Industrial Strategies for Economic Recovery and Long-term Growth in Africa*

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Abstract: Despite a decade of rapid economic growth, Africa's industrial sector remains underdeveloped. In this paper we explain why improved economic performance in the industrial sector is important for Africa's long-term growth, and discuss the prospects for accelerated industrialization in the continent. We distinguish between macroeconomic aspects, factors related to the investment climate, and the role of skills at the level of the enterprise. We also discuss the theoretical underpinnings of industrial policy, as well as implementation problems.

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1. Introduction

The economies of Sub-Saharan Africa (Africa from here on) saw increasing per capita incomes for about a decade, up until the 2008 financial crisis. Towards the end of that period incomes were growing faster than in the developed countries, although not as fast as in the successful emerging economies in Asia. The economic set-back during the crisis has been more limited than in the industrialized countries. Is this improved growth performance indicating that Africa has achieved economic take-off, and that we will now see sustained growth and strongly increased standards of living? Or is the continent facing further challenges before it can become fully integrated in the global economy and benefit from the opportunities opening up?

One worry is that, despite a decade of rapid economic growth, Africa's industrial sector remains small and underdeveloped (Page, 2010).[1] Growth in this sector will generate new jobs, reduce vulnerability to weather shocks, ease the pressure on land, accelerate technological progress, etc. All this should contribute to sustained poverty reduction and improved standards of living. Without growth in the industrial sector, however, Africa is likely to remain overly dependent on agriculture and the extraction of natural resources.

In this paper we consider the prospects for accelerated industrialization in Africa, and discuss the role of industrial policies. Section 2 discusses the determinants of economic performance for Africa in general and its industrial sector in particular. Section 3 provides a concise discussion of the economics of industrial policy, while Section 4 reviews the policy options and concludes.

2. Sustained Growth in Africa

The premise of much of our discussion below is that, unless African firms can strengthen their foothold in international markets, accelerated industrialization in the continent is unlikely. One reason is that the small size of home markets prevents domestically oriented firms from taking advantage of scale economies in production. This hampers their ability to grow and cut costs. But the benefits of exporting go beyond getting access to a larger market. There exists plenty of evidence both at the macro and micro level showing that openness and growth are positively

[1] Following Page (2010), we will use the term 'industry' and 'industrialization' to encompass high productivity activities including manufacturing, tradable services and agro-processing.

correlated, and many authors argue that trade has a causal effect on growth (Frankel and Romer, 1999). Harrison and Rodriguez-Clare (2009, p. 40) note that "exports are more likely to lead to growth if they are in non-traditional sectors such as manufacturing or skill-intensive goods rather than primary products or raw materials". Several micro studies suggest that African firms learn from exporting (Bigsten et al., 2004; Van Biesebroeck; 2005, Bigsten and Gebreeyesus, 2009). Furthermore, there is some evidence that what you export matters for growth (Hausmann, Hwang, and Rodrik, 2007). Hausmann and Rodrik (2006) note that poor countries export low value added goods, while rich countries export high value added goods. On the whole, this research indicates that Africa has a lot to gain by orienting more of its industrial production towards exporting.

Table 1 shows summary statistics on Africa's sectoral composition and exports. The share of exports in GDP has increased from 0.13 in 1975 to 0.32 in 2008. However, most of Africa's exports are not in the form of manufactures, and the share of manufacturing in terms of output and employment remains quite small, with only about 15 per cent of output originating in the sector. The Asian emerging economies have much larger shares, with for example China having about a third of GDP from manufacturing. We may also note that, in Africa, the share of manufacturing in total value added has actually declined since 1990, partly due to the process of liberalization which meant that many previously protected (and inefficient) firms went out of business.

Table 1: Africa's Output and Exports: 1965-2008

	1965	1970	1975	1980	1985	1990	1995	2000	2005	2008
Sectoral share										
Agriculture	0.22	0.20	0.20	0.19	0.18	0.19	0.18	0.17	0.17	0.12
Industry	0.31	0.31	0.33	0.37	0.34	0.32	0.29	0.29	0.31	0.33
- manufacturing	0.18	0.18	0.18	0.17	0.16	0.18	0.16	0.15	0.13	0.15
Services	0.47	0.49	0.47	0.45	0.47	0.49	0.53	0.54	0.52	0.55
Export shares										
Export/GDP			0.13					0.31		0.32
Share of world export	0.041	0.034	0.030	0.036	0.024	0.018	0.014	0.014	0.018	0.019

Source: WDI 2010. Shares are weighted so as to represent Sub-Saharan Africa. Manufacturing refers to industries belonging to ISIC divisions 15-37, whereas industry corresponds to ISIC divisions 10-45. Thus industry is defined here to include manufacturing, mining, construction, electricity, water, and gas.

2.1. Macroeconomics

Economic growth depends on the growth of factors of production such as labour, physical capital, human capital, and natural resources, and the growth in productivity. Productivity growth, in turn, is affected by technological progress and efficiency growth. In this section we discuss these components of growth for Africa.

In a closed economy investment equals savings, but in an open economy one can also draw on foreign savings. In a completely integrated global economy, investment would not depend on domestic savings and returns to investments would be equalized across countries. However, the world economy is not yet as integrated as that, so countries that are high savers are normally also high investors. Therefore policy for domestic savings is relevant for African growth. Returns to investments in Africa are often found to be high, but still little capital flows there.[2] This suggests that there are other factors restricting investments – such as risk. Moss et al. (2007) find that investors are cautious with regard to investments in African shares, because of the smallness financial markets and poor liquidity. So investments in Africa are held back by a shortage of savings, but probably even more so by the riskiness of the economic environment.

The empirical evidence on the link between investments and growth in Africa is somewhat mixed. Analyzing growth accelerations in Africa, Arbache et al. (2008) find that investment and savings increased during growth episodes and fell during periods of decline, and that foreign investments are six times higher during the growth accelerations than during decelerations.[3] This suggests that investment plays an important role in Africa's growth process. In contrast, Devarajan et al. (2003) fail to find a clear link between the investment and growth for Africa. These authors hypothesize that both low investments and low growth are due to other underlying problems.

Lack of skills has sometimes been highlighted as a key problem for Africa. Empirical evidence on the link between human capital and growth in the cross-country literature is quite weak

[2] For a very influential paper asking why capital doesn't flow from rich to poor countries, see Lucas (1990).
[3] Arbache et al. (2008) further note that countries that are highly dependent on agriculture face a larger risk of decline due to the risks associated with agriculture, both natural and from the world market.

however. Pritchett (2001) believes that this may be explained by the bad quality of the economic environment where the skills are applied, imbalance between the supply of skilled labour and demand, and by the poor quality of human capital produced by the educational system. One may also note that returns to human capital vary a lot between sectors in Africa, suggesting allocative inefficiencies are rife. Rankin, Sandefur, and Teal (2010), for example, show that returns are very high in large formal firms, while they are very low in the public sector. Returns in the informal sector vary but are generally low. Easterly (2009) argues that the poor growth outcome for Africa is consistent with the fact that few jobs are created in the formal private sector. This sector would under normal circumstances absorb a lot of the skilled labour into well-paid jobs, but now many of the newcomers end up in the informal sector with low incomes. So although the level of education in Africa has increased a lot, the effects in terms of employment and growth have been a disappointment. The problem is that there has not been enough expansion of the demand for skilled labour due to the failure to create high growth or a growth process demanding labour.

Apart from the growth of input factors, technical progress is assumed to be a central determinant of growth. In general, countries can upgrade their technology by innovating or by imitating others. Since R&D is a very costly activity and requires a solid basis of skills, it is hard for low-income African countries to promote technological progress through innovation. So for African economies the bulk of new techniques still come from abroad. Even though the period 1960-2000 was characterized by sustained technological progress in the world, there is little evidence that productivity growth impacted economic growth in Africa. Ndulu and O'Connell (2008, p. 18) carry out a growth decomposition for a subset of countries in Sub-Sahara Africa for this period and find no growth contribution at all from total factor productivity growth. This suggests that growth in Africa during this period was due to factor accumulation, while productivity stagnated.

Johnson et al. (2007) note that it is hard to identify the factors that generate sustained growth and instead try to see what creates crises and derails growth. They argue that there are at least three plausible types of explanations, namely weak economic and political institutions, greater propensity to experience conflict and social strife, and bad macroeconomic policies. They do a benchmarking exercise, in which they identify a set of indicators that have been found to be important for sustained growth. To construct the benchmark they investigate the recent

experiences of countries which started with poor institutions and at income levels like those of Africa today, but which nevertheless were able to sustain high growth rates. They identify 12 countries that managed to do so in the post-1945 period. It is noteworthy that these countries all had rapid growth of exports, in almost all cases in the form of manufactures.

Johnson et al. (2007) find that African macro balances and institutions have improved over recent decades, and that Africa on most of these indicators in general does not score worse than the countries that were economic successes in the second half of the 20th century did at their take-off. Still, they identify some gaps relative to what the old successes experienced. There are still substantial regulatory costs of exporting in Africa, and many countries in Africa have experienced significant real exchange rate overvaluation.

2.2 Trade and Growth

Much of the debate about determinants of African growth has concerned the relation between trade and growth. Patillo et al. (2005) show that trade in Africa has been closely associated with growth accelerations.[4] Johnson et al. (2007) observe that "escapes from poverty in the face of weak institutions have generally involved exports and – in almost all cases – manufacturing exports" (Johnson et al, 2007, p 37). There are also micro studies showing that African firms learn from exporting (Bigsten et al., 2004; Van Biesebroeck; 2005, Bigsten and Gebreeyesus, 2009). One possible explanation why trade may impact growth, advanced by Acemoglu et al. (2005), is that manufacturing exports help create a middle class that demands good institutions which in turn spur growth. Natural resource based growth does not seem to have the same positive effect on either institutions or growth.

While export expansion was obviously central for the Asian economic growth success, the global economic environment has changed a lot since the Asian economies broke into the world market. Trade is now to a much higher degree made up of trade in components rather than complete final products. It is on this arena that countries now must seek to establish a presence, but Africa has so far more or less failed to enter this market. To be able to integrate with this market countries

[4] There is a discussion about cause and effect in the literature (Rodriguez and Rodrik, 2001), but few would dispute there is a strong positive correlation between openness and growth.

must become attractive arenas for outsourcing of production of components. This means that they must be able to guarantee both quality and timely deliveries. A stable and effective economic environment is of fundamental importance for countries to be able to benefit from the opportunities opened up by globalization. For Africa this pattern of production requires reliable logistics and a well functioning infrastructure.

The effects of trade depend on the characteristics of the economic environment. Chang et al. (2005) show that the effects depend on the quality of the infrastructure, the flexibility of the labour markets and the extent of barriers keeping new firms from entering the market. DeJong and Rippol (2006) find that these effects are particularly large in less developed countries.

Since much of modern trade involves trading in tasks, with firms being part of global production networks, one expects a stronger link between trade and technological progress than previously. In particular, the intensified globalization and integration of production processes have diminished the need for vertical integration. There is no need any longer for a single firm to perform all tasks that go into the final product; instead, the firm sources inputs and services from a global network of firms. It follows that, in a globalized world, a comparative advantage may reside in a small and narrowly defined task. In addition, the technological progress that has spurred the global integration of the production process itself puts greater demands on intense communications and interaction between firms in the production network (Saxenian, 2006). Basically, without modern management and a thorough understanding of global business, it will be hard to participate in modern production exploiting the global network.

In order to facilitate for firms to participate in the international network of production, it is important to get the trade policy right. Firms that are part of a global value chain tend to import processed inputs. Many African governments have traditionally let tariffs increase with the stage of processing, in order to protect final stage producers. Such a policy is problematic in a world characterized by global production chains, however, since inputs tend to be more processed in such a system. It is therefore important to keep tariffs low across the board, and avoid the temptation of keeping tariffs high on processed products.

2.3. The Investment Climate

Returning to the discussion in Johnson et al. (2007) of the prospects for Africa, these authors note that African macro balances and institutions have improved over recent decades, and that Africa on these indicators in general does not score worse than the twelve comparison countries in the early post-1945 period. However, in terms of some specific economic institutions particularly important for private sector development, Johnson et al. argue that there remains a wide gap relative to what the old successful countries experienced. The discussion ties in well with a recent literature stressing the importance of a good "investment climate" - reliable logistics, sensible regulations, etc. – for private sector development. The key results from this line of research have recently been summarized in the report of the Commission on Growth and Development (2010): Africa is a high cost, high risk environment in which to invest. Part of Asia's and Latin America's competitive advantage comes from its better investment climate.

Globalization and the new international organization of production offer new opportunities for African firms but also present new challenges. It will not be easy for African firms to participate in a global production network if there is a lot of red tape which may jeopardize just-in-time deliveries, for example. Just how poor is Africa's investment climate, and is there anything that can be done about it? To shed light on these issues, we consider data generated by the *Doing Business* project.[5] This project assesses the effects of regulations on the ease of doing business for domestic small and medium-size companies across 183 economies in the world. The following topics are considered: starting a business; dealing with construction permits; employing workers; registering property; getting credit; protecting investors; paying taxes; trading across borders; enforcing contracts; and closing a business. Each economy gets rated on each of these topics. Based on these ratings, economies are ranked from the best to the worst in terms of ease of doing business. This provides a crude but still useful indicator of the state of Africa's investment climate.

As expected, most African countries get a low ranking for ease of doing business. Figure 1 illustrates the association between the doing business ranking and per capita income for a cross-section of countries (a low number for the doing business ranking reflects a good outcome, and

[5] See www.doingbusiness.org for details.

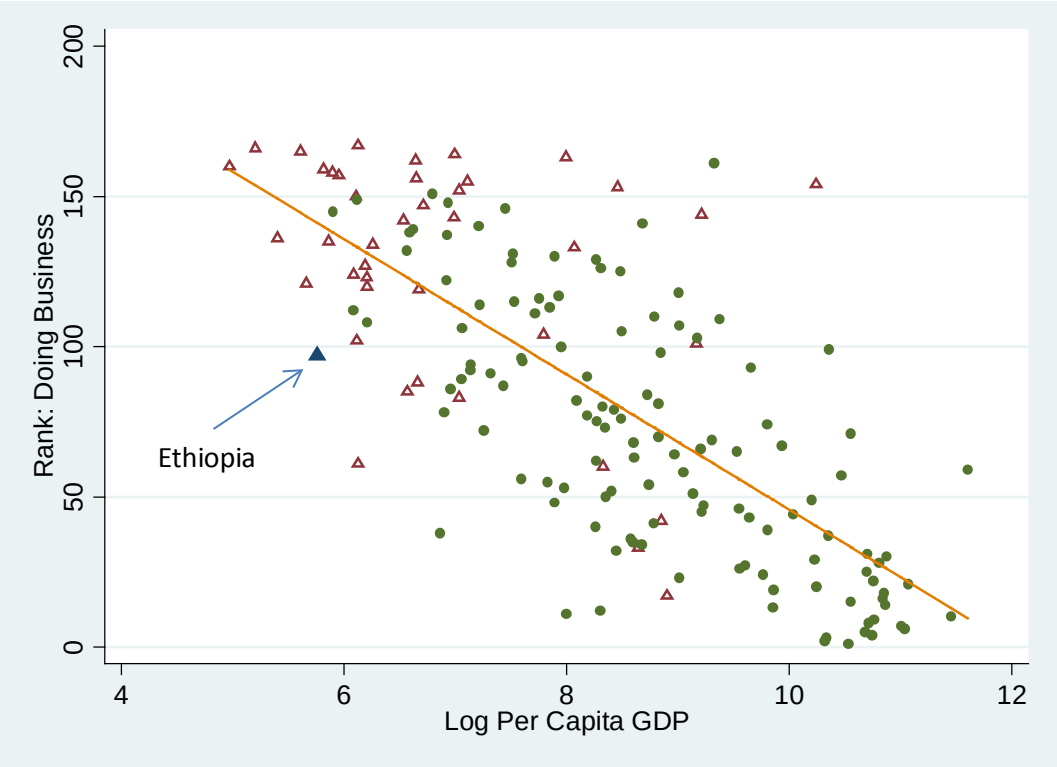
vice versa).[6] Clearly these variables are strongly negatively correlated: richer countries tend to score much better on the ease of doing business indicators. Countries in Africa are represented in the graph by triangles. There is a clear pattern by which African countries tend to cluster in the top left corner of the graph, combining low income with a poor investment climate. However, there are also several non-African countries featuring a poor investment climate and a low per capita income. What if we take into account the fact that most African countries are poor – is it still true that the quality of Africa's investment climate is atypically poor? To find the answer, we run a simple OLS regression in which the ease of doing business ranking is the 'dependent' variable, and per capita income and a dummy for Sub-Saharan Africa the 'explanatory' variables. Of course, results from such a regression cannot be given a causal interpretation. But it does provide impressionistic evidence on whether Africa's investment climate is worse than that of other countries with similar levels of income. The regression results are as follows:

ranking =	238.9	- 19.3*log[per capita income]	+ 20.6*SSA
	(0.00)	(0.00)	(0.05)

where the numbers in parentheses are p-values based on robust standard errors. The coefficient on log per capita income is -19.3 and highly statistically significant. This merely confirms the strong negative association between income and ease of doing business ranking visible in Figure 1. More interestingly, the estimated coefficient on the dummy for Sub-Saharan Africa is equal to 20.6 and significant at the 5% level. This indicates that African countries tend to be ranked 20 places below non-African countries *among countries with similar levels of income*.

[6] The data on per capita income were obtained from the World Development Indicators. The doing business rankings were downloaded from www.doingbusiness.org.

Figure 1. Ease of doing business ranking and per capita GDP



Note: Triangles indicate countries in Sub-Saharan Africa.

Hence the quality of African's investment climate is low, and this cannot be attributed solely to Africa being a low-income region. Looking within Africa, there are exceptions of course. Ethiopia, highlighted in Figure 1, stands out as an interesting case. Ethiopia has recorded very strong growth in the noughties, primarily a result of impressive growth in crops. The average annual growth rate of GDP per capita in Ethiopia between 2000 and 2008 was 5.4%, more than twice as high as the average for Sub-Saharan Africa over the same period.[7] However, with a per capita income in 2008 equal to 190 US dollars (in constant values with 2000 as the base year), Ethiopia remains one of the world's poorest countries. Keeping this in mind, Ethiopia's investment climate is actually relatively good, compared to other low-income countries. This is reflected in Figure 1 by the fact that Ethiopia finds itself below the plotted regression line: the actual ease of doing business ranking (which is 97, amongst 167 countries) is rather better than one would predict based on Ethiopia's low per capita income. Another way of interpreting the

[7] Source: Authors' calculations based on the *World Development Indicators* 2010.

data is that Ethiopia's economy should be quite a bit stronger, given the quality of the business environment. Box 1 provides further details about Ethiopia's investment climate.

Box 1: Doing Business in Ethiopia

The table below shows how Ethiopia ranks in terms of ease of doing business and per capita income amongst all countries in the world (column 1) and amongst Sub-Saharan African countries (column 2). Ethiopia is doing well, in particular with regard to ease of starting a business. For example, the required procedure and time to start a business in Ethiopia is less than the average for Sub-Saharan Africa and almost equal to the average of OECD countries. With regards to ease of doing business only eight Sub-Saharan African countries are higher ranked than Ethiopia. Recent survey data on managers' perceptions indicate that the investment climate in Ethiopia improved a lot between 2001 and 2007: "Perception of the severity of almost all business obstacles in Ethiopia have improved over the past four to five years. So much so that the rate of complaint among the respondents of 2006 Investment Climate Survey is significantly lower than the low-income cross country average with respect to almost all institutional factors. This reverses the comparison that the 2002 Ethiopia rates bore in the cross country sample …" (World Bank, 2009: p. 19).

Doing Business: Ethiopia's Ranking	All countries (N=167)	Sub-Saharan Africa (N=42)
Rank: Overall Ease of Doing Business	97	9
Rank: Doing Business Topics		
Starting a Business	85	9
Dealing with Construction Permits	56	7
Employing Workers	87	15
Registering Property	99	13
Getting Credit	118	17
Protecting Investors	115	18
Paying Taxes	37	8
Trading Across Borders	146	30
Enforcing Contracts	56	7
Closing a Business	68	9

Source: Data obtained from www.doingbusiness.org.

We have seen that Africa is at a disadvantage with respect to its investment climate, certainly compared to the rest of the world but also compared to non-African countries with similar levels of per capita income. Within Africa, there is a lot of variation in the quality of the investment climate, and we have specifically highlighted Ethiopia as an interesting case where the

investment climate has improved over the last decade and is now relatively good considering that the country is poor. The improvements in Ethiopia did not happen by chance; on the contrary, they reflect a decade of government policies aimed at improving the investment climate. Hence, policy can have an impact. Having a poor business environment is not Africa's destiny.

2.4. Skills and Enterprise Success

Investment climate studies focus explicitly on the environment external to the firm. As already noted, this is an area within which public policy can play an important role. But even if governments or donors can do things to improve the investment climate, this does not automatically guarantee success in the domestic private sector. It is well known that firm performance varies greatly across firms that share the same investment climate. Bigsten and Söderbom (2006), for example, argue that "…while most African firms have not fared well during the last decade, some have performed extremely well." (p.2). Hence the investment climate cannot be the full story. Factors internal to the firm are important too. What are the relevant capabilities – technological, managerial, and organizational – that distinguish leading firms from average performers? Where do these capabilities come from?

Sutton and Söderbom (2010) argue that globalization has had a major impact on the capabilities relevant for enterprise success. Twenty years ago, it was widely held in the literature that technological capabilities constituted the main constraint on private sector development in low income countries. These days, however, technology poses less of a constraint on industrial growth, because access is no longer such a serious problem. This suggests that technology is not the main determinant of enterprise success, at least for enterprises producing mostly relatively unsophisticated products. Sutton and Söderbom (2010) argue that the crucial capability for success is 'market intelligence': ability of mangers to communicate and interact efficiently with suppliers and buyers abroad; knowledge of where to position the firm in relation to existing distribution networks and how to develop new distribution channels; ability to create a well organized and efficient working group; etc.

What are the origins of such capabilities? In the last two decades there have been massive investments in schooling across the world. As a result, the level of education has risen steadily in

most countries. There is no doubt this has been socially beneficial. However, it is not obvious that more schooling promotes the type of skills required to run a successful private company. In fact, researchers are only beginning to understand the determinants of entrepreneurial success in low income countries. We have already mentioned recent empirical research indicating that entrepreneurs running small African firms stand to learn a great deal from interacting with foreign customers and being exposed to international competition (Bigsten et al. 2004). Hence, participating in the global economy can be a source of improved performance. Of course, there are other determinants of enterprise success too. John Sutton has recently led a team of researchers requested by the Ethiopian government to provide advice on strategies for industrialization. One of the tasks of the research team was to document the historical background of successful managers in the country. A striking finding was that very few of the current leading industrialists in Ethiopia had a long industrial history. In fact, most had a background as traders. Based on in-depth interviews, a fairly clear pattern emerged: these individuals had been successful precisely because they were very well informed about how the relevant markets in which they had to operate worked; and very good at organizing moderately large workplaces. Many of them had entered the manufacturing sector without a great deal of knowledge about manufacturing technology, but this did not stop them from becoming successful. For more details on this research, see Sutton and Kellow (2010).

Providing incentives for individuals with the right skills to invest in Africa is essential to sustain Africa's economic recovery and long-term growth. To some extent, capabilities will be embedded in foreign direct investment, which should be encouraged. Africans living abroad constitute another potential source of skills. In a recent book that has received a lot of attention in the US, AnnaLee Saxenian (2006) argue that entrepreneurs that return to their home countries following a period spent in the US can be powerful drivers of entrepreneurial success in the home country. Saxenian's analysis, which focuses on Israel, Taiwan, China and India, shows that entrepreneurs returning home to these countries have often taken on a leading role in developing technological and entrepreneurial capabilities. According to Saxenian, globalization is an important reason why return entrepreneurs have come to play this role. The global integration of the production process puts greater demands on intense communications and interaction between firms in the production network. Modern management and a good understanding of global

business are therefore important. Returning entrepreneurs, who have received education as well as entrepreneurial experience in the US, possess such capabilities. They also have access to a network of long distance potential collaborators, thanks to their shared language and their professional experiences. This puts them in a much better position with respect to the ability to engage in long-distance collaborations than entrepreneurs that have exclusively focused on the domestic market. What are the obstacles to this form of development? Saxenian (2006) notes that Iranian and Vietnamese immigrants in the US have not returned to their home countries on a large scale, and points to economic instability and lack of skills in the domestic workforce as the most important obstacles. On both points, it would seem, many African countries are at a disadvantage. Long term decisions are required to improve the status. Young, bright Africans should be encouraged to spend time studying or running enterprises in more developed countries, and the home environment needs to offer opportunities and incentives for Africans living abroad to return.

3. Economics of Industrial Policy

Economic development is typically accompanied by structural change, which normally means that the share of industry in output increases. Diversification into new activities, however, may be hampered by market imperfections and distortions. Can African countries overcome such problems and speed up the economic transformation by pursuing an active industrial policy? This is a controversial question. It is hard to target individual firms or to ”pick winners”, and few economists want to see this type of policy back on the agenda. However, other forms of industrial policy, covering a broad spectrum of measures, now feature in the policy discussion again. In this section we discuss how a more active industrial policy can be justified on economic grounds.

There has been a revival of the debate as to whether the state should be neutral with regard to trade, foreign investment and allocation of resources between sectors (see the review in Harrison and Rodriguez-Clare, 2009). Poor countries may have good reasons for choosing to tax different industries differently to raise revenue. The question here is whether countries should introduce tariffs, subsidies and tax breaks that leads to distortions beyond the ones due to optimal taxes and revenue constraints.

Most economists would agree that active industrial policy should be motivated by the presence of market failures. Two types of market failures that block investment and entry into non-traditional activities in low income countries are often highlighted in the literature (e.g. Rodrik, 2003). The first is information externalities associated with the 'discovery' of the cost structure for the production of new goods. Since the profitability of new activity cannot be known with certainty ex ante, there must be an experimental process of cost discovery. Any entrepreneur who innovates by investing in a new activity bears the full cost of failure if the project collapses. If the project is successful, however, other firms will be quick to benefit from new ideas or insights coming out of the project, and therefore the innovator reaps only a portion of the gains. As a result, the private return would be smaller than the social return, and this type of activity will therefore tend to be undersupplied.

The second form of market failure highlighted in the literature arises because of coordination problems. These occur when markets are incomplete, so that the return to one investment depends on whether some other investment is also made. In such a case, although a set of coordinated and complementary investments might be profitable, a single investment may not be. For example, investing in new technology for producing cut flowers may not yield high returns unless there are complementary investments in infrastructure enabling the firm to export the flowers abroad. More formally, Harrison and Rodriguez-Clare (2009) show that an economy may have multiple equilibria, and that coordination problems may prevent the economy from moving from the bad equilibrium to the good one, in which the economy is said to have a 'latent' comparative advantage. In such a situation industrial policy may be a way to support a move that is increasing welfare in the long run. One option may be to let the dynamic, new industry develop initially behind tariff walls. These should then be removed when the sector has grown stronger and become internationally competitive. The idea is that a temporary tariff will make it possible to shift production to a sector where you have a latent comparative advantage, but where this cannot be realized without intervention, since initial profitability is higher in the other sector. Clearly, for this type of intervention to pay off, the protected sector must eventually become competitive.

Thus there are sound theoretical arguments for interventions supporting industry in some circumstances. From a policy perspective a pertinent question is if, and how, such interventions will work in practice. Indeed, there are many studies that show that it is hard to get industrial policy to work well. Conventional wisdom has it that a key reason industrial policy has worked poorly in Africa is that it has not created enough pressure on firms to become productive and meet the standard requirements of the international market. It also seems widely agreed that industrial policy should not attempt to favour individual firms or be too narrowly focused.

Rodrik (2009a, 2009b) discusses whether having an undervalued exchange rate can help. He points to the case of China, which (according to most observers) during several years has had an undervalued exchange rate, and to findings from a cross-country analysis which suggest a positive effect of undervaluation on growth. The latter effect does not seem to be dependent on whether there are good institutions or not, or whether other growth factors are in place. Rodrik also investigates whether causality can go in the opposite direction – i.e. from growth to undervaluation - or if both factors can be explained by some omitted variable, but he does not find any support for this. He further finds that growth accelerations in Asia are often preceded by an undervalued exchange rate. In contrast, he finds that the Sub-Sahara African growth accelerations were preceded by a period of overvaluation. His explanation for this seemingly paradoxical result is that growth accelerations in Africa do not emanate in manufacturing, the sector for which an undervalued exchange rate means most.

Rodrik argues that you can view undervaluation as a compensation for a difficult institutional contract environments and market failures in the industrial sector. He argues that it is primarily tradables that suffer from these problems. The first best solution would be to eliminate the distortions, but when this is hard you can use undervaluation as a second best tool. But it may be hard to achieve undervaluation. One option is to have a high savings rate relative to investment (like in China), but this does not seem possible for African countries at present. You could have a capital balance policy with taxes on capital inflows and liberalization of outflows, but that too seems hard to implement in the African case. Aid inflows are problematic in this context, since they counteract the ambitions to undervalue the exchange rate. So it is hard to think of an easily implemented exchange rate policy interventions, which leads to undervaluation. Also, in view of

the furore in 2010 over the global ‘currency war’, pursuing undervaluation may become politically very difficult in the future, especially for large economies.

A more promising approach, perhaps, is that suggested by Harrison and Rodriguez-Clare (2009). These authors argue that it may be possible to pursue some form of “soft” industrial policy to create a process, whereby authorities, industry and private organizations can collaborate to increase productivity. The idea is that you should shift from a policy which distorts prices to interventions that directly address coordination problems and other externalities. You could for example help a certain cluster of firms by increasing availability of labour with certain skills, support the introduction of new techniques, and improve regulations and infrastructure. You may further need to introduce regulations to maintain a certain product standards, invest in specific infrastructure, stipends for studies abroad, support for innovations, technical support etc. A soft industrial policy gives less room for corruption than a policy with direct support for specific firms and it is also more compatible with international rules for trade and investments.

4. Discussion and Conclusions

Africa has embraced radically different industrial policies since independence. In the 1960s, the dominating policy to support manufacturing in Africa was import-substitution. This policy led to an expansion of manufacturing production for the domestic market, but very few producers became competitive enough to break into the export market. The tariff protection of the manufacturing sector implied a bias against agriculture and traditional export sectors, and eventually this resulted in unsustainable current account deficits. Therefore, around 1980 adjustment policies started to be implemented under the auspices of the international financial institutions, which provided funding through so called Structural Adjustment Programmes. These programmes consisted of macroeconomic stabilization measures and structural reforms. Trade protection was rationalized and the level of protection reduced, and most countries moved away from a situation with seriously overvalued currencies. The structural reforms included privatization of state firms, and the liberalization of markets. As far as manufacturing was concerned this implied increased foreign competition at the same time as various forms of interventionist policies supporting manufacturing were phased out. Because of these reforms many non-viable manufacturing firms went out of business. At the time of writing, there is a

renewed interest in the role that industrial policy can play for growth and development. Perhaps the tide is turning again.

The structure of African trade can be said to "reveal" its present comparative advantages, which depend on technology, factor abundance, business environment, and other institutional factors. And it certainly does not seem as if Africa has its main comparative advantage in manufacturing. The factors behind the lack of revealed comparative advantage in the sector normally referred to are twofold. First, poor economic institutions tend to harm particularly transaction-intensive sectors like manufacturing. Second, even if Africa has a latent comparative advantage in manufacturing, the economies have not been able to shift factor proportions in favour of more capital-intensive manufacturing due to low levels of investment. Empirical studies of African manufacturing furthermore show that there is learning-by-exporting, but also that there are large entry-costs associated with entering the export market.

But it is conceivable that there exist multiple equilibria, due to externalities such as learning, network effects, and inter-industry spillovers. There are examples also in Africa of industrial clustering being associated with successful development, such as Kenya's horticulture industry and garments in, for example, Mauritius. Possibly coordination failures have prevented most African countries from exploiting the latent advantage or benefitting from the externalities associated with manufacturing production. Manufacturing may be associated with significant external effects, and so there are likely to be significant latent comparative advantages in the sector for African countries as well. Clearly, there may in such a situation be need for industrial policy to move the economy to the alternative equilibrium with a larger share for manufacturing in the product mix.

This was of course also the thinking behind the failed impost-substitution policies pursued earlier. Can African economies intervene more effectively now? We may first note that a shift in the pattern of specialisation requires capital accumulation. It seems clear that investment, at least in sectors outside extractive industries, has been hampered by both macroeconomic uncertainty and high costs of doing business. So improvements in these areas will make it easier to change the pattern of comparative advantage and production. We have cited evidence that Africa by now

has reached sufficient levels of sophistication with regard to many of the factors that previously have previously hampered growth.

But can there be a shift in the pattern of growth in favour of manufacturing? We have argued that substantive manufacturing growth will be hard to achieve without breaking into the international market. We do not think Africa is inherently unsuitable for manufacturing production and manufacturing exports. Instead, we think of Africa as having a latent comparative advantage in manufacturing. In the medium-term perspective, one would assume this will mainly be in segments of the manufacturing sector that are relatively low-tech or low-skill.

Can we find new forms industrial policy leading to more rapid manufacturing growth without distorting the economy? What is required is a policy that supports the development of manufacturing firms which are internationally competitive. This means that we want to see the emergence of competitive firms in tradables production. To achieve this, one can either support tradables sectors or only support exports. In the former case one supports tradables production also if it is sold domestically. Rodrik (2009a, p. 18) finds that increases in the industry share are more significantly related to growth than increases in export shares, and therefore he argues that it is the structural change that matters and not the export orientation per se. Still, we note that the results from firm level analysis in Africa suggest that export has its own positive effects.

Undervaluation of the currency is a subsidy of exports, while there are other means that can be used to support tradables production, that is affecting both exports and domestic sales. Rodrik's strategy proposal is that government should seek to enhance the relative profitability of non-traditional products that face large information externalities and coordination failures, or which suffers particularly strongly from the poor institutional environment. One can think of interventions such as tax exemptions, directed credit, payroll subsidies, investment subsidies, export processing zones aimed at specific firms or sectors. One can shift relative incentives in favour of tradables by reducing cost of inputs which are used intensively by modern economic activities. A typical area for intervention would be infrastructure for transport and logistics costs. Labour is the most important non-traded input, so what happens to wages is also very important for competitiveness.

On a general level all this sounds fine. But for Africa there are at least two concerns with regard to this type of interventions. The first is that the government does not have enough information, and the other is that, even if they did, there will be rent-seeking and corruption. The second type of concern is probably the most worrying one. Rodrik's response to the first concern is that mistakes are unavoidable but that governments generally eventually recognize their mistakes and change. And on the second one he argues that industrial policy is not the only area that is open to corruption, but that policies still are pursued in a whole range of policy areas. So the relevant question on this second point then is whether one should be particularly concerned about industrial policies. And maybe there are reasons to be extra worried. Attempts in this direction during the import-substitution phase in Africa were largely a failure. So the question is whether the institutional environment in Africa is good enough for more ambitious forms of industrial policy. And, if so, how should it be designed? Or, alternatively, should industrial policy be designed in a special way so as to account for the fact that the policy environment is extra challenging in Africa?

We think there are good reasons to think seriously about industrial policy, whilst recognizing that import protection is not the appropriate route to take. With good governance in place, there should be considerable scope for effective interventions. Countries that can put competent and non-corrupt governments in place, will have a good chance of achieving an economic take-off based on manufacturing when the costs of labour increase among its Asian competitors. In the end it boils down to a question of whether African political systems can deliver such governments.

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