and Economic Cooperation Program (ITC). India spent more than $1 billion on such assistance, including training, deputation of experts, and implementation of projects. Over 15,000 African students study in India. Seminars and training classes are given to senior African diplomats and economic and financial officials.

Box 5.15 India's Contribution to the Pan-African E-network Project

Ethiopia has been selected as the first country to benefit from the pilot phase of the Pan-African E-network Project, a joint initiative between the Indian government and African Union (AU) to develop ICT infrastructure across the continent. Under the initiative, the Indian government will donate $1 billion to connect 53 African countries through satellite and fiber optic network to promote telemedicine and tele-education programs. The project is at "an advanced stage of implementation" in Ethiopia, and South Africa, Mauritius, and Ghana have also been short-listed for the pilot phase. The e-network initiative is being heralded by the local press as the largest infrastructure project in Africa's history, and the e-education and e-medicine programs are particularly expected to extend ICT infrastructure to certain rural communities and underserved areas. This announcement came during the recent "International Conference on ICT for Development, Education, and Training" in Addis Ababa, Ethiopia, and follows a major India-Africa trade summit in Accra, Ghana, dubbed as the "Making India a Partner of Choice" meeting.

Source: The Observatory on Borderless Higher Education
http://www.obhe.ac.uk/cgi-bin/news/article.pl?id=561

CONCLUSIONS AND POLICY IMPLICATIONS

Summary of Findings

This chapter assessed various between-the-border factors that facilitate trade and investment, particularly in the context of Africa's trade and investment ties with China and India. First, foreign market information on potential demand and investment opportunities is essential in facilitating trade and investment. Given the imperfect information flows now in existence for trade and investment with African countries, public information services, run by both the government or by private firms, have proven to be very important. While they also may work as a barrier to trade (chapter 3), standards and accreditation schemes may also reduce difficulties in assessing the quality of a product by enhancing the availability of reliable, accessible information on aspects considered important by exporters, importers, and consumers. Also while they run the danger of restricting domestic competition by segmenting markets (chapter 4), ethnic networks that operate across national borders can help overcome between-the-

border barriers by providing efficient circulation of market information within the networks that link African countries and India and China.

It was also presented how flows of technology and people between Africa and Asia facilitate the formation of business links that lead to trade and foreign direct investment flows, and how the latter two enhance technology transfers and migration simultaneously. The World Bank Africa-Asia Trade and Investment (WBAATI) Survey as well as Business Case Studies clearly suggest such two-way links in the context of China and India's trade and investment ties with African countries. For example, Chinese investors operating in Africa tend to bring their workforce from China. Also, exporting firms tend to rely more on foreign workers, whose skills and knowledge help firms to link themselves with overseas markets. The complementary relationship among people flows, trade, and capital flows suggests that any removal of between-the-border barriers should facilitate all of these flows. Increases in these three flows are likely to accelerate the pace of technological diffusion throughout Africa and Asia.

However, it is also the case that local technological transfer or skills transfer is somewhat compromised when foreign skilled workers are simply brought in with foreign capital without effective skills transfer to local workers either through subcontracts or employment opportunities. Furthermore, the emerging agenda for African firms is how to effectively capture opportunities for acquisition of technology and skill through participating in the international production network as discussed in chapter 6. At the same time, this chapter also showed how Chinese and Indian governments have increasingly invested their resources in providing technical cooperation to African countries to foster technological transfer to African countries.

The ability to enhance trade facilitation could offer significant opportunities to reduce direct and indirect costs in Africa. African, Chinese, and Indian firms have been hampered by inadequate and costly transport and logistics services in Africa. African firms continue to experience difficulty in accessing necessary trade financing tools, which is a particularly acute issue among small- and medium-size enterprises. At the same time, it was found that investment by Chinese and Indian firms in Africa has been significantly aided by public trade finance programs by the Export-Import Banks of those two countries.

Policy Implications

The WBAATI Business Case Studies suggest that one area of emphasis in improving trade facilitation should be dealing with customs and reduction of

transport costs. Many government departments are involved in trade facilitation processes. For example, improving coordination among institutions to better link trade and transport initiatives, both within and across countries, will facilitate harmonization of customs reforms. Furthermore, implementation of already-agreed decisions on regional trade (i.e., particularly on documents requirements and implementation of regional transit systems) will reduce the delays and the unpredictable application of rules across borders.

African countries face significant constraints to trade facilitation stemming from their market size, the situation of their landlocked countries, and their lack of financial and capacity resources to reduce direct and indirect costs. Hence, considering alternative solutions—such as adopting a regional approach to trade-related infrastructure investments, and requesting technical assistance from donors on these issues—is worthwhile. Without significant support from national governments, international organizations, and donors in resources, technology, and capacity building, no accomplishments can be made in trade facilitation. It is quite clear from the experience of developed countries, India, and China, that capacity building is essential for streamlining various processes and institutional mechanisms. It is important that each of the African countries work out a comprehensive strategy on trade facilitation for a more focused, coordinated, and well-resourced approach. Regional cooperation between Africa and Asia may also play an important role.

In the emerging structure of global production systems, participating in the production network, building forward and backward linkages of foreign capital and technology, and expanding the area of services are increasingly relevant for Africa. Technology diffuses in the receiving country mainly through the purchase of new equipment, direct foreign investment, the transfer of nonproprietary technology, licensing, information from customers, knowledge from returning nationals, and domestic research. Thus, African countries should emphasize Mode III and Mode IV when they liberalize their services sectors.

Given the suspension of the Doha Round WTO negotiations apart from bilateral efforts to promote Mode IV in liberalizing trade in services, African countries should encourage unilateral reforms to trade in services. India is a good example of a successful technology transfer in services. IT services and telecommunications were among the sectors that were the most liberalized in the 1990s. A liberal regulatory and policy framework encouraged investment by multinationals and temporary movement of skilled labor. These people flows enabled technology transfers. However, services reforms are complex and

resource-intensive. Experience in services liberalization around the world suggests that the design of efficient regulation that could allow foreign providers to access the market while maintaining a competitive environment in which public policy objectives are enforced is key to success.

The WBAATI Business Case Studies showed in very concrete terms how Chinese networks living in Africa help to overcome between-the-border barriers in doing business with China. Ethnic networks promote bilateral trade and investment by providing market information and by supplying matching and referral services. Equally, the transfer of knowledge and experiences transmitted by the African diaspora living in Europe and Asia has improved export opportunities and increased information to new markets. Following the experiences of Taiwan, India, and Ireland, actions should be taken to foster further interactions between African diaspora and professionals in the home country. For example, a combination of Internet-based and relationship-based networks should be developed and linkages with the Chinese and Indian diaspora should be established to serve as bridges for doing business.

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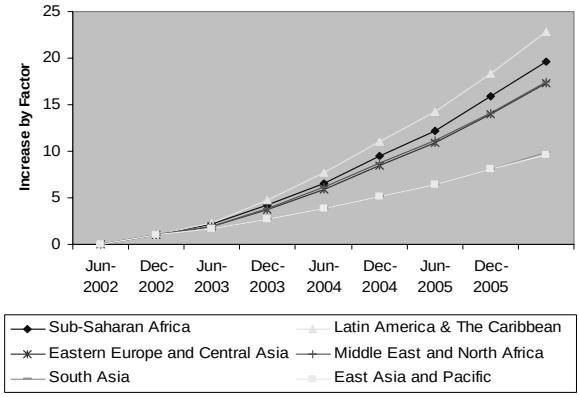
ANNEX

For more than a decade, the World Bank Group's Multilateral Investment Guarantee Agency (MIGA) has offered free online services to give investment promotion intermediaries a platform to effectively disseminate information on investment opportunities and to market their respective locations. The objective has been to provide information on investment opportunities and facilitate investment flows in emerging markets.[23] MIGA's online information dissemination services provide an interesting snapshot of the supply side of the FDI-information market. In terms of the number of FDI-information resources supplied through MIGA's online services, Sub-Saharan Africa is well represented compared to other regions. Out of nearly 8,400 investment-related information resources contained in the online services, 22 percent refer to Sub-Saharan Africa. Of the 55 national and provincial investment promotion agencies listed for Sub-Saharan Africa in MIGA's directories, 21 agencies supply content to the online services. South Africa, Tanzania, and Ghana appear consistently among the top countries in Sub-Saharan Africa in terms of the number of investment information resources available under each of the four subjects (legal, markets, business, opportunity). Also, South Africa tends to feature more prominently than the other countries.

An analysis of the number of users by region shows a very significant increase in the number of registered users based in East, South East, and South Asia who have selected Sub-Saharan Africa as a region of their interest for investment. Sub-Saharan Africa ranks second to Latin America and the Caribbean in terms of generating the most interest from Asian users (see figure 5A.1). Specifically, the number of FDI Xchange registered users who have selected Sub-Saharan Africa as a region of interest has increased 20 times during the period between June 2002, when the service was first launched, and December 2005.

The snapshot of investment information that is contained in MIGA's online services suggests that Sub-Saharan Africa overall is well represented. However, the "on-average" good picture of the continent hides significant asymmetries across countries in terms of investment information availability. Important gaps in the availability of information for many countries in Sub-Saharan Africa still exist. It should be noted that this analysis only points to a snapshot of the *quantity* of documents available in MIGA's online services database. Only a third of the investment promotion agencies from the continent listed on MIGA's online services supply content directly. These issues indicate

Figure 5A.1 Demand for FDI Information on Sub-Saharan Africa by Region



Source: MIGA.

the need to improve not only the quantity but also the quality of information resources focused on investor demands.[24] On the demand side, the evidence based on users' interests strongly suggests a growing attention to Sub-Saharan Africa by potential investors from Asia.

ENDNOTES

1. Lederman, Olarreaga, and Payton (2006).
2. UNIDO (2006).
3. UNCTAD (2005).
4. See the Web site of the Ministry of Foreign Trade and Economic Cooperation of China. There is also a center in Egypt. (www.cofortune.com/cn/moftec_cn/tzkfzx/tzkf_menu.html).
5. This was second in the conclave series organized by CII. The first one was held in March 2005. About 178 projects were discussed and 12 Memoranda of Understanding were signed. Regional mini-conclaves were held in 2006, including one in Lusaka, Zambia (April 2006), targeting Southern African countries, and another in Accra, Ghana (May 2006), targeting Western and Central African countries.
6. World Bank Global Technical Barrier to Trade Survey (2003).
7. Rauch (2001), Gould (1994), and Rauch and Casella (1998).
8. See http://indiandiaspora.nic.in/contents.htm.
9. Wei (2004). A recent strand in the literature emphasizes that trade and migration might appear as complements as opposed to substitutes (Gould 1990, 1994). Rauch (2003) and Rauch and Trindade (2002) also find that trade and migration are complements.
10. Eisenman and Kurlantzick (2006).
11. When FTAs are formed among developing countries or between developed and developing countries, they have generally limited their coverage to temporary location of skilled workers, if any, as illustrated in the case of the Chile and the Singapore agreement with the United States.
12. Announcing this at a meeting organized by the Southern Indian Chamber of Commerce and Industry (SICCI), South African High Commissioner to India Francis Moloi said orders in this regard were issued in July 2006. He said South Africa must re-examine its visa regulations, particularly in the context of forging closer ties and trade and business between the two countries. http://www.thehindu.com/2006/07/11/stories/2006071107960500.htm.

13. See Roy and Bagai (2005).

14. See Walkenhorst and Yasui (2003), Cudmore and Whalley (2004), Wilson, Luo, and Broadman (2006), Djankov, Freund, and Palmna (2006), Soloaga, Wilon, and Mejia (2006).

15. UNCTAD (2006).

16. Naude (2005).

17. Amjadi, A. and Yeats, A. (1985).

18. Based on the World Bank Investment Climate Assessments, trade finance programs are most effectively facilitating manufactured exports among African firms, compared to other export incentive schemes African governments extend to firms such duty drawback, bonded warehouse, and VAT exemption programs. See Yoshino (2006).

19. "Viewing the World: A study of British television coverage of developing countries," July 2000, DFID.

20. "China's Outward Foreign Direct Investment: A company survey." A MIGA-FIAS publication, based on research conducted by the China Center for Economic Research, Beijing University. Forthcoming.

21. Eaton and Kortum (2001) and Navaretti and Soloaga (2001).

22. "India, Africa ready to embrace global destiny." An Article by Minister of State for External Affairs Rao Inderjit Singh. In http://meaindia.nic.in/ interview/2006/01/25in01.htm. January 25, 2006.

23. MIGA's online services for foreign investors comprise IPAnet, PrivatizationLink and FDI Xchange. When MIGA launched IPAnet in 1995, it was considered a pioneer in the use of the Internet for disseminating information on investment opportunities and the business environment in developing countries. Subsequently, MIGA diversified its information services by launching PrivatizationLink (1998), FDI Xchange (2002), and the FDI Promotion Center (2004).

24. Although a recent evaluation of MIGA indicated that the services appeared to be providing reliable, accurate, timely, and current information, in Africa there is a quality deficit. Independent Evaluation Group-MIGA 2006 Annual Report.

6

INVESTMENT-TRADE LINKAGES IN AFRICAN-ASIAN COMMERCE: SCALE, INTEGRATION AND PRODUCTION NETWORKS

INTRODUCTION

The increasing globalization of the world economy and the fragmentation of production processes have changed the economic landscape facing the nations, industries, and individual firms in Sub-Saharan Africa, as they have in China and India—indeed, throughout much of the rest of the world. Firms engaging in trade of intermediate goods (or services) through foreign direct investment (FDI) (or through subcontracting) have been key agents in this transformation. Exploiting the complementarities between FDI and trade, they have created international production and distribution networks spanning the globe and actively interacting with each other. Technological advances in information, logistics, and production have enabled multinational corporations to divide value chains into functions performed by foreign subsidiaries or suppliers. The availability of real-time supply-chain data has allowed for shipping large distances not only durable goods, but also components for just-in-time manufacturing and—importantly for developing countries such as in Africa—perishable goods. The result has been the rapid growth of *intraindustry* trade—"network trade"—relative to the more traditional *interindustry* trade of final goods and services.

One manifestation of the rise in network trade is the increasing expansion of production "downstream" into finished or semifinished products, where greater value can be extracted, as compared to the "upstream" production of raw materials alone. Many of the countries in the world that have grown rapidly in the last 15 years, especially Asian countries, including China and India, have done so through such integration and the exploitation of the associated economies of scale and scope. They have moved progressively from

production and trade in labor-intensive, low-value-added products (e.g., unprocessed agricultural products and primary commodities, such as cotton) to production and trade in higher stages of the value chain, i.e., capital-intensive, high-value-added products (e.g., automotive parts). Even many "transition countries" in the Former Soviet Union, making the jump from central planning to capitalism, have recognized that, in order to take advantage of globalization and foster economic growth through international trade, it is increasingly important for their firms to reap the benefits of scale economies and have access to and be integrated within international production networks.[1]

This chapter shows that to date the participation of most African countries in network trade centered around or linked to large foreign investors—not only those from China and India, but also multinational firms from elsewhere, including the most advanced economies—has been very limited. As discussed earlier in this study, oil still dominates exports from Sub-Saharan Africa, together with primary agricultural commodities and minerals, such as platinum and diamonds. There are notable exceptions, however. African network trade is being carried out in food, apparel, and automotive assembly and parts, the latter largely concentrated in South Africa. Another is horticulture, especially fresh-cut flowers. All are exported to international markets where the competition is much tougher than in the export of traditional, raw commodities, and standards are world-class.

Yet outside of these relatively few products, there is little trade in intermediate goods, let alone clear signs of major participation in coordinated global value chains. Exports of Sub-Saharan African firms hardly figure into Chinese or Indian markets, let alone the United States, EU, or Japan. For example, there are no African countries represented in the top 25 apparel exporters to either the United States or the EU. In fact, in both in Europe and America, African producers have seen growing competition from Asia—especially China, India, and Bangladesh—even after taking into account the preferential trading agreements, Cotonou and AGOA, that African firms enjoy.[2] The same picture emerges when considering the world's main exporters of automotive parts. The only Sub-Saharan African country represented in the top-50 exporters is South Africa.

The analysis in this chapter suggests that if African countries want to move up in the value chain and increase overall value-added, they will have to diversify their exports, move out of traditional primary commodities into manufactured goods and services, and become part of global production

networks. To this end, the mounting commercial interest in Africa by China and India creates an important "South-South" opening for Africa to take these steps and create new high-valued export opportunities. Both Asian giants, China and India, have a growing middle class with increasing purchasing power and with an increasing appetite for imported goods.[3] This means that China and India are not just big *potential* markets for higher valued-added goods and services from Africa, but *real opportunities*, especially compared to Africa's traditional export markets in the "North." For example, China's imports as a percentage of GDP are more than 25 percent, while for the United States, EU, and Japan they are only 15 percent, 14 percent, and 11 percent, respectively.

Using new firm-level data from both the World Bank Africa Asia Trade Investment (WBAATI) survey and the World Bank's newly developed business case studies of Chinese and Indian firms in Africa, this chapter details empirically with the ways in which these businesses operate in Africa, with a focus on the linkages between their investment and trade activities.[4] The chapter also examines where opportunities for network trade might exist in Sub-Saharan Africa by assessing the characteristics of select country-level industry value chains in Africa and comparing their performance with that of direct international competitors. The analysis suggests that in the short-run such network trade opportunities are likely to remain concentrated in only a select group of relatively labor-intensive products and services, such as food, horticulture, apparel, and tourism, with the South African automotive assembly and parts sector standing out as an exception, where network trade is more capital- and skilled-labor intensive. Only in the medium- to the longer-run, with significantly more investment—not only from foreign but also domestic sources—as well as implementation of structural and institutional reforms that facilitate infrastructure development and regional integration, will it be likely that African producers are able to effectively enter global value chains in capital- and skilled-labor-intensive products beyond what already exists in South Africa's automotive sector.

In addition, and equally important from the perspective of furthering economic development and growth *within* Africa, the chapter examines how the linkages between FDI and trade among Chinese and Indian firms involved in Africa create the possibility for positive "spillovers" on the continent—through the attraction of investment for infrastructure and related services development and through the transfer of advances in technology and managerial skills, which are often the intangible assets that accompany FDI.

If the African continent is to effectively take advantage of the opportunities afforded by China's, India's, and other economies' already sizable and growing commercial interest in Africa, it will have to successfully leverage this newfound interest and be a more proactive player in global network trade. This calls for African leaders to pursue certain policy reforms. To this end, the last section of the chapter posits that, as is the case elsewhere in the world, African countries' differential performance in terms of network trade can be attributed to the large variation in the amount of FDI received across the continent (whether considering oil-producing countries or not). The analysis suggests that the FDI inflow differentials observed across African countries are largely determined not only by traditional macropolitical and macroeconomic factors, but by the quality of the *underlying* domestic business climate and related institutional conditions, both within individual countries and on a regional basis. Thus the focus of the policy implications at the close of the chapter is on a set of factors that shape a country's microeconomic fabric at a *deeper* level beyond that touched by the reform of so-called administrative barriers—such as speeding up the pace of business registration or of obtaining a business license—which has become the conventional wisdom as the way in which improvement in the investment climate comes about.

DETERMINANTS OF LINKAGES BETWEEN TRADE AND FOREIGN DIRECT INVESTMENT

Trade-FDI Integration in the Global Context

Complementarities between Investment and Trade. While traditional economic theory often assumes that firms choose between either supplying a foreign market through exports or establishing production facilities in a host country, the overwhelming bulk of empirical evidence in regions worldwide broadly suggests the opposite. While there clearly are cases of "tariff-jumping" FDI,[5] most empirical studies at the aggregate country or industry level find that increases in FDI tend to be positively correlated with a rise in exports; chapter 2 provides such evidence in the case of both African and Asian countries.[6] Similarly, most firm-level empirical studies also point to the complementary effects between FDI and exports, a finding that is also corroborated in the case of Asian investors in Africa below.

Indeed, even a decade ago the *World Investment Report* stated:

> . . . the issue is no longer whether trade leads to FDI or FDI to trade; whether FDI substitutes for trade or trade substitutes for FDI; or whether they complement each other. Rather it is: how do firms access resources—wherever they are located—in the interest of organizing production as profitably as possible for the national, regional or global markets they wish to serve? In other words, the issue becomes: where do firms locate their value added activities? . . . increasingly, what matters are the factors that make particular locations advantageous for particular activities, for both domestic and foreign investors.[7]

The increasing complementarity between FDI and trade throughout the world marketplace has been the result of the growing fragmentation of production, combined with the creation of distribution networks spanning across continents. The information revolution and new technologies have made it possible to divide an industry's value chain into smaller functions that are performed by foreign subsidiaries or are contracted out to independent suppliers. This global diffusion of productive activity has led to increased international trade in both final goods and parts and components. Thus it comes as no surprise that about one-third of world trade consists of intrafirm trade (that is, international trade among constituent entities within a single corporation), and the importance of intrafirm trade has been growing over time. Estimates also suggest that about two-thirds of world trade today involves multinational corporations in one way or another, whether intrafirm trade or arms-length transactions in intermediate goods. In fact, intermediate goods trade has risen more rapidly than trade in final goods.[8]

The result has been that, although producers from developing economies may not possess the intangible assets or services infrastructure developed at a level sufficient to have a competitive advantage in the manufacturing of final goods, thanks to production fragmentation, they may be able to join the production chain by specializing in the labor-intensive fragment of the manufacturing process.[9] Thus, production fragmentation not only enables firms from developing countries to access foreign markets without large outlays on advertising and market research, but it also may lead to an additional benefit in the form of knowledge spillovers, which will be discussed later in the chapter.

Fragmentation of production also offers a unique opportunity for producers in developing countries to move from servicing small local markets to supplying large multinational firms and, indirectly, their customers all over the world. This phenomenon is accompanied by an evolution in the nature of

competition, with a growing emphasis on customization of products, rapid innovation, flexibility, and fast response to changes in demand. In many cases, the managerial and technological skills required to successfully compete in global markets make it impossible to rely on the resources of one country. Under these circumstances, integration into the production and marketing arrangements of multinational corporations, rather than the pursuit of an autarchic national development strategy, has become the most efficient way of taking advantage of growth opportunities offered by the global economy.

On the other, hand, fragmentation of production also means that foreign investors have become more sensitive to changes in the investment climate. In some cases, multinational corporations can relatively easily shift their production from one geographic location to another in response to changes in the cost of production, market access, regulatory conditions, or perceived risks. Noteworthy to developing countries, such as in Sub-Saharan Africa, relocation is easier to accomplish in labor-intensive industries, where low capital investments are required and thus disinvestment does not represent a large loss for the investor; the ability to shift production tends to diminish with the technological intensity of exports. The difference in the extent of footlooseness is clearly visible when distinguishing between the different types of production and distribution networks, an issue to which we now turn.

Rise of Buyer-Driven and Producer-Driven Global Networks. International production and distribution networks, also known as global commodity chains, refer to production systems that are dispersed and integrated on a worldwide basis. Typically, four main dimensions of such chains are identified: their internal governance structure, their input-output structure, the territory that they cover, and the institutional framework that identifies how local, national, and international conditions and policies shape the process at each stage. In terms of internal governance structures, it has become customary to distinguish between "buyer-" and "producer-driven" global networks or commodity chains.[10]

Buyer-driven networks are usually built without direct ownership and tend to exist in industries in which large retailers, branded marketers, and branded manufacturers play the central role in chain organization. Buyer-driven commodity chains are characterized by highly competitive, locally owned, and globally dispersed production systems. Profits do not come from scale, volume, and technological advantage, but rather from market research, design, and marketing. The products are designed and marketed by the buyer and are

typically labor-intensive consumer goods, such as apparel, footwear, and furniture.

However, there are successful cases of natural resource-based industries successfully entering into buyer-driven networks. One such example especially applicable to Africa because it is landlocked, poor, and small, is Armenia; it has been very effective in selling its diamonds through the global value chain.[11] In fact, there are reasons to believe that Africa can effectively build on its endowment of natural resources, enhance export competitiveness, and climb the value chain; see box 6.1.

Box 6.1 Building African Competitiveness and Value-Added from Natural Resources: Aluminum and Diamonds

Many African countries continue to depend on a few primary commodities for their export earnings (see chapter 2). A number of economic studies support the hypothesis that Africa's comparative advantage is in natural resources. This often leads to a pessimistic view that, because Africa does not have a highly skilled workface, with only a few exceptions, manufactured exports are likely to remain unprofitable in Africa for the foreseeable future. The recent rapid increase in trade and investment between Africa and Asia is largely driven by economic complementarities between the two regions based on factor endowments—skilled labor and more advanced technologies in Asia, and the abundance of natural resources and unskilled labor in Africa. Can Africa build competitiveness based on its endowed natural resources?

International experience shows that developing local value-added activities can indeed help countries build competitiveness based on natural resources. Supported by stable and sound economic policies, several resource-rich developing countries, ranging from Chile to Malaysia, have been successful in developing value-added resource-processing industries in the early stages of industrialization and then using these as a springboard to even higher value-added resource-processing activities. These natural resource success stories stem in large part from the establishment of favorable behind-the-border investment climates—analogous to what has been behind other developing countries' success in building higher value-added competitive manufacturing sectors.

Commodity processing requires significant investment. FDI can alleviate the domestic shortage of financial resources. Such investment can also bring the technology required. Equally important, a competitive domestic market environment engenders the development of local backward and forward linkages to the extractive process. Quality of infrastructure services, particularly power and transport, is also critical to building export competitiveness. The following two cases highlight how these factors have been influencing the development of natural resources processing in Africa.

(cont.)

Aluminum Smelter in Mozambique

Mozal, one of the largest aluminum smelters in the world, is located near Maputo, the capital of Mozambique. It was constructed in two phases with approximately $2 billion in funding and $1.1 billion in non-recourse project funding from international enterprise. Shareholders in the enterprise are BHP Biliton of Britain (47 percent owner, and the smelter operator), Mitsubishi Corporation of Japan (25 percent), Industrial Development Corporation of South Africa (24 percent), and the government of Mozambique (4 percent). The factors that have led to Mozal's success include a competitive and inexpensive power supply, based on Mozambique's connection to neighboring countries through the intraregional power grid; training of efficient labor; and a good supply of raw materials. Mozal has contributed to a doubling of Mozambique's exports, providing in excess of $400 million in foreign exchange earnings per annum and adding more than 7 percent to the GDP. Moreover, a goal of Mozal is to recruit and train staff directly from the local community. At its peak, it is anticipated that 65 percent of the Mozal labor force will be Mozambican. The Mozal project has also contributed to significant spillovers. These include upgraded roads, bridges, water lines, and hazardous-waste facilities. In addition, numerous contracts have been awarded to local small and medium enterprises (SMEs).

Diamond Polishing

Today, most commercially viable diamond deposits are in Africa, notably in South Africa, Namibia, Botswana, the Democratic Republic of Congo, Angola, Tanzania, and Sierra Leone. The diamond value chain is highly concentrated. De Beers runs most of the diamond mines in South Africa, Namibia, and Botswana that long produced the bulk of world supply of the best gemstones. The Diamond Trading Company (DTC) is a subsidiary of De Beers and markets rough diamonds produced both by De Beers, who produces more than half of worldwide production of rough diamonds, and other mines. DTC performs sophisticated sorting of rough diamonds into over 16,000 categories, and then sells bulk lots of rough diamonds to a limited number of invited clients or "sightholders" at non-negotiable prices. Once purchased by sightholders, diamonds are cut and polished in preparation for sale as gemstones. The cutting and polishing of rough diamonds is a specialized skill that is concentrated in a limited number of locations worldwide. Traditional diamond cutting centers are Antwerp, Amsterdam, Johannesburg, New York, and Tel Aviv. Recently, diamond cutting centers have been established in China, India, and Thailand. Cutting centers with lower costs of labor, notably Surat in Gujarat, India, handle a larger number of smaller carat diamonds. India, where 900,000 people are working as basic polishers, produces 90 percent of all cut and polished diamonds by number.

Partly in an effort to break the market concentration, several diamond trading companies have started establishing polishing plants in Africa. In June 2004, Lev Leviev Diamonds, the Israel-based second-largest diamond trader in the world, opened Africa's first diamond-polishing factory in Namibia, employing 550 workers. In September 2004, Eurostar Diamond Trader, a Belgian-based diamond company broke ground in Botswana for the construction of a new diamond cutting and polishing factory, employing more than 1,000 workers. However, the viability of such polishing

(cont.)

plants in Africa is still in question. In Namibia, for example, just a few hundred people work as polishers and cutters. There are few skilled workers, the scale of production is small, and wage costs are roughly ten times those of India. In South Africa, because skilled labor is in relatively short supply, the estimated cost of cutting and polishing diamonds there is $40–60 a carat, compared with $10 a carat in India and $17 carat in China.

However, there is also a new movement from India to make it the global hub for the diamond market. The Indian Department of Commerce set off in August 2006 a series of initiatives with major diamond producing countries, including South Africa, Namibia, Ghana, Congo, and Angola. The shortage of skilled workers in South Africa has hampered the country's advantage in diamond polishing. However, India's policy makers identify this as a potential for providing skills training to South Africans so that South Africa could move up the value-chain. Two models were suggested to South Africa under which a joint venture of diamond jewelry (including cutting and polishing of diamonds) could be set up in Mumbai with roughs coming up from South Africa and jewelry being exported to South Africa. The second one pertains to setting up a joint venture in South Africa.

Source: World Bank staff.

Producer-driven networks are often coordinated by large multinationals. They are vertical, multi-layered arrangements, usually with a direct ownership structure including parents, subsidiaries, and subcontractors. They tend to be found in more capital- and technology-intensive sectors, often dominated by global oligopolies, such as aircraft, automobiles, and heavy machinery. The manufacturers control "upstream" relations with suppliers of intermediate components and "downstream" or forward links with distribution and retailing services. Examples of such developments can be found in East Asia and Eastern Europe and the Former Soviet Union, where network trade has been the driving force behind economic growth and has enabled producers in these regions to access foreign markets without large outlays on advertising and market research. East Asia's recent experience perhaps epitomizes the success that countries can have entering into production-driven network trade; see box 6.2.

Worldwide, there appears to be a natural progression in a country's participation in networks, reflecting the country's development path.[12] As buyer-driven commodity chains usually involve less capital- and technology-intensive production processes, they are typically the networks through which developing countries enter the global production system. Developing countries often start with unskilled-labor-intensive exports, such as apparel, agricultural products, and natural resources. Over time, rising wages and improved human and physical capital allows them to move up the value chain. Ideally, this process of upgrading

Box 6.2 Producer-Driven Network Trade: The Case of East Asia

Producer-driven network trade in East Asia experienced remarkably high growth during the last two and a half decades, much higher than that in either in Europe or North America. Exports of parts and components of East Asian countries increased more than 500 percent over the 1984–1996 period, as compared to a 300 percent increase in total exports. Trade in parts and components recorded the fastest annual growth rate in both regional as well as global exports, exceeding by 5 to 6 percentage points the export growth of all other goods, and significantly increasing in relative importance. By 1996, parts and components accounted for approximately 20 percent of the region's total exports and imports of manufactures.

Source: Ng and Yeats (2001).

shifts the export mix toward skilled labor- and capital-intensive exports conducted through producer-driven networks, such as those in the automotive and information technology industries. This has important implications for understanding the evolution of the linkages between trade and FDI flows by China and India with Africa.

Trade-FDI Integration in the African-Asian Context

The phenomenon that FDI by Asian countries in Africa is being accompanied by trade flows—both exports and imports—with those countries has only recently begun to be systematically documented.[13] It exemplifies how, as in much of the rest of the world, trade and investment activities on the African continent are becoming more integrated, and that firms are pursuing such strategies in a complementary fashion. However, unlike other regions of the world, where it is foreign firms from advanced countries in the "North," such as the United States, EU, and Japan, that have tended to be dominant in integrating investment and trade, in Africa, especially in the last few years, it is increasingly foreign firms from the "South," especially China and India, that are exhibiting the most rapid growth in combining investment and trade.

To a certain extent, the integration of FDI and trade flows in Africa has been fostered by special market-access incentives engendered by trade preferences the African countries have been receiving from certain industrialized countries, such as the Untied States' AGOA program, the EU's Everything But Arms initiative, and country Generalized System of Preference schemes (see chapter 3).[14] Beyond the objective of exploiting such incentive regimes—which pertain essentially only to *exports* from Africa and only to *designated* markets—the evidence from the WBAATI firm-level survey and business case studies

points to the fact that Chinese and Indian firms operating in Africa are also engaging in such integration—albeit on a limited scale, as discussed below—as a means of strategically diversifying their production channels in *global* supply chains, and they are doing so in both *export as well as import* transactions. In other words, the emergence of network trade between Africa and China and India is being driven by more than taking advantage of trade preference schemes.

A useful way to analyze how trade and FDI flows are becoming integrated in the business relations between Africa and Asia is to categorize such integration according to the markets being targeted by Chinese and Indian businesses operating in Africa in the *selling* (i.e., exporting) of their products and services.[15] (An analogous categorization could be done regarding where Asian firms operating in Africa are *purchasing* (i.e., importing) their inputs.) This categorization gives rise to the following tripartite taxonomy.

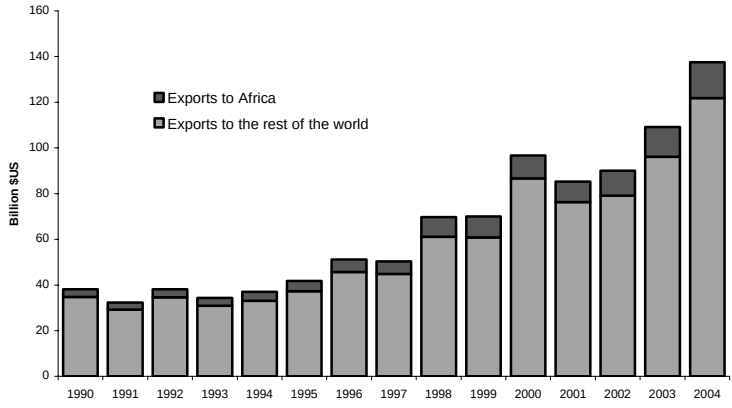
Host-Country-Targeted Investment. Foreign direct investment in Africa in which the goods (or services[16]) produced are sold primarily in the markets where they are made—either within a single African country or subregionally (i.e., among several African countries)—can be thought of as host-country-targeted investment. It would be rare in the African case, except for perhaps South Africa, for host-country-targeted investment to engender, or be associated with, network trade, and if such trade did arise, it would likely be of the buyer-driven variety.

During the 1960s through the 1980s, Asian firms making such investments were mostly (but not exclusively) Japanese businesses in the light manufacturing sectors; for example, the home electronic appliance and textile sectors. These investments were aimed at supplying manufactured products to Africa's domestic markets, which were protected by high tariffs under African governments' import substitution policies during this period. In subsequent years, African import liberalization reforms (see chapter 3) eliminated some of the competitive advantages that local sales from such investments may have had vis-à-vis direct importation of the product in question. For example, some Japanese electronic firms such as Matsushita Electric-Cote d'Ivoire and Sanyo Electric-Kenya were forced out of the market by a growing wave of cheaper imported products (some of which were imported through a black market). As a result, the recent rapidly growing Asian investors in Africa—the Chinese and Indians—that operate in such manufacturing industries and sell output locally (or subregionally) face direct competition from imports (as discussed in chapter 4), far more so than did the earlier Asian investors in Africa.

At the same time, the export prospects for the Chinese and Indian firms invested in these host-country sectors are also limited—at least at this juncture—especially in today's fiercely competitive global marketplace. This is because such investments and any intra-African regional trade associated with them are generally bound by the constraints of most African countries' small local markets and high transactions costs: the limited size of the typical African domestic market limits economies of scale and thus the pursuit of the mass-production manufacturing business model commonly used in larger country markets, whether in the "South" or the "North." In part, that is why intraregional trade on the African continent, while growing, remains small at present; see figure 6.1 Other reasons include policy barriers to intraregional trade, such as tariffs and non-tariff trade barriers (NTBs); these are discussed below. If the various initiatives fostering regional trade integration in Africa (described in chapter 3) are successful, they could help achieve economies of scale and reduce production costs. This could enable the output from such manufacturing investments to become more competitive vis-a-vis imports, thus making subregional trade more cost effective, and possibly, vis-a-vis international production in global markets, fostering exports.

To be sure, there are cases where such constraints may not greatly impinge on business viability and thus small- and medium-sized scale is sustainable. One instance is where the foreign presence by Asian firms is made not through direct investment *per se* or long-term contracting, but rather by manufacturing through local licensing or franchising. While there were cases of

Figure 6.1 African Intraregional Trade is Increasing But Small



Source: IMF Direction of Trade.

this mode of entry into Africa by Japanese businesses in the past few decades, for example in the chemical sector, at present, based on the latest available evidence from the WBAATI survey and business case studies, existing Chinese and Indian manufacturing firms in Africa appear to use this mode in a more limited fashion; see chapter 5.[17] One prominent example of this is an Indian investment in a locally owned brewery in South Africa; see box 6.3.

In many ways, this example epitomizes one difference between Chinese and Indian firms in the way in which they operate in Africa: whereas Indian firms integrate relatively deeply into local African economies—including, in some cases, business managers becoming involved in municipal government—and operate through informal networks, Chinese firms have a tendency to operate as enclaves. In part, no doubt, these differences stem from the longer history that ethnic Indians have living in Africa as compared to the Chinese. Indeed, as one CEO of an Indian-owned firm in Africa that was part of the business case studies remarked: "We want to be thought of as an African business."

Box 6.3 The Africanization of Indian-Owned Businesses

This company is a producer of sorghum beer, a traditional beverage drink of South Africa. The firm was originally a state-owned enterprise, but in the mid-1990s, after its ownership was ceded to private black management, the majority of its capital was acquired by a large brewery group with headquarters in India, which was seeking to penetrate the South African beer market. Sorghum beer accounts for about 25 percent of the South African beer market, with 75 percent of the market held by lager beer. Within the sorghum beer market, this firm is the only formal producer; it has 10 breweries, and its sales account for about one-third of the market. The remaining two-thirds of the market is supplied by about 1,000 informal individual local producers. While the company distributes its products by trucks through its long-standing distribution network, most local producers do not transport their products and sell them on the spot. Because sorghum beer is highly perishable and there is a lack of infrastructure to ensure adherence to the health standards of such products, the company does not export to other African countries; instead, it is planning to produce in-country (plans are underway to build a brewery in Botswana). There are complaints about some of the informal breweries not maintaining health standards. While the company pays VAT and excise duties, the informal sector does not. Although these differences present serious competitive and hence financial challenges to the profitability of the company, because of the traditional position that the beverage holds in South African society, including the convention of having many local "mom and pop" producers, the company is reluctant to seek redress for these problems. The senior management of the company—although only four of them are Indian—does not want the firm to be perceived as an Indian business, but rather as a local one.

Source: World Bank staff.

A greater number of cases where small- and medium-sized enterprises (SMEs) are sustainable in Africa come from various services sectors—for example, construction, retail, or tourism, among others—as well as in the light manufacturing sector, such as textiles and apparel and furniture. Here, today, small- and medium-scale Chinese and Indian businesses are operating in Africa—at a very rapid pace—serving local or subregional markets. These investors—especially Chinese firms, who are generally substantially newer to Africa than Indian firms—are, in some respects, following in the footsteps of earlier Asian firms. In the past, investors in this sector came from Asian countries where small- and medium-sized enterprises were active, such as Korea and Taiwan. For Africa, these Chinese- and Indian-invested SMEs are proving to be significant sources of job creation.

To be sure, much of the Chinese and Indian FDI in Africa is concentrated in extractive sectors, such as oil and mining, which grabs most of the headlines. These are more properly thought of as "home-country-targeted investments" (see below). But, in fact, greater diversification of these countries' African foreign direct investments has been occurring, and they increasingly fall into the "host-country-targeted investment" category. Significant Chinese and Indian investments on the African continent have been made in apparel, retail ventures, fisheries, commercial real estate and transport construction, tourism, power plants, and telecommunications, among other sectors. To cite a few examples, Huawei, a major Chinese telecommunications firm, has won contracts worth $400 million to provide cell phone service in Kenya, Zimbabwe, and Nigeria. In Zambia, the Chinese are building a $600 million hydroelectric plant at Kafue Gorge. And in South Africa and Botswana, hotels and other elements of the tourist infrastructure are being built by Chinese investors.[18] China and India are pursuing commercial strategies with Africa that are about far more than resources.

Home-Country-Targeted Investment. The objective of home-country-targeted investment is to produce African goods (or services) that are to be exported and sold primarily in the investors' home countries in Asia. Typical examples include Chinese and Indian investments in Africa in natural-resource-extractive industries, such as oil and mining, and increasingly, agricultural primary commodities and (to a still-limited extent) processed foods. An example of the latter is a large Indian-owned cashew-processing company in Tanzania, which, ironically, faces escalating tariffs on its imports into its home market; see chapter 3. Where such investment is taking place in Africa, any network trade that has arisen generally has been buyer-driven.

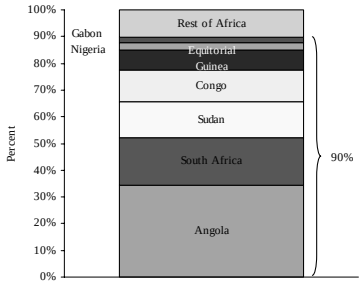
On a global basis, where Chinese firms are engaged in home-country-targeted investments, such investments are most often conducted by state-owned enterprises (SOEs).[19] On average, 88 percent of Chinese firms engaging in FDI abroad are owned by provincial governments.[20] In fact, in the African setting, new survey data suggest that Chinese firms investing in Africa rank "Chinese government support" as the second most-important determinant of their investment decision, following "market seeking."[21]

Needless to say, investments in extractive industries are large scale and capital intensive, and in Africa, not surprisingly, the recent oil-industry investments by China are also relatively large (see chapter 2).[22] They have been often initiated by government-to-government agreements followed by corporate engagement, frequently by SOEs. Although Asian (and other nationality) firms have invested in Africa's extractive-industry sectors for many years, the investments by China in African oil production over the past decade, and especially in the last few years, have garnered the most public attention.[23]

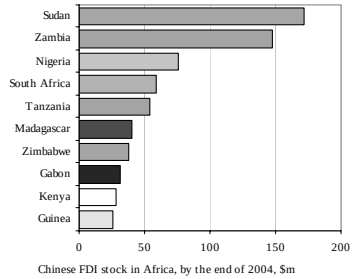
Still, even after accounting for China's comparably sizeable investments in Africa's oil sector, with a few exceptions, in the aggregate the African countries that possess the greatest accumulation of Chinese FDI differ from those generating the greatest exports to China; see figure 6.2. This suggests that, outside the oil sector, home-country-targeted investments in Africa, at least in the case of those made by Chinese firms, are at present not a significant phenomenon. This implies relatively limited substitution of trade for FDI. Indeed, if anything, the data suggest growing *complementarities* between Africa and China, a theme that emerges from the data in chapter 2.

Figure 6.2 How Home-Targeted Are China's Investments in Africa?

Africa's Exports to China, 2005



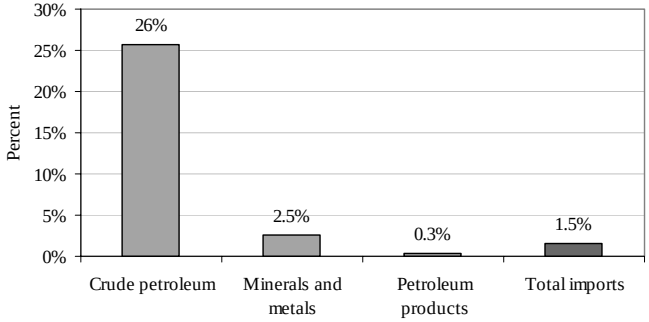
China's Stock of FDI in Africa, 2004



Source: 2004 Chinese FDI Statistics Bulletin (2004 年度中国对外直接投资公报）and WITS COMTRADE.

Figure 6.3 Does China's FDI in Oil Engender African Market Power?

China is substantially oil import-dependent on Africa.



Source: WITS COMTRADE.
Note: China's imports from Africa as a share of China's global imports.

On the other hand, China is substantially dependent on its oil imports from Sub-Saharan Africa—regardless of whether or not these imports are the direct product of Chinese investment on the continent. More than a quarter of China's global imports of oil come from African countries (see figure 6.3). If anything, this suggests that these African oil-exporting countries—as a whole—may well have market power in their crude oil exports to China, which might allow for higher prices to be charged, all other things equal. Of course, to exercise market power would require these exporting countries to cooperate in some joint fashion in their production and sales activities, an unlikely event. It also would require other oil-exporting countries in the world to not lower their prices.

Global-Market-Targeted Investment. Global-market-targeted investment is focused on exporting goods produced in Africa to third-country markets. At this juncture, except for some special cases such as the network trade emerging in South Africa's automotive industry (see below), these investments are almost always based on buyer-driven, as opposed to producer-driven, global-supply-chain considerations. Over the past few decades, most of the Asian businesses in Africa engaging in these types of investments, such as Japanese and Korean firms, have been primarily targeting industrialized regions, such as the European Union and the United States.

The recent, rapid, significant entry by Chinese and Indian firms engaged in this mode of investment is changing things. A substantial portion of their target export markets tends to be other countries in the "South," especially (but

not exclusively) in Asia. However, there are also cases in which such investments by Chinese and Indian firms are facilitating African exports into other markets, including the "North," and furthering even more so the continent's global integration.

One prominent example is Chinese firms' involvement in the African textile and apparel sector—especially in the wake of the expiration of the Multifibre Agreement in 2005, which unleashed fierce global competition—a clear illustration of how China's foreign investment in Africa is linked to the future of the continent's trade patterns. Investment in these sectors has been accompanied by imports of textile materials (e.g., cotton fabrics) from China to African countries that have growing apparel sectors. In turn, partly as a result of the trade preference schemes noted earlier, this is linked to African exports of garment products to the global market, most notably to the EU and United States.[24] Like other places in the world where global-market-targeted investment and the associated network trade are occurring, the focus of Chinese and Indian firms pursuing this business strategy has been on "footloose" industries.

The emerging network trade is being motivated by the low labor costs in Africa, especially in sectors that are displaying relatively higher and rising labor costs in Asia. The result is that global-market-targeted investments by China and India—as well as others—can create important opportunities for Africa to not only expand the volume of exports, but also diversify them away from traditional sectors. In fact, network trade has been creating export opportunities for Africa in newer, higher-value-added industries, such as telecommunications and electronic parts and components, which are proving to be the domain for Chinese investors.

In other sectors, such as data services, call centers, and telemarketing—so-called "back-office support"—Indian investors in Africa have shown a greater interest. Indeed, while India itself has become a center for outsourcing services for more advanced countries, such as the United States and the EU, it is now outsourcing its own services to Africa, especially in the software sector. Data from the WBAATI business case studies suggest that countries such as Ghana, Senegal, and Tanzania, among others, have the ability to compete globally in such services markets. For example, HCL Enterprises, Ltd., a $3 billion Indian software company, is working on a $400 million multiyear outsourcing contract with Old Mutual, South Africa's largest insurance company. In many cases, although by international standards the size of these investments in Africa may be limited, they nonetheless can generate significant employment opportunities for local economies.

More advanced global-market-targeted investments by Asian firms investing in Africa are emerging, resulting in (limited) producer-driven network trade. These investments are fostered by the promise of substantial productivity increases that could be engendered by subregional integration of the continent. If such regional integration were to succeed—and the challenges are appreciable (see box 6.4)—ultimately, it could provide a platform for exports to global markets. To seize on such prospects, beginning in the 1990s, major Japanese and Korean automobile companies, for example, established plants in South Africa, which is rapidly becoming an important regional economic hub. More recently, Chinese and Indian automotive and truck assembly operations have made significant investments in Africa—not only in South Africa, but also in Tanzania, with plans for exports to Uganda, Rwanda, Burundi, and the Democratic Republic of Congo. Importantly, as the WBAATI business case studies suggest, these newer investments are targeting export markets inside—and ultimately outside—the Africa region.

Box 6.4 Barriers to Regional Integration Are Barriers to Africa's Export Prospects: Evidence from Chinese and Indian Business Case Studies

The WBAATI business case studies of Chinese-owned and Indian-owned firms in Africa point to a number of difficulties enterprises face in realizing the benefits that regional integration can bring to the continent. Without regional integration, the many small, landlocked countries of Africa will not be able to create unified economic spaces sufficiently large to achieve economies of scale. Without economies of scale, unit production costs will unlikely be low enough to allow for the successful penetration of export markets. Every Chinese and Indian business study noted the poor quality and high cost of transport services, the long shipping times, and the lack of effective logistics services such as insurance and transport intermediaries, all of which limited the commercial viability of intra-African trade. One Chinese firm operating in South Africa indicated that sending a product from South Africa to Angola costs as much as sending the product from China to Angola. An Indian firm in Tanzania noted that intra-African maritime shipping costs are three times as high as road shipping costs, in part due to the lack of competition. Another Indian firm, in Ghana, stated flatly that "ECOWAS does not work," as there are still high tariffs among ECOWAS countries. The firm reported that it costs about $1,000/TEU to send a container from Accra to Lagos, a distance of just over 200 miles. In fact, the high tariffs on trade induced this firm to make cross-border investments instead, an example where intraregional trade barriers gave rise to intraregional investment.

Source: World Bank staff.

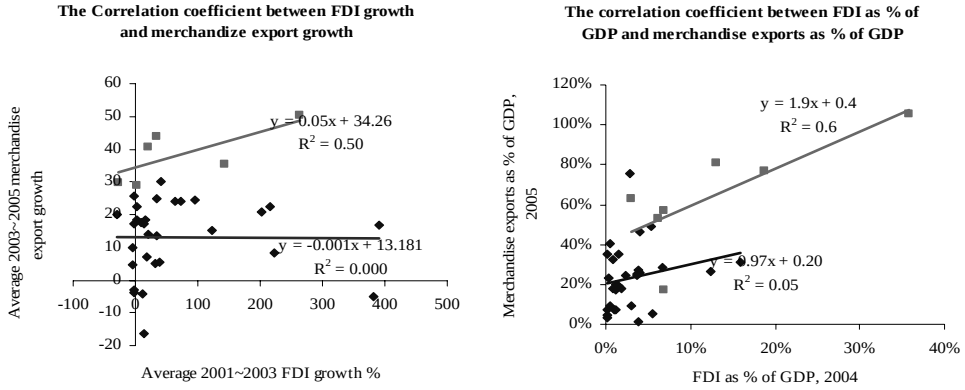
EVIDENCE ON FDI-TRADE LINKAGES OF CHINESE AND INDIAN FIRMS IN AFRICA

Country-Level Evidence

Aggregate statistical evidence—at the country level, that is, regardless of firm nationality—on the strength of linkages between FDI and trade flows among African countries yields mixed findings; see figure 6.4. When relating the growth of merchandise exports to the growth of FDI, there appears to be a positive association for the oil-producing countries, but none for the non-oil-producing countries. In the case of the relationship between merchandise exports as a percent of GDP and FDI as a percent of GDP, there is a much stronger positive association for the oil-producing countries than for the non-oil-producing countries. Of course, other variables beyond the growth of FDI and FDI as a percentage of GDP affect export growth and exports as a percentage of GDP.

Fortunately, there are new firm-level data from the WBAATI survey of Chinese and Indian firms operating in Africa that permit a more disaggregated analysis of the extent to which trade and FDI flows are related to one another on the continent. We now turn to assess the findings from these data.

Figure 6.4 Country-Level Statistical Evidence on FDI-Merchandise Trade Linkages in Africa



Source: IMF WEO, oil countries include Angola, Chad, Congo, Equitorial Guinea, Nigeria, and Sudan.
Key: Purple line is for oil-producing countries; blue line for non-oil-producing countries.

Firm-Level Evidence

Modes of Foreign Investment Entry. The "initial conditions" of Chinese and Indian foreign investors' entry into the African economy influence the scale and pattern of integration attained by these businesses. As chapter 2 shows, foreign direct investment in Africa by Chinese and Indian firms is not a wholly recent phenomenon; indeed, in some cases Chinese and Indian FDI in Africa dates back several decades. Nonetheless, according to new firm-level data from the 2006 World Bank AATI survey, a snapshot of a large sample of the *stock* of Chinese and Indian firms currently operating in Africa reveals that the median Chinese firm began its African operations in 2002, and its Indian counterpart began its operations in 1999; see table 6.1. This finding at the firm level is consistent with that suggested by the aggregate data presented in chapter 2, which showed a rapid increase in the last few years of *flows* of FDI to Africa by firms from these countries. Overall, today, a substantial portion of Chinese and Indian foreign investors in Africa are of a relatively young vintage, especially compared to European firms currently operating on the continent.

Table 6.1 FDI Entry to Africa by Start-Up Vintage

Firm Nationality	Vintage
Chinese	2002
Indian	1999
European	1993

Source: World Bank staff.
Note: Data refer to median year.

Initial conditions are also shaped by the form of entry that firms pursue in their foreign direct investments. Worldwide there is much diversity in the way in which firms engage in FDI, depending in no small measure on the sector in question and the degree of economic and political stability of the country, among other factors. Still, it is often the case that firms that are newer to a market—and thus less familiar with the local investment climate—tend to enter in ways that reduce risks, such as through acquiring an existing operation. With greater familiarity of a market or greater willingness to incur risk, foreign investors have felt more comfortable entering by establishing greenfield (or de novo) operations. Of course in settings where existing firms are either very limited in number or insufficiently commercially attractive for buy-outs or joint ventures, the options for entry will be more limited.

In the case of Chinese and Indian investors in Africa, surveyed firms exhibit a strikingly different pattern of entry; see table 6.2. In contrast to entrepreneurs from India, who, like their European counterparts, have had

Table 6.2 Form of FDI Entry to Africa

Firm Nationality	De Novo	JV	Acquisition
Chinese	82%	9%	9%
Indian	68%	9%	23%
European	50%	26%	25%

Source: World Bank staff.
Note: Data pertain to median values.

relatively longer commercial ties with Africa and tend to initiate investments in the African market through both de novo entry as well as acquisition of existing businesses, the vast majority of Chinese firms have entered Africa through greenfield investments. To some extent, these differences might be explained by the variance in sectoral orientation between the surveyed Chinese and Indian firms, although such variance is relatively limited, and it also does not appear to break along sectoral lines where inherent risks differ significantly or potentially acquirable African businesses are unlikely to exist; see table 6.3 and table 1A.3 in the annex to chapter 1.[25] Instead, that an overwhelming portion of surveyed Chinese firms investing in Africa have done so through de novo entry may suggest that such enterprises simply do not pursue a relatively strong risk-averting business strategy or perhaps they find fewer benefits to rapidly integrating into African markets than do Indian firms, a notion that other evidence appears to support.[26]

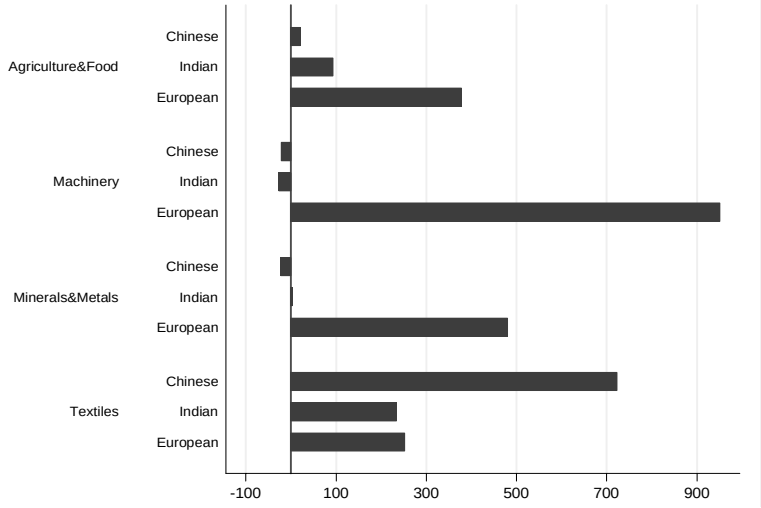
Table 6.3 Form of FDI Entry to Africa by Sector

Sector	De Novo	JV	Acquisition
Agriculture & Food	63%	13%	25%
Chemicals	60%	20%	20%
Construction	100%	0%	0%
Machinery	56%	44%	0%
Non-oil Minerals & Metals	86%	0%	14%
Nondurables	63%	13%	25%
Nonconstruction Services	57%	10%	33%
Textiles	40%	40%	20%

Source: World Bank staff.
Note: Includes Chinese, Indian and European firms.Data pertain to median values.

Scale of Investment and Corporate Structure. The ability of firms in Africa to achieve lower production costs in order to better exploit export opportunities and climb the value chain through network trade can, in part, depend on the scale of operations attained through FDI. This is likely to be true to the extent that the underlying technology and the organization of production inherent in the sector in question provide for decreasing unit costs as production

Figure 6.5 Business Size Differences (Relative to African Firms) for Selected Sectors[a]



Source: World Bank staff.

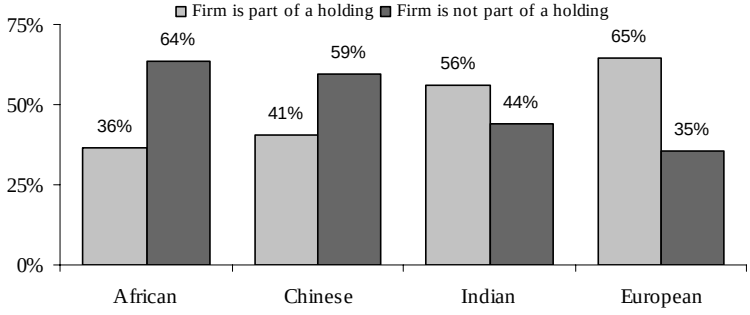
Note: "Minerals" excludes non-oil minerals.

[a]Difference in median size, by number of employees, relative to median African firm

increases. Among businesses covered by the 2006 WBAATI survey, in comparison with Chinese and Indian firms operating in Africa, the scale achieved by domestically owned enterprises in certain sectors, for example, agriculture and food and textiles, is considerably smaller (see figure 6.5).[27] Especially in the textile sector, the scale of Chinese firms, and to a lesser extent Indian firms, greatly dominates that of African-owned firms. In contrast, in the machinery and the non-oil minerals and metals sectors, there is relatively little difference between the scale of African firms and their Chinese or Indian counterparts. These scale variations across sectors are likely to have a significant influence on the reasons why Chinese and Indian firms in Africa are better able to engage in network trade than are domestic businesses.

One obvious dimension of scale that can play a key role in the ability of firms to integrate investment with trade activities and engage in international production sharing is the extent to which a business is part of a larger holding company or group-enterprise corporate structure. It has been widely documented that some of the larger businesses in China and India—including some of the largest (and most well-known) companies in the world, such as SINOPEC

Figure 6.6 Extent of Scale: Incidence of Holding Company or Group Enterprise



Source: World Bank staff.

(primarily in the chemical sector) and Tata (a conglomerate), respectively—have group structures.[28] In fact, a recent survey of FDI outflows from China on a global basis finds that on average 97 percent of Chinese firms investing abroad are affiliates of a parent firm in China.[29] As investors in Africa, survey data reveal that both Chinese and Indian (as well as European) businesses have a higher incidence of belonging to a holding or group enterprise than do African firms; see figure 6.6. In fact, the survey data suggest that a greater proportion of Indian firms operating in Africa are part of a group structure than are stand-alone enterprises.

Effects of Scale on Regional Integration and Geographic Diversification outside Africa. Beyond the issue of whether or not a firm is part of a larger corporate group structure is the degree to which variation in this dimension of scale engenders differences in the facility for effectively integrating investment and trade activities. In part, this will likely depend greatly on how extensive is the geographic spread of the group structure. The presumption is that the greater the corporate geographic diversification, the higher the payoff from investment-trade linkages, hence the stronger the tendency for firms to exploit opportunities to be able to undertake them.

In this regard, the pattern of geographic diversification of the number of group member firms is quite notable in the WBAATI survey; see table 6.4. Not surprisingly, African-owned firms tend to exhibit by far the greatest geographic spread within their "home" countries. But in terms of geographical diversification across the African continent as a whole, Chinese-owned (and to a much greater extent, European-owned) businesses appear to engage in significantly more intra-African regional integration than do African firms themselves. As Chinese and Indian firms participating in the business case

studies revealed, intraregional barriers to trade, in part the result of de facto lingering high tariffs and NTBs, despite de jure regional trade agreements, actually have had the effect of engendering intraregional (cross-border) investments rather than trade (recall figure 6.1).

Table 6.4 Extent of Scale and Geographic Spread

Number of Separate Firms Belonging to Holding Company or Group Enterprise

	African	Chinese	Indian	European
Domestic	8	1	2	3
Other Africa	2	4	1	8
Outside Africa	2	16	5	58

Source: World Bank staff.
Note: Data pertain to median values.

The contours of regional integration undertaken by foreign investors in Africa sometimes result in market segmentation of the pan-African market. The WBAATI business case studies focused on a large state-owned Chinese construction firm operating on the continent in Tanzania, Uganda, Kenya, and Zambia, doing so largely through competing for public procurement contracts in each of the four countries. Although the firm possesses the capacity to engage in construction contracts in other, neighboring countries on the continent, its management follows a business strategy dictated by headquarters in China: the firm will operate only in its current four markets; other construction firms belonging to the same holding group will bid on contracts in other African markets. All other things equal, the effect of such market segmentation is to reduce the extent of competition in Africa's construction sector.

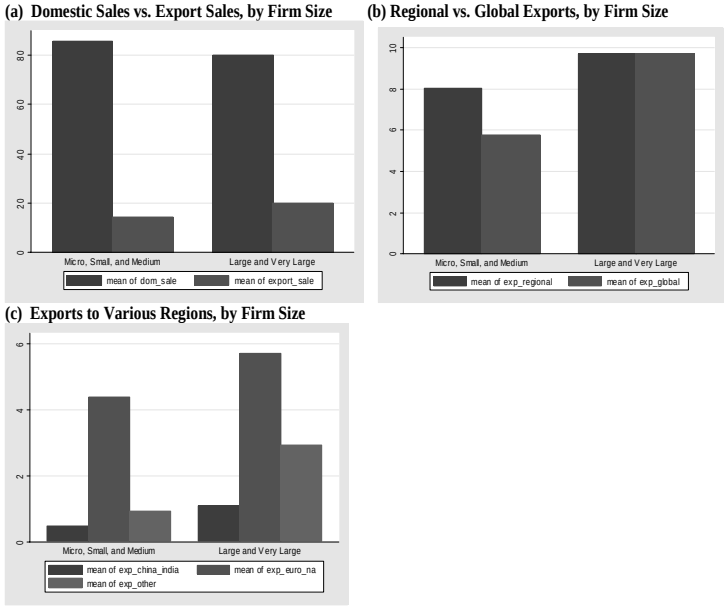
A similar, but even more striking, pattern emerges in table 6.4 among the surveyed firms when the focus is on geographic diversification of the number of group-member firms in markets outside of Africa altogether. Again, and not surprisingly, given the relative nascence of their international corporate development, African businesses that are part of a group structure are much less extended to other continents than are their Chinese and Indian counterparts also operating in Africa.

Impacts of Scale on Exports. Based on the foregoing analysis of differences in scale of businesses operating in Africa as a starting-point for assessing the nature of the investment-trade linkages exhibited by such firms, it is useful to gauge the extent to which firm size is related to overall export performance. The analysis then focuses on an assessment of the differences in export—and import—patterns at a more disaggregated level.

Whether in terms of comparing (i) domestic sales versus exports, (ii) exports to regional markets within Africa versus exports to global markets, or (iii) exports to specific markets all wholly outside Africa, new empirical evidence from firm-level survey data on such businesses suggests that firm size and export propensity—measured by exports as a percentage of total sales revenue—are positively related, all other things equal; see figures 6.7a–6.7c. In the first case, the data indicate that while, *within* either of the two size classes—micro, small, and medium vs. large and very large[30]—domestic sales exceed exports, on average, larger firms exhibit greater export propensity than do smaller firms.

In comparing the propensity to export regionally (i.e., within Africa) versus the propensity to export globally, smaller firms export more to regional markets than they export outside the continent, consistent with the findings on domestic sales vs. exports above. The larger firms not only export more than smaller firms to regional markets but also to international markets; in fact, the data suggest that larger firms export to regional and global markets with about the same intensity.

Figure 6.7 Scale and Export Propensity: Intra-African, Global and Asian Trade



Source: World Bank staff.
Note: Data pertain to 2005 median annual sales and exports.

Finally, in comparing the propensity to export to different international markets—whether China and India, Europe and North America, or the rest of the world—larger firms register more exports per unit of sales than their smaller counterparts.

Patterns of Firm-Level Exports and Imports by Businesses in Africa. In light of the significant heterogeneity among firms with operations in Africa, whether in terms of nationality, mode of entry, scale of investment, or geographic diversification, among other factors, one would expect to observe significant differences in the patterns of the exports and imports at the firm level. In fact, the 2006 survey data indicate, even from the most aggregate perspective, substantial variation; see table 6.5. On the sales side, for the totality of the sample of surveyed firms, the geographic distribution of sales is rather skewed, with almost 70 percent of output produced in 2005 being sold within Africa (either in the local market or in other markets on the continent; see below for further disaggregation on this specific point). The EU is the next largest destination market, accounting for 15 percent of the surveyed firms' aggregate sales in 2005. By contrast, total exports to China and India among all the firms taken together accounted for about only 2 percent of sales. These findings are not terribly surprising, considering the fact that, as noted earlier, the survey deliberately omits coverage of firms in the oil-related sectors, which account for the lion's share of Africa's exports, and instead, by design, concentrates on general manufacturing and various service industries.[31]

Table 6.5 Geographic Distribution of Output Sales and Input Purchases in the Aggregate

Destination Market	Percent	Origin Market	Percent
Africa	68.0	Africa	19.1
China	1.0	China	13.2
India	1.0	India	12.6
EU	15.0	EU	26.8
Other Asia	4.0	Other Asia	9.1
North America	4.0	North America	7.7
Other	6.0	Other	11.5
Total	100.0	**Total**	100.0

Source: World Bank staff.
Note: Data pertain to 2005 median annual sales and purchases.

On the input purchase side, the distribution across source markets is more balanced. While the EU market supplies about one-quarter of the inputs used in Africa by the surveyed firms in the aggregate, only a slightly lesser

amount—about one-fifth—is procured in Africa. Goods from China and India also account for a substantial portion of inputs—each locale supplies about 13 percent of total input purchases by the surveyed firms.

The geographic distribution of output sales and input purchases varies significantly across surveyed firms according to nationality**.** Particularly noteworthy in table 6.6 is the fact that both Chinese and Indian businesses operating in Africa sell about twice the amount of output in other African markets *outside* the local market than do their African business counterparts. This finding is consistent with data presented above suggesting that non-African firms operating in Africa appear to engage more in regional integration on the continent than do domestic firms. Interestingly, the median African firm surveyed indicates that its sales to Europe and North America account for 5 percent and 2 percent, respectively, of total sales in 2005, whereas the median Chinese and Indian firms indicate they sell none in those two markets.

Table 6.6 Distribution of Output Sales by Destination Market and Nationality

	African	Chinese	Indian	European
Domestic	85%	81%	89%	76%
Other Africa	10%	20%	18%	17%
Europe	5%	0%	0%	13%
North America	2%	0%	0%	2%
India	0%	0%	0%	1%
Other South Asia	1%	1%	0%	1%
China	0%	3%	0%	1%
Other East Asia	0%	0%	0%	3%
Other	1%	1%	1%	3%

Source: World Bank staff.
Note: Data pertain to 2005 median annual sales.

The observed pattern of origin markets used by firms of different nationality operating in Africa to procure inputs is considerably different than that of destination markets for output sales; see table 6.7. Not surprisingly, all surveyed firms, regardless of nationality, substantially tap their home markets for inputs. But there is a surprisingly significant heterogeneity. At one extreme, African firms tend to rely very heavily on local markets for inputs, with such purchases constituting 60 percent of total inputs bought; at the same time, 13 percent of African firms' inputs are bought in Europe. At the other extreme are Chinese firms: like their Indian (and European) counterparts, African markets account for about 30–40 percent of total inputs purchased. But Chinese firms indicate they buy 55 percent of their inputs in China, almost twice the level

Table 6.7 Distribution of Material Input Purchases by Origin Market and Nationality

	African	Chinese	Indian	European
Domestic	60%	31%	27%	40%
Other Africa	7%	4%	9%	9%
Europe	13%	1%	13%	34%
North America	3%	5%	1%	6%
India	5%	2%	26%	3%
Other South Asia	3%	1%	4%	1%
China	4%	55%	7%	3%
Other East Asia	2%	1%	3%	3%
Other	2%	0%	11%	1%

Source: World Bank staff.
Note: Data pertain to 2005 median annual purchases.

purchased in Africa, whereas Indian (and European) firms purchase an almost equivalent level of inputs in their home markets as they do in Africa.

Extent and Geographic Distribution of Intraindustry and Network Trade. The intensity of intraindustry and network trade being undertaken by firms operating in Africa can be gauged across several dimensions. One is the extent to which firms engage in vertical integration—that is, the buying and/or selling of outputs or inputs by different business units that operate under one corporate roof, resulting in common ownership and control. This practice is in contrast to "arms-length transactions," where the buying and selling of outputs or inputs is done with independent and privately owned corporate entities. Worldwide, firms generally engage in vertical integration (as opposed to transacting in the open market) when they want to avert undue exposure to market risks or there are genuine technical economies of scale (or economies of scope) that can be realized by combining successive stages of the production process in a single corporate unit. The latter condition is often largely determined by the basic technology underlying the industrial production process in question. A classic case is manufacturing steel, where it would make little economic sense to have one firm heating up iron ore ingots and another casting the molten iron into designated shapes.

Data from the new WBAATI survey provide an opportunity to assess the extent of these practices; see tables 6.8 and 6.9. With respect to vertical integration, African firms tend to engage significantly more in "downstream" integration (intracorporate sales of outputs) than "upstream" integration (intracorporate purchases of inputs). This is a different practice than that of both Chinese and Indian (as well as European) firms, where upstream integration

Table 6.8 Extent of Vertical Integration by Nationality

	African	Chinese	Indian	European
Output Sales to Parent Firm or Affiliate	9%	19%	0%	14%
Input Purchases from Parent Firm or Affiliate	3%	23%	9%	15%

Source: World Bank staff.
Note: Data pertain to 2005 median values.

Table 6.9 Extent of Arms-length Transactions with Private Firms

	African	Chinese	Indian	European
Arms-length Output Sales to Private Firms	49%	24%	42%	57%
Arms-length Input Purchases from Private Firms	92%	75%	89%	83%

Source: World Bank staff.
Note: Data pertain to 2005 median values.

dominates downstream integration. Across firms of different nationalities, there are also significant differences: whether in terms of downstream or upstream integration, Chinese businesses in Africa engage in substantially more vertical integration than do all other firms surveyed.

Generally speaking, it is not uncommon to find firms—regardless of locale—relying more on the open market than on internal channels for sales of outputs or purchases of inputs, though of course there are variations across sectors due to differences in industries' underlying technologies. In the case of the surveyed firms in Africa, the data do indeed suggest that these businesses generally transact more with independent, private firms via the open market than through vertical integration. Where arms-length interbusiness transactions are being conducted in Africa, the firms engage in this practice more for output sales than for input purchases. Across nationalities, however, the differences are striking. Businesses from China transact with private firms in the open market—both for purchases of inputs and sales of outputs—to a much smaller degree than other nationality firms operating in Africa.

Taken together, the findings suggest that Chinese businesses, which tend to rely both more heavily on vertical integration and less heavily on arms-length transactions with independent private firms, perceive the risks associated with commercial activity in Africa differently than do Indian (or European) firms. This conclusion is consistent with the findings above on differences across firm nationality in investment patterns.

Table 6.10 Geographic Distribution of Output Sales to Private Firms

	African	Chinese	Indian	European
Domestic Firms	83%	79%	84%	73%
Other African Firms	8.5%	10.5%	8%	17%
Firms Outside Africa	8.5%	10.5%	8%	10%

Source: World Bank staff.
Note: Data pertain to 2005 median values.

Table 6.11 Geographic Distribution of Input Purchases from Private Firms

	African	Chinese	Indian	European
Domestic Firms	62%	49%	30%	50%
Other African Firms	9%	7%	9%	6%
Firms Outside Africa	29%	44%	61%	44%

Source: World Bank staff.
Note: Data pertain to 2005 median values.

The *extent* to which firms operating in Africa engage in open market transactions with independent firms vs. vertical integration is one element depicting the pattern of these businesses' intraindustry and network trade. Another is the nature of the *geographic distribution* of such transactions. The WBAATI survey data provide information on this score; see tables 6.10 and 6.11. For arms-length sales of output to private firms, Chinese businesses transact less with local (African) firms than do African- or Indian-owned businesses. At the same time, however, Chinese firms engage in more interfirm output sales in the private sector in Africa's *regional* markets than do African or Indian firms. This finding is consistent with earlier ones pointing to the fact that Chinese firms tend to engage in more extensive regional integration than do domestic counterparts.

Regarding purchases of inputs from independent private entities, the variation among firms of differing nationality is far more notable. African firms rely much more heavily on procuring privately produced inputs in the local, domestic market than do either Chinese or Indian firms, especially the latter: Indian firms' arms-length input purchases from private local firms is half the magnitude of their African counterparts. On the other hand, while there is limited variation across different nationality businesses regarding interfirm input purchases in Africa's regional markets, Chinese and Indian firms operating on the continent procure significantly greater portions of inputs from private firms located outside Africa than do domestic firms, especially Indian businesses, which do so at twice the rate as their African counterparts.

Worldwide, firms that have been most effective in taking advantage of the new opportunities afforded by the growth in network trade and the accompanying increase in trade in parts and components are those who have been able to climb the value chain. This means moving from exporting raw materials to exporting goods that have been further processed. In doing so, a greater portion of the product's value is retained by the firm producing the raw material initially.

It has been widely documented that, at the national level, African countries rely heavily on exports of raw materials. As a result, value-added is being foregone. At the firm level, the WBAATI survey data suggest a similar story; see table 6.12. Indeed, in comparison with both Chinese and Indian (as well as European) firms operating in Africa, domestic firms tend to sell a larger portion of raw material products. Moreover, this pattern is evident not only in global trade outside the African continent, but also with regard to inter-regional trade *within* Africa.

Table 6.12 Extent of Value Added in Output Sales and Exports, by Destination Market and Firm Nationality

Firm Nationality		African	Chinese	Indian	European
	Product				
Domestic Sales	Finished assembled	88%	90%	90%	89%
	Partially finished	5%	9%	4%	4%
	Raw material	6%	0%	5%	6%
Sales to Other African Countries	Finished assembled	83%	89%	100%	78%
	Partially finished	8%	11%	0%	15%
	Raw material	9%	0%	0%	7%
Export Sales Outside of Africa	Finished assembled	77%	75%	100%	90%
	Partially finished	10%	25%	0%	10%
	Raw material	13%	0%	0%	0%

Source: World Bank staff.
Note: Data pertain to 2005 median values of sales to private firms.

Externalities from Chinese and Indian FDI in Africa: Technology Transfer. Worldwide, the presence of foreign firms usually has a profound effect on a host country's participation in international trade, as FDI is often associated with an increase in both exports and imports. Empirical evidence on a global basis suggests that firms with foreign capital tend to be more export-oriented than domestic firms, and are responsible for a large share of exports in many developing, as well as transition, economies.[32] The data presented in this chapter

generally confirm these findings in the case of Chinese and Indian firms operating in Africa. In most regions of the world, the contribution of foreign firms to host-country exports may not be immediate. A surge in FDI inflows frequently results in a spike of imports as multinationals bring capital equipment for their newly established production plants. As it takes several years to establish links with local suppliers, in the initial period of operation they may also rely on imported intermediate inputs before switching to local sourcing.

An important potential by-product of this process is that domestic firms become exposed to transfers of advances in technology or enhanced skills. Such exposure can engender positive spillover effects on the efficiency and competitiveness of host country firms; see box 6.5. [33] The possibility of positive spillovers to host markets in Africa by Chinese and Indian investors in the form of new skills was explored in detail in chapter 5. How these investors utilize new

Box 6.5 International Evidence on Spillovers from Foreign Direct Investment

Spillovers from FDI take place when the entry or presence of multinational corporations increases the productivity of domestic firms in a host country and the multinationals do not fully internalize the value of these benefits. Spillovers may take place when local firms improve their efficiency by adopting the new technologies of foreign affiliates operating in the local market, either based on observation or by hiring workers trained by the affiliates. Spillovers also occur when multinational entry leads to greater competition in the host country market and forces local firms to use their existing resources more efficiently or to search for new technologies (Blomström and Kokko, 1998).

To the extent that domestic firms are effective competitors with multinationals, the latter have an incentive to prevent technology leakage and "horizontal" spillovers from taking place. This can be achieved through formal protection of their intellectual property, trade secrecy, paying higher wages, or locating in countries or industries where domestic firms have limited imitative capacities to begin with. While foreign affiliates may want to prevent knowledge leakage to local firms against whom they compete, they may have an incentive to transfer knowledge to their local suppliers in upstream sectors. These "vertical" spillovers can take place through several channels. Multinationals may transfer knowledge about production processes, quality control techniques, or inventory management systems to their suppliers. By imposing higher requirements with respect to product quality and on-time delivery they may provide incentives to domestic suppliers to upgrade their production facilities or management. Indeed, the pressure from multinationals is often the driving force behind obtaining ISO quality certifications. Finally, increased demand for intermediate products due to multinational entry may allow local suppliers to reap the benefits of scale economies.

Source: Broadman 2005.

machinery is another avenue for spillovers. Indeed, a key sector in Africa where the importation of inputs is critical in affecting the export competitiveness of the continent's manufactured products is new machinery, since this is one input in the production process where the impacts of technological advances and innovation will likely be felt most.

Interestingly, there is significant variation in the source markets for new machinery purchases among different nationality firms covered in the WBAATI survey; see table 6.13. African firms buy the majority of their new machinery in their local, home markets. Chinese businesses also purchase a substantial portion of new machinery in Africa, indeed twice as much as do Indian firms. But it is the share of new machinery that Chinese firms buy in their home market that is striking in comparison with other firms: whereas machinery made in India constitutes 22 percent of Indian firms' new machinery purchases, for Chinese firms operating in Africa, 60 percent of their new machinery purchases are made at home. Indian firms in Africa also procure a substantial portion of new machinery in the Chinese market.

Table 6.13 Purchases of New Machinery by Import Origin and Firm Nationality

Nationality	African	Chinese	Indian	European
Domestic	55%	32%	15%	28%
Other Africa	3%	1%	7%	12%
China	6%	60%	13%	1%
India	5%	0%	22%	2%
Other	31%	8%	44%	56%

Source: World Bank staff.
Note: Data pertain to 2005 median values.

The findings from the business case studies provide additional insights to these survey data about the sources and disposition of machinery and equipment by Chinese and Indian firms operating in Africa, as well as those of their African counterparts. First, whereas these firms' raw materials are most often procured locally, much of their capital goods is imported, and not just from their home markets, but from Europe, the United States, and Japan. For instance, a Chinese construction firm in Tanzania recently purchased new Mack and Caterpillar trucks and other vehicles from the United States, and new Komatsu equipment from Japan. Still, a key finding from the business case studies is that China and India are rapidly becoming important source markets for imports of sophisticated capital goods for firms producing on the African continent, and regardless of firm nationality. Price advantage appears to be a major factor. To take but a few

examples, new Chinese-manufactured tower cranes and aviation control pumps newly built to custom specifications were recently purchased by firms in South Africa; and India has been a key source market for new road-paving equipment in Ghana, new water-purification systems in Senegal, and new automated nut-processing machines in Tanzania. On the other hand, a particularly interesting finding is that the transfers of technology are not unidirectional from China and India to Africa: in some cases, Africa has been a source market for capital goods exports to China and India, resulting in "reverse technology transfers"; see box 6.6

Box 6.6 "Reverse Technology Transfers": Africa as a Capital Goods Source Market for China and India

Perhaps the most surprising finding from the business cases studies on the issue of technology spillovers involving Chinese and Indian firms in Africa is the phenomenon of "reverse transfers of technology." In several instances, *used* African-made capital goods are being purchased by Chinese and Indian firms to be used in *their* home countries. For example, a Chinese firm bought, dismantled, and then reconstructed in China a synthetic polymer plant that was operating in South Africa. An Indian firm did the same with an electric power station, also in South Africa.

Source: World Bank staff.

Second, the firms in Africa under study clearly make their capital goods purchase decisions based on price/quality tradeoffs. In particular, although machinery and other equipment available from China and India often embody a price advantage, firms covered in the business case studies indicated that in some instances due to lower quality, they purchased these capital goods elsewhere. Conversely, other firms are willing to accept lower-quality machinery in return for having to pay a lower price. For example, an African construction company looked into procuring Chinese equipment, but did not do so due to inferior quality; instead it purchased more expensive equipment from Germany and United States. A foam mattress producer in Senegal tried to source covers from China, but ultimately cancelled the order due to poor craftsmanship. On the other hand, a bottled water manufacturer in Ghana recently purchased new filling machines and a new pasteurizer from China. Although the firm considers the Chinese equipment to be of a lower quality than European versions, the 25 percent cost advantage proved sufficiently offsetting.

Finally, there is a clear recognition among all nationality firms covered in the business case studies that export competitiveness in Africa hinges greatly on the use of new, as opposed to used, machinery, especially in global-market-

targeted investments—where exports are destined for advanced country markets. This business strategy is consistent with findings in the empirical literature showing a positive correlation between superior export performance and new vintage equipment.[34] Several examples illustrate the point. One Chinese affiliate in Tanzania indicated that headquarters management forbids it to utilize used machinery in Africa; at the same time, the firm is prohibited from selling any of its used machinery in Africa once a project is completed: rather, headquarters deploys such machinery to other African affiliates of the enterprise group. A long-established Indian textile firm in South Africa recently purchased new weaving machines from Germany and Italy to produce high-quality blankets it sells not only locally in South Africa and in neighboring countries, but also in the United Kingdom. And, a struggling African textile firm in Ghana still using 1960s-vintage machines just placed an order in China for state-of-the-art equipment so that it can export—for the first time in its history—to other African markets as well as to markets outside the continent, based on its recognition that only by competing in terms of quality, price, and time will it be able to expand its reach.

MEETING THE CHALLENGE OF NETWORK TRADE: WHAT ARE AFRICA'S EXPORT OPPORTUNITIES PRESENTED BY CHINESE AND INDIAN FOREIGN INVESTMENT?

The dynamics of recent economic development trends in other regions of the world suggest that for most African countries, buyer-driven networks offer several opportunities to export labor-intensive products in an increasingly globalized marketplace. While there are possibilities for the continent's participation in exporting through producer-driven value chains, they are far more limited at present. [35] In large part this is due to the largely rudimentary nature of the bulk of FDI inflows to Africa; it also is due to the limited volume of such flows: in 2005, Sub-Saharan Africa accounted for less than 2 percent of global FDI inflows.[36] On the other hand, one sector where Africa's supply chain exports can be enhanced in the short- to medium-run is in the service sector—especially tourism. This is a labor-intensive industry that could yield significant benefits in terms of spillovers, growth, and employment generation. The dramatically recent increase in "South-South" FDI flows to Africa by China and India, especially in light of the nature and effects of these flows evidenced above, holds the promise for countries on the continent to exploit opportunities for network trade. There are brighter prospects for buyer-driven trade in the short

run, with more producer-driven trade in the longer run. Even in buyer-driven networks, however, as well as in the tourism sector, African countries today face many challenges in both maintaining their foothold and in upgrading their current roles. In what follows, we assess several cases for such network trade opportunities.

African Buyer-Driven Network Trade Opportunities

Participation in the Global Food Network. For African farmers, there are inherently new risks and new opportunities associated with the globalization of the agricultural sector. Increasing quality, production, and employment standards are complemented by lower overall prices and heightened competition. Accessing global commodity chains can mean higher economic rents and more stability, but it is not an immunization against changing market conditions. For those firms that remain outside the value chain, the risks are even greater as they are subject to even more volatile markets.

Agriculture is one of the sectors with the greatest potential for integration of African producers into global buyer-driven networks. However, in the short run this development will be inhibited by poor transport and communications infrastructure, which are detrimental to perishable agricultural products. Africa's network trade in agriculture—and in all other sectors as well—will also be negatively affected by the deficiencies in the business climate and the lack of human capital. If these difficulties are overcome, the increased network participation will translate into higher agro-exports and higher employment in the sector, but its benefits are likely to accrue to larger producers.

Global food markets have undergone a rapid transformation in recent years, driven by changes in consumer demand, increased concerns about food safety, and the rise of modern retail systems. Growing incomes and changing lifestyles have increased consumer demand for variety, quality, food safety, year-round supply of fresh produce, "healthy" foods, and convenience. Concerns about the social and environmental conditions of food production have also become more prominent.[37]

The growing concerns about food safety have shifted the emphasis from product to process standards and have made product traceability and controlling the supply chain "from farm to shelf" a vital requirement in higher segments of the market. Sourcing in open markets with anonymous suppliers has been increasingly replaced with integrated supply chains that usually involve reliance on preferred

suppliers and independent certification of good agricultural and manufacturing practices. In response to these changes, international food companies have become more reliant on standards that are often more stringent than the public sector requirements for food safety and quality. Most companies have begun to view food safety not only as an important commercial risk but also as an opportunity to distinguish themselves from competitors. This effort has also manifested itself through growing product differentiation, innovation, and branding.

At the same time, three important trends have been taking place in the structure of the global food industry during the past two decades.[38] First, there has been consolidation of food retailing. In 2001, just 30 grocery retail chains reached jointly more than $1 trillion in revenue, thus accounting for about 10 percent of global food sales. Within this group, the top 10 retailers constituted 57 percent of the combined total. The highest concentration ratios were observed in Europe. For example, the top five supermarket companies in France had a 90 percent market share and the corresponding figures for the Netherlands and Germany were 64 and 60 percent, respectively. While an acceleration in consolidation was also observed in the United States in the late 1990s, the top five supermarket chains commanded only about 35 of the overall market in 2004.

Second, there is an increasing reliance by major retail chains on their own agents for sourcing and thus declining importance of wholesale markets. While in the past, wholesale and terminal markets were responsible for 20 or more percent of food sales, their share in sales in industrialized countries has dropped to about 10 percent. Despite their declining importance, some wholesale markets still continue to play their traditional roles, serving as a buffer for overages and outages, an outlet for second-quality products, and a source for small shops and restaurants. Others have moved to more specialized roles in servicing ethnic food segments of the market.

And, third, is the rapid growth of the food service industry. For instance, in 2002, 46 percent of all food expenditures in the United States were spent in hotels, restaurants, and institutions. In the EU, consumer expenditures on food away from home were equal to about one-third of the value of retail food sales. In Japan, the food service sector accounted for 26 percent of total spending on food. The growing importance of food services has been associated with an increasing demand for a wide range of processed and semiprepared foods, large-volume contracts, extreme aversion to food safety and other product risks, and almost no direct foreign sourcing.

Overall, the consolidation of food retailing has given the market leaders an extraordinary market and purchasing power and has resulted in a strong tendency toward global sourcing, the introduction of preferred-supplier arrangements, supply-chain integration and rationalization, and lower average prices but also lower variability in prices for contract or program suppliers.

That supermarkets are replacing wholesalers as the leading buyers in the global food sector has important implications for African producers. Compliance with the standards imposed by supermarkets is costly. It requires investment in machinery and facilities (for instance, cold storage and stainless steel tables), improvements in sanitation levels, worker hygiene, and skills, as well as investment in obtaining a formal certification. For instance, fruit producers in South Africa supplying supermarkets have had to comply with HACCP (Hazard and Critical Control Point) as well as the private standards of a particular buyer. Growers selling to U.K. supermarkets are also expected to comply with the Ethical Trading Initiative Baseline Code, which covers labor standards and includes requirements related to health, safety, and wages.[39] Such investments may be beyond the reach of smaller producers, who are often credit constrained. Supplying supermarkets may additionally involve an increase in variable costs, such as expenditure on microbiological testing. Timeliness is also an important aspect of serving supermarket chains. If a shipment gets delayed along the way and misses its vessel in the port, taking the next vessel might not be an option as the delay may result in deterioration of the product quality and thus the shipment may no longer meet the required standard.

However, there are several advantages of being a supplier servicing a supermarket chain. They include: higher margins than in wholesale transactions, more consistent and more predictable demand, the ability to obtain detailed information on changing developments and requirements within the market, the chance to receive very detailed guidelines for operations and good practice, and finally the ability to enhance one's reputation by being a supplier to a major retail chain.[40] In South Africa, for example, producers selling fruit to U.K. and European supermarkets have been able to obtain more stable outlets for their produce. For instance, most supermarkets negotiate purchases six months in advance. Moreover, producers servicing supermarkets on average receive better prices than those selling on the open market.[41] These benefits of the emergence of supermarkets as direct buyers extend to outside of the food sector, including for example, the cut-flower industry; see box 6.7.

Box 6.7 Benefits of Supermarkets as Direct Buyers in the Supply Chain: African Cut Flowers

The cut-flower industry offers one promising example for future Africa-Asia trade and investment. Traditionally, the majority of Kenyan cut flowers are exported to the Netherlands, where they are sold in auction houses and are then re-exported to large markets in the United States or Japan. This rather convoluted process contributes to a much shorter vase life of Kenyan flowers. An emergent trend in the industry is *direct sales* to supermarkets, which seem keen to cut out the auction houses and buy directly from flower farms abroad. African producers really are the main beneficiary of this new trend. For supermarkets, African flowers are attractive because they are inexpensive and their growers are willing to accept a fixed price. To the African growers, the arrangement is beneficial as well because supermarkets buy large quantities at fixed prices.[42] The commercial challenge for Kenya is to "cut out the Dutch middleman" and sell directly in the United States or in Japan's more than $10 billion flower market. This Kenyan example could perhaps even be expanded to the whole horticultural sector in Africa.

Source: Based on Jaffee 2005.

Increased safety and traceability requirements suggest two potential business strategies for African exporters. The first one is to remain small and to compete on price in wholesale markets or in Asian countries where high standards are not required. This strategy relies heavily on the ability to minimize overhead costs, but is not very demanding in terms of investment and skills required. It corresponds to the "SME generic exporter" category in the agro-exporter typology presented in table 6.14. The other strategy is to invest in facilities and systems to service the most discriminating buyers and benefit from the higher prices received for such products and thus become a "premium supplier," as in the case of Kenyan Kale Farmers; see box 6.8. From there, a company can move up the value-added ladder to supply premium, prepacked produce and thus become a "value-added prepared-food operator." The leap from the "SME generic exporter" category to the "premium exporter" status is huge, as is the jump to highest category. At the same time, the road for small firms to grow into large generic exporters is closing. Thus, in the future, firms will most likely self-select into small operators with low profits or high value-added operators supplying premium products.

Table 6.14 Typology of African Agro-exporters

Type	Type Name	Main Characteristics	Major Facilities	Main Skills
1	"Briefcase" trader	Very small scale; intermittent and opportunistic sales	Pickup truck, fax machine	Some trading skills
2	SME generic exporter	Regular sales to regular clientele of one or two shipments per week; mostly sales of loose packed produce; virtually all sales to wholesaler-based distribution channels	Small packing shed with some cold storage capacity and basic equipment (i.e., sorting tables) 3–4 pickup trucks	Trading and management skills. At least one quality control person. One/few persons to interact with farmers. Several produce grades
3	Large generic exporter	Regular sales to regular clientele virtually every day. Mix of loose and prepacked produce. Most sales to wholesaler-based distribution channels, some to smaller supermarkets	Larger packing house facilities with some automation and significant cold store facilities. Larger fleet of trucks including several insulated trucks	Supply chain management skills. More quality control staff. Several agronomists and larger number of field staff
4	"Premium" supplier	Regular supplier to supermarkets and other upmarket distributors. Most sales are of prepacked produce with improved packaging and product combinations	Potentially requires development and operation of one or more farms (to ensure supply control and traceability) with investments in farm equipment. Upgraded central pack house facilities (stainless steel tables, improved lighting, blast cooling system, good sanitation and worker hygiene systems) plus precooling centers in major product sourcing areas	Supply chain and food hygiene/HACCP management skills. Multiple layers of quality assurance personnel. Advanced production planning skills, including professional farm management. Need to be an "accredited" supplier
5	Value-added prepared food operator	Same as "premium" supplier with the addition of a "high-care" line of prepared ready foods	The above, plus separation of high- and low-risk areas and distinct "high-care" rooms with the necessary temperature control and air venting systems, metal detectors, heat sealing equipment.	The above, plus additional food science personnel

Source: Jaffee 2003.

Box 6.8 Kenyan Kale Farmers Upgrade Physical and Human Capital to Supply Supermarkets

The example of kale farmers in Kenya illustrates the implications of supplying supermarkets as opposed to distributing the product through traditional channels. Although the supermarket buyers in Kenya are mostly domestic, the transition required by farmers to qualify as suppliers involves upgrading human and physical capital. Kale is a useful example because it is the most widely grown and consumed vegetable in Kenya, and because it is a relatively labor-intensive crop with reliable yield and low market price, making it common among smallholder farmers.

Farms supplying kale to supermarkets achieve higher land and labor productivity rates than farms supplying brokers, wholesalers, or retailers. For land productivity, the difference between the two groups is 59 percent, while the corresponding figure for labor productivity is 73 percent. These differences are due to the fact that farms selling to supermarkets are larger, use an average of twice the amount of inputs per unit of

(cont.)

land, and incur higher variable costs in the form of tractor rentals and irrigation operating expenses. Their share of irrigated land in total land under cultivation is almost four times higher than in the case of other farms. For instance, while only 5 percent of traditional farms have electricity, this is true of all farms supplying supermarkets. Similar differences can be found with respect to having a phone line or a transportation vehicle. Producers selling to supermarkets have higher profits, pay 25 percent higher wages, and enjoy greater revenue stability than traditional-channel farms.

Meeting the higher standards for food safety, quality, and other delivery conditions requires additional human capital. The average education of workers on farms supplying supermarkets is 13 years of schooling, which is almost twice the 7 years obtained by workers on traditional-channel farms. The vast majority of workers in the latter scenario are family members, whereas the opposite is true for supermarket chain suppliers.

Source: Neven 2004.

While many African growers may continue exporting their products to wholesale buyers or Asian markets, the coming years will most likely bring an increase in foreign sales of premium suppliers which in turn will lead to a higher concentration of exports. Such a trend has been observed in Kenya, where in recent years only 13 companies account for about 90 percent of the country's fresh vegetable exports.[43] The small producers incapable of accumulating human and physical capital will be excluded from the global commodity chain and will capture lower returns.

However, thanks to their lower production costs in labor-intensive products, smallholder farmers will remain competitive suppliers to wholesalers and Asian markets where neither high process standards nor traceability are required. The cost advantage of smallholder farmers over large-scale commercial firms is about 20–40 percent, as the latter have high overhead and supervision costs and paid labor is in general less motivated than self-employed farmers.

Alternatively, smallholders may find opportunities in production under contract for private export firms. However, smallholder growers could be marginalized by higher standards imposed by food importers on premium suppliers: suppliers would need to bear the costs to provide the necessary training and oversight to a large number of small growers. Indeed, working with smallholder farmers is difficult for trading and processing companies. Quantities of products are small and heterogeneous in quality, supply can be haphazard, and bulking-up of volume into a steady stream of product of constant quality is difficult to achieve. Other weaknesses of smallholder farmers are the lack of

knowledge of modern markets, technologies, and inputs, and poor access to capital, which prevents them from upgrading their production. These factors constitute a serious constraint to supplying high-end modern supply chains. In fact, the share of smallholder farmers (and medium-scale growers) in Kenya has decreased over the past decade, although the absolute volume of smallholder-produced vegetables for export is approximately the same.[44]

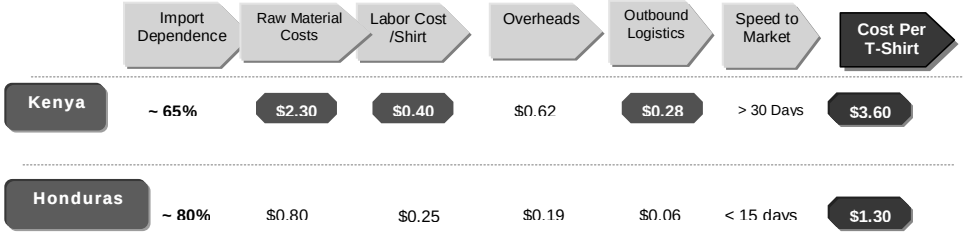
Participation in the Global Apparel Network. The apparel industry is another sector in which production is increasingly distributed across low income countries by buyers searching for cheaper labor. The global trend is one of continuous differentiation and externalization of traditional functions by buyers. It began with a shift in production of standard, low-value garments to suppliers and was followed by a shift in production of higher-value apparel.

The experience of countries that have made this transition, such as Korea, Taiwan (China), and Hong Kong (China), suggests the importance of organizational learning.[45] As these countries upgraded and outsourced production to suppliers with cheaper labor, they themselves moved from being original equipment manufacturers (OEM) to serving as original brand name manufacturers (OBMs) of garments. Acquiring the capabilities needed for transition was achieved by firms that integrated into the buyer-driven networks of developed countries, not by those for which participation did not extend beyond simple assembly.[46]

As a result of Africa's preferential access to foreign markets, a significant amount of such production was moved from newly industrialized countries in Asia to Africa. FDI from Asia, induced by the quota system of the Multi-Fiber Agreement (MFA) and the U.S. Africa Growth and Opportunity Act (AGOA), enabled rapid growth of the African apparel sector. One of the beneficiaries was Lesotho, which, thanks to its cheap labor costs, was an ideal host for Asian capital seeking to avoid the textile quotas constraining exports from their home country. Investors from Taiwan (China) and China helped to make the textiles industry in Lesotho the single-largest employer, accounting for 90 percent of export earnings.[47] Other African producers also benefited from AGOA. In 2004, Sub-Saharan African exports of apparel to the United States exceeded $1.5 billion.[48]

The expiration of the MFA on January 1, 2005 ushered in a new apparel trade environment, however. On the one hand it unleashed a new wave of Chinese sales on the world market. The ILO, in its analysis of the post-MFA

Figure 6.8 Apparel Value Chain Comparison between Kenya and Honduras



Source: Uma Subramanian, "Being Competitive: Value Chain Analysis and Solution Design," IFC–World Bank Group, April 2006.

environment, reported that textiles and apparel exports under the AGOA fell to $270 million in the first quarter of 2005 versus $361 million a year earlier. The 25 percent reduction contrasts with a 19 percent increase in China's exports for the same period.[49] On the other hand, following the expiration of the MFA, many companies that had invested in Africa to take advantage of the quota began moving back to China in search of cheaper labor.[50] Between January and March 2005, Kenya exported $60 million of textile and clothing products to the United States, which was 13 per cent or $9 million less than the exports during the same period in 2004.[51] But, importantly, the stepped-up competition African apparel makers face today is not just an Asian phenomenon: indeed, just as fierce competition comes from other "Southern" markets, such as Central and Latin America; figure 6.8 shows a value-chain comparison between Kenya's and Honduras' apparel sectors.

Today, the increased competitive pressures in the global apparel market call for significant upgrading of Africa's apparel industry. Much as in Africa's agricultural sector, suppliers striving to get preferred status in global apparel-production chains must be capable of meeting ever-rising quality, production, and employment standards while at the same time lowering costs, inventory, and lead times on delivery. In the United States, textile and garment buyers demand quick and accurate response systems of their suppliers. Quick response entails technological integration within the supply chain to shorten lead times. Accurate response comprises integration of forecasting, planning, and production activities to allow manufacturers to postpone production until forecasts can be validated at the point-of-sale.

Reducing inventory and delivery lead times can be challenging for small firms because it involves integrating within the supply chain and investing in process improvement, infrastructure, technology, and training. To be successful,

suppliers have to coordinate with customers in various process areas, including customer relationship management, demand management, enterprise resource planning, product development, order fulfillment, and procurement, among other items. It also includes adoption of new systems ranging from electronic data interchange to bar coding, often to customer specifications.

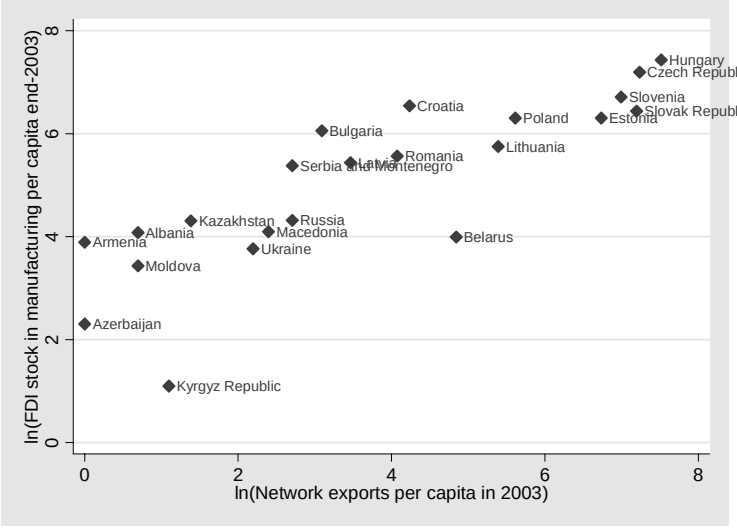
Despite the complexity of commodity chain integration, an opportunity for medium-sized African firms lies in the fact that global buyers seek nimble suppliers with low inventory. A good organizational structure with well-trained staff and close integration within the network should enable even small producers to avoid a make-to-stock production configuration that poses an expensive risk of obsolete inventories. However, it is also clear in light of the scale and competitive advantage that Chinese and Indian textile and apparel firms have in the mass-market portion of the sector that African firms should focus on niche markets.

There is little question that recent developments in the international trading system mean that without substantial improvements in Africa's behind-the-border business climate, the opportunities for apparel exporters on the continent may be rapidly diminishing, notwithstanding the fact that preferential access to the U.S. market under AGOA still presents a window of opportunity for African-based suppliers. Many global buyers seek not only low-cost labor and production flexibility, but also value geographic diversity of supply in order to reduce exposure to risks. This is yet another opportunity for African suppliers to enter the global apparel supply chain. However, all these opportunities will not be realized without substantial investments in transportation and communications infrastructure and in trade facilitation, as discussed earlier in chapters 4 and 5.

Producer-Driven Network Trade Opportunities for Africa

Since producer-driven global networks are characterized by high levels of vertical ownership within the supply chain, a significant amount of FDI is usually required in producing countries. Producer-driven networks also prevail in industries with greater capital intensity and greater reliance on skilled labor. As new research on the recent experience of the transition countries in Eastern Europe and the Former Soviet Union illustrates, there indeed exists a positive correlation between the amount of FDI received and country participation in producer-driven production networks; see figure 6.9.[52] The same research found a positive correlation between the stock of FDI and the share of skilled-labor- and capital-intensive exports.[53] Given the limited amount of FDI attracted by

Figure 6.9 Producer-Driven Network Trade Positively Correlates with FDI: International Evidence



Source: Broadman 2005.

most African economies—apart from the oil-dominated countries—(see table 6.15), with a few exceptions aside, the prospects for entry by African producers into these networks seem limited in the near future. One sector where such opportunities do exist is the automotive assembly and parts industry in South Africa.

Producer-Driven Network Trade for South Africa's Automotive Industry. Since the early 1960s, South Africa's government has pursued a proactive policy of support for developing the nation's automotive sector; see box 6.9. Just like many formerly inward-oriented economies, South Africa's industry started to face a radically new competitive environment as its trade barriers began to fall starting in the late 1980s.[54] The initial result was a sharp increase in the trade deficit in the automobile and components sector. In 1995, the South African government's Motor Industry Development Program (MIDP) heralded a much-lauded shift in vision and aims. Its main objective was to improve the international competitiveness of firms in the industry, enhance growth through exports, and stabilize employment levels. In order to achieve these objectives, a series of export-oriented incentives were introduced, coupled with a reduction in import tariffs between 1995 and 2002.[55]

Table 6.15 Africa Net FDI Inflows Per Capita, $US

Country Name	Average 2003-2005
Equatorial Guinea	1404
Seychelles	633
Angola	248
Congo, Rep.	166
Gabon	136
Botswana	108
Namibia	97
Mauritania	75
Sudan	48
Lesotho	44
Chad	40
Cape Verde	38
Nigeria	32
South Africa	30
Mauritius	30
Gambia, The	24
Cameroon	22
Sao Tome and Principe	22
Swaziland	19
Zambia	16
Mozambique	13
Ghana	12
Guinea	12
Cote d'Ivoire	10
Tanzania	10
Togo	8
Senegal	8
Uganda	8
Congo, Dem. Rep.	7
Mali	7
Benin	6
Eritrea	5
Zimbabwe	4
Sierra Leone	4
Malawi	3
Madagascar	3
Guinea-Bissau	3
Central African Republic	2
Kenya	1
Burkina Faso	1
Niger	1
Ethiopia	1
Comoros	1
Rwanda	1
Burundi	*
Liberia	N/A
Somalia	N/A

Source: IMF WEO database, except Burkina Faso, Cote d'Ivoire, Kenya, Niger, Tanzania, Togo, and Zambia, where the World Bank WDI data were used. For WDI data, the most recent three-year average was used.
Note: "*" indicates negligible amount FDI; "N/A" indicates no data available.

Box 6.9 South Africa's Automotive Industry Policy

South Africa's policy of support for developing the nation's automotive sector has evolved through several phases over the last 40 years. Its overarching objectives have been to develop a globally integrated and competitive local motor vehicle and component industry; stabilize long-term employment levels in the industry; improve the affordability and quality of vehicles; promote the expansion of automotive exports and improve the sector's trade balance; and contribute to the country's economic development.

The initial strategy emphasized import substitution strongly influenced by protectionism, including local content policy. In the late 1980s, in line with the country's progress toward trade liberalization, a structural adjustment program for the motor industry that primarily focused on the objective of saving foreign currency and enhancing automotive exports was introduced. In the mid-1990s, in order to make the framework consistent with the then-new WTO, the Motor Industry Development Program (MIDP) was initiated; it continues to this day. In general, the MIDP has entailed a phase-down of tariffs; removal of local content requirements; duty-free imports of components up to 27 per cent of the wholesale value of a vehicle; and duty rebate credits to be earned on exports. The provisions of the current phase of the MIDP extend to 2007. Recently, it was publicized that a third phase of the MIDP is anticipated to run from 2008 to 2012.

Sources: Kaplan (2005) and Barnes, Kaplinsky, and Morris (2004).

Since the implementation of the MIDP, South Africa has seen rapid growth in the auto sector, based on a speedy rise in global exports of completely-built-up units (CBUs), especially after 1998. In addition to these exports of CBUs, there was also a marked increase in global exports of direct car components.

With respect to CBU global exports, several of the leading international automotive companies have been sourcing large numbers of cars from South Africa for sale *outside* the continent.[56] (This is in contrast to the Chinese and Indian entrants to the South African CBU market—noted above—where all of their sales are *within* Africa, and mostly in South Africa itself.) BMW has been largely specializing in the 3-series car in order to obtain scale economies. Its exports of CBUs increased steadily from 4,346 units in 1998 to 43,583 units in 2002; its exports have been sold in North American, Australian, European, and Asian markets. Volkswagen has sourced an increasing number of Golf 4 cars for the U.K. and European markets, with exports growing from 10,485 units in 1998 to 30,533 units in 2002. Daimler-Chrysler exported 36,324 C-Series Mercedes Benz's to the UK, Australia, and Asia in 2002, a 20-fold increase on exports of only 1,752 vehicles in 1998. Toyota began exporting its Corolla to Australia and New Zealand in April 2003.

Global exports of South African-produced automotive components have also grown, particularly that of catalytic converters. A major conduit for these exports were the non-German OEMs (original equipment manufacturers) who satisfied their need for duty credits by purchasing these from component suppliers. Catalytic converters are an especially interesting case, since initially the level of value-added was low. However, as scale has been built up, investment of more than 2 billion Rand (more than $200 million) has been made into a deepening of the production process. In 2002, South Africa supplied 12 percent of the global catalytic converter market and was the most important supplier of catalytic converters to the European Union.

South Africa's success in tapping into global production sharing in the automotive sector is driven in large part by the economy's well-developed infrastructure, high labor productivity, speed-to-market, product quality, and flexibility. Its accommodative foreign trade and investment policy regime has also been a key factor. At present, very few other countries on the continent can match these attributes or possess the resources that South Africa has devoted to developing this industry. With the implementation of certain policy reforms, other countries may well be able to achieve a modicum of success in this regard.

As the case of South Africa's development of its automotive sector shows, however, not only can entry barriers to global production networks be appreciable, but the role of government in supporting certain policies has had to evolve. This evolution has been driven in part by fiscal considerations at home. Moreover, changes in international trade rules regarding interventionist export promotion policies have also played a role. Indeed, in general there are important lessons in this regard for the African continent, not only from South Africa's experience but from that of other regions—most notably East Asia—as well; see box 6.10.

Box 6.10 Lessons for Africa from the "East Asian Miracle"

Africa's economies (as well as those of developing countries elsewhere) face significant challenges in trying to duplicate the interventionist "export-push" strategies of the earlier high-performing Asian economies that gave rise to the so-called "East Asian Miracle." In part, these challenges arise from the fact that the international trading system today, under WTO rules, embodies constraints on the use of certain national policies that were absent 15 years ago. At the same time, in light of the economic crises many of the East Asian countries experienced in the 1990s, governments rightfully face tougher questions now about which parts of the earlier approaches should be implemented. At a very minimum, off-the-shelf applications of

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these approaches seem unwise: policies need to be shaped to local conditions. There are valuable lessons from the earlier experiences to be shared, if none other than that the most successful approaches build on a government's ability to adapt to a constantly changing global economic environment.

Exports can be promoted by a variety of means that are consistent with obligations for market access and limited subsidies under the WTO. Improving the efficiency of institutions such as customs services, implementing duty drawbacks and related measures in a transparent manner, and minimizing trade diversion under free trade regimes are all WTO-consistent and can be effective mechanisms for export promotion—all other things equal. In addition, aggressively courting export-oriented FDI and focusing infrastructure development in areas that facilitate exports are unlikely to provoke opposition from trading partners. Export credits, while more controversial, remain feasible instruments under certain conditions; however, these measures must be of limited duration. Fiscal discipline, moreover, will require that the costs of any such programs be kept in check.

Regardless of whether such initiatives are in compliance with international commitments, a prerequisite for their effectiveness is the establishment of basic market institutions—those that stimulate interenterprise competition, protect private property rights, ensure the free flow of labor and capital, and foster effective disciplines for sound governance, among other characteristics. Without such market institutions in place, any presumed national benefits from interventionist export policies can be eroded by distortions and the misallocation of resources. Clearly, the role of government is to ensure the establishment of such institutions insofar as they are public "goods," the provision of which can compensate for basic market failures.

For firms attempting to enter export markets, it cannot be assumed that simply achieving low production costs is sufficient to realize foreign sales. Today, firms increasingly need to be embedded in international production networks. Four decades since the East Asian Miracle, the emergence of international production networks has transformed the world marketplace into one where there is very fast innovation with dramatic declines in product prices, rapidly changing product characteristics, new products that quickly lead to the obsolescence of older ones, and a premium on the ability to rapidly communicate electronically. In such a setting, government's role in foreseeing and successfully dealing with market changes more effectively than businesses themselves is likely to be more limited. The experience of a number of countries in the last two decades suggests that private firms often have been successful at certain strategies previously advocated to be provided by government. For example, the growth of the Indian software sector was primarily driven by private sector agents, often from abroad. In this regard, governments can play an effective supporting role in providing an inviting environment for firms to encourage the return of nationals working abroad, which can provide a large reservoir of new knowledge and effect the transfer of best practice methods.

Sources: World Bank staff, based on World Bank (1993) and Pack and Saggi (2006).

Services Network Trade Opportunities in Africa: The Case of Tourism

As fast growth rates and rising disposable incomes in the Chinese and Indian economies foster the creation of a growing Asian middle class, the opportunity for Africa to attract more tourists from that part of the world becomes greater. Indeed, China's government formally encourages tourism in Africa. The government has approved 16 African countries as outbound destinations for Chinese tourists, including Ethiopia, Kenya, and Zimbabwe. This pushed the number of Africa's Chinese tourists to 110,000 in 2005, a 100 percent increase over 2004, according to Chinese government figures.[57]

The tourism sector covers hotels and restaurants, travel agencies, tour operator services, and tourist guide services, and its development could have a myriad of positive spillover effects for Sub-Saharan African countries: improved transportation, enhanced communications infrastructure, and transfers of technology, knowledge, and managerial skills. It also can make significant contributions to foreign exchange earnings. And, perhaps most important from the standpoint of increasing growth and reducing poverty, tourism is a labor-intensive industry, and its development therefore can be a major source of employment.

Tourism already dominates African services exports, both for the region overall and for several countries; it also exhibits the fastest growth rate of services exports for the region; see figures 6.10a and 6.10b. South Africa is the most important tourist destination on the continent, followed by Mauritius, Tanzania, and Botswana. For the whole of Sub-Saharan Africa, South Africa accounts for about 57 percent of the market share of total travel exports services.

Figure 6.10a Tourism: Africa's Largest Service Export

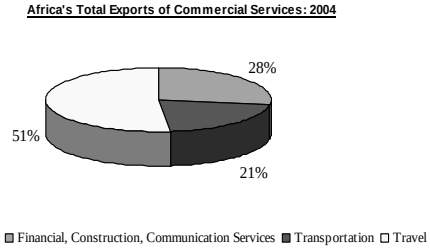
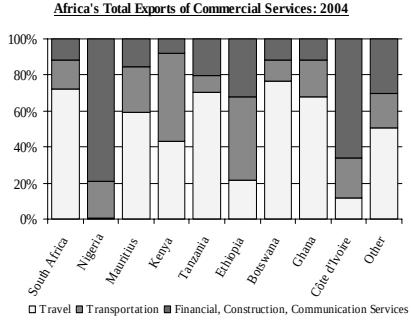


Figure 6.10b Where Tourism is the Main Service Export



Source: IMF Balance of Payments.

But there is great potential for further development of the industry. Mozambique provides an interesting case for unexploited tourism development that could have quite positive value-chain effects (see box 6.11).

Box 6.11 Developing Services Supply Chains: Tourism in Mozambique

Mozambique has underdeveloped tourism potential. Since the 1980s, the Government of Mozambique (GOM) has implemented many "first-generation" structural reforms such as adopting sound fiscal and monetary policies, privatizing public enterprises, and liberalizing trade. The reforms have helped stabilize macroeconomic balances and supported the remarkable growth performance since 1992. In 2000, the GOM adopted the Action Plan for Reduction of Absolute Poverty (PARPA) as a medium-term rolling instrument incorporated into the public planning system. Tourism is seen as a priority area in which additional investment may create the jobs that are necessary to meet the PARPA objectives. This expectation is sensible and reasonable, as most developing countries have increased market shares in international tourism. Sub-Saharan Africa, in particular, has experienced very strong growth in tourism within the last two decades—increasing its market share of global arrivals from 1.5 percent in 1970 to 4.5 percent by 2003.

Despite a strong tourism asset base and its geographic proximity to South Africa, one of the world's top destinations, Mozambique still trails behind all its neighbors except for Malawi. Despite quite an impressive annual growth rate of 13 percent (1999–2003), the average number of tourists per 100 inhabitants, at 2 for Mozambique, is half of that of Africa's average, and well below the world average of 11 per 100 inhabitants. Mozambique's poor performance reflects problems with the country's overall image, product variety, and quality of tourists' experiences. Realizing this potential depends substantially on the ability of all players in the Mozambique tourism value chain—from providers of final goods and services, to other suppliers and government officials—to create and deliver high-quality tourism experiences that can transform the country into a "must-see" destination in Africa.

However, the requirements for turning Mozambique into a regional tourism star are extremely high. First of all, the country needs to address its cumbersome visa regulations. Many countries in the area do not require visas at all from EU citizens (Mauritius, Seychelles, Maldives). Second, there are also limited intercontinental flights from Europe, and significant delays and hassles for tourists in airports. Third, there is a weak presence of Mozambican tour operators in regional and global markets and limited collaboration between foreign and Mozambican tour operators. Finally, there are no clear or concerted mechanisms to ensure the development and restoration of historic monuments and sites (e.g., elephant reserve, Ilha da Mocambique, ruins of the Bazaruto Fishing Pearls Company).

Source: Foreign Investment Advisory Service (FIAS) 2006.

African countries are engaged in a concerted effort to explore tourism potential at the subregional level. For example, SADC countries have established an SADC Tourism Sector Coordination Unit, based in Mauritius, which has been coordinating initiatives at the regional level. Along the same lines, EAC countries, as part of the regional strategy for 2006–2010, have developed a concerted action plan to increase exports of tourism services. Still, further efforts are needed to enhance tourism exports. For example, the sector is constrained by the limited presence of African tourist suppliers in the travel-originating distribution centers, and by poor access to the Global Distribution System (GDS) and the Computer Reservation System (CRS).

To facilitate African countries' realization of the benefits that tourism development can offer, there are several areas for proactive government actions. First of all, incentives for private investment—both by domestic entrepreneurs and foreign businesses—in the sector are low in light of the inherent public-good nature of many national (and cross-national) tourism assets. Public investment in tourism development and marketing is relatively small by world standards, except for countries like Kenya and South Africa. Secondly, there is limited coordination among the industry's stakeholders. Airlines, hotels, tour operators, retailers, restaurants, and a whole range of public sector agencies are not effectively working intersectorally to develop, promote, and manage tourism destinations and, more broadly, Africa's tourism image and positioning in world markets. Last, the roles and responsibilities among tourism-related agencies lack clarity and reforms are needed to avoid overlapping and inefficiently allocated limited funds.

What Lessons Emerge from Africa's Experience in Exploiting Opportunities for Network Trade?

Several factors appear to be critical in fostering success of engagement in network trade by African producers, as illustrated by the following examples. Exploiting price sensitivity is one. Pineapples sold in Europe have become a major export for Ghana in the last few years. Ghana's pineapples are of a lower quality than those of its main competitors in the European market, Costa Rica and Ivory Coast, but even so, Ghana's prices were relatively high due to an inefficient national transport system. Largely as a result of the country's enhanced sea-freighting capacity in the mid-1990s, Ghana's pineapple shipping costs to Europe were reduced significantly compared to former airfreight means. This in turn allowed Ghana's pineapple exporters to reduce the export price and compete more effectively in Europe. While this has been a sound market-entry strategy, Ghana faces a significant risk in this low price/low margin market unless it can ramp up quality as well as increase scale.[58]

Speed-to-market has been crucial in the success of highly perishable commodities, such as Kenyan cut flowers, as discussed above. The fact that there are several planes leaving Nairobi every day for its main markets in the EU makes for fast delivery—an obvious competitive advantage. Kenya was one of the first African countries to privatize its airline industry in 1996. This infrastructure asset also allows African producers tapping into distant export markets to be highly responsive and flexible to market changes. Recently, an Air Services Agreement between China and Kenya was signed; Kenya Airways has been granted landing rights in several cities in China and is now operating direct flights to Hong Kong and Guangzhou in southern China from Nairobi. Since Kenya was granted Preferred Tourist Destination Status in 2004, arrivals from China have more than doubled and are expected to grow even further. Similar to the policies with China, Kenya could seek enhanced access to other Asian markets, such as India, Japan, and South Korea.

High labor productivity is clearly a critical factor. It explains in part why, as discussed above, South Africa is essentially the only country in Sub-Saharan Africa to participate in producer-driven network trade. At the same time, low labor productivity is a major weakness for the Kenyan apparel industry: even though Kenyan wages are lower than those in Honduras, for example, the labor cost for producing one T-shirt in Kenya is 1.6 times that of Honduras. In addition to shop-floor productivity-enhancement programs, implementation of specific policies to improve labor productivity is required in education, skills training, and health policies.

Finally, the importance of product quality cannot be overstated. Nigeria's shrimp industry has been transformed and is now increasingly profitably thanks to the high quality of its exports to a growing European market. On the other hand, if Ghana wants to increase the profitability of its pineapple industry, it will have to start focusing on ways to produce higher-quality produce through the implementation of standards and quality certification.[59]

To be sure, as the foregoing analysis makes clear, these attributes are not easy to develop. They are complex to implement, require significant investment in resources, and they take time. The experience of many of the developing countries in the world that have been successful in entering network trade—even more so those that were not successful—testifies to this. The barriers to entry to global production sharing should not be underestimated.

CONCLUSIONS AND POLICY IMPLICATIONS

Firms in Africa—both domestic and foreign owned—have had international operations and trading relationships for decades. But in recent years the world's marketplace has witnessed the formation of new global-scale economic systems that are tightly integrated, and the rise of trade in intermediate goods constitutes a fundamental shift in the structure of the global trading system. These transformations pose a major challenge for African policy makers in their understanding of how their countries fit into today's international division of labor. Under traditional notions of international trade, the direction of trade (i.e., which countries produce what goods for export) was determined by the principle of "comparative advantage" and a country specialized in the production and export of the good (or goods) for which its relative productivity advantage exceeded that of foreign countries. It is clear, however, that a radically different notion of comparative advantage has now emerged due to the significant role that intermediate goods play in overall international trade, giving rise to *intraindustry* trade. This is true whether the trade is done *within* firms as a result of FDI or through more arms-length transactions, such as through subcontracting.[60] In this environment, it is hard to imagine that the future of Africa's economic development can be isolated from these systems.

Summary of Main Findings

It is in this context that a key issue facing the countries of Sub-Saharan Africa is how they can successfully leverage the newfound investment and trade interest of China and India so that the continent can become a more proactive player in modern global network trade. Over the last 15 years, Asia has already been Africa's fastest-growing export market and is much more open to trade than are Europe and America. And there is no evidence to suggest that this trend will not continue. Yet, in spite of the many opportunities offered by trade in global supply chains, few African countries have been able to make the leap and exploit these opportunities. As the preceding analysis suggests, investment and trade activities by China and India with Africa can facilitate the continent's ability to avail itself of such opportunities.

Evidence presented in this chapter from new firm-level survey data and original business case studies developed in the field provides strong support for the notion that, as is happening elsewhere in the world, in Africa, trade flows and FDI are complementary activities, rather than substitutes. (This finding at the firm level parallels that presented at the country level in chapter 2). Importantly,

the data clearly point to the fact that Chinese and Indian firms operating in Africa have been playing a significant role in facilitating this complementarity. For one thing, Chinese and Indian businesses tend to achieve larger-sized operations than do their African counterparts within the same sectors, and this appears to allow them to realize economies of scale. It is not surprising, then, that the evidence shows that, all other things equal, Chinese and Indian firms have significantly greater export intensity than do African firms. Moreover, the exports from Africa produced by Chinese and Indian businesses are considerably more diversified and higher up the value chain than exports sold by domestic firms.

The corporate structures of Chinese and Indian firms also differ from those of African businesses: the former tend to have more extensive participation in group enterprises or holding companies (with headquarters in their home countries). At the same time, relative to their African counterparts, Chinese and Indian firms engage more extensively in regional integration on the continent. They also exhibit more extensive integration into a greater variety of third countries outside of Africa than do African businesses. And Chinese and Indian firms tend to be vehicles for the transmission of advances in technology and new equipment to the African continent.

But the data also suggest that there are significant differences between Chinese and Indian firms operating in Africa. Chinese businesses in Africa tend to have a different risk-aversion profile than Indian firms, as reflected in their foreign investment entry decisions, their degree of vertical integration, the origin of source markets for their inputs, and the strength of affiliation with state (as opposed to private) entities in conducting transactions, among other attributes. Chinese businesses in Africa pursue business strategies that yield them greater control up and down the production line, resulting in enclave types of corporate profiles, with somewhat limited spillover effects. Indian firms, on the other hand, pursue African investment strategies that result in greater integration into domestic markets and operate extensively through informal channels, indeed even into facets of the local political economy, surely a result of the fact that there is a longer tradition of Indian ethnic ties to Africa.

That global value chains offer real opportunities for African countries to use Chinese and Indian investment and trade activities to increase the volume, diversity, and value-added of exports from the continent is corroborated by the evidence presented. Indeed, as has happened elsewhere in the world, even landlocked countries in Africa—with the “right mix” of policies—may well be able to engage in network trade. Value-chain analysis of particular industry cases

in Africa shows that certain factors are likely to be especially critical in successful network trade. These include implementing a pricing scheme that fully takes into account market conditions, such as production and distribution costs, the strength of competition, etc.; enhancing product quality; organizing the business to be flexible and responsive to changes in market conditions; enhancing labor productivity; and developing the capacity to maximize speed to market. As the analysis shows, there are several industries in Africa that have either already engaged in or have strong prospects to engage in buyer-driven network trade, including food, fresh-cut flowers, apparel, and fisheries, among others. These are all products where African exports face far tougher competition in international markets than the continent's traditional raw commodities, and they must meet world-class standards. However, there are also examples where Africa can exploit its endowment of natural resources and climb the value chain.

The prospects for African industries to engage in producer-driven network trade in the short- to medium-run, apart from some sectors in South Africa, such as automotive assembly and parts and components, are far more limited—without attracting substantial FDI by firms plugged into such networks. Increasingly, as the chapter suggests, Chinese and Indian firms have these attributes. Still, the barriers to entry to global production sharing are significant.

Finally, there is evidence that African services exports can engender significant supply-chain spillover effects domestically. Some countries already are doing so, such as Ghana, Senegal, and Tanzania in back-office services. A second concrete opportunity for growth in services exports is tourism. With rising middle classes in China and India looking to spend a significant part of their increased disposable incomes on holidays, there is clear potential for Africa to reap the benefits. Through positioning itself as a relatively close and attractive holiday destination, the gain for Sub-Saharan Africa would not just be *direct* (in tourism services, hotels, restaurants, etc.) but also *indirect*: the fact that more and more flights arrive in African airports makes transport cheaper and Asian markets more readily accessible for African goods and services.

Policy Implications

As is the case in other regions of the world, African countries' participation in international production networks will be an important path for exporting to foreign markets and more generally integrating into the global economy. FDI has been the driver behind involvement in international production chains. Indeed, the evidence suggests that countries that have been

most heavily involved—or have the strongest prospects for involvement—in network trade are the countries that have received large FDI inflows.[61] Thus examining the reasons why some countries have been more successful in attracting FDI can help explain why they have been more involved in international production networks, particularly as many determinants of FDI inflows also determine the country's ability to participate in international trade. This analysis readily yields insights as to what policies African governments should pursue.

Cross-country differences in the amount of FDI received over the past decade in Africa have been striking, whether considering oil-producing countries or not.[62] What explains success or failure in attracting FDI inflows? At the macro level, one obvious factor is political stability. In Africa, as is the case worldwide, the absence of political instability generally always discourages FDI inflows, all other things equal. Consider the experience of Sierra Leone: it has attracted just $4 per capita of FDI annually between 2003 and 2005. Of course, political stability is not a sufficient condition, as the example of some African countries shows. Burkina Faso enjoyed relative stability but no significant FDI inflows over the same period.

Also at the macro level, empirical studies of capital flows seem to agree on two observations: official flows lead or stimulate countries' reform efforts, whereas private capital flows, with FDI as their most important component, follow or respond to certain reform measures.[63] On a global basis, research shows that a sound and stable economic policy regime provides a potent explanation of variation in FDI flows. To this end, maintenance of macroeconomic fundamentals as measured by GDP growth or low inflation is important.

But there are FDI-specific policy measures that also are key in this regard.[64] The most effective reforms of FDI policy regimes have included steps to: (i) grant nondiscriminatory, "national treatment" to foreign investors for both right-of-establishment and post-establishment operations; (ii) prohibit the imposition of new and the phase-out of existing trade-related investment measures (TRIMs), e.g., local content measures; export performance requirements; restrictions on the use of foreign exchange; and trade balance measures, including those prohibited by the WTO, among others, on foreign direct investment; (iii) provide freedom to foreign direct investment projects regarding all investment-related transfers, e.g., profits, royalties, the right of compensation for confiscation, requisition, and other guarantees; (iv) provide for binding international arbitration for investor-state disputes; and (v) abide by

international law standards for expropriation, i.e., expropriation only for a public purpose and with prompt, adequate, and effective compensation.

Sound and stable economic and FDI-specific policies alone, however, are not sufficient to attract FDI. The overwhelming bulk of empirical research in many regions around the world points to progress in establishing behind-the-border market-supporting institutions, especially those assuring a competitive business environment, legal protection and enforcement of property rights, sound governance,[65] and market-reinforcing regulatory regimes governing the provision of basic infrastructure services, as critical.[66] This suggests that the FDI inflow differentials observed across African countries are likely to be significantly determined by the quality of the *underlying* domestic business climate and related institutional conditions, both within individual countries and on a regional basis. If this is the case, the focus of reforms should be on the factors that shape a country's microeconomic fabric at a *deeper* level beyond that touched by reform of so-called administrative barriers—such as speeding up the pace of business registration or of obtaining a business license—which has become conventional wisdom as the way in which improvement in the investment climate comes about.

Proximity to markets, which is strongly related to geography, also explains a relatively larger FDI stock in some countries. To some extent, however, geographical disadvantage may be overcome. To some extent, sound governance can compensate for distance to major markets. More important, engaging in regional trade agreements that effectively increase the size of the market and foster regional integration can be a strong counterweight to poor proximity to markets. Thus, an effective way for land-locked remotely located countries to attract larger FDI inflows is to improve the quality of governance and cooperate on arrangements that would reduce transactions costs associated with moving shipments through their respective territories.

Moreover, trade transactions costs associated with FDI depend crucially on a country's trade-facilitating infrastructure, such as the performance of the customs administration and the quality of transportation and communication networks. Long delays at the border and high variance in clearing times make it difficult for potential foreign investors to commit to a particular delivery time. Corruption at border crossings increases the costs of doing business, thus lowering the competitiveness in world markets of locally produced goods. The poor condition of transport networks increases the cost and time needed for shipping goods. High costs of communications, whether through fixed-line

telephony, cellular network, or Internet increase the costs of doing business. In light of the public-goods aspects of developing adequate infrastructure, a legitimate role for government action—including potential investment outlays—probably exists.

The quality of infrastructure services is another crucial component of a business-friendly climate that facilitates both FDI inflows and participation in international production networks. Well-designed liberalization of services sectors can lead to higher competition, greater range of services available, and more efficient services provision, which in turn decrease the costs of doing business and attract new entry by both domestic and foreign entrepreneurs.

Of course, many other factors may influence attractiveness to FDI. For instance, investors operating in high technology and services sectors will be looking for availability of skilled labor and protection of intellectual property rights. To enhance Africa's attraction for investment in back-office services, enlarging the pool of skilled workers is key. Those interested in simple labor-intensive assembly operations will be more sensitive to labor costs and labor market flexibility.

Beyond the investment-related policies enunciated above, what trade-related policies might be considered by African policy makers to facilitate participation in international production networks? One option concerns export processing zones (EPZs). Experience from other parts of the world suggests caution in pursuing this route. The bulk of international evidence shows that, while many countries have established these special-incentive regimes, relatively few have succeeded in encouraging exports on a sustainable and economywide basis. Indeed, most such regimes are not readily amenable to generate horizontal and vertical spillovers. In addition, in certain cases, these incentives create opportunities for discretionary behavior and corruption. Finally, resorting to these incentives appears to signal to international investors fundamental weaknesses in the underlying business climate for which such measures are meant to compensate.

A second option would be introducing duty drawbacks or other systems offsetting import tariffs. Although such measures may offset the bias in favor of production for domestic market, experience around the world indicates that they require sophisticated administrative capacities for effective implementation. In most of Sub-Saharan Africa, these are lacking.

Trade policy reforms that would likely be the most effective in engendering Africa's participation in global network trade are those that would provide for economywide trade liberalization, in line with these countries' WTO obligations. These reforms should be combined with proactive trade facilitation measures and WTO-consistent actions that would encourage regional integration, especially those that can create needed economies of scale, including through regional cooperation in customs administration and conditions for transit. In essence then, countries should rely on a two-pronged trade policy strategy encompassing improvements in both domestic and external conditions, and use WTO rules as a tool to leverage both domestic and regional reforms.

Overall, the shift in the views of many governments—not only on the African continent, but worldwide—toward a more positive stance vis-a-vis FDI has increased competition for such investment. Having more potential host countries to choose from, FDI inflows have become more sensitive to differences in investment climates. As a result of the fragmentation of international trade, multinational corporations have become more footloose, being better able to shift their own production (or their subcontracting) activities relatively easily from one geographic location to another in response to changes in the cost of production, competition, and market access, regulatory and governance conditions, and perceived political risks. All of the factors that would make Sub-Saharan African exports competitive in Europe or the United States–especially price, speed-to-market, labor productivity, flexibility, and product quality–are equally *if not more* important in the fiercely competitive Asian markets. Of course this presumes an Asian playing field where market access to African exports is not distorted through trade policy measures, such as the case of escalating tariffs in certain South-South trade arrangements.[67]

The experience of countries that have successfully taken advantage of opportunities offered by global markets suggests that two elements have to be in place—successful implementation of first-generation reforms (liberalization of prices, foreign trade, and exchange regimes) and consistent movement toward a rule-based institutional regime with the capacity of enforcement. This means it is a priority is for Sub-Saharan Africa to accelerate efforts by getting its own house in order and implement the policies, institutions, and trade-enabling physical infrastructure that will be the critical foundations to allow African countries to successfully integrate into today's international economy.

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ENDNOTES

1. Broadman (2005).
2. For a discussion of these trade preference arrangements see chapter 3.
3. See chapter 2.
4. See the annex to chapter 1 for a description of the survey and business case study databases.
5. In fact, as discussed below, because of weak implementation of regional free trade agreements in Africa, companies have been induced to engage in cross-border investment rather than serving regional markets through trade.
6. See Blonigen (2001) for a literature review. At the product level, many empirical studies also find that trade and FDI tend to be complements, although there are a few exceptions, such as Blonigen's (2001) study of Japanese trade and FDI in the U.S. automobile market, where the evidence suggests both substitution and complementarity effects.
7. UNCTAD (1996).
8. UNCTAD (2003).
9. For an extensive discussion of issues involved, see Jones and Kierzkowski (2004).
10. Gereffi (1999).
11. For analysis of the Armenia case, see Broadman (2005).
12. Feenstra (1998).
13. World Bank (2004), "Patterns of Africa-Asia Trade and Investment."
14. Paul Brenton and Mombert Hoppe (2006).
15. This categorization builds on that developed in TICAD (2004).
16. See below for further discussion of services in this context.
17. For the Japanese case see World Bank (2004).

18. Eisenman and Kurlantzick (2006).

19. See Broadman (2001).

20. Yang Yao and Yin HE, "Chinese Outward Investing Firms: FIAS Sponsored Survey," mimeo, FIAS, August 2005.

21. Yang Yao and Yin HE, "Chinese Outward Investing Firms: FIAS Sponsored Survey," mimeo, FIAS, August 2005.

22. See OECD (2006).

23. See, for example, K. Legget, "China Flexes Economic Muscle Throughout Burgeoning Africa," *Wall Street Journal*, March 29, 2005; C. O'Hara, "Seeing Green in Africa," *Foreign Policy*, July 2005; D. White, "China Winning Resources and Loyalties of Africa," *Financial Times*, February 22, 2006; C. Timber, "In Africa, China Trade Brings Growth, Unease," *Washington Post*, June 13, 2006; Economist Intelligence Unit, "Africa Economy: China Syndrome," March 2006, EIU Country Briefing.

24. For example Chinese textile investments in Cote d'Ivoire, Mauritius, Rwanda, and Swaziland are commonly thought of as AGOA-related investments.

25. As table 3 in the annex to chapter 1 shows, for the specific sectors that table 6.3 indicates there are significant differences in the form of entry; in the case of construction, surveyed Chinese and Indian firms have essentially the same representation; in the case of non-oil minerals and metals, the surveyed Chinese firms have about half the representation as the Indian firms. The latter may account for the Indians' greater reliance on entry through acquisition.

26. See below.

27. This finding is consistent with various World Bank Investment Climate Assessments (ICAs) of African countries.

28. On China, see Broadman (2004); on India, see Lawrence Saez and Joy Yang (2001), The Deregulation of State Owned Enterprises in India and China, *Comparative Economic Studies*, Vol 43, 2001.

29. Yang Yao and Yin HE, "Chinese Outward Investing Firms: FIAS Sponsored Survey," mimeo, FIAS, August 2005.

30. Micro firms have 10 or less employees; small firms have more than 10 but less than 51 employees; medium firms have between 51 and 100 employees; large firms have more than 100 but less than 201 employees; and very large firms have 200+ employees.

31. See chapter 1.

32. UNCTAD (2002).

33. Clerides et al. (1998), Bernard and Jensen (1999).

34. Bernard and Jensen (1999).

35. See the discussion in the second section of this chapter.

36. UNCTAD (2006).

37. van der Meer (2004).

38. These points drawn from World Bank (2005).

39. Barriendos and Kritzinger (2004).

40. Jaffee (2003).

41. Barrientos and Kritzinger (2004).

42. ILO, The World Cut Flower Industry: Trends and Prospects, Sector Publications. Online available at: http://www.ilo.org/public/english/dialogue/sector/papers/ctflower/139e3.htm.

43. Jaffee (2003).

44. Jaffee (2003).

45. Gereffi (1999b).

46. Gibbon (2001).

47. Peta (2005).

48. ILO (2005).

49. ILO (2005).

50. Between October 2004 and May 2005, a loss of 6,000 out of 39,000 jobs was also reported. In Lesotho, where the garment sector accounted for more than 90 per cent of the country's exports and was by far the largest single employer, 6,650 out of 56,000 workers were terminated at the end of 2004 and 10,000 more were moved to short-term contracts (ILO 2005).

51. ILO (2005).

52. Broadman (2005).

53. Broadman (2005)

54. Source: Barnes, J. and R. Kaplinsky, 2000, "Globalization and trade policy reform: whither the automobile components sector in South Africa?" *Competition and Change* 4 (3): 211–243.

55. For the specifics on those export incentives, see Barnes, Kaplinsky, and Morris (2004).

56. Barnes, Kaplinsky, and Morris (2003).

57. Eisenman and Kurlantzick (2006).

58. Subramanian and Matthijs (2206).

59. Subramanian and Matthijs (2206).

60. Robert Feenstra, 1998, "Integration of Trade and Disintegration of Production," *Journal of Economic Perspectives* (Fall).

61. Jones et al. (2005).

62. Recall table 6.15.

63. The literature is large; among others, see UNCTAD (2005).

64. See Broadman and Recanatini (2002).

65. Although the quality of governance tends to matter less for attracting FDI to countries that happen to be amply endowed in natural resources, especially oil and natural gas, the exclusion of FDI in extractive industries does not significantly change the findings in the literature.

66. For one such examination in the case of South Eastern Europe, see Broadman et al. (2003).

67. Recall the case of the Tanzanian cashews produced by an Indian firm that faces escalating import tariffs on processed cashews in India (see chapter 3).