2

PERFORMANCE AND PATTERNS OF AFRICAN-ASIAN TRADE AND INVESTMENT FLOWS

INTRODUCTION

This chapter documents and assesses the trade patterns and investment relations between Africa and Asia, with an emphasis given to the roles of China and India. The analysis focuses not only on the historical trend of African-Asian trade and investment flows at the aggregate level, but also on emerging patterns of these flows at the country (or subregional) levels. The chapter also explores the main determinants of trade and investment flows between Africa and Asia, setting the stage for the discussion in subsequent chapters.

To set the context, the chapter begins with a discussion of Africa and Asia's roles in the world economy, with a focus on those of China and India. Emphasis is given to the fact that Africa is a highly heterogeneous continent of 47 countries, each having different-sized economies, populations, and surface areas, and where GDP per capita ranges from less than $200 to $7,000. It is also a highly segmented continent with extremely inconvenient and costly transportation, contributing to its small role in global trade and investment.

The subsequent analysis of the current patterns of trade and investment between Africa and Asia suggests that the recent boom in international commerce is largely driven by complementarities between the two regions, for example, with Africa's needs for Chinese and Indian manufactured goods and machinery and China and India's needs for Africa's natural resources.[1] This differs from the recent growth in Africa's trade with the EU and the US, which is largely stimulated by preferential treatments in these two markets. The evidence presented points to the fact that the complementarities between the two regions are strong in terms of economic resources, indicating the likely sustainability of the current African-Asian trade and investment boom.

Following the descriptive analysis a quantitative assessment is presented of the roles of "at-the-border" trade policies, "between-the-border" constraints, and "behind-the-border" conditions in shaping the flows of trade and investment between Africa and Asia. The examination also considers the linkages between trade and investment activity. The analysis suggests that, while formal trade policies such as tariffs and regional trade agreements matter, behind-the-border and between-the-border factors also have significant, if not greater, impacts. The findings also suggest that FDI inflows to African countries have a complementary effect on the continent's export flows: greater FDI stocks appear to be associated with an increase in exports.

The chapter concludes by highlighting the policy implications of the key factors contributing to African-Asian trade performance and investment, and how they may leverage domestic growth in African countries in the future.

AFRICA AND ASIA IN THE GLOBAL ECONOMY

World trade has dramatically expanded in the last 15 years, the period well-characterized by the term "globalization." Currently, many countries in Africa are experiencing an economic boom, partly due to high prices for their major export commodities. However, not all countries on the African continent have benefited from this boom.

The region is quite diverse in many aspects, including natural resource endowments and economic performance; see figure 2.1 and table 2.1. One-third of the world's resource-dependent economies are in Africa (table 2A.1 in the annex).[2] This engenders a high degree of dependence on resource rent and, concomitantly, significant opportunities for corruption. Not surprisingly, and partly as a result, the continent is characterized by a high degree of income inequality and is prone to conflict.

In Africa, there are 45 small economies and two regional "super powers"—South Africa and Nigeria—that together account for 55 percent of the continent's economic activity. Still, 18 African countries, accounting for 36 percent of the continent's population, have grown in a sustained manner in the last decade; these include Ghana, Senegal, and Tanzania, to name a few. On the other hand, 14 African countries, accounting for one-fifth of the African population, have experienced little or negative GDP-per-capita growth over the last decade; among them are the Democratic Republic Congo, Eritrea, and Burundi, many of which were affected by conflict.

In addition to this heterogeneity, Africa is also highly segmented geographically. Indeed, Africa is distinctive compared to other developing regions in both its physical and human geography.[3] The continent has the largest number of countries per square area in comparison with other developing regions, with each on average sharing borders with four neighbors. Africa also has a large proportion of its population living in countries with an unfavorable geographic and economic basis for development. Forty percent of its population is in landlocked countries, compared with 23 percent of the population in East and Central Asia. Moreover, the low population density is accentuated by high internal transport costs, estimated at nearly twice the levels of other developing regions. The result, except for South Africa and Nigeria, is small and shallow markets. These endowed conditions make it costly to trade in Africa. In many respects, Africa's geography has shaped it economic fortunes.

Figure 2.1 African Resource and Location Map

Source: World Bank staff.

Table 2.1 Heterogeneity of the African Continent

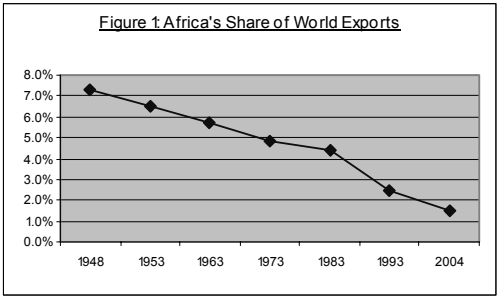
	GDP growth, 1996-05	GDP per capita, 2000 $	Agriculture as % of GDP	Industry as % of GDP	Manufacturing as % of GDP	Services as % of GDP	Oil producers	Land locked	# of borders	Conflict affected	Population million	Surface area '000 sqkm	Population Density, # of people/sqkm	Export diversification index
Angola	7.9	799	9	59	4	32	√		3	√	14.5	1247	12	1.1
Benin	4.8	324	35	14	9	50			4		7.1	113	63	2.1
Botswana	5.7	3,671	2	44	4	43		√	2		1.7	582	3	
Burkina Faso	4.6	248	31	20	14	49		√	6		12.7	274	46	2.2
Burundi	1.2	107	49	19 ..		27		√	3	√	7.5	28	269	1.6
Cameroon	4.5	737	43	15	8	40			6		16.7	475	35	4.4
Cape Verde	6.5	1,292	7	20	1	73			0		0.5	4	122	9.2
Central African R.	0.9	225	56	22 ..		22		√	5	√	4.0	623	6	3.4
Chad	7.8	261	59	8	6	29	√	√	5	√	9.1	1284	7	2.6
Comoros	2.0	378	41	12	4	47			0		0.6	2	282	1.2
Congo, Dem. Rep.	0.0	88	59	12	5 ..			√	9	√	56.4	2345	24	3.0
Congo, Rep.	3.5	940	6	56	6	38	√		4	√	3.9	342	12	
Cote d'Ivoire	1.5	574	26	18	15	56			5	√	17.4	322	54	4.0
Equatorial Guinea	20.9	4,101	5	60 ..		3	√		2		0.5	28	18	1.2
Eritrea	2.2	174	14	22	10	55			3	√	4.6	118	39	5.2
Ethiopia	5.5	132	41	9 ..		39		√	5	√	71.3	1104	65	4.0
Gabon	1.7	3,860	9	68	5	22	√		3		1.4	268	5	1.6
Gambia, The	4.5	327	28	13	5	48			1		1.5	11	130	5.2
Ghana	4.7	275	35	25	9	40			3		21.4	239	90	4.0
Guinea	3.6	381	24	35	4	37			6		8.2	246	34	4.2
Guinea-Bissau	0.6	134	61	12	9	25			2	√	1.6	36	44	4.8
Kenya	2.8	427	13	16	11	52			5		32.9	580	57	16.0
Lesotho	2.7	543	16	36	18	38		√	1		1.8	30	61	
Liberia		130	61	9	8	120			3		3.5	111	32	2.0
Madagascar	3.3	229	26	15	13	50			0		17.7	587	30	8.1
Malawi	3.2	154	36	14	10	40		√	3		11.4	118	96	3.0
Mali	5.7	237	33	24	3	35		√	7		12.2	1240	10	1.3
Mauritania	4.9	437	17	27	8	46			4		3.0	1026	3	3.8
Mauritius	4.9	4,223	5	26	19	56			0		1.2	2	612	11.7
Mozambique	8.4	276	23	32	14	36			5	√	19.5	802	24	2.0
Namibia	4.0	2,035	10	23	11	57			3		2.0	824	2	
Niger	3.5	155	40	17	7	43		√	7		12.4	1267	10	1.9
Nigeria	4.0	402	26	48	4	24	√		3		143.3	924	155	1.3
Rwanda	7.5	250	40	21	10	38		√	4	√	8.4	26	320	2.4
Sao Tome and P.	3.1	354	17	16	4	67			0		0.2	1	171	1.5
Senegal	4.6	461	17	21	13	62			5		10.6	197	54	12.2
Seychelles	2.0	6,688	3	28	16	70			0		0.1	0	189	2.7
Sierra Leone	1.1	170 ..	..	..	..				2	√	5.5	72	77	3.8
Somalia		.. ..	..	..	..				3	√	10.3	638	16	6.1
South Africa	3.1	3,346	3	29	18	59			6	√	45.3	1219	37	
Sudan	6.4	439	28	27	7	39	√		8	√	35.2	2506	14	1.6
Swaziland	2.8	1,358 ..	..	..	..			√	1		1.1	17	65	
Tanzania	5.4	314	41	15	7	35			7		37.2	945	39	21.7
Togo	3.3	244	41	23	9	36			3		5.1	57	89	5.3
Uganda	6.1	262	29	19	8	43		√	5	√	27.2	241	113	7.3
Zambia	3.6	339	19	33	11	38		√	7		10.9	753	15	5.0
Zimbabwe	-2.4	457	16	21	13	42		√	4		13.1	391	34	8.1

Sources: Africa LDB, African Development Indicators 2006, OECD 2006, world conflict map, and World Bank staff.

Note: The diversification indicator measures the extent to which exports are diversified. A higher index indicates more export diversification; see OECD 2006 for details.

Although many countries in Africa have made significant progress in economic development over the last decade, the continent's overall trade performance in the global marketplace has been very disappointing. World trade accounted for 16 percent of global output in 1991; this figure had jumped to 20 percent in 2004. But the trade flows of African economies on the whole have yet to be favorably affected. In fact, Africa's export market shares have continuously fallen over the last six decades (figure 2.2).

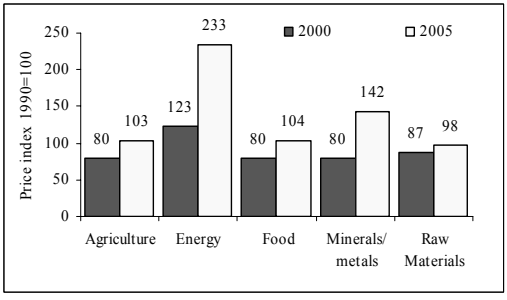
Figure 2.2 Africa's Share of World Exports



Data sources: World Bank.

Since 1999, Africa has seen price increases for most of its primary export commodities, as illustrated in figure 2.3. With the exception of raw materials, whose prices have been relatively stagnant, other commodities have experienced noticeable increases in their price levels. This is of course especially the case for energy prices, driven by the sharp price increase in the worldwide petroleum market. Metal and non-oil mineral prices also have grown substantially.

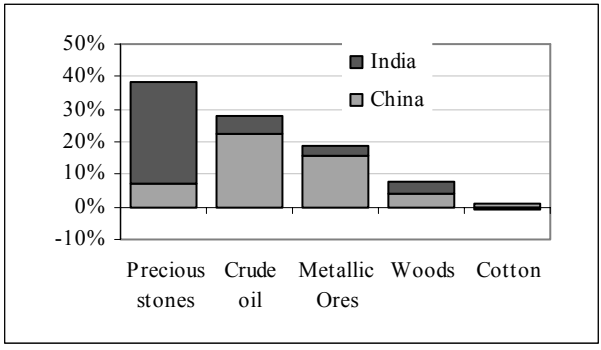
Figure 2.3 Price Indices for Africa's Export Commodities



Source: IMF, Direction of Trade Statistics Yearbook, 2005.

The worldwide rise of commodity prices has been engendered in large part by the rapid growth of Asian developing countries, especially China and India (figure 2.4). These two countries contributed close to 40 percent of global import growth for precious stones, 30 percent for crude oil, and 20 percent for metallic ores. Their demand for these commodities is likely to grow, or at least not change from, current levels in the foreseeable future.[4]

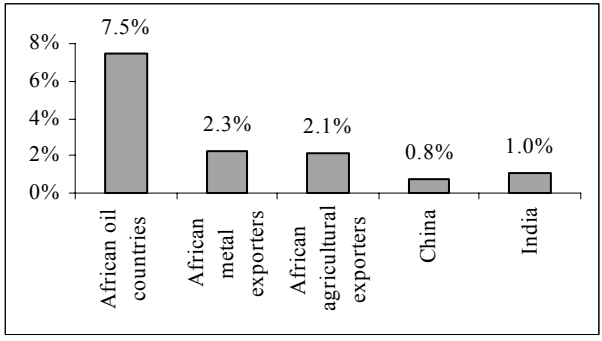
Figure 2.4 Percent Contribution of China and India to the Growth of World Imports of Selected Commodities, 2000–2004



Source: OECD 2006.

The recent surge in commodity prices mostly benefits resource-rich countries. Asia has seen little increases in its export commodity prices. The rising prices for major African export commodities have contributed significantly to African countries' Gross Domestic Income (GDI), as illustrated in figure 2.5. In comparison, commodity price increases have contributed little to China and India's GDI growth.

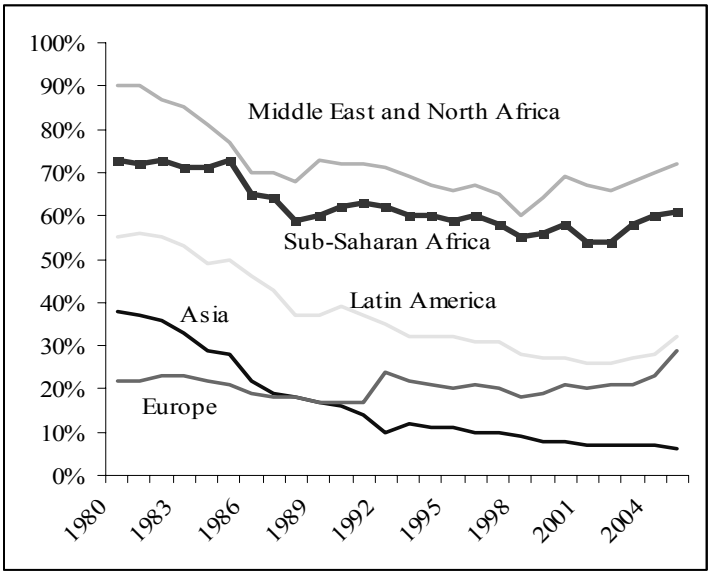
Figure 2.5 Terms of Trade Effects on Gross Domestic Income (GDI), 1997–2003



Source: OECD 2006.

African exports are heavily oriented toward raw materials, the share of which is second only to the Middle East and North Africa (figure 2.6). Although Africa made good progress in reducing its dependency on raw materials in the late 1980s, it has not made progress since then.

Figure 2.6 The Share of Raw Materials as Percent of Total Exports, by Region

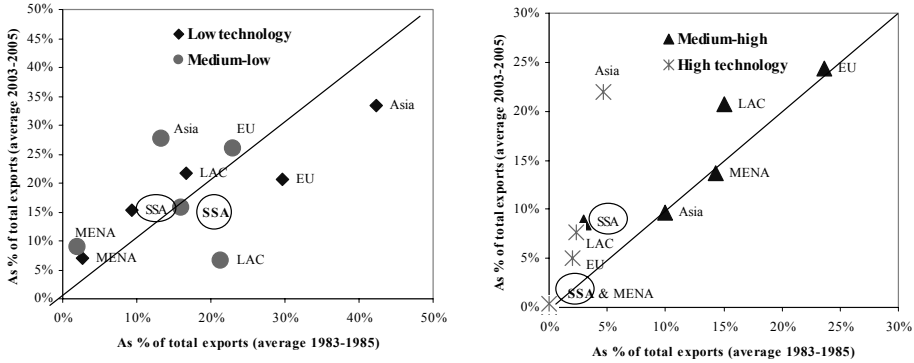


Source: UNCOMTRADE.
Note: raw materials include agricultural raw materials, crude petroleum, ores, and coal. "Asia" excludes Japan, Korea and Singapore. All other regions are restricted to low- and middle-income countries only.

Figure 2.7 shows the technology content of exports among developing regions. For Asia, the share of low technology and medium-high technology exports has decreased (below the diagonal line) or been stagnant (on the diagonal line) over the last two decades. However, the shares of medium-low and high technology exports have increased drastically (above the diagonal line). There is a clear pattern that Asia is moving up the technology ladder of the world trade.

Africa has also seen some increase in low and medium-high technology exports shares, indicating that it is moving up the technology ladder where Asia is putting less emphasis. However, Africa's shift in the share of medium-high technology exports mainly came from the two regional super powers, Nigeria (refined petroleum exports) and South Africa (machinery and transportation equipment exports). Indeed, overall, Africa's shares of low and medium-low technology exports is at a lower-middle position among all developing regions. Its shares of medium-high and high technology exports are the lowest among all developing regions.

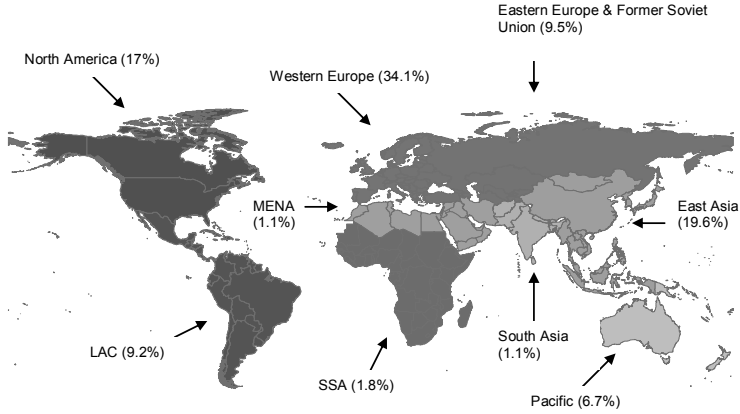
Figure 2.7 The Average Shares of Exports by Technology Level



Source: UN COMTRADE.
Note: Technical levels were based on OECD definition. See annex table for details. "Asia" excludes Japan, Korea, and Singapore. All other regions include low- and middle-income countries only.

Since 1990, flows of foreign direct investment (FDI) to developing countries have increased rapidly, including those to Africa, China, and India.[5] In recent years, the average annual growth rate of FDI flows to Africa was 17 percent, comparable to the 20 percent growth rates of China and India. Still, in spite of Africa's rapid growth of FDI, the continent accounts for 1.8 percent of global net FDI flows. More than half of the world's FDI goes to North America and Western Europe, and 20 percent goes to East Asia (see figure 2.8).

Figure 2.8 Regional FDI Share, Percent of Total World FDI

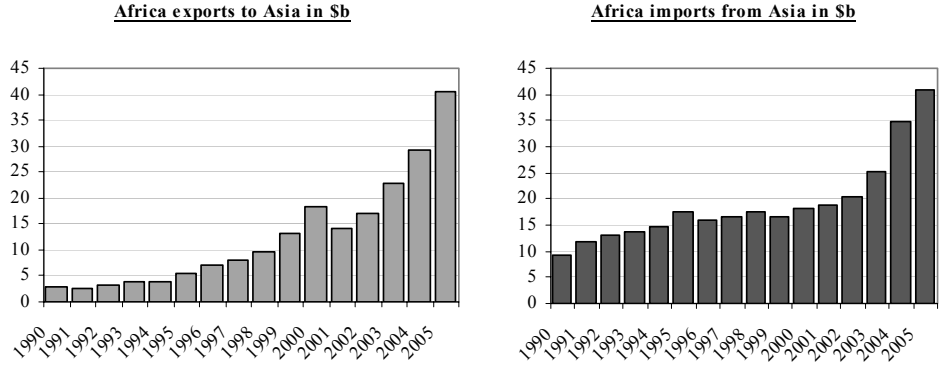


Source: WDI, 2006

PATTERNS OF MERCHANDISE TRADE FLOWS BETWEEN AFRICA AND ASIA

During the last 15 years, trade flows between Africa and Asia have been rapidly increasing. This is the hallmark of the recent growth of South-South trade and investment, which is a significant feature of recent developments in the global economy.[6] Africa's exports to Asia have been growing rapidly since 1990 and have accelerated since 2003.[7] Figure 2.9 shows that, while the 15 percent growth of Africa's exports to Asia during 1990–1995 was especially rapid compared to other regions, over the last five years, total exports of African countries to Asia have grown at an even faster rate of 20 percent. In fact, since 2003, the annual growth rate has reached an all-time high of 30 percent.

Figure 2.9 Africa's Exports and Imports with Asia: 1990–2005



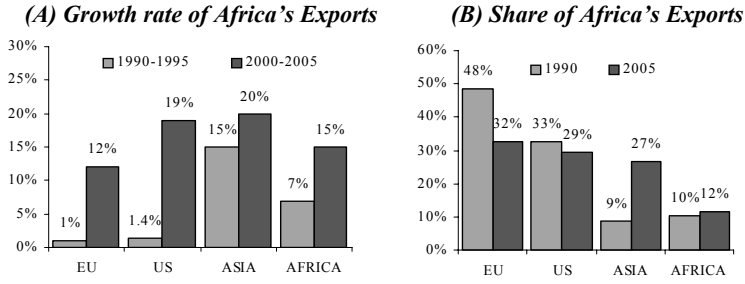
Data sources: IMF Direction of Trade.
Note: The 2005 figures were based on data for exports for the first 10 months, adjusting for November and December's exports with the average monthly exports of January to October 2005. "Asia" includes Afghanistan, Bangladesh, Brunei, Cambodia, China (including Hong Kong and Macao), India, Indonesia, Japan, the Democratic People's Republic of Korea, the Republic of Korea, the Lao People's Democratic Republic, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan (China), Thailand, and Vietnam. Note that the differences in total trade values between these graphs and tables 2.1 and 2.2 result from using different data sources.

The Rapid Growth of African-Asian Trade: 1990–2005. Africa's imports from Asia have also grown. However, they have grown less rapidly than exports, allowing African countries to substantially reduce their overall trade deficit, which amounted to as much as 50 percent of their total trade value with Asia in the early 1990s. The rapid growth in Africa's exports has created financial space for Africa to import. The average annual growth rate of Africa's imports from Asia was 13 percent between 1990 and 1995, and accelerated to 18

percent between 2000 and 2005. Africa imports one-third of its total imports from Asia, second only to the EU.[8]

It is easy to see how much the growth of Africa's exports to Asia has been demand-driven by looking at how the relative share of exports to Asia in overall African exports to the world has shifted over time. Africa's export growth to Asia has surpassed that to all other regions over the last decade. Although exports to the European Union and the United States grew much more rapidly between 2000 and 2005 than they did between 1990 and 1995, the growth rate of exports to Asia was 20 percent during the last five years, which is higher than that of exports to any other regions during the same period. Asia is now the third most important export destination, with a share of 27 percent of Africa's total exports in 2005, lagging only the European Union (32 percent) and the United States (29 percent). Africa's exports to Asia, as a share of its total exports, have increased from a mere 9 percent in 1990 to 27 percent, while exports to its traditional markets among the EU countries have decreased from around 48 percent to 32 percent.[9]

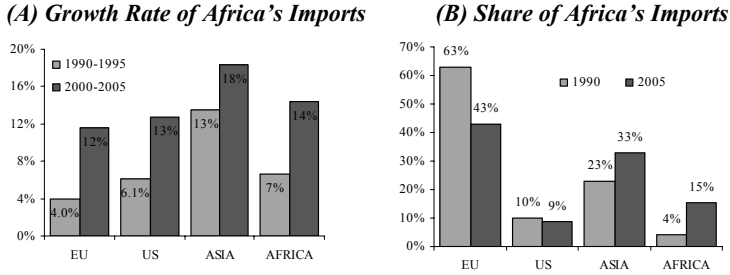
Figure 2.10 Growth and Proportional Change in Africa's Export Destinations: 1990–2005



Source: IMF Direction of Trade.
Note: The growth rate is the simple average of annual growth rates in the respective period.

Asia has become a significant trade partner for Africa in imports as well as exports over the last 15 years. As shown in figure 2.11, the average annual growth rate of Africa's imports from Asia was 13 percent between 1990 and 1995, and accelerated to 18 percent between 2000 and 2005.[10] Africa imported 33 percent of its total imports from Asia in 2005, second only to the EU. In comparison, Africa receives only 9 percent of its total imports from the United States.

Figure 2.11 Growth and Proportional Change in Africa's Import Origins: 1990–2005



Source: IMF Direction of Trade.
Note: The growth rate is the simple average of annual growth rates in the respective period. "Asia" includes Afghanistan, Bangladesh, Brunei, Cambodia, China (including Hong Kong and Macao), India, Indonesia, Japan, the Democratic People's Republic of Korea, the Republic of Korea, the Lao People's Democratic Republic, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan (China), Thailand, and Vietnam.

The Product Composition of African-Asian Merchandise Trade Structure. Table 2.2 presents the product group-destination matrix of Africa's merchandise exports. The composition of exports is broadly based both for exports to the EU and for intra-African markets, whereas the exports to the United States and Asia are more concentrated in natural resources. Africa's exports to Asia consist mainly of primary commodities, including oil, non-oil minerals, metals, and agricultural raw materials, accounting for 86 percent of exports to Asia. Approximately 47 percent of Africa's exports to Asia comprise oil and natural gas, which represent 12 percent of Africa's overall exports to the world. In addition to oil and natural gas, agricultural raw products and non-oil mineral and metal products are also major product groups, representing another 39 percent of Africa's exports to Asia. Cotton, timber, fruits and nuts, crustaceans and mollusks are the major agricultural products exported from Africa to Asia. The leading non-oil mineral and metal products include gold, silver, platinum, iron, aluminum, iron ore, copper, and pearls. Although almost one-half of total African exports to Asia are from oil and natural gas, the dominance of such products in the export structure is less pronounced than the case of exports to the United States.

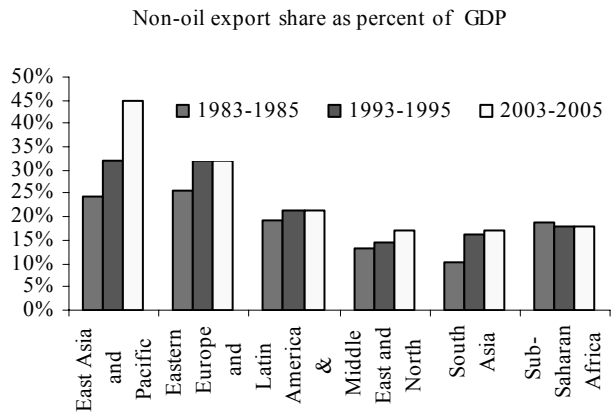
Table 2.2 Africa Export Matrix (2004)

	Africa	EU	United States	Asia	Other	World
Machinery and transport equipment	0.8% **(12.9%)**	3.3% (9.7%)	0.7% (2.7%)	1.0% (4.0%)	0.6% (6.7%)	6% (6%)
Textiles, apparel, and footwear	0.3% (4.84%)	1.2% (3.5%)	1.3% (5.0%)	1.0% (4.0%)	0.2% (2.2%)	4% (4%)
Manufactured materials	1.2% **(19.4%)**	5.9% **(17.4%)**	1.3% (5.0%)	1.3% (5.2%)	0.5% (5.6%)	10% **(10%)**
Nonpetroleum minerals and metals	1.1% **(17.7%)**	7.2% **(21.2%)**	2.5% (9.6%)	7.2% **(28.8%)**	2.4% **(26.7%)**	20% **(20%)**
Agricultural raw products	0.7% **(11.3%)**	8.5% **(25.0%)**	1.2% (4.6%)	2.5% **(10.0%)**	1.2% **(13.3%)**	14% **(14%)**
Processed food and beverages	0.3% (4.8%)	1.9% (5.6%)	0.2% (0.8%)	0.2% (0.8%)	0.3% (3.3%)	3% (3%)
Oil and natural gas	1.8% **(29.0%)**	6.0% **(17.7%)**	19.0% **(73.1%)**	11.7% **(46.8%)**	3.6% **(40.0%)**	42% **(42%)**
All groups	6.2% (100%)	34% (100%)	26% (100%)	25% (100%)	9% (100%)	100% (100%)
Total export volume (billion $)	*9.2*	*50.7*	*39*	*37.1*	*12.8*	*149*

Source: UN COMTRADE.
Note: Figures are percentage shares in total African exports to the world. Figures in parentheses are percentage shares in total African exports to respective regions/countries (more than 10% are bolded). "Asia" includes**:** Bangladesh, Cambodia, China (including Hong Kong and Macao), India, Indonesia, Japan, the Republic of Korea, Malaysia, Maldives, Mongolia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan (China), Thailand, and Vietnam.

Manufactured products (machinery and transport equipment; textiles, apparel, and footwear; and other manufactured materials) are not major exports of African countries in general. In fact, compared to other regions, only Africa has exhibited a stagnant trend in non-oil exports (see figure 2.12). In absolute terms, the EU is the major destination of African manufactured products. Manufactured exports to Asia are approximately one-third of those to the EU in absolute terms. Among exports to Asia, those products constitute only 13 percent (see table 2.2). African exports in manufactured products are also limited. The weak presence of manufactured products in the export structure, or in turn the strong presence of primary commodities, is in no way particular to exports to Asia. Only 20 percent of total African exports to the world are from manufactured products.

Figure 2.12 Non-Oil Export Share as Percent of GDP, 1985–2005



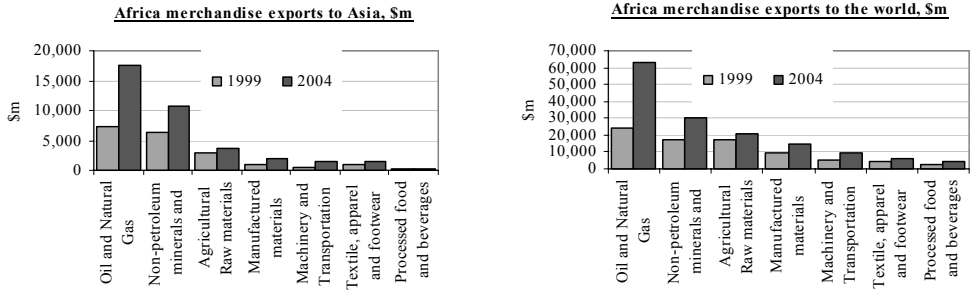
Source: IMF WEO.

In regard to the growth rates of Africa's exports, growth is very rapid among petroleum, ores, metals, and gold. However, primary commodities and limited value-added products have not been the only African exports on the rise. Though still in their infancy, high value-added products, such as passenger and transportation vehicles assembled by the FDI-driven automobile industry in South Africa, have also been increasing rapidly, especially in the last two to three years, largely due to increases in sales to Japan (see table 2A.2 in the annex for growth rates for more detailed product groups).

The trend of sector-specific exports shown in figure 2.13 indicates that the general patterns of Africa's exports to Asia are quite consistent with the patterns of its exports to the world in general. Oil and natural gas is the leading group of exports from African countries to Asia, and has grown dramatically over the past decade. Crude oil recorded an annual growth rate of 19 percent, while oil products recorded an annual growth rate of 20 percent. The similarity in sectoral composition and growth patterns between Africa's exports to Asia and Africa's overall exports essentially implies that Asian countries have become more representative of Africa's typical export destinations worldwide.[11]

While exporting mostly raw materials to Asia, Africa imports mostly manufactured goods from Asia, including machinery, transport equipment, textiles, apparel, footwear, and manufactured materials. Light industrial products account for 46 percent of Africa's total imports from Asia, including food,

Figure 2.13 The Trend of Africa's Exports by Sector, 1999–2004



Sources: UN COMTRADE.
Note: Export data on Africa are obtained by using Asian countries' reported data on imports from Africa, except for Thailand and Vietnam, where African export information was used. Africa's petroleum exports to India were adjusted for missing values. "Asia" includes Bangladesh, Cambodia, China (including Hong Kong and Macao), India, Indonesia, Japan, the Republic of Korea, Malaysia, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, and Vietnam.

pharmaceuticals, electronics, textiles, apparel, and footwear. Cotton fabric is the leading African imported item from Asian countries. The other leading imports are machinery and transport equipment, accounting for almost one-third of all imports from Asia (table 2A.3). The leading products in this category are automobiles and motorcycles. While Africa's primary commodity exports to Asia account for 86 percent of its total exports to Asia, its processed imports, including manufactured products and food products, account for 80 percent of its total imports from Asia.

As in the case of Africa's exports to Asia, the structure of imports from Asia is also similar to the structure of overall African imports from the world. Table 2.3 shows that 62 percent of Africa's merchandise imports from Asia comprises manufactured goods (machinery and transport equipment, textiles, apparel and footwear, and other manufactured materials). The figure is somewhat lower than those products' share in overall African imports, which is 75 percent. Among manufactured products, textiles, apparel, and footwear are more represented in imports from Asia than the average, and less represented for other manufactured products.

Geographic and Product Concentration in African-Asian Trade. By comparing the composition of exports and imports in Africa's trade with Asia, one can easily observe clear complementarities between Africa and Asia. African countries supply raw materials for Asian countries, linked to either industrial growth or emerging consumer populations in Asia. African exports to Asia of oil,

Table 2.3 Africa Import Matrix (2004)

	Africa	EU	United States	Asia	Other	World
Machinery and transport equipment	2.0% **(20%)**	20.0% **(47.6%)**	4.0% **(57.1%)**	12.7% **(39.2%)**	3.0% **(30%)**	43.0% **(43%)**
Textiles, apparel, and footwear	1.0% **(10%)**	1.0% (2.4%)	0.1% (1.4%)	3.7% **(11.4%)**	0.2% (2%)	8.0% (8%)
Manufactured materials	2.0% **(20%)**	12.0% **(28.6%)**	1.0% **(14.3%)**	3.4% **(10.6%)**	2.0% **(20%)**	24.0% **(24%)**
Nonpetroleum minerals and metals	1.0% **(10%)**	3.0% (7.1%)	0.4% (5.7%)	4.1% (12.6%)	1.2% **(12%)**	7.0% (7%)
Agricultural raw products	2.0% **(20%)**	3.0% (7.1%)	0.0% 0.0%	5.2% (16.1%)	2.0% **(20%)**	8.0% (8%)
Processed food and beverages	1.0% **(10%)**	1.0% (2.4%)	1.0% **(14.3%)**	2.5% (7.8%)	1.0% **(10%')**	7.0% (7%)
Oil and natural gas	1.0% **(10%)**	2.0% (4.8%)	0.1% (1.4%)	0.7% (2.2%)	0.5% (5%)	4.0% (4%)
All groups	10% (100%)	42% (100%)	7% (100%)	32% (100%)	10% (100%)	100% (100%)
Total import volume (billion $)	11	49	9	38	10	118

Source: UN COMTRADE.

Note: Figures are percentage shares in total African exports to the world. Figures in parentheses are percentage shares in total African exports to respective regions/countries (more than 10% are bolded). "Asia" includes**:** Bangladesh, Cambodia, China (including Hong Kong and Macao), India, Indonesia, Japan, the Republic of Korea, Malaysia, Maldives, Mongolia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan (China), Thailand, and Vietnam.

natural gas, and other fuels, as well as natural resource-based products, including agricultural raw materials such as cotton and wood, have experienced strong growth as a result of the rising manufacturing sectors in the rapidly developing economies in Asia such as China and India. Food exports to Asia have also increased due to the large populations in Asia with rising income levels. On the other hand, Asian manufactured products, likely produced out of Africa's raw materials, are imported into African countries. Those products are not only imported for household consumption, but also for capital goods in the manufacturing sector in the African economy, where growth is much needed; these issues are discussed in greater detail in chapter 6.

The complementarities appear to also exist between Africa and the EU, but they are somewhat different from those between Africa and Asia. Textiles and apparel dominate Asia's exports to Africa, while machinery and transport equipment dominate EU and U.S. exports to Asia. In buying from Africa, the EU is concentrating less on natural resources and more on manufactured products, particularly machinery and equipment. It is likely that the preferential market access to European markets through the Everything But Arms (EBA) initiative or

the EU-South African Customs Union (SACU) Free Trade Agreement have facilitated exports of these products to the EU.[12]

In analyzing the structure of African-Asian trade flows, we immediately see that Asia contributes to Africa's export diversification in terms of destination markets (destination diversification). Destination diversification is particularly relevant to primary commodity exports, which are commonly considered to be the traditional exports of most African countries. Decreases in the prices of these commodities over the past decades have lessened the magnitude of export earnings for primary commodity exporters in Africa. Additionally, African countries have experienced difficulty in expanding their exports in real terms because of stagnant demand in existing export destinations. By exploring—and exploiting—markets in Asian countries, where there is unsaturated rising demand for primary commodities, and by establishing new market relations with them, African exporters can find new opportunities to expand their exports of these products; see chapter 6.

However, at present, Asia is not contributing to other aspects of Africa's export diversification, including product diversification and source diversification. Africa's exports to Asia are more sectorally and geographically concentrated than are Africa's imports from Asia. This pattern is quite visible in the Herfindahl-Hirschman Index figures presented in table 2.4. Product concentration is based on how products are concentrated in African exports to and imports from Asia, while geographical concentration is based on how African trade partners (either exporting countries or importing countries) are concentrated in the same trade flows. Behind the figures lies the fact that more than 80 percent of value-added exports originate in only three countries: refined petroleum products are mostly from Nigeria and South Africa, pharmaceuticals are mostly from South Africa and Swaziland, and electronics, machinery, and transportation equipment are also from South Africa. Figure 2.14 illustrates rather clearly how product concentration in Africa is geographically clustered at the subregional level. Southern African countries are concentrating on non-oil mineral resources, whereas Central-Western African countries have high intensity in oil exports. Agricultural products are the dominant exports from Eastern African countries to Asia.

Table 2.4 Geographical and Sectoral Concentration of African-Asian Trade: Herfindahl-Hirschman Index

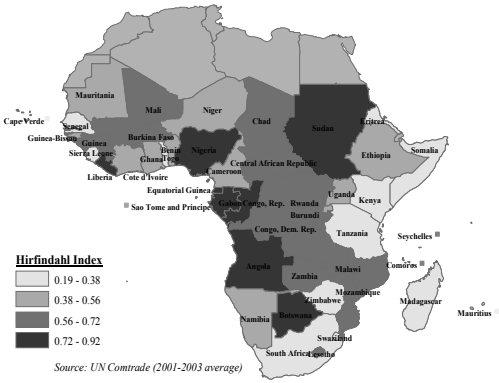
	Exports to Asia	Imports from Asia	Exports to World	Imports from World
Geographical concentration of African exporters / African importers	0.19	0.14	0.08	0.04
Product concentration of African exports / African imports	0.25	0.01	0.15	0.01

Source: Authors' calculation based on data from UN COMTRADE.
Note: Figures are based on 2002–2004 average trade values. "Asia" includes**:** Bangladesh, Cambodia, China (including Hong Kong and Macao), India, Indonesia, Japan, the Republic of Korea, Malaysia, Maldives, Mongolia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan (China), Thailand, and Vietnam.

Although Africa's imports from Asia are diversified in comparison, the number of suppliers in Asia is not as high as one would expect if focusing on specific product groups. Only a few Asian countries have large shares of African import markets. Of Africa's total machinery and transport equipment imports from Asia, two-thirds are from Japan and China. Thailand, India, and Malaysia account for almost 80 percent of Asia's total processed food exports to Africa. While India and China supply 70 percent of Asia's total electronic exports to Africa, China supplies 90 percent of Asia's coal exports to Africa.

Figure 2.14 Geographical and Sectoral Distribution of Africa's Trade with Asia

(A) Product Concentration of Exports to the World



(B) Exports from Asia

(C) Imports from Asia

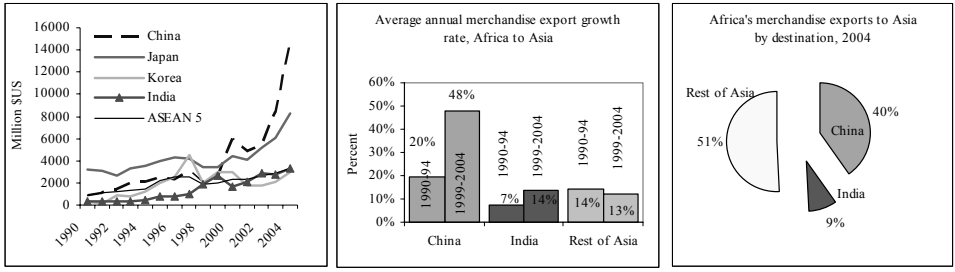
Source: UN COMTRADE.

Note: Figures are based on 2002–2004 average trade values. "Asia" includes**:** Bangladesh, Cambodia, China (including Hong Kong and Macao), India, Indonesia, Japan, the Republic of Korea, Malaysia, Maldives, Mongolia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan (China), Thailand, and Vietnam.

AFRICA'S PATTERN OF MERCHANDISE TRADE WITH CHINA AND INDIA

China and India as Drivers of Growth in African-Asian Trade Flows. The high growth of Africa's trade with Asia is largely driven by exports to China and India, the two dynamic economies not only in Asia but also worldwide. The China-India-driven export growth of African countries underpins the earlier observation that Africa's exports to Asia are largely driven by increasing demand in Asia for natural resources and other primary commodities arising from Asia's growing industrial sectors and increasing purchasing power. China and India are the countries where such demand is most visible. While Japan and South Korea were the most important markets for Africa's exports in the early 1990s, both China and India doubled their annual growth rates of imports from Africa between the periods of 1990–1994 and 1999–2004 (figure 2.15). China and India have 40 percent and 9 percent shares, respectively, of Africa's total exports to Asia today.

Figure 2.15 Growth in Africa's Exports to China and India

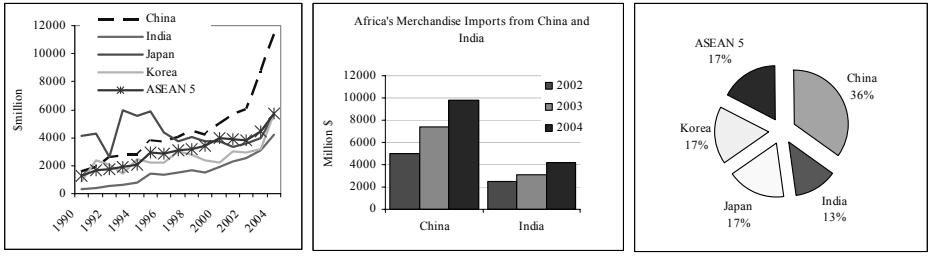


Source: UN COMTRADE.

The leading role of China and India in African-Asian trade relations is not limited to Africa's exports. On the import side as well, these two countries have become the major trading partners for African countries. Japan used to be the largest Asian exporter of products that Africa imported from Asian countries. However, China has taken over the leading position from Japan, accounting for more than one-third of Asia's total exports to Africa (figure 2.16).

Product Composition Structure of Africa's Trade with China and India. Africa mainly exports petroleum and raw materials to China, and non-oil minerals to India, while it imports more value-added commodities from both

Figure 2.16 Growth in Africa's Imports from China and India

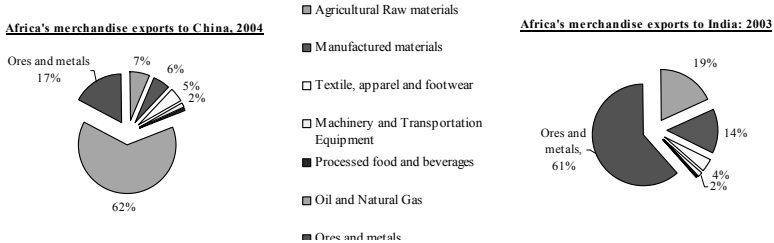


Source: UN COMTRADE.
Note: Imports are based on trade partner's export data, except for 2002 Thailand data, which was based on Africa's export data.

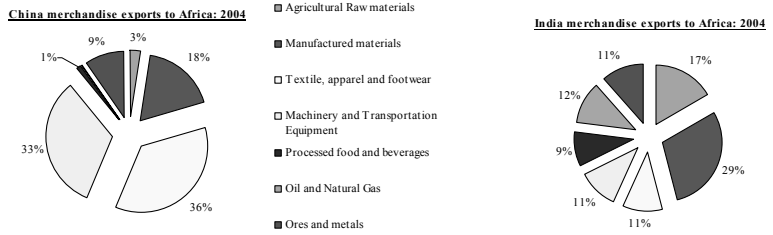
China and India (figure 2.17). Oil and natural gas are the single most dominant category of products exported from Africa to China, accounting for more than 62 percent of total African exports to China, followed by ores and metals (17 percent) and agricultural raw materials (7 percent). In addition, Angola, Sudan, and the Democratic Republic of Congo provide 85 percent of African oil exports to China (box 2.1). Exports to India also show a high concentration in resource-based products. Ore and metals comprise 61 percent, followed by agricultural raw materials (19 percent).

Figure 2.17 Product Distribution of Africa's Trade with China and India

(A) Africa's Exports to China and India



(B) Africa's Imports from China and India

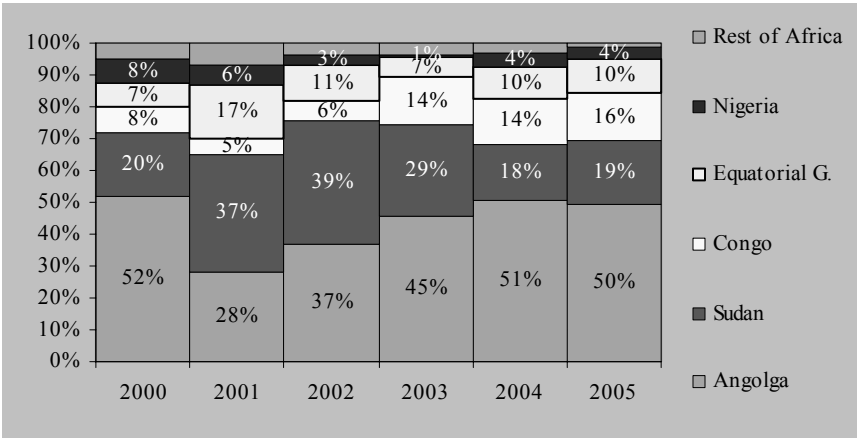


Source: UN COMTRADE.

Box 2.1 China and India's Oil Imports from Africa

China's oil imports from Africa have been increasing at an annual compounded rate of 30 percent, slightly higher than the growth rate for imports from the rest of world, which is 26 percent. While China's crude oil imports from Africa account for more than 25 percent of its total crude oil imports, its petroleum product imports from Africa are quite insignificant. Among African oil-producing countries, China imports oil mainly from Angola, Sudan, Congo, and Equatorial Guinea, with Angola alone accounting for 50 percent of oil imports from Africa.

Share of Chinese Crude Oil Imports from Africa, by Country of Origin



Chinese Oil Imports ($ billions)

	2000	2001	2002	2003	2004	2005
	Crude Petroleum					
Africa	3.6	2.5	3.0	4.9	9.3	13.2
ROW	14.9	11.7	12.8	19.8	33.9	47.7
	Petroleum products					
Africa	0.0	0.0	0.0	0.1	0.0	0.1
ROW	5.7	5.8	6.3	9.1	13.4	15.0

Although India also imports a large amount of crude petroleum from Africa, reliable statistics are not available to verify this phenomenon. Since 2000, India has not reported data on oil imports to UN COMTRADE. Based on export data reported by African countries, mainly Nigeria, and by the rest of world, India imports approximately half of its petroleum from Africa. However, even these data underestimate India's oil imports from Africa. For example, there are no data indicating that India imports oil from Sudan.

(cont.)

Indian Oil Imports ($ billions)

	2000	2001	2002	2003	2004	2005
	Crude Petroleum					
Africa	3.9	2.1	2.2	2.4	-	-
ROW	1.8	1.9	2.2	2.2	2.4	-
	Petroleum products					
Africa	0.01	0.01	0.06	0.03	0.02	0.01
ROW	1.0	0.7	0.7	1.0	1.4	1.4

Sources: UN COMTRADE and World Bank staff estimations.

The annex to this chapter provides data on the top 20 African exports to China and India and the leading exporting countries in Africa for those products (see tables 2A.4 to 2A.5). Oil accounts for 62 percent of total African exports to China. Angola supplies 50 percent of Africa's oil exports to China, followed by Sudan (19 percent), the Democratic Republic of Congo (16 percent), Equatorial Guinea (10 percent), and Nigeria (4 percent). Other leading exports to China include logs, iron ores, diamonds, and cotton. South Africa is almost an exclusive supplier of ore and diamonds to China. Logs and cotton, the two leading agricultural raw materials for industrial use in China, are supplied by a range of countries concentrated in West Africa (Cameroon, the Democratic Republic of Congo, Gabon, Equatorial Guinea, and Liberia for logs, and Benin, Burkina Faso, Cameroon, Cote d'Ivoire, and Mali for cotton).

For India, gold is the major import from Africa, accounting for more than half of all Indian imports from Africa (52 percent) and almost exclusively supplied by South Africa. Other ore and metal products include inorganic acid from Senegal and South Africa as well as coal from South Africa. The leading agricultural products exported to India include logs from West African countries (Benin, Cote d'Ivoire, Gabon, Ghana, and Nigeria) and cotton from Benin, Cote d'Ivoire, Mali, Sudan, and Tanzania. Nuts follow logs and cotton as major exports to India (8 percent), supplied by Benin, Cote d'Ivoire, Guinea, Mozambique, and Tanzania.

African imports from China and India are more broadly based than African exports to those countries (see figure 2.17). Out of all imports from China, 87 percent comprise machinery and equipment, textile and apparel, and other manufactured products. Manufactured products are less represented in imports from India (51 percent). Manufactured products imported from China and India are mainly textile and apparel products, electric machinery and equipment, and consumer products, such as medicine, cosmetic products, and batteries. (tables

2A.6 and 2A.7) provide more detailed lists of top African imports from China and India, respectively, and their destination markets in Africa).

For both China and India, fabrics and yarn are their major exports to Africa. West African countries such as Benin, The Gambia, Ghana, Niger, Nigeria, and Togo, and East African countries such as Kenya and Tanzania are the major buyers of Chinese and Indian cotton fabrics. Cotton yarn from India is bought largely by South Africa and Mauritius. Both China and India export synthetic fibers to countries with relatively more developed light industries, such as Mauritius, Nigeria, and South Africa,. One stark difference between China and India is the high prevalence of apparel products (garments) sold to the large African consumer markets, such as South Africa and Nigeria.

Geographic and Product Concentration in Africa's Trade with China and India. Table 2.5 shows the level of geographical and product concentration of African exports and imports with China and India based on the same Herfindalh-Hirschman Index used earlier. Clearly, exports to China and India are more concentrated, both in terms of origin markets in Africa and the range of products, than imports from the two countries. Also, for both geographic and product concentration, and for both exports and imports, Africa's trade with India is less concentrated than its trade with China. For the geographic concentration, this difference is visible in figure 2.18. One plausible explanation for this difference is the historical ties India has with African countries from the colonial period, which have created a large Indian diaspora population across the African continent. Strong ethnic networks are one of the key characteristics of the private sector in African countries.[13] Ethnic networks should work to facilitate trade activities between India and African countries.[14]

Earlier, it was shown that, although African exports to Asia as a whole do not exhibit a significant pattern of product diversification, intersectoral complementarities between Africa and Asia do exist. Similar intersectoral complementarities seem to exist between Africa and China or India. This is true in a general context of Africa as a large supplier of raw materials, including energy resources, and China and India being suppliers of manufactured products to African countries. This pattern is largely driven by factor endowments. The rich resource endowment in Africa provides a natural comparative advantage in raw materials and resource-based products. China and India, on the other hand, have a rich stock of skilled labor compared to Africa and thus have a comparative advantage in manufactured products.[15]

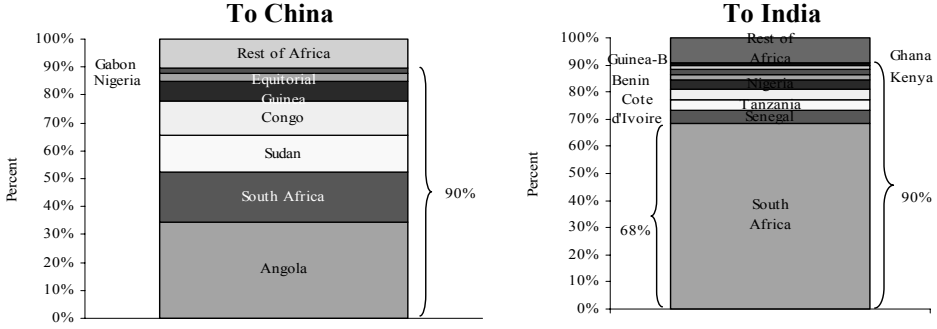
Table 2.5 Geographical and Sector Concentration of Africa's Trade with China and India: Herfindahl-Hirschman Index

	China		India	
	Exports to	Import from	Exports to	Import from
Geographical concentration of African exporters/African importers	0.17 (+0.09)	0.09 (+0.05)	0.05 (-0.03)	0.01 (-0.03)
Product concentration of African exports/African imports	0.40 (+0.25)	0.02 (+0.01)	0.30 (+0.15)	0.02 (+0.02)

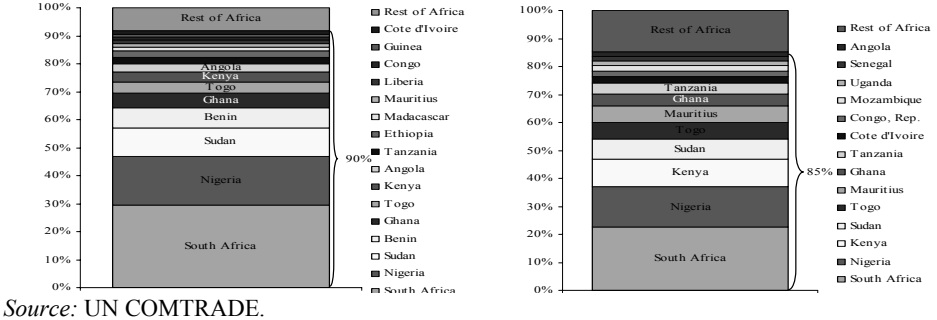
Source: Authors' calculation based on the data from UN COMTRADE.
Note: Figures in parentheses are the difference in index figures from those based on Africa's trade with the world. Figures are based on 2002–2004 average trade values.

Figure 2.18 Leading African Trade Partners of China and India (as Percent of Import Values in Importing Country)

(A) Leading African Exporters for Exports to China and India



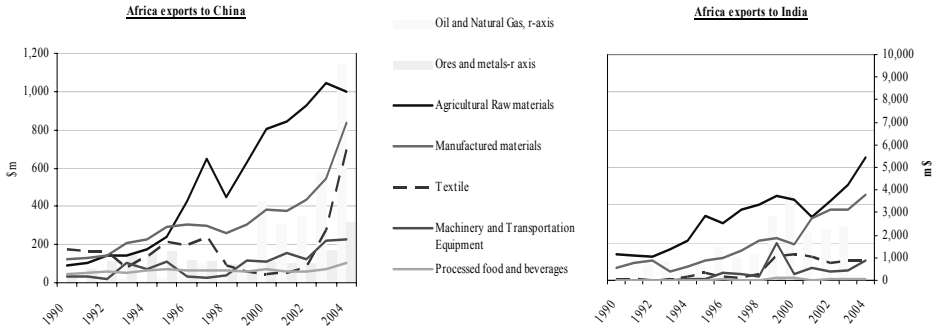
(B) Leading African Importers for Imports from China and India



Source: UN COMTRADE.

The endowment-based theory of comparative advantage provides a simple but intuitive framework for understanding the trade patterns of African countries. In light of Africa's scarcity in human capital and rich natural resource base, the theory would suggest that it is not economically efficient for African countries to push for manufactured exports. At the same time there is a belief that, with greater trade between Africa and the growing industrial giants China and India, Africa's concentration on primary commodity exports will, if anything, increase, undoing Africa's efforts to promote manufactured exports. However, manufactured exports from Africa to China and India are increasing rather significantly (figure 2.19).

Figure 2.19 Africa Exports to China and India by Commodity Groups



Source: UN COMTRADE.

Is this a sign of growing complementarities between Africa and China and India? Three aspects may show positive shifts in complementarities between Africa and China and India. The first concerns the prospects for resource-based, value-added manufacturing exports**.** There is already evidence of Chinese and Indian imports of resource-based manufactured products. African countries could increase their manufactured exports to China and India based on the existing exports of raw materials. However, there is always a limit to growth based on horizontal diversification. African countries want to avoid being trapped as a "resource basket" for rapidly industrializing economies, such as China and India; they also want to realize dynamic efficiency gains by extracting value from their endowed resources. Natural resources provide a quick launching base for African countries to generate value-added activities. Although still limited to a few countries such as South Africa and Nigeria, resource-based manufactured products such as aluminum and iron steel appear among the leading exports to China and India. India's large exports of diamonds, which are likely due to diamond polish work in India using raw diamonds from Africa, raise a clear

example of how added processing work could be retained in Africa, possibly by inviting Indian investment.

The second aspect concerns the prospects for broader participation in global value chains. As discussed in detail in chapter 6, there are growing vertical complementarities along value chains between Africa and China and India. Among the top 20 African exports and imports with China and India, there are clear complementarities between African countries and China and India in the cotton-textile-garment value chain (see tables 2A.4 through 2A.7). Raw material (cotton) is supplied by West African countries to China and India, and intermediate materials (fabrics) are supplied by China and India to apparel producers in Mauritius, Nigeria, South Africa, and other countries in Sub-Saharan Africa. Chapter 6 addresses the possibility of African producers participating in global network trade in the apparel sector.

The third aspect is the diversity among African countries and potential benefits from regional integration. Just as African-Asian trade relations encompass various dynamics due to rich variability among Asian countries—from high-income Japan to low-income but dynamically developing economies such as Vietnam—a rich variability is also found among African nations. Particularly, South Africa has evolved as a regional hub of industrial and commercial development in Sub-Saharan Africa and even beyond. The technological complementarities between South Africa and China or India exist at a higher level than is the case for other African countries. This provides scope for more intraindustry trade between South Africa and China and India. Through regional integration, the emerging intrasectoral complementarities between such industrial leaders in Africa and China and India could lead to wider benefits at the subregional markets through further forward and backward linkages; see chapter 6.

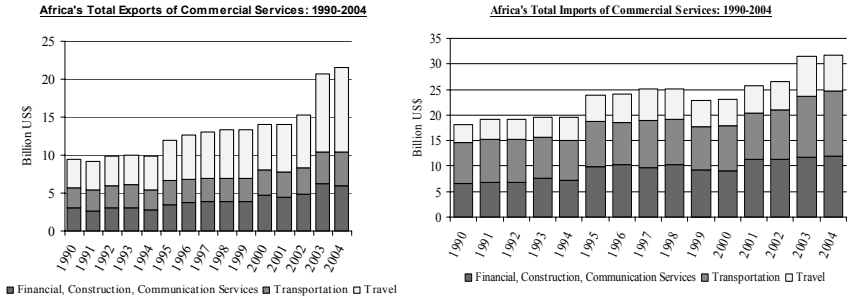
Increasing exports to China and India present both opportunities and challenges to Africa. Africa could benefit from rapidly growing Asian markets in those countries to achieve broad-based economic development, or it could become merely a resource base for Asia's growing economies, benefiting little to its domestic economic development. The agenda for African countries to allow them to benefit from such growth of trade with China and India is really linked to two key questions: how to create an enabling environment for engaging more extensively in value-added production, in natural resources as well as other sectors; and how to effectively participate in global supply chains. These are the focus of chapter 6.

TRADE IN SERVICES BETWEEN AFRICA AND ASIA

Since the early 1980s, international services transactions have increased more rapidly than trade in goods. Trade in services amounted to $2,125 billion in 2004, about 24 percent of the figure for trade in goods.[16] Despite the lack of internationally comparable statistics on the direction of international services trade and on South-South trade in particular, figures confirm an increasing volume of South-South services trade. According to UNCTAD (2005), there is a growing concentration of trade in some developing countries. In 2003, 12 leading developing-country exporters of services—including China, India, Democratic People's Republic of Korea, Malaysia, Thailand, Mexico, Egypt, and Brazil—accounted for 71 percent of service exports of all developing countries, compared to 66 percent in 1998.

Services Trade of African Countries. Sub-Saharan exports of services grew from $9 billion in 1990 to $22 billion in 2004. Among Sub-Saharan countries, the largest export sector is travel, accounting for more than half of all Sub-Saharan services exports, followed by financial, construction, communications services, and transport (see figure 2.20). Africa's services export growth in the second half of the 1990s increased, especially since 2003. In recent years, almost three-quarters of recorded Sub-Saharan African exports of services have gone to the EU.

Figure 2.20 Africa's Trade in Services



Source: IMF Balance of Payments.

In Kenya, South Africa, and Mauritius, tourism is an important foreign-exchange earner. Benin, Côte d'Ivoire, and Tanzania get revenue from shipments from neighboring landlocked countries transiting through their ports, while Ghana and Mali receive remittances from their citizens working in services sectors abroad. Overall, while Africa's services exports rely heavily on low-skilled labor, under the leadership of South Africa and to some extent Senegal,

Mauritius, and Kenya, Africa is engaging in the export of high-skill services. These services include health, financial, and business services.

Sub-Saharan imports of services grew from $18 billion in 1990 to $32 billion in 2004. Africa imports mainly transport, financial, construction, and communication services. In the early 1990s, Sub-Saharan Africa showed rapid services import growth, with imports growing faster than exports. During the second half of the decade, Africa's imports of services slowed down considerably. Sub-Saharan Africa's annual deficit in services trade stands at roughly $10 billion.

Exports of Services by Asia. In 2004, China and India also sustained high growth rates of services exports. India, in particular, had an average service export growth rate of almost 20 percent. China's services exports for 2003 were about $46 billion. Nearly half of that amount came from travel and tourism, yet all services made up barely 10 percent of China's total exports. China's continued economic growth depends on further development of its services sectors, including services such as banking, insurance, securities, management consulting, telecommunications and IT, tourism, education, training, and engineering services (see box 2.2). India exported $25 billion in services and $56 billion in goods in 2003. India's services exports are also more heavily weighted to finance, telecom, call centers, and other "IT-enabled" services than to tourism (see figure 2.21).

Box 2.2 Increasing Chinese Trade in Services

Tourism: China has become one of largest outbound tourist markets. There is a sustained Chinese outbound tourism boom. According to the World Tourism Organization (WTO), China is projected to supply 100 million travelers by 2020, making it the number-one supplier of outbound tourists. In terms of total travel spend, China is currently ranked seventh and is expected to be the second-fastest growing in the world from 2006 to 2015, jumping into the number-two slot for total travel spending by 2015.

Transport: The Chinese government is in the midst of a massive upgrade of their existing transportation infrastructure. In order to keep their economy moving forward, China must have an efficient system in place to move goods and people across this 9.326 billion square kilometer land mass. Passenger rail traffic has priority over freight on the many single-track rail lines across China. Rail tracks are now being doubled to alleviate the freight train conflict issues, expressways are being built to cut down on vehicular travel times, sealed roads are being extended to new locations, ports are being improved for greater use of China's waterways, and airports are being improved across the country. This boom in construction will offer opportunities to local and foreign firms of construction services.

(cont.)

Distribution Services: Foreign companies have been banned from engaging in freight forwarding unless they form a joint venture with local partners. Many have stayed away. With China's accession into the WTO, these and other structural issues are moving to positions more in line with international standards. These changes are to be fully compliant with negotiated accession terms within five years of the accession date.

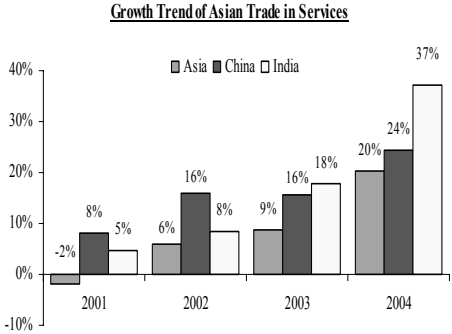
Ports: China has 16 major shipping ports with a capacity of more than 5 million tons per year, combined for a total country shipping capacity in excess of 1,400 million tons. The Port of Shanghai is going through a significant upgrade.

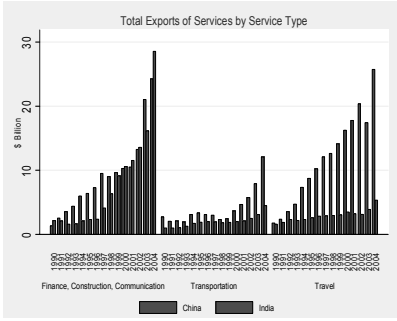
Software: China's exports of software were $2.6 billion in 2004.

Energy and natural resources: China's Africa Policy "encourages and supports competent Chinese enterprises to cooperate with African nations to develop and exploit rationally their natural resources." Africa contains about 8 percent of the world's proven oil reserves, 70 percent of which are off the west coast in the Gulf of Guinea. The low sulfur content of West Africa's oil makes it an attractive investment opportunity. China is investing in oil exploration and construction of pipelines. These construction services are creating opportunities for Chinese exports of services in other areas such as restaurants and small stores. Another anticipated benefit of these new investments is that they generate backwards linkages with the rest of the economy.

Source: Office of the United States Trade Representative 2005.

Figure 2.21 Asia's Trade in Services





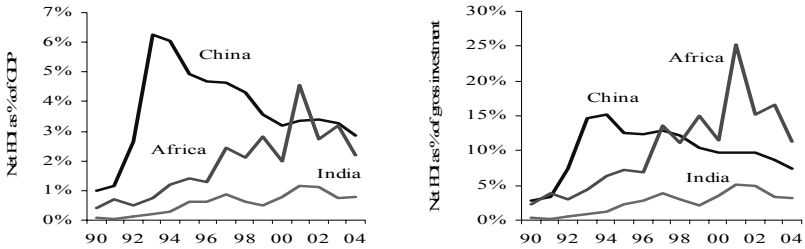
Source: IMF Balance of Payments Statistics

FOREIGN DIRECT INVESTMENT BETWEEN AFRICA AND CHINA AND INDIA

Patterns of Africa's Inward FDI. As figure 2.22 shows, the volatility of FDI to African oil countries is understandably very high. Another noticeable fact is that the difference between FDI as the share of GDP and domestic investment has been declining for China while increasing for Africa. This could indicate that the multiplier effect of FDI in China is much higher than it is in Africa. The multiplier effect of FDI is the amount of additional income that one FDI dollar can generate in the host economy. FDI invested in the light manufacturing sector typically has much larger multiplier effects than FDI invested in the extractive sector. While FDI is resources-oriented in Africa, it is manufacturing-oriented in China. FDI as a percent of GDP has been declining in China even though the absolute level of FDI has been increasing. This indicates that GDP grows at a pace that can outweigh FDI growth, very possibly as a result of both a high multiplier effect of FDI and complementary high domestic investment. In comparison, FDI as a percent of GDP has been increasing rapidly in Africa, indicating that GDP grows at a much slower pace than FDI inflows, possibly as a result of a low multiplier effect and low complementary domestic investment.

FDI to Africa is predicted to continue to increase with more diversified investors from different countries (see box 2.3). European countries (the United Kingdom and France) and North American countries (the United States and Canada) have been the main foreign investors in Sub-Saharan Africa, accounting for 68 percent and 22 percent of the FDI stock, respectively. However, FDI from developing countries, particularly from South Africa, China, and India, as well as from Malaysia and Brazil, has increased substantially in Africa. FDI from Asia accounts for 8 percent of total FDI inflows to Africa. South Africa stands out as the major intraregional FDI source country.

Figure 2.22 Gross FDI Flow, Volume and as Percent of GDP and Gross Domestic Investment



Source: World Bank WDI.

Box 2.3 Prospects of FDI flows to Africa

FDI flows to Africa are expected to continue to increase, according to UNCTAD's Global Investment Prospects Assessment 2006–2008 (GIPA). The country sources of FDI are also expected to become more diversified, with China and India to be among the top five leading FDI sources to the Africa region.[17] A number of factors have contributed to the overall increase of FDI flows as well as to the sectoral and source country composition of FDI flows to the region. These factors include:

- Rich natural resources in Africa that have always attracted FDI in oil and primary commodities sectors, regardless of the lack of good investment climate conditions;
- Improved macroeconomic and political stability for a number of countries;
- Sector-based reforms. For example, financial sector liberalization and changes in trade policies have encouraged FDI into the financial and automotive sectors in South Africa, and changes in the mining codes in Ghana and other African countries have encouraged mining FDI;
- Simplification of FDI regulations and the establishment of more transparent FDI regimes in a number of countries, including Ghana, Senegal, and Tanzania; and

International agreements, between African countries and the rest of the world, including China and India, increased significantly over last two years and have facilitated FDI flows and changed the FDI compositions. For example, the African Growth and Opportunity Act (AGOA) and the Multi-fiber Agreement (MFA) have attracted FDI into the apparel sector and led to exports growth for Lesotho and Madagascar.[18] AGOA also contributed to the increased FDI to Tanzania's light manufacturing and agribusiness sectors. Bilateral Internationals Treaties and Double Taxation Treaties have also led to higher FDI flows.

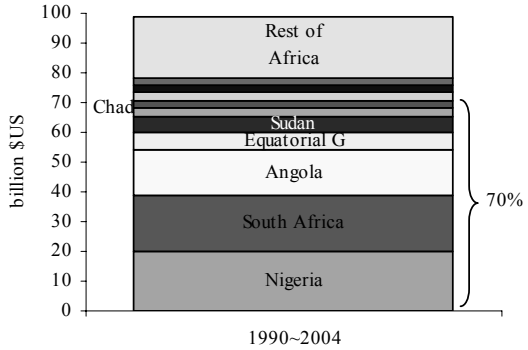
Even though the above-mentioned factors have encouraged FDI flows to Sub-Saharan Africa, there are still a number of investment impediments that need to be addressed in order to attract FDI to the region. Such impediments stem from a number of factors, including:

- Political instability and conflicts for a number of countries;
- In general, higher tariff barriers among countries in the region than between the region and countries outside Africa, resulting in the balkanization of domestic markets;
- Regulatory and fiscal burden (Doing Business: Africa has the highest taxes compared to other developing countries and the most cumbersome business and customs procedures);
- Corruption is high in the region (African countries dominate the bottom cluster of Transparency International's country ranking);
- Weak, and at times deteriorating, physical infrastructure; and
- Lack of a critical mass of skilled workers in the labor force.

Source: UNCTAD 2005.

Although data on global-sectoral FDI flows are incomplete, by looking at FDI destinations in Africa, one can conclude that a large proportion of FDI goes to the oil sector. Figure 2.23 shows that over the last 15 years, 70 percent of FDI has been invested in five out of the seven African oil-exporting countries as well as in South Africa. South Africa has been able to attract the most dynamic investment among African countries, including in the financial sector after its mid-1990s liberalization reforms. FDI flows to South Africa, however, are quite volatile, affected by large FDI deals.[19]

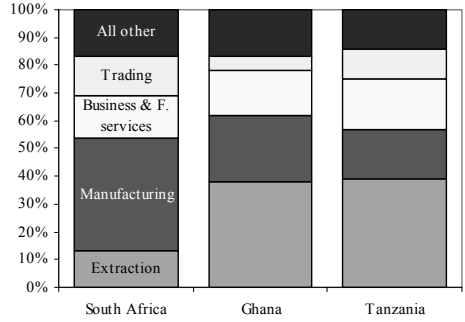
Figure 2.23 FDI to Africa by Destination, Cumulative between 1990 and 2004



Source: UNCOMTRADE.

While in most African countries about 50–80 percent of FDI goes to natural-resource exploitation, some countries are able to attract FDI into the financial, telecom, electricity, retail trade, light manufacturing (apparel, footwear), and transportation equipment sectors (see figure 2.24).

Figure 2.24 Share of Sectoral FDI Inflows to Selected African Countries, 2002–April 2006

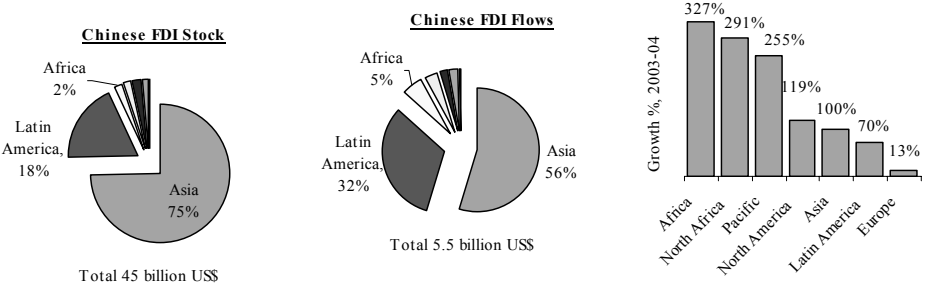


Source: OCO consulting, FIAS staff calculation.
Note: Greenfield projects.

Chinese and Indian FDI to Africa. Chinese investors in Africa, like other foreign investors, seek natural resources and local markets, as well as a platform for exporting to Europe, the United States, and throughout the region. In Africa, China has been investing in oil production facilities as well as in light manufacturing. India has invested in an array of sectors, including the financial sector as well as food processing and light manufacturing. Historically, Chinese FDI went primarily to other Asian countries, mostly to Hong Kong. Recently, however, Chinese FDI has been targeting Africa, among other areas, where natural resources are abundant.

Chinese FDI to Africa represents a small proportion of China's total FDI portfolio (see figure 2.25).[20] Africa in fact is second next to Asia as the major destination of Chinese FDI (box 2.4).[21] China has established its economic and political ties with the region since the Cold War era, but the motivation of Chinese FDI changed drastically before and after the Cold War. China participated in various major infrastructure projects throughout Africa during its earlier involvement in Africa and is still very active in investing in infrastructure projects. Globally, 75 percent of China's FDI is in the tertiary sector, including construction and business activities (see box 2.5). More recently, however, a

Figure 2.25 Chinese FDI Stock and Flows by Region



Sources: 2004 Chinese FDI Statistics Bulletin.

large proportion of Chinese FDI has gone to oil-rich African countries (see figure 2.26). In 2002, some 585 Chinese enterprises received approval by the Chinese authorities to invest in Africa, accounting for 8 percent of the total number of approvals. South Africa had 98 approvals, amounting to $119 million in value. Other important Chinese FDI destinations in Africa include Tanzania, Ghana, and Senegal. Today, it is estimated that there are 700 Chinese enterprises operating in Africa.[22]

Box 2.4 Patterns of Chinese Investment in Africa from Outward Chinese FDI Survey

China's relatively recent "Going Global" policy has encouraged Chinese firms to invest abroad to seek inputs in support of the country's fast-paced economic development, and to exploit their rapidly developing comparative advantages. While reliable and complete statistics are hard to come by, China's outward foreign investment [OFDI] stock and flows have been estimated at around $50 billion and $5 billion, respectively, in 2005.

Much has been written, often anecdotally, about China's OFDI. Less attention has been directed toward developing a better empirical understanding of the impact of the "Going Global" policy from the firms' points of view. In mid-2005, FIAS and MIGA sponsored a survey of 150 Chinese firms based in eight Chinese cities that had invested or were about to invest abroad. The purpose of the survey was to learn about the motivations, experiences, and perceptions of the firms, and their future investment plans. Defining dimensions of the survey audience include:

- The surveyed firms have made 251 overseas investments to date, and of those investments more than half (129) were in developing countries.
- Reasons for investing are similar to those found in overseas investors worldwide—market access, resources, and strategic assets (e.g., technology, brands, distribution channels) are the key drivers, across all regions of interest.
- Most are new to investing overseas, and need support to better understand the procedures required, and the opportunities and challenges these markets represent.

With regard to Africa in particular, some specific findings are worthy of note:

- Africa is second only to Asia as the destination of choice of the firms surveyed, accounting for some 18 percent of the overseas projects. (Asia accounted for nearly 40 percent of the total.)
- Reflecting the composition of the firms surveyed, manufacturing was the primary sector of interest of firms investing in Africa (45 percent), followed by construction and services (35 percent), and resource-based investment at 20 percent (focusing on agriculture, oil, gas, and mining).
- Support from the Chinese government was considered to be an important factor driving FDI to Africa relative to other regions.
- Africa was the least attractive environment in the eyes of the Chinese investors with regard to political risk, perceived by 94 percent of the firms surveyed as the riskiest region.
- Some 60 percent of the firms investing in Africa ranked the policy environment there as "good," which was twice the levels achieved by Latin America at 29 percent.

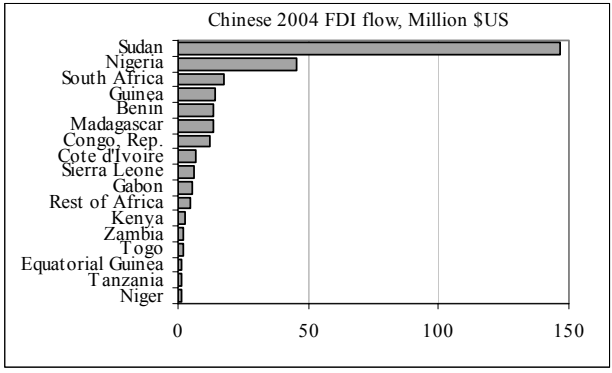
(cont.)

In terms of the future trends and destinations for Chinese outward investment, nearly 60 percent of the firms surveyed had concrete plans for additional overseas projects in the next three years, and an additional 13 percent had plans but no specific projects. Here again Africa fares well, as the intended destination for 21 percent of the planned projects.

It is worth noting that the survey found the firms often lacking information on both sides of the equation—on the procedures required by the Government of China for outward investors, and on the investment conditions in the countries in which they were establishing operations. This implies information gaps both behind and across borders that should be addressed

Source: World Bank Group/MIGA.

Figure 2.26 China's Current FDI Outflows to Africa by Country, 2004



Source: 2004 Chinese FDI Statistics Bulletin.

Box 2.5 Dynamic Sectors in Chinese Outward FDI

Worldwide, the largest proportion of China's outward FDI stock is in the business sector, including mainly the investment in equity of companies outside China, accounting for 37 percent of the total value. Trade, mainly in the wholesale and retail sectors, amounts for 18 percent of China's outward FDI. The mining sector, mainly oil and natural gas exploration and ferrous and nonferrous metal mining and quarrying, attracted $6 billion in Chinese investment, accounting for 13 percent of the total stock. The transport, storage, and communications sector's stock reached $4.6 billion, accounting for 10 percent of China's outward FDI, mainly in water transportation. The tertiary sector dominates China's outward FDI, accounting for 75 percent of total stock in 2004. It is noteworthy that investment in mining has increased rapidly in recent years.

(cont.)

Chinese Outward FDI Stock by Sector

Sector/industry	2004 $m	Percent
Total	**44,579**	
Primary	**6,784**	**15%**
Agriculture, forestry, fishery	834	2%
Mining, quarrying and petroleum	5,950	13%
Secondary	**4,540**	**10%**
Manufacturing	4,540	10%
Tertiary	**33,255**	**75%**
Electricity, gas and water	910	2%
Construction	832	2%
Trade (Wholesale & retail)	7,840	18%
Transport, storage and communications	4,580	10%
Business activities	16,420	37%
Community, social and personal service activities	1,100	2%
Other services	1,573	4%

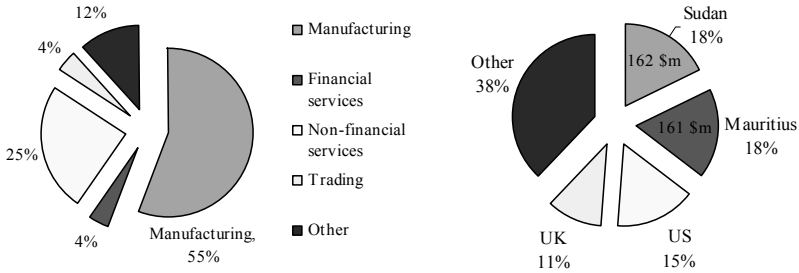
Source: Ministry of Commerce, 2004 Statistical Bulletin of China's Outward Foreign Direct Investment.

As it is in other regions of the world, Indian FDI in Africa is mostly in the services and manufacturing sectors. However, in Africa, India also has significant FDI in natural resources, including the oil sector (in the Sudan, for example). Over the period 1995–2004, Africa accounted for 16 percent of India's FDI, at $2.6 billion. Like China, India seeks primarily to secure energy sources from Africa as well as other natural resources such as timber, non-oil minerals, and precious stones to support its dynamic economic growth.

Of course, India has been present on the African continent for decades. In East and Southern Africa, the large Indian diaspora, whose members have business ties to India and a good knowledge of Africa, has played a significant role in attracting new investment to the continent. This is especially true in recent years, given that India is flush with foreign reserves, and the government has lifted regulations and controls allowing firms to go abroad and has removed the $100 million cap on foreign investment by Indian firms.

Mauritius is a major Indian FDI destination in Africa, particularly in the financial sector, as well as in the telecommunications and pharmaceuticals sectors (figure 2.27). However, it is difficult to assess the extent to which the investment stays in the country or passes through to take advantage of Mauritius' low tax regime.[23] FDI from India to Africa is set to increase, as the Indian conglomerate Tata Motors has identified South Africa as the next frontier in its globalization policy. It plans to use South Africa as its gateway to Europe by expanding its automotive operations there, taking advantage of South Africa's favorable trade regime with Europe.

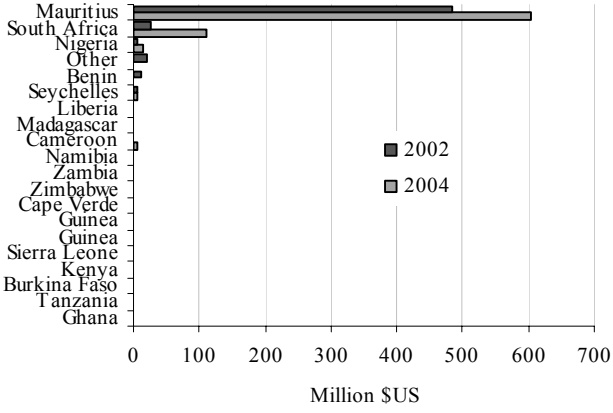
Figure 2.27 India's FDI Outflows by Sector and Destination



Source: UNCTAD 2004.

Emerging African FDI to China. Official data on Africa's FDI to Asia are largely unavailable. However, data are available on Africa's FDI to China. Based on statistics from the Chinese authorities, African FDI to China reached $776 million in 2004, compared to $565 million in 2002, posting a 17 percent annual compounded growth rate over two years. Mauritius accounted for more than three-quarters of the total flows of FDI from Africa to China in 2004 (figure 2.28). [24] Clearly, a large proportion of that FDI is pass-through, unlikely originating solely in Africa. Worth noting is that South Africa has been actively investing in China. In 2004, FDI from South Africa to China increased significantly to $109 million, up from $26 million in 2002. In 2005, SAB Miller, the South African food and beverage company, announced plans to invest about $15 million in China. Nigeria is another emerging African investor in China, having more than doubled its FDI to China between 2002 and 2004.

Figure 2.28 African FDI to China, Total between 2002 and 2004



Source: China Statistics Book 2003, 2004.

In summary, the growing FDI from China and India to Africa is consistent with these countries' trade patterns in Africa (see box 2.6). The challenge for Africa is to grasp this opportunity to create an environment for Asian developing economies to invest in the business activities that create high value-added commodities, rather than investing mainly in the extractive sector known to create few backward linkages in the host economy. This is the focus of chapter 6.

Box 2.6 Summary of Characteristics of Africa's Trade and Investment Patterns with China and India

- Mineral resources, including oil, dominate Africa's exports to China and India and display rapid growth.
- Agricultural raw materials and food are also commodities having high and rapidly growing demand by China and India.

  Complementarities:

  - Growing demand for raw materials in expanding Chinese and Indian industries and for food by Chinese and Indian consumers with increasing purchasing power.
  - Internal pressure for resource reallocation within the domestic economies of China and India.
- China and India export manufactured products to Africa.

  Complementarities:

  - Chinese and Indian firms supply lower-tech/lower-cost products compared to those from industrialized countries; this intensifies competition for and efficiency of African producers: consumers benefit.
  - China and India also provide capital goods/intermediate inputs, enabling African businesses to manufacture products potentially exportable to third regions and countries (e.g., the EU, United States) and engage in network trade.

Source: World Bank staff.

KEY ELEMENTS SHAPING AFRICAN-ASIAN TRADE FLOWS

Roles of At-the-Border, Behind-the-Border, and Between-the-Border Factors

What are the principal factors that account for the differences observed in the patterns of African-Asian trade flows? At-the-border formal trade policies are often at the forefront of negotiations and discussions on international commerce. Obviously, tariff and non-tariff barriers (NTBs) are the primary targets of trade liberalization. It is thus important to investigate the impact of such factors on the patterns of Africa's trade flows with Asia. More liberal import policies taken by individual countries (e.g., low tariff rates) should facilitate more trade flows among such countries. Preferential market access measures or free trade agreements also should stimulate more trade flows.

However, changes in formal trade policies are only a necessary and not a sufficient condition for engendering cross-border trade. In order for trade to take place, tradable, internationally competitive goods and services need to be produced. In many developing countries, where the private sector base is thin, this translates to enhancing the investment environment behind-the-border so that both domestic businesses and foreign investors can the build an efficient productive (supply) capacity to respond to opportunities created by increased market demand. At the same time, for the goods and services produced to be traded efficiently, sufficient capacity is needed for trade-facilitating infrastructure, institutions, and services to lower between-the-border trade-related transactions costs.

Country-Level Qualitative Studies. A large number of qualitative studies that have been conducted to analyze how at-the-border, behind-the-border and between-the-border factors influence the trade performance of developing countries. Prominent among them are the Diagnostic Trade Integration Studies (DTISs) carried out under the Integrated Framework for Trade-Related Technical Assistance to Least Developing Countries (IF) program. DTISs have been developed for 26 countries in Africa to identify country-specific bottlenecks for promoting trade in those countries (see chapter 1). As illustrated in table 2.6, which summarizes the findings from a sample of 6 of these 26 DTISs, these studies find that these three factors are major parameters affecting African trade performance.

TABLE 2.6 Illustrative Findings from a Sample of DTIS Assessments on Six African LDCs

Country	At the Border	Behind the Border	Between the Border
RWANDA	•Inadequate export development and diversification •High tariffs on raw materials • Negative tariff escalation on food and textiles	•Lack of access to electricity constraining rural development and expansion of nonfarm activities •Lack of access to credit for farmers and SMEs •Weak organization of the rural sector and limited role of market activities	•Lack of capacity for standards and quality management constrains diversification into agroprocessed exports •High cost and limited access to rural transport reduces returns to trade and constrains the ability of rural farmers to produce commercial crops •Delays on the main corridors raising the costs of trade •Long border clearance times and uncertainty at customs
ZAMBIA	• Inadequate legislation on tariffs and safeguards	• Urgent need to make a thorough assessment of the WTO Government Procurement Agreement	•Long border clearance times, lack of ability to ensure integrity and increased compliance •Insufficient regulatory framework for transport, transit logistics, efficiency, costs •Lack of training for staff in transportation regulation and administration
MALI	• Poor promotion of domestically produced exports • Lack of investment promotion policy	• Inadequate access to power, water, and telecommunications • Weak regulation of public utilities • Lack of access to finance in specific sectors • Weak supply chain management • Noncompetitiveness of pricing in domestic markets	• Poor customs administration • Long transit delays • Complicated customs procedures
TANZANIA	• Urgent need to phase out export taxes • Long waiting periods for duty drawback refunds • Lack of sector-specific foreign investment promotion policy	• Insufficient access to power, water, and telecommunications in EPZs • Inadequate competition policy and market access • Inability to use existing trade preferences	• Inadequate transport legislation •Inadequate public-private dialogue in transport and trade facilitation, transit and border crossings
MADAGASCAR	• Inadequate assessment of tariff barriers • Poorly functioning investment promotion strategy and lack of an investment code.	• Inadequate access to finance for SMEs • Complicated and poorly functioning taxation policy	• Weakly functioning customs administration • Noncompliance with customs practices
SENEGAL	• Inconsistency between preshipment valuation and import duties • Weak investment promotion strategy • Too many separate Export Promotion Agencies in operation	•Lack of access to competitively priced infrastructure services • Insufficient investment in the petroleum sector • Lack of a national ICT strategy • Need for reform in the financial sector	• Poor management of customs procedures • Outdated trade facilitation procedures • Lack of investment in cold storage facilities • Delayed implementation of civil aviation legislation

The advantage of these country-specific studies is that they provide rich, qualitative evidence on the nature of the constraints on African trade at the micro level. Moreover, with their detailed analysis they are able to identify complex institutional linkages that may exist among the various constraints, especially where quantitative data do not exit. One such linkage is the interactive effects between formal trade policies and trade facilitation factors. For example, many trade policies such as multiple tariff bands, multiple tariffs for the same products, tariff peaks, non-tariff barriers, as well as specific duties, are often creating enormous complexity in customs administration. Those policies not only restrict trade flows but also indirectly discourage trade flows by slowing customs procedures. Eliminating such barriers would have positive spillover effects to other areas, such as improving customs efficiency.

By their country-specific nature, DTISs are difficult instruments to gauge systematically how these various factors impact African countries across the board (beyond the fact that only 26 DTISs have been carried out). Nor do they give a sense of the relative importance of such impacts. To do so requires a quantitative cross-country approach.

Cross-Country Quantitative Analysis: Gravity Model. Gravity models are one of the most popular analytical tools used in the economic study of bilateral trade flows to examine underlying factors that influence the cross-country direction and the volume of such flows.[25] To be sure, such models have shortfalls, in large part due to the lack of necessary data for conducting refined estimation, especially in the case of Sub-Saharan Africa. For example, due to the lack of availability of comprehensive data on bilateral services trade, gravity analysis of African trade necessarily focuses on merchandise trade flows. Careful estimation of interlinkage effects among policy factors is also difficult due to poor data availability. Nonetheless, gravity models provide useful information as to how significant are the various policy factors in influencing the pattern of overall trade flows between Africa and Asia on a cross-county basis. In this regard they are a powerful complement to the qualitative DTISs.

We apply an augmented multivariate gravity model to bilateral trade flows of African countries to and from various countries in the world, including Asian countries as well as African countries themselves. [26] In addition to economic and geographic factors such as GDP, GDP per capita, physical distance, and common language, the augmented gravity model incorporates formal trade policies, domestic behind-the-border business constraints, and between-the-border factors.

To measure the impact of formal at-the-border trade policies, the model uses several measures, including an index of trade restrictiveness of importers; membership in regional trade agreements; and preferential market access eligibility to the EU and United States markets through EBA and AGOA. Specific between-the-border factors included in the analysis are customs efficiency (in terms of number of documents required); availability of Internet access in exporting and importing countries; and quality of port infrastructure (both airport and seaport) of both exporting and importing countries. Behind-the-border factors included in the model are various measures of barriers to doing business and the quality of domestic infrastructure services. The intensity of barriers to doing business is measured by the number of procedures required for starting a new business, registering property, obtaining licenses, and enforcing contracts. The quality of electric power service is used to measure infrastructure service delivery. In general the specific variables and respective data sources used in the model are listed in table 2A.8.

Table 2.7 summarizes the direction of statistically significant impacts from various factors based on the signs of coefficients estimated by Ordinary Least Squares (OLS) regressions.[27] The complete list of estimated coefficients is in table 2A.9 in the appendix of this chapter. Although not reported in the table, most of the economic, geographical, historical, and cultural factors have the predicted signs and their coefficients are statistically significant. These variables capture most of the fundamental sources of the heterogeneity among Sub-Saharan countries.

A number of studies using gravity models have shown the significance of at-the-border constraints in impacting bilateral trade flows. Our empirical analysis shows that, on a cross-country basis, in addition to trade policy variables (as well as the standard economic and geographic factors), both behind-the-border and between-the-border factors significantly influence the trade performance of African countries. All of the statistically significant coefficients display the expected sign. Moreover, the results from the estimation procedures show that the same factors are equally important when examining Africa's trade performance on a global basis or its trade performance vis-a-vis Asia in particular. This indicates the robustness of the estimated model.

Table 2.7 Signs of Impacts on Bilateral Trade Flows of African Countries: Formal Trade Policies, Trade Facilitation and Domestic Business Constraints

		All Merchandise Trade		Manufactured Trade	
		Exp. from Africa	Imp. to Africa	Exp. from Africa	Imp. to Africa
Formal Trade Policies	Importer trade restrictiveness	n.s.	n.s.	-	n.s.
	Regional trade agreement	+	+	+	n.s.
	Preferential Market Access	n.s.	n.s.	+	n.s.
Between-the-border factors	Customs Procedure – Exporter	-	n.s.	-	n.s.
	Customs Procedure – Importer	+	n.s.	n.s.	n.s.
	Internet Access – Exporter	+	+	+	+
	Internet access – Importer	n.s.	n.s.	n.s.	n.s.
	Port quality – Exporter	-	+	-	+
	Port quality – Importer	+	+	+	+
Behind-the-border factors	Domestic business procedure – Exporter	-	n.s.	-	n.s.
	Power infrastructure quality – Exporter	n.s.	n.s.	+	n.s.

Source: Authors' calculations based on 2002–2004 average figures. See appendix for the table of estimated coefficients (Table 2A.) as well as the data sources (Table 2A.)
Note: Only the signs of significant coefficients are shown (level of significance above 10 percent). "n.s." represents a coefficient not statistically significant.

At-The-Border Factors. As expected, the estimates show that formal trade policies do matter for exports and imports of African countries. Yet only manufactured exports of African countries seem to be significantly negatively impacted by import trade restrictions and, moreover, only when behind-the-border and between-the-border factors are also taken into account. For (broader) merchandise trade, the multivariate analysis suggests that once between-the-border and the behind-the-border impacts are also taken into account, the significance of trade restrictiveness of importing countries tends to diminish significantly. This points to the importance of the behind-the-border and between-the-border factors even after allowing for the impact of at-the-border policies.

The finding of a positive RTA effect is consistent with other empirical studies. Through lowering within-bloc trade barriers, RTA participation may cause countries to trade more.[28] Alternatively, intra-bloc trade may grow by diverting flows from extra-bloc trade. In either way, formation of RTAs generates more trade within the blocs.[29] The effect of RTA formation is not only increasing the overall volume of trade but also may likely affect the product

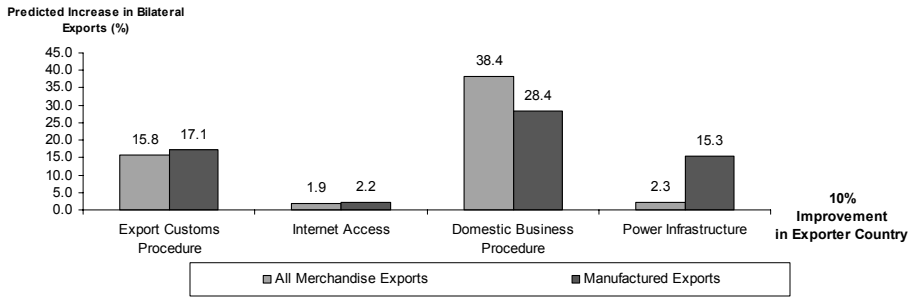
composition of exports within and outside the RTAs, partly by diverting trade flows away from countries outside the bloc.[30] This might be one of the reasons why the RTA variable does not have a significant impact on manufactured imports to Africa, while it does for the general merchandise import flows to Africa. The weak manufacturing base in Africa does not cause a diversion of manufactured product flows toward intra-bloc trade. Preferential market access through AGOA and EBA has a positive and significant coefficient only for manufactured exports. This is consistent with the fact that most of products benefited from AGOA and EBA are manufactured products, whereas agricultural products do not receive equal benefits of duty-free market access to those markets.

Behind-The-Border Factors. Our estimated model provides clear empirical evidence that a poor domestic business environment in the form of high barriers to entry and poor power infrastructure substantially restricts exports, particularly for African countries' exports of manufactured products. It is quite straightforward that better power infrastructure improves productivity of domestic producers, thereby strengthening their export competitiveness. Better power infrastructure also attracts foreign investors who would be more prone to produce for export markets. The coefficient estimates from the augmented gravity model underpin this relationship between export performance and power infrastructure.

For exports from Africa, domestic business-related barriers measured in terms of number of procedures for starting and operating a business have a significantly negative impact on exports by African countries. Regulatory burdens in African countries not only increase business transaction costs and reduce productivity, they also pose barriers for new businesses to enter.

Figure 2.29 shows how a 10 percent improvement in some selective between-the-border and behind-the-border factors increases exports of African countries, based on the estimation results of our augmented gravity model (table 2A.9). Improving domestic business-related procedures would visibly improve export performance of African countries. This applies not only to manufactured exports, but also to exports in general. A 10 percent improvement in efficiency of domestic business procedures is associated with 38 percent larger bilateral exports of African countries. Improvement in power infrastructure would also have a high positive impact on exports, particularly on manufactured exports. A 10 percent improvement in power infrastructure-services quality would increase exports by 15 percent.

Figure 2.29 Predicted Percentage Increase in Africa's Bilateral Exports from Improvement in Factors: Based on Augmented Gravity Model



Source: Authors' calculations based on 2002–2004 average figures. See Table 2A. for coefficient estimates.

That there is a relatively strong impact on exports of behind-the-border factors is an important finding. Improvements in domestic business procedures or in power infrastructure-services quality are essentially enhancing domestic production and therefore, in one aspect, should be neutral to exports. Such domestic impacts should be mostly subsumed under GDP and thus already captured in the model. The sizable positive impacts of the behind-the-border factors on exports hint at significant positive spillovers in improving efficiency. A large body of literature shows that there is a clear linkage between productivity and propensity to export both at the country level as well as at the firm level. Exports to each market require certain fixed costs unique to exportation. Firms choose to export and engage in cross-border arm's length transactions only if they are productive enough. Also, several studies point that higher domestic productivity allows firms to export not only in regional markets but also to geographically more distant markets. The efficiency gain from improving behind-the-border constraints appears to generate sizable improvement in trade flows.

Between-The-Border Factors. The estimated model suggests that customs efficiency is an important between-the-border factor affecting Africa's exports. On both general merchandise exports and manufactured exports, the results show significantly negative impacts of poor customs clearance procedures for exporting products. While the number of necessary documents for customs clearance is used here to measure inefficiency of customs procedures, similar results are obtained from using alternative ways of measuring the procedural constraints in customs, such as number of required signatures or total time required to clear customs. Our finding for African trade agrees with evidence

from other research that addresses customs efficiency and other trade logistics, both at the country and industry levels as well as at the firm level.[31]

The positive effect of port infrastructure quality, capturing both airport and seaport quality, seems to be much more pronounced in affecting African imports as opposed to exports. For all types of trade flows and for both merchandise trade as well as manufactured trade, higher quality of port infrastructure leads to more imports.[32]

IT infrastructure is found to also significantly affect African bilateral trade flows.[33] Better Internet access in exporting countries is positively related to export flows. On the other hand, the insignificant result for importing countries may suggest that the Internet is increasingly utilized as a tool for suppliers to build their networks with buyers rather than a tool for consumers to source products—at least in the context of African exports and imports. It may also be the case that the use of the Internet goes much beyond simply reducing searching costs of sellers and buyers in cross-border transactions, but reducing more general business-related transaction costs, which improves productivity level of domestic producers.

Trade and Investment Linkages

What linkages exist between FDI inflows to and exports from African countries? How do these linkages compare with those that might exist for Asian countries? Based on the gravity model incorporating the stock of inward FDI as one of the explanatory variables, FDI in African countries appears to be complementing rather than substituting for bilateral export flows (table 2.8). In the case of the Asian countries, the estimates also suggest complementary effects between FDI and exports. In both cases, greater stocks of FDI are associated with higher exports. While recognizing the variation among individual countries in Africa, for the African countries as a whole, the effect is more muted than it is for Asian countries. However, among non-oil-exporting African countries, the complementary effect is actually stronger than that for the Asian countries.

These findings suggest the existence of an important relationship between trade and FDI flows in Africa as well as in Asia. Not surprisingly, in the context of trade and investment between these two regions, this linkage has various dimensions. In particular, attracting FDI from Asia (as well as from elsewhere) to Africa appears to be an effective route to boosting African exports. Detailed analysis of these types of linkages and their implications for African development is the focus of chapter 6.

Table 2.8 Trade-FDI Complementary Effects from Gravity Model

	Coefficient Estimate of FDI Inward Stock on Export Flows
Exports by Asian countries	0.29
Exports by African countries	0.11
Exports by non-oil exporting African countries	0.36

Source: Authors' calculations based on 2002–2004 average figures. See appendix (table 2A.8) for the data sources.
Note: Coefficient estimates are all statistically significant at 5 percent. Non-oil exporting African countries are all Sub-Saharan African countries other than Angola, Chad, Republic of Congo, Equatorial Guinea, Nigeria, and Sudan.

CONCLUSIONS AND POLICY IMPLICATIONS

Africa's trade with China and India has grown rapidly in both directions. This is based on high demand for natural resources by China and India and their industrial advantage in manufactured products against African countries. This reflects complementarities between African countries and China and India based on factor endowment of natural resources in Africa versus skilled labor in China and India.

Africa's exports to China and India have not directly contributed to its export diversification in terms of products and trading partners. Even though the boom of natural resource exports to China and India may provide short-term benefits, African countries need long-term strategies to leverage the current export-boom revenue to create opportunities for long-term economic benefits through export diversification.

Three types of complementarities between Africa and China and India are emerging: (i) vertical complementarities along the cotton-textile-apparel value chain; (ii) exports based on endowed natural resources with greater processing work (aluminum, for example) done locally; and (iii) increased intraindustry trade with emerging African industrial hubs such as South Africa and Nigeria. These complementarities provide opportunities for African countries to increase and diversify their exports by focusing on policies and activities (i) to increase participation in global network trade, (ii) to develop diversified value-added local industries through forward and backward linkages to resource-based products, and (iii) to enhance subregional economic integration and to maximize its benefit.

In addition to trading in goods, Africa-China-India economic relations are deepening in service trade and FDI. Asian FDI in Africa targets various trading opportunities using Africa as the production base; examples include natural resources for overseas markets and construction services for local markets, as well as trade-facilitation service providers. This implies the existence of a strong synergy among trade in goods, trade in services, and FDI, which in turn enhances economic relations between Africa and China and India.

Through analyzing quantitatively bilateral trade flows between Asian and African countries, the evidence presented strongly suggests that, while formal trade policies matter in promoting Africa's exports to Asia (as well as elsewhere), behind-the-border and between the border constraints are every bit as, if not more, critical. This means that, if African countries are to enhance their trade performance in Asia, it will take far more than simply liberalizing trade policies to reach that objective. Indeed, the deeper, more complex, and longer-run challenge is to confront the behind-the-border and between-the-border constraints. Improving trade policies is necessary but not sufficient.

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ANNEX

Table 2A.1 African Countries' Three Main Exports, with their Share in Total Exports

	Three main exports, with their share in total expxorts*			No. of produts accounting for more that 75 per cent of exports
	Product I	Product II	Product III	
South Africa	Platinum (11.8%)	Diamond.exl.industrial (9.6%)	Oth.coal,not agglomerated (7.5%)	44
Egypt	Motor gasolene,light oil (15.3%)	Crude petroleum (13.4%)		42
Tunisia	Trousers, breeches etc. (17.1%)	Crude petroleum (6.8%)	Insultd wire, etc.conductr (5.4%)	35
Morocco	Trousers, breeches etc. (6.5%)	Diodes,transistors etc. (5.5%)	Insultd wire,etc.condctr (5.4%)	33
Kenya	Tea (16.9%)	Cut flowers and foliage (11.2%)	Motor gasolene,light oil (9.3%)	25
Tanzania	Fish fillets,frsh,chilld (12.6%)	Coffee, not roasted (8.9%)	Tobacco,stemmed,stripped (6.9%)	21
Zimbabwe	Tobacco,stemmed,stripped (30.8%)	Nickel,nckl.alloy,unwrgt (8.9%)	Nickel ores,concentrates (8.6%)	13
Mauritius	T-shirts,othr.vests knit (16.6%)	Sugars,beet or cane, raw (16.4%)	Jersys,pullovrs,etc.knit (11.5%)	10
Madagascar	Spices,ex.pepper,pimento (27.9%)	Crustaceans, frozen (14.6%)	ersys,pullovrs,etc.knit (11.6%)	9
Eritrea	Elctrn comp pts,crystals (40.7%)	Electrical capacitors (11.8%)	Drawing,measurg.instrmnt (4.6%)	8
Namibia	Fish fillets, frozen (22.5%)	Diamonds.excl.industrial (15.4%)	Radio-active chemicals (10.8%)	8
Senegal	Molluscs (20.2%)	Groundnut oil, fractions (11.1%)	Fish,fresh,chilled,whole (9.4%)	8
Uganda	Coffee, not roasted (31.8%)	Fish fillets,frsh,chilld (11.0%)	Tobacco,stemmed,stripped (9.7%)	8
Cape Verde	Special trans not classd (19.1%)	Gas turbines, nes (18.2%)	Shirts (9.3%)	7
Côte d'Ivoire	Cocoa beans (48.2%)	Cocoa paste (7.7%)	Bananas, fresh or dried (4.8%)	7
Gambia	Aircrft etc.ULW >15000kg (40.3%)	Oth.frsh,chll.vegetables (10.4%)	Groundnut oil, fractions (7.3%)	7
Ghana	Cocoa beans (48.3%)	Wood,non-conifer, sawn (6.3%)	Alum.,alum.alloy,unwrght (5.1%)	7
Togo	Cotton,not carded,combed (36.7%)	Natural calc.phosphates (20.9%)	Cocoa beans (5.8%)	7
Zambia	Copper;anodes;alloys (40.7%)	Copper plate,etc.15mm+th (10.8%)	Cobalt,cadmium,etc.unwrt (10.4%)	7
Ethiopia	Coffee, not roasted (47.2%)	Sesame (sesamum) seeds (12.6%)	Sheep skin without wool (6.5%)	6
Sierra Leone	Diamonds.excl.industrial (49%)	Convertible seats,parts (10.9%)	Parts,data proc. etc.mch (4.9%)	6
Djibouti	Sodium chloride, etc. (35.2%)	Oth.wheat,meslin,unmlled (11.5%)	Petrolm.bitumen,coke,etc (10.2%)	5
Cameroon	Crude petroleum (43.1%)	Wood,non-conifer, sawn (13.4%)	Bananas, fresh or dried (9.8%)	4
Guinea	Aluminium ore,concentrat (43.4%)	Alumina(aluminium oxide) (17.2%)	Crude petroleum (10.3%)	4
Lesotho	Jersys,pullovrs,etc.knit (33.3%)	Trousers,breeches,etc. (18.4%)	Trousers, breeches etc. (15.9%)	4
Malawi	Tobacco,stemmed,stripped (55.7%)	Tea (10.5%)	Tobacco,not stripped, etc (8.8%)	4
Somalia	Sheep and goats, live (27.6%)	Fuel wood, wood charcoal (20.7%)	Molluscs (17.1%)	4
Algeria	Crude petroleum (50.3%)	Natural gas, liquefied (15.1%)	Motor gasolene,light oil (14.8%)	3
Benin	Cotton,not carded,combed (68.7%)	Motor gasolene,light oil (5.8%)		3
Burkina Faso	Cotton,not carded,combed (66.9%)	Sesame (sesamum) seeds (6.4%)	Cigarettes contg.tobacco (4.1%)	3
Central African Republic	Diamonds.excl.industrial (42.7%)	Wood,non-conif,rough,unt (29.1%)	Cotton,not carded,combed (14%)	3
Congo DR	Diamonds.excl.industrial (54.9%)	Industrial diamonds (14.4%)	Crude petroleum (8.8%)	3
Guinea Bissau	Molluscs (32.8%)	Propane, liquefied (21.8%)	Fish,frozen ex.fillets (20.6%)	3
Mauritania	Iron ore,concntr.not agg (39.8%)	Molluscs (27.8%)	Fish,frozen ex.fillets (15.5%)	3
Chad	Cotton,not carded,combed (57.5%)	Crude petroleum (21.1%)	Natural gums,resins,etc. (11.9%)	2
Lliberia	Ships,boats,othr.vessels (69%)	Wood,non-conif,rough,unt (9.5%)	Natural rubber latex (5.9%)	2
Mozambique	Alum.,alum.alloy,unwrght (70.9%)	Crustaceans, frozen (6.6%)		2
Niger	Radio-active chemicals (71.5%)	Special trans not classd (12.3%)		2
Rwanda	Crude petroleum (61.1%)	Ore etc.molybdn.niob.etc (14.8%)	Coffee, not roasted (14.6%)	2
Syechelles	Fish,prepard,presrvd,nes (54.5%)	Fish,frozen ex.fillets (27.3%)	Motor gasolene,light oil (4.3%)	2
Swaziland	Chem.products etc.nes (48.3%)	Yarn,staple fibres, etc. (29.1%)	Othr.organo-inorgan.comp (5.4%)	2
Angola	Crude petroleum (94.6%)			1
Botswana	Diamonds.excl.industrial (87.6%)	Nickel mattes,sintrs.etc (8.4%)		1
Burundi	Coffee, not roasted (78.9%)	Diamonds.excl.industrial (4.7%)	Ore etc.molybdn.niob.etc (4.4%)	1
Comoros	Spices,ex.pepper,pimento (88.1%)	Essential oils (8.8%)		1
Congo	Crude petroleum (78.4%)	Motor gasolene,light oil (5.8%)	Wood,non-conif,rough,unt (5.7%)	1
Equatorial Guinea	Crude petroleum (89.6%)	Acyclic monohydric alchl (4.6%)	Wood,non-conif,rough,unt (4.1%)	1
Gabon	Crude petroleum (77.4%)	Wood,non-conif,rough,unt (12.3%)	Manganese ores,concentrs (4%)	1
Libya	Crude petroleum (82.8%)	Motor gasolene,light oil (10.4%)		1
Mali	Cotton,not carded,combed (86.8%)			1
Nigeira	Crude petroleum (86.4%)	Natural gas, liquefied (4.6%)		1
São Tomé and Princip	Cocoa beans (82.2%)1			1
Sudan	Crude petroleum (79.6%)			1
Africa**	Crude petroleum (38.4%) [16.3%]	Motor gasolene,light oil (4.7%) [5.5%]	Diamonds.excl.industrial (3.7%) [12.5%]	36

Sources: OECD 2006.

Notes: * Products are reported when accounting for more than 4 percent of total exports.
** Figures in [ ] represent the share of Africa in the world export for each product.

Table 2A.2 Composition of Africa Exports to Asia: 1999 and 2004

	1999	Share (percent)	2004	Share (percent)	Annual Growth percent
Machinery and transportation equipment	435	2.3	1,383	3.7	26 percent
Ores	804	4.2	2,377	6.4	24 percent
Petroleum products	158	0.8	401	1.1	20 percent
Electronics	19	0.1	47	0.1	20 percent
Crude Petroleum	7,136	37.2	17,113	46.1	19 percent
Manufacturing of non-oil minerals	2	0.0	3	0.0	8 percent
Pharmaceuticals	5	0.0	12	0.0	19 percent
Electric machineries	36	0.2	71	0.2	15 percent
Other manufactured goods, paper, pulp, furniture, etc.	490	2.6	904	2.4	13 percent
Nonpharmaceutical chemicals	520	2.7	955	2.6	13 percent
Basic manufactured metals	4,880	25.5	8,201	22.1	11 percent
Cotton, textile fibers, and yarns	848	4.4	1,423	3.8	11 percent
Agricultural raw materials, nonedibles	1,525	8.0	1,970	5.3	5 percent
Processed food and beverages	271	1.4	342	0.9	5 percent
Agricultural raw food edibles	1,437	7.5	1,777	4.8	4 percent
Apparel and footwear	30	0.2	25	0.1	-4 percent
Manufacturing of nonminerals	11	0.1	4	0.0	-18 percent
Coal	554	2.9	132	0.4	-25 percent
Total	19,159	100.0	37,141	100.0	14 percent

Table 2A.3 Africa Imports from Asia—Growth Rate by Commodity Group

	1999	Share	2004	Share	Annual Growth percent
Machinery and transportation equipment	5,241	28.2	12,336	32.3	19 percent
Agricultural raw food edibles	2,075	11.2	3,947	10.3	14 percent
Processed food and beverages	1,426	7.7	2,997	7.8	16 percent
Pharmaceuticals	1,851	10	3,529	9.2	14 percent
Electronics	1,457	7.8	2,607	6.8	12 percent
Coal	1,220	6.6	2,586	6.8	16 percent
Cotton, textile fibers, and yarns	1,228	6.6	2,283	6.0	13 percent
Apparel and footwear	1,165	6.3	2,087	5.5	12 percent
Agricultural raw materials, nonedibles	1,110	6	2,204	5.8	15 percent
Manufacturing of nonminerals	917	4.9	1,525	4.0	11 percent
Basic manufactured metals	286	1.5	559	1.5	14 percent
Petroleum products	269	1.4	825	2.2	25 percent
Other manufactured goods, paper, pulp, furniture, etc.	181	1	324	0.8	12 percent
Nonpharmaceutical chemicals	102	0.5	210	0.5	16 percent
Ores	35	0.2	78	0.2	17 percent
Manufacturing of non-oil minerals	27	0.1	71	0.2	21 percent
Electric machineries	13	0.1	19	0	8 percent
Total $m	18,602	100	38,184	100	15 percent

Data sources: UN COMTRADE SITC Revision 2.
Asia includes**:** Bangladesh, Cambodia, China (including Hong Kong and Macao), Indonesia, India, Japan,, Vietnam, Thailand, Rep of Korea, Maldives, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Singapore , Sri Lanka, and Taiwan.

Table 2A.4 Africa's Top 20 Exports to China: Products and Leading Exporters

	SITC Code: Name Share in Total African Exports to China (US$9,171 million)	Exporting Country Share in Total Export Value of the Product from Africa to China				
1	**3330: Crude oil** **62.20%**	Angola 46.80%	Sudan 24.66%	R. Congo 13.00%	Eq. Guinea 9.17%	Nigeria 3.07%
2	**2472: Sawlogs and veneer logs** **4.91%**	Gabon 41.17%	R. Congo 17.84%	Eq. Guinea 16.31%	Cameroon 8.17%	Liberia 7.21%
3	**2815: Iron ore and concentrates** **4.59%**	S. Africa 94.03%	Mauritania 3.54%	Liberia 1.31%	Mozambique 1.12%	
4	**6672: Diamonds** **3.33%**	S. Africa 99.27%				
5	**2631: Cotton (other than linters)** **3.28%**	Benin 21.54%	Burkina F. 17.26%	Mali 15.14%	C. d'Ivore 13.70%	Cameroon 8.14%
6	**2879: Ores & concentrat.of other non-ferrous base metals** **1.75%**	S. Africa 30.95%	R. Congo 26.73%	D.R. Congo 26.52%	Rwanda 5.90%	Nigeria 4.10%
7	**1212: Tobacco** **1.51%**	Zimbabwe 99.56%				
8	**6727: Iron or steel coils** **1.38%**	S. Africa 100.00%				
9	**6812: Platinum** **1.34%**	S. Africa 100.00%				
10	**2877: Manganese ores and concentrates** **1.31%**	Gabon 46.53%	Ghana 25.87%	S. Africa 25.61%	C. d'Ivore 1.99%	
11	**6821: Copper and copper alloys** **1.26%**	Zambia 48.36%	S. Africa 29.24%	Namibia 20.41%	R. Congo 1.27%	
12	**6746: Sheets & plates, rolled** **0.83%**	S. Africa 100.00%				
13	**6841: Aluminium and aluminium alloys** **0.46%**	S. Africa 99.80%				
14	**5121: Acyclic alcohols** **0.41%**	S. Africa 100.00%				
15	**3413: Petroleum gases** **0.41%**	Nigeria 76.12%	Sudan 23.32%			
16	**6716: Ferro-alloys** **0.38%**	S. Africa 99.99%				
17	**2871: Copper ores & concentrates** **0.37%**	S. Africa 40.67%	Tanzania 39.74%	R. Congo 13.47%	D.R. Congo 5.42%	
18	**6899: Base metals,n.e.s.** **0.36%**	Zambia 62.88%	S. Africa 26.08%	R. Congo 5.79%	Uganda 3.39%	D.R. Congo 1.86%
19	**6842: Aluminium and aluminium alloys** **0.25%**	S. Africa 100.00%				
20	**2483: Wood of non-coniferous species** **0.24%**	Cameroon 45.58%	Gabon 23.20%	R. Congo 11.92%	S. Africa 7.40%	Ghana 3.09%

Data sources: UN COMTRADE SITC Revision 2.

Table 2A.5 Africa's Top 20 Exports to India: Products and Leading Exporters

	Top 20 African Exports to India (2002-2004 Average) SITC Code: Name Share in Total African Exports to India (US$3,027 million)	Exporters in Africa >>> Exporting Country Share in Total Export Value of the Product from Africa to India				
1	9710: Gold 52.67%	S. Africa 99.90%				
2	0577: Edible nuts(excl.nuts used for the extract.of oil) 8.83%	C. d'Ivore 22.06%	Guinea B. 20.89%	Tanzania 20.52%	Benin 10.95%	Mozambique 9.17%
3	5222: Inorganic acids and oxygen compounds of non-metals 8.50%	Senegal 55.46%	S. Africa 43.65%			
4	2472: Sawlogs and veneer logs 3.73%	C. d'Ivore 34.55%	Gabon 22.34%	Nigeria 15.67%	Benin 9.55%	Ghana 4.87%
5	2631: Cotton (other than linters) 2.99%	Mali 20.96%	Tanzania 15.30%	Benin 12.71%	Sudan 9.04%	C. d'Ivore 8.85%
6	2820: Waste and scrap metal of iron or steel 2.65%	S. Africa 27.07%	Nigeria 15.40%	C. d'Ivore 6.68%	Benin 5.66%	R. Congo 4.93%
7	3222: Coal 2.05%	S. Africa 99.34%				
8	6673: Preciousstones other than diamonds and pearl 1.09%	Zambia 43.75%	Tanzania 34.95%	S. Africa 10.49%	Kenya 6.83%	Madagascar 1.67%
9	2516: Chemical wood pulp 1.08%	S. Africa 75.14%	Somalia 24.85%			
10	3330: Cruide oil 1.04%	Nigeria 70.76%	S. Africa 9.20%	Angola 7.57%	Senegal 5.87%	Sudan 3.20%
11	0542: Beans,peas,lentils 0.86%	Tanzania 59.86%	Malawi 12.71%	Kenya 11.88%	Ethiopia 7.55%	Mozambique 6.89%
12	2713: Natural calcium phosphat 0.74%	Togo 72.03%	Senegal 22.53%	S. Africa 5.44%		
13	6841: Aluminium and aluminium alloys 0.61%	S. Africa 83.37%	Nigeria 12.78%	Zambia 1.60%	C. d'Ivore 1.33%	
14	2871: Copper ores & concentrates 0.48%	Guinea 72.12%	Ghana 26.40%	R. Congo 1.35%		
15	7932: Ships,boats and other vessels 0.42%	Liberia 99.90%				
16	5162: Aldehyde-,ketone-,& quinone-function compounds 0.38%	S. Africa 98.10%	Nigeria 1.71%			
17	5232: Metallic salts and peroxysalts of inorganic acids 0.37%	Kenya 99.52%				
18	5121: Acyclic alcohols 0.37%	S. Africa 88.92%	Liberia 6.46%	Sudan 3.21%		
19	6831: Nickel & nickel alloys 0.36%	Zimbabwe 53.68%	S. Africa 44.62%			
20	5123: Phenols & phen.-alcohols 0.31%	Senegal 63.03%	S. Africa 34.99%	Nigeria 1.34%		

Data sources: UN COMTRADE SITC Revision 2.

Table 2A.6 Africa's Top 20 Imports from China: Products and Leading Importers

	Top 20 Imports from China (2002-2004 Average)	Importers in Africa >>>				
	SITC Code: Name	*Exporting Country*				
	Share in Total African Imports from China (US$7,407 million)	*Share in Total Import Value of the Product from China to Africa*				
	China to Africa					
1	**6522: Cotton fabrics,woven**	Benin	Togo	Gambia	S. Africa	Kenya
	8.45%	29.73%	10.67%	8.21%	7.52%	7.51%
2	**8510: Footwear**	S. Africa	Nigeria	Ghana	Benin	Togo
	5.34%	41.11%	13.47%	6.95%	4.82%	3.55%
3	**7851: Motorcycles**	Nigeria	Togo	Mali	Cameroon	Guinea
	4.10%	68.48%	9.71%	4.38%	3.67%	2.38%
4	**7781: Batteries and accumulators**	Benin	Nigeria	Togo	Ghana	Kenya
	3.08%	27.88%	10.50%	7.76%	7.12%	6.97%
5	**6531: Fabrics,woven of continuous synth.textil.materials**	S. Africa	Nigeria	Togo	Benin	Ethiopia
	2.94%	23.38%	22.71%	16.23%	7.53%	6.67%
6	**6534: Fabrics,woven,of discontinuous synthetic fibres**	Benin	S. Africa	Togo	Nigeria	C. d'Ivore
	2.46%	18.80%	13.30%	10.99%	10.00%	6.54%
7	**0422: Rice**	C. d'Ivore	Liberia	Tanzania	Nigeria	Ghana
	1.64%	77.16%	6.63%	4.10%	3.31%	2.22%
8	**8310: Travel goods,handbags,brief-cases,purses**	S. Africa	Nigeria	Ghana	Kenya	Tanzania
	1.48%	31.46%	25.14%	8.60%	6.34%	3.63%
9	**6560: Tulle,lace,embroidery,ribbons,& other small wares**	Nigeria	Benin	Togo	S. Africa	Gambia
	1.32%	45.70%	22.66%	14.50%	5.50%	3.60%
10	**8459: Outer garments & clothing,knitted**	S. Africa	Nigeria	Sudan	Ethiopia	Madagascar
	1.32%	58.72%	6.59%	5.20%	5.16%	4.83%
11	**7641: Elect.line telephonic & telegraphic apparatus**	Nigeria	Zambia	Ethiopia	Angola	S. Africa
	1.24%	19.35%	15.18%	13.82%	10.54%	8.38%
12	**7643: Radiotelegraphic & radiotelephonic transmitters**	Nigeria	S. Africa	Ghana	Uganda	Angola
	1.09%	32.01%	30.13%	10.87%	3.94%	3.82%
13	**6783: Tubes and pipes,of iron or steel**	Sudan	Nigeria	S. Africa		
	1.08%	94.70%	1.83%	1.17%		
14	**7162: Elect.motors & generators**	Nigeria	S. Africa	Sudan	Angola	Benin
	1.08%	61.71%	9.50%	8.16%	6.27%	2.60%
15	**6974: Art.commonly used for dom.purposes**	Benin	Nigeria	S. Africa	Ghana	C. d'Ivore
	1.07%	30.72%	13.61%	8.62%	7.29%	6.98%
16	**7611: Television receivers,colour**	S. Africa	Lesotho	Nigeria	Sudan	Madagascar
	1.07%	54.53%	14.03%	11.39%	3.38%	2.31%
17	**8423: Trousers**	S. Africa	Nigeria	Benin	Tanzania	Uganda
	1.02%	51.35%	15.11%	9.53%	8.17%	5.95%
18	**8939: Miscellaneous art.of materials of plastics**	S. Africa	Nigeria	Benin	Ghana	Kenya
	1.00%	23.96%	23.74%	7.63%	6.85%	5.16%
19	**8124: Lighting fixtures and fittings**	Nigeria	S. Africa	Ghana	Benin	Kenya
	1.00%	39.12%	21.11%	6.63%	5.63%	5.39%
20	**6991: Locksmiths wares,safes,strong rooms of base metal**	Nigeria	S. Africa	Benin	Ghana	Kenya
	0.98%	32.00%	19.18%	7.38%	7.08%	5.79%

Data sources: UN COMTRADE SITC Revision 2.

Table 2A.7 Africa's Top 20 Imports from India: Products and Leading Importers

	Top 20 Imports from India (2002-2004 Average)	Importers in Africa >>>				
	SITC Code: Name	*Exporting Country*				
	Share in Total African Imports from India (US$3,267 million)	*Share in Total Import Value of the Product from India to Africa*				
1	**5417: Medicaments**	Nigeria	S. Africa	Kenya	R. Congo	Ghana
	8.99%	25.97%	8.78%	6.26%	5.47%	5.05%
2	**0422: Rice**	S. Africa	Nigeria	C. d'Ivore	Senegal	Somalia
	8.77%	35.53%	23.17%	8.80%	6.21%	4.97%
3	**6522: Cotton fabrics,woven, bleached**	Niger	Togo	Nigeria	Benin	Ghana
	5.15%	14.02%	10.84%	10.08%	8.53%	6.86%
4	**6749: Sheets and plates of iron or steel**	S. Africa	Ghana	Nigeria	Ethiopia	Kenya
	2.57%	29.36%	12.99%	9.40%	9.27%	5.05%
5	**6974: Art.commonly used for dom.purposes**	Nigeria	Ghana	Benin	S. Africa	C. d'Ivore
	2.25%	31.62%	13.83%	12.97%	6.36%	4.91%
6	**6513: Cotton yarn**	Mauritius	S. Africa			
	2.20%	81.58%	11.66%			
7	**7853: Invalid cariages,motorized or not**	Nigeria	Tanzania	Uganda	Burkina F.	Kenya
	1.98%	19.97%	12.75%	10.21%	9.76%	7.88%
8	**6521: Cotton fabrics,woven,unbleached**	Benin	Togo	Nigeria	Ghana	Tanzania
	1.94%	10.73%	10.29%	9.62%	7.25%	6.82%
9	**6783: Tubes and pipes,of iron or steel**	Sudan	Ghana	Ethiopia	Nigeria	Kenya
	1.87%	83.76%	3.29%	1.57%	1.42%	1.12%
10	**6531: Fabrics,woven of continuous synth.textil.materials**	Mauritius	Nigeria	Togo	Malawi	R. Congo
	1.77%	17.51%	14.01%	10.48%	9.28%	8.39%
11	**7284: Machinery & appliances for spezialized particular industry**	Nigeria	Kenya	Tanzania	Ghana	S. Africa
	1.26%	31.93%	13.56%	10.43%	7.72%	7.67%
12	**7849: Parts & accessories of motor vehicles**	S. Africa	Nigeria	Sudan	Kenya	Ghana
	1.24%	45.38%	20.05%	9.24%	5.52%	2.63%
13	**0111: Meat of bovine animals**	Angola	R. Congo	Mauritius	Gabon	C. d'Ivore
	1.14%	59.09%	11.16%	9.13%	8.34%	5.20%
14	**6745: Sheets & plates,rld.thickns**	S. Africa	Ethiopia	Nigeria	Kenya	Ghana
	1.01%	29.12%	20.01%	11.06%	7.14%	4.36%
15	**7852: Cyles,not motorized**	Nigeria	Mozambique	Kenya	R. Congo	Malawi
	0.89%	25.30%	19.34%	9.58%	7.98%	5.89%
16	**6672: Diamonds**	Swaziland	S. Africa	Mauritius	C. African R.	Sao Tome P.
	0.84%	60.04%	29.07%	3.13%	2.26%	2.19%
17	**8939: Miscellaneous art.of materials of plastics**	Sudan	Nigeria	S. Africa	Kenya	Tanzania
	0.70%	14.56%	13.23%	11.01%	10.73%	9.05%
18	**6842: Aluminium and aluminium alloys**	Nigeria	Kenya	Ghana	S. Africa	Ethiopia
	0.67%	40.86%	27.40%	7.99%	6.54%	2.97%
19	**5530: Perfumery,cosmetics and toilet preparations**	Nigeria	Ghana	S. Africa	Mauritius	Sudan
	0.64%	12.95%	12.83%	9.53%	8.16%	7.65%
20	**5416: Glycosides;glands or other organs & their extracts**	R. Congo	Nigeria	Ethiopia	Kenya	Uganda
	0.61%	13.07%	11.36%	10.32%	7.88%	5.27%

Data sources: UN COMTRADE SITC Revision 2.

Table 2A.8 Key Variables in Gravity Model and Data Source

Group	Variables	Specific Data and Sources
Dependent variables	• Bilateral trade flows (aggregate merchandise exports) • Bilateral trade flows (manufactured exports)	UN COMTRADE from World Bank WITS
Base controls	• GDP (EX, IM)	World Bank, *World Development Indicator*
	• GDP per capita (EX, IM)	World Bank, *World Development Indicator*
	• Physical distance (PR)	CEPII geographical and distance data sets
	• Coastal/landlocked (EX, IM)	CEPII geographical and distance data sets
	• Common language (PR)	CEPII geographical and distance data sets
	• Colonial past (PR)	CEPII geographical and distance data sets
	• Common colonial power (PR)	CEPII geographical and distance data sets
Formal trade policies	• Trade restrictiveness in importing market (IM)	Heritage Foundation, *Economic Freedom Index*
	• Regional trade agreements between exporter and importer (PR)	World Trade Organization
	• Exporter's eligibility for preferential market access to importing market (PR)	U.S. Government and European Commission
Trade facilitation	• Port and airport infrastructure quality (EX, IM)	World Economic Forum, *World Competitiveness Report*
	• Customs efficiency (EX, IM)	World Bank, *Doing Business Indicators* (number of documents required for exporting)
	• ICT infrastructure availability (EX, IM)	World Bank, *World Development Indicator*
Domestic business environment	• Business-related administrative barriers (EX)	World Bank, *Doing Business Indicators* (composite of numbers of procedures for starting business, registering property, obtaining licenses, and enforcing contracts, using Principal Components Analysis)
	• Power infrastructure quality (EX)	World Economic Forum, *World Competitiveness Report*

Note: EX (exporting country data), IM (importing country data), PR (exporting and importing countries pair data). All variables except for the variables for costal/landlocked, common language, colonial past, common colonial power, regional trade agreements, and eligibility for preferential access to importing market, are expressed in natural log.

Table 2A.9 Coefficient Estimates of Augmented Gravity Model (OLS)

	All Merchandise Trade		Manufactured Trade	
	Exp. from Africa	Imp. to Africa	Exp. from Africa	Imp. To Africa
GDP – Exporter (i)	1.475 ***	1.210 ***	1.354 ***	1.218 ***
	(0.082)	(0.042)	(0.076)	(0.045)
GDP Per Capita – Exporter (i)	-0.056	-0.581 ***	0.205	-0.280
	(0.144)	(0.169)	(0.136)	(0.182)
GDP – Importer (j)	1.078 ***	0.857 ***	0.925 ***	0.801 ***
	(0.044)	(0.071)	(0.043)	(0.075)
GDP Per Capita – Importer (j)	-0.058	-0.059	-0.729 ***	0.035
	(0.161)	(0.104)	(0.152)	(0.111)
Contiguity (ij)	0.642	1.885 ***	1.009 *	1.323 **
	(0.429)	(0.395)	(0.396)	(0.412)
Common Language (ij)	0.383 *	0.261	1.041 ***	0.211
	(0.161)	(0.159)	(0.152)	(0.168)
Past Colonial Relation (ij)	1.229 *	0.659	1.298 **	0.962
	(0.541)	(0.505)	(0.498)	(0.524)
Past Common Colonial Power (ij)	0.128	0.745 ***	-0.106	0.874 ***
	(0.201)	(0.192)	(0.191)	(0.204)
Distance (ij)	-1.763 ***	-1.496 ***	-1.430 ***	-1.610 ***
	(0.147)	(0.135)	(0.139)	(0.145)
Landlocked – Exporter (i)	-0.430 *	0.247	-0.866 ***	0.721 ***
	(0.199)	(0.197)	(0.190)	(0.213)
Landlocked – Importer (j)	0.189	-0.902 ***	0.322	-0.624 ***
	(0.185)	(0.142)	(0.175)	(0.150)
Importer Trade Restrictiveness (j)	-0.017	-0.336	-0.451 *	-0.270
	(0.220)	(0.331)	(0.212)	(0.351)
Regional Trade Agreement (ij)	1.196 ***	0.960 ***	1.220 ***	0.475
	(0.298)	(0.284)	(0.280)	(0.302)
Preferential Market Access (ij)	0.400		0.956 ***	
	(0.214)		(0.198)	
Export Customs Procedure – Exporter (i)	-1.575 ***	-0.444	-1.711 ***	-0.591
	(0.314)	(0.249)	(0.301)	(0.264)
Import Customs Procedure – Importer (j)	0.366 *	-0.070	0.213	0.083
	(0.175)	(0.234)	(0.165)	(0.248)
Internet – Exporter (i)	0.194 **	0.230 **	0.216 **	0.150 *
	(0.072)	(0.074)	(0.068)	(0.079)
Internet – Importer (j)	-0.041	-0.036	0.117	-0.085
	(0.081)	(0.068)	(0.076)	(0.072)
Port Quality – Exporter (i)	-2.975 ***	2.311 ***	-3.158 ***	3.242 ***
	(0.497)	(0.383)	(0.470)	(0.412)
Port Quality – Importer (i)	2.000 ***	0.889 **	1.507 ***	0.911 *
	(0.343)	(0.336)	(0.330)	(0.356)
Domestic Business Procedure – Exporter (i)	-3.835 ***	-0.249	-2.835 ***	0.230
	(0.549)	(0.274)	(0.526)	(0.292)
Power Infrastructure Quality – Exporter (i)	0.226	-0.295	1.532 ***	-0.789
	(0.350)	(0.383)	(0.335)	(0.411)
No. of Observation	1420	1351	1319	1295
R Square	0.613	0.651	0.645	0.633

Source: Authors' calculations based on 2002– 2004 average figures. See Table 2A.8 for the data sources.

Note: Standard errors in parentheses. * = Statistically significant at the 10 percent level. ** = Statistically significant at the 5 percent level. *** = Statistically significant at the 1 percent level. All variables except for the variables for costal/landlocked, common language, colonial past, common colonial power, regional trade agreements, and eligibility for preferential access to importing market are expressed in natural log.

ENDNOTES

1. Portions of this analysis update earlier work on Africa-Asia trade and investment in World Bank (2004).

2. An economy that generates more than 10 percent of its GDP in primary commodities exports is classified as a ”natural resource economy.”

3. See Collier (2006).

4. OECD (2006).

5. UNCTAD (2005).

6. UNCTAD (2005).

7. Consistently we define *Africa* to mean Sub-Saharan African countries (Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Congo, D.R., Cote d'Ivoire, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe. Owing to lack of data, Liberia and Somalia are not in the sample) unless otherwise specified. Also, *Asia* means Eastern and Southern Asian countries (Afghanistan, Bangladesh, Bhutan, Cambodia, China (including Hong Kong and Macao), Indonesia, India, Japan, Vietnam, Thailand, Rep of Korea, Korea Dem Rep., Lao PDR, Maldives, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Singapore , Sri Lanka, and Taiwan).

8. EU consists of Austria, Belgium, Cyprus, Czech Republic, Demark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, and United Kingdom.

9. Such a pattern was forecast by several observers in the late 1990s, such as Thomas W. Hertel, William A. Masters, and Aziz Elbehri, “The Uruguay Round and Africa: a Global, General Equilibrium,” *Journal of African Economies* 7(2) (1998): 208–234.

10. From the perspective of Asian countries, Africa is the second-fastest growing destination of their products after East and Central Europe and the CIS countries (grown by 22 percent during 2000–2005).

11. The sectoral patterns of Africa's export growth to high-income countries during the same period of time (1990–2004) are similar to Asian countries. This implies that African exports to Asia have not necessarily replaced their exports to non-Asian OECD countries.

12. Chapter 3 discusses details of bilateral and regional trade agreements such as SACU or preferential trade arrangements for African countries such as EBA.

13. A number of papers discuss segmentation of the private sector in Sub-Saharan African countries that is based on ethnic communities. See, for example, Easterly and Levine (1997) and Eifert, Gelb, and Ramachandran (2005).

14. Chapter 5 addresses the effect of ethnic networks in trade facilitation in greater depth.

15. Wood and Berge (1997) and Wood and Mayer (2001) compare Africa's endowments with those of other regions. Countries higher up along the spectrum of the skills-resource-endowment ratio export more manufactured products relative to processed or primary goods, and a larger proportion of higher-technology manufactured products. This seems to be a compelling story for trade relations between Africa and China and India.

16. Trade services encompass (1) transportation, including land, air, and maritime; (2) tourism; (3) cross-border education; (4) foreign direct investment in banking and financial services; (5) communications and distribution; and (6) temporary migration of high- and low-skill labor, among others.

17. GIPA is a survey of FDI experts, transnational cooperation and investment promotion agencies.

18. With the ending of the quotas limiting exports from some countries under the WTO's Agreement on Textiles and Clothing and MFA, the preferential advantage provided by AGOA may not be enough to attract FDI into SSA's textiles and clothing sector.

19. For example, the 2001 investment by Citibank, the 2005 acquisition of Absa Bank Limited by Barclay's (UK), and the 2003 acquisition of DeBeers by a U.K. concern.

20. It is estimated that by 2005 Chinese FDI reached $1.18 billion in Africa, which, however, may contain FDI to North Africa. "Premier Wen's Africa tour boosts bilateral investment" www.chinaview.cn 2006-06-19 20:32:52.

21. Chinese FDI to Africa increased by 300 percent between 2003 and 2004 due to a large oil investment in Sudan.

22. These estimates are as of mid-2006 based on www.ChinaView.cn June 19, 2006.

23. Being that Mauritius is a major offshore financial center, it may often be used to pass through investments, particularly those into the financial sector, in order to take advantage of its low tax regime.

24. Mauritius being a major offshore financial center, it is difficult to determine the actual FDI source country, particularly because of pass-through investment.

25. They allow researchers to measure the gravitational and frictional factors in the bilateral trade flows. The model includes a set of control variables to measure the size of supply and demand (GDP and per capita GDP of exporting and importing countries). There are also a set of control variables to account for various distance factors, such as: geographical distance between trading pairs as well as individual exporting and importing countries (physical distance, contiguity, and landlocked); cultural and historical ties between trading pairs (common languages, common past colonial powers, past colonial relations); and economic distance between the two countries preferential trade arrangements such as regional trade agreements.

26. A critical view toward applying a gravity model to study African export performance is related to the fact that the African countries have very small share in the worldwide trade volume, so that any variation across individual African countries cannot be estimated in any meaningful way when the model is applied to the global bilateral data. To mitigate this problem, the gravity model is applied to only subsets of the global bilateral trade data, by constraining on either export or import side.

27. See table 2.A.9 for the complete table of estimated coefficients.

28. See Frankel and Rose (2002).

29. There is no strong evidence to support the claim that a preferential trade agreement will be net trade creating or that all members will benefit. Positive outcomes will depend on design and implementation (World Bank 2005).

30. For example, based on a multi-sectoral gravity model, Kahn and Yoshino (2004) found that formation of RTAs within developed countries are likely to result in more trade in energy-intensive products within trading blocs, and more trade in less energy-intensive products within trading blocs for Southern RTAs.

31. Hausman, Lee, and Subramanian (2005) and Djankov, Freund, and Pham (2006). Both applied the similar indicators of customs efficiency for global bilateral trade flows, and found evidence for significant increases in exports by improving customs efficiency in exporting products.

32. It is somewhat surprising to see that, for both aggregate merchandise trade and manufactured trade, the port quality in exporting countries in Africa has a negative impact on trade flows from African countries. At least in the bivariate setting, port infrastructure quality is positively related to export performance of African countries Given the fact that customs efficiency matters significantly in exporting African countries, there may be some interactions between customs efficiency and port quality that the model does not capture.

33. The effect of ITC infrastructures, such as the Internet, on exports by developing countries has been increasingly researched recently. The positive effect of exporters' average Internet accessibility found in this analysis is consistent with previous findings by others, including Freund and Weinhold (2004) and Clarke and Wallsten (2006). The latter found that the Internet promotes trade between North and South in particular.