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Relevance of 'Policy Space' for Development: Implications for Multilateral Trade Negotiations

**Nagesh Kumar
and
Kevin P. Gallagher**

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Relevance of ‘Policy Space’ for Development: Implications for Multilateral Trade Negotiations

Nagesh Kumar* and Kevin P. Gallagher**

Abstract: This paper makes a compelling case for public intervention for fostering industrial development. We have also summarized evidence that suggests that present day developed countries have extensively employed infant industry protection, industrial policy and performance requirements, soft intellectual property protection regimes, subsidies, government procurement and regional economic integration among other policies in their process of industrialization. Many of these policies have also been effectively and successfully emulated by the newly industrializing economies in East Asia to build internationally competitive modern industries despite the lack of the apparent comparative advantage. A development-friendly outcome of the Doha Round would provide flexibility from the TRIPs and TRIMs obligations for facilitating transfer of technology and building up local capabilities in developing countries besides allowing them adequate space for pursuing infant industry protection in the tariff reduction commitments.

1. Introduction

Development is a process of transforming an economy from concentrated assets based on primary products, to a diverse set of assets based on knowledge. This process involves investing in human, physical and natural capital in manufacturing and services and divesting in rent seeking, commerce, and un-sustainable agriculture (Amsden, 2001, 2-3). Imbs and Wacziarg (2003) have confirmed that nations that develop follow this trajectory. They find that as nations get richer, sectoral production and employment move from relatively high concentration to diversity. They find that nations do not stabilize their diversity until they reach a mean income of over \$15,000. For many years it has also been known that as countries diversify they also undergo a process of deepening whereby the endogenous productive capacities of domestic firms are enhanced through forward and backward linkages (Hirschman, 1958; Krugman, 1995; Amsden, 2001). The question for development and trade policy then becomes: what policies will help facilitate the diversification and development process without conflicting with trade rules or jeopardizing the needs of future generations?

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The answer to this question will differ across the developing world depending on specific “development situations.” The development policies for a small, vulnerable nation such as Haiti will be significantly different from countries like Brazil, India, and China who looking to diversify beyond primary products and light manufacturing to high-tech manufacturing and services based economic growth that develops endogenous productive capacity. With these situations as context, this paper is organized in four parts. After this brief introduction is a discussion of the economic rationale for government intervention in development policy for the 21st century. This discussion is followed by a review of the evidence regarding nations in both the developed and developing world who have used pro-active policies to develop their economies by broadening and deepening their industrial structure while raising the standards of living of their people. The final section reviews our argument: government intervention is economically rational and has been a success. We then close with a few remarks addressing the question: what can be done in the ongoing Doha Round negotiations to preserve the policy spaces still available and retrieve those that have been lost in the earlier rounds?

2. The Rationale for Public Intervention for Development

Nation-states have serious tasks before them in a world of increasing interdependence and globalization. Governments in the developing world need to play an active role in growing their economies—regardless of which of many development situations they may be in. This section of the paper shows that there is a strong economic rationale for developing countries to engage in pro-active policies for economic development. We discuss two key reasons for this. First, for many developing countries the projected gains from trade liberalization are small and elusive. Secondly, there are strong theoretical reasons for government action in the face of the pervasive market failures and technological asymmetries that characterize the developing world today. However, the last part of this section underscores the need to “get the political economy” right on government facilitated development policy.

a. Small Gains and Real Costs

Trade liberalization has been beneficial for many developing countries over the past fifteen years, but the gains from liberalizing remaining levels of protections may be outweighed by the costs. According to the World Bank,

since 1997, China’s entry into the WTO, the expansion of the European Union, and many of the preference schemes have yielded \$440 billion in benefits for developing country. However, new projections show from this point on that if the world fully liberalized all markets—a highly unlikely scenario for years to come—projections of developing country gains would only be \$90 billion, or 0.8 percent of developing country GDP (Ackerman, 2005; Anderson et al 2005a; Anderson, 2004).

More realistically, the World Bank estimates that the benefits from a “likely” outcome of the Doha negotiations will be approximately \$96 billion, with 70 per cent of the gains going to developed countries. Developing country gains are projected to be approximately \$16 billion, and amount to less than a penny-a-day per capita—less than 0.2 percent of GDP (see table 1). Even projections that include services liberalization yield only an additional \$6.9 billion for the developing world in a likely scenario of fifty percent reduction in services trade barriers (Francois, 2003). These small gains go a long way in explaining why there is a lack of urgency on the part of developing countries to finish the round as it is currently constructed.

These benefits would be met with significant costs. Using the same model as the World Bank, UNCTAD has published estimates of projected tariff revenue losses under the NAMA negotiations of the Doha Round for a Swiss Formula scenario which resembles the likely Doha outcome—a

Table 1: Doha Benefits vs. NAMA Tariff Losses

	“Likely” benefits*	Nama Tariff Losses**
Developed	79.9	38.0
Developing	16.1	63.4
Selected developing regions		
Middle East and North Africa	-0.6	7.0
Sub-Saharan Africa	0.4	1.7
Latin America and the Carribean	7.9	10.7
Selected countries		
Brazil	3.6	3.1
India	2.2	7.9
Mexico	-0.9	0.4
Bangladesh	-0.1	0.04

*Anderson and Martin (2005), *Agricultural Trade Reform and the Doha Development Agenda* World Bank

** De Cordoba and Vanzetti (2005), *Coping with Trade Reforms*. UNCTAD, Table 11.

coefficient of 10. These tariff revenue losses are shown with the World Bank benefit projections for the world and various regions and countries in Table 1.

While there is evidence that shifting from trade to consumption taxes can be better for welfare, in the real world such taxation schemes cost political capital and in some cases may not even be possible. Indeed, it has been shown that tariffs may be preferable in developing countries with large informal sectors that cannot be taxed efficiently (Emram and Stiglitz, 2004). Many developing countries rely on tariffs for more than one quarter of their tax revenue. For smaller nations with little diversification in their economies, tariff revenues provide the core of government budgets. According to the South Centre, in the Dominican Republic, Guinea, Madagascar, Seirra Leone, Swaziland, and Uganda tariff revenues are more than 40 percent of all government revenue in their countries (South Centre, 2004).

Tariff revenue losses will be significant and even outweigh the benefits in some cases (see Table 1). Total tariff losses for developing countries under the NAMA could be \$63.4 billion or almost four times the benefit. Africa, the Middle East, and Bangladesh—areas with large informal economies and where tariff revenues are key for government revenues—are predicted to be net losers in terms of benefits, they will also suffer even larger losses in tariff revenues.

In this table only in Brazil are the benefits larger than the tariff revenue losses. However, while Brazil may gain \$3.6 billion it will still lose \$3.1 billion in tariff revenue. This will be the result of increased competition from imports into heavy industry. Such competition will be coupled with significant urban job losses in those industries. Although there may be modest job creation in Brazil's soy country, few of those displaced workers will opt to move to the countryside. What's more, the Brazilian government will be hard pressed to tax the left over benefits that will flow to soy agribusiness to compensate industrial workers for their losses.

In a recent issue of *Foreign Affairs*, Jagdish Bhagwati (2005) commented that the more attention needed to be paid to adjusting to tariff revenue losses in developing countries:

If poor countries that are dependent on tariff revenues for social spending risk losing those revenues by cutting tariffs, international agencies such as the World Bank should stand ready to make up the difference until their tax systems can be fixed to raise revenues in other, more appropriate, ways.

At present even the most ambitious “aid for trade” packages come nowhere near filling the gap in lost tariff revenue predicted by UNCTAD.

b. Governing Markets and Economic Theory

Given that the likely gains from future trade liberalization will be relatively small, it is of vital importance that the policy space for economically justified government interventions is maintained in trade negotiations. As mentioned earlier, economic development entails product diversification, industrial deepening, technological sophistication, and the development of endogenous productive capacity. However, the integration of world markets has accentuated many of the pervasive market distortions in the world economy. National policy is needed and justified to “correct” these distortions and create an enabling environment for productive development in an open economy.

Developing countries will have various development policy objectives depending on the particular level of development. While it is in the interest of all developing countries to diversify their economies from primary product production to the production and export of products with high knowledge based assets, different countries will be at different stages of that process. Some smaller or more vulnerable economies will have a need to reduce their dependence on a small group of low-value added commodities and diversify their export base. Others may seek productivity increases in specific sectors, regions or social groups. Medium income nations with an existing but albeit less advanced set of knowledge based assets may stand ready to foster the transfer of technology to national firms and eventually promote more domestic investment in higher value added production. All of these aims are justified goals for economic development, but the persistence of market failure makes them more difficult to achieve.

The recent wave of regional, bilateral and multilateral trade agreements has integrated vastly different economies at vastly different levels of development. Developed and developing countries alike are rife with market failures. Integration, therefore, has led to the globalization of market failure—in other words, economic distortions—in many cases. Targeted and disciplined government interventions can correct these distortions and make markets work more efficiently. Economic theory states that when the market fails, policy instruments should be deployed to correct the distortions created by private markets (Lipsey and Lancaster, 1956). This theory is referred to as the “second best” theory, and states that government policy can offset market failures. Economists have also argued that the WTO has focused on reducing tariff rates, rather than economic distortions—reducing rates can simply maintain existing distortions and even exacerbate such distortions (Kowalczyk, 1989; Kowalczyk, 2002). In such an environment, government intervention used in a careful manner are one of a myriad tools that can work as second best solution to the distortions occurring through trade liberalization.

There are market failures of too numerous of a nature to discuss fully in this paper. However, five key limits of private markets plague nations seeking to catch up to the developed world: coordination and information externalities, dynamism and technological change, human capital formation, and environmental externalities. Table 2 lists these alongside various policy instruments that can be used to correct them. These policy instruments fall under the purview of various agreements under the WTO and are listed in the third column of the table. The specific extent to which such instruments have been used by developed and developing countries respectively are the subject of the subsequent sections of this paper.

Diversification by definition can mean the creation of whole new industries in an economy and sometimes may require linking new industry to necessary intermediate goods markets, labor markets, roads and ports, and final product markets. For fifty years economic theorists have demonstrated how markets fail at “coordinating” these efforts.

Coordination failures and the asymmetric distribution of world income has led economists to argue that the nation state should provide “big push” investments to build scale economies and enhance the complimentary demand and supply functions of various industries (Nurkse, 1952; Scitovsky, 1954; Chang, 2002; Rodrik , 2005).

While historically such efforts took the form of large industrial planning efforts and infant industry protection, more recently industrial clustering has taken place where nations focus on the development of specific technologies or sectors in specific geographical regions—especially when facing scale economies. Clustering and export processing zones have been created to attract foreign firms, link them to domestic input providers, and serve as exporting platforms. To support these efforts nations (most successfully in Asia) provide tax breaks and drawbacks to foreign firms but required them to source from domestic firms and transfer technology. In tandem, the state provides an educated labor force, public R&D, tariff protection, and subsidized credit to support the domestic firms, and provided export subsidies to the domestic firms until they could produce products at the global technological frontier (Murphy et al, 1989; Amsden, 2001; Weiss, 2005).

Markets also fail at providing the socially optimal amount of “information” to producers and consumers as well—such phenomena are termed information externalities. Technological experimentation through research and development and the inquisitive process of entrepreneurship involve the a process of “self-discovery” regarding which economic activities and product lines will be the most appropriate for a domestic economy (Hausman and Rodrik, 2002; Rodrik, 2005). These experimenters who tinker with establish or invent new technologies to adapt to local conditions provide enormous social value to a national economy but solely bare the course of failure (and success). These entrepreneurs need to be compensated for their experimental nature through subsidization of exports and credit, temporary tariff protection, patent rewards, and marketing support. Without such incentives, entrepreneurs will be more apt to invest in historically profitable industries in the primary product sectors and so forth (Hirschman, 1958; Gerschenkron, 1966; Krugman, 1995).

Table 2: Market Failure, Governing Markets, and the WTO

Market Failure	Policy Instrument	Agreement
Coordination failures tariff sequencing	Export subsidies GATT	SCM
infrastructure provision information externalities subsidized credit tariff sequencing	Tax drawback clustering GATS administrative guidance SCM GATT	
technological dynamism	subsidized entrepreneurship Selective permission for patents tariff sequencing Tech transfer requirements Joint Ventures Public R&D TRIPs	SCM TRIPS WTO TRIMs TRIMs
Compulsory licensing	Selective permission for patents	TRIPs GATT
Government procurement Human capital formation	Public education Employment of local personnel Movement of people Taxation to reduce negative externalities Subsidies to increase positive externalities	TRIMs, GATS GATS GATT SCM
Environmental Externalities		

Related to coordination and information externalities is that trade liberalization and comparative advantage tends to produce static gains but make dynamic gains through technological change more elusive. The static models of the gains from the Doha round suggest that Brazil should dismantle its industrial sector in favor of specializing in soy and meat production, that India should de-emphasize services and heavy manufacturing in favor of textile and apparel specialization (Ackerman, 2005; Anderson, 2005). These models, if deployed twenty years ago would have told South Korea and China to focus on rice production. However, following the lead of Japan, the United States, and Europe before them, many nations in East Asia and Latin America fostered more diversified and higher value added sectors over time (Okimoto, 1989; Chang, 2002b). If South Korea and China had relied on comparative advantage we might not be driving Kias and Hyundais, using Haier appliances or typing on Lenovo laptops!

In enabling the technological capacity of new industries, markets do not give the correct investment signals when there are high and uncertain learning costs and high levels of pecuniary externalities. In other words, technological dynamism that leads to diversification is not guaranteed by market reforms alone. For many of the reasons described earlier: weak capital markets, restrictive intellectual property laws, lack of information, and poor coordination, imperfect competition and the need for scale economies, under-investment in technologically dynamic sectors can occur (Arrow, 1962; Nelson and Winter, 1982; Lall, 2005). Historically, to correct for these market failures nations have encouraged joint venturing with technological transfer agreements with foreign firms to learn technological capabilities, in addition they have invested heavily in higher education and publicly funded research and development. What's more, nations have selectively loosened intellectual property rules to allow for learning and supported innovative firms through government procurement, export subsidies, subsidized capital, and tariff protection (Amsden, 2001; Lall, 2005).

Although mentioned in each of these previous examples, human capital formation is also essential for dynamic economic growth and diversification. Once again, private markets fall short of supplying human capital at a socially optimal level. There are numerous arguments why markets undersupply

education and that governments should intervene to increase the supply of educated workers. Basic literacy and education has positive externalities such as improved health and better participation in democratic processes—in other words the social rate of return on education is higher than personal investment. With respect to learning in private firms, firms may underinvest in the training of their workers because of fears of high labor turnover (Rodrik, 1992). East Asian tigers—like developed countries before them—spent a great deal of effort providing education and training to their people. This was done by spending a significant amount of funds on education (including providing scholarships to obtain PhDs in developed countries), clustering schools in export processing zones, requiring that foreign firms hire nationals and train them on the job, and subsidizing training programs in domestic firms (Kim and Nelson, 2000; Amsden, 2001).

Finally, economies operate as sub-systems of encompassing ecosystems that provide matter and energy that is transformed by the economy and re-deposited into ecosystems as waste. Government intervention in cases of negative environmental externalities is often a function of the need to eradicate negative externalities from the production and consumption processes. Some goods and services are overproduced because they do not reflect the true social costs of production. Such is the case of highly polluting fossil fuel energy sources and means of transportation, as well as other sources of pollution. Prices do not reflect the costs to human health and the environment. When one country that “internalizes” its externalities through taxes or subsidies in second best situations liberalizes trade with a country that does not enact such policies, there can be an incentive to overproduce in the nation without those policies (Baumol and Oates, 1988).

What is often the case is that taxes from “environmental bads” are used to subsidize environmental goods. Often times, the revenue from environmental taxes is transferred to affected communities or used to fund research, development and deployment of alternatives. In developed countries, the subsidies for alternative energy are often financed through fossil fuel taxes (Hansen et al., 2001). Subsidies also help to internalize positive environmental externalities, such as the public goods aspects of providing environmental services. Subsidies to small producers providing positive environmental services

in these markets are extensively used to correct such market failures. Rural Mexican and Central American coffee growers provide vital ecosystem services in the form of water and soil conservation and purification. Governments have set up small subsidy programs to keep small coffee farmers in global export markets (Rosa et al., 2004; Calo and Wise, 2005).

c. Getting the Political Economy Right

This section of the paper has made the case that developing countries should engage in pro-active government policies to facilitate the diversification and deepening of economic activity. The rationale is twofold. First, recent estimates of the gains from proposed trade liberalization are relatively small for many developing countries and may lead to less diversification, not more. What’s more, there are many adjustment costs associated with liberalization that are not being adequately addressed in the international arena or in domestic contexts. The second rationale is that the absence of government “corrective” policies may result in sub-optimal allocations of economic resources in the face of the many market failures that are pervasive in the world economy. While there is a strong theoretical justification for pro-active government policy, development success takes much more than the proper rationale and proper policies. Development success stories from the twentieth century all struck a unique blend between state and markets—they got the *political economy* of industrialization right.

Essentially nations have a choice to either further liberalize trade or to promote learning economies by government intervention. Figure 1 presents this choice (as outlined by Amsden, 2001). Developing countries are at point A on the $(W/Y)_1$ curve. They can move to point B by liberalizing trade. But here they will have lower wages and be less productive than developed countries. Moving from A to C can result from subsidizing learning through pro-active government policy. We argued above that moving from A to B may result in small gains with real costs. We also argued that persistent market failures and the need to catch up are the rationale to attempt to move from A to C.

Subsidizing learning or cutting real wages. L = labor; Y = output; W/L = real wage per worker; W/Y = unit labor costs. Unit labor cost loci are rectangular hyperbolas, the product of real wage and labor-output ratio. They, therefore, are constants.

Following such a path has been highly criticized, for four reasons. First, although economists acknowledge that there is a strong rationale to correct market failure, there is a consensus that says that the “correction” should occur as close to the market failure as possible and therefore that trade policy is an inefficient mechanism for correcting market failures. In other words, even though many economists will acknowledge that market failures justify government intervention, a valid criticism is that trade policies are too far removed from the market failure to be effective. Trade policy gets to the problem in an indirect manner (Rodrik, 1992). Second, governments can be pathetic in picking “winners” for industrial policy. Many governments have tried to adopt pro-active policies and have failed miserably—in other words meeting market failures with government action often leads to government failure. Governments have been criticized for not being able to pick winning sectors to focus on. Indeed, there are many examples of governments picking “losers”. South Korea and Taiwan are

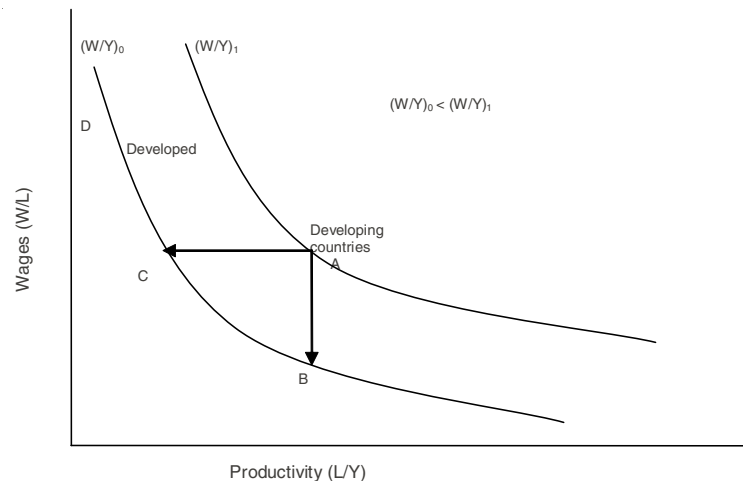
often cited as success stories but Indonesia, Nigeria, and Brazil have had failures that have received relatively less attention in scholarly circles. (Burton, 1983; Evans, 1995; Kohli, 2005). In addition, subsidization and government involvement has been shown to accentuate “rent-seeking” behavior that make it additionally difficult for developing country governments to let go of projects that aren’t going well or that have already reached maturity (Krueger, 1996).

These critiques are quite valid. Of course, without the proper policies in place, government intervention can create more problems than they correct for. However, the most successful cases (discussed in the next section of this paper) in large part circumvented these problems because governments by designing policies where corrective instruments were indeed close to market failures, where state actors were “embedded” in the private sector and where the state enforced discipline on the private sector.

Although trade policy has traditionally been viewed as not the most economically optimal arena to address market failure, it may be appropriate for two reasons. First, because trade liberalization in the face of persistent market failure can actually “globalize” or accentuate market failure and therefore trade policy is the closest to the market failure. Take for example, high technology electronics. This industry has become more concentrated than the world oil industry at its cartel peak, despite declining prices. For hard drives, five firms account for 85 percent of sales, in personal computers the top four firms in 2004 control 44 percent of the worldwide market—up from 27 percent in 1996 (Ernst, 2004). “Breaking in” to highly oligopolistic markets is hard to do. The only successful case has been ACER computers from Taiwan, which had high tariffs, restrictions on foreign investment, and government subsidized credit and learning (Amsden and Chu, 2003).

To circumvent the rent-seeking problem, political scientists have shown that successful industrializers have had states that were “embedded” in the private sector while maintaining “autonomy” from sectional elite interests seeking rents. State agencies that are charged with correcting market failures have to maintain constant communication and input with the private sector

Figure 1: Subsidizing Learning vs. Trade Liberalization



Essentially nations have a choice to either further liberalize trade or to promote learning economies by government intervention. Figure 1 presents this choice (as outlined by Amsden, 2001). Developing countries are at point A on the $(W/Y)_1$ curve. They can move to point B by liberalizing Subsidizing learning or cutting real wages. L = labor; Y = output; W/L = real wage per worker; W/Y = unit labor costs. Unit labor cost loci are constants.

(Evans, 1995). Perhaps most importantly, the problem of picking winners problem has been circumvented by having a good deal of discipline for private actors. Alice Amsden (2001) has referred to the need for “reciprocal control mechanisms. A control mechanism is “a set of institutions that disciplines economic behavior based on a feedback of information that has been sensed and assessed” (Amsden, 2005). For the East Asian success stories, the key principle behind their use of control mechanisms was “reciprocity”:

Reciprocity disciplined subsidy recipients and thereby minimized government failures. Subsidies were allocated to make manufacturing profitable—to convert moneylenders into financiers and importers into industrialists—but did not become giveaways. Recipients of subsidies were subjected to monitorable performance standards that were redistributive in nature and result-oriented. The reciprocal control mechanism thus transformed the inefficiency and venality associated with government intervention into collective good (Amsden, 2005: 222).

In other words, firms have performance requirements that when they aren’t met are no longer supported. The most successful industrializers were able to abandon projects that were not performing whereas others were perpetuated because bureaucrats became hijacked by business interests who became dependent on the state. The next section discusses how well such performance requirements and other measures performed in developed and developing countries.

3. State Intervention for Development: Lessons from Experiences of Developed Countries

The previous section has highlighted the importance of state intervention in the process of development. The history of economic development suggests that present day developed or matured economies have extensively employed a number of policy instruments such as protectionist trade, industrial and IPR policies that are not available to present day developing countries. In this section, we summarize evidence on use of some of these policy mechanisms by developed countries and newly industrializing countries in the process of their development.

The focus here generally will be on those instruments of state policy that are proscribed or are actionable under the multilateral or regional trade rules.

a. Protectionist Trade Policy

Developed countries are seeking ambitious tariff reductions in the tariffs rates applicable in developing countries through multilateral trade negotiations. This led to developing countries accept commitments to bind 61 per cent of their imports compared to 13 per cent earlier in the Uruguay Round (see RIS 2003). In the ongoing Doha Round, developed countries are seeking an ambitious tariff reduction in developing countries under the negotiations on non-agricultural market access (NAMA) through application of a non-linear formula. By pushing developing countries to accept commitments to bring down their tariffs to very low levels, developed countries are trying to take away the policy space that developing countries may need to protect and nurture their infant industries. This policy space developed countries have themselves used extensively for their own industrialization. European countries, the US and Japan have employed high tariffs extensively to protect their infant industries in the early phases of their development and liberalized their trade regimes only their industries gained competitiveness. As Bairoch (1993, p. 16) points out, protectionism was the rule, free trade the exception during the industrialization of today’s mature economies. Wade (2003, p. xv) finds that ‘almost all now-developed countries went through stages of industrial assistance policy before capacities of their firms reached the point where a policy of (more or less) free trade was declared to be in the national interest.’ Thus, ‘Britain was protectionist when it was trying to catch up with Holland. Germany was protectionist when trying to catch up with Britain. The United States was protectionist when trying to catch up with Britain and Germany, right up to the end of the World War II. Japan was protectionist for most of the twentieth century up to the 1970s, Korea and Taiwan to the 1990s (Wade, op.cit. 2003).’ Box 1 shows how the champion of free trade today i.e. the US has had one of the most protectionist trade regime in the world during the period of its industrialization that continued upto Second World War.

Box 1: Infant Industry Protection in the US

The US has been far more protectionist in the period of its industrialization than perhaps any other country and was indeed described as “the mother country and bastion of modern protectionism” (Bairoch 1993, p. 30). From the beginning of the 19th century until the 1840s its average tariffs varied between 20 and 50 per cent, while its industrial tariffs were as high as 40 per cent in 1820, a level which was generally maintained until the 1840s. 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 per cent of the United States government revenue. 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. In the United States there was a brief easing of tariffs around the First World War, before they were raised again to exceed 35 per cent in the mid-1920s, and 48 per cent 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. Chang (2005) observes that ‘between 1816, when it first put up high industrial tariff rates, and the end of the Second World War, the United States had one of the highest average tariff rates on manufacturing imports in the world – usually at around 40 per cent and rarely falling below 25 per cent. Given that the country enjoyed an exceptionally high degree of “natural” protection due to high transportation costs at least until the 1870s, when steamships became common, we can say that the United States industries were the most protected in the world for over a century until the Second World War’.

To put the US protectionism in perspective, one may observe that at the end of the 19th 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 per cent, compared to 8.1 per cent in developing countries and 13.6 per cent 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 19th century), its average tariff was twice as high. The heavy protection accorded to its industries combined with natural protection provided by geographical distance enabled the US to industrialize and grow rapidly. Evidence shows that throughout the 19th century until the Second World War, not only did the United States have the highest tariffs, but also it was the fastest growing economy.

Sources: Based on Chang 2005, and Akyuz 2005, who have documented extensive evidence on the developed country protection from various sources.

Protectionism in the developed countries has not been limited to only pre-War period. Most of the developed countries adopted the Multi Fibre Agreement (MFA) that enabled them to impose quantitative restrictions on imports of textiles and clothing. The MFA quotas have finally been phased out under the WTO’s Agreement on Textiles and Clothing (ATC) by 31 December 2004. However, they continue to still employ high peak tariffs on select labour intensive products such as textiles and clothing, leather goods, among others (see Table 3).

Different developed country governments have also used protectionist policies such as tariffs and non-tariff barriers to encourage the tariff jumping type of FDI inflows (see Caves, 1996 for a review of evidence).

b. Performance Requirements and Selective FDI Policies

The WTO Agreement on TRIMs (Trade Related Investment Measures) has taken away the ability of governments to impose some types of performance requirements on foreign investors. Among the specific types of performance requirements, local content requirements have been employed by most of the developed countries at one time or other (see Kumar 2005, UNCTAD 2003, for illustrations). In particular, governments have employed LCRs in auto industry to promote backward integration and localization of production of value added. For instance, when Ford Motor Company took over a minority stake in the UK in 1960, ‘a string of conditions on exports, earnings retentions, employment and import policies were imposed’ (cited in UNCTAD 2003: 266). More evidence on the use of PRs by developed countries in the post-World War II period is available. Countries like Australia, Canada, France, Japan, among others have made extensive use of PRs (Safarian 2002, WTO/UNCTAD 2001). Australia (and New Zealand) imposed 50 per cent domestic ownership requirements in natural resource projects, and also employed offsets policy under which larger government contracts required new domestic activity of 30 per cent of their import content. Canada enacted a Foreign Investment Review Act (FIRA) in the early 1970s under which an extensive set of PRs (called undertakings) were imposed to ensure ‘significant benefit’ is reaped by Canada from the operations of FDI (See Box 2). Norway and Sweden also imposed PRs

Table 3: Post-UR Tariffs in Quad Countries on Select Items of Exports from Developing Countries¹

Product description	EU	Japan	USA	Canada
Agricultural products	113	220*	66**	241
Milk (>3% fat)	55-66	160-280*	55-85**	243
Yogurt and Butter	69	300-620*	63-80*	238-300
Cereals and Preparat	32-84	70-900	0-2	0
Groundnuts, shelled	0	470	1322	0
Cane sugar, raw and white	71-73	85-100*	77-90**	7
Grape juice	215	30	7-90**	10
Coffee preparations	8	130	27**	0
Tea preparations, essence	0	100	91**	0
Smoking tobacco	52	30	91**	5
Industrial Products	12	8	25	14
Woven fabrics of >80% combed wool	11	22	16	18
Babies garments, knitted or croch synthetic fibre	11	11-Sep	32	18
Men's shirts, woven, of cotton and man made fibres	11	7	20-28	17-18
Waterproof footwear	13	27	38	20
Footwear with leather uppers	6	140	10	18
Ceramic tableware, kitchen-ware, glassware, etc.,	8 to 9	0	28-29	0

Source: RIS World Trade and Development Report 2003 p. 20.

1. Post-Uruguay Round MFN rates above tariff quotas; or applied MFN rates (1998-2000) or general GSP rates, if lower.

*Including additional amounts levied by the Government, mark-ups, levies.

**Progressive additional safeguard duties are levied if import prices are below the level indicated in the tariff.

for natural resource concessions. France has imposed an extensive set of PRs on foreign investors depending upon the nationality of the investor, economic growth effects including employment, regional balance and promotion of local R&D; competition to French enterprises, and on balance of payments etc. Japan also imposed PRs at the time of approvals depending upon contribution to technology development, exports or import substitution, competition to Japanese industry, 50 per cent foreign ownership and required the president of the joint Venture to be a Japanese.

Box 2: Foreign Investment Regulation and Performance Requirements in Canada

Canada had evolved an extensive set of regulations and performance requirements to make FDI work for its development and deepen the industrial structure of Canadian economy. In the late 1950s and later a series of sectors were partially or wholly closed off to foreign ownership, culminating in a Foreign Investment Review Agency (FIRA) in the early 1970s and a major new sectoral initiative in the National Energy Program (NEP) in 1980. Both political and economic concerns lay behind these policies. At the political level U.S. extraterritorial law and policy in a number of sectors was widely resisted, as was foreign ownership in sensitive sectors such as communication and some resources. The entire question of FDI became linked with the problems of developing distinctive Canadian policies in a number of areas when trade, communication, military and other links with the United States were developing rapidly. In terms of microeconomics, there were concerns that substantial reliance on FDI was leading to a "truncated" or dependent form of development with weak R&D and manufactured exports combined with strong imports of high value-added products.

Part of this effort was to increase Canadian capacities to undertake investment, involving a wide array of policies such as improvements to technological capabilities and institutions such as the Canada Development Corporation. Part of the effort, both before and after 1970, was to close a sector in part or whole to foreign ownership, sometimes, but not always, with an exemption for existing firms. Where partial foreign ownership was allowed in such sectors, an effort was made to assure that effective voting control remained in Canada. Tax incentives by the federal government encouraged firms more generally to issue 25 percent or more of their shares to the public. There was limited success with this latter program.

The FIRA and the NEP formed two major and somewhat unusual policy instruments. From 1974-75 onwards review of inward FDI in new investments and acquisitions was required, with some exceptions. The investor had to satisfy the government that significant benefit would occur to Canada as determined by five factors:

- The effect of the investment on the level and nature of economic activity in Canada, including employment, resource processing, domestic sourcing and exports.
- The degree and significance of Canadian participation in the business enterprise and in the industry sector to which the enterprise belonged.
- The effect on productivity, industrial efficiency, technological development, innovation and product variety in Canada.
- The effect on competition in Canada.
- The compatibility of the investment with national industrial and economic policies, taking into consideration the industrial and economic policy objectives of the province(s) likely to be significantly affected by the investment.

The investor was required to note the benefits to Canada by way of a series of 'undertakings' (or performance requirements) in the proposal. The agency's job was to secure significant benefit to Canada, and it did not hesitate to bargain in order to improve the undertakings. Once the undertakings were put into writing by the Minister in a letter granting entry, they had the force of law. The agency had to survey specific undertakings annually until they were met. It used random and

Box 2 continued

detailed audits on the reports made in this connection by the firms. The FIRA had a significant enforcement unit. Legal proceedings could be instituted if the foreign firm failed to file an application, or to meet the condition associated with entry, or to comply with an order of disallowance. Legal proceedings were, in fact, begun against a few firms.

Meanwhile, external criticism of the NEP also spilled over to the FIRA. In addition, the United States secured a ruling from the GATT that undertakings given to the FIRA contradicted treaty obligations with regard to imports, and the U.S. Congress enacted a bill authorizing the President to challenge export requirements as a condition of investment. In 1985, with a new government, Investment Canada replaced the FIRA. Review became limited to larger acquisitions, although it continues for all cases in the cultural sectors and energy, and recommendations no longer go automatically to the cabinet-level. New investments require only notification. With the Canada-U.S. Free Trade Agreement of 1989 each country agreed not to require new PRs but existing laws and regulations could continue. Takeover review for U.S. acquisitions was to be raised from \$5 million to \$150 million, except for cultural industries and upstream oil and gas. National treatment was to be developed for each country's financial sectors. The NAFTA imposed a string of restrictions on PRs in Article 1106, far more, for example, than those in the TRIMs agreement.

Source: Safarian (2002).

Many of the developed countries have imposed LCRs in auto industry until recently. For instance, Italy has imposed 75 per cent local content on Mitsubishi Pajero, US has imposed 75 per cent rule on Toyota Camry and UK 90 per cent on Nissan Primera (Sercovich 1998). Australia imposed 85 per cent local content rule on motor vehicles until 1989 (Pursell 1999).

In more recent times, industrialized countries in the EU, for instance, have used neo-protectionist or gray area measures such as voluntary export restraints (VERs), quotas, screw driver regulations, and anti-dumping measures to encourage foreign-based MNEs, especially from Japan, to increase the domestic content in their sales (see e.g. Moran, 1998). In the US, the Exxon-Florio Amendment to the Trade Act authorized the President to block an acquisition from abroad if it posed a threat to national security. Under this Amendment, the Government rejected a number of proposals and imposed performance requirements on a number of others. For instance, Monsanto sold its silicon wafer division to a German company after the buyer agreed to keep production and R&D facilities in the US (Safarian 2002 as included in UNCTAD 2003).

Therefore, developed countries have extensively employed investment measures to deepen their industrial structure—measures that are denied to developing countries under the provisions of the TRIMs Agreement.

c. Intellectual Property Protection Policy

Most of the countries have changed their regimes at different stages of economic development has changed. Developed countries of today have used lax intellectual property rights to benefit from innovations in other countries during the process of their industrialization. They started demanding stringent IPR standards from others when they emerged as the source countries of innovations to provide monopoly rights for their enterprises to exploit the inventions. The US' case is typical in this regard. The US has been seeking to strengthen IPR protection through bilateral negotiations and through unilateral sanctions under the Super 301 Priority Watch Lists before using multilateral trade negotiations in the Uruguay Round to harmonize the IPR protection under the TRIPs Agreement. However, the history suggests that the US has followed discriminatory IPR regime in the period of industrialization. Between 1790 and 1836, as a net importer of technology, the US restricted the issue of patents to its own citizens and residents. Even in 1836, patents fees for foreigners were fixed at ten times the rate for US citizens. Similarly, in Switzerland in the 1880s, industrialists did not want a patent law because they wished to continue to use the inventions of foreign competitors. When Switzerland did eventually adopt a patent law under intense pressure from Germany, it did so with various exclusions and safeguards such as compulsory working and compulsory licensing which enabled the government to enforce production in Switzerland by one means or another, if it so desired. In addition, chemicals and textile dyeing were excluded from patent protection (CIPR 2002: 18-20). Similarly the East Asian countries such as Japan have extensively used weak IPR regimes to facilitate absorption of foreign inventions (see Box 3).

d. Subsidies and Investment Incentives

Under the WTO Agreement on Subsidies and Countervailing Measures investment incentives have been phased out except for low income countries with a per capita income upto US\$ 1000. However, industrial subsidies (SCM) all different types of subsidization measures such as export subsidies, have been widely practiced in the

Box 3: IPR Protection in Japan

Japan is known to have greatly benefited from intellectual property generated in other developed countries in the early stages its development. In fact the two international treaties on the IPRs viz. the Paris Convention (1883) for industrial property and the Berne Convention (1886) for copyrights were negotiated, in part because of frustration over alleged infringements in the 'newly industrialising countries' of the day, such as the United States and Japan. Furthermore, in Japan the patent protection has been designed with an ultimate objective of contributing to the 'development of industry' and not as an end by itself. In tune with this objective it has contained several features that have helped the absorption of spillovers of foreign inventive activity by domestic enterprises. For instance, although Japanese Patent System (JPS) was established in 1885 by the Patent Monopoly Ordinance that was replaced by the Patent Ordinance of 1888, the food, beverage, pharmaceutical products and chemical compounds were excluded from the scope of patent protection until 1975 to facilitate the process innovations. In 1905 the Utility Model Law was introduced to provide protection to adaptations or improvements over the imported machinery or equipment by domestic inventors that were considered too minor to be patented primarily. As many as 99.9 per cent of utility models have been granted to Japanese nationals over the 1905-79 period. Furthermore, the JPS provides for protection of industrial designs which only needed to demonstrate novelty and not inventiveness. The utility models and industrial designs have allowed Japanese firms to receive protection on technologies that were only slightly modified from the original invention. JPS also employs the first-to-file principle rather than the first-to-invent principle incorporated in the US law, pre-grant disclosure that lays open or publishes the patent applications for inspection or opposition for eighteen months, provides for compulsory license if a patent has not been worked (i.e. used in manufacture) in Japan continuously for more than three years or in public interest, and (until 1988) required the patent applications to be limited to a single narrow claim. All these features have been designed to favour adaptations by domestic enterprises. That they have been used to encourage technology adaptations by domestic entrepreneurs is clear from the fact that in 1980 Japan had awarded 49000 utility models to its nationals compared to just 533 to foreigners. Similarly Japanese nationals were granted 31000 industrial design patents vis-à-vis 600 to foreigners. There have also been complaints of discrimination by JPO and foreign applicants appear to face longer pendency periods than do domestic applicants in Japan.

Studies have found that the above features namely utility models, design patents, compulsory licenses, first-to-apply, narrow claims, among others, that make JPS considerably weaker than the US patent system, for instance, have facilitated absorption, transfer and diffusion of technology by allowing reverse engineering and contributed to the TFP growth during the period 1960-93. The scope of patent system was expanded to cover chemical and pharmaceutical products only in 1975 by when Japanese enterprises had developed their technological capability adequately and hence needed protection for their own innovative activity. In October 1970 the Japan Patent Association surveyed its member firms on whether they favoured introduction of chemical product patents. About 60 per cent of the respondents favoured product patents and only 9 per cent opposed. With this strong support from the industry, the Japanese government began the process of amending Japanese patent law to provide for product patents for chemicals and pharmaceuticals. The amendment was adopted by the Diet in May 1975 and became effective from January 1976.

Source: Kumar (2003) and sources cited therein.

developed countries to give to their enterprises a competitive advantage. Examples include large sums of subsidies doled out to investors by governments in developed countries. The examples include US\$ 484 million given to Ford in Portugal in 1991 for creating 1900 jobs or \$ 300 million to Mercedes-Benz in Alabama in 1996 for creating 1500 jobs (see Table 2 for select cases). Because developing countries lack the capacity to provide matching financial subsidies, investment incentives do tend to distort the normal pattern of location of investments in favour of industrialized countries.

The billions of dollars or euros given in subsidies to Boeing and Airbus by the US government and the EU countries have been well known. The European governments have been given the so-called 'launch aid' to Airbus while Boeing gets huge subsidies from the US government for R&D projects. The aircraft subsidies dispute has been one of the biggest feuds at the WTO dispute settlement.

Another dispute running at the WTO dispute settlement concerned the policy of the US government to pass on the anti-dumping duties collected from the foreign exporters to the US enterprises under the Byrd Amendment, that has since been deemed illegal by the WTO.

The European Community Structural Funds consist of over 540 programmes including areas such as agriculture, R&D, industry, among others, besides several regional funds such as European Regional Development Fund, European Social Fund, the European Agriculture Guidance and Guarantee Fund. The EU has allocated a total of euro 195 billion placed at the disposal of the Structural Funds for the period 2000-06, a figure that accounts for approx. one third of total budget (Corrales-Leal and Sugathan 2003).

Export Subsidies to Manufacturers

Although export subsidies have been phased out under the provisions of the SCM Agreement of WTO, some developed countries continue to provide substantial export subsidies to their enterprises. The United States, for instance, has been giving subsidies worth US\$ 4 billion every year to large

American exporters under the Foreign Sales Corporation (FSC) Programme. The European Union had recently brought a complaint against the US to the Dispute Settlement Undertaking of WTO which deemed these subsidies as illegal. The EU has warned that it could retaliate with as much as \$4 billion in trade sanctions unless the US makes significant progress towards repealing the FSC scheme by the end of 2003. Under EU pressure the US is now proposing to repeal the FSC. However, the subsidies to US enterprises are likely to increase if the proposed scheme promising to cut taxes for a broader range of US companies by US\$ 120 billion over the next ten years comes into effect. The proposed new tax cuts will benefit the companies that manufacture in the US with accelerated depreciation, extended R&D tax credit and a lower tax rate for smaller companies (RIS 2003).

R&D Subsidies

While developed countries have sought to phase out of all subsidies under the Agreement on Subsidies and Countervailing Measures (SCM), R&D subsidies up to 75 per cent of the costs of industrial research or 50 per cent of the cost of pre-competitive development activity were

Table 4: Developed Country Subsidization of Foreign Investment

Site	Company	Subsidy	Jobs Created	Subsidy per job
Kentucky, US	Toyota, 1985	\$150 million	3,000	\$50,000
S. Carolina, US	BMW, 1992	\$150 million	1,900	\$79,000
Alabama, US	Mercedes Benz, 1996	\$300 million	1,500	\$200,000
New Mexico, US	Intel, 1993	\$289 million	2,400	\$120,000
Setubal, Portugal	Ford, 1991	\$484 million	1,900	\$254,000
Germany	Dow, 1996	\$6.8 billion	2,000	\$3,400,000
United Kingdom	Samsung, 1994	\$89 million	3,000	\$30,000
United Kingdom	Siemens, 1995	\$77 million	1,500	\$51,000
United Kingdom	Lucky Goldstar, 1996	\$320 million	6,100	\$48,000

Sources: Correa and Kumar (2003) based on Moran (1998), UNCTAD (1996) and sources cited therein

‘non-actionable’ under Article 8.2 of the Agreement upto 2000. Growing internationalization of markets of the past years has emphasized the role of technology as a key element of international competitiveness. In order to retain and further sharpen the technological edge of their corporate enterprises, governments of industrialized countries have been supporting the technological activities of national enterprises through a wide variety of government industry complexes.

The governments of Japan, the US, and major European Union (EU) member states such as Germany, France, the UK, and the Netherlands have already taken steps to strengthen the technological competitiveness of national enterprises through increasing subsidization of research in a manner that could be termed as ‘technology race’. The focus of the extensive subsidies provided by the governments to their enterprises is on core technologies viz., microelectronics and information technology, biotechnology and new materials. The governments in France, Germany, the U.K. and the US, for instance, accounted for 48.8, 37, 34, and 47 per cent of total gross R&D expenditure in their respective countries with a substantial proportion of the funding directly going to business enterprises. Furthermore, nearly 20, 11, 15, and 28 per cent of R&D performed by business enterprises was directly funded by the governments (Kumar and Siddharthan 1997).

Complementing the national programmes of collaborative research, the European Commission has established a number of Community wide technology development programmes called Framework Programmes for funding research activities of entities public or private, large or small. The EC contributes one half of the costs of the projects, the other half being borne by the participating firms. The Sixth Framework Programme (FP6) (2002-2006) had a budget of Euro 17.5 billion representing an increase of 17 per cent from the previous programme and accounting for 3.9 per cent of EU’s total budget (2001). FP6 is an important building block in the Union’s drive to increase its overall research effort to 3 per cent of GDP by 2010 from the present level of 1.9 per cent by stimulating private investment in R&D and creating a

favourable environment. The major focus of these programmes is on strengthening the EC's competitiveness in new and emerging technologies such as micro-electronics and information technology, biotechnology, and advanced materials in view of the widespread linkages these core technologies have with other sectors of the economy. Almost all the subsidies go to the private enterprises that undertake R&D projects or participate in the joint projects undertaken with other EU enterprises for eventual commercialisation of the technologies developed (RIS 2003).

Government subsidization of R&D activity is widely perceived to be a part of strategic trade policy in the industrialized countries, designed to enhance their national enterprises' competitive edge.

e. Government Procurement

A number of developed countries have used government procurement as a policy tool to foster deepening and diversification of domestic industrial structure. The U.S. government adopted the Buy American Act in 1933 that mandates preference for the purchase of domestically produced goods over foreign goods in U.S. government procurement. The provisions of the Act have also been used as local content requirements. For instance, in order to qualify as domestic product to claim a 25 per cent price preference under the Buy American Act, a Hungarian manufacturer of buses had to buy US made engines, transmissions, axels and tyres (Krugman and Obstfeld 2000:205). EU also has provisions for minimum local requirement and preference for European firms in government procurement (Corrales-Leal and Sugathan 2003). A number of countries including developed countries like Switzerland impose offset requirements in government procurements especially of defence equipment where the exporters have to undertake obligations to import or outsource a certain proportion of the value of exports from the importing country.

f. Proliferation of RTAs and Rules of Origin

The past decade or so has seen a major trend of formation of regional trading arrangements (RTAs). Around 240 such arrangements are currently in force and the number is likely to go up to 300 in the next

couple of years. The Single European Market (SEM) in the European Union and North American Free Trade Area (NAFTA) are the major RTAs. Developed countries account for the bulk of the functioning RTAs. An immediate effect of these regional integration agreements (RIAs) has been that nearly half of the world trade is conducted on a preferential basis rather than on an MFN basis. Exports of non-member countries are discriminated against. Hence, RTAs act as protectionist barriers against exports of non-member countries. The trade diversionary effect of these RTAs is clear from the fact that the intra-regional trade within these RTAs has been rising twice as fast as the extra-regional trade of the member countries. These trade preferences have already resulted in a diversion of trade away from other developing countries such as those in South Asia. In the case of textiles and clothing exports, for instance, that is the most important item of exports of South Asian countries, Mexican exports of clothing to the United States have grown at the rate of 27 and 15 per cent in 1998 and 1999, respectively with the growth rate of exports to Canada in these years being 30 percent and 26 percent, respectively. Similarly, exports of clothing from Bulgaria, Hungary, Poland, Romania, Turkey to the European Union in 1998 have grown at 26 percent, 14 percent, 11 percent, 23 percent and 11 percent, respectively. Compared to these rates, growth rates of exports of textiles and clothing of South Asian countries have been far more modest if not negative owing to trade diversion and high tariff and non-tariff barriers (RIS 2003). The RTAs' preferences granted to the participants also erode the GSP preferences given to developing countries.

EU and NAFTA have also adopted stringent rules of origin to increase the domestic content of foreign enterprises' sales in the trade bloc taking advantage of RTA exceptions available under Article XXIV of GATT. The rules of origin determine the extent of domestic content a product must have to qualify as an internal product in a preferential trading agreement. Both Nafta and EU have adopted very stringent rules of origin to deepen the regional industrial structure which have the same effect as of local content regulations (see Annex 1 for examples).

Besides diverting the patterns of trade in favour of partners in RTAs and discriminating against third countries, RTAs also tend to distort investment patterns. The regional champions are protected by common external tariffs and a variety of non-tariff measures such as voluntary export restraints, screw driver and local content regulations and anti-dumping levies. In the post-WTO world, these regional trading blocs enjoy additional advantages as they can still use the instruments of policy to deepen their industrial structure such as rules of origin under regional trading agreement (RTA) exemptions under the WTO Agreements that are not permissible to other WTO members. Hence, the formation of trade blocs has been followed by tariff jumping FDI inflows and M&As as outside MNEs attempt to secure their access to the markets. Hence, the share of RTAs in global FDI inflows has gone up. For instance, EU member countries accounted for 66 per cent of FDI outflows originating in the EU countries in 1990 compared to just 28 per cent in 1985. Recent quantitative studies have observed the significant influence of memberships in RTAs such as EU and NAFTA as well as privileged access to major markets through preferential trading arrangements on the location and export-orientation of affiliates of US and Japanese corporations (Kumar 2002, for evidence).

4. Lessons from Experiences of Newly Industrializing Economies

The foregoing analysis has shown that developed countries have extensively employed infant industry protection and other policy measures in the process of their industrialization that they are trying to deny to developing countries. Developing countries need these policy spaces more acutely given their many constraints. Typical developing countries are characterized by high dependence on exports of low value-added raw materials and intermediates, poor technological capability, narrow base of domestic entrepreneurship, poor competitiveness of their fledgling industries because of lack of scales and maturity, poor infrastructure, lack of access to aggressive skills and resources for sustaining them, handicaps of trade information and finance, among others. Their developmental objectives generally require a focus on diversification of industrial and export structures in favour of higher value-

added goods, deepening the industrial production with progressive domestic value addition per unit of output and exports, strengthening international competitiveness, among other goals for generating output, foreign exchange and jobs (Corrales-Leal 2005). A number of newly industrializing and emerging countries in Asia and Latin America have successfully employed the policies measures such as infant industry protection and other aspects of industrial policy to achieve these policy objectives. In this section we examine certain cases of newly industrializing countries meeting their developmental objectives by using infant industry protection and other industrial policy tools for building and deepening their industrial capacities.

a. Infant Industry Protection and Industrial Subsidies

By now a number of success stories of policy intervention in building competitive capabilities in developing and emerging countries around the world are available. These include dramatic industrial transformation of East Asian newly industrialized countries such as South Korea and Taiwan, emergence of China as a leading manufacturing hub and exporter, rise of Malaysia's electronics exports, emergence of Thailand as the third largest exporter of automobiles in Asia, emergence of India as competitive exporter of generic medicines and computer software, or Brazil's success in building a competitive aircrafts industry. Each of these success stories have their lessons that point to the fact that infant industry protection and active state intervention can be a instrumental in building industrial capacities and development of poor nations, as is evident from the case of South Korea (see Box 4).

b. Performance Requirements and Industrial Policy

A number of developing countries have succeeded in internationally competitive industrial capabilities using PRs. For instance, Brazil, Mexico and Thailand have built internationally competitive auto industry by enforcing LCRs and export performance requirements on foreign auto MNEs (Moran 1998: 53-62). Taiwan has also emerged as a major supplier of auto parts in the world following similar policies (Gee 1997). Furthermore, it has been argued that export performance requirements have prompted MNEs to establish world scale plants incorporating best practice technology and have generated significant

Box 4: Infant Industry Protection and Building Modern Competitive Industries in South Korea

In the second half of the 20th century, the Republic of Korea achieved one of the most rapid sustained economic growth in human history that was facilitated by infant industry protection and active state intervention. Actually Korea had high average tariffs until the 1980s that ranged in the region of 30-40 per cent with a high variation across industries. Tariffs understate the degree of protection due to widespread quantitative restrictions as 40 per cent and 25 per cent of imports were prohibited or restricted in 1973 and 1981, respectively. In addition there were any domestic regulations that mandated government permission for imports of machinery and other inputs, even if the items concerned were technically freely importable. There were also strict foreign exchange rationing by the government giving priority to the importation of capital goods and intermediate inputs, especially for the sectors promoted by the government. This meant that very often even many of the “freely-importable” items could not be imported.

The first attempt at an export car, the Hyundai Pony, in the late 1970s, attracted criticism due to very poor quality of the vehicle even though it had been designed by the legendary Italian car designer Giorgetto Giugiaro. Inevitably, many people, including many Koreans, argued that this industry, which went against the hallowed principle of comparative advantage, should be abandoned. However, the government persisted with protecting the automobile industry, first through an outright ban on car imports and then through high tariffs, and provided various forms of direct and indirect subsidies.

Twenty-five years on, Hyundai, the country’s biggest car manufacturer, has become one of the biggest car producers in the world. While it is still not quite at the level of Toyota or Honda, it is rapidly upgrading its products and its products are now routinely voted the best in the mid-level segment of the United States car market. It was achieved through a combination of massive government protection and subsidies, combined with the firm’s dedication to investment and innovation.

Another even more striking example from the Republic of Korea is the emergence of steel maker, POSCO (Pohang Steel Company). When the Government of the Republic of Korea decided in the late 1960s to apply to seek funding to build its first modern steel mill, the World Bank declined the application on the ground that the project was not viable – not an unreasonable decision, given that the country’s biggest export items at the time were fish, cheap apparel, wigs, and plywood. The country did not even possess deposits of the key raw materials of iron ore and coking coal. These materials had to be imported from places as far away as Australia. High tariff protection was provided to ensure the survival of the new producer. To cap it all, the government proposed to run this as a state-owned enterprise (and it was run as one until a few years ago). A perfect recipe for disaster, according to standard economic theory! Yet within ten years, the company became the most efficient steel-producer in the world and is now the world’s fifth largest steel producer.

Source: Chang 2002b.

Box 5: Illustrations of Selective Industrial Policies from Asian Newly Industrializing Economies

In an attempt to spread the development impacts of technological and trade interaction, the Asian NIEs designed impressive programmes to foster the creation of inter-firm linkages between MNE affiliates and local SMEs. Such programmes contributed to increased internal economic multipliers, improved domestic technological capabilities, greater employment, and the creation of additional export capacities.

For instance, the **Korean** government mounted what is probably the most comprehensive package of interventions to develop a diverse, technologically advanced, and nationally owned industrial structure. Its industrial strategy centred mainly on importing capital goods, licensing and other technology transfer agreements, as well as keeping FDI to a minimum – permitting the latter when it was the only way of obtaining a technology.

The overall Korean policy package included quantitative and tariff restrictions on imports, tax exemptions for technology and development funds, strong export subsidies, as well as targeted & subsidised credit. In essence, Korea facilitated conglomerates that linked entire sets of heavy industries (with the aim of exploiting linkages and externalities), gave them financing and protected markets, minimised their reliance on FDI, and forced them into export markets. This is often pointed to as why, for example, Korea now has 25 times higher R&D by industry as a proportion of GDP than Mexico which, has roughly the same size of manufacturing value-added but has remained highly dependent on technology transfer from foreign sources.

On the other hand, due to its smaller size and weak entrepreneurial base at the time, **Singapore** decided to rely heavily on targeted and guided FDI. Moreover, it deepened its industrial and export structure by using incentives to persuade TNCs to move from labour to capital, skill and technology-intensive activities.

In able to achieve this, **Singapore** invested heavily in education and training and physical infrastructure. It also launched in 1991 a five-year technology plan for the development of ten key sectors. In 1997, it launched a sector specific policy package, which doubled S&T expenditures, to S\$4 billion over 5 years, of which 30% is also focused on strategic industries.

Taiwan used a mix of trade and credit policies to guide the technological upgrading of an economy dominated by SMEs. Enterprises were encouraged into skill and technology-intensive activities, with inputs from selectively used FDI and a superlative extension and technology support system.

China’s Production Networks for Exports (PRC), which was created in the second half of the 80s, developed networks of local suppliers by targeting local enterprises in selected provinces into training collaborations with MNEs, focusing on light industrial products, textiles, machinery and electronic goods for export. Over 200 rural export enterprises have benefited.

Thai BUILD Programme, which was established by the Thai Board of Investment in 1992, provides active matchmaking, brokering, technical assistance and information dissemination activities to encourage industrial linkages between MNEs and local industries. **Malaysia’s Vendor Support Program** was established in 1988 under the Ministry of International Trade and Industry though currently it is under the Ministry of Entrepreneur Development. This programme is a comprehensive approach to upgrading local supplier capabilities. Debt financing is available on a preferential basis to participating enterprises, venture capital is provided to local firms. Technical assistance is encouraged through active collaboration with MNEs, and industry-led training initiatives, such as the Penang Skills Development Centre.

Source: Corrales-Leal 2003.

knowledge spillovers for local firms of the type reported by Aitken et al (1997) and Moran (1998). Use of PRs has also helped countries like India to develop export-oriented autoparts industry (see Kumar, 2005). Selective FDI policy and PRs have enjoyed an important place among the industrial policy tools employed by the East Asian newly industrializing economies viz.

Box 6: Performance Requirements and Development of Thailand as the Southeast Asia's Auto Hub

Thailand has extensively used different performance requirements in automotive industry. To encourage domestic production, the government resorted to the policy of selective high tariff and import bans during the 1960s. However, the recurrence of weak domestic demand and continued deterioration in the trade balance because of importation of auto parts forced government to impose minimum local content requirement on automotive assembly and continually pushed it upward from 25 percent in 1969 to 50 percent in 1977 to 54 percent in 1983. Imposition of LCRs in 1970s and early 1980s did create domestic production capacities but exports by foreign auto producers remained 'practically nil' blaming 'inferior quality' of Thai component producers. However, domestic component enterprises that had emerged thanks to LCRs launched themselves in international markets by obtaining OEM status with external buyers. To prod the Japanese auto companies to incorporate their Thai affiliates in their global production networks, the government employed export performance requirements since 1985. The foreign enterprises primarily selling their output in domestic market had to have at least 51 domestic ownership. However, those exporting more than 50 per cent of their output could have foreign majority ownership (until 2000). That prompted the Japanese auto makers to think of integrating Thailand in their global production networks. The development of internationally competitive auto parts industry in the country also attracted global auto majors such as GM, Daimler-Chrysler and Ford to announce plans to set up auto plants in the country. Thailand has emerged as Southeast Asia's main auto hub with a production capacity of one million vehicles. It exported 1,70,000 vehicles in 2001 that makes it third largest exporter of automobiles in Asia after Japan and Korea. Automotive exports earned Baht 154 billion and auto components, an additional Baht 60 billion in 2001. Honda and Toyota have added second shift with Honda announcing sourcing of Honda City for Japanese market from Thailand and Toyota making Thailand a global production base for pick-up trucks.

Source: Kumar (2005) based on sources cited therein.

Box 7: IPR Regime Change and Development of Local Capability: Indian Pharmaceutical Industry

India had inherited the Patents and Designs Act 1911 from the colonial times that provided for protection of all inventions except those relating to atomic energy and a patent term of 16 years from the date of application. However, a few domestic chemical and pharmaceutical enterprises that tried to develop their own technology in the 1960s ran into trouble with foreign patent owners. A number of cases highlighted that foreign patent owners were neither using their patents for domestic manufacture nor allowing them to be used by local firms. That led to a build-up of pressure in the late 1960s for a new patent law. Therefore, a new Patents Act was adopted in 1970 that reduced the scope of patentability in food, chemicals and pharmaceuticals to only processes and not products. Since virtually any chemical compound can be made by a variety of processes, the scope of patent protection was greatly reduced. The term of process patents was reduced to 7 years in food, drugs and chemicals and to 14 years for other products. The compulsory licenses could be issued after three years. The Indian Patents Act of 1970 has continued to govern the IPR regime in India over the past 30 years except for the three recent amendments made to make it consistent with the WTO's TRIPs Agreement.

It is by now widely recognized that the abolition of product patents in chemicals and pharmaceuticals has facilitated the development of local technological capability in chemicals and pharmaceutical industry by enabling the domestic firms in their process innovative activity. In particular, the rapid evolution of Indian pharmaceutical industry since the mid-1970s highlights the fact that weak IPRs regime could be instrumental in building local capabilities even in a poor country such as India. In 1970 much of the country's pharmaceutical consumption was met by imports and the bulk of domestic production of formulations was dominated by MNE subsidiaries. Of the top ten firms by retail sales in 1970 only two were domestic firms and the others were MNE subsidiaries. By 1996 six of the top ten firms in the industry were domestic firms. By 1991, domestic firms accounted for 70 per cent of the bulk drugs production and 80 per cent of formulations produced in the country.

The increasing technological capability is reflected in terms of rising exports of drugs and pharmaceuticals. With their cost effective process innovations, Indian companies have emerged as competitive suppliers in the world of a large number of generic drugs that are now outside the patent protection. That has resulted in a steady growth of India's exports of drugs and pharmaceuticals. Thus the industry has evolved from being one being highly import dependent to one that generates increasing export surplus for the country. The faster growth of pharmaceutical exports has resulted in their share in India's exports rising from 0.55 per cent in 1970-71 to over 4 per cent by the turn of the century. Emerging revealed comparative advantage of India in pharmaceuticals was clear from the share of India in world exports of pharmaceuticals rising by 2.5 times. India ranks second after China among developing countries in export of pharmaceuticals and is ahead of such technologically advanced countries as Mexico, South Korea, Brazil, Israel.

Indian exports of pharmaceuticals received a boost in the late 1980s when a number of drugs went off the patents and Indian companies manufacturing them with cost-effective processes entered the international markets after obtaining FDA approval. Therefore, in the late 1980s, as much as 61 per cent of India's pharmaceutical exports comprised bulk drugs. However, subsequently some of the larger and more dynamic Indian enterprises such as Ranbaxy Laboratories, Dr Reddy's Labs, Cipla and Cadila, have started marketing their own formulations in different countries with the help of a growing network of overseas offices and subsidiaries set up in key international markets. As a result the share of bulk drugs in total exports of pharmaceuticals has come down to around 40 per cent. Domestic Indian pharmaceutical companies now operate in an

Box 7: continued

Singapore, Taiwan and South Korea (see Box 5). Box 6 summarizes a case study of Thailand in building an export-oriented auto industry through PRs.

c. Intellectual Property Regime

The rapid and sustained growth and development in the East Asian NIEs viz. South Korea, Taiwan, Hong Kong and Singapore (first tier Asian NIEs), Malaysia, Thailand, and Indonesia (second tier NIEs) and China, generally termed as the 'East Asian Miracle', has attracted a large volume of literature [see for instance, World Bank 1993, Amsden 1989, Wade 1990, among many books and papers]. A number of studies have argued that a substantial proportion of East Asian growth was contributed by growth of total factor productivity (TFP) and was not a result of merely factor accumulation [see Kumar 2003, for a review of literature]. The total factor productivity growth

Box 7 continued

increasing number of countries through a network of subsidiaries and have been acquiring a number of generic manufacturers in the West such as RPG Aventis in France taken over by Ranbaxy and Beetapharm in Germany taken over by Dr Reddy's Labs of India.

The technological capabilities of Indian companies have grown to a point when leading MNEs have started to take note of it. For instance, Eli Lilly established a joint venture with Ranbaxy in the mid-1990s for development of a cost effective process for synthesis of Cefaclor, among other products, taking advantage of the latter's process development capabilities. Similarly, Bayer contracted Ranbaxy to develop single doses formulations of its proprietary Ciprofloxacin.

Thus the Indian pharmaceutical industry has evolved from one dependent upon imports and some formulation activity in the late sixties to one which is able to introduce some of the most sophisticated products indigenously produced within a relatively short lag and at a fraction of the cost, and export a growing proportion of its produce to emerge as a net foreign exchange earner. It is a remarkable achievement especially because it has been accomplished within two decades of the change of patent regime. The case study of India highlights the critical importance of fine-tuning and calibrating the IPR regime to the level of development of the country.

Source: updated from Kumar 2003.

in Japan, Korea, Taiwan, Hong Kong and Thailand has averaged between 2 to 4 per cent per year over 1960-89 thus contributing over a third of the growth of output! (World Bank 1993: figure 1.11). It is now widely accepted that the assimilation of foreign technology was a 'critical component of the Asian Miracle' (Nelson and Pack 1999; also see Westphal 2000, Kim 2000, Amsden 1989, Wade 1990, Hobday 1995, Lall 2000, among many others). There seems to be a general consensus that the East Asian success owes a lot, in general, to their ability to imitate, absorb, assimilate and replicate foreign innovations or what has been described as duplicative imitation or reverse engineering facilitated by soft intellectual property protection regime. The soft intellectual property protection regime adopted by these countries in the period of duplicative imitation or reverse engineering has played an important role in facilitating the firm level technological learning (see Kumar, 2003 for more details). For instance, South Korea adopted the patent legislation only in 1961. The Korean patent law was amended in 1981 to conform with the Paris Convention that provided for multiple claims for related inventions in a single application. However, the scope of patenting did not cover patenting of products and processes to manufacture food products, chemical substances and pharmaceuticals. The US government initiated an investigation on Korea under Section 301 of the Trade Act threatening trade sanctions on Korean

exports for its failure to provide protection to US products. That pushed Korea to strengthen its IPR regime. The revised patent, copyright, and software legislation was passed by the National Assembly on 31 December 1986 and became effective in July 1987 (see Kumar 2003 for more details).

Similarly soft patent regime has enabled India to emerge as a most competitive producer and exporter of generic drugs (see Box 6).

5. Concluding Remarks

The foregoing discussion has shown that there is a compelling case for policy intervention for fostering development. We have also summarized evidence that suggests that present day developed countries have extensively employed infant industry protection, industrial policy and performance requirements, soft intellectual property protection regimes, subsidies, government procurement and regional economic integration among other policies in their process of industrialization. Many of these policies have also been effectively and successfully emulated by the newly industrializing economies in East Asia to build internationally competitive modern industries despite the lack of the apparent comparative advantage. Unfortunately the space to employ a number of these policy instruments has been squeezed by the multilateral trade negotiations. In particular, the Uruguay Round (UR) Agreements on industrial tariffs, TRIPs, TRIMs, GATS, SCM, among others, have circumscribed valuable development policy space without addressing a number of distortions in the developed country policies (see RIS 2003, 2007 for a detailed account). Given this experience with the UR, developing countries were resistant to launch of a new Round of negotiations at Doha. They tended to see the Rounds of WTO negotiations as processes that would further curtail their development policy space without giving them any meaningful market access in return. This is in sharp contrast to the avowed goals of the WTO as set out in the preamble to the Marrakesh Agreement recognizing the 'need for positive efforts designed to ensure that developing countries... secure a share in the growth in international trade commensurate with the needs of their economic development... mutually advantageous arrangement directed to the substantial reduction of tariffs and other barriers to trade and to the discriminating treatment in international trade'. A new Round could be launched at Doha only with a promise to put development at the centre so much so that it is called a Development Round!

The ongoing negotiations in the Doha Round are seeking to further curtail the policy space. The industrialized countries attempted to launch negotiations on four new the so-called Singapore issues viz. investment, competition policy, government procurement at the Cancun Ministerial in 2003 despite stiff resistance of developing countries and hence the lack of explicit consensus. However, the Cancun Ministerial collapsed and due to continued resistance by developing countries three of the four issues were dropped off the Doha Round at the July 2004 Package adopted to revive the negotiations. Pressure is being built up on developing countries to accept non-linear approaches to tariff reduction (viz. Swiss formula) to bring about sharp reductions in the bound tariff rates in developing countries thereby squeezing their policy space. Similarly, ambitious approaches for market access pillar in the Agreement on Agriculture is being proposed by industrialized countries while resisting significant reduction in trade distorting agricultural subsidies. The industrialized countries are also resistant to allow flexibility to developing countries to protect the livelihood concerns by designating adequate number of tariff lines as special products and special safeguard measures. It is clear that the Doha Round as it has been proceeding so far is going to further squeeze the policy space for developing countries.

In that context, it is imperative to highlight the role of policy space for development. Developing countries should seek to preserve the policy flexibility and attempt to retrieve the space that has been eroded in the previous Rounds as a part of the Special and Differential Treatment and other provisions. Among these could include seeking flexibility from provisions of TRIPs and TRIMs for facilitating transfer of technology. Transfer of technology was included in the Doha Agenda at the instance of developing countries and a Working Group was set up under the auspices of the General Council to examine 'the relationship between trade and transfer of technology, and of any possible recommendations on steps that might be taken within the mandate of the WTO to increase flows of technology to developing countries'. Like other development issues in the Doha Round, very little work has been done so far within the framework of the Working Group on transfer of technology leading to operational provisions. The problem arises because a lot of policy mechanisms employed by developed countries and newly industrializing countries to facilitate transfer, absorption

and diffusion of technology in the process of their development have been already eroded under some of the WTO agreements concluded in the Uruguay Round, viz. TRIPs and TRIMs Agreements.

Most developed countries of today have employed soft patent regimes in their period of underdevelopment for absorbing the knowledge spillovers by reverse engineering of known chemical and pharmaceuticals compounds, as observed above. It has been argued that industrial countries (Japan, Switzerland, Italy etc.) adopted patent protection for pharmaceuticals at levels of per capita income of about US\$ 20,000 whereas developing countries are required to adopt it at levels between US\$ 500 and \$ 4000. Therefore, forcing TRIPs on developing countries is about 50-100 years premature from developed country standards (Birdsell et al. 2005). As documented above soft patent regimes in countries like India have helped in development of capability to produce more affordable generic medicines for the poor. In fact the amendment of Indian Patents Act in early 2005 to comply with the TRIPs obligations attracted worldwide attention in view of the potential it had to adversely affect the supply and affordability of life-saving drugs for the poor.

Much more seriously perhaps, the TRIMs Agreement has taken away some of the valuable policy space, viz. the ability to impose some performance requirements like local content regulations on incoming foreign investors to build local production bases and localization of technology. Local content regulations have been extensively employed by most of the developed countries until recently in particular, in auto industry to promote backward integration and localization of production of value added, as documented above. Studies have shown that local content requirements have served to promote transfer and diffusion of technology in auto industry, among others, by prompting vehicle assemblers to develop and upgrade the domestic vendor base (see RIS 2005).

Therefore, a development-friendly outcome of the Doha Round would provide flexibility from the TRIPs and TRIMs obligations for facilitating transfer of technology and building up local capabilities in developing countries besides allowing them adequate space in the tariff reduction commitments.

**Annex 1: Rules of Origins Imposed by NAFTA and EU to
Increase Local Content: Select Case Studies**

NAFTA Rules of Origin

The objective of the US effort in NAFTA through rules of origin has been to prevent “screwdriver” assembly operations from being set up within the region that could utilize low-cost inputs from outside. NAFTA rules of origin require that a substantial portion of inputs originate within the region for automobiles, electronic products (printers, copiers, television tubes), textiles, telecommunications, machine tools, forklift trucks, fabricated metals, household appliances, furniture, and tobacco products. For example:

- *Telecommunications:* NAFTA rule requires that 9 of every 10 printed circuit board assemblies, the essential component of office switching equipment, be packaged within the NAFTA countries. In response, AT&T shifted some production from Asia to Mexico, and Fujitsu and Ericsson brought new investments to Mexico as well.
- *Color Televisions:* NAFTA requires that television tubes be produced within the region to qualify for preferential status. Prior to NAFTA, there was no North American manufacturer of television tubes; in the first two years after NAFTA’s passage, five factories took shape within the NAFTA region, with investments from Hitachi, Mitsubishi, Zenith, Sony, and Samsung.
- *Computers:* US negotiators proposed a rule that would have required two of the three key components (the motherboard, flat panel display, and hard disc drive) to be North American in origin. With forceful opposition from IBM and other companies that wanted to maintain their more flexible international sourcing patterns, the negotiators settled on a final rule requiring at least the motherboard to be North American.
- *Office Equipment:* NAFTA tightened origin rules for printers, photocopiers, and fax machines, requiring more components to be manufactured locally. For printers and photocopiers, all major subassemblies have to be produced in North America (equivalent to an 80-percent domestic-content requirement). Apparently this rule was instrumental in motivating Canon to construct a plant costing more than \$100 million in Virginia, rather than somewhere in Asia where the production costs would be lower.
- *Automobiles:* The domestic content rule was raised from 50 percent in the United States-Canada Free Trade Agreement to 62.5 percent in NAFTA. It required Japanese and European firms to replace imports from their home countries.

EU Rules of Origin

The European Union has adopted high domestic-content rules of origin in automobiles and other industries such as photocopiers, as well, and has also entertained proposals for even tighter requirements for printed circuit boards and telecom switching equipment. The European Union also established product-specific rules that require printed circuit board assembly within Europe. It has negotiated association agreements in Central and Eastern Europe that require 60 percent domestic content for products to qualify for entry into the European Union. Select examples are as follows:

- *Semiconductors:* In 1989, the European Union abruptly changed the rule of origin to require that wafer fabrication for semiconductor be done within Europe to avoid 14 percent semiconductor tariff. Whereas US companies performed most of their diffusion operations in the United States prior to the decision, 7 of the largest 10 US producers built fabrication facilities in Europe following the rule change. Citing the need to comply within the new rule of origin, for example, Intel invested \$400 million in Ireland for wafer fabrication and semiconductor assembly. Even though wafer fabrication was not cost-competitive in Europe, compared to Asia or the United States,

Annexure 1 continued

Annexure 1 continued

22 new fabrication facilities were set up in Europe within two years of the change in the rule of origin.

- *Automobiles:* The United Kingdom and France proposed an 80 percent local content rule for the Nissan Bluebird to qualify as an EC product. In the end, they backed down in the face of Italian and German opposition and decided to rely on quantitative restrictions to protect against Japanese imports. The 60 percent domestic content in the automotive sector has forced the General Motors engine plant in Hungary to use high cost German steel as an input, preventing utilization of locally available cheaper Steel.
- *Textiles and Apparel:* The near 100 percent domestic-content requirement in textiles and apparel has forced the German partner in the Brinkmann-Prochnik joint venture in Poland to load a truck with cotton fabrics, thread, buttons, and even labels in Germany; transport it to Lodz for stitching into trench coats; and re-import it for sale in the European Union-rather than allow the Polish partner to source from cheaper supplies locally.

Source: Kumar 2005.

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