

CHAPTER 2
**PROMOTING INDUSTRIAL
DEVELOPMENT IN AFRICA:
STAGES, PERFORMANCE
AND LESSONS LEARNED**

This chapter presents a short overview of attempts to promote industrialization in Africa and then discusses the past performance and current characteristics of Africa's manufacturing sector with a view to drawing lessons for the future.

A. STAGES OF INDUSTRIAL DEVELOPMENT IN AFRICA

While there are differences across countries in terms of the starting dates for the industrialization programmes, it is evident that industrial development in Africa has gone through three broad phases or stages since independence. The first phase which began in the 1960s and ended in the late 1970s is the import substitution industrialization (ISI) phase. The second phase, which represents the structural adjustment programme (SAP) phase, began in the early 1980s and ended in the late 1990s. The third phase, the poverty reduction strategy papers (PRSP) phase, began in 2000.

The import substitution industrialization phase

The ISI phase of industrial development in Africa began after political independence in the 1960s up until the late 1970s. As in other developing country regions, ISI in Africa started with the domestic production of consumer goods that were previously imported. The idea was that the domestic markets for these goods already existed and could form the basis for initiating an industrialization programme. While the initial focus was on consumer goods, there was the expectation that, as the industrialization process proceeds, there will also be domestic production of intermediate and capital goods needed by the domestic consumer goods industry. There was also the expectation and hope that the replacement of imported goods with domestically produced goods would, over time, enhance self-reliance and help prevent balance-of-payments problems.

The implementation of ISI involved substantial government support as well as protection of domestic firms from foreign competition. In particular, domestic infant industries were identified and nurtured through trade protection and other domestic economic policies. This was rationalized on the grounds that domestic firms have the potential to be competitive but require a temporary period of protection before they could withstand international competition.³ Although there are country-specific differences in policies adopted, the implementation of ISI in Africa generally involved the following elements: (a) restriction of imports to intermediate inputs and capital goods required by domestic industries; (b) extensive use of tariff and non-tariff

barriers to trade; (c) currency overvaluation to facilitate the import of goods needed by domestic industries; (d) subsidized interest rates to make domestic investment attractive; (e) direct government ownership or participation in industry; and (f) provision of direct loans to firms as well as access to foreign exchange for imported inputs (Mkandawire and Soludo, 2003; Wangwe and Semboja, 2003).

The share of manufacturing in African gross domestic product (GDP) rose substantially between 1970 and 1980 (table 1). However, it became evident in the late 1970s that industrial development through the ISI model could not be sustained for a variety of reasons. First, very few of the domestic firms supported actually became fully competitive in international markets (Wangwe and Semboja, 2003). Second, ISI has a high foreign exchange requirement in the early phase since it involves imports of intermediate inputs and capital goods needed by domestic industries. However, the implementation of ISI in most African countries did not lay emphasis on the generation of foreign exchange. Agriculture was also neglected. In particular, the focus of ISI was more on setting up factories rather than building the entrepreneurial capabilities that would foster industrial dynamism and the development of competitive export sectors. In addition, the domestic economic policies adopted during the period implicitly taxed agriculture and exports thereby reducing foreign exchange earnings. Consequently, in the late 1970s, the scarcity of foreign exchange became a serious constraint on industrial development in the region. It should be noted, however, that while the implementation of ISI in Africa generally had an anti-export bias, there is evidence suggesting that in countries such as Mauritius and Zimbabwe, the protection of the domestic market allowed firms to accumulate resources and invest in the development of capabilities needed for exporting (Wangwe, 1995; Lall and Wangwe, 1998).

The structural adjustment programmes phase

The SAP phase in Africa began in the early 1980s and ended in the late 1990s. In particular, its origin could be traced back to the early 1980s, when African countries experienced severe balance of payments crisis resulting from the cumulative effects of the oil crisis, the decline in commodity prices, and the growing import needs of domestic industries. In response to the crisis, many countries sought financial assistance from the International Monetary Fund (IMF) and the World Bank. The IMF/World Bank interpretation of the crisis and Africa's industrial development problems were that it had to do with poor domestic policies and so the recommendation was that African countries adopt SAPs (Soludo, Ogbu and Chang, 2004). This

interpretation and policy prescription was based on the findings of the Berg Report on *Accelerated Development in Sub-Saharan Africa: An Agenda for Action* published by the World Bank in 1981. The report argued that Africa's economic and industrial performance was poor because of policy inadequacies in the form of overvalued exchange rates, interest rate controls, overemphasis on industry at the expense of agriculture, and trade protectionism. In addition, the report was of the view that Africa's comparative advantage lay in agriculture and not industry. Consequently, it did not share the popular view among African policymakers that industry should be promoted through deliberate government intervention.

African countries that adopted SAPs were expected to implement certain policy reforms as a condition for receiving financial assistance from the IMF and the World Bank. The policy conditions included among other things: (a) deregulation of interest rates; (b) trade liberalization; (c) privatization of State-owned enterprises (parastatals); (d) withdrawal of government subsidies; and (e) currency devaluation. One of the key objectives of SAPs was to reduce the role of the State in the industrialization and development process and give market forces more room in the allocation of resources. The assumption was that markets are more efficient than the State in resource allocation and that the appropriate role of the latter should be to provide an enabling environment for the private sector to flourish.

Critics of SAP argue that it placed Africa on a low-growth path, undermined economic diversification efforts, and led to an erosion of the industrial base in the region (Sundaram and von Arnim, 2008; Mkandawire, 2005; Soludo, Ogbu and Chang, 2004; Stein, 1992). In particular, the focus on liberalization of markets coupled with the phasing out of various forms of interventionist policies supporting manufacturing drove many domestic firms out of business. This resulted in the destruction of what remained of the local industry base despite the potential of technological upgrading in some of the existing domestic firms (Lall, 1995). In Mozambique, for example, the reduction in the strategic role of the State during the SAP period undermined attempts to promote industrial development. There is also evidence that in Ghana, Nigeria and Zambia, trade liberalization under SAP exposed domestic firms to import competition and led to the closure of some manufacturing firms (Lall and Mwangwe, 1998).

To summarize, the expectation that SAP would make African firms more competitive, trigger industrial development, and lay the foundation for sustained economic growth has not been realized. As was the case with ISI, the adoption

of SAP did not lead to the attainment of the objective of structural transformation and export diversification in Africa. Against this backdrop, in the late 1990s African policymakers began to reappraise their development strategies with a view to avoiding some of the mistakes made in the ISI and SAP phases.

The PRSP phase

By the second half of the 1990s, many African countries had accumulated enormous foreign debt and the burden of debt service became an obstacle to growth and development. In response to this challenge, in 1996 donors launched the Heavily Indebted Poor Countries (HIPC) initiative designed to provide relief to severely indebted countries. Dissatisfaction with the slow progress of the HIPC initiative in reducing the debt of poor countries led to the adoption of the enhanced HIPC initiative in 1999 (Booth, 2003). As a precondition for participation in the enhanced HIPC initiative, potential recipients were required to prepare PRSPs detailing how the resources made available through debt relief would be used to reduce poverty in the recipient country. In particular, recipient countries were encouraged to invest the resources from debt relief in the social sectors such as health and education (particularly at the primary and secondary levels). Consequently, since 2000, most African countries considered eligible for participation in the HIPC programme have prepared PRSPs, giving priority to spending on health as well as primary and secondary education. Therefore, the year 2000 marked the beginning of another phase of policy design and implementation that had implications for industrialization in the region.

While the PRSP differs from the ISI and SAP in the sense that it was specifically designed as a debt relief programme, it is evident that it did have consequences for industrial development in Africa because the first generation PRSPs led to a shift of resources from the production to the social sectors. The second generation PRSPs have tried to address the social sector bias problem associated with the first generation PRSPs. However, interest in the productive sectors in second generation PRSPs in Africa tends to be in agriculture and its related industries, reflecting largely the widespread view that African countries have a comparative advantage in these industries and that agriculture is an important source of pro-poor growth. For an in-depth analysis of the implications of the PRSP for Africa's economic development see UNCTAD (2006).

B. THE PERFORMANCE AND CHARACTERISTICS OF AFRICAN MANUFACTURING

This section examines the past performance and current characteristics of Africa's manufacturing sector with a view to identifying some stylized facts on the development of manufacturing in the region. It should be noted however that there is a high degree of heterogeneity across African countries and so manufacturing performance will vary across countries. The main stylized facts identified in the data are as follows.

The contribution of manufacturing to GDP peaked in 1990 and fell thereafter

The share of African manufacturing in GDP rose from a low of 6.3 per cent in 1970 to a peak of 15.3 per cent in 1990 (Table 1). Since then, there has been a significant decline in the contribution of manufacturing to GDP. In particular, the share of manufacturing in GDP fell from 15.3 per cent in 1990 to 12.8 per cent in 2000 and 10.5 per cent in 2008. It is interesting to note that the decline in the contribution of manufacturing to GDP since 1990 has been observed in all subregions of the continent. In Eastern Africa, the share of manufacturing in GDP fell from 13.4 per cent in 1990 to 9.7 per cent in 2008. In West Africa it fell from 13.1 to 5 per cent over the same period. Furthermore, in Southern Africa, it fell from 22.9 to 18.2 per cent and in Northern Africa it fell from 13.4 to 10.7 per cent.

Africa still accounts for a very low share of global manufacturing

As indicated by the small bubble sizes in figures 1 and 2, Africa continues to be marginalized in global manufacturing production and trade. The share of the region in global manufacturing value added fell from 1.2 per cent in 2000 to 1.1 per cent in 2008. In developing Asia, it rose from 13 per cent to 25 per cent and in developing countries in Latin America it fell from 6 per cent to 5 per cent over the same period. There has also been no significant change in the region's share of global manufacturing exports in recent years. In particular, while Africa's share of global manufacturing exports rose slightly from 1 per cent in 2000 to 1.3 per cent in 2008, in low- and middle-income countries in East Asia and the Pacific it rose from 9.5 per cent in 2000 to 16 per cent in 2008. Furthermore, in low-

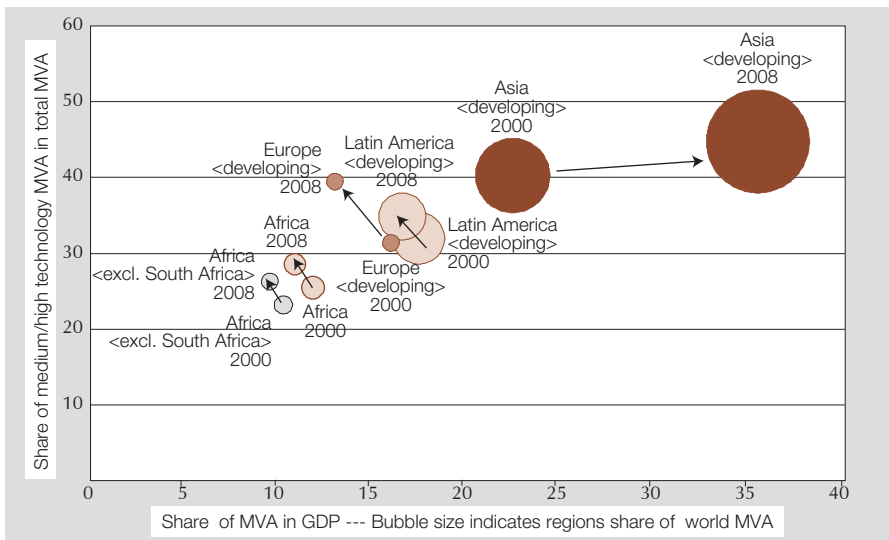
Table 1. Contribution of industry to GDP, 1970–2008

| | % share of GDP | 1970 | 1980 | 1990 | 2000 | 2005 | 2008 |
|------------------------------|--------------------|------|------|------|------|------|------|
| World | Industry | 36.9 | 38.1 | 33.3 | 29.1 | 28.8 | 30.1 |
| | Manufacturing | 26.7 | 24.4 | 21.7 | 19.2 | 17.8 | 18.1 |
| | Mining & utilities | 3.9 | 7.1 | 5.2 | 4.5 | 5.5 | 6.2 |
| Developing economies | Industry | 27.3 | 41.1 | 36.8 | 36.3 | 38.9 | 40.2 |
| | Manufacturing | 17.6 | 20.2 | 22.4 | 22.6 | 23.3 | 23.7 |
| | Mining & utilities | 5.7 | 14.7 | 8.9 | 8.3 | 10.1 | 10.9 |
| African developing economies | Industry | 13.1 | 35.6 | 35.2 | 35.5 | 38.8 | 40.7 |
| | Manufacturing | 6.3 | 11.9 | 15.3 | 12.8 | 11.6 | 10.5 |
| | Mining & utilities | 4.8 | 19.3 | 15.2 | 18.4 | 23.0 | 25.8 |
| Eastern Africa | Industry | 3.1 | 7.8 | 20.6 | 18.6 | 20.6 | 20.3 |
| | Manufacturing | 1.7 | 4.9 | 13.4 | 10.4 | 10.3 | 9.7 |
| | Mining & utilities | 0.8 | 1.5 | 3.3 | 3.1 | 3.6 | 3.7 |
| Middle Africa | Industry | 34.2 | 38.4 | 34.1 | 50.4 | 57.9 | 59.8 |
| | Manufacturing | 10.3 | 11.8 | 11.2 | 8.2 | 7.3 | 6.4 |
| | Mining & utilities | 19.1 | 21.2 | 18.9 | 39.3 | 47.9 | 50.5 |
| Northern Africa | Industry | 34.2 | 50.0 | 37.4 | 37.8 | 45.0 | 46.0 |
| | Manufacturing | 13.6 | 9.7 | 13.4 | 12.8 | 11.3 | 10.7 |
| | Mining & utilities | 15.7 | 33.0 | 17.2 | 19.5 | 28.2 | 29.8 |
| Southern Africa | Industry | 38.2 | 48.2 | 40.6 | 32.7 | 31.7 | 34.5 |
| | Manufacturing | 22.0 | 20.9 | 22.9 | 18.4 | 17.9 | 18.2 |
| | Mining & utilities | 12.0 | 24.0 | 14.3 | 11.7 | 11.2 | 13.1 |
| Western Africa | Industry | 26.7 | 43.3 | 34.5 | 39.8 | 36.7 | 37.4 |
| | Manufacturing | 13.3 | 16.8 | 13.1 | 7.8 | 6.0 | 5.0 |
| | Mining & utilities | 7.7 | 21.3 | 18.8 | 29.3 | 27.7 | 29.6 |

Source: UNCTAD/UNIDO.

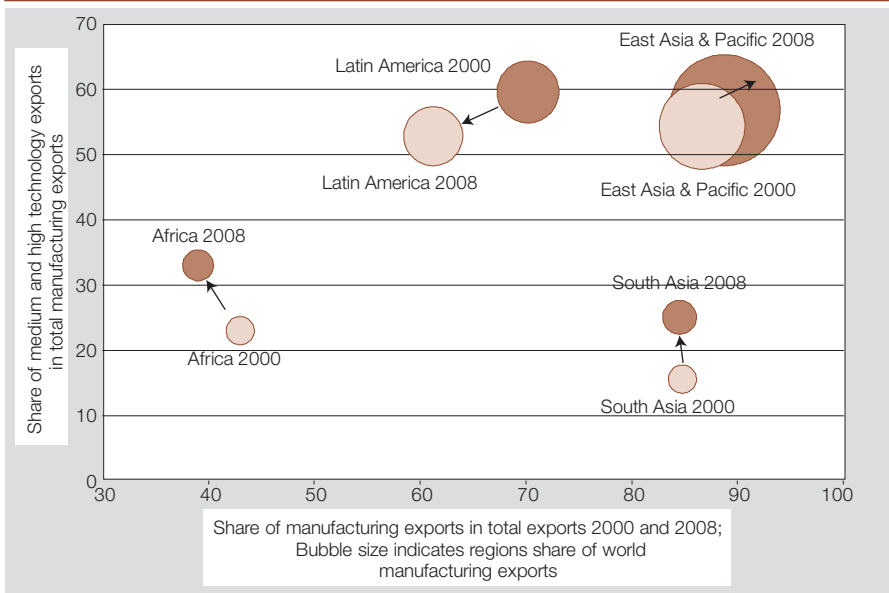
and middle-income countries in Latin America it fell from 5 per cent to 4.5 per cent over the same period. These facts suggest that African countries have not taken full advantage of the opportunities offered by manufacturing for growth and development. They also suggest that the region continues to be marginalized in global manufacturing trade.

Figure 1. Structural transformation of Africa's economy vis-à-vis other developing regions



Source: UNCTAD/UNIDO.

Figure 2. Structural transformation of Africa's exports vis-à-vis other developing regions



Source: UNCTAD/UNIDO.

Manufacturing in Africa is small relative to other developing-country regions and has been falling as a share of both GDP and exports

It makes sense to analyse the relative degree of structural transformation of African economies from the domestic as well as the international perspective in more detail. On the one hand, from the domestic production perspective (figure 1), two levels of transformation can be distinguished: (a) an increase in the relative contribution of manufacturing to the whole economy as well as (b) an increase in the relative contribution of more technology intensive manufacturing activities to total manufacturing. On the other hand, it is also necessary to look into the structure of African manufacturing exports, in order to understand the competitiveness of African manufactures in global markets (figure 2). From this perspective, we can also distinguish between two levels of transformation: (a) an increase in the relative contribution of manufacturing exports to total exports as well as (b) an increase in the relative contribution of more technology intensive manufacturing exports to total manufacturing exports.

One of the important features of manufacturing in Africa today is that, relative to other developing economies, the sector plays a very limited role in African economies (figure 1). In particular, the share of manufacturing value added (MVA) in Africa's GDP is small relative to what is observed in other developing-country regions. In 2000, manufacturing accounted for 12.8 per cent of GDP in the region and in 2008 it accounted for 10.5 per cent. Unlike the situation in Africa, manufacturing seems to play a more important role in economic activities in both developing Asia and Latin America. In Asia, the share of MVA in GDP rose from 22 per cent in 2000 to 35 per cent in 2008 while in Latin America it fell from 17 per cent to 16 per cent over the same period.

The slow pace of manufacturing development in Africa is also evident at the international level. Manufacturing exports represent a relatively low percentage of total African exports and, more importantly, the share has declined over the years (figure 2). While the share of manufactures in Africa's exports was 43 per cent in 2000, it fell to 39 per cent in 2008. The decline in the importance of manufacturing in Africa's exports can be explained in part by the growing trade between Africa and non-African developing countries, which has led to a substantial increase in commodity exports in recent years. It should be noted that the share of manufacturing exports in Africa's total exports is also low when compared to other developing regions. For example, in 2008, the share of manufacturing exports in

total exports was 89 per cent in low and middle income countries in East Asia and the Pacific, 61 per cent in low and middle income countries in Latin America, and 85 per cent in low- and middle-income countries in South Asia.

But progress has been made in boosting medium and high technology manufactures

Figures 1 and 2 indicate that Africa has made some progress in boosting medium and high technology manufacturing activities in recent years. The share of medium and high technology (MHT) activities in total MVA in the region increased from 25 per cent in 2000 to 29 per cent in 2008. Furthermore, the share of medium and high technology exports in total manufacturing exports rose from 23 per cent in 2000 to 33 per cent in 2008. The growing share of medium and high technology activities in both African MVA and manufacturing exports is important because technology-intensive manufacturing sectors grow faster, have greater learning prospects, and have more spillover effects on the rest of the economy. Furthermore, they generate higher value added and impose higher entry barriers. In contrast, simple sectors such as resource-based (RB) and low technology (LT) manufacturing generate lower and less sustainable margins as competition is much tougher. These simple sectors generally do not need a strong human capital base and have been the main entry points in industry by most developing countries (UNIDO, 2009).

Despite the recent progress made, it should be noted that the shares of medium and high technology activities in both Africa's MVA and manufacturing exports are still low relative to those of Asia and Latin America (figures 1 and 2). Furthermore, Africa's medium and high technology manufacturing activities are highly concentrated in the chemical industry. In particular, chemicals account for almost one fifth of African MVA today, giving the continent a share of 2.2 per cent of the world chemical manufacturing capacity (table 2). In contrast, other MHT activities play a relatively minor role in African manufacturing. In terms of exports, Africa is mostly active in the medium technology rather than the high technology product groups. Table 3 shows that the top three products (pig iron, passenger cars and fertilizers) in the medium technology category account for 10.3 per cent of African manufacturing. On the other hand, the top three products in the high-technology category (valves and transistors, telecommunication equipment, and aircraft/spacecraft) account for only 1.9 per cent of African manufacturing.

Table 2. African manufacturing by sector and technological classification, 2000–2009 (%)

| ISIC rev. 3 manufacturing sectors | African MVA structure | | African growth | African share in the world | |
|---|-------------------------|-------------------------|----------------------------------|----------------------------|-------------------------|
| | 2000 share of total MVA | 2009 share of total MVA | Compound annual growth 2000–2009 | Share in World MVA 2000 | Share in World MVA 2009 |
| 15 – Food and beverages | 20.0 | 16.6 | 1.1 | 2.4 | 1.9 |
| 16 – Tobacco | 3.0 | 2.6 | 1.6 | 3.4 | 2.5 |
| 20 – Wood | 2.8 | 1.8 | -1.9 | 1.7 | 1.5 |
| 21 – Paper | 3.1 | 3.0 | 2.9 | 1.3 | 1.5 |
| 23 – Refined petroleum and coke | 5.9 | 6.1 | 3.6 | 2.0 | 2.1 |
| 25 – Rubber and plastics | 2.7 | 2.9 | 4.1 | 1.0 | 1.1 |
| 26 – Glass and other non metallic minerals | 6.8 | 10.1 | 7.9 | 2.2 | 3.3 |
| 27 – Basic metals | 7.3 | 5.6 | 0.4 | 1.7 | 1.0 |
| Subtotal RBM (resource-based manufacturing) | 51.6 | 48.8 | 2.6 | 2.0 | 1.8 |
| 17 – Textiles | 6.8 | 4.7 | -0.9 | 3.1 | 2.3 |
| 18 – Apparel | 4.7 | 4.3 | 2.3 | 3.0 | 3.3 |
| 19 – Leather | 1.5 | 1.2 | 0.8 | 2.7 | 2.3 |
| 22 – Publishing and printing | 2.9 | 2.7 | 2.7 | 0.8 | 1.0 |
| 28 – Fabricated metal products | 5.2 | 5.1 | 3.0 | 1.1 | 1.3 |
| 36 – Furniture and manufacturing n.e.c. | 1.8 | 1.8 | 3.2 | 0.7 | 0.7 |
| Subtotal LTM (low technology manufacturing) | 22.9 | 19.9 | 1.6 | 1.5 | 1.5 |
| 24 – Chemicals | 12.4 | 19.2 | 8.4 | 1.6 | 2.2 |
| 29 – Machinery and equipment | 3.7 | 3.6 | 2.9 | 0.6 | 0.6 |
| 30 – Office machinery | 0.3 | 0.3 | 3.9 | 0.1 | 0.1 |
| 31 – Electrical machinery | 2.0 | 2.5 | 5.9 | 0.6 | 0.6 |
| 32 – Radio, TV and communication equipment | 0.9 | 0.8 | 2.2 | 0.1 | 0.0 |
| 33 – Medical, precision and optical instruments | 0.3 | 0.3 | 3.3 | 0.1 | 0.1 |
| 34 – Motor vehicles | 4.9 | 3.8 | 0.4 | 0.9 | 0.7 |
| 35 – Other transport equipment | 1.0 | 0.9 | 1.8 | 0.5 | 0.4 |
| Subtotal MHTM (medium/high technology manufacturing) | 25.5 | 31.4 | 5.7 | 0.6 | 0.6 |
| TOTAL Manufacturing | 100.0 | 100.0 | 3.2 | 1.2 | 1.1 |

Source: UNCTAD/UNIDO.

Table 3. Structure of African manufacturing exports (top 10 export products by technology category)⁴

| Top 10 resource-based manufactured export products | | | Top 10 low technology manufactured export products | | |
|---|---------------------------|---|---|----------------------------|---|
| SITC Product code | Product | Share in total manufacturing exports (2008) | SITC Product code | Product | Share in total manufacturing exports (2008) |
| 334 | Heavy petrol/bitum oils | 12.4 | 845 | Articles of apparel nes | 2.9 |
| 342 | Liquid propane/butane | 4.6 | 842 | Women/girl clothing woven | 1.8 |
| 667 | Pearls/precious stones | 4.5 | 841 | Mens/boys wear, woven | 1.7 |
| 522 | Elements/oxides/hal salt | 4.2 | 673 | Flat rolled iron/st prod | 1.0 |
| 287 | Base metal ore/conc nes | 2.8 | 699 | Base metal manufac nes | 0.9 |
| 281 | Iron ore/concentrates | 2.2 | 851 | Footwear | 0.8 |
| 335 | Residual petrol. prods | 1.0 | 675 | Flat rolled alloy steel | 0.8 |
| 283 | Copper ores/concentrates | 1.0 | 611 | Leather | 0.7 |
| 37 | Fish/shellfish, prep/pres | 0.9 | 893 | Articles nes of plastics | 0.7 |
| 112 | Alcoholic beverages | 0.8 | 821 | Furniture/stuff furnishg | 0.7 |
| Concentration level (combined share of top 10 products) | | 34.3 | Concentration level (combined share of top 10 products) | | 12.0 |
| Top 10 medium technology manufactured export products | | | Top 10 high technology manufactured export products | | |
| SITC Product code | Product | Share in total manufacturing exports (2008) | SITC Product code | Product | Share in total manufacturing exports (2008) |
| 671 | Pig iron etc ferro alloy | 4.2 | 776 | Valves/transistors/etc | 0.7 |
| 781 | Passenger cars etc | 3.3 | 764 | Telecomms equipment nes | 0.6 |
| 562 | Manufactured fertilizers | 2.8 | 792 | Aircraft/spacecraft/etc. | 0.6 |
| 773 | Electrical distrib equip | 2.4 | 542 | Medicaments include vet | 0.3 |
| 743 | Fans/filters/gas pumps | 2.3 | 874 | Measure/control app. nes | 0.3 |
| 793 | Ships/boats/etc | 1.5 | 771 | Elect power transm equip | 0.2 |
| 782 | Goods/service vehicles | 1.3 | 752 | Computer equipment | 0.2 |
| 772 | Electric circuit equipmt | 1.1 | 716 | Rotating electr plant | 0.1 |
| 784 | Motor veh parts/access | 0.9 | 759 | Office equip parts/accs. | 0.1 |
| 598 | Misc chemical prods nes | 0.7 | 525 | Radio-active etc. material | 0.1 |
| Concentration level (combined share of top 10 products) | | 20.6 | Concentration level (combined share of top 10 products) | | 3.3 |

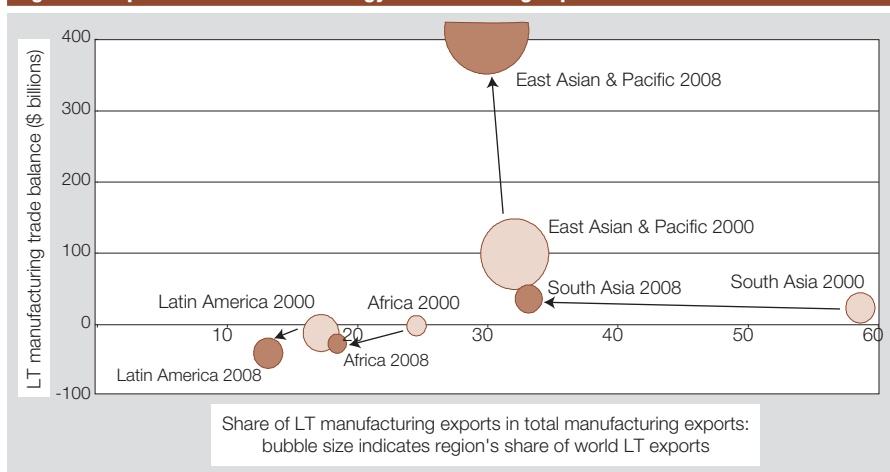
Source: UNCTAD/UNIDO.

Africa is losing ground in labour-intensive manufacturing sectors

Given the fact that most African countries are at an early stage of industrial development, one would expect the region to have very good performance in LT or labour-intensive manufacturing activities that tend to be especially important for early industrializing countries. However, the labour-intensive sectors (e.g. textiles, apparel and leather products) play a rather limited role in African manufacturing today, both in terms of domestic manufacturing production as well as exports. At the domestic level, LT manufacturing activities account for roughly one fifth of African manufacturing value-added only and its share has decreased from 23 per cent in 2000 to 20 per cent in 2009. A large part of this change is due to a decline in the share of textiles, from about 7 per cent in 2000 to 5 per cent in 2009 (table 2). The three most important LT manufacturing activities in Africa today are fabricated metals, textiles and apparel.

In terms of exports, the share of LT manufacturing exports in Africa’s total manufacturing exports has also decreased, from 25 per cent in 2000 to 18 per cent in 2008 (figure 3). As a result of this decline, the region’s share of global LT exports fell from 1.5 per cent to 1.3 per cent while the share of East Asia and the Pacific rose from 17 per cent to 26 per cent over the same period. Table 3 shows

Figure 3. Importance of low technology manufacturing exports and trade balance



Source: UNCTAD/UNIDO.

that the top 10 products in the LT category accounted for only 12 per cent of Africa's manufacturing exports. Furthermore, the largest three LT product groups alone (i.e. various apparel products) accounted for about half of this share. Given that many developing countries in other regions have managed to experience significant growth through exporting LT manufactures, it is also relevant to consider Africa's trade balance in LT manufactures. Although Africa's exports and imports in LT manufactures were balanced in 2000, the region had a trade deficit in LT manufactures in 2008. The fact that Africa is increasingly dependent on other regions for LT manufacturing products is significant for two reasons. First, the trade deficit indicates that African economies have a sizeable domestic market for LT products which could form a basis for the expansion of LT manufacturing activities in some African countries. Second, LT sectors are a stepping stone towards MHT sectors. Increased involvement and export growth in LT industries could stimulate capital deepening and thus facilitate structural transformation into more advanced sectors.

Africa is heavily dependent on resource-based manufactures

In 2009, resource-based (RB) manufacturing accounted for about 49 per cent of total MVA in the region, compared with 20 and 31 per cent respectively for LT and MHT manufacturing (table 2). The most important products in RB manufacturing in Africa based on their contributions to MVA are food and beverages (17 per cent) and glass and other non-metallic minerals (10 per cent). In terms of exports, Africa also has a strong dependence on resource-based manufactures. In particular, the share of RB manufactures in total manufacturing exports was 52 per cent in 2000 and 49 per cent in 2008. Furthermore, the top 10 RB manufactures accounted for 34 per cent of Africa's total manufacturing exports in 2008. Africa's high dependence on RB manufactures contrasts with the situation in Latin America and East Asia and the Pacific, where the shares of RB in total manufacturing exports were 34 and 13 per cent respectively in 2008. While RB manufacturing exports can contribute to high growth rates (Kjöllerström & Dallto 2007), they involve relatively low value addition and also make exporting countries highly vulnerable to external price shocks. Furthermore, natural resource-based sectors exhibit lower productivity growth and have few linkages with the rest of the economy (Lall, 2004c). In sum, resource-based manufactures show only very limited product differentiation and thus share several characteristics of commodities.

African manufacturing is dominated by small firms

An important feature of African economies is that the industrial structure is very weak in terms of both the number of firms and of their average size. While there are differences across countries, the large majority of industrial firms are small or micro enterprises operating side by side with a few large-scale (often foreign or State-owned) firms found mostly in the raw material and extractive sectors. It should be noted that a significant proportion of the small or micro enterprises in Africa are informal as opposed to formal firms. Furthermore, African economies are characterized by a “missing middle” in the size distribution of firms in the sense that there are very few medium-sized firms (Bigsten and Söderbom, 2006). The small average size of African firms is a problem from the perspective of long-run growth since the size of firms is correlated with export activity and productivity (Rankin *et al.*, 2006). In particular, small firms tend to be less productive than large firms.

In addition to the size distribution of firms in African countries, which is highly skewed towards micro and small firms, there is the fact that firms are also characterized by extremely low size mobility. In other words, it is difficult either for micro and small firms to become medium-sized firms or for the latter to become large firms (Sandefur, 2010; van Biesebroeck, 2005b). Furthermore, there is a high degree of concentration in the sense that a few large and mid-sized firms account for the bulk of manufacturing value-added and exports in Africa. For example, in Ethiopia, 31 large and mid-size firms account for about half of total exports (Sutton and Kellow, 2010).

With the exception of firms involved in industrial clusters, there is relatively very low interaction among African firms. The lack of interaction is a concern because linkages among firms have positive effects that enhance firms’ competitiveness. Both cooperation (which allows exploitation of economies of scale as well as scope and favours innovation, learning and skills development) and agglomeration (which increases the local availability of skilled labour, inputs and machinery) are beneficial to firms (Altenburg and Eckhardt, 2006).

African firms have weak technological capabilities

Another interesting feature of manufacturing in Africa is that domestic firms have weak technological capabilities and are embedded in fragmented learning and innovation systems. Oyelaran-Oyeyinka (2006) suggests that African countries

have weak capabilities in mechanical or engineering industries, are trade-based commodity economies, and are largely users rather than developers of new technologies. Lall (2004b) attributes the weak technological capability of African firms to lack of technological support and infrastructure for domestic enterprises. Furthermore, he argues that most African enterprises do not make significant investments in technological effort. Consequently, they have difficulties entering into, as well as competing in, export markets for medium and high technology manufactures.

Industrial clusters play an important role in African manufacturing

Industrial clusters play an important role in African manufacturing.⁵ An industrial cluster may take different forms: in its simplest form it is an agglomeration of (usually) small and medium-sized firms which belong to the same sector. One or more large firms may also be part of the cluster. A major advantage of being part of a cluster is that it reduces geographical and informational costs for firms. This type of organizational form is particularly advantageous in the African context characterized by poor infrastructure and weak information systems. Based on the international experience, clusters are believed to play a significant role in the promotion and development of small and medium-sized enterprises (SMEs). In general, clusters (a) make market access easier; (b) are characterized by labour pooling; (c) facilitate technological spillovers; and (d) create an environment conducive to joint actions. McCormick (1999) provides a detailed analysis of six clusters in three African countries (Kenya, Ghana and South Africa). The cases considered show that African clusters, far from being homogeneous, vary in both internal structure and level of industrialization. Furthermore, research on African economies has shown that belonging to clusters, particularly in the case of SMEs, is associated with an increase in firm's competitiveness (Zeng, 2008). Interestingly, African clusters belong to very different sectors, from natural resource-based activities, such as fishing, to high-tech industries, such as auto parts and computer manufacturing.⁶

Informality is a feature of African manufacturing

Another characteristic of African manufacturing is the preponderance of informal enterprises. While it is difficult to obtain recent and reliable data on informality in the region, there is some evidence that it is quite high. For instance, Bigsten, Kimuyu and Lundvall (2004) show that in Kenya informal manufacturing enterprises

account for about 83 per cent of total manufacturing employment. Furthermore, over the period 1998–2002, the informal manufacturing sector growth rate was 10.5 per cent compared to the growth rate of formal manufacturing sector which was 1.5 per cent. Meagher (2009) provides an account of informal industrialization of the Igbo States in Nigeria. She argues that the expansion of local manufacturing in Nigerian cities (such as Aba and Nnewi) could be ascribed to the widening of markets made possible by informal trading and transport networks.

The extent of informality is relevant to the issue of industrial development because it has been shown that there is correlation between the legal status of a firm and its production characteristics. La Porta and Shleifer (2011) provide an analysis of informality in Africa. They define informal firms as those that are not registered with the government. In other words, they operate outside the legal framework. Using data from 24 African countries, they find that informal firms have lower productivity than small formal firms. Furthermore, they are smaller in size, produce to order, are run by managers with low human capital, do not have access to external finance, do not advertise their products, and sell to largely informal clients for cash. The analysis also highlights something very important from an industrial policy point of view. Informal and formal firms occupy very different market niches and the former rarely become formal since there is very little demand by formal firms for informal products. Most importantly, it seems that informal firms do not become formal as they grow.

It should be noted that the informal sector is not homogenous in the sense that informal firms have very different characteristics. For instance, evidence for Mozambique shows there are substantial differences among informal enterprises in the country, which implies that effective policy interventions should take into consideration the heterogeneity of firms (Byiers 2009). There are various reasons for the informality of firms: it may offer a means of survival in the absence of social security nets, it may be a way to earn income while searching for a formal job, or it may be a strategy to compete with formal firms. A distinction should also be made between informal firms that would prefer to be formal if they could (involuntarily informal) and those that choose to be informal as a strategy (voluntarily informal). Policy intervention should take into consideration these two very different types of informality.

Manufacturing performance varies across African countries

Heterogeneity amongst countries is an important feature of African manufacturing. In particular, there is a wide variance across countries in terms of both the level and growth of MVA per capita (table 4). In 1990, 6 of the 52 African countries for which data are available had MVA per capita of at least \$200 and in 2010 the number of countries with an MVA per capita of at least \$200 was 9. In terms of manufacturing growth, 23 African countries had negative MVA per capita growth over the period 1990–2010 and 5 countries had an MVA per capita growth above 4 per cent. This issue of heterogeneity is taken up in more detail in the next chapter.

C. LESSONS LEARNED

The review of the history of attempts to promote industrial development in Africa and the analysis of the performance of African manufacturing presented in this chapter suggests that, in general, the strategies adopted did not achieve the broad objective of inducing structural transformation and economic diversification in the region. While some progress was made in several countries at the different industrial development phases, this has not been enough to trigger and sustain significant structural transformation in the region. In addition, the limited progress made so far has not led to a significant change in the region's share of either global exports or manufacturing value-added. Consequently, the region remains marginalized in world trade. Notwithstanding this drawback, there are important lessons to be learned from the four decades of attempts to promote industrialization in the region.

The nature and implementation of domestic policies matter

One of the lessons from the industrial development experience of African countries is that the form and the implementation of domestic policies affect development outcomes. Policy failures both in design and implementation during the ISI, SAP and PRSP phases did contribute to the poor industrial performance of African countries (Soludo, Ogbu and Chang 2004; Lall and Mwangwe 1998). In the ISI phase, government policies and efforts focused more on providing support to entrepreneurs than on getting them to perform. Furthermore, the emphasis was on setting up industries rather than on building dynamic capabilities that would allow firms to be competitive and survive in export markets. With regard to SAP, the withdrawal of government support even in the presence of pervasive market

Table 4. Manufacturing performance of African countries

| Country | MVA per capita (1990) | MVA per capita (2010) | MVA per capita (Compound annual growth rate 1990–2010) | RB manufacturing share of MVA (2009) | LT manufacturing share of MVA (2009) | MHT manufacturing share of MVA (2009) |
|--------------------------|-----------------------|-----------------------|--|--------------------------------------|--------------------------------------|---------------------------------------|
| Algeria | 179 | 136 | -1.4 | 67 | 20 | 13 |
| Angola | 26 | 66 | 4.8 | 46 | 41 | 12 |
| Benin | 21 | 23 | 0.4 | | | |
| Botswana | 124 | 171 | 1.6 | | | |
| Burkina Faso | 26 | 37 | 1.9 | | | |
| Burundi | 16 | 9 | -2.9 | | | |
| Cameroon | 126 | 148 | 0.8 | 75 | 24 | 2 |
| Cape Verde | 108 | 139 | 1.2 | | | |
| Central African Republic | 21 | 16 | -1.3 | 76 | 16 | 8 |
| Chad | 22 | 15 | -1.8 | | | |
| Comoros | 14 | 12 | -0.9 | | | |
| Congo | 62 | 83 | 1.5 | 81 | 6 | 13 |
| Côte d'Ivoire | 112 | 99 | -0.6 | 70 | 13 | 17 |
| Dem. Rep. of the Congo | 16 | 5 | -5.7 | | | |
| Djibouti | 37 | 20 | -3 | | | |
| Egypt | 177 | 369 | 3.7 | 37 | 16 | 48 |
| Eritrea | 9 | 9 | 0.2 | | | |
| Ethiopia | 8 | 9 | 0.3 | 67 | 20 | 13 |
| Gabon | 163 | 200 | 1 | 76 | 16 | 8 |
| Gambia | 19 | 16 | -0.7 | | | |
| Ghana | 20 | 28 | 1.6 | 86 | 7 | 6 |
| Guinea | 12 | 17 | 1.7 | | | |
| Guinea-Bissau | 26 | 16 | -2.2 | | | |
| Kenya | 49 | 47 | -0.3 | 68 | 19 | 13 |
| Lesotho | 44 | 103 | 4.3 | 36 | 55 | 9 |
| Liberia | 34 | 17 | -3.6 | | | |

Table 4 (contd.)

| Country | MVA per capita (1990) | MVA per capita (2010) | MVA per capita (Compound annual growth rate 90-10) | RB manufacturing share of MVA (2009) | LT manufacturing share of MVA (2009) | MHT manufacturing share of MVA (2009) |
|-----------------------------|-----------------------|-----------------------|--|--------------------------------------|--------------------------------------|---------------------------------------|
| Libyan Arab Jamahiriya | 319 | 237 | -1.5 | 81 | 8 | 11 |
| Madagascar | 30 | 25 | -0.8 | 79 | 13 | 7 |
| Malawi | 21 | 17 | -1 | 38 | 48 | 14 |
| Mali | 13 | 7 | -3.3 | 28 | 61 | 11 |
| Mauritania | 27 | 22 | -0.9 | | | |
| Mauritius | 522 | 801 | 2.2 | 35 | 48 | 16 |
| Morocco | 180 | 246 | 1.6 | 45 | 30 | 25 |
| Mozambique | 15 | 52 | 6.2 | | | |
| Namibia | 92 | 348 | 6.9 | | | |
| Niger | 13 | 10 | -1.5 | | | |
| Nigeria | 15 | 24 | 2.4 | 26 | 53 | 21 |
| Rwanda | 56 | 17 | -5.9 | | | |
| Sao Tome and Principe | 34 | 50 | 1.9 | | | |
| Senegal | 57 | 54 | -0.3 | 80 | 6 | 14 |
| Seychelles | 692 | 1,193 | 2.8 | | | |
| Sierra Leone | 9 | 6 | -2.4 | | | |
| Somalia | 8 | 7 | -0.1 | | | |
| South Africa | 551 | 581 | 0.3 | 52 | 17 | 31 |
| Sudan | 19 | 34 | 2.8 | 84 | 9 | 7 |
| Swaziland | 311 | 451 | 1.9 | | | |
| Togo | 22 | 25 | 0.5 | | | |
| Tunisia | 253 | 493 | 3.4 | 51 | 26 | 22 |
| Uganda | 9 | 26 | 5.6 | 58 | 29 | 13 |
| United Republic of Tanzania | 19 | 29 | 2.2 | 68 | 6 | 26 |
| Zambia | 36 | 44 | 1.1 | 74 | 11 | 15 |
| Zimbabwe | 106 | 34 | -5.5 | 44 | 44 | 12 |

Source: UNCTAD/UNIDO.

failures and the liberalization of trade without taking account of the capabilities of domestic firms are some examples of policy failures during this phase. In the case of the PRSP, the main policy failure was the fact that it shifted resources away from the productive sectors which are necessary for sustained growth and poverty reduction.

Structural constraints have to be dealt with

Although policy failures and exogenous shocks did contribute to poor industrial performance in Africa, structural factors also played a role and have to be addressed to enhance the likelihood of success in industrial development. The structural factors are manifest in the form of poor infrastructure, low human capital, small size of domestic markets, and a low entrepreneurial base (Lall 2004a). Infrastructure is critical to the development of manufacturing. But African countries have very poor transport, communication and energy infrastructure. Furthermore, Africa lags behind other developing country regions in skills and vocational training, reflecting largely the impact of the relative neglect of tertiary education. With regard to the other structural factors, there is the recognition that more effort has to be geared towards the development of entrepreneurship as well as building robust regional markets to address the limitation imposed by the small size of domestic markets.

Ownership of the development process is important

Another lesson from the experience of African countries is that, if they are to make significant progress in boosting and sustaining industrialization, they must take effective leadership of the development process. Because of Africa's high dependence on official flows, external actors have had significant influence on the choice of policies and development paths in the region and this has had serious consequences for the attainment of national development goals (UNCTAD, 2006; UNECA and African Union Commission, 2008; OECD, 2008). The experience of the SAP and PRSP phases indicates that, when countries do not have the space to adopt development policies and path they deem necessary, they are unlikely to achieve their industrialization objectives. Promotion of industrial development requires active government policies to build domestic capabilities and direct investment and resources to priority areas. External influences in the form of policy and process conditionalities limit the policy space available to governments and make the achievement of industrial development more difficult (UNCTAD, 2009c).

Exclusively inward-looking industrialization strategies have severe consequences

The experience with ISI in Africa suggests that an industrialization programme that focuses exclusively on the domestic market and does not have an export promotion component is likely to run out of steam. The small size of domestic markets in most African countries implies that they are unlikely to sustain an industrialization programme without access to external (regional and global) markets. External markets would provide an opportunity for African countries to expand production as well as exports, and reap the benefits of scale economies. It would also provide access to foreign exchange needed to import intermediate inputs and capital goods for domestic industries. In this context, it is important that industrial development in Africa be part of an overall process of integration into the global economy rather than inward-looking as in the ISI period. This means that both the domestic and external (regional and global) markets are important in the industrialization process.

Technological capabilities of domestic firms have to be developed

Technology and innovation are important in building the capabilities of domestic firms and preparing them to compete in export markets for medium and high technology manufactures. One of the lessons from past attempts to promote industrialization in Africa is that governments did not pay more attention to the building of technological capabilities of domestic firms to enhance their ability to produce medium and high technology goods (Oyelaran-Oyeyinka 2006). Lall (2004b) argues that African countries lag behind other regions in the provision of technological support and infrastructure to domestic firms. Furthermore, he suggests that the establishment of institutions for quality standards and testing, support for research and development, and provision of services to improve productivity are important government measures that could contribute to enhancing the technological capabilities of domestic firms.

Linkages are needed between agriculture and industry

The need to enhance food security implies that agricultural development should be part of Africa's development agenda. Furthermore, given the region's current endowment structure and stage of development, it is evident that the

agriculture sector will continue to be a major source of revenue, employment and foreign exchange in the short-to-medium term. Therefore, it is important that the promotion of industry is not done at the expense of agriculture. The experience of industrialization in Africa has shown that promoting industry through discrimination against agriculture will ultimately lead to agricultural as well as industrial stagnation, with dire consequences for growth and poverty reduction. There has been the tendency for policymakers to treat agriculture and industry as competitive alternatives. However, they are not necessarily substitutes and could be complements. In this regard, African countries can exploit the potential complementarities between both sectors through judicious use of policies to create mutually reinforcing linkages between them.

Avoid a top-down industrialization process

The government and the executive branch of government in particular, has been the main actor in the industrialization process of African countries. It allocates resources and makes decisions on which activities or sectors should be accorded priority, often with little or no consultation with the private sector. The experience of African countries, particularly during the ISI period, suggests that effective State–business relations are needed for effective design, implementation and monitoring of industrial development programmes. Interaction and coordination between the State and the private sector will ensure that policymakers have a good idea of the constraints facing businesses which should have a positive impact on policy design and implementation.

Political stability is a necessary condition

Another important lesson from the decades of implementation of industrial development strategies in Africa is that political stability is a necessary condition for the success of any industrial development programme. Addressing policy failures and lifting structural constraints will not have any substantial impact on industrialization if the political environment is not conducive to investment. In particular, domestic and foreign entrepreneurs are unlikely to invest in a society that is politically unstable. In addition, political instability hampers the development of manufacturing because it is often associated with the destruction of infrastructure and an increase in the cost of credit through rising risk premium.

Sustainability is as important as initiating an industrial programme

The lesson from the ISI period is that it is easier to start an industrial programme than to sustain it. Past attempts at industrialization in Africa and some parts of Latin America failed in part because they were based on a short-term view of the industrialization process and paid less attention to enhancing capacity to generate the foreign exchange needed to ensure sustainability. If industrial policy in Africa is to achieve the twin objective of promoting and sustaining industrialization, policymakers must adopt a long-term view of the development process. They also have to make informed decisions and either have or develop the capacity to effectively implement them.
