

# **The Impact of China and India on Africa: Trade, FDI and the African Manufacturing Sector**

## **Issues and Challenges**

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## **Asian Drivers (China and India) and African Manufacturing: Issues and Challenges**

### **1. Introduction**

Research on the impact of China on other developing countries is still at an early stage and there still are a number of key areas where current knowledge is limited (Jenkins and Peters, 2006). The situation is even worse in the case of India. Even the scanty available literature on the subject focuses mainly on China's accession to the WTO (See for example Ianchovichia and Martin (2006) and Yang (2006) among others.) Further more, academic interest in studying the impact of China and to a lesser extent India, on African economics is just beginning to flicker. Thus, the best we could do at this stage of the study is to look at studies that address the issue of Chinese (and Indian) impact on other developing (and also developed) countries and draw lesson for our work.

In what follows we attempt to look at the impact of China and India through the vector of trade and FDI. Then we will explore the methods employed in similar studies and point out the relevant one for the African study. Based on this, an attempt to shed light on the impact of China and India on Africa in the manufacturing sector is made. We conclude the study by offering the policy and research implications of this study.

### **2. What are the Issues?: Trade and FDI Impacts of the Asian Drivers on Africa**

#### ***2.1 Trade Impact: The Asian Drivers and African Manufacturing***

##### **Competitive Impact and Distributional Implications**

According to Razmi's (2006) survey, a number of studies about the export demand for developing countries show that the elasticity of export demand is very limited. Moreover, competition among developing country suppliers in the third (usually developed country) market is becoming a more important factor than that with developed countries. This is specially so among those developing countries engaged in low-technology products. Lall and Albaladejo (2003) also noted that the Chinese competitive threat is real given its stock of skilled and productive low-cost labour complemented by rapidly growing technological capability and massive scale and agglomeration economies. High-technology products producing East Asian developing countries not only have high export demand elasticity but also compete with developed, as opposed to developing, countries (see Razmi and Blecker 2005; Razmi, 2006; Kwan, 2002). Similar results are reported by IMF using a computable general equilibrium (CGE) model (see IMF, 2004).

Stevens and Kennan (2005) noted that, countries producing goods that are highly demanded by China (such as minerals) may see export growth. On the other hand those countries exporting products what China produces (such as clothing) will see exports fall while countries importing those goods will gain from lower prices. They also stated that, if

importers also have domestic industries that are competing in local markets with Chinese exports, there will be distributional effects within the country (such as between producers and consumers) (Ibid).

Stevens and Kennan (2006) assess the impact of China by devising a method of typology which has subsequently been termed as typology of “winners” and “losers” by Goldein *et al* (2006). Accordingly, “winners” are those countries for which the number of sectors recording trade gains associated with lower costs of imports or higher prices for exports is greater than the number of sectors incurring experiencing losses due to increased competition from China in third markets or higher import prices resulting from higher Chinese demand for a given product (Ibid: 45). (The reverse is true for the “losers”.) Regarding the winners, Stevens and Kennan assess the gains from trade (due to China) to check whether the gains arise primarily from lower import costs, from greater export revenue, or from both; and conclude that all the SSA countries (except South Africa) gain primarily from lower import costs (Ibid: 39). However, this approach of appraising the impacts of the “drivers” has been criticized by Goldstein *et al* (2006) for falling short of offering a quantitative estimate of trade losses and gains; and therefore, generally for failing to provide an estimate of the overall trade impact. More importantly Goldstein *et al* (2006) also criticize the approach for not reckoning the adverse impact of cheap Chinese imports on local producers (Ibid: 45). In fact most recent studies dealing with the impact of China on other countries ignore this aspect and limit their focus on the short and medium term impact which makes their analyses a static one. ( See for example Eichengreen and Tong 2006; Qurush and Wan 2006; and Kaplinsky, 2005 among others). Kaplinsky and Morris (2006b) and Kaplinsky *et al* (2006) distinguish various dimensions of assessing the impacts of the drivers: competitive/ complementary; direct/indirect and via various vectors of impacts (such trade, FDI, finance, etc.) (See Ibid: Figure 1.). Their analysis of the clothing and textile sectors indicates that it is in trade and production fronts that the impacts of the drivers on SSA economies is observable.

Most studies found that China brought about a competitive threat on many developing countries. Palley (2003), cited in Razmi (2006), for instance found that, over the period 1978-1999, exports from the newly industrialized countries of Asia to the US market were subject to large crowding out effects from China, although the study used exports in general and not limited to manufactures as such. Razmi (2006) used an econometric approach of fitting a regression equation where the dependent variable is the real export of a developing country and the regressors are the industrial country’s real spending on imports, real effective exchange rate relative to the industrialized countries and the export of a competitor developing country in the industrialized country. This model took a standard CES production function form and is estimated using a fixed effects model and 2SLS with a panel data (where panel unit root test is also carried out). The result shows that there is a crowding out effect by competitors which became stronger in the 1990s. The crowding effects are found to vary across time periods, SITC categories and level of technological sophistication of exports (Razmi, 2006)

In general, studies investigating the impact of China and India on other countries find that China in particular is a tough competitor to those countries that produce and export goods that are similar to its exports (Eichengreen *et al*, 2004). On the other hand, Jenkins and Edwards (2005) assess the impact of economic growth and trade integration in both China and India on Sub Saharan Africa (SSA) and find that competition from China and India is not a challenge for most of the countries in the region, the only significant exception appearing to be Lesotho whose sizable garment industry is threatened by competition from these countries.

On the import front, their finding concurs with that of Stevens and Kennan (2005) who state that "China's imports are those associated with a rapidly industrializing state. Since few SSA states fall in to this category, they are not competing for world supplies of the same products". Similarly, Qureshi and Wan's (2006) result suggests that, if international demand remains constant, then the most pronounced adverse effect of a rise in the exports of China and India is a reduction in the exports of countries having similar export structures. However, the fact that international demand itself may be endogenous may invalidate their assumption of constant international demand. In any case they themselves lowered the tone of their conclusion by admitting that their analysis represents a preliminary investigation and their results are only suggestive (Ibid: 23).

The existing evidence also seem to indicate that it is becoming almost impossible for poor countries to compete with the drivers head to head in labor intensive manufactures and that the literature predicts re-specialization into primary products (at least in the medium term). To emphasize this point Kaplinsky (2005) argues that "wages are unlikely to grow in China in the medium run, at least in the export oriented manufacturing industries which have capacity to move in to the interior and be serviced by the mass of rural unemployed and under employed. And, if and when they do, India sits on a labor force of 470 million (compared to the 770 million in China), and there is a plentiful supply of labor in Indonesia and other populated Asian economies" (Ibid:17). Such depiction of the future seems to paint a picture of China that is bent on bringing the last of its rural labor force into the low-tech manufacturing sector. However the reality is that "[t]he structure of China's exports has been changing as well, away from clothing, foot wear, other light manufacturing and fuels that dominated its trade in the 1980s and early 1990s towards office machines, telecoms, furniture and industrial supplies in the 1990s and automated data processing equipment and consumer electronics in recent years" (Eichengreen *et al*, 2004:2, see also Shafaeddin, 2002). The above depiction also seems to have missed the fact that transportation costs (domestic as well as international) could trim down the competitive advantage arising from labor costs. Moreover bringing in such huge amount of labor into modern manufacturing sector implies huge infrastructural and other social costs of urbanization. In fact Shafaeddin (2002) notes that, compared to the hinterland, the labour cost in China's manufacturing sector is relatively high in costal regions of China. In general Shafaddin's (2002) analysis shows that except for raw material importing countries and few products, China's competitive threat even in the traditional labour-intensive products is exaggerated in the existing literature. Even the Chinese cheap labour story is not that strong when it is taken in the context of its relative productivity competitiveness with other countries (see Shafaddin, 2002:4-5).

The literature about the competitive threat of China is related not only to low income, labour-intensive goods exporters, but also to the relatively advanced East Asian countries such as South Korea and Taiwan that are engaged in exports of high technology goods. This is because China is fast moving towards this sector too. However, an important point worth noting here is the fact that Chinese exports depend heavily on imported technology and equipment and have high import content of primary and intermediate products (Li, 2002). This implies that the Chinese surge does not just pose a threat but also opportunity to those countries that supply it with technology, equipment and primary and intermediate inputs. Further more, according to Li (2002), while the newly industrialized East Asian (NEI) countries are undergoing further specialization in search of cost saving and better market opportunities, China is at the receiving end of their outsourcing and relocation of the sunset industries as well as some dynamic industries. This may also enable China to climb up its own industrialization ladder (Li, 2002: 5-6). Two points could be raised from here regarding

its trade impact on other countries: (1) China might be just replacing the NIEs in supplying labor intensive manufacture which makes its emergence just as an ordinary (even though very huge and fast) case of catching up industrialization and (2) that it is not going to be the world's workshop of low tech manufacture forever.

World Bank (2000) emphasized the need for most African governments to support, at least in principle, the export orientation of their manufacturing industries with aim of positioning themselves on a dynamic growth trajectory such as those in Asia. According to Mengistae and Pattillo (2004) that claim is essentially based on the idea that one can derive significant productivity gains out of exporting. The study by Mengistae and Pattillo (2004) found that export manufacturers in Sub-Saharan Africa have efficiency ( or total factor productivity, *TFP*) gains over non-exporters. However, the study couldn't establish whether these gains are due to a process of learning by doing or because more efficient producers go into exporting (although they suggest the former). The study analyzes manufacturing data from Ethiopia, Ghana and Kenya that are believed to represent the diversity of the region's manufacturing sectors and their orientation towards exporting<sup>1</sup>.

Mengistae and Pattillo's (2004) empirical analysis revealed that efficiency (*TFP*) of exporting manufacturers is 17% higher than for non-exporting firms across the three countries. The authors show that the average premium for direct exporters is close to 22%, a figure, the authors' claim, that underestimates the premium for those that export to destinations outside Africa. They found the productivity premium for direct exporters outside Africa that reaches a staggering 42% (see Mengistae and Pattillo, 2004: 330-334). The study does not claim to determine the causality between productivity and exporting but, the authors' argue, their finding is sufficient enough to warrant a support for open trade and an external trade regime that supports export orientation. Thus, there is a supporting empirical evidence for export-oriented development strategy at least from productivity perspective. There is therefore a need to blend such export orientation with the policy of how to cope with the pressure of the Asian drivers.

Given the importance of export orientation to Africa as we noted above, if China is putting a competitive threat not only on low-income countries but also on the relatively advanced developing countries, its threat to African manufacturing exports could be even bigger. This proposition, however, requires understanding the competitive position of African manufacturers. It also requires the nature of manufacture exports to Africa. If manufacture imports are capital and intermediate goods, their impact could be different form that of finished consumer goods. It is also interesting to examine whether African manufactured exports are in good shape to compete with China and India in the third market. This question relates to the challenges of manufacture exports in Africa. In the context of examining the implication of China's accession to WTO on developing countries, Shafaeddin(2002) notes that, as far as African countries are concerned, except for North Africa and to some extent Zimbabwe, Kenya, Tanzania and Malawi, there seems to be no competitive threat to Africa in the short to the medium term. This is because not only African export structure is different from that of China but also the countries noted above are generally in good shape to compete with China (Shafaeddin, 2002). After carrying out an econometric analysis, Elbadawi (1998) made an empirical investigation of the determinants of manufacture exports in Africa. He

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<sup>1</sup> Kenya represents one of the strongest export-oriented manufacturing sectors in the world, with 25% of the manufacturing sector actively engaging in export, while Ethiopia represents countries of the region that are actively engaged in import substitution [only 3.7% of the establishments engaged in exports]. Ghana represents countries in between the two extremes.

noted that the African literature puts the determinants of competitive manufacture exports from Africa to depend on the nature of *endowment* (Wood. and Mayers, 1998; Wood and Berg, 1997; Wood and Owens, 1997) *transaction cost* (Collier, 1997) and *real exchange rate competitiveness* (Elbadawi and Helleiner, 1998). Elbadawi (1998) found that the evidence strongly corroborate the ‘transaction cost theory’ although real exchange rate competitiveness is a pre-requisite for success in exporting. (Elbadawi, 1998: 13).

### **Distributional Implications**

The impact of China and India on Africa may have also another dimension that may arise from the low price of imports from China and India both in consumer and producer goods. Here the consumers may gain from the cheap imports while producers may lose due to competitive pressure although they may get cheaper supply of producer goods. Employees of collapsing firms, which fail to withstand competition, may also lose. Government may lose (or gain) on tariff revenues and lose in domestic income and indirect tax revenue.

Given the basket of goods consumed by the different strata of the population, the source of import of producer goods by local firms, the poverty and income distribution implications may vary across social strata. Given the implication of such change for political and social change, this is an area worth studying.

### **Complementary Impacts and Primary Sector Locking Effect on Africa**

On the other side of China’s and India’s competitive threat lies the possibility of complementarities to a possible growth of African economies. This is in particular true since most African countries are primary commodity producers which may benefit from a surge in demand for primary commodities from China’s and India’s growth. The possible danger of this is its implication for industrialization in Africa if it locks African countries in primary goods productions in a perpetual manner.

Eichengreen *et al* (2004) took the analysis of the complementarities/competitive issue between China and its neighbors, using a gravity model. Their results indicate that countries at different level of development are affected very differently. Whereas an increase in China’s output positively affects the exports of its high-income neighbors, it negatively affects those of the less-developed countries in the East Asian region (Ibid). The following quotation from Eichengreen *et al* (2004) summarizes the issue:

If the addition each year of another medium sized emerging market to the global economy drives down the world market prices of labor-intensive manufactures, this will heighten the incentive for countries to move up the technology ladder into the production of more technology-intensive less labor-intensive exports in order to better insulate themselves from Chinese competition.... In contrast, countries that produce raw materials and capital goods utilized intensively in Chinese manufacturing may wish to specialize further in these areas (Eichengreen *et al*, 2004: 3-4).

Some authors seem to view such a prospect as beneficial to developing countries (e.g. Kaplinisky, 2005; Ianchovichina and Martin, 2004; World Bank, 2004). This, they argue, is because, unless a country’s exports face direct competition with those of the 'driver', their terms of trade will tend to improve (Since growth in demand for primary commodities drives up their world prices while increases in the manufactured exports of the drivers drives down prices of manufactured imports.) Ianchovichina and Martin (2004) employed a GTAP model

with some adjustments and noted that “increases in imports by China create market access opportunities for countries exporting to China. Increases in exports from China create potential terms of trade gains as China’s improved efficiency lowers the cost of imports from China to its trading partners.” (Ibid: 54). Ianchovichina and Martin (2004) also discussed the indirect (multiplier) effect of growth in Chinese demand through increased import demand from China’s closest trade partners and found it to be positive. Mayer and Fajarnes (2005) are even more convinced with this prospect.

However, the fact that increasing commodity demand from China (and to some extent, India) will tend to push developing countries to “re-deepen” their specialization toward commodities is worrying because such products are traditionally characterized by a strong price volatility (Blazquez – Lidoy et al, 2004:29-30), secular deterioration of terms of trade as well as limited scope for technological development. Further specialization in primary production in the case of African countries which is implied in the discussion above leads to what Jenkins and Peters (2006) fear about “de-industrialization with potentially deleterious effect on technology development and long term growth” (Ibid.: 4-5).

However, Lall and Abaladejo (2003) argue that China may gain market share faster than a neighbor by taking inputs from it for further processing; or it may gain market share at its expense but with the export activity under taken by enterprises from the neighbor. In the former case, specialization within integrated systems allows the simultaneous growth of both sites and strengthens the system as a whole (Lall and Abaladejo, 2003: 34). In the latter case, the neighboring country, (say, with higher wages) may be losing its competitive edge but its enterprises are able to exploit their competitive advantage in other locations; and if the activity would have died out in the home country with out this relocation, the ‘threat’ from China actually yields a net benefit via out ward FDI by its enterprises (Ibid). This is more or less the prediction of what is generally known as the Flying Geese Model (FGM) of industrialization and catch up (see below).

The implication of the above analysis for Africa is the following. Since most African countries are not producers and exporters of the products in which China and India are competitive (i.e. labor intensive manufactures), their negative impacts on African economies are limited. Given this scenario, Stevens and Kennan (2005) stress the importance of answering the question as to whether or not those countries that are not already exporting labour-intensive manufactures are likely to have been able to enter the pre-China value chains in a sustainable and economically advantageous way over the medium term. We may add here, that answering the question as to whether or not the collapse of the existing inefficient (compared to their Chinese competitors, nevertheless) domestic manufacturers is a desirable outcome in terms of future industrialization prospects, compared to the terms of trade gains resulting from the surge in the growth of Chinese and Indian economies.

To sum up the consensus in the literature regarding the trade impact of India and China on other countries we refer to Qureshi and Wan’s (2006) classification of impacts: (1) the ‘complementarity effect’, i.e. the growth of exports to China and India by the rest of the world due to an increase in demand in these countries; (2) the ‘international competitive effect’, i. e. increased competition from China and India from exports in third markets; and (3) the ‘domestic competitive effect”, i.e. increase in competition from China and India in domestic markets. We may add here their effect on the trend of global division of labour or specialization. (See also Jenkins and Edwards, 2005.) Industrialized (and industrializing countries) will find it in their interest to move up the technology ladder as fast as possible to



avoid direct competition and to benefit from capital exports to the drivers. On the other hand, those countries that are exporters of commodities demanded by the drivers will find it attractive to specialize even more on those products. This might be at the possibility of de-industrialization. The latter issue points at the need to look at the raw material supplying role of African from a dynamic gain and industrialization strategy perspective. These possible costs and benefits of the Asian drivers is summarized by Kaplinsky *et al* (2006) and given as Figure 1.

**Figure 1: China and SSA: An elaborated synthetic view of the three main channels complementary-competitive and direct-indirect impacts**

		<b>Direct</b>	<b>Indirect</b>
<b>Trade</b>	<b>Complementary</b>	<ul style="list-style-type: none"> <li>• Inputs for industries</li> <li>• Cheap consumption goods</li> </ul>	<ul style="list-style-type: none"> <li>• Higher global prices for SSA exports</li> <li>• (Locking SSA in primary sectors)</li> </ul>
	<b>Competitive</b>	<ul style="list-style-type: none"> <li>• Displacement of existing and potential local producers by cheap Chinese products</li> </ul>	<ul style="list-style-type: none"> <li>• Competition in external markets – falling prices and falling market shares</li> </ul>
<b>Production and FDI</b>		<b>Direct</b>	<b>Indirect</b>
	<b>Complementary</b>	<ul style="list-style-type: none"> <li>• Chinese FDI in SSA, particularly in fragile states</li> <li>• Cheap and appropriate capital goods</li> <li>• Technology transfer</li> <li>• Integration in global value chains, particularly in clothing</li> <li>• Low-cost infrastructure</li> </ul>	
	<b>Competitive</b>	<ul style="list-style-type: none"> <li>• Displacement of existing and potential local producers</li> <li>• Less spin-off to local economy than other foreign contractors</li> <li>• Use of scarce resources</li> </ul>	<ul style="list-style-type: none"> <li>• Competition for global FDI and production platforms</li> <li>• Disinvestment and relocation by other foreign investors (for example, clothing and furniture)</li> </ul>
<b>Aid</b>		<b>Direct</b>	<b>Indirect</b>
	<b>Complementary</b>	<ul style="list-style-type: none"> <li>• Grants and concessional finance</li> <li>• Technical assistance</li> <li>• Training</li> </ul>	
	<b>Competitive</b>		Chinese aid to Latin America creates productive capacity which competes with SSA producers and lowers export prices

Source: Kaplinsky (2006).

**The Aggregation Effect (The Adding-up Effect):**

As Razim (2006) noted, when we take the nation state as a unit of analysis, there is a distinct possibility for (i) immiserizing growth along the lines of Bhagwati (1958), and (ii) change in the very nature of the manufacturing towards what Kaplinsky (1993) called commoditization of manufactures (Razim, 2006: 20).<sup>2</sup>

There is also the related famous adding-up problem and 'the fallacy of composition' in policy advice (see Alemayehu 2002). When virtually all developing countries were advised to undertake the policy of liberalization, their simultaneous action would result in what is known as the "adding-up effect"<sup>3</sup> and the "fallacy of composition"<sup>4</sup> in policy advice (Balassa, 1988; Panagariya and Schief, 1990; Akiyama et al, 1993; Coleman and Thigpen, 1993; Goldin et al, 1993; Akiyama and Larson, 1994; Schief, 1994; Gilbert and Varangis, 2003<sup>5</sup>). In other words, the simultaneous increase in exports by all developing countries would shift the global supply curve. Given inelastic world demand for commodities (Akiyama and Larson, 1994; Schief, 1994; Gilbert and Varangis, 2003), this would lead to price declines. If the effect of price declines is more pronounced than the effect of quantity increase, then export revenues would decline and hence real welfare loss for the producers (Panagariya and Schief, 1990; Akiyama et al, 1993; Coleman and Thigpen, 1993; Goldin et al, 1993; Akiyama and Larson, 1994; Schief, 1994; Gilbert and Varangis, 2003). The issue of the adding-up effect was in fact originated from Johnson (1958, previously in 1953), where he showed that expansion of an economy may lead to worsening of the terms of trade against it, in the course of international trade. It was also raised by Bhagwati (1987, previously in 1958) in terms of 'immiserising growth', in the sense that the growth-induced deterioration in the terms of trade would outweigh the primary gains from trade. China and India's growth could have similar effect on Africa's manufactured exports, given the sheer size of these economies and their growing dynamic production capability.

In the context of manufacture exports from developing countries, Mayer (2003) puts the gist of the argument as follows: expanding exports by a small developing economy might be viable but if all, in particular large, developing countries try to increase their manufactured (especially labor-intensive) exports, terms of trade would decline to such an extent that the benefits of any increase in the volume of exports is more than offset by losses due to lower export prices (Mayer, 2002: 875). Mayer (2003) identifies three distinct versions of this argument: the first originating from Cline (1982) based on potential protectionist tendencies in developed countries; the second based on the contention that the elasticity of demand for a group of countries is smaller in absolute value than the corresponding elasticity for an individual developing country; the third highlights the general equilibrium nature of the fallacy of composition (*Ibid*: 876).

Notwithstanding the importance of the adding-up effect in primary commodities, the empirical study on the adding-up effect in manufactures by Martin (1993) (cited in Schief,

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<sup>2</sup> The sense in which "commodity" is defined here means a product (or service) where there are low entry barriers including manufacturing in EPZs using labor intensive methods. This implies that even traditional commodities could be 'de-commoditized' by way of raising entry barriers (e.g. Jamaican Blue Mountain Coffee). See Kaplinsky (1993, 2005) on these issues.

<sup>3</sup>The adding-up effect refers to the concern that if several developing countries expand their exports simultaneously, they will face a decline in their terms of trade that their export revenues and their real incomes will fall (Panagariya and Schief, 1990: 2; Schief, 1994:1).

<sup>4</sup>The phrase "fallacy of composition" refers to the failure of policy analysis to identify situations in which individual and collective interests diverge (Goldin et al, 1993:160).

<sup>5</sup> See Mayer (2003) for a review of the literature related to the 'fallacy of composition' or adding up problem.

1994:4) shows that the adding-up problem is not relevant for developing countries' exports of manufactures once general equilibrium effects and intra-industry trade are taken in to account ( see Alemayehu and Melesse, 2006). More over, since different countries are characterized by different initial conditions, endowments and policy postures, embarking on manufactured exports by these countries would presumably mean different countries producing goods with different attributes at different points in time, even in the hypothetical case of many countries embarking on expansion of manufactured exports simultaneously (Ranis, 1985; Athokorala, 2000). Under the context of the issue at hand, the implication of this line of argument here is that differences in endowment, initial conditions and policy stances with respect to the drivers and each other make the likelihood of head to head competition in production and export of manufactures slim. However, in case of head to head competition, China becomes a threat to African producers not due to the 'fallacy of composition' (which involves decreases in prices due to simultaneous expansion of export supply) but because China alone is big enough to drive down international manufactures prices as was discussed earlier.

## **2.2 FDI Impact: The Asian Drivers and African Manufacturing**

Here again, the literature in relation to Africa is limited. However, there is a growing interest to understand the impact of China and India on FDI. This is particularly so because China in particular has been a leading destination for FDI (related to Manufacturing) by producers seeking to capitalize on its large domestic market and low labor costs (Eichengreen and Tong, 2005)..

The theory of determinants of FDI covers a range of explanations (see Alemayehu 2002): the pure capital movement theory (Iversen, 1935 and Tobin, 1958, both cited in Agarwal, 1980; MacDougall, 1960), the product cycle theory (Vernon, 1966; Krugman, 1979), theories of industrial organization (see Hymer 1960, 1976; Kindleberger, 1969; Agarwal, 1980; Helleiner, 1989; Dunning, 1993), the stagnation thesis of radical economists (see Baran and Sweezy, 1966; Magdoff, 1992) as well as other political considerations. In the African context all the theories except perhaps 'industrial organization', may not be relevant to understand the determinants of FDI .The concentration of Multinational Corporations in the mining sector of most African countries and, to a good degree, the importance of the colonial history in determining their spatial pattern might be taken as lending support to the importance of this approach. In fact Alemayehu (2002) has found supporting evidence for this in African context.

Be such theoretical arguments as they may, according to Jenkins and Peters (2006) there is a merit in looking at FDI distinguished by their motivation: natural resource-seeking, market-seeking or efficiency-seeking. In the African context, such distinction is very important to understand the FDI both from the drivers and other traditional source. This point becomes clearer when we look at the various channels through which FDI flows from the Asian drivers (and to some degree from) may affect African countries that are identified by Goldstein *et al* (2006). These includes: (1) direct competition for FDI (or what is commonly known as FDI crowding out by the drivers); (2) indirect consequence of the rise in the price of commodities on FDI flows; (3) interest of Chinese and Indian multinationals to invest in Africa; and (4) opportunity for African FDI in China and India (see Goldstein *et al* 2006; Jenkins and Peters, 2006).

Discussing the crowding out effect, Goldstein *et al* (2006) stress that as much as FDI in SSA is geared toward resource extraction (resource-seeking) and domestic market (market-seeking), China does not pose a direct (and significant) threat to Africa. In relation to the more indirect channel, the authors argue that the commodity booms that are at least partly fueled by Chinese and Indian demand are making Africa more attractive to “resource and raw-material-seeking” FDI (Goldstein *et al*, 2006:54-55). Goldstein *et al* (2006) also noted that African investments in China and India are basically insignificant and limited to those made by South African companies (Ibid: 64).

To date, the analyses of Chinese impact related to FDI has focused on the question as to whether or not China is attracting FDI and hence is crowding out FDI destined to other countries, mostly Asian countries (See for example Mercereau, 2005). Eichengreen and Tong (2005) used a gravity model to assess whether or not China is in fact crowding out FDI destined to other countries. Their findings indicate that there is little evidence that China’s FDI creates problems for other developing countries by limiting their own access to FDI. “If any thing, there is some evidence that developments making China more attractive destination for FDI also make other Asian countries attractive destinations for FDI (Ibid : 15-23). Eichengreen and Tong (2006) performed a similar exercise (in terms of the research question and methodology) and conclude that whether China’s large and growing receipts of FDI are encouraging or discouraging FDI in other countries depends on whether that investment is horizontally or vertically oriented and specifically whether the countries are linked to supply chains with China. They find that countries that compete with China for horizontal FDI find it more difficult to attract FDI as a result of China’s emergence while countries that are potentially attractive destinations for vertical FDI find it easier, especially in components and intermediaries, to attract FDI (Eichengreen and Tong, 2006:82). Mercereau (2005) contends these results, however.

In general it seems that the effect of the drivers with respect to FDI depends on issues of competition vs. complementarity (horizontal vs. vertical FDI, respectively) and the location of each country on the supply chains of the drivers. It also depends on the nature of FDI coming from the drivers. Thus, it would be instructive to ask whether the FDI flow is resource seeking, efficiency and market seeking etc. It would be important to distinguish project aid, FDI in infrastructure; and construction of infrastructure arising from Chinese firms winning commercial tenders in SSA countries. Moreover, most FDI from the Drivers is mainly extended to fragile states such as Sudan, DRC and Angola. It is also from parastatals which have access to low-cost capital so that the investors have long planning horizons. Taking the implication of this in analysis is paramount importance.

There is also a strand of the literature that used what is called the Flying Geese Model (FGM) of industrialization and catch-up to study the pattern of FDI among Asian countries that includes China and India. The model shows how countries seek to upgrade their industrial structures through augmenting their endowment of capital and technological capabilities and move up the technological ladder (Kwan, 2000: 2). The FDI that emerges in the context of such pattern is called “pro-trade” FDI because the leader exports capital and capital goods in return for less-advanced, labor-intensive products from the follower which implies expanded trade and “FDI-led growth” (Kojima, 2000:376). Has the emergence of China disrupted the FGM pattern of industrialization? Based on a comparison of the trade structures among Asian nations, Kwan (2002) finds that they are broadly in line with their respective levels of economic development and therefore the pattern has not been disrupted.

Looking at the emergence of the drivers through the lens of the FGM implies that the kind of FDI China is amassing is 'market' and most importantly 'efficiency seeking' type which originates from 'sun-set' industries of the more advanced countries. Leaving aside what this means to those countries, the implication of this phenomena to other developing countries is that, the emergence of the drivers should be viewed as just change of source of manufactured imports (albeit with some decreases in their prices due to China's higher efficiency compared to its predecessor Tigers). In the domestic manufacturing front of countries such as those in Africa, this means that industrialization aspirations will have to be postponed and efficiency and market seeking FDI will continue to shun such places in the short and medium-terms. This will be the case as long as the drivers can keep their competitive edge in low technology industries, unless the preferential market access granted by developed countries (such as 'Every Thing But Arms' and AGOA), and tariff jumping FDI and proximity to rich economies could over-turn the cost disadvantages of countries in Africa. Nevertheless, the long-term might hold a very different picture: the pace at which the drivers are changing the technological structure of their production and exports, rising costs of locating export oriented production in China, Africa's proximity to European and Middle Eastern consumer markets and a host of other factors might help Africa to become the next 'goose' in the long run. There are signs that such combination of factors have already began to appear. Asian countries are increasingly providing essential inputs (and components) to Africa's growing manufacturing sector, most notably, its textile and apparel sectors, and in some cases, its automobile sector (World Bank: 2004). Further more, World Bank (2004) identifies three forms of Asian investment in Africa which corroborates the above observation: (1) investments aimed at supplying Asia with natural resources and processed raw materials; (2) investments that target African domestic market which could get a boost via effective regional integration; and (3) investments aimed at supplying the international markets such as the EU and the US motivated mostly by low-labor costs plus favorable trade access given to African countries in those markets.

If African countries are to compete with China and India as a possible destination of FDI, the prospect for Africa is extremely limited. This is because, first, a good part of the FDI flows to China and India comes from the overseas Chinese and Indians whose motive for their investment goes beyond simple economic return. Second, as is noted by Srinivasan (2006), the Export Processing Zones (EPZs) of China offer many opportunities for investors such as allowing 100 percent foreign ownership, freedom of managers to fire and hire as they see it fit, provision of excellent transport and communication infrastructure, as well as the rapid urbanization and its agglomeration effect. Although India lags behind on this, it is working hard to create such EPZs lately. These fundamentals for attracting FDI are way behind in Africa and are unlikely to change dramatically in the near future.

In sum, we noted from the discussion so far that the AD's have both competitive and complementary (both direct and indirect) impact on African manufacturing. The central issue that we need to research is the implications of this on growth, distribution of income, governance and the environment.

### **3 What do we Know and Do not Know?: An Overview of the African Evidence & its Implication**

### 3.3 The Pattern of Trade between Asian Drivers and Africa

#### 3.3.1 The Pattern of Trade and Its Possible Effect

Table 4.1 shows the extent of African countries involvement in the markets of China and India. For the period 1999-2001 we note that the share of imports of China from African countries in its total imports from developing countries was around 3 to 5 percent, that of India being about 10 percent. These figures are not that big when compared to other trading partners of Africa such as the European Union (EU). Among individual African countries South Africa, Angola, Gabon and Equatorial Guinea, in the order of importance, are found to be important exports to China while Nigeria, South Africa and Morocco, in the order of importance, are found to be important trading partners to India. A further analysis shows that, except for South Africa, the other countries are exporting primary commodities (oil in particular) to these countries. Similarly the figures for the year 2003 in Table 4.1 show the importance of these exports to China and India for individual African countries by showing their share in total export of the African country in question. Thus, exports to China constitute 40 and 23 percent of the exports of the Sudan and Angola, respectively, while exports to that of India constitute 13 percent of Senegal's export and about 10 percent of the exports of Nigeria and Tanzania.

As can be read from Table 3.2 the imports of China from its important African trading partners are mineral and petroleum products, except from Mozambique which supplies timber to China. India's imports are relatively diversified. It imports labour-intensive agricultural products from Mozambique, mineral and petroleum from Nigeria, Somalia and Sierra Leone, and agricultural products from Somalia and the Sudan.

Table 4.1 Imports of China and India from Africa (Country shares as % of total imports from Africa)

	China				India			
	1999	2000	2001	2003*	1999	2000	2001	2003*
Developing Countries	74829.7	111565	117312	0	26859.2	30670.1	30680.7	
Africa	3.11	4.87	3.97		10.32	9.71	9.46	
Algeria	2.68	0.48	1.50		0.67	0.78	0.79	
Angola	15.30	33.95	15.50	23.20	0.00	0.00	0.00	0.00
Benin	0.10	0.02	0.00		1.28	1.36	1.55	
Cameroon	3.28	2.54	3.94	4.40	0.45	0.33	0.59	0.30
Congo, Dem. Rep. of	0.06	0.02	0.17	2.20	1.55	1.66	1.87	0.00
Congo, Republic of	2.58	5.96	3.90		0.23	0.26	0.29	
Côte d'Ivoire	0.34	0.13	0.17		2.52	3.43	2.93	
Equatorial Guinea	7.19	5.89	10.92		0.01	0.01	0.01	
Gabon	12.01	6.21	5.57		0.35	0.40	0.44	
Guinea-Bissau	0.01	0.00	0.00		1.12	1.20	1.36	
Kenya	0.21	0.07	0.13	0.30	1.16	1.24	1.40	1.40
Morocco	2.39	1.07	1.81		13.82	14.79	9.70	
Mozambique	0.14	0.16	0.24	2.30	1.27	0.66	0.13	2.10
Nigeria	7.85	5.66	4.88	0.50	39.92	46.05	50.97	9.90
Senegal	0.02	0.03	0.01	1.40	5.23	3.25	3.68	13.00
South Africa	37.06	19.11	25.18	4.60	16.13	13.82	13.71	4.20
Sudan	2.29	13.48	20.14	40.90	0.17	0.18	0.20	3.00

Swaziland	0.00	0.00	0.15		0.04	0.04	0.05	
Tanzania	0.25	0.09	0.07	2.60	4.49	3.65	4.13	9.90
Tunisia	1.22	0.04	0.07		6.52	4.11	3.11	
Zambia	0.76	1.28	0.77	1.70	0.95	0.40	0.46	3.60
Zimbabwe	1.91	1.89	2.47		0.58	0.44	0.46	

IMF DOT 2003 and DFID 2005

Note (a) Share of China and India imports form each African country in total imports from Africa by China and India. The Africa's figures are as share of the driver's import from all developing countries. The figure for Developing countries is in millions of dollar at cif price.

\* (b) Column 3 for 2003 refers the share of China and India in exports of selected African countries. It is based on DFID (2005).

Table 3.2 Structure of China and India' Imports form Selected African Countries, 2003 (%)

<b>Structure of China Imports form Selected African Countries, 2003 (%)</b>							
	Angola	Mozambique	Nigeria	Somalia	South Africa	Sudan	
Labour Intensive Agriculture	0.0	0.1	0.0	0.0	0.3	0.0	
Other Agriculture	0.0		0.7	100	0.9	0.7	
Forestry (Timber)	0.0	99.9	0.8	0.0	2.0	0.0	
Mineral and Petroleum	100.0	0.0	97.0	0.0	34.3	99.3	
Labour Intensive Manufacture	0.0	0.0	1.3	0.0	0.6	0.0	
Other Manufacture	0.0	0.0	0.1	0.0	61.8	0.0	
<b>Structure of India's Imports form Selected African Countries, 2003 (%)</b>							
	Mozambique	Nigeria	Sierra Leone	Somalia	South Africa	Sudan	
Labour Intensive Agriculture	93.9	0.0	3.0	0.0	0.8	0.0	
Other Agriculture	3.5	0.0	0.9	24.1	0.5	53.9	
Forestry (Timber)	0.0	0.0	3.8	49.8	2.0	0.1	
Mineral and Petroleum	2.0	100.0	66.0	18.6	4.9	12.9	
Labour Intensive Manufacture	0.0	0.0	3.7	6.4	0.3	10.6	
Other Manufacture	0.0	0.0	22.6	1.2	91.4	22.6	

Source: DFID 2005 based on UN COMTRADE data

Table 3.3 shows the export of China and India to Africa. As the share of the total export of China to all developing countries (shown in the fourth row of Table 3.2) the African share is about 3 to 4 percent between 1999-2001. The comparable figure for India ranged from 8 to 10 percent. Important contributors or markets among African countries are South Africa, Nigeria, Benin and Cote d'Ivoire, in the order of importance, for China; and South Africa, Nigeria, Mauritius and Ethiopia for India. In Table 3.3 the columns for the year 2003 show the share of imports from China and India in the total imports of selected African countries. We learn from that column that imports from China constitute 1 to 14 percent of imports of these African countries, the highest share being registered for Sudan followed by Ghana and Nigeria. Imports form India constitutes 1 to 10 percent of total imports of these selected African countries. The highest market for India is found to be Somalia, followed by Tanzania and Uganda.

As can be read form Table 3.4, except for India's exports of agricultural goods to Somalia which constitutes about 63 percent of India's exports to Somalis, China and India's exports to Africa are largely manufacture goods which range from 10 to 52 and 12 to 21 percent of exports of China and India, respectively, to these selected African countries.

**Table 3.3 China and India's exports to each African country as proportion of their total exports to Africa.**

	China				India			
	1999	2000	2001	2003*	1999	2000	2001	2003*
Developing Countries	83219	108208	116516		15521.5	18745.9	19967.6	
Africa	3.96	3.84	4.33		10.47	8.64	8.96	
Algeria	4.85	4.17	4.41		1.64	2.05	2.00	
Angola	0.50	0.81	0.91	3.50	0.72	0.83	0.83	1.5
Benin	4.83	8.92	10.31		0.88	1.02	1.01	
Cameroon	0.61	0.55	0.58	4.80	0.72	0.41	0.53	1.7
Congo, Dem. Rep. of	0.57	0.44	0.26	2.70	1.48	1.71	1.71	1
Congo, Republic of	0.33	0.44	0.76		0.59	0.75	0.67	
Côte d'Ivoire	6.00	5.37	5.11		1.83	0.99	1.23	
Djibouti	1.16	1.30	0.94		0.56	0.64	0.64	
Ethiopia	1.62	1.34	1.56	6.40	4.94	5.70	5.68	3.2
Gambia, The	1.73	1.48	1.44		0.47	0.54	0.54	
Ghana	3.32	2.55	2.89	9.10	3.37	3.89	3.89	4.6
Guinea	1.40	0.82	0.87		0.93	0.60	0.48	
Kenya	3.05	3.21	2.75	6.40	8.22	9.50	9.46	5.8
Lesotho	0.11	0.25	0.33	2.20	0.01	0.01	0.01	2.7
Madagascar	1.23	1.72	1.44		0.56	0.81	0.80	
Malawi	0.15	0.17	0.09	1.90	0.89	1.02	1.02	6.3
Mauritius	2.16	2.02	1.73		10.47	10.31	10.26	
Morocco	7.70	6.69	5.94		0.19	0.22	3.40	
Mozambique	0.57	0.60	0.44	2.80	1.14	1.03	1.15	3.7
Namibia	0.22	0.20	0.42	1.90	0.16	0.21	0.23	2.3
Nigeria	12.01	13.24	18.18	7.10	11.81	14.82	13.35	2.5
Rwanda	0.05	0.08	0.06	1.10	0.41	0.47	0.47	1.6
Senegal	1.19	1.24	1.04	2.70	3.15	1.40	1.39	2.2
Sierra Leone	0.13	0.21	0.24	3.10	0.20	0.23	0.23	2.3
Somalia	0.01	0.02	0.02	1.00	1.50	1.73	1.73	9.7
South Africa	26.11	24.43	20.79	5.90	21.26	15.66	13.70	1.5
Sudan	6.96	3.82	4.36	14.20	3.06	3.53	3.53	4.2
Tanzania	1.93	2.07	1.79	9.10	5.29	4.98	4.96	7.6
Togo	2.13	1.94	2.15		0.19	0.25	0.27	
Tunisia	2.95	2.33	2.10		2.26	2.44	2.26	
Uganda	0.32	0.35	0.32	5.10	2.95	3.40	3.40	7.4
Zambia	0.25	0.79	0.77	2.70	0.97	0.90	0.90	2.2
Zimbabwe	0.83	0.77	0.66		1.80	1.06	0.63	

IMF DOT 2003 and DFID 2005

Note (a) Share of China and India exports to each African country as proportion of China and India's exports to Africa. The Africa's figures are as share of the driver's import from all developing countries. The figure for Developing countries is in millions of dollar at fob price.

• (b) Column 3 for 2003 refers the share of imports from China and India in total imports of each African country and obtained from DFID (2005).



**Table 3.4 Share of Labour-Intensive Agricultural Products and Manufactures in Exports from China and India to Selected African Economies, 2003 (%)**

	China		India	
	Agricultural	Manufactures	Agricultural	Manufactures
Ethiopia	1.2	34.0	1.4	12.1
Ghana	5.7	46.7	4.8	20.8
Kenya	2.7	51.9	3.9	21.3
Nigeria	0.7	31.8	5.9	15.8
Somalia	0.0	10.1	62.3	27.1
Sudan	0.6	14.8	5.0	18.1
Tanzania	5.0	32.6	1.8	17.5
Uganda	0.0	51.5	1.2	18.5

Source: DFID (2005)

In a more detailed manner and using a high degree of disaggregation a DFID study (DFID 2005) has attempted to examine the pattern of trade between China and India on the one hand and 21 African countries that has a strong trade linkage with the Asian drivers on the other. An examination this pattern of trade disaggregate by the level of technology and using the UN COMTRADE data shows the following major trends: (see DFID, 2005)

First, in all the 21 African countries imports from China and India constitute manufacture goods that include labour-intensive textile, garments and other manufactures. In the 21 countries such imports constitute 5 to 80 % of imports from these countries. Second, exports from Africa to China and India are generally non-manufactures such as agricultural products, forestry and minerals and petroleum. Finally, manufacture exports from Africa to China and India is limited to few African countries. This list includes: Botswana (veneers, plywood, wood works to China and India), DRC Congo (medicinal and pharmaceutical products to India); Ethiopia (leather and textile Yarn to China and India), Kenya (machinery, equipments and parts for specialized industries to China and leather and inorganic chemicals and precious metals to India), Malawi (woods and wood products to China and pearl, precious stones to India), Lesotho (textile fabrics to China and motor vehicle part to India), Namibia (pearl, precious stones to both China and India), Senegal (inorganic chemicals, hydrocarbons and derivatives to India), South Africa (pearl, precious stones, ingots, plates and sheet of iron or steel to China; and gold, inorganic chemicals, aluminum to India), Tanzania (pearl, precious stones to India), Sudan (leather, rotating electric plant, inorganic chemical to India), Zambia (leather, manufactures of base metal, copper to China; and pearl, precious stones, copper, non-ferrous base metals, manufactures of base metal and aluminum to India).

It is interesting to note from Tables 4.1 to 4.4 and the DFID study noted above that imports of China and India are largely related to primary commodities such as petroleum and mineral resource while their exports to Africa are manufactured goods. The second important point to note is that there is a high correlation between the existence of African countries exports to India and China and probability of imports from china and India to these African countries. Finally, the information in the tables above is suggestive of the fact that the existence of sizable overseas Chinese and Indians in a particular African country may have a positive impact on the pattern of trade between an individual African country and China and India. It is important to note the implication of this pattern of trade for:

- (a) possible locking of African countries in specialization in primary commodities with all its short term benefits and long term problems
- (b) the pressure on domestic manufacture goods producers through competition and the positive effect through supply of cheap producer goods
- (c) the benefit to consumers in terms of cheaper consumer goods, for a given quality of a product
- (d) the tax revenue and employment implication for the government, and
- (e) the importance of overseas Chinese and Indian business networks in shaping the pattern of trade and production of manufacture goods.

### 3.3.2 The Competitive Effect

As we noted before, one of the effect of the Asian drivers on Africa is its competitive threat to African producers and exporters both in domestic market and third country market. In particular, the driver's impact on Africa in the US and the EU (European Union) markets might be important. Tables 4.5 to 4.7 offers an over view picture of this condition.

Table 3.5 shows the share of US imports from Africa in total imports of the US is about 2 percent while the EU imports form Africa range form 2.5 to 3 percent. By contrast US imports from China is in the range of 6 to 9 percent and about 1 percent from India; while EU's imports are about 2 to 3 percent from China and about 0.5 percent from India. Table 3.5 also shows the most important African countries that contributed to the African share reported. In general Table 3.5 shows how small the African share of exports in the US and EU market where China and India are expected to pose a threat to African exports. However, we also note that this level of product aggregation hides a lot of details and may lead to unwarranted conclusion about the competitive threat of Asian drivers to African exporters. The information in Tables 4.6 and 4.7 shade light on those issues.

**Table 3.5 Competition in the Third (US and EU) Market**

	1996	1997	1998	1999	2000	2001
<b>Import of US at cif from:</b>						
Industrial Countries	54.2	53.2	53.5	52.9	50.7	50.9
Developing Countries	45.8	46.8	46.5	47.1	49.3	49.1
Africa	2.3	2.3	1.7	1.7	2.2	2.2
Algeria	0.3	0.3	0.2	0.2	0.2	0.2
Angola	0.3	0.3	0.3	0.2	0.3	0.3
Gabon	0.3	0.3	0.1	0.2	0.2	0.1
Nigeria	0.8	0.7	0.5	0.4	0.8	0.8
South Africa	0.3	0.3	0.3	0.3	0.3	0.4
Asia	24.4	24.7	25.1	25.1	25.2	24.6
China, P.R.: Mainland	6.7	7.3	8.0	8.2	8.6	9.3
India	0.8	0.9	0.9	0.9	0.9	0.9
World	100.0	100.0	100.0	100.0	100.0	100.0
World value (in million)	817818.0	898661.0	944644.0	1048430.0	1238200.0	1180110.0
<b>Imports of EU at cif from:</b>						
Industrial Countries	77.7	76.8	77.2	77.7	75.4	74.4
Developing Countries	21.1	21.9	21.7	21.6	24.0	24.4
Africa	2.7	2.6	2.4	2.4	2.7	2.9
Algeria	0.4	0.5	0.4	0.4	0.7	0.6
Angola	0.0	0.0	0.0	0.0	0.1	0.1
Cameroon	0.1	0.1	0.1	0.1	0.1	0.1

Congo, Dem. Rep. of	0.1	0.0	0.0	0.0	0.0	0.0
Congo, Republic of	0.1	0.0	0.0	0.0	0.0	0.0
Côte d'Ivoire	0.1	0.1	0.1	0.1	0.1	0.1
Ghana	0.1	0.0	0.1	0.0	0.0	0.0
Mauritius	0.1	0.1	0.1	0.1	0.0	0.1
Morocco	0.3	0.3	0.3	0.3	0.3	0.3
Nigeria	0.3	0.3	0.2	0.1	0.3	0.3
South Africa	0.5	0.5	0.5	0.5	0.6	0.6
Uganda	0.0	0.0	0.0	0.0	0.0	0.0
Asia	8.0	8.5	8.8	8.6	9.3	9.0
China, P.R.: Mainland	1.8	2.0	2.1	2.3	2.6	2.8
India	0.6	0.6	0.5	0.5	0.5	0.5
World	100.0	100.0	100.0	100.0	100.0	100.0
World value (in million)	1956310.0	1974270.0	2063100.0	2157510.0	2287240.0	2247380.0

Source: IMF DOTS, 2003

Table 3.6 shows the proportion of exports that the DFID study identified as vulnerable to Chinese and India's competitive threat. The DFID study defined, using 3-digit SITC classification, those exports in which the share of China or India in world exports increased by one percent or more between 1990 and 2002. China increased this share in 140 products, while India did so in 31 out of 237 3-digit categories (DFID, 2005: 21). Note however, that these shares may decline sharply if the commodities are taken at high level of disaggregation. An interesting example is that of Botswana and India where the figure in Table 3.6 could have dropped from 89.9 percent to zero if we were to use SITC 66721 (rough diamonds) instead of SITC 667 (pearls, precious and semi-precious stones) used in the Table (See DFID, 2005). Be that as it may, we noted from Table 3.6 that a number of African countries may face a competitive threat from China and India in the third market. This is in particular true for Lesotho, Malawi, Mozambique, Namibia, Senegal, South Africa, Tanzania, Uganda and Zambia.

As Table 3.7 shows those countries noted above to have similar export products as that of China and India are generally exporting labour-intensive manufactures (2 cases), other manufacture (one case that is South Africa), minerals and petroleum (2 cases) and other agriculture (2 cases). The implication of the analysis in this section is that there is a need to have the right disaggregation of export products as well as the importance of focusing on specific countries to have an in-depth look at the competitive impact of China and India on Africa.

**Table 3.6 Proportion of Exports Facing Competition from China and India**

	Year	China	India
Botswana	2001	6.0%	89.9%
Cameroon	2003	23.8%	5.6%
Ethiopia	2003	17.8%	7.6%
Ghana	2000	32.3%	7.5%
Kenya	2003	33.8%	25.4%
Lesotho	2002	89.1%	6.8%
Malawi	2003	64.0%	25.2%
Mozambique	2002	73.4%	16.7%
Namibia	2003	55.4%	18.4%
Nigeria	2003	2.0%	0.1%

Rwanda	2003	7.8%	30.2%
Senegal	2003	44.1%	32.7%
Sierra Leone	2002	5.4%	0.8%
South Africa	2003	54.4%	18.1%
Sudan	2003	2.2%	79.5%
Tanzania	2003	26.3%	13.0%
Uganda	2003	35.5%	2.2%
Zambia	2002	82.4%	11.3%

Source DFID 2005 which is based on COMTRADE data p.21

Table 3.7 Competition from China and India of Exports of Selected African Countries

	China						India	
	Lesotho	Malawi	Mozambique	Namibia	South Africa	Zambia	Botswana	Sudan
<b>% of total exports</b>	89.1%	64.0%	73.4%	55.4%	54.4%	82.4%	89.9%	79.5%
of which*								
LA	0.1%	1.5%	0.1%	1.6%	1.3%	1.3%	0.1%	0.7%
OA	2.1%	51.2%	1.5%	24.4%	2.1%	2.9%	0.0%	0.6%
Forestry	0.0%	0.1%	0.5%	0.3%	0.9%	0.2%	0.0%	0.0%
M & P	0.0%	0.0%	68.9%	4.5%	20.7%	62.6%	5.2%	78.2%
LM	78.9%	9.7%	1.0%	15.7%	5.6%	3.9%	0.6%	0.0%
OM	8.0%	1.6%	1.4%	8.9%	23.8%	11.6%	84.0%	0.0%

Source DFID 2005 based on COMTRADE data p.22 and 23.

\*Note: LA: Labour Intensive Agriculture; OA: Other Agriculture; M&P: Mineral and Petroleum; LM: Labour-intensive Manufacture and OM: Other Manufacture.

### 3.4 The Nature of FDI and its Possible Effects

Africa's share of world FDI inflows is extremely low. By the second half of the 1990s, the average share of FDI in GDP of African countries was not only very small but also declining. Any positive trends were largely related to investment in countries with newly discovered resources. For instance in 1996, FDI was a mere US\$5.5 billion, representing only 1.5 per cent of global investment flows. Its distribution was also extremely skewed, with Nigeria, Egypt, Morocco, Tunisia, South Africa, Algeria, Angola, Ghana and Cote d'Ivoire accounting for over 67 per cent of FDI receipts to Africa. Between 1991 and 1996 ten countries (Nigeria, Morocco, Tunisia, Angola, South Africa, Ghana, Tanzania, Namibia, Uganda and Zambia) received almost 90 per cent of flows, with Nigeria alone absorbing a third. The majority of flows emanated from France, UK, Germany, and the US. Favoured recipient sectors included oil, gas, metals and other extractive industries (ADB, 1998).. The latest figure shows that the total value of FDI inflows to Africa in 2003 and 2004 was about US\$ 18 billion in each year that increased from US\$12 billion in 2002. The 2004 FDI constitutes about 3 and 7 percent of world and developing economies FDI inflows, respectively (see Table 3.8). In the year 2004 North Africa managed to attract about 5.2 billion US\$ while the rest of Africa attracted about 13 billion US \$, divided between 3.6, 6.3, 2 and 1.3 billion US\$ for West, Central, Eastern and Southern Africa, respectively. Table 3.8 also provides data for individual African countries which has an FDI figure above US\$ 50 million at least in one of the years. In contrast to Africa, for the year 2004, China has attracted about 60.6 billion US\$, while the figure for India being US\$ 5.3 billion. Table 3.9

shows a detailed picture of FDI inflows to Africa from 1980 to 2004 by showing each African country's share in the total FDI flows to Africa.

Relative market size, the existence of mining activity, and the historical pattern of investment together determine the flow of FDI to Africa (see Alemayehu, 2002). Bhattacharya, Montiel and Sharma (1997) grouped African FDI recipients into three categories; (1) countries that are long-term recipients (Botswana, Mauritius, Seychelles, Swaziland and Zambia); (2) countries that recorded large increases in the 1990s (Angola, Cameroon, Gabon, Ghana, Guinea, Lesotho, Madagascar, Mozambique, Namibia, Nigerian and Zimbabwe); and (3) countries that have low and/or declining levels of FDI, but with encouraging turnaround, such as Uganda.

**Table 3.8 FDI flows, by region and economy, 2002-2004 (Millions of Dollars)**

	FDI inflows			FDI outflows		
	2002	2003	2004	2002	2003	2004
<b>World</b>	<b>716 128</b>	<b>632 599</b>	<b>648 146</b>	<b>652 181</b>	<b>616 923</b>	<b>730 257</b>
<b>Developed economies</b>	<b>547 778</b>	<b>442 157</b>	<b>380 022</b>	<b>599 895</b>	<b>577 323</b>	<b>637 360</b>
<b>Developing economies</b>	<b>155 528</b>	<b>166 337</b>	<b>233 227</b>	<b>47 775</b>	<b>29 016</b>	<b>83 190</b>
<b>Africa</b>	<b>12 994</b>	<b>18 005</b>	<b>18 090</b>	<b>427</b>	<b>1 215</b>	<b>2 824</b>
<i>Share of world (%)</i>	<i>1.80</i>	<i>2.84</i>	<i>2.79</i>	<i>0.06</i>	<i>0.19</i>	<i>0.39</i>
<i>Share of Developing economies (%)</i>	<i>8.35</i>	<i>10.82</i>	<i>7.75</i>	<i>0.89</i>	<i>4.19</i>	<i>3.39</i>
<b>North Africa</b>	<b>3 872</b>	<b>5 262</b>	<b>5 270</b>	<b>22</b>	<b>115</b>	<b>514</b>
<b>Other Africa</b>	<b>9 122</b>	<b>12 743</b>	<b>12 821</b>	<b>404</b>	<b>1 100</b>	<b>2 310</b>
<b>West Africa</b>	<b>2 928</b>	<b>3 117</b>	<b>3 562</b>	<b>649</b>	<b>274</b>	<b>325</b>
Benin	14	45	60	1	-	..
Côte d'Ivoire	213	165	360	-4 a	21	..
Ghana	59		137	139	44	..
Guinea	30		79	100	7	..
Mali	244		132	180	2	1
Mauritania	118		214	300	..	-1
Nigeria	2 040		2 171	2 127	172	167
Senegal	78		52	70 a	34	3
<b>Central Africa</b>	<b>3 212</b>		<b>6 346</b>	<b>6 122</b>	<b>9</b>	<b>-32</b>
Angola	1 672		3 505	2 048	29	24
Chad	924		713	478	-	-
Congo	137		323	668	6	2
Congo, Dem. Rep. of	117		158	900 a	-2 a	..
Equatorial Guinea	323		1 431	1 664	-	-
Gabon	30		206	323	-32	-57
<b>Eastern Africa</b>	<b>1 521</b>		<b>2 013</b>	<b>2 098</b>	<b>108</b>	<b>74</b>
Ethiopia	255		465	545	..	..
Kenya	52		81	46	86	24
Madagascar	8		13	45a	..	..
Mauritius	33		70	65	9	41
Mozambique	348		337	132	-a	-
Seychelles	48		58	60 a	9	8
Uganda	203		211	237	..	..
United Rep. of Tanzania	430		527	470	..	..
Zambia	82		172	334	..	..
Zimbabwe	26		30	60	3	..
<b>Southern Africa</b>	<b>1 460</b>		<b>1 267</b>	<b>1 038</b>	<b>-362</b>	<b>783</b>

Botswana	405		418	47	43	206
Lesotho	27		42	52	-	-
Namibia	181		149	286	-5	-10
South Africa	757		720	585	-399	577
Swaziland	90		-61	69	-1	10
<b>Latin America and the Caribbean</b>	<b>50 492</b>		<b>46 908</b>	<b>67 526</b>	<b>11 351</b>	<b>10 562</b>
<b>Asia and Oceania</b>	<b>92 042</b>	<b>101 424</b>	<b>147 611</b>	<b>35 998</b>	<b>17 239</b>	<b>69 423</b>
<b>East Asia</b>	<b>67 282</b>	<b>72 060</b>	<b>105 037</b>	<b>27 555</b>	<b>14 442</b>	<b>53 521</b>
China	52 743	53 505	60 630	2 518	-152	1 805
Hong Kong, China	9 682	13 624	34 035	17 463	5 492	39 753
Korea, Rep. of	2 975	3 785	7 687	2 617	3 426	4 792
Taiwan Province of China	1 445	453	1 898	4 886	5 682	7 145
<b>South Asia</b>	<b>4 528</b>	<b>5 331</b>	<b>7 005</b>	<b>1 149</b>	<b>962</b>	<b>2 288</b>
India	3 449	4 269	5 335	1 107	913	2 222
<b>Memorandum</b>						
Least developed countries	6 327	10 351	10 702	488	123	110
Major petroleum exporters	12 162	15 767	15 994	2 095	-2 705	-482
All developing economies, excluding China	102 785	112 832	172 597	45 257	29 168	81 385
EU-15	397 145	326 611	196 099	383 072	369 099	276 330

Source: UNCTAD (2005) 'World Investment Report, New York and Geneva.

\* African countries with a value above 50 million at least in one of the years are shown

**Table 3.9 Inward FDI Flows (as % of Total FDI inflows to Africa)**

	1980	1990	2000	2001	2002	2003	2004
Angola	14.3	-20.4	12.9	14.0	16.7	24.5	14.1
Botswana	42.8	5.8	0.8	0.2	4.0	2.9	0.3
Cameroon	49.8	-6.9	0.0	0.0	0.0	0.0	0.0
Chad	-0.2	0.6	1.7	3.0	9.2	5.0	3.3
Congo	15.3	1.4	2.4	0.5	1.4	2.3	4.6
Côte d'Ivoire	36.3	2.9	3.5	1.8	2.1	1.2	2.5
Congo, D. R.	42.0	-0.9	0.3	0.5	1.2	1.1	6.2
Equ. Guinea	na	0.7	1.6	6.2	3.2	10.0	11.5
Ethiopia	0.4	0.7	2.0	2.3	2.5	3.3	3.8
Gabon	12.1	4.5	-0.6	-0.6	0.3	1.4	2.2
Ghana	6.0	0.9	2.4	0.6	0.6	1.0	1.0
Kenya	30.3	3.5	2.4	0.4	0.5	0.6	0.3
Lesotho	1.7	1.0	0.5	0.2	0.3	0.3	0.4
Liberia	27.6	13.7	0.3	0.1	0.0	0.0	0.1
Madagascar	-0.3	1.4	1.2	0.6	0.1	0.1	0.3
Malawi	3.6	1.4	0.4	0.1	0.1	0.1	0.1
Mali	0.9	0.3	1.2	0.8	2.4	0.9	1.2
Mauritania	10.4	0.4	0.6	0.6	1.2	1.5	2.1
Mozambique	1.7	0.6	2.1	1.7	3.5	2.4	0.9
Namibia	na	1.8	2.7	2.4	1.8	1.0	2.0
Niger	18.8	2.5	0.1	0.1	0.0	0.1	0.1
Nigeria	na	61.0	19.3	8.4	20.3	15.2	14.7
Rwanda	6.3	0.5	0.1	0.0	0.1	0.0	0.1
Senegal	5.6	3.5	0.9	0.2	0.8	0.4	0.5
Seychelles	3.6	1.2	0.8	0.4	0.5	0.4	0.4
South Africa	-3.9	-4.8	13.1	44.4	7.5	5.0	4.0
Sudan	3.4	-1.9	5.8	3.8	7.1	9.4	10.4
Swaziland	10.1	1.7	1.3	0.3	0.9	-0.4	0.5
Togo	16.4	1.4	0.6	0.4	0.5	0.2	0.4

Uganda	1.5	-0.4	2.7	1.0	2.0	1.5	1.6
Uganda	1.5	-0.4	2.7	1.0	2.0	1.5	1.6
Tanzania	1.8	0.0	4.2	3.1	4.3	3.7	3.2
Zambia	23.7	12.3	1.8	0.5	0.8	1.2	2.3
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Authors' Computation based on UNCTA at [www.unctad.org](http://www.unctad.org) accessed Sept. 10, 2006.

Given this general picture of FDI in Africa, it is interesting to ask what the nature and contribution of FDI from China and India in Africa is? There is a lack of disaggregated and detailed data that could be of some help for this. However, the existing evidence show that, (a) there is a surge in flows of global FDI to China and India and this is largely related to the activity of overseas Chinese and Indians. This doesn't seem to cause a diversion of FDI away from Africa; (b) the role of FDI from China and India in augmenting the total flows of FDI to Africa is extremely limited. Between 1979 and 2002 only four out of 21 African countries selected in DFID's study were included in the top 30 destination for FDI from China. These are Zambia, South Africa, Nigeria and Zambia. In Indian case Sudan is the only country in the top 30 destination (see DFID, 2005: 32). (see Table 3.10 for details).

In sum, we note the following points about FDI flows from China and India to Africa. First, it is highly unlikely that China and India divert FDI that would have been coming to Africa. Second, the level of FDI from China and India is not only very small but also located in a few countries. Third, these flows from China and India are largely motivated by the desire to secure source of energy and raw materials as well as the desire to exploit preferential markets which are accessible to African countries. It is imperative to examine what the likely impact of such pattern of FDI from the Asian drivers in technology transfer, employment creation, and competitive threat to local producers as well as in locking African countries on primary commodity production and exporting sectors.

**Table 3.10 China and India's share in FDI Stock of Selected African Countries**

	<b>Total (2002) (US\$ mn.)</b>	<b>China * (US\$ mn.)*</b>	<b>China's Share</b>
Cameroon	1,505	16	1.1%
Ghana	1,610	19	1.2%
Mozambique	1,505	15	1.0%
Nigeria	22,570	44	0.2%
South Africa	29,611	125	0.4%
Tanzania	2,335	41	1.8%
Zambia	2,241	134	6.0%
	<b>Total (2003) (US\$ mn.)</b>	<b>India (US\$ mn.)*</b>	<b>India's Share</b>
Sudan	4,033	912	22.6%

Source: DFID (2005), page 34.

Note: \* Cumulative value of investment from China (1979-2002) in Nigeria, South Africa, Tanzania and Zambia, and from India (1996-2003) in Sudan. Value to the end of 2001 for China's investment in Cameroon, Ghana and Mozambique

#### **4. How do We Address the Issues?: Methods of Analysis used to Study the Impact of Asian Drivers**

As the overview of the literature thus far shows, there are a number of approaches used to study the impact of China and India on other countries. Such studies in particular are motivated by the China's accession to WTO as well by the need to know the implications of ending the multi-fiber agreement in 2005. In this section we have briefly summarized the various methods used in the literature to come up with an 'eclectic' approach that we may use to study the impact of the drivers on Africa.

##### **A. Flying Geese Model (FGM) & Technological based Categorization of Exports**

One widely used model for analyzing the impact of China and India on other countries is the Flying Geese Model (FGM) of industrialization and catch up. The model predicts that countries specialize in the export of products in which they have a comparative advantage commensurate with their level of development and at the same time seek to upgrade their industrial structures through augmenting their endowment of capital and technological capabilities (Kwan, 2000: 2). What Kojima (2000) calls "pro-trade" FDI from the sunset industries of the leading goose (or geese in the case of China and India) accelerates the process of up-grading the comparative advantage and industrial structures of the follower goose. According to Kojima (2000) who is the student and follower of Kaname Akamatsu (the originator of the model) and who surveys the literature related to the model, the flying geese pattern in regional context can be described as follows: the leading goose becomes (wage-wise) uncompetitive in a less-advanced industry in which the follower has already developed a capability; then the firms of the leader relocate their capital and managerial skills (which are superior to those existing in the follower) as a package to the follower goose and in the process, resource productivity is enhanced in both countries (both move up on the ladder of comparative advantage).

In the context of an open economy the FGM is used to describe the staging of industries from more advanced countries to countries catching up from behind (Kwan, 2002). For empirical investigators the computation of product sophistication is very important. Kwan (2002) suggested, and used, two approaches. The first one is to assume that high (low) income countries produce high (low) value products. Using this assumption the weighted per capita income (weighted by export share) could be used as a proxy. The second approach is to compute the index based on the assumption that the larger the share of high-value-added products, the more advanced the export structure is. The index computed thus can be standardized using global average and standard deviation of exports among products at different level of sophistication – using 'standardized scores' (the country having the global average being given the index of 50 by construction and one standard deviation from average given a point of 10). Using this approach Kwan (2002) found that labour-intensive products still dominated China's exports and hence China could compete with countries that export goods in that level of sophistication. The use of such an index for each African country may help to show the complementary or competitive position of African countries vis-à-vis China and India.



A related micro-based theory of FDI which is similar to the FGM has also emerged with the development of the Vernon's product cycle theory (Vernon, 1966). The product cycle theory represents an advance on previous theories, in that it incorporates an analysis of oligopoly and strategic market considerations. Based on Vernon's theory of 'product cycle', and the existence of 'new' and 'old' goods, Krugman (1979) further develops this theoretical avenue for explaining FDI flows. Specifically, he extends the analysis to a North-South framework with innovation (in the 'North') and technology transfer (to the 'South') representing its crucial aspects. Krugman (1979) notes that technological progress raises the marginal product of capital and provides an incentive for FDI. On the other hand, this process may be reversed through technology transfer (Krugman, 1979a: 263-265). Indeed, recent theories of trade, such as that of the 'economies of specialisation' which emphasises the existence of intra-industry (as well as intra-firm) trade, also provides scope for analysis of FDI (See, for instance, Ocampo's survey, 1986: 152-155 and Alemayehu, 2002).

### Technological Categorization of Products

In this approach which is used by Lall and Albaladejo (2003), the evolution of China's exports by technological categories [such as RB (*Resource Based*), LT (*Low Technology*), MT (*Medium Technology*) and HT (*High Technology*) products] to understand the nature of the products traded between China and its trading partners (see Annex A of Lall and Albaladejo, 2003, for details of this classification). This approach allows us to examine the complementarity and competitiveness of the products traded. Having the right level of product aggregation (say 3 to 5 digit SITC classification), the next stage in this method is to compare the change in market share in foreign markets. This can be mapped in a matrix format where Chinese competitiveness (rising or falling) is given in two columns and the trading partners' competitive conditions (rising and falling) is given across rows. From this matrix we can infer whether there is competitive threat or not (see Figure 2). The degree of threat could be *partial threat* (both China's and its competitors' share rises but China's share rises faster), *no threat* (the opposite of partial threat), *direct threat* (China gains while competitors lose), *China under threat* (China loses market) and *mutual withdrawal* (both China and its competitors lose market). Note, however, that market share analysis is similar to RCA analysis and this approach could be combined with RCA approach noted above (see also Srivastava and Rajan, 2003).

Figure 2: Matrix of Competitive Interaction between China and its Competitors in the Third Country or Region Market (Lall and Albaladejo, 2003)

	Chinese Export Market Shares		
	<b>Rising</b>	<b>Falling</b>	
Trading Partners of China ( say, Africa)	<b>Rising</b>	No threat from China unless Chinese growth is faster	No competitive threat from China
	<b>Falling</b>	Possible competitive threat, unless market shares are declining	No threat from China and both are losing competitive advantage in export market

## B. The Gravity Mode or the Econometric Approach

In this method the standard gravity model which attempts to model the determinants of bilateral trade between trading partners is adopted to study the impact of China. This is usually done by augmenting the gravity model through the inclusion of the impact of the Chinese trade as additional regressor. The coefficient of the latter could be interpreted as competitive or complementary depending on whether it is negative or positive, respectively. Eichengreen *et al* (2004), Eichengreen and Tong (2006) analyzed the impact of China's growth on the exports of its neighbors (as well as the condition of FDI) using the gravity model which they disaggregated across commodity types and adjusted the mode for the endogeneity of China's exports. Moreover, the gravity model in conjunction with growth spillover models<sup>6</sup> can also be applied to see the impact of China's growth on the growth of its trading partners. For instance, Eichengreen and Tong (2006) used per capita growth rate of the trading partners of China as dependent variable and the per capita growth rate of China, lagged one period, and its interaction with distance between China and its trading partners', population growth as regressors to investigate the effect of China's growth on the growth of other countries (see Eichengreen and Tong, 2006).

## C. Revealed Comparative Advantage (RCA) or the Balassa Index

Another method that is widely employed to identify the competitive or complementary position of countries vis-à-vis China and India is the use of RCA index. For a specific product, China's RCA index, for instance, can be obtained by dividing China's share of a *specific* product exports (say TV sets) in the world (TV sets exports) or specific market, say the United States, by its share of total *global* exports in the world (or to the US) total or global exports. If the former is greater than the latter, China's RCA index for that product is greater than one – indicating that China has RCA in that product. This method, however, need to be used in combination with standardized-scores method that we noted above owing to variation in the value of different goods within an identified product category such as information technology or IT (see Kwan, 2002). Formally, the RCA index could be given by,

$$RCA = \frac{X_{ij} / X_{wj}}{X_i / X_w}$$

where RCA, X, ,i, j and w refer to 'Revealed Comparative Advantage', exports, product, country and world, respectively.  $RCA > 1$  implies having 'revealed comparative advantage'.

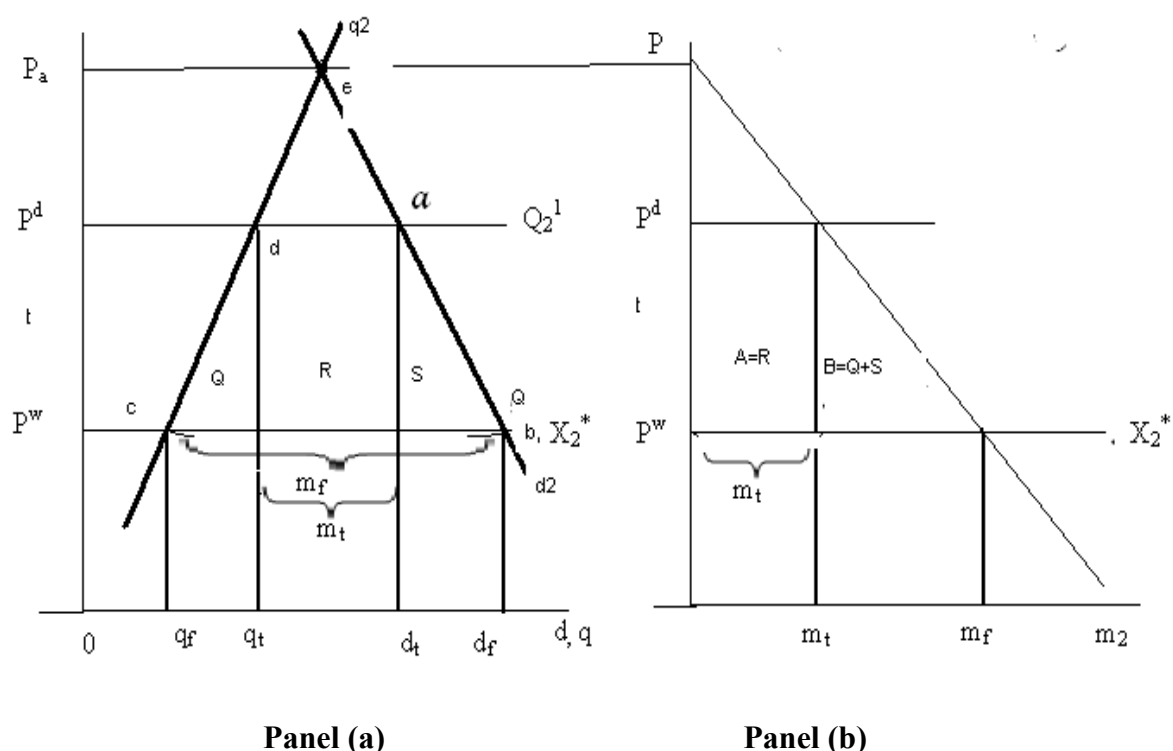
## D. The Partial Equilibrium Analysis Approach for Distributional Implications

<sup>6</sup> This is a typical growth model that depicts the effect of the growth of one country (say China) on other countries (say its neighbors or African countries).

China's and India's competitive threat and complementary effects will have different distributional implications for different economic agents in a country. For instance it may benefit consumers through cheap imported consumer goods but may hurt producers (and their employees) by deriving them out of the market (or benefit them through the supply of cheap producer goods). The government may also lose (or gain) tax revenue in the process. It is important to analyze the net welfare implication of this process.

We may employ the standard way of handling such welfare and distributional implications using the partial equilibrium approach of the theory of customs union and tariff analysis. We have shown below a partial equilibrium approach that is based on Viner (1950) Mead's (1955) and Lipsey (1987) (see Alemayehu, 2006 for details) to understand the theoretical distributional implications of cheaper imports from China in the domestic market for imported goods in Africa.

**Figure 3: The Distributional Implications of Asian Drivers on Africa**



In Figure 3 (panel a) the export supply  $X_2^*$  from China (and India) is drawn as infinitely elastic at world price ( $P^w$ ), reflecting the small country assumption for the exporter to the African (home) country under analysis. The domestic supply of import competing good is given by  $q_2$ , while the domestic demand is given by  $d_2$ ... If the home country were under autarky, equilibrium would have taken place at  $e^*$ . Alternatively if the African country were having a tariff rate  $t$  ( $p^d - P^w$ ), equilibrium would have taken place at  $a$ . Perhaps, the latter depicts the theoretical position where most African countries could be in relation to China and India today.

Let us now assume away this and take that the home country is open to international trade with China and India. Given this set-up, the free trade equilibrium is given at  $b$  where  $Q_1$

( $=X_2^*$ ) intersects with the demand curve  $d_2$ . We note here that  $X_2^*$  at  $b$  (or  $d_f$  in the X-axis) is the sum of domestic supply,  $q_f$  in the X-axis and imports ( $d_f$  less  $q_f$ ). We note here that the level of consumption is given by  $d_f$  and the domestic price equals the world price. This scenario depicts the position where an African country finds itself when it confronts cheaper prices from China (and India) under zero tariff rate. The welfare and distributional implications of this scenario would include (i) the decline in producers surplus as can be read from schedule  $q_2$ , (ii) the increase in consumer surplus as can be read from the schedule  $d_2$ , the government tariff revenue loss as can be inferred from  $t$  and  $mf$  as well as the efficiency gain associated with demand diversion towards the efficient producers, China and India.

This comparative static (and partial) equilibrium based analysis shows that there is a distributional implications of shifting benefits from government and producers to the consumers, following opening the African market for Chinese and Indian cheaper imports. In fact, if we could estimate such supply and demand schedules for manufacture goods, we can calculate the welfare implication of cheaper imports from the Asian drivers. Where getting such demand and supply schedule is difficult, an assumption of horizontal (and vertical) supply (and demand) schedules entails using the price gap between imports of China (and India) and the price of import competing African domestic goods as well as the volume of imports to compute such welfare implications.

## **E The Global Model based Simulation Approach**

In this approach general equilibrium type of models are used to simulate the impact of China on other countries. The most widely used such model is the GTAP (Global Trade Analysis Project) model. This analysis is in particular done to evaluate the implication of China's accession to WTO for other countries. Despite many weakness (see UNCTAD 2002) of this approach, the over all result from the use of such models, according to Shafaeddin (2002), is that China will get a considerable market share at the expense of other developing countries. Cerra *et al* (2005) also employ a computable general equilibrium (CGE) model derived from the GTAP to study the implications of China's entry into the WTO on India's trade. They apply a modified version of the static model to an aggregation of the GTAP data base version 6.0 release candidate (Ibid: 12). Their findings indicate that India, for one, is likely to experience welfare losses owing to loss of market share (in textiles) and deterioration of its terms of trade; but, other sectors will likely expand to partially offset the losses (Ibid).

## **5. Conclusion: Research and Policy Implications**

In this paper an attempt to examine the impact of the Asian drivers on the manufacturing sectors of African economies are made. We begin by reviewing the relevant literature and identified about five approaches (methods) used in the literature. We also made an overview of this impact based on accessible data and empirical studies. In what follows we will attempt to foreword the implications of the analysis so far for policy makers. This will be followed by the implications of the study for carrying out an in-depth study of the impact of China and India on Africa as well the kind of data required for the case study countries.

An examination of the existing literature and empirical regularity suggest looking into the following issues which might be important for policy makers. First, China and India's growth is creating a demand surge for African commodities. It is worth noting, however, that the continent need not be left worse off once the boom ends. Thus, deals must be made to sustain

it, say, through down-streaming linkages and local partnership (World Economic Forum, 2006: 11). Moreover, the demand boom for commodities may lead to problems of management of such resources (such as the Dutch Disease effect and possibly conflict among the political elite) that should be a central policy issue.

Second, it seems that some policy makers are worried about the detrimental impact of the Asian drivers on their country. However, there is a need to change from defensive mind set about China and India to one that is more embracing, and one in which the Africans determine the terms of engagement (World Economic Forum, 2006: 12).

Third, Africans need to develop dynamic capability to scan changing environments, to developing appropriate strategic response and to implement these strategies effectively (Kaplinsky *et al* , 2006). This may include the possibility of exploiting joint venture with the Asian drivers as well as the need to identify niches for African exporters. There is also the need to actively seeking investment linkages with the drivers as well as other sources to benefit from being part of some industrial supply chains with the drivers.

Fourth, we need to note that what is important for Africa may not relate to the static gain and loss but to future industrialization of African and the space left by China and India (Kaplinsky *et al* , 2006). In this regard it is important to think and act on the possible impact of the Asian drivers' trade and FDI impact in locking African countries in the primary commodity sector, especially in the long run. To this end, selected protection might be important and there is also a need for continuous preference access to the markets of the developed countries for Africa (Kaplinsky *et al*, 2006). It should be noted, however, that given the pressures of global competition, the challenge is not so much to move from agriculture to industry, but from low-rent activities to rent-rich activities. The challenge is that much of manufacturing has now become low-rent; at the same time some of agriculture and services have become rent-intensive. So, the primary focus of policy is to endogenise a process of dynamic capability building.

Fifth, Effective industrial policy requires, subject to state competences, an appropriate macro environment – for example, exchange rate competitiveness, reasonably stable prices, property right, enforcement of contracts etc (the main terrain of the Washington Consensus). It also requires mechanisms to cope with pervasive market failures, for example with regard to R&D, training .Targeted incentive systems, favouring particular sectors, regions and perhaps national champions (national firm creation as is done in East Asia) might be important. It is within this framework that one would then question the role which the ADs play with regard to the macro environment (including the ability which the AD presence gives to withstand the Washington Consensus).

Finally, the distributional implications of trade with China and India are also worth examining. This is because trade liberalization is generally associated with inequality and change in distribution of income across economic agents. This might have both social and political implications that need the attention of policy makers.

This paper has shown that there is a knowledge gap about the impact of the Asian drivers on Africa in general and the manufacturing sectors of Africa in particular. This calls for an in-

depth study of the issues explored in this paper. Towards that end we have suggested below an approach that could be followed to carry out an in-depth study of the impact of the Asian drivers on African using a case study approach.

To begin with, in terms of an approach or method it might be productive to use the Flying-gee model (FGM) as an over arching framework of the study. Thus, we could frame out case studies in the context of an FGM where China and India are the leaders, except perhaps for South Africa, in the technology ladder. Having this overall framework we need to resort to the following two steps which could be instrumental in conducting our study using the FGM frame work. These steps are:

- (i) First to classify the manufacture exports of each African manufacture exports by level of technology of the export in question using the approach of Lall and Albaladejo (2003) as outlined in ‘method A’ of section two of this paper.
- (ii) Then, we will compute indices such as revealed comparative advantage indices (RCA) or export similarity indices for each technological category of African manufacture exports identified in the first step for each of the case study countries.

Once we have this information, we will attempt to see the place of the African countries identified as case study countries in the hierarchy of manufacture exporters of China and India in the context of FGM. This framework will help us to examine the competitive or complementary (as well as direct and indirect) impact of the Asian drivers on African countries.

The analysis conducted using the FGM approach then will be augmented by:

- (a) Firm level information about the direct and indirect impacts on producers, consumers and the government
- (b) The gravity model or related econometric approach that could be used to substantiate further the empirical analysis carried using the FGM (if needed).
- (c) By general equilibrium approaches such as the GTAP model which could be important to see the indirect impacts.

Using this ‘eclectic’ method, the overall assessment could be based on Kaplinsky et al (2006) framework given as Figure 2 in this paper (see also Annex A).

In order to implement the framework outlined here, the case study countries may need the following type of data about trade and FDI:

- (a) Data that shows the pattern of trade between African countries and China & India at an optimal level of disaggregation, at least at 3-digit SITC level.
- (b) The import price of Chinese and Indian goods in the case study African country relative to other suppliers by commodity type (ie. for industrial inputs, capital goods and consumer goods imports from China & India)
- (c) Data about the impact of imports from China and India on government revenue, domestic employment and welfare impact of consumers.
- (d) World price change for African export commodities and how much the rise in price of their exports could be attributed to the demand surge in China and India

- (e) Domestic price of import competing goods and types of industries and firms engaged in the production of such good that compete with imports from China & India.

With regard to the impact of FDI, data that will help to answer question such as the following are needed:

- (a) Type of FDI from China and India as well as in which sectors of the African country they are engaged, and why?
- (b) The possibility of technological transfer through FDI and the appropriateness of such technology to Africa. Is there a trend towards partnership (say in Joint venture, ownership and management, as well as skill transfer).
- (c) How much the African FDI of China and India put the African country on global value chain?
- (d) Is the FDI from China and India displacing (or encouraging) flows from historical sources
- (e) Is the FDI from China and India engaged in the enclave sector or is it integrated with the rest of the economy.

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**Annex A: An Illustration of Summary of Likely Effects on Poverty of China and India's Trade Growth on Twenty-one African Countries**

	<b>Exports to China/India</b>	<b>Competition in Third Markets</b>	<b>Imports from China/India</b>
Angola	Strong effect from China. Challenges from negative spillovers; Opportunities from increased government revenues		Little or no effect
Botswana	Little or no effect	Possible effect from India	Little or no effect
Cameroon	Small effect from China	Little or no effect	Little or no effect
Congo, Dem. Rep. of	Little or no effect		Little or no effect
Ethiopia	Little or no effect	Little or no effect	Moderate threat to employment from imports from China. Small gain from cheaper imports from China
Ghana	Little or no effect	Little or no effect	Not a major threat. Moderate gain from cheaper imports from China
Kenya	Little or no effect	Little or no effect	Not a major threat. Small gain from cheaper imports from China
Lesotho	Little or no effect	Significant harm from competitive threat from China	Little or no effect.
Malawi	Little or no effect	Possible slight harm from competitive threat from China	Little or no effect
Mozambique	Small effect from China. Challenges from negative spillovers; Opportunities from increased government revenues	Moderate harm from competitive threat from China	Little or no effect
Namibia	Little or no effect	Possible slight harm from competitive threat from China	Little or no effect
Nigeria	Moderate effect from India. Challenges from negative spillovers; Opportunities from increased government revenues	Little or no effect	Moderate threat to employment from imports from China. Small gain from cheaper imports from China
Rwanda	Little or no effect	Little or no effect	Little or no effect

DFID (2005)

	<b>Exports to China/India</b>	<b>Competition in Third Markets</b>	<b>Imports from China/India</b>
Senegal	Little or no effect	Little or no effect	Little or no effect
Sierra Leone	Little or no effect	Little or no effect	Little or no effect

Somalia	Moderate effect??		Moderate gain from imports from India
South Africa	Moderate challenges from negative spillovers; Opportunities from increased government revenues	Possible slight harm from competitive threat from China	Challenge – reduced employment; Opportunity-cheaper consumer goods.
Sudan	Strong effect from China. Challenges from negative spillovers; Opportunities from increased government revenues. Moderate effects from China with potential favourable impacts	Little or no effect	Moderate threat to employment from imports from India. Small gain from cheaper imports from India
Tanzania	Little or no effect	Little or no effect	Not a major threat. Small gain from cheaper imports from China
Uganda	Little or no effect	Little or no effect	Not a major threat. Moderate gain from cheaper imports from China
Zambia	Little or no effect	Moderate harm from competitive threat from China	Little or no effect

Source: DFID (2005)