in each stage of development, influenced by policy including import restrictions.<sup>12</sup>

#### *Pattern and evolution of optimum industrial tariffs*

These considerations suggest a pattern of optimal tariffs in the course of industrial development as described in Figure 6.2. Four different categories of products (industries) are selected according to a broad classification developed in UNCTAD TDR (1996 and 2002): resource-based and labor-intensive manufactures (RL), and low (LT), medium (MT) and high (HT) technology- and skill-intensive products.<sup>13</sup> Tariffs are introduced once a particular line of industry is entered, and kept at their initial (maximum)

levels for a certain period before being brought down at a constant rate as the industry matures.<sup>14</sup> For the reasons already noted, technology-intensive industries have higher initial levels of protection and support than resource-based and labor-intensive manufacturing.<sup>15</sup> As technological capacities are built successfully, subsequent shifts to more advanced sectors become relatively easier than the earlier move from labor-intensive to technology-intensive activities. Accordingly, in Figure 6.2, peak tariff rates are assumed to follow a non-linear path, rising initially during the shift from RL towards LT and MT industries, and falling afterwards. In the early stages of development, there would be no need for infant industry protection against imports of MT and HT products since industries producing these goods are not yet in existence. By the time the economy moves to MT products, protection for RL products is assumed to have been fully phased out.

In this process the economy moves through a technological trajectory which determines its position in the international division of labor. In other words, what a country produces, imports and exports, and how much support and protection its emerging industries need depends very much on its stage of technological development vis-à-vis rest of the world.<sup>16</sup> Clearly the process of sequencing industries can differ from country to country depending on factors such as geography, size and endowments. In accordance with the evidence noted above, industrial specialization in Figure 6.2 follows a non-linear path, with greater sectoral concentration at the early and late stages of industrial development, and diversification in between. In each stage there is a diverse set of industries while different stages are characterized by different levels of selection. Selection made in different countries in each stage of industrial development can show considerable variations depending on a host of factors including institutional arrangements and endowments.

**Figure 6.2: Tariff profile of sequenced industries for infant industry protection**

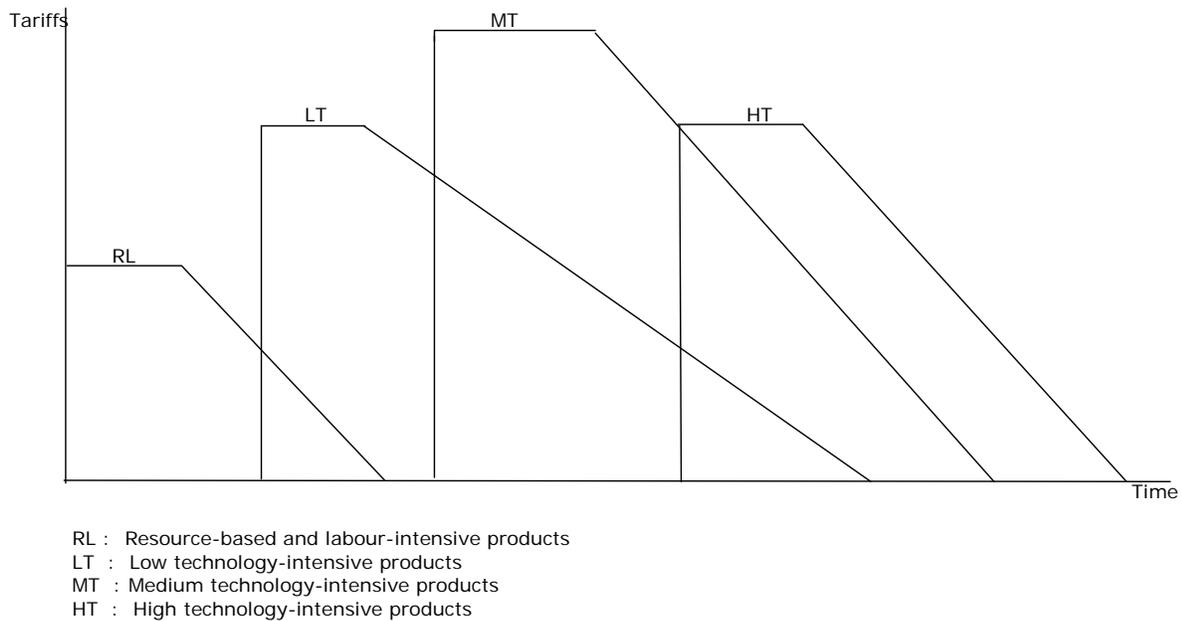


Figure 6.2 describes the pattern and evolution of optimum tariffs that would be needed for infant industry protection in late industrializers in order to overcome their technology and skill gaps with the more advanced economies at each stage of industrial development. For industrial leaders where technological advance depends on innovation rather than adaptation of foreign technology, industrialization would not call for the kind of infant industry protection described in Figure 6.2, but a host of other policies that help promote innovation and internalize its benefits.

In reality tariffs tend to be set and evolve in quite different ways from the pattern depicted in Figure 6.2 since they are imposed, *inter alia*, for balance-of-payments and government revenue reasons.

Furthermore, pressures by interest groups or distributional considerations could push tariffs from the levels that would maximize their economic benefits.<sup>17</sup> Even though it would not generally be efficient to have all four types of industry operating simultaneously, labor intensive sectors are often maintained behind barriers in economies which have attained technological maturity. Indeed, in many developed countries textiles, clothing, and footwear and leather goods receive far greater protection than technology-intensive sectors against competition from low-cost developing country producers, in large part because of their failure to upgrade the skill profile of labor and to deal effectively with rising unemployment.

Much like the major industrial countries, many middle-income countries have been unable to maintain competitiveness in traditional labor-intensive products against cheaper new producers and persisted in such sectors behind barriers, in part because their producers have found it difficult to upgrade and diversify.<sup>18</sup> Again, in some developing countries there have been attempts to establish MT or even HT industries under strong protection at relatively early stages of development, before achieving efficiency in labor-intensive manufacturing. More generally, under import-substitution regimes tariffs were often levied on an *ad hoc* basis with the consequence that “a great hodgepodge of rates appeared, with virtually no evidence of any consideration of costs or efficiency” (Bruton 1998). More recently the tendency has been towards indiscriminate liberalization without much regard to its consequences of industrial development.

The use of tariffs in the course of technological upgrading along the lines described in Figure 6.2 implies that countries at the intermediate stages of development would have relatively low tariffs for products both at the top and bottom ends of the technology spectrum, and higher tariffs on middle-range products. By contrast, industrially advanced countries would have higher tariffs at the top end. Available evidence from a recent study distinguishing tariffs on low, intermediate and high value-added products suggests that in reality this happens only to a limited extent (Fernandez de Cordoba and Vanzetti 2005).

Both developed and developing countries have lower applied tariffs on low value-added industrial products. Developing countries have higher average applied tariffs for intermediate products than for high value-added products, while in developed countries average tariffs are higher on high value-added products. Nevertheless, in developed countries tariffs on intermediate products are only marginally lower than those on high value-added products, reflecting in large part tariff peaks on products of export interest to developing countries. On the other hand, both developing countries and LDCs keep relatively high tariffs for high value-added products even though most of them have not yet advanced beyond labor-intensive and resource-based industries (Akyüz, Kozul-Wright, and Mayer 2004).

### *Implications for trade negotiations*

The pattern of tariffs needed to support overlapping generations of industries in developing countries conflicts with the objectives pursued by developed countries in the WTO in several respects:

- At any point in time effective use of tariffs for industrialization would require coexistence of very low and very high tariffs. In Figure 6.2 at initial stages of industrialization, tariffs are zero for MT and HT products, high for LT products and moderate for RL products. Similarly during industrial maturity, tariffs are zero for RL and LT products, moderate for MT products and high for HT products. In the intermediate stages tariffs are concentrated on LT and MT products, and there is no need for tariff protection for the RL industries because they are competitive, and for the HT industries because they are not yet in existence. Briefly, since at any point in time different industries would require different degrees of infant industry protection, dispersion across tariff lines

can be very wide.

- Over time tariff dispersion may be rising or falling according to the stage of industrial development reached. In Figure 6.2 it is initially increasing as the economy moves towards more demanding industries, but subsequently decreasing with industrial maturity.
- In the course of industrialization tariffs are raised on some products but lowered for others; that is, there is no continuous liberalization on a line-by-line basis.
- The behavior of average tariffs in Figure 6.2 in the course of industrial development is quite similar to the evolution of industrial tariffs in the United States shown in Figure 6.1; they rise in the intermediate stages of industrialization as the economy diversifies away from resource-based and labor-intensive manufactures and then start falling with industrial maturity.
- Since countries at different stages of industrial development can coexist, there would be little harmonization across countries. Mature industrial countries would have relatively low average applied tariffs compared to those at the intermediate stages of industrialization, but not necessarily lower than those at the early stages of industrialization. In other words, countries at the intermediate stages of development need higher average applied tariffs than both mature industrial countries and LDCs. However, while mature industrial countries are expected to dismantle tariffs over time, LDCs would need to move towards higher tariffs as they enter technology-intensive industries.

Although Figure 6.2 is a highly simplified picture of the possible evolution of optimum infant-industry support and protection that may be needed at different stages of industrial development, the results above do not depend on a particular description of this process. A key conclusion is that in a process of sequential build up of competitive industries under temporary infant industry protection, the optimal level and structure of tariffs would change over time. Consequently, focusing on the needs of existing industries or taking current levels of tariffs as the basis for commitments in the WTO could subsequently present serious setbacks to technological upgrading. A country at an earlier stage of industrialization might be inclined to have low bound tariffs for high-tech products because it has not yet entered into such sectors, aiming, instead, at retaining high bound tariffs for labor-intensive and low-technology manufactures in order to protect its existing industries. But emphasizing short-term benefits to the neglect of longer-term industrialization could lock it into the current pattern of industrial specialization, making it difficult to move up on the technology ladder. Similarly, whether or not bound tariffs allow sufficient policy space for industrialization should be assessed not in terms of currently applied rates, but the rates that may be needed when the time comes to enter higher value-added, more dynamic industries.

The key issue here is how to reconcile multilateral discipline with policy flexibility needed for industrial development. As shown above, developing countries do not need high tariffs for all sectors and all the time. But they should have the option of using tariffs on a selective basis as and when needed for progress in industrialization. They should not be expected to keep moving tariffs downward from one trade round to another, but be able to move them in both directions in different sectors in the course of industrial development.

The analysis above suggests that this kind of flexibility is best accommodated by binding the

average tariff without any line-by-line commitment; that is, to leave tariffs for individual products unbound, subject to an overall constraint that the average applied tariffs should not exceed the bound average tariff. Clearly, the average bound tariff should be high enough to accommodate the needs of different sectors at different stages of industrial maturity. This would not necessarily lead to high bound average tariffs. On the contrary, it could result in lower average tariffs than would be the case under a line-by-line commitment.

This is illustrated by the example given in Table 6.3 which draws on the pattern in Figure 6.2 wherein countries go through various phases of industrial development, moving through a sequence of overlapping industries in LR, LT, MT and HT products. The bold numbers are the maximum tariffs that would be needed for each product for infant industry protection. Numbers in the last column give the average applied tariffs in each phase of industrialization. As in Figure 6.2, over time tariffs are lowered in some sectors but increased in others. In this example, on a line-by-line commitment, a country at the first phase of industrial development would want to bind its sectoral tariffs at the maximum rates needed, ending up with an average bound tariff of 37.5 percent. For an economy in phase II, the resulting average bound rate would be 35 percent, and in phase III 30 percent. But for these economies an average maximum bound tariff of 25 percent would be sufficient to provide infant industry support to all sectors in all phases of industrial development provided that they are free to set applied tariffs for different sectors as needed.

Average applied tariffs would remain below 25 percent in early stages of industrialization, rising gradually in the intermediate stages and eventually falling with industrial maturity. A country with an average bound rate of more than 25 percent would be willing to cut it provided that it retains the freedom to set sectoral rates as needed. Furthermore, once phase IV is reached, it would be possible to reduce the average bound tariff gradually while maintaining higher applied tariffs for more advanced sectors.

As countries are free to choose their applied tariffs for individual industries/products subject to the overall constraint of an average bound tariff, such an approach would balance multilateral discipline with policy flexibility. It would also have the additional advantage of encouraging countries to view tariffs as temporary instruments and to make an effort to ensure that infant-industry protection succeeds in establishing competitive industries. This is because in order to stay within the overall limit of the bound average tariff, they would need to cut tariffs in industries at the lower end before moving up towards the higher end. For instance, a country cannot effectively move into phase III and establish MT industries under tariff protection without first lowering its tariffs on RL and LT industries from their initial levels, since this would result in an average tariff of higher than 25 percent. Finally, it would encourage developing country trade negotiators to take a long view in making multilateral commitments, rather than focusing on the immediate needs of their industries.

**Table 6.3: Tariffs at Different Phases of Industrialization (percent)**

Phase	RL	LT	MT	HT	Average
I	<b>20</b>	0	0	0	5.0
II	10	<b>40</b>	0	0	12.5
III	0	30	<b>50</b>	0	20.0
IV	0	20	40	<b>40</b>	25.0
V	0	10	30	40	20.0
VI	0	0	15	25	10.0
VII	0	0	5	15	5.0
VIII	0	0	0	0	0.0

**RL: Resource-based and labour-intensive products.**  
**LT: Low technology-intensive products.**  
**MT: Medium technology-intensive products.**  
**HT: High technology-intensive products.**

Notes: Bold numbers are the maximum tariffs initially needed for infant industry protection for each product.

## **Assessing costs and benefits: Are the gains worth the pains?**

### *Doubling the effort*

Fanaticism, according to the Spanish philosopher George Santayana, means re-doubling your effort when you have forgotten your aim. Economics is no exception to such thinking. Thus, developing countries are once again facing intense pressure to liberalize trade in industrial products even though the extravagant benefits claimed from the Uruguay Round have been belied by subsequent experience.<sup>19</sup> According to one estimate, the Uruguay Round's combined liberalization increased global economic welfare by \$75 billion, of which almost \$70 billion went to developed countries, \$5 billion to Newly Industrialized Economies (NIEs; Korea, Singapore and Taiwan), and none to developing countries taken together.<sup>20</sup> Despite this, recent years have seen a proliferation of similar exercises, claiming large benefits from further trade liberalization for the world economy in general and for developing countries in particular. The gains estimated by various studies from full liberalization of goods and services trade, or trade in goods alone, range from a couple of hundred billion dollars to more than \$2.000 billion.<sup>21</sup> On some accounts, the incidence of gains to developing countries reaches as much as 65 percent of the total.

It has also been argued that while a successful outcome of the Doha Round would greatly improve the growth prospects of developing countries, these benefits would come primarily from liberalization in

these countries themselves. According to a scenario designed by the World Bank (2004) universal liberalization of agricultural and manufacturing trade would generate some \$290 billion, of which \$160 billion would go to developing countries and \$132 billion to developed countries. Manufacturing liberalization in developed countries would carry a small loss to themselves while benefiting developing countries. Developing countries would gain significantly more from their own reforms than from increased access to markets in developed countries.

Other estimates are less sanguine about the potential benefits to developing countries from liberalization of trade in industrial products. According to a study on global gain from the Uruguay Round was in the order of \$90 billion, of which \$65 billion went to mature industrial countries, \$6 billion to NIEs, and less than \$20 billion to developing countries (Brown *et al.* 2001). The same study estimates that a one-third reduction in post-Uruguay Round manufacturing tariffs would benefit industrial countries by \$160 billion, NIEs by \$16 billion to NIEs and developing countries by \$30 billion.

Only a few attempts have been made to estimate the costs and benefits of the various formulas proposed for reducing industrial tariffs in the current negotiations on industrial tariffs. Simulations of various scenarios including universal free trade, ambitious liberalization and a simple formula designed to reduce tariff peaks and escalation predicts modest welfare gains for the world economy as a whole, between \$28 billion and \$42 billion (Fernandez de Cordoba *et al.* 2004a). Under free trade, winners are concentrated in Asia. Developing countries would obtain less than a third of the total gains from cuts in tariff peaks and escalation. Their exports increase as much as in developed countries, partly due to increase in exports to other developing countries, while their imports increase faster.

*Modeling the benefits, assuming away the costs*

The estimates above are one-off static gains expected to result from reallocation of resources after trade liberalization.<sup>22</sup> They are derived from computable general equilibrium (CGE) models based on the neoclassical paradigm of competitive equilibrium where markets always clear and resources are fully employed.<sup>23</sup> These estimates do not provide a reliable guide to what might happen in reality because of two interrelated shortcomings of the CGE models.

First, the structure of a particular model determines the range of results that can be obtained, and it is often the underlying theory and assumptions that determine what the numbers would show. A CGE model founded on conventional trade theory will generally behave and yield results in the manner determined by its underlying assumptions, but shed no light on the validity of the theory itself (Stanford 1993). For this reason it is almost impossible to find any CGE model fashioned on the traditional trade theory which does not predict gains from trade liberalization (Anderson 2004).

As one commentator remarked, the “best definition of a CGE model is: ‘theory with numbers’” (O’Rourke 1995), rather than an empirical test of a theory. But it is a theory that assumes away various imperfections and rigidities that pervade developing economies and lead to market failures, including externalities, incomplete markets, imperfect and asymmetric information, monopolies or imperfect competition. The incorporation of any of these could lead to problems for the stability and even the existence of “equilibrium”. They could also yield multiple equilibria, leading to uncertainty about the outcome of trade liberalization.

The second problem is that although these are comparative statics exercises, the *difference* between two equilibrium states is often presented as a *change* from one to another. This tendency has long been noted:

Following Joan Robinson's strictures that it is most important not to apply theorems obtained from the analysis of differences to situations of change (or, at least, to be aware of the act of faith involved in doing this), modern writers usually have been most careful to stress that their analysis is essentially the comparison of different equilibrium situations one with another and that they are not analysing the actual processes. Nevertheless, in their asides, they sometimes speak as if their results were applicable to a world of change and as if 'back-of-an-envelope' excursions into the statistics can provide 'realistic' orders of magnitude to try out their theorems. (Harcourt 1972)

The CGE models compare two equilibrium states of an economy differing in trade policy but similar in all structural aspects. From the way the economies are assumed to work follows the prediction that the equilibrium state with lower tariffs will have higher income and welfare. But even then, this does not mean that a reduction in tariffs would necessarily lead to another equilibrium state with a higher level of income. This depends on how the economy will react to disequilibria generated by liberalization. The kinds of problems involved were explained by John Hicks some 40 years ago:

Even if the equilibrium exists, it has still to be shown that there is a tendency towards it. ... Even in the single market, under perfect competition, and such that the existence of equilibrium is indubitable, there may be no *tendency* to equilibrium, if speeds of reaction to price change are perverse. Something has to be specified about reactions to disequilibrium before the existence of a tendency to equilibrium can be asserted. (Hicks 1965)

The CGE economists do not specify reactions to disequilibrium brought about by policy shocks, but assume that a new equilibrium is always reached. Nevertheless, they also hedge by taking refuge in the concept of "adjustment costs", acknowledging that in the transition from one equilibrium state to another, resources may be temporarily unemployed, skills may be eroded, equipment may become obsolete, government revenues may fall, trade imbalances may emerge, or there may be all kinds of costs in learning to live with the new set of incentives. Thus the World Bank (2004) argues that the "positive impact on overall growth, accompanied by a sharp boost in trade and a poverty outlook improvement leaving all regions better off in aggregate, does not signify that the reforms are without adjustment costs, even over the

long term.”

However, these “adjustment costs” are almost never quantified and incorporated in the estimated benefits from trade liberalization simply because the CGE economists are engaged in comparative statics, making comparisons between two equilibrium states (i.e., two solutions, for different tariff rates, to a set of simultaneous equations) without specifying how the economy moves from one state to another. There are attempts to incorporate some of the deviations from neoclassical assumptions into these models, such as labor market inflexibility, as causes of adjustment costs. While this would alter the comparative statics effects of liberalization, as measured by welfare *differences* between two equilibrium states, it would not account for what happens in between, which is what the adjustment cost is about. More importantly, the very same deviations from the conventional assumptions of the CGE models that lead to adjustment costs could also prevent the economy from moving towards a new equilibrium with an improved allocation of resources, or could actually lead to an equilibrium with lower income and employment levels, making temporary adjustment costs permanent. But this question is rarely asked, let alone answered.

When adjustment costs out-of-equilibrium are relatively large, there may be no net benefits from liberalization even if comparative statics show positive results, “since in discounting streams of costs and benefits for welfare calculations, the near-present counts more heavily than ‘the long run’” (Baldwin *et al.* 1980). But there is hardly any work on developing countries in the CGE tradition specifying the time path of adjustment to a new equilibrium, assessing the adjustment costs and measuring them against comparative static benefits. Despite lack of rigorous work and evidence, there is a tendency to underplay such costs. A good example is a recent paper from the WTO. After arguing that “although the economy may be worse off in the short-run, the gains from trade will outweigh short-run adjustment costs in the medium to long-term”, the authors go on to recognize that “measures of adjustment costs in existing

empirical work are crude and imprecise” and “the empirical evidence ... is restricted to industrialized countries”, and “may not be representative for the case of other countries” since “the institutional settings and the functioning of domestic markets will affect the size of adjustment costs.”<sup>24</sup>

Until adjustment paths are properly defined and out-of-equilibrium reactions and costs are properly specified, the assumed one-off benefits of trade liberalization in developing countries would remain an act of faith, and estimates based on CGE models would provide little guidance to commercial policy. But there are reasons to doubt whether a sound analysis of trade liberalization could really be undertaken in models premised on the neoclassical tradition. As long argued by Keynesian economists, “comparisons of equilibrium positions one with another are *not* the appropriate tools for the analysis of out-of-equilibrium processes or changes, and that the neoclassical procedure is singularly ill-equipped to cope with the problem of time” (Harcourt 1972). This is also reflected by a sloppy use of the concepts of short-term and long-term in the CGE literature. In economic analysis, short-term typically refers to a situation where, *inter alia*, resources are fixed while long-term implies capital accumulation, technical progress and economic growth, none of which really happen in the CGE models.

### *Beyond adjustment costs: Industrialization*

The key question for developing countries is not what they can gain or lose from trade liberalization as a result one-off reallocation of existing resources, or even the temporary adjustment costs generated when passing from one resource allocation to another. Rather, it is the implications of leaving industrial progress, technological upgrading and economic growth to global market forces dominated by large and mature firms from advanced industrial countries. Even if developing countries could avoid adjustment

costs and instantly benefit from improved allocation of resources and increased access to markets in industrial countries, these one-off benefits may be quite insignificant compared to longer-term losses that may be incurred as a result of losing policy space for rapid industrialization. Thus, as explained by Dosi, Pavitt and Soete (1990): “From such a perspective, it is the relationship between technology, trade and growth which is at the centre of the analysis, rather than the question about the short-term gains from trade stemming from the open-economy allocation of resources, so crucial in the conventional view.”

According to conventional trade theory, under free trade developing countries with abundant unskilled and semi-skilled labor should specialize in labor-intensive activities while industrial countries concentrate on skill- and technology-intensive sectors. Thus, with a significant move towards free trade in industrial products, developing countries would be expected to exit partly or wholly from skill- and technology-intensive and *potentially* high value-added sectors maintained behind tariff and non-tariff barriers. The same goes for industrial countries for labor-intensive products.

Detailed studies of the sectoral impact of trade liberalization on employment and production are hard to come by. Nevertheless, as expected, available evidence from a series of CGE model simulations is quite consistent with the traditional trade theory. One study estimates that in both Japan and the United States trade liberalization in agriculture, industry and services would lower output and employment in low value-added, labor-intensive sectors including textiles, wearing apparel and leather products, but raise them in almost all other manufacturing sectors including transportation equipment, metal products, and machinery and equipment (Brown *et al.* 2001). In the same study a simulation of a free trade agreement among ASEAN plus 3 (China, Japan and Korea) shows employment losses for Japan in textiles, wearing apparel, leather products, and gains in all other manufacturing sectors. For China, there are sizeable losses in chemical industry, metal products, transportation equipment, machinery and equipment, but gains in

almost all the sectors in which Japan experiences losses. These are also broadly confirmed by the results obtained from a CGE model simulating the sectoral impact of various formulas for cuts in industrial tariffs (Fernandez de Cordoba *et al.* 2004a).

Thus, the mainstream theory and the CGE models tell us that at the current levels of technological capability, firms in developing countries cannot compete with those in advanced industrial countries in skill- and technology-intensive products so that any rapid move towards free trade implies that developing countries would withdraw from these sectors and move to low value-added, resource-based and labor-intensive industries. In other words, it would have the consequence of establishing an international division of labor based entirely on competitiveness as determined by existing endowments and capabilities. Still, the pace of industrialization and growth in developing countries would depend on how fast they move away from such a division of labor by improving their technical and skill endowments and establishing more dynamic and challenging industries that promise higher productivity and per capita income. In other words, the return on industries that developing countries would be exiting is potentially greater than industries in which they are expanding. Therefore, the key question is: can developing countries re-enter and successfully establish such high value-added, technologically dynamic activities over time without being able to provide them infant industry protection and support because of their commitments in the WTO?

In answering these questions the conventional trade theory and the CGE models are even less useful since “they can’t unlock the secrets of economic growth” (O’Rourke 1995). This issue is addressed by another class of *ad hoc* models linking trade to growth. However, there is no generally accepted theory that economies that are more open grow faster. Furthermore, several cross-country studies which show a positive relation between growth and some measure of openness have come under strong criticism because

of their methodological and conceptual weaknesses, as well as their failure to account for causality- that is, whether greater openness causes faster growth or faster growth allows greater openness. The more recent experience also shows not only that import liberalization does not guarantee a strong export performance, but also that improved export performance is not always mirrored by acceleration of industrialization and growth (Akyüz 2005).

While evidence on the link between growth and tariffs appears to be mixed for advanced industrial countries, the relation between the two is generally found to be positive in developing countries. As already noted, O'Rourke (2000) finds a positive correlation between tariffs and growth among Western European countries and their offshoots during 1875-1914 while Clemens and Williamson (2001) contend that this was reversed after 1950.<sup>25</sup> Edwards (1992) finds a negative relation between growth and tariffs for a sample of 20 developing countries, but the relationship is statistically insignificant. By contrast Yenikkaya (2003) provides cross-country evidence for 100 countries that initial tariffs were positively correlated with subsequent growth during 1970-1997, particularly in developing countries. According to a more recent study, the relationship between tariffs and growth is negative and significant among developed countries but positive among developing countries (DeJong and Ripoll 2005).

These studies all focus on average tariffs while one of the conclusions of the analysis here is that success in the use of tariffs for industrial development depends not so much on their average level as their pattern and evolution over time. Consequently, two countries at the same level of development and with the same average level of tariffs may obtain different results in industrial development and economic growth depending, *inter alia*, on the sectoral profile of their tariffs. This is all the more important since, as noted, in reality tariffs often diverge from the pattern maximizing their dynamic economic benefits. In general success comes where they are designed to protect learning in dynamic sectors rather than deep-

seated inefficiencies or vested interests in sunset industries.<sup>26</sup> Indeed, a rational tariff structure based on selective and temporary protection appears to be one of the factors distinguishing East Asian economies such as Taiwan and Korea from less successful countries which had similar or even lower average tariff protection and price “distortions.”<sup>27</sup> Given the evidence against the orthodox idea of technological leapfrogging through big-bang liberalization, “some form of protection for learning is necessary. ... The major policy issue then is to design protection measures that induce learning rather than the easy life” (Bruton 1998).<sup>28</sup>

To sum, while infant industry protection is no guarantee for successful industrialization and growth, there is no example of modern industrialization based on *laissez-faire*. Consequently, there is little economic rationale for developing countries to narrow their options to use tariffs for industrialization by agreeing to bind and lower them significantly in the WTO. First, the one-off comparative static benefits that may be brought by the reallocation of their existing resources are likely to be small, and there may even be net losses. Second, they can face high “adjustment costs” resulting from dislocation and disequilibria generated by trade liberalization, and these costs can in fact wipe out static benefits. Finally, over the longer term such a commitment can create serious difficulties in industrial progress and development. Even when net benefits in the short-term are positive, they are unlikely to be large enough to justify losing policy space and jeopardizing development prospects.

### **Conclusions: The way forward**

According to the traditional theory while opening up to trade is mutually beneficial, the distribution of its benefits among trading partners is indeterminate, susceptible to being influenced, *inter alia*, by power,

intra- or extra-market. Certainly there is considerable power play in negotiations on industrial tariffs in the WTO. But if current negotiations are to live up to their characterization as a Development Round, industrial tariff cuts should be so designed as to provide maximum benefits to developing countries. This is not the case with the proposals put forward by major industrial countries and a different approach would be needed.

First of all, developed countries should not use tariffs on products of export interest to developing countries, notably labor-intensive manufactures, as bargaining chips. Even though these sectors have long lost their viability in the face of the emergence of low-cost producers in the developing world, they have been maintained behind barriers for the reasons already explained.<sup>29</sup> Such protection is not temporary since these sectors have no chance of regaining competitiveness vis-à-vis cheaper producers in the South. Developed countries are in effect offering to cut such tariffs in return for across-the-board cuts in tariffs by developing countries, including those protecting learning in skill- and technology-intensive industries that should eventually be removed with maturity. These should be cut as part of unfinished business as rapidly as possible irrespective of the commitments to be undertaken by developing countries.

As for the import regime for industrial products in developing countries, the crucial issue is how to reconcile policy flexibility with multilateral discipline. The proposals on the table leave little room not only because they stipulate deep cuts in industrial tariffs in developing countries, but also they require tariff binding and reduction on a line-by-line basis. Such an approach could pose a number of problems not only for developing countries but also for the trading system as a whole.

There are more than 5000 tariff lines in the Harmonized System for customs tariff classification. Even if commitments were to be made for broad categories of products rather than for individual tariff lines, an attempt to shape national commercial policy through multilateral commitments at the lowest

layers of public intervention could pose problems of practicality and potential conflicts that may surpass even those caused by the proliferation of conditionalities attached to lending by the Bretton Woods Institutions. If countries are forced to make commitments which they cannot fulfill without suffering from serious disruptions, they might be inclined to resort to other, less transparent means of import restrictions, thereby creating trade frictions and weakening multilateral discipline. Recent history of international development policy is replete with examples showing an inverse correlation between proliferation of rules and conditions on the one hand, and the degree of compliance, on the other, particularly when rules are set without a full understanding of their consequences.

One way of addressing these difficulties would be to have a fixed life span for the agreements so that they can be automatically re-negotiated after a certain period. This was the case with almost all free trade agreements of the 19<sup>th</sup> century, including the Anglo-French agreement which had a life-time of twenty years, and was not renewed after its expiration. It would represent an important advance over current procedures for the re-negotiation of tariffs. Such an option should be worth considering on its own merits regardless of how tariffs are bound.

Setting maximum (bound) line-by-line tariffs at sufficiently high levels so as to accommodate all contingencies would provide considerable flexibility to developing countries, but it would also render multilateral commitments superfluous. The proposal developed in this paper, binding the average industrial tariff without line-by-line commitments, does not only have the advantage of simplicity compared to a complex system of tariff commitments. It would also reconcile multilateral discipline with policy flexibility since countries would be subject to an overall average ceiling in setting tariffs for individual products. Furthermore, for most countries in the early and intermediate stages of industrial development, it could result in lower average tariffs than would be the case under line-by-line

commitments. In practice it would have the effect of balancing tariff increases with reductions; a country would need to lower its applied tariffs on certain products in order to be able to raise them elsewhere. This would encourage governments to view tariffs as temporary instruments, and to make an effort to ensure that they effectively serve the purpose they are designed for; that is, to provide a breathing space for infant industries before they mature and catch up with those in more advanced economies.

## Notes

- <sup>1</sup> This is a revised and abridged version of an earlier paper, “The WTO Negotiations on Industrial Tariffs: What is at Stake for Developing Countries?”, prepared for and published by the Third World Network. I am grateful to Ha-Joon Chang, Bhagirath Das, Martin Khor, Richard Kozul-Wright, Kamal Malhotra, Jorg Mayer, Chakravarthi Raghavan and Irfan Ul Haque for helpful comments and suggestions. They are not responsible for remaining errors.
- <sup>2</sup> For a detailed discussion of these proposals see Khor and Goh Chien Yen (2004).
- <sup>3</sup> For bound tariffs before and after the application of various formulas see Fernandez de Cordoba *et al.* (2004b).
- <sup>4</sup> These estimates are based on Fernandez de Cordoba *et al.* (2004b).
- <sup>5</sup> For the historical evolution of industrial tariffs in the developed world the classic reference is Bairoch (1993). See also O’Rourke and Williamson (2000); and Chang (2002). For the evolution of tariffs in general see Williamson (2003).
- <sup>6</sup> UNCTAD TDR (1984). There was also a general upward drift in the use of subsidies after the early 1950s (Hufbauer 1983). Shutt (1985) argues that liberalization was an illusion as tariff cuts were offset by a greater resort to market-distorting state interventions.
- <sup>7</sup> On the gunboat diplomacy see Clemens and Williamson (2002b), and the Ottoman predicament Kiray (1990).
- <sup>8</sup> For the distinction between natural and nurtured comparative advantages see Gomory and Baumol (2000).
- <sup>9</sup> Countries such as Finland and Sweden diversified based on their natural resources, but their success in industrialization depended on moving to technology-intensive manufacturing. For a discussion of processing and diversification in timber and iron-related industries see UNCTAD TDR (1996).
- <sup>10</sup> For a discussion of the importance of internal integration in economic development and the trade-offs and complementarities involved between internal and external integration see Wade (2003).
- <sup>11</sup> Vernon’s (1966) product-cycle theory also gives a similar description of shift of production across countries. However, it focuses on the behavior of TNCs and sees trade and FDI as successive stages in production for foreign markets.
- <sup>12</sup> See Argyrous (1996) who distinguishes between low-end and high-end capital goods with the former referring to standard, off-the-shelf equipment, the latter to custom-made machinery built for special purposes.
- <sup>13</sup> This classification based on products does not capture all aspects of manufacturing production. Many technology-intensive products involve labor-intensive processes, such as the assembly of imported electronic parts and components in developing countries participating in international production networks (IPNs). These should appear in the RL category; see Akyüz (2003 and 2005).
- <sup>14</sup> It is also possible to have non-linear paths for tariffs, falling at an accelerated or decelerated rate.
- <sup>15</sup> Since subsidies are substitutes for tariffs in maintaining domestic production above the level that would be possible under free trade, the vertical axis may be conceived as including also the tariff equivalent of subsidies. The horizontal axis could be defined in terms of per capita income rather than time, but the latter is preferred here in order to emphasize the sequence of industries.
- <sup>16</sup> For technology-driven trade, as opposed to endowment-driven trade, see Dosi, Pavitt and Soete (1990).
- <sup>17</sup> Several *ad hoc* theoretical and empirical models have been developed to account for political-economy influences on tariff policy. For a survey see Gawande and Krishna (2003).
- <sup>18</sup> These countries thus run the risk of being squeezed between the bottom and top ends of the markets for manufactured exports, and contribute to a global glut in labor-intensive manufactures and the deterioration of manufacturing terms of trade of developing countries: see Akyüz (2003).
- <sup>19</sup> For predictions of potential benefits of the Uruguay Round see Martin and Winters (1996).
- <sup>20</sup> Brown *et al.* (2001). These estimates do not take into account the kind of adjustment costs discussed in the following section. They thus overestimate the benefits of liberalization. See Dorman (2001) for a critical assessment.
- <sup>21</sup> For a survey of these studies see Anderson (2004).
- <sup>22</sup> Some of the exercises noted above attempt to incorporate “dynamic” effects. For instance in the World Bank (2004)

scenario, trade is assumed to induce productivity growth so that “dynamic” gains would be a multiple of static gains.

- <sup>23</sup> Not all CGE models generate full employment equilibrium. This depends on the assumption about what is called “macro-closure”; that is, how the equilibrium in the product market is attained. While the neoclassical closure gives full employment, under Keynesian closure aggregate demand and supply (or savings and investment) can be brought into equilibrium at less than full employment. For a classification of empirical CGE modeling see Thissen (1998). The estimates surveyed here generally use the GTAP (Global Trade Analysis Project) model developed at the Purdue University, assuming neoclassical competitive equilibrium; see Anderson (2004).
- <sup>24</sup> Bacchetta and Jansen (2003). According to one of the few models, again designed for developed countries, that specifies the adjustment path between steady states and accounts for training costs of unemployed labor, aggregate adjustment costs could reach 90 percent of the comparative statics gains from freer trade even under modest assumptions regarding training costs and the discount factor; see Davidson and Matusz (2001).
- <sup>25</sup> However, as noted above, while tariffs lost their relative importance, other forms of intervention including subsidies, non-tariff barriers and voluntary export restraints, have proliferated in the post-war era. For an attempt to test possible explanations for this reversal, including widespread use of non-tariff barriers, see Clemens and Williamson (2002a).
- <sup>26</sup> According to a study of 63 countries including LDCs and advanced industrial countries, the average tariff is uncorrelated with growth, but countries that focus protection on skilled manufacturing exhibit faster growth than those with higher protection for unskilled manufacturing (which includes several industries classified as RL and LT here) (Nunn and Trefler 2004). Higher protection for unskilled industries is associated with rent-seeking behavior. While this is highly plausible for advanced and even middle-income countries, higher tariffs on RL and LT products in LDCs dependent on primary commodities cannot always be said to reflect the inability of governments to prevent rent-seeking behavior, rather than a rational choice. For the same reason it is doubtful if higher protection for skilled industries in Bolivia, Ghana and Haiti are more beneficial (or less harmful) to growth.
- <sup>27</sup> For tariffs and price distortions in East Asia compared to other ‘interventionist’ developing countries see Bruton (1998), and Wade (2003).
- <sup>28</sup> It is sometimes argued that because of increased participation of developing countries in IPNs organized by TNCs, tariffs are no longer needed for industrial progress. However, working with TNCs promises no more leapfrogging than liberalizing trade or even faster learning (Bruton 1998 and Akyüz 2005). For instance tariffs on imported skill- and technology-intensive parts and components can help encourage TNCs to contribute to indigenous learning of national firms by making greater use of local products. This may indeed be an effective way of increasing the domestic content of production in sectors dominated by TNCs in view of restrictions placed on domestic content requirements through TRIMs. For a discussion of the impact of the rise of TNCs on the ability of developing countries to conduct strategic industrial policy see Chang (2003).
- <sup>29</sup> On the concentration of high tariffs (tariff peaks) in developed countries on such products see Fernandez de Cordoba *et al.* (2004b).

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