

WORKING PAPER **271**

Reducing Complexity in the Industrial Policy Debate

Hubert Schmitz
July 2006

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Abstract

A central concern of industrial policy is how to configure the relationship with the global economy. The many-fold choices and pressures make this a difficult task for policymakers. This paper suggests a way of framing discussions between policymakers, advisers and researchers. It seeks to reduce complexity and help find common ground. It shows how different constellations of low/high challenge and low/high support bring out the essence of different policy regimes. And it shows how different constellations of narrow/wide technology gap and narrow/wide marketing gap help identify the most plausible way forward.

Keywords: industrial policy, late-comers, competitiveness, value chains, technology gap, marketing gap, Egypt.

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1 Introduction

Researchers working with policymakers face two typical problems: first, some of the questions which concern the policymakers cannot be answered on the basis of existing evidence. Second, on other issues there are so many views and so much information that it is difficult to transmit these to the policymakers in a simple and insightful way. This paper addresses this latter problem. It seeks to reduce complexity and thus help researchers and policymakers who are concerned with industrial policy in developing countries.

A key concern in industrial policy is how to configure the relationship with the global economy. This is the central issue addressed in this paper. The vast majority of developing countries have undergone a process of trade liberalisation, so the choice open to them is not *whether* to integrate into the global economy but *how*: fast or slowly, comprehensively or selectively, taking the low or the high road. For the policymakers the question is how to manage the process and how to enable local enterprises to compete in the global economy.

Section 2 offers a quick way of grouping industrial strategies and capturing their key features. Subsequent sections show how to move from the general to the specific. Section 3 emphasises that this process needs to start with clear understanding of the challenges faced by enterprises. Section 4 suggests that the key to defining specific policies lies in identifying *constellations* of challenges faced by the enterprises. It suggests a simple way of categorising these constellations. Sections 5 and 6 then discuss specific ways forward derived from these constellations. The final section sums up why and how this reduction in complexity helps researchers and policymakers, warning that the objective is not to produce blueprints but frame discussions in a way that clears the cobwebs, helps communication between policymakers and researchers and makes them focus on the key issues.

The idea for this paper emerged in the course of research and advisory work carried out in Egypt. In order to illustrate arguments, the paper draws mainly, but not only, on Egyptian examples. The purpose of these examples is to highlight issues which are of importance to latecomers throughout the developing world. Indeed the concerns seem relevant for many latecomer countries.

2 Key features of industrial strategies

This section offers a simple way of grouping industrial strategies past and present. Table 2.1 uses two dimensions for such grouping: *challenge* and *support*, both of which can be high and low.

Table 2.1 Industrial strategies

		Support	
		Low	High
Challenge	High	Washington Consensus	Active industrial policy
	Low	No policy	Protection under ISI

The purpose of this table is twofold. First, it helps to specify the terrain of industrial policy in which the subsequent discussion will take place. This terrain is characterised by the constellation High Challenge + High Support. The significance of this constellation becomes clear if we contrast it with the other constellations. Low Challenge + High Support characterises the protectionist policies for import substitution, adopted in many developing countries during the 1950–70s; and High Challenge + Low Support characterises the policies of liberalisation, which many developing countries adopted when the Washington Consensus dominated thinking on economic development. The central message was: rely on the market and do not trust government. The combination of exposing enterprises to competition from outside and establishing transparent rules on the inside was thought to be most promising way to achieving competitiveness and growth.

The disillusion with both the old protectionist policies and subsequent Washington Consensus policies has led to the search for strategies which accept the high challenge which comes from integration in the world economy but seek to provide support for coping with this challenge, for example tax incentives for investment in training, low-interest credit for developing new technology or subsidies for participation in international trade fairs. In Table 4.1, this is referred to as ‘active industrial policy’. Such active industrial policy can take many forms but the common characteristic is the *combination of high challenge and high support*. While rarely presented in this way, researchers, advisers, and policymakers seem to gravitate increasingly towards this position (for example Altenburg *et al.* 1998; Barnes *et al.* 2004; Kaplinsky 2005; Lall 2003; Lall and Teubal 1998; Morris and Barnes 2005; Rodrik 2004; Westphal 2002; UNIDO 2002).

Second, the table serves a wider purpose which is not tied to the later parts of the paper. It helps to group industrial strategies in a way which is simple but effective. Industrial policymakers in developing countries typically receive a lot of advice on how to integrate into the global economy and how to help local enterprises to compete. The views offered reflect different ideologies, different business interests, and different donor interests. Many ways of categorising these policies are in use, differentiating between extent of state intervention, area of intervention (trade, industry, technology), national and local policies, horizontal and vertical approaches, and so on. They all have their uses but tend to miss the essence of policy and fail to provide the policymakers with a bounded range of options.

Industrial policy is about influencing the decisions of entrepreneurs. These decisions can be influenced by challenging the entrepreneurs (for example increasing competitive pressure) and by supporting them (for example providing financial or technical assistance). Providing just one or the other can work but often fails. The critical step is to *combine challenge and support*.

A brief historical review helps to underline this. The protectionist policies adopted in many countries in their import substitution phase often failed because they provided support but did not challenge the entrepreneurs. Protection was granted but was not linked to meeting specific targets. One of the main reasons for the much celebrated success of Korean industrial policy was that it combined support and challenge (Luedde-Neurath 1986).

Similarly, just challenging and not supporting often leads to failure. Many developing countries were encouraged to liberalise their trade and rely on the forces of competition to prompt their enterprises to modernise. A few did invest and change but most failed because they were unable to respond without help (Katz 2004; Morrissey 2005). The increasing disillusion with the Washington Consensus has its root in neglecting the fact that challenge works best when accompanied by support.

The key reasons for supportive industrial policy are first, coordination failures. Firms seeking to upgrade require many inputs, such as new skills, risk finance or logistics, which the market often does not provide. Without parallel investments, the investments for upgrading may not occur. Second, sunk costs can be high. First movers incur a high cost for exploring foreign markets and marketing channels and they need to make upfront investments for discovering which new products can be made at low enough costs to be profitable. The gains, however, have to be shared with the followers. Without support, the required investments are less likely to be made (Hirschman 1958; Lall 2003; Roberts and Tybout 1995; Rodrik 2004).

3Of course, it is not any kind of support that works; it has to be tailored to the specific challenges which enterprises face. The next section helps to define these.

3 The challenges for the latecomer firm

As they integrate into the global economy, most developing country firms face the problem of being latecomers: they have to make a rapid transition from patterns of demand and competition, typical of a domestic economy, to global standards of competitiveness. A small number of exceptional firms sometimes manage this transition on their own but the vast majority find it extremely difficult. Enabling these firms to compete is the concern of the policymakers. This requires understanding the problems faced by the latecomer firm.

Latecomers entering the global economy face many challenges. In his analysis of catch-up strategies of East Asian firms, Hobday (1995) suggests that two obstacles are particularly critical: latecomer firms are dislocated from the main international sources of technology and they are dislocated from the main international markets they seek to supply. This paper builds on Hobday's work, but modifies the terminology and extends the argument.

Latecomers face two key problems: 'a technology gap' and a 'marketing gap'. The technology gap arises from: being dislocated from the international sources of technology, especially the producer–user loops which generate innovation; difficulties in access to proprietary technology; and weak national/local support for innovation. Protection often allows firms to continue with outdated technology. These technologies include both the 'hard' technologies embodied in machinery and the 'soft' management technologies that have become increasingly important for competitiveness, such as advanced quality and supply chain management.

Second, these enterprises face a marketing gap. The marketing gap arises from: being disconnected from global markets and the demands of customers in these markets; the enormous difficulty of having up-to-date knowledge of ever-changing markets, especially in markets where fashions and styles change frequently; the increasing concentration in retailing which has shifted power from producers to buyers; and the high investments required to establish an individual or collective brand.

The two gaps sometimes interact with each other, as for example in the Egyptian horticulture industry. Supermarket chains in Europe are important buyers of Egyptian products but many Egyptian producers face a marketing gap in that they do not understand the needs of the large European supermarket chains (DOL 2005). This lack of understanding also creates a technology gap. By not appreciating the need for rapid chilling of products, better packaging and product presentation and efficient transport systems, Egyptian exporters have failed to invest in the technology required to meet these needs. Market opportunities are being lost, and in spite of its advantages of location and climate, Egypt is not reaching its full potential.

The technology gap varies according to the specific characteristics of sectors and types of market that are being targeted. The technology gap is lower in mature

industries where technological requirements are well understood and change slowly. Unfortunately, the fastest-growing sectors in the global economy, and those which offer the best long-term possibilities for rapid export growth, are those in which technology changes rapidly (UNIDO 2004).

Marketing gaps are lower when enterprises export to markets that have consumer preferences and market structures which are close to those of the domestic market. For Egyptian firms, selling to the Middle East market should be easier than selling to Western Europe and North America. Consumers are likely to have similar tastes and income levels, and marketing structures may be similar. In contrast, exporting to North America and Western Europe presents a greater challenge. Exporters have to understand and respond to differences in consumer tastes and also find ways of making sales in markets dominated by global brands and powerful retailers.

It is important to recognise that marketing in developed countries has become more difficult for manufacturers in recent years. Increased concentration in the retail sector and the growing role of brands, above all global brands, have made it particularly difficult for small, independent manufacturers to establish a presence in these markets. The costs of establishing a market presence have increased substantially. In software, for example, Cairo-based firms find that the investment required for marketing a software package in North America far exceeds that of developing it (author's interviews in Egyptian software companies). There is no evidence of electronic commerce lowering the marketing barriers for developing country firms (Humphrey *et al.* 2003).

The size of the marketing and technology gaps, however, vary between sectors and markets. In some sectors, the technology gap is low and the marketing gap is high. In others, both gaps might be high, or both might be low. The key point developed in the next section is that the strategy for integrating in the global economy depends on this constellation. *There is no 'one size fits all' solution.*

4 Strategies for integrating in the global economy

If differentiation is so important in devising ways forward, how can we organise the search? Providing the policymakers with a long list of options and then warning them that each option is only appropriate if a long list of conditions apply is not very useful. Mental categories are needed which are analytically sound and help frame the debate.

Section 2 gave a brief overview of the options faced by policymakers who seek to enhance the country's prospects of competing in the global economy. It was stressed that researchers and policymakers increasingly favour a constellation of 'high challenge and high support'.

Within this broad constellation there are many possibilities of intervention. Which ones are most appropriate depends on the economic precondition of the country and global economic trends which vary from sector to sector. And support measures often vary with the kind of integration that is being sought. Are local manufacturers trying to occupy a niche in global value chains coordinated by global buyers or are they trying to market a product which is designed, branded and made by themselves? The extent and kind of support required is likely to be different.

The issue of which instrument to choose and which enterprises to target is not just dictated by economic considerations. Political pressures play a major role. The government may be keen to initiate new sectors but it is the old sectors that tend to have stronger lobbies (Baldwin and Robert-Nicoud 2002). Government may be keen to attract new foreign enterprises but established local enterprises may feel that they deserve more support.

This section suggests a way of cutting through this bewildering array of choices and pressures by drawing on the gap analysis put forward in the previous section. In some (sub-)sectors local enterprises face both a wide technology gap and marketing gap. In others, both gaps might be narrow, or different combinations of wide and narrow gaps might exist. Knowing the constellation is important because it enables the researcher and policymaker to reduce complexity and identify the most plausible options. It provides a compass through the technical and political debate. Table 4.1 shows how this can work.

Table 4.1 Four strategies for integrating in the global economy

		Technology gap	
		High	Low
Marketing gap	High	1 Access to both technology and markets is a severe problem for local firms. Foreign direct investment (FDI) is preferred strategy.	2 Challenge is not technology, but marketing. Integrating into value chains coordinated by global buyers seems best.
	Low	3 Challenge is not marketing, but technology. Acquiring technology through licensing seems best option. Or joint ventures .	4 Technology and marketing gaps are low. Local firms can export own-designed complete products directly .

The table shows that according to the combination of technology and marketing gaps, different options for promoting integration in the global economy become plausible. Its strength lies in helping researchers and policymakers to

order the field of options. Its danger lies in ‘freezing’ the options and failing to recognise change over time.

The table is particularly helpful for dealing with two issues:

- In which situations is a focus on promoting local firms most suitable, as opposed to situations where foreign direct investment is critical for bridging the gaps?
- When should support measures be tailored to firms attempting to design, make and export their own products and when should they be tailored to firms performing a more limited range of operations within global value chains?

The following sections show why these are critical questions and how the table helps to find answers.

5 Attracting foreign direct investment versus support for local enterprises

The issue of foreign versus local investors is a big issue for many governments for both political and technical reasons. Local enterprises often protest that government pays too much attention to attracting foreign enterprises and not enough to supporting local enterprises. Showing the ability to differentiate and putting forward a convincing argument as to why foreign direct investment is particularly critical in certain sectors is important. Even where governments do not face such political pressure they need to select. Attracting foreign investors is expensive. To make it viable, investment promotion agencies need to target. Table 4.1 indicates those circumstances in which promotion of foreign direct investment is particularly appropriate.

Table 4.1 suggests that foreign direct investment (FDI) has a particularly important role to play in promoting competitiveness when both the technology and market gaps are wide. In such circumstances, FDI is often the quickest, or even the only way of overcoming big technology and market gaps.

The co-existence of these gaps explains to a large extent why multinational enterprises have been able to control large segments of international trade. Approximately one third of international trade takes place within such firms (UNCTAD 2005). Such intra-firm transactions are particularly prevalent in high technology industries which are the most dynamic segment of world trade (UNIDO 2004). Insertion into the global networks of multinational corporations has been key to the export success of most East Asian economies, in particular China (Lall *et al.* 2004). The subsidiaries of multinational firms provide both the critical technology and market access, local firms can become suppliers.

In the car industry, local firms can at best hope to become second- or third-tier suppliers. The multinational assemblers expect their first-tier suppliers to operate globally (Humphrey 2000). Even highly capable local firms cannot compete when their main customers require production capability with a global footprint. The combination of a wide technology and marketing gap makes foreign direct investment the preferred option.

Table 4.1 suggests that when the marketing gap is narrow and technology gap is wide, the best way forward is for local firms to acquire the technology through licensing. Local firms probably need assistance in negotiating favourable licensing agreements. Korea relied heavily on licensing in order to help local firms catch up. For example, Kim (1997) shows that licensing played a critical role in developing Samsung's technological capability. However, two caveats are in order: first, licensing only works if it is accompanied by own investment in technological capability (Bell and Pavitt 1993). Second, licensing agreements are sometimes difficult to obtain when local firms want to export. In such cases, joint ventures may well be a more feasible option. Mandatory joint ventures, however, are rarely effective in bringing about the sought after technology transfer; voluntary joint ventures tend to yield better results (Altenburg 2000).

In summary, when the marketing gap is narrow and the technology gap is wide, attracting foreign direct investment may not be a priority. Local firms can be targeted but they are likely to require assistance in negotiating licensing agreements or joint venture contracts.

6 Finding a role in global value chains versus direct exports of complete products

In many products exported by developing countries, the greatest difficulty is not so much the acquisition or mastery of the technology but marketing the output. The constellation narrow technology gap–wide marketing gap is very common. In this situation, the most promising option is finding a role in global value chains: local manufacturers concentrate on manufacturing a product or part of a product and global buyers coordinate the chain and take care of branding and marketing. Much of the rapid growth of export manufacturing in developing countries is due to this division of labour (Humphrey and Schmitz 2004).

This strategy can apply to both mature and new industries. Take garments or shoes: the main challenge for domestic enterprises lies not in the hard and soft technologies used in production, but rather the considerable barriers faced when trying to sell own products directly in export markets. These export barriers may arise from the difficulty of tracing the needs of export markets, exacerbated by rapid changes in fashion and styles. Marketing barriers also arise

from the structure of these markets. The increasing concentration of retailing in advanced economies has made it more difficult for manufacturers to gain access to consumers. And the cost of establishing own brands is very high (Gereffi 1999).

Insertion in global value chains has also been very effective in software. The biggest success story is India, where local firms were able to grow rapidly by providing specialist services to their US or European customers. Post-architectural design and programming capabilities are widespread. Even the development of own software programmes is increasingly possible but marketing remains a formidable barrier. Investments required are high and established lead firms make it difficult for later-comers to reach product markets (Arora *et al.* 2004).

The key point is that insertion in global value chains has enabled many developing country producers to overcome the marketing barrier. The outsourcing trend in North America and Western Europe means that opportunities will continue to arise. Enabling local firms to take advantage of these opportunities becomes a priority for policymakers. It requires in particular ensuring rapid movement of materials and people across national boundaries. And it may require helping local enterprises to find their core competence and understand the global value chain. It is difficult for newcomers to understand where and how they fit into the global economy (Schmitz 2005).

When both the technology and the marketing gap are narrow, local enterprises can pursue a different strategy: they can export products designed and made by themselves. A good example is Egyptian carved furniture: local producers in the cluster of Damietta acquired the production capabilities in the home market. In order to export, local enterprises need to pay greater attention to consistent quality but the technology required is similar. Adjusting the designs to export markets (for example, imitating classical European styles) is also in their reach. There is thus an export market for small volumes of carved furniture sold to independent furniture stores and small retail chains. To give another example, Egyptian software firms have produced packages, tailored in terms of language and technical specifications to the needs of small hotels and restaurants. Exporting this kind of product to neighbouring Arab countries is within their reach. They may however need some specialised assistance to do this: for example for participation in trade fairs or for adopting new quality improvement schemes. The technology and marketing gaps are narrow, but they need to be bridged (IMC 2005).

Most export promotion in developing countries is geared towards such export of own-designed, own-made, complete products. In many sub-sectors this is in fact important and deserves support. The volumes however tend to be small and the markets fragmented. The fastest growing kind of world trade is that coordinated by the lead firms of global value chains in which developing country producers insert themselves by producing to the specification of the lead firms and often providing only part of a product or a specific service (UNIDO 2002). Much of the export growth of the Pearl River Delta, China's fastest growing

region, has been based on this kind of integration into the world economy (Enright *et al.* 2005). Policymakers need to know what kind of integration is most promising for their national and regional economy because it has a major bearing on the kind of support they offer, the partners with whom they work and the mode in which support is provided. In summary, the constellation of technology gap and market gap helps to frame the policymakers' discussion with entrepreneurs, advisers and researchers about appropriate intervention.

7 Conclusion

This paper has tried to do what the title promises: reduce complexity. Table 2.1 showed how the different constellations of low/high challenge and low/high support bring out the essence of old protectionist regimes and the more recent policies which followed the Washington Consensus. Both failed, but for different reasons and the table helps to grasp these reasons. It also helps to concentrate the discussion of industrial policy on those options which avoid the pitfalls of those earlier policies. It was suggested that they fit into the high challenge–high support constellation.

Within this range, however, many options remain possible in terms of targeted enterprises, modes of support, and alliances which deliver the support. The paper suggests that priorities can be identified by analysing technology and marketing gaps. Different constellations of narrow/wide technology gap and narrow/wide marketing gap show how to frame the discussion and identify the most plausible ways forward. The promise is not a quick technical fix but framing the discussions between policymakers, entrepreneurs, advisers and researchers. The value added of the paper is thus thought to lie in reducing complexity and leading more quickly to the identification of common ground and plausible ways forward.

Two dangers need to be recognised. First, equating problems with sectors: if a way forward is identified in the way suggested, it may not be appropriate for an entire sector. Differences within sectors need to be recognised. For example, for Egyptian software enterprises targeting other Arab countries, making and exporting software packages based on their own design may be the best way forward. In order to make significant inroads in the North American or West European market, it may be better to offer software services specified by the outsourcing customers. Such differentiation is critical for both the entrepreneurs and the policymakers that seek to support them.

Second, failing to recognise change over time. The constellation of gaps that existed ten years ago might be different today. For example, Taiwanese computer manufacturers started off by producing to the specifications of the big US customers. Today, some of them are able to offer their own makes, based on own design and using their own brand, to customers even in Europe and US (Kishimoto 2004). Similar examples can be found in the Brazilian shoe industry and the Turkish clothing industry (Bazan and Navas-Aleman 2004;

Tokatli and Kizilgün 2004). The suggested framework helps to define the starting position: which are the most promising options now? Once embarked upon and once new capabilities are acquired, the options might change. As the gap constellation changes, new choices may open up but the dynamics are usually hard to predict.

Assessing the options for integrating and competing in the global economy needs to start with the present. There are many different ways of doing this and policymakers are often confronted with a bewildering array of views and terms put forward by researchers and consultants. This paper has suggested a way of framing the debate which seems relevant for most developing countries. The objective is not to derive blueprints but to concentrate on those options that are most relevant and find a steer through difficult political and technical terrain. Many of the points made may appear basic, if not elementary, but in a world of increasing complexity and information overflow, taking stock and going back to basics can be a virtue.

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