Effective Industrial Policy: Tariffs, Rents and Capabilities

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Ethiopia is using tariff policy as a component of its industrial policy in order to assist the development of its garments and textile industries, as well as other targeted sectors. The use of tariffs, like other financing instruments for emerging industries, raises specific questions about the design of the policy that will ensure successful outcomes. The development of new competitive industries is only likely to be successful if the support is provided to emerging industries on the right terms and conditions. The support has to be targeted to create sufficient opportunities and incentives to create or increase capacity in the emerging industries but it also has to be attached to specific or general conditions that ensure and compel the rapid development of competitiveness. These terms and conditions also have to be enforceable given the monitoring and enforcement capacities of the state, and this is why policy design has to be different in countries with different political settlements.

Industrial policy can therefore fail for two separate reasons. It can fail if the design of instruments such as tariff rates across inputs and outputs fails to create the right incentives and opportunities for capability development. This result can happen, for instance, if inconsistent tariff rates mean that the effective rate of protection for the targeted activities is too low, or if the tariffs or subsidies are not combined with other necessary conditions such as the availability of finance at the right price. However, a more common reason for the failure of industrial policy is that it does not create sufficient or credible compulsion on firms to use these opportunities to rapidly enhance their competitiveness. This factor is often the more demanding part of successful policy design, because the conditions imposed on supported firms have to be credible in terms of enforcement.

Developing countries engaged in industrial policy have in the past often used tariff protection as the most important policy instrument to encourage domestic industries and to accelerate technology acquisition and upgrading. Other policy instruments that have been used include export subsidies, the provision of low interest finance and the provision of subsidized inputs such as land and infrastructure. As a result of using these policy instruments a number of problems can emerge and these can prevent the achievement of the policy goals. To identify the policy challenges it is important to begin by identifying the objectives of industrial policy and asking how the policy instruments have to be designed and implemented in order to achieve these objectives.

Industrial policy can have multiple objectives. which can include employment generation, enhancing wages, achieving a balance in regional development, developing industries and sectors important for national security and so on. But to be viable over the longer term, any successful industrial policy must also succeed in developing firms operating in the new sectors and technologies that pass the test of *global competitiveness*. This condition focuses our attention on the importance of not only promoting the development of new sectors and upgrading the technology of existing sectors, but also and most importantly, ensuring that the majority of supported firms in these sectors are eventually able to survive *without any forms of support beyond* the levels provided by competitor countries. Spelling out the core objective in this way helps us to explore the basic economics involved in industrial policy in more detail. The basic economics soon leads us to questions of political economy since the achievement of competitiveness requires fitting policy instruments to the political conditions of the country that can make particular strategies of providing support effective.

Effective Rates of Protection

To begin with, the instruments of industrial policy provide resources to firms and sectors that are not already sufficiently competitive to begin productive activities on their own. Clearly, if the firms and sectors in question were already competitive, they would not need

any industrial policy support to begin production. The policy support therefore has two separate objectives, once the sectors to be supported have been identified. First, the policy support has to be well designed and targeted to enhance value added (and therefore profitability) in the sector sufficiently in order to allow production to begin or to grow. This condition will be the subject of this section. However, *output growth* in itself does not ensure that the sector will become a viable and sustainable sector in the longer term. Viability requires the achievement of *competitiveness* over a relatively short period of time, so that the policy-induced enhancement of profitability is no longer required. This second requirement for successful industrial policy will be discussed in the next section.

The first objective of industrial policy is therefore simply to provide the resources and incentives required to set up or expand output in designated sectors. Growth generated in this way requires the provision of implicit or explicit subsidies to target sectors. Any combination of policy instruments that provide sufficient incentives and resources to target sectors can perform this function. But the policy instruments still matter for several reasons. First, they determine the *incidence* of the costs of subsidization. In the case of tariffs, the cost is primarily paid by domestic consumers, who end up paying a higher price or are forced to consume lower quality products, or both, as long as the tariffs are in place. In the case of other instruments, the incidence of the costs might be quite different. For instance, if the support provided to firms comes in the form of direct subsidies, the cost is paid by the constituencies that have to pay the additional tax or by sectors that lose their existing subsidies as a result of subsidy diversion to new sectors. The incidence of the cost matters both for political reasons and the fact that a badly designed instrument could inflict economic costs on other sensitive or potential growth sectors, resulting in the net present value of the benefit becoming negative.

We will focus on a separate issue in this section, which is the problem of ensuring consistency between different instruments so that the support provided to a particular sector

by one instrument is not wiped out or diluted by the effects of other instruments, or by the support provided to other sectors that provide inputs into the product or activity supported. It is clearly *necessary* to achieve policy consistency in order to ensure that the supported activity actually gets the minimum level of support needed to enable it to start setting up or expanding capacity. However, even though coordination in this respect is necessary, it is not *sufficient* to ensure industrial policy success. The next section will argue that viability also requires additional conditions to ensure the achievement of *competitiveness* over relatively short periods, and it is in this arena that industrial policy usually fails in developing countries.

The first issue of policy consistency has been examined by economists as a problem of determining *effective rates of protection.* As early as the 1960s, it was obvious that tariff strategies in many countries were not resulting in sufficient incentives for the expansion of many apparently protected sectors. The typical reason was that tariff protection across the board and the application of other subsidy policies could increase the cost of imported inputs for the protected sector, and this could significantly reduce or even wipe out the benefit that came with the tariff-protected increase in the price of that sector's output. What mattered therefore was the *net benefit* that a system of taxes, subsidies and other forms of intervention created for production in a particular sector, and this condition was called the effective rate of protection. In other words, there is a difference between protection measured by the increase in output prices, and protection measured by the increase in value added. The first is defined as the *nominal rate of protection*, and the second as the *effective rate of protection*. In symbols, the nominal rate of protection, NRP, is defined as

$$NRP = \frac{P_d - P_w}{P_w} \times 100$$

where P_d is the price of the output of the domestic firm in the domestic market after all tariffs and protective instruments have been applied, and P_w is the price of an identical product in the world market. The level of P_d can be higher relative to P_w because of the net effect of tariffs, taxes, quantitative controls and any other factors that raise the domestic price relative to the world market price. Thus,

$$P_d = P_w(1 + t + e)$$

where t is the appropriate tariff rate and e captures the tariff equivalent of all other policies and market frictions that can explain the higher level of domestic prices compared to world prices.

A positive nominal rate of protection does not necessarily mean that domestic production is sufficiently profitable for the desired activity to begin on a sufficient scale. The reason is that domestic production may suffer from lower productivity than foreign producers and, more relevant for the current discussion, the price of the *inputs* used by the firm may also have been raised above the world market price by tariff policy and other distortions in the economy. The effective rate of protection, ERP, looks at how tariffs affect *value added* in a sector, because this effect is what determines whether new investments will be attracted into the sector as a result of the policy. The ERP for activity *i* is therefore defined as:

$$ERP_i = \frac{VADP_i - VAWP_i}{VAWP_i}$$

Where $VADP_i$ is the value added in sector i at *domestic* prices after the protective policies have taken effect, and $VAWP_i$ is the value added in sector i at *world* prices, which would

hold without protection. Since profitability depends on value added, if the tariff and other policies do not succeed in raising the value added in the sector, it will have little impact on incentives for investors. Note that if tariff policy raises the cost of inputs as well as outputs, the improvement in value added relative to the free trade position may be relatively small or even negative. From the perspective of neoclassical economics, which is primarily concerned with the impact of policies on resource allocation, the effective rate of protection is clearly more relevant than the nominal rate of protection. For instance, if tariffs on inputs raise their price so much that the tariffs for sector *i* do not result in a significant increase in value added in sector *i,* then new investment will not be attracted into sector *i*.

There are a number of other technical issues in the calculation of the ERP that we will not pursue further here. First, if we look at the problem from the perspective of inter-sectoral investment choices, the relative and not just the absolute ERP is relevant. Investors contemplating investment in a sector are affected not only by the effective rate of protection for that sector, but also by the effective rate of protection offered to other sectors. Net new investments will only come into a sector if its effective rate of protection is higher than in other sectors. In theory, protection can also have effects on the exchange rate that could in principle offset some of the effects of the original protection. The reason is that tariff protection can reduce the demand for imports and this effect can result in an appreciation of the currency. This result can in turn make imports cheaper and discourage exports.

Currency appreciation can make both the imports of finished products and inputs cheaper, with complex effects on the effective rate of protection that will vary from sector to sector depending on the inputs used and their price elasticities. Finally, there are also technical questions about how to value non-traded goods in order to ensure that the effective rate of protection captures the relative attractiveness of different sectors. These additional issues add to the complexity of calculating the effective rate of protection but do not substantially affect the validity of the points that are being made (Corden 1966; Johnson 1969; WTO 2012).

Table 1 Ethiopia: Tariffs (per cent ad valorem) for Textiles and Apparel 2011

	HS Chapter/Subheading	Tariff Rate Range (%)
Yarn		
-silk	5003-5006	5 – 20
-wool	5105-5110	10 – 20
-cotton	5203-5207	10 – 35
-other vegetable fibre	5306-5308	20
-man-made fibre	5401-5406/5501-5511	5 – 20
Woven Fabric		
-silk	5007	35
-wool	5111-5113	35
-cotton	5208-5212	20 - 35
-other vegetable fibre	5309-5311	20 - 35
-man-made fibre	5407-5408/5512-5516	20 - 35
Knit Fabric	60	35
Non-Woven Fabric	5603	35
Industrial Fabric	59	5 - 35
Apparel	61-62	35

Note: HS refers to the Harmonized Commodity Description and Coding System

Source: International Trade Administration, Office of Textiles and Apparel, http://web.ita.doc.gov/tacgi/OverSeasNew.nsf/alldata/Ethiopia

The main policy conclusion for Ethiopia from this part of the discussion is that high levels of nominal tariff protection are not sufficient to ensure that enough incentives are created for attracting resources into particular sectors. For instance, if the government wants to develop both the garments and the textile industry *at the same time*, it has to look carefully at the structure of tariffs, taxes and other factors affecting the prices of inputs and outputs in both sectors. The reason is that the output of the textile sector is an important input for the garments sector. If both are protected, the effective protection for garments could be significantly reduced, and might turn out to be insufficient for attracting new investments into the sector.

We can see in **Table 1** using figures available for 2011 that the Ethiopian protection for woven fabrics was in the 35 per cent range, as was the protection for the garments sector. This result signifies that the effective rate of protection for garments was much lower, unless there were additional offsetting policies such as direct subsidies for the garments sector. Going further upstream, the protection on cotton yarn was in the range of 10-35 per cent, and since cotton is an input into the textile industry, the effective protection for the textile industry was also less than the nominal protection! Without sector specific data on value added at world prices and value added after protection, it is not possible to determine whether the garments and textiles sectors had a high enough effective rate of protection. What we can say is that it was very likely to be much less than 35 per cent unless there are other concurrent subsidy policies.

If sectors are connected through linkages, it is easier for policy to attempt to develop them sequentially. Historically, the experience of other countries shows that downstream sectors are usually developed first, with sequential movements up the linkages chain. This is because it is difficult to ensure the effective protection of downstream sectors if upstream industries providing inputs are also protected at the same time, because this condition would raise the prices of inputs for the downstream sectors. However, such a situation does not mean a simultaneous development of linked sectors is not possible. Rather, it means that in these cases we have to focus on the value added in each sector, and use other tax and subsidy instruments to ensure that downstream sectors have sufficiently high effective rates of protection, as defined above.

Capabilities, Productivity and Competitiveness

The real problem of such measures is that the net subsidy has to create not *just* the opportunity to expand production, which is simple enough as long as a big enough net subsidy comes through, but *also* to raise productivity, which is much more difficult to ensure. This linkage means that the resolution of policy inconsistencies has to keep in mind not only the imperative of ensuring value added in protected sectors is sufficient to attract new investment and raise output, but much more importantly, to consistently address the more important problem of enforcing credible compulsions on supported sectors in order to raise their productivity. We will discuss the two interrelated issues and draw some policy conclusions for the Ethiopian strategies for instance for the textile and garment sectors.

The importance of ensuring that tariff and protection policies are compatible with incentives and compulsions for productivity growth is often not sufficiently understood. One of the early critiques of tariff protection was that it allowed a country to produce goods with negative value added at world prices. Soligo and Stern (1965) made this point in the 1960s for the tariff structure in Pakistan, which was at that time one of the countries engaged in import substituting industrialization. However, in retrospect, this effect was not really

surprising because the problem for many developing countries is that at world market prices they are unable to engage in any manufacturing, and this is why they introduce tariff protection and other forms of industrial policy in the first place. The protection allows production to begin, but the value added at world prices may initially be very low or even negative in these cases.

Soligo and Stern's calculations were, however, important because they showed that in the short run protection reduced the welfare of citizens and this effect was only justified if productivity growth and the externalities from the development of modern sectors were high enough for the long-run benefits to justify the short run costs. The calculations were also important in showing that a country could achieve a high rate of growth of *output* under protection (as Pakistan did), but this result could hide a growth of *negative* value added at world prices. This outcome means that despite the high growth rates in the industrial sector, the country may actually be better off closing down these sectors and reverting to world prices unless productivity grew and the protection could therefore be removed. The real failure of industrial policy in many sectors in Pakistan and many other developing countries in the 1960s and 1970s was that the long run benefits of productivity growth did not materialize. Soligo and Stern's static analysis of inefficiency was therefore validated by many other neoclassical authors as a long-run critique of strategies of protection and import substitution, but for reasons that were different from the ones that the neoclassical authors identified. It is important for Ethiopia not to repeat this mistake.

The challenges of designing targets for firms receiving industrial policy subsidies that are compatible with the governance and enforcement capabilities of the country are summarized in two of my papers (Khan 2013a, 2013b). The central problem is that it is necessary for us to change our policy focus from *effective rates of protection* to *competitiveness.* The latter concept forces us to think about productivity growth over time, and the *rate* of productivity growth. The sustainability of a protection strategy depends not just on

productivity growth, but also on the productivity growth being rapid enough. Competitiveness is defined by looking at the cost of production of a product of specific quality, compared to the world market price of a product of identical specifications in the world market. A summary of the argument in my two papers is as follows:

The current global price of a particular product of quality Q is set by its cost of production in the country that is currently the global production leader. The unit price can be arithmetically broken down into the unit labour cost plus the unit input cost plus the unit amortized capital cost representing the unit cost of machinery and buildings. This is shown as

$$P_Q^{global} = \left[\frac{W_Q^{leader}}{\Pi_Q^{leader}} + \sum_i \frac{P_{Qi}}{\alpha_{Qi}^{leader}} + \sum_k \frac{P_{Qk}}{\beta_{Qk}^{leader}} \right] \left(1 + m_Q\right)$$

(unit labour cost) (unit input cost) (unit capital cost) (markup)

To simplify the notation we do not denote products and simply refer to a particular quality indexed by Q, so Q+1 represents a higher quality product compared to Q. P_Q^{global} is the international price of a particular product of quality Q. W_Q^{leader} is the wage level in the leading country producing the product of quality Q. Π_Q^{leader} is the productivity of labour in this activity in the leading country, measured by the output per person in this activity. The first term on the right hand side is therefore the unit labour cost.

The second term on the right hand side is the unit input cost. The production of the product requires i inputs as raw materials or semi-manufactured inputs. To simplify, we assume that these inputs are globally traded, each with a global price of P_{Qi}. The efficiency with which inputs are used is measured by the productivity of input use (output per unit input). In the leading country, the input productivities of each of the i inputs are represented by α_{Qi}^{leader}. Input productivity primarily measures wastage and input loss due to rejected final products. In many production processes this is a critical determinant of competitiveness.

The third term refers to the unit 'capital' cost attributable to the cost of machinery and buildings. There are k inputs of this type, and the most important elements are usually machines, which have a globally traded price, though land and buildings can also be significant cost components in some cases. The unit cost of capital is determined by the fraction of each component of these capital costs that is attributed to the particular period of production, represented by P_{Qk} divided by the output-capital ratio for each type of capital (the productivity of capital) measured by β_{Qk}^{leader}. As the capital stock that is available in each period is fixed, the output-capital ratio depends critically on the scale of production that determines capacity utilization. The higher the output that is achieved with any given capital stock, the higher the productivity of capital measured by each β. Low capital productivity could therefore be the result of a lack of technological capabilities on the part of the workforce, resulting in improper use of machinery, but it could also reflect the presence of significant spare capacity if machines and fixed assets are underused because of a suboptimal scale of production. Finally, the mark-up for profits is m_Q.

In the same way, the cost of production (in a common currency) in the developing country is the domestic cost $C_Q^{domestic}$ for the product of quality Q, given by an exactly equivalent equation but with the appropriate domestic productivities and prices:

$$C_Q^{domestic} = \left[\frac{W_Q^{domestic}}{\Pi_Q^{domestic}} + \sum_i \frac{P_{Qi}}{\alpha_{Qi}^{domestic}} + \sum_k \frac{P_{Qk}}{\beta_{Qk}^{domestic}} \right] \left(1 + m_Q\right)$$

The follower country achieves competitiveness when its $C_Q^{domestic} \leq P_Q^{global}$. The globally traded prices of inputs and machinery are typically similar in the follower and leader countries but wages and some input costs are likely to be lower in the former. It may therefore appear that the developing country should be able to achieve competitiveness for many simple technologies for which the appropriate formal skills exist since its wage level is lower. The most important constraint on the adoption of technologies is the availability of *formal* skills that are required for the operation of these technologies. For instance, it would not be wise for a country like Ethiopia to attempt to produce advanced machinery if there are insufficient numbers of formally trained engineers and scientists. This problem is the most relevant constraint that should determine the sophistication of technologies that a country should aim to adopt, rather than calculations of static comparative advantage.

The underlying problem is that developing countries usually cannot break into the production even of relatively low technology (low quality) products, even when workers with the appropriate formal skills appear to be available. The reason is that the available workers typically suffer from significant productivity disadvantages that more than negate their wage and other cost advantages. The typical developing country usually has much lower productivities, Π, α, and β compared to the leading country. It may appear that a low wages could compensate for these productivity differentials, but in reality that wage may have to be much lower than is feasible.

A more profound problem is that in many cases, even *zero* wages may not be able to compensate for a lower efficiency of input and capital productivity. The reason is that inputs and capital equipment have global prices that have to be paid. If $\alpha_{Qi}^{domestic} < \alpha_{Qi}^{leader}$ for

expensive globally traded inputs, the greater wastage of inputs alone could result in a higher domestic cost of production *even if the domestic unit labour cost could be pushed to zero.* This is why efficiency in controlling the wastage of inputs and reducing product rejection is often a critical variable in achieving competitiveness.

In addition, the productivity of critical capital equipment is often lower, with $\beta_{Qk}^{domestic} < \beta_{Qk}^{leader}$ as a result of machinery not being properly set up, or the optimal scale of production not being achieved. Indeed, a small disadvantage in these productivity variables across a number of inputs and types of capital could mean that even with *zero* wages, the cost of production in the developing country could be higher. In fact, wages are typically a relatively small part of the cost of production even in labour-intensive manufacturing processes. Competitiveness, even in low technology products, therefore depends more on the level and growth of productivity than on cost advantages.

We can now revert to the problem of effective rates of protection but from a different perspective. Low productivity in the developing country means that the domestic cost of production is higher than the world market price: $C_Q^{domestic} \geq P_Q^{global}$. It is in this context that protection and other forms of subsidies have to be devised to effectively reduce C (if the strategy is to export) or raise P (if the strategy is to begin with domestic market production). The *effective rate of protection has to be sufficient to ensure that the ratio P/C becomes greater than 1* in the relevant markets. This expression is a more precise way of understanding the level of subsidy required, since it is clearly not sufficient to ensure that value added after protection is simply higher than that at world market prices.

But then we come to the critical condition: *the terms on which the support is offered has to credibly ensure that C declines rapidly to the level of P so that P/C stays equal to or greater than 1*

without any protection. It is only then that the static welfare losses disappear, and the dynamic gains can begin to compensate for past losses.

From the derivation of the terms for C and P, we can see that this requires that the rate of growth of labour, input and capital *productivity* in our country has to be *higher* than that in the more advanced countries, and indeed considerably higher, so that convergence is rapid. If this is not achieved, then the strategy will fail even if output growth is high, as it was in Pakistan or India in the 1960s. This is due to several reasons. First, as the supported sectors grow arithmetically, the overall magnitude of the transfers to the sector from the rest of society also grows as long as these sectors remain uncompetitive. This condition limits the growth of the sector simply because transfers to a sector cannot grow without limit, even if they are implicit transfers from consumers. Secondly, the political support for such transfers is inevitably also time-bound regardless of their magnitude because of the competing demands of other sectors and constituencies.

Thus, industrial policy can only be successful if the *output growth* that it can spur in the short to medium term is associated with *productivity growth* that rapidly leads to a growth in competitiveness, and allows the tariffs and other forms of subsidies to be cut back relatively rapidly. Indeed, once competitiveness is achieved, the sector can instead be taxed to provide resources for other social objectives or support other emerging economic sectors. However, if productivity growth is too low and competitiveness does not emerge within a reasonable time frame, the critiques of protection strategies coming from liberal and neoclassical economists are justified.

In my earlier paper in this series, entitled '*What are the Instruments of Industrial Policy?*' and in much greater detail in Khan (2013a, 2013b), I argue that the main factor explaining low levels and low growth of productivity in manufacturing is the low level of organizational

capabilities in developing countries. These capabilities refer to the tacit knowledge involved in a range of processes that explain the huge differences in measured manufacturing productivity across countries, even when countries use identical machines and have workers with the same formal skills. These include the organizational capabilities involved in setting up and altering production lines to maximize work flow, ensuring quality control, reducing input wastage, ensuring that inventory management is cost-effective, managing orders to ensure that there is no down time, and so on. These critical capabilities explain much of the difference between success and failure and are largely developed through learning-by-doing.

Subsidies and the protection for new sectors can allow the learning-by-doing to happen by allowing production to take place in sectors and firms that are not yet competitive and could not have survived on their own. However, unless stakeholders in the firm put in a high level of effort in the learning process to continuously experiment with different processes and incentive structures, the necessary tacit knowledge will not be acquired, productivity will not grow and the strategy will eventually fail.

The pressure on stakeholders to do the experimentation and learning at a high level of intensity comes from external conditions that can be credibly enforced on the firms receiving support, including credible threats of subsidy withdrawal if intermediate targets are not achieved, credible threats of changing management and so on. It is in these areas that developing countries typically fail, even when they have been able to ensure that effective rates of protection are sufficient. As the political and institutional contexts of countries differ greatly, it is not surprising that the design of effective protection and industrial policies have differed significantly across countries.

The success of countries using tariff protection to develop garments, textiles and other low technology sectors has not been very promising. Nunn and Trefler (2010) review the international experience with tariff protection to argue that tariff protection of low technology industries like textiles and garments generally fails to achieve competitiveness, while there is greater success in the protection of skill-biased industries like shipbuilding or automobiles. In my opinion, the authors are unable to provide a convincing explanation for this result, but they assert this outcome is due to the fact that the nature of rent seeking is different when tariffs are skills-biased as opposed to when they are not. But it is not clear why this should be.

A more plausible explanation comes from the analysis of credible compulsions in learning processes as discussed earlier, given the technical requirements for achieving high-effort learning in low technology sectors. One of the characteristics of such sectors is that there is intense global competition, with narrow margins and therefore organizational capabilities are critical in ensuring high levels of overall productivity. Wage differentials are unlikely to compensate for large differences in these organizational capabilities. However, the organizational capabilities in question are not technically very complex. They do not take years to acquire. But they do require a lot of effort and experimentation and, without the application of a high level of external pressure, the learning might not result in the emergence of the organizational design that achieves high productivity in that context.

When we look at the processes through which countries such as Bangladesh achieved global competitiveness in textiles and garments, it is clear that this outcome did not require long periods of tariff protection. The organizational learning happened relatively rapidly once financing for learning could be organized and there were credible compulsions for the experimentation that led to the emergence of appropriate organizational design and internal routines for the factories. In the case of the Bangladeshi garments industry, although there was tariff protection, the actual process of productivity growth was achieved through a

different financing process. This approach was based on financing learning through the use of MFA quota rents that were passed on to the South Korean company Daewoo in order to pay for the transfer of organizational know-how to managers of a Bangladeshi company. The details of this story can be found in Khan (2013a).

The reason that tariff policy often fails in these low technology contexts is that it is usually difficult to combine tariff support with credible pressures for high-effort experimentation with learning, and with hard conditions that limit the support to a few months or at most a couple of years. If funding is provided for periods longer than that in low technology sectors, it is a good indication that the participants are not serious about becoming internationally competitive. This is particularly true in countries where the capacity of the government to enforce conditions on firms receiving policy support is already weak.

Remember that in the case of low-technology sectors, very limited additional formal training of workers is required, and the required learning is almost entirely about the acquisition of tacit knowledge for the organization and its design. Much of this could in principle be acquired relatively quickly, over a period of twelve to eighteen months in the case of the Bangladeshi example. This result provides, I believe a better explanation for the observation that tariffs have been much less successful in creating competitive low technology sectors in developing countries. The reason is not that low technology sectors have more pernicious types of rent seeking, but, more likely, that the time period that tariffs typically provide support for are not relevant for creating competitiveness in sectors like garments or textiles. In other words, the problem is one of policy design.

This result does not mean that tariffs have no role in low technology sectors, but rather that policy-makers have to have a clear idea of the causes of low productivity in their country, and ensure that the structure of tariffs and the conditions attached to this protection will

create the appropriate compulsions for productivity growth. Without such compulsions the tariff protection will provide a long-term support for inefficiency and will eventually fail.

These obvious points are often forgotten in the design of industrial policy instruments. It is not enough for policy-makers to announce that the support will be short-lived and time-bound. It is also necessary to ensure that the recipients understand this constraint, and the design of the instrument creates significant and credible pressures on the firms receiving support to enhance their productivity and competitiveness at the fastest possible rate. This is why it is often argued that industrial policy support has to be time-bound, and come with enforceable conditions on achieving results. However, the conditions that a South Korea or Taiwan could credibly enforce on recipients of government support may not be credible in other countries. This is why instruments and the conditions attached to them cannot simply be copied from more successful countries.

For instance, the design of the successful policies that achieved competitiveness in the garments, textiles or automobile sectors in the Indian subcontinent was quite different from what succeeded in East Asia. Rather, countries have to begin from the types of first principles that were discussed in this note and they have to devise financing instruments and attach conditions to them in order to achieve effective high-effort learning in their own specific political contexts.

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