

**DOES PRIMARY RESOURCE-BASED INDUSTRIALISATION OFFER  
AN ESCAPE FROM UNDERDEVELOPMENT?**

**THESIS**

**Submitted in fulfilment of the requirements of the Degree of  
MASTER OF COMMERCE  
of Rhodes University**

By

**FATIMAH ALI**

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## DECLARATION

The work below has been my own except for the references and any input that I have acknowledged. Nowhere has this work been submitted for a degree to any university.

A handwritten signature in black ink, appearing to be 'F. B. Ali', written over a horizontal dashed line.

F. B. Ali

Grahamstown,  
16 January, 2006

## ABSTRACT

It is commonly believed about sub-Saharan Africa (SSA) that the region has a comparative advantage in primary resources as reflected by its high share of primary exports to total exports. In acknowledging the region's comparative advantage, the study tries to put the determinants from the Wood and Mayer (1998, 1999) (W-M) Heckscher-Ohlin based model in the context of two relatively diversified countries (South Africa and Mauritius) and two commodity-export-dependent countries of sub-Saharan Africa (Nigeria and Côte d'Ivoire).

The study finds that the skill and land resource measures used in the W-M (1998, 1999) thesis do not explain why Nigeria, having a similar level of skill per worker ratio to South Africa, has not diversified. Further, Mauritius having relatively the highest skill per land ratio specialises in low-skill textiles and clothing, while South Africa specialises in the more human capital-intensive "other manufactures" group. The other measure, a low land per worker ratio that explains Mauritius' relatively higher share of manufacturing exports, also fails to apply to Nigeria. The thesis thus concludes that the W-M land and skill measures could only be rough proxies in determining comparative advantage in manufacturing exports.

However, employing the Dutch disease hypothesis recognises the potential of land abundance as a natural resource, namely minerals in South Africa, oil in Nigeria, and cocoa in Côte d'Ivoire. The Dutch disease is a dynamic process of structural economic and political development that will permit an understanding of why natural resource abundant countries do not have a comparative advantage in manufacturing, at least in the short to medium term.

The study therefore investigates commodity dependence and the Dutch disease effects to examine whether primary resource-based industrialisation offers an escape from underdevelopment. It establishes that South Africa, a mineral resource rich country, diversified based on a broad mineral-energy-complex (MEC) reinforcing the notion that land abundant countries will first invest in capital-intensive primary resource processing. However, the thesis concludes that in Nigeria and Côte d'Ivoire where external shocks are more predominant probably because of single commodity export reliance, the manufacturing sector lags behind more due to resource and spending effects that a natural resource boom generates in these economies.

Due to the implications of external and endogenous effects linked to single commodity dependence and comparative advantage in natural resources, this study stresses important policy questions about how developing countries such as Nigeria and Côte d'Ivoire should adopt a harmonious blend of exchange rate policy, multilateral and bilateral trade agreements as well as how they should tackle problems of political Dutch disease.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Background

The preoccupation with the role of exports in development goes back to the revelations of the gains from trade by classical economists such as Adam Smith and David Ricardo. This has led to studies that empirically found a positive correlation between economic growth and growth of exports by export-optimists such as Balassa (1977) and Michaely (1977). For instance, Balassa (1977: 181) notes that exports bring about growth due to the following reasons:

- (i) exports result in resource allocation according to comparative advantage;
- (ii) they allow greater capacity utilisation;
- (iii) they permit exploitation of economies of scale;
- (iv) exports generate technology improvement in response to competition abroad;
- (v) finally, exports contribute to the absorption of labour in labour surplus countries.

Bhagwati (1998), Balassa (1988) and the World Bank (1987, 1993) point to the evidence of “superexporting” in the first-tier Newly Industrialised Countries (NICs) of East Asia that led to their development. More recently, the success of the second-tier NICs of South East Asia (SEANICs) has also been the result of development through manufacturing exports.

It is thus believed that exports, manufacturing exports in particular, offer the potential for sustainable growth. According to Elbadawi (1999), manufacturing has become regarded as important in this respect, because:

- (i) the income elasticity of demand for manufacturing goods is high, therefore their demand rises as global income rises;
- (ii) the relatively higher price elasticity of demand and supply for manufacturing goods make them less susceptible to price volatility, hence, a small percentage change in price brings about a relatively higher percentage change in the quantity of exports demanded and the quantity supplied;

iii) and lastly, dynamic productivity gains in manufacturing are potentially higher relative to primary products.

To elaborate further on iii) above, dynamic effects such as those featured in certain manufacturing structures, viz., firm clusters, also offer advantages. Firm clusters support specialised suppliers and offer the benefits of labour market pooling (Krugman and Obstfeld, 2000). Market pooling occurs when companies absorb excess specialised labour in their location. This structure also results in knowledge spillovers due to the interaction of workers from different firms in one location, making it possible for companies to expand rapidly. In this regard, the absence of manufacturing industries may significantly reduce any possible firm clustering. Hence, this might manifest in the loss of backward and forward linkages in the economy that could result from specialised suppliers as well as the loss of opportunities for the accumulation of knowledge through learning-by-doing (Sachs and Warner, 1995).

In addition, manufacturing is believed also to be a sector that absorbs excess labour in the first stages. Therefore, most of sub-Saharan Africa (SSA), with undoubtedly surplus labour, could utilise its excess labour in this sector. Further, manufacturing expansion leads to a gradual increase in skill demand as a country accumulates more capital (Leamer et al., 1999). This aspect of skill demand that will be considered in Chapter Three, forms an important argument of this thesis since this could be a significant source of poor manufacturing export performance.

On the other hand, primary good exports in contrast to manufacturing exports seem to be beset with problems. The characteristics of manufactures listed in (i), (ii) and (iii) conversely apply to primary good exports. Thus, primary good exports' relatively lower income elasticity of demand is believed to lead to a relative decline in the quantity of primary good exports demanded as industrialised countries grow (Azam et al., 2000; Appleyard and Field, 2001). In this respect, the countries that rely on primary good exports can be said not to reap the advantages of economies of scale in the long run.

Also, due to the inelastic price elasticity of demand and supply of primary good exports, there are huge price changes relative to the changes in the quantity demanded and supplied in the

world market. Dependence on exports of primary products is therefore associated with problems of shocks due to the volatility of world demand and price fluctuations.

It is commonly accepted that countries that depend solely on mineral or oil revenues in particular are also faced with the adverse economic, social and political effects dubbed the Dutch disease (see Chapter Two). These setbacks are dynamic and are said to influence manufacturing industrial development in the long run (Sachs and Warner, 1995). Hence, it is argued that developing countries need to diversify their economies to minimise their dependence on primary resources.

In this regard, most of SSA including those countries endowed with mineral resources remains un-industrialised. The exceptions are a few countries with economic performance above the region's average. For instance, South Africa and Mauritius are middle-income countries, while Botswana is an upper middle-income country (Edwards and Schoer, 2001; Sarraf and Jiwanji, 2001). This evident difference in performance forms the key subject of the thesis, that there are other strong factors to explain the discrepancies in performance, especially in terms of manufacturing exports.

Africa's economic performance has been the lowest among all regions globally (Collier and Gunning, 1999a; ILO, 2000). The gross domestic product (GDP) for sub-Saharan Africa in particular, according to Collier and Gunning (1999a), declined by 1.3% in the 1980s. Despite an increase of 1.8% in the 1990s, this growth is still 6.2 % below the average for all low-income developing countries.

Further, SSA's share in world exports has declined since 1955 resulting in annual trade losses of about \$65 billion (Ng and Yeats, 1997). According to the ILO (2000) report, the region's share of world manufactured exports had fallen to 1.2% by 1990, compared to 3.1% in the mid-1950s. Africa has not been a part of the global transformation of trade where 80% of exports from developing countries are now manufactures (Collier, 2002).

Nonetheless, the circumstances of Africa should be evaluated against the world economy at various periods. Wars and post-war recessions between 1913 and 1945 defined a period of import substitution (IS) in industrial countries (ILO, 2000). At that time these countries

erected high tariffs and other trade barriers to protect their industries. Simultaneously, Africa experienced a drop in commodity prices as a result of decline in demand (ILO, 2000). The 1945-1960 period, however, according to Collier and Gunning (1999b), was an era of more deliberate import substitution characterised by rising capital intensity in the now industrialised countries. Furthermore, most of Africa at that time was under colonial rule and was not free to pursue independent policies of industrialisation even if it had wanted to. Nevertheless, after the uncertainties of political transition in the 1950s, independent African countries enjoyed rapid growth during 1960-70, even higher than some Asian countries. This was fostered by both the IS industrialisation that began in the 1960s in most of Africa, and by the commodity boom of the 1970s (Collier and Gunning, 1999b). However, falling earnings as SSA's share of world exports declined in the 1980s and 1990s, combined with rising debt servicing, reversed the gains from the windfalls of the previous years (Rimmer, 1995).

It is thus argued that LDCs', particularly sub-Saharan Africa's, low share of world exports has a negative effect on growth and development (Ng and Yeats, 1997; Colombatto, 1990). However, the cause of SSA's poor participation in world trade and her consequent economic condition is subject to debate. Proponents of exports as an engine of growth (Lewis, 1980; Reidel, 1984) have suggested that external demand for LDCs' exports is the key determinant. However those that refute this, instead rely on supply-side factors as the plausible cause of the regions' dismal export shares (Ng and Yeats, 1997; Collier and Gunning, 1999; Romer, 1986). Kravis (1970) argues that competitiveness factors internal to LDCs hinder the mobility of resources toward efficient production. Comparative advantage has also been concluded to be decisive in determining exports (Wood and Mayer, 1998, 1999).

The above arguments capture part of the truth. The question that this thesis raises is in which direction should SSA go? Does the region's inherent comparative advantage mean that SSA is compelled to follow a resource-based industrialisation path fraught with difficulties? For Wood and Mayer (1998, 1999), SSA needs to increase its share of exports by concentrating production in the goods in which it has comparative advantage. They hold that the natural endowment neoclassical model explains the region's comparative advantage (see Chapter 2). This is evidenced from the export composition of SSA, which constitutes mainly primary products. Therefore, intuitively, it makes sense to begin from comparative advantage theory.

For this reason, the Wood and Mayer (1998, 1999) model serves as a basis for analysis. Wood and Mayer (1998, 1999) employed the Heckscher-Ohlin (H-O) theory in determining regional endowments and expected export structure. Primary goods thus form most of SSA's exports while skill-intensive goods make up most of the region's imports. According to Wood and Mayer (1998, 1999), countries such as South Africa and Côte d'Ivoire have more than 4 sq. km per 100 workers, comparable to Latin America (LA), and therefore are characterised as being relatively land abundant. These countries will thus be expected to export primary products. Only a high skill per worker will enable these land abundant countries to process a good proportion of their primary products. In such cases a relatively high share of processed primary products in total primary product exports will be found. A land abundant country that has a relatively high skill per worker ratio is also expected to have a relatively high share of manufacturing exports.

Conversely, where the land per worker is below 4 sq. km per 100 workers, a country is anticipated to have a lower share of primary products in total exports. Coupled with a high skill per worker, the share of total exports of manufactures will also be relatively high. For instance, Nigeria and Mauritius, both with similar land per worker below 4 sq. km per 100 workers, like that of the NICs, would be expected to have high shares of manufactures in total exports.

The peculiarity with the case studies in this thesis is that South Africa and Nigeria both are rich in mineral resources and are said to suffer from the Dutch disease (Fine and Rustomjee, 1998; Fidel Ezeala-Harison, 1993). While Nigeria's small land per worker ratio places her at a high potential for manufacturing exports, actual exports of manufactures are very low, but South Africa, however, is a relatively "good performer" in manufacturing exports. It is this discrepancy that Chapter Two will detail as due to the crude measures (land per worker and skill per worker) employed in the Wood and Mayer (1998, 1999) model in determining export performance. Both these ratios do not take account of the quality of land and skill across countries. Further, these measures fail to incorporate the effects of, for instance, mineral and oil wealth in the cases of South Africa and Nigeria respectively.

It is also probable that skill demand may be tied to the quality of land. This argument takes into consideration that the disparity in skill between countries with different mixes of

endowments, viz., skill abundant-land scarce, and skill scarce-land abundant, may be due to low demand for skill in the latter. The suggestion that SSA should follow its natural endowments and apply laissez-faire policies to trade then becomes questionable (see Chapter Three). By doing so, sub-Saharan African countries that are land abundant will therefore neglect developing and harnessing their human skill. Policy direction then becomes another significant factor in development in such countries.

The question that then arises is whether sub-Saharan Africa, notably the “poor performers” in manufacturing exports in this case study, could ever develop a comparative advantage in manufactures. More specifically, should the countries of the region follow resource-based industrialisation or attempt to diversify into higher value added sectors?

## **1.2 Aim of the research**

This research focuses on four countries in SSA, i.e., South Africa, Nigeria, Mauritius and Côte d’Ivoire. The primary goal of the thesis is to highlight the disparities between the “good performers” and the “poor performers” in manufacturing exports outlined above. This builds on the Wood and Mayer (1998, 1999) model, which examines Africa’s performance from a comparative perspective. An attempt will be made to explain this comparative performance by reviewing traditional trade theory of comparative advantage on which the Wood and Mayer (1998) model is based. The Wood and Mayer (1998, 1999) model provides a useful framework for analysis. However, as noted in the last section, it uses only rough proxies for relative factor abundance such as land/worker and skill/worker ratios. The model also does not explore the importance of policies, infrastructure and institutional fitness. Therefore, new trade theory and the Dutch disease hypothesis will also be reviewed to see how they relate to empirical evidence from SSA, notably for South Africa, Nigeria, Côte d’Ivoire and Mauritius.

Secondly, in order to shed light on why most SSA countries have failed to engage in learning-by-doing and why their shares of manufacturing are so low, the core model of the Dutch disease and aspects of political Dutch disease will be considered in detail. This will add to an understanding of the peculiar resource re-allocation that takes place in the economies of mineral/oil rich countries such as South Africa and Nigeria.

### **1.3 Thesis plan**

This thesis will undertake a comparative statistical and institutional analysis on the structure of exports of a four-country panel from sub-Saharan Africa namely, South Africa, Mauritius, Nigeria and Côte d'Ivoire. This method has been chosen over econometric analysis, since the quality of data does not always justify formal quantitative analysis, which is the case of the data from some of the countries under study. The method will involve using a case study approach to assess sectoral performances of the countries and to determine the deterrents to growth while referring to the growth paths of comparable countries. Variables such as export shares, manufacturing value added (MVA), the real effective exchange rate (RER) and the terms of trade (TOT) will be examined.

Chapter Two begins with the theories that form the basis of the research question on SSA's export structure and manufacturing export performance. The H-O theory and the Wood and Mayer (1998, 1999) variant are critically discussed to analyse their application to SSA. Further, non-market factors that may be impediments to SSA's efforts to diversify will be touched on briefly. In addition to this, dynamic factors offered by the new trade theories as well as the details of the Dutch disease core model will be considered to elaborate on more realistic influences that primary product dependence has on the government, civil war, and social and human capital development.

Taking a historical perspective, Chapter Three will attempt to address the importance of endowments as well as the government's role in the development paths of the countries under study. This chapter will also survey relevant empirical studies on the South East Asian NICs and Latin America. Further, development patterns in these regions will serve as international comparisons.

Comparisons of the countries under study by economic size, economic performance and sectoral characteristics will be analysed in Chapter Four. In order to highlight the revealed comparative advantage of each country, this section will focus on the export structure of South Africa, Nigeria, Mauritius and Côte d'Ivoire. In addition to this, data on economic freedom and human development factors will be examined to compare endogenous components in the four countries that may reveal any differences between the "good performers" and the "poor performers" with respect to manufacturing exports.

The fifth chapter will survey aspects of the macroeconomies of the four countries. This is done in order to emphasise any differences regarding the impact of commodity export price fluctuations through the TOT and the RER of the countries and to link them to commodity price instability. This chapter also aims to try to determine the impact of single commodity dependence on the political economy.

The conclusion in Chapter Six will consider the implications of traditional endowment theory, the Dutch disease hypothesis and the new trade theory for development in the context of the case studies. The chapter will offer suggestions for policy to foster the economic performance of the countries.

## CHAPTER 2

### TRADE, DEVELOPMENT, AND THE DUTCH DISEASE

#### 2.1 Introduction

Africa's poor economic performance was noted in Section 1.1. Average income per capita is lower than at the end of the 1960s and in 1997, real income in terms of purchasing power parity averaged one-third less than in South Asia, making Africa the poorest region in the world (World Bank, 2000).

Further, it was cited in Section 1.1 that massive annual trade losses have been experienced particularly by SSA, due to the decline in its share of world exports since 1955. While manufacturing export shares in other regions increased significantly that of SSA had fallen to 1.2% by 1990 compared to 3.1% in the mid-1950s (ILO, 2000). Elbadawi (1999) points out that sub-Saharan Africa only managed to export about 2.9% of her GDP during the 1990s. It is believed that Africa has not been a part of the global transformation of trade where 80% of exports from developing countries are now manufactures (Collier, 2002). The commodity boom of the 1970s brought about rapid growth to most of SSA, however this was followed by a sharp contraction that deteriorated economic growth (Collier and Gunning, 1999b; Rimmer, 1995).

The cause of SSA's poor participation in world trade and the region's consequent economic condition has been explained by a variety of factors. The problems of primary good exports considered in Chapter One are a major issue connected to SSA's trade performance. It is due to these problems that diversifying into manufacturing exports is believed to bring about improved world export shares. However, neoclassical comparative advantage theory like that used in the Wood and Mayer (1998, 1999) model suggests that the sub-Saharan African region in general lacks the endowments necessary for manufacturing exports. Comparison with the relatively "good performers" in manufacturing exports in Section 1.1 leads this chapter to look into other theories.

Against this backdrop, the aim of this chapter is to review the traditional theories of comparative advantage, particularly the Heckscher-Ohlin (H-O) theory and its extension by Wood and Mayer (1998, 1999) in the sub-Saharan African context. The chapter will

critically assess the lessons of these theories for the growth and development path of countries such as those in SSA.

In the light of the various shortcomings of these theories, the chapter will examine the Dutch disease concept, and particularly the implications of natural resource abundance and resource booms for the growth and development of the manufacturing sector and manufactured exports. The lessons of the new trade theory based on economies of scale and imperfect competition for the policies of developing countries will also be briefly considered.

Section 2.2 will look at the essence of neoclassical trade theory while Section 2.3 will show the workings of the Wood and Mayer (1998, 1999) model. Section 2.4 will distinguish between different development approaches implied by the theory. Deviations from the static assumptions of the H-O theory will be dealt with in Section 2.5. Subsequently, in Section 2.6, the problems of the Dutch disease and its political aspects will be considered. Finally Section 2.7 concludes the chapter by synthesising the preceding discussion to see how the lessons of the theory can be applied to the problems of sub-Saharan Africa.

## **2.2 Neoclassical Trade Theory**

Eli Heckscher (1919)<sup>1</sup> and Bertil Ohlin's (1933) work resulted in the well-known neoclassical Heckscher-Ohlin (H-O) theory. The theory holds that a country will have a comparative advantage in a good when that good's production is relatively intensive in the factor with which the country is relatively well endowed (Husted and Melvin, 2001).

Subasat (2003: 150) lists the main assumptions of the theory as follows:

1. commodities are freely mobile internationally;
2. all countries use the same technology in production;
3. factors of production are mobile domestically but immobile internationally;
4. tastes are the same in all countries;
5. there are no economies of scale;
6. there is perfect competition in all markets;
7. there are no transportation costs;
8. all resources are fully employed; and
9. countries have different relative factor endowments and thus different factor prices.

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<sup>1</sup> The English translated article "The effect of foreign trade on the distribution of income" can be found in Flam and Flanders (1991).

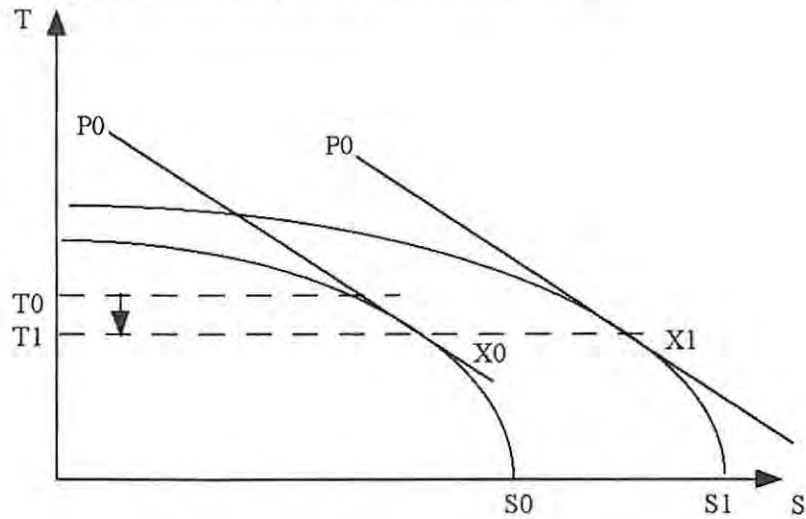
Basic H-O theory explains the pattern of trade in terms of two goods and two factors, labour and capital. Technology is assumed to be constant and identical across countries. Therefore, producers have ready access to the choice of method of producing any of the goods. Production of a good is either labour or capital-intensive depending on the relative proportion of the factor used. Furthermore, there are no factor intensity reversals, so that one good remains labour-intensive relative to the other at all factor price ratios.

These assumptions lead to the result that the labour-intensive good, for example, is relatively cheaper to produce in the labour abundant country, which will then specialise in this good and export it in international trade.

The trade and development policy implications of the H-O theory result will be considered further below, but before doing so it is worthwhile to outline how the H-O approach allows consideration of the impact of factor growth and/or technological change on the welfare and/or per capita income levels of a small open economy. This is explained by the Rybczynski theorem. The theorem (Rybczynski, 1955) states that growth in a factor will, at constant relative commodity prices, increase the output of the good intensive in that factor and decrease absolutely the production of the good intensive in the other factor. There are important implications for welfare if labour force growth is unaccompanied by capital growth or technological change. Adverse terms of trade effects may aggravate the outcome in cases where countries are large in the market for the product in question. These situations are best explained with reference to Figures 2.1 and 2.2.

Figure 2.1 depicts the case of a labour abundant country that is small and thus cannot influence world prices. Therefore, world price remains constant at  $P_0$ . Subsequently, if the country experiences an increase in its supply of one factor (a non-neutral growth), say an increase in labour, at a constant world price  $P_0$ , the production possibility frontier (PPF) will

Figure 2.1: The effect of an increase in labour stock



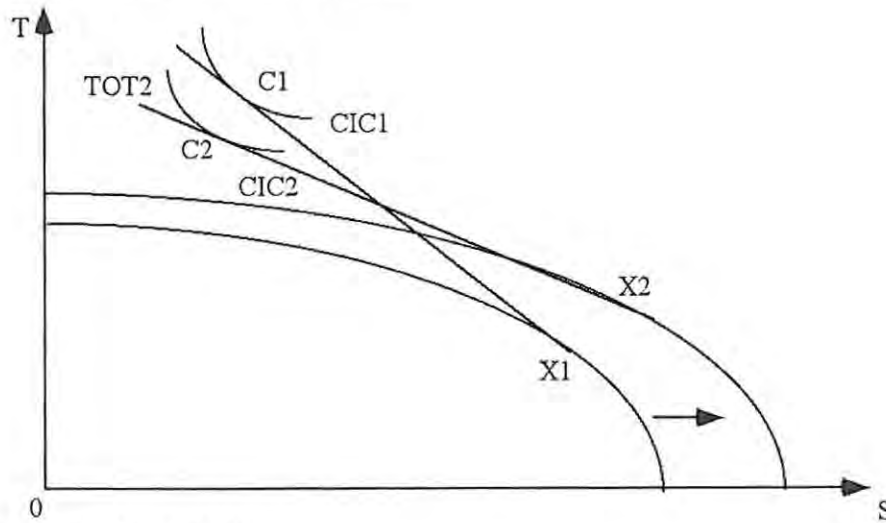
Source: Husted and Melvin (2001).

shift such that there is an increased output of S (the labour-intensive product) and a decrease in the output of the capital-intensive good T, other things constant. A biased growth occurs in other words because an increase in labour will shift the PPF out asymmetrically more along the axis of the labour-intensive good. Initially production is at X0, which shifts to the new production point at X1. The peculiarity of the Rybczynski effect is that under the small country assumption relative prices and technology remain constant.

Therefore, for the capital-labour ratio to remain unchanged at the new equilibrium in both industries, the capital-intensive sector must release some capital to be used with the new labour (Appleyard and Field, 2001:196).

The Rybczynski effect brings about an ultra-protrade production effect, whereby a country participates more in trade if the labour-intensive good is the export good. An ultra-antitrade effect will result if the labour-intensive good is the import good (Appleyard and Field, 2001:195).

Figure 2.2: Immiserising growth



Source: Husted and Melvin (2001)

The H-O theory assumption of constant returns to scale, however, has welfare implications when considering the Rybczynski theorem. This assumption means that an increase in both factors of production leads to an equal proportionate increase in output. However, with only one factor (labour) increasing as the Rybczynski theorem suggests, this will lead to a less than proportionate increase in output. Thus an increase in the labour force results in an increase in income less than if all the inputs have also grown equally. The resulting effect is a fall in per capita income, thus a decline in a country's welfare.

Consider now the case where a country is large enough to influence world prices. By changing its exports or imports and hence also influencing the international terms of trade (TOT), the assumption of constant world price falls. In such an example, biased economic growth such as that discussed in the small country case may also bring about negative welfare changes tied to TOT changes. This effect is known as immiserising growth. Bhagwati (1958:201) was the first to argue that under certain circumstances economic expansion might lead to a sufficient deterioration in the terms of trade to offset the beneficial effect of growth and reduce the real income of the growing country. In a large country case only, decline in per capita income such as that explained in the small country case, is further deteriorated by a worsened TOT.

Figure 2.2 assumes a country abundant in labour, large enough to affect world prices. Initially, production of good S is at  $X_1$ . At a constant price the country's consumption possibility line is  $TOT_1$  and its welfare level is represented by  $CIC_1$ . Consumption is at  $C_1$  with  $TOT_1$  terms of trade. When this country experiences labour force growth, biased production of the labour-intensive good S occurs, and hence its export supply to the rest of the world increases. Due to the Rybczynski effect, production in the industry with the scarce factor, capital, will decline, thereby generating an increased demand for imports. This process will alter the international TOT when an oversupply of S on the world market leads to its price decline. The significance of this is a welfare effect as the country moves to a lower  $TOT_2$ , consuming less at a new indifference curve  $CIC_2$ .

The implications that can be drawn from H-O theory are that resource differences between countries are the reason for trade. Therefore, when countries exploit their natural endowments, this will ensure an efficient allocation and production of resources in attaining comparative advantage and hence economic growth. This therefore serves as an incentive for greater international trade participation of countries. What this also suggests is the liberalisation of trade and hence laissez-faire government policies towards trade.

However, primary-export-led growth based on endowment in primary resources has its setbacks. First, as mentioned earlier in Chapter One, primary exports are vulnerable to price shocks due to world demand fluctuations. Therefore, the macroeconomies of such exporting countries face economic instability. As a result, developing countries would experience unstable export earnings. Second, it is believed that primary-export-led growth leads to the concentration and over-supply of primary commodities in the international market. With the effect of immiserising growth the result is that the terms of trade would be worsened for commodity exporting countries when prices of such exports are lower relative to their imports. It is rather argued that developing countries should diversify their production base to facilitate development.

The static framework based on the restrictive assumptions made earlier is thus insufficient for analysing the developing country context. It is important to consider both positive and negative dynamic effects, and to look at the lessons of new trade theory in the developing

country context. Furthermore, in the context of countries like Nigeria and South Africa we need to look at the Dutch disease theory. Before doing so, however, it is useful to consider the Wood and Mayer (1998, 1999) application of the H-O framework, as it has been applied specifically to the problems of sub-Saharan Africa with which this thesis is concerned.

### **2.3 The Wood and Mayer model**

A variant of the H-O theory, the Wood and Mayer (1998, 1999) (W-M) model, assesses the relative endowments of skill and land to determine regional patterns of trade. The model is explained using human and natural resources as factor inputs whose supplies affect export structure. Wood and Mayer (1998) argue that Africa cannot compete in manufacturing exports due to its current comparative advantage in natural resources and unskilled labour relative to other regions.

While they have modified a number of the H-O assumptions, they maintain the plausible assumption that all goods are ranked the same in terms of relative factor intensities in the trading countries. For example, agriculture will always use more land relative to the skill input in contrast to manufacturing. Therefore, the skill to land ratio in agriculture will be expected to be lower than in the latter.

#### **2.3.1 Factors of production**

Capital of all kinds is taken as given because of its international mobility. Based on this, if a country has a comparative advantage in some area it will obtain capital needed to develop it either from domestic savings or from overseas. Also, countries face similar costs of capital due to domestic capital markets being linked to international capital markets. Therefore, in contrast to the H-O model, the W-M model views differences in capital abundance not to be a source of comparative advantage among countries (Wood and Mayer, 1998; 1999).

Skill and labour are two separate factors of production, which are also mobile to an extent, but only a limited skilled workforce of the world is mobile with the more skilled labour having greater mobility. Skill, otherwise termed human capital, is taken to be the measure of a combination of education, training and experience. Labour is the number of people in the workforce, and land is the total land area that refers to natural resources of all kinds.

The resource measures are the skill to land and the skill per worker ratios. These measures are important as they point to the relative costs of factors that form the source of comparative advantage. The ratio skill to land, derived from a measure of skill per worker and land per worker, points to a country's comparative advantage in either manufactured or primary exports. On the other hand, to explain differences in processed primary to unprocessed primary export ratios in a country, the skill per worker ratio is used. This is calculated from the average number of years of schooling of the adult population over 15 years (Wood and Mayer, 1998; 1999).

### **2.3.2 Export categories**

In examining comparative advantage the W-M model broadly distinguishes exports of narrow manufactures (NM), unprocessed primary products (NP) and processed primary products (PP). For Wood and Mayer (1998, 1999), it is important to distinguish processed primary products from manufactures. Therefore, they refer to the Standard International Trade Classification (SITC) of manufacturing goods (categories 5-8 less 68) as Narrow Manufactures (NM). They thus refer to a proportion of the International Standard Industry Classification (ISIC) of manufactures as processed primary since this include goods that use large inputs of local raw materials. Unprocessed primary products in the W-M model are those goods in the state in which they leave the farm, which the ISIC classify as agriculture and mining. Figure 2.3a summarises the three broad export classifications.

Eight export categories and sub-divisions are presented in Figure 2.3b. The idea is that distinguishing and defining these exports into the various categories allows for identifying factor intensities, as Section 2.3.3 below<sup>2</sup> will explain.

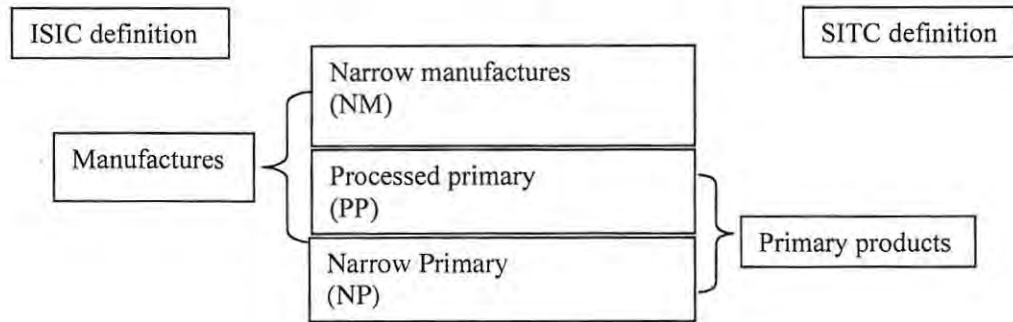
The category of narrow manufactures is separated into high-skilled (NMH) and low-skilled (NML) manufactures. Broad primary agriculture (BPA) and broad primary metals and fuels (BPM) constitute both the processed primary agriculture and metal (PPA, PPM) and their non-processed categories (NPA, NPM). Furthermore, processed and non-processed agriculture could either be 'static' (PPS or NPS) or "dynamic"<sup>3</sup> (PPD or NPD).

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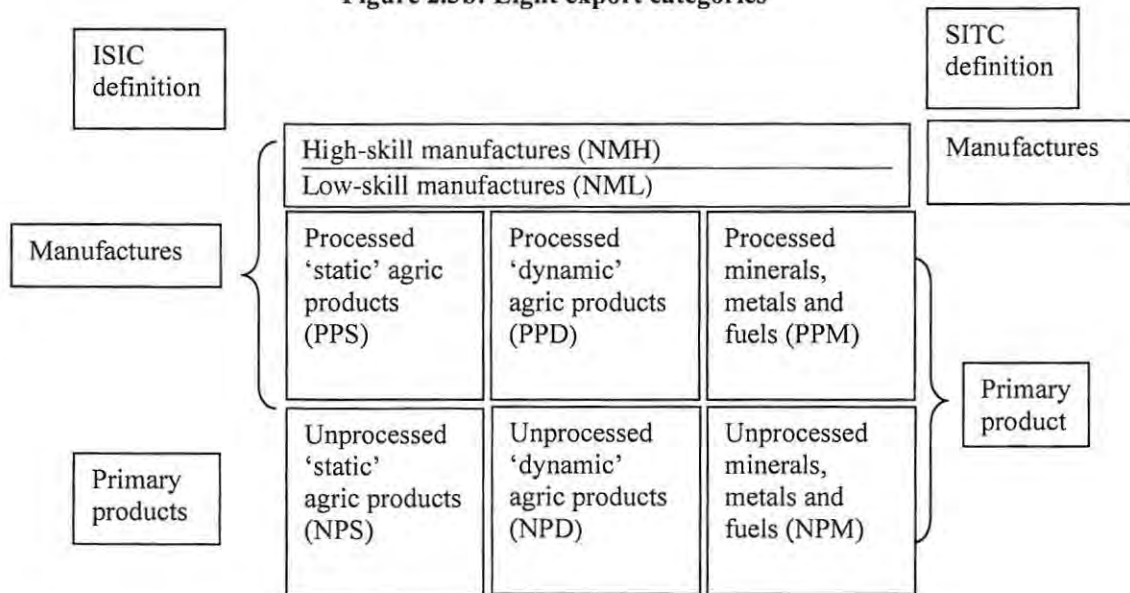
<sup>2</sup> The empirical results of Wood and Mayer's modelling for Africa will be examined in Chapter 3.

<sup>3</sup> Dynamic refers to items whose income elasticity of demand is greater than one.

**Figure 2.3a: Summary of export category**

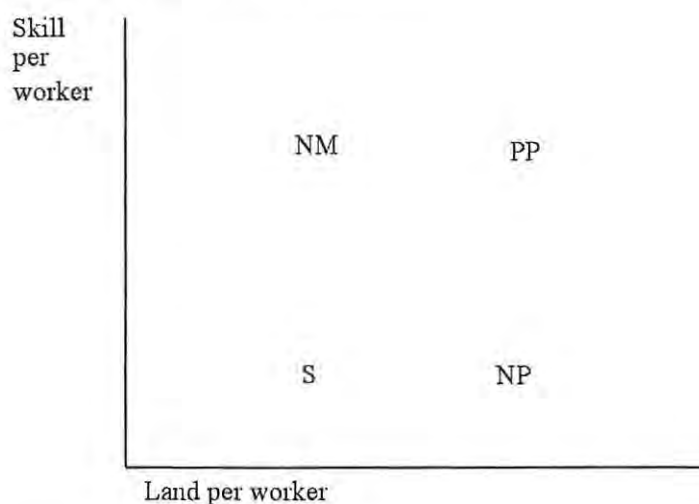


**Figure 2.3b: Eight export categories**



Source: Wood and Mayer (1998).

Figure 2.4: Relative factor intensities



Source: Wood and Mayer (1998).

### 2.3.3 Relative factor intensities

The ranking of the export categories (see Figure 2.3b) places NMH as the most skill-intensive followed by PPD, PPM and then NML, which are all broadly of similar skill-intensity. It therefore follows that both dynamic agricultural products and minerals require more skill than unprocessed static agricultural products, because these are processed and processing is carried out in factories.

Figure 2.4 shows the relative factor intensities of the export categories. Manufacturing does not require as much land compared to agriculture but will use more skill to land. Therefore, it requires a more educated labour force.

Mining however, is viewed as having a similar requirement to manufactures but its ratio of skilled wages to land rent is low as in agriculture. Manufacturing (NM) and processed primary (PP) accordingly have similar skill per worker but PP employs more land (because it depends on the availability of natural resources).

Similarly, unprocessed primary (NP) products and their processed counterparts (PP) use the same land per worker ratios for they both depend on natural resources, but PP requires more skill per worker and low input of labour. Finally, services and narrow manufactures have

similar land intensity, but the former is relatively less skill-intensive (Wood and Mayer, 1998: 8; 1999).

This said, the W-M model indicates that a country whose ratio of land per worker is low is expected to have a high share of manufactures to processed primary products in total exports. Its share of services<sup>4</sup> can be expected also to be relatively high. However, for relatively high shares of manufactures and services in total exports, a country with a low land to worker ratio requires a relatively high skill to worker ratio. Conversely a high share of primary products in total exports is due to a high land to worker ratio. When processed primary exports are relatively more than unprocessed primary exports, this only points to a high skill per worker ratio since both categories, i.e., unprocessed primary and processed primary exports require high land per worker.

In conclusion, the W-M thesis is simply a variant of the H-O model. It analyses the components of exports that substitute for international factor mobility to determine comparative advantage. Simply put, it suggests that the inherent components or 'natural' abundance of specific factors of production will lead to their full employment and therefore the efficient production of associated goods in a region. Consequently, the model implies that Africa will never be able to compete in narrow manufacturing exports because of the region's natural resource abundance combined with low skill. Thus, exploitation of these natural endowments will determine the direction of specialisation. To this, Subasat (2003:153) argues that:

this is no better than predicting that someone who has medical training will be likely to practice medicine or that someone practicing medicine must have medical training.

More importantly, some of the endowments are not "endowments" as such since they can be produced. Capital can be created or, as in Wood and Mayer (1998, 1999), is freely mobile, and labour can be educated and trained. Wood and Mayer (1998, 1999) have defended the latter arguing that since the concern is with relative comparative advantage, given that skill acquisition is not static, constant shifts in skill accumulation may maintain the skill gap with

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<sup>4</sup> However, different types of services have different relative factor intensities. For example tourism is more land-intensive than financial services (Wood and Mayer, 1998).

regions that lag behind. However, to observe a labour-intensive (natural resource endowed) country export manufactures (natural resources) is merely stating the obvious. Rather, development requires a move from labour-intensive production to that of capital-intensity (Subasat, 2003: 153). In that respect, it is the nature of development to move from labour-intensive production to capital-intensive production.

Further, the assumption that capital is given stands to be challenged by endogenous growth theorists' arguments of market and governments failure that could raise the cost of technology transfer (Lall, 1992; See Section 2.4.2).

In addition, skill measured by years of schooling does not consider the quality of schooling across countries or the sources of skill acquisition. If a distinction is made between human capital and other forms of capital then other processes of skill acquisition come to mind. For example, processes such as on-the-job-training and research and development (R&D) impact on the accumulation of knowledge and thus, human capital accumulation. In the light of this, some new trade theories, such as those discussed in Section 2.5 become relevant for SSA. These factors among others such as infrastructure and institutional fitness have policy implications for SSA. In the light of this, policy becomes an important impetus in driving comparative advantage.

As pointed out in Section 1.2, the W-M (1998,1999) model provides a useful framework for analysis. However, proxies for relative factor abundance such as the land/worker ratio ignore land quality. The W-M model is still based on most of the static assumptions of the H-O theory. Their model does not adequately take account of the effects of natural resources in an economy, for example, the predominance of minerals and oil in South Africa and Nigeria as well as agricultural resources in Côte d'Ivoire because it uses land area as a measure of natural resources. Therefore, in Section 2.6, the Dutch disease model has been chosen to explain the relevance of natural resources for structural economic changes. Subsequent sections will also highlight other factors more in line with the case of developing countries.

#### **2.4 Endogenous growth theory approach to development**

The implication of endogenous growth theory for development strategies will be examined in this section in contrast to the neoclassical framework. Endogenous growth theory argues that

technology is due to factors explained within the economic model and not assumed to happen as in the neoclassical model. The endogenous growth theorists' approach is thus toward development and to assign a central role to endogenous technological effort in acquiring new technology, adapting it to the developing economy and exploiting it through manufacturing (Lall, 1992). This is in contrast to the conventional neoclassical approach. The latter is based on "getting prices right", reducing protection, freeing international flows of capital and technology, and cutting back on government intervention in economic activity (Lall, 1992); this implies that government intervention should be "neutral" and thus limited to R&D, education and functions that support the market. In other words, the distinction between the two frameworks in policy terms is between "functional" (in the neoclassical case) and selective intervention, where the latter (favoured by endogenous growth theorists) promotes certain industries or technologies over others.

#### **2.4.1 Incentives and market failure**

The essential justification for selective intervention is market failure. It is argued that since endogenous growth theorists' approach is to assign a central role to endogenous technological effort, their concern then is with market failures that may hinder the acquisition, adaptation, improvement and functioning of technology in the economy (Lall, 1992).

In the neoclassical framework, markets provide a correct set of prices that yield the appropriate incentives for economic agents. For markets to operate there needs to be functional intervention in, for example, education and a legal system. However, Rodrik (2000b) argues that a much broader set of institutions is required to generate the correct incentives. Institutions are defined as "a set of humanly devised behavioural rules that govern and shape the interactions of human beings in part by helping them to form expectations of what other people will do" (Rodrik, 2000b: 4). Thus institutions of the legal framework are required to support industrial activity and property rights. In this regard, industrial institutions could serve to promote interfirm linkages in production or technology, support small enterprises and provide training and restructuring.

Further, non-market incentives such as social insurance could bring about social stability and employment (Rodrik, 2000b). In addition, another dimension to consider is democracy. The latter creates a more participatory and open government and enables the consensus to take on

policy adjustments decisively. Democracy also provides for the voice of the people to be heard in, especially, ethno-linguistic societies. There has, however, been some controversial debate on this latter issue with regard to lobbying groups along ethnic divisions and competing demands from the government (see, for example, Przeworski and Limongi, 1993). Nonetheless, government activity in welfare i.e., investment in health, nutrition and education of society, to buffer economic uncertainties in this regard could correct non-market institution failure too (Rodrik, 2000b).

Neoclassical economics, by allowing for the correction of some market failure, seems to provide the basis for quite a lot of intervention, as Stiglitz points out (World Bank, 1997). This includes infant industry arguments, due, for example, to market failure as a result of firm-level lack of investments. However, infant industry arguments are usually seen as selective, and Krueger, (1990) argues that government failures can be much worse than market failure.

Krueger (1990) notes that in the 1970s to early 1980s government failures were revealed in large-scale corruption in most developing countries. She points out that, firstly, failures of commission brought about inefficient and wasteful investment projects and government expenditure that led to high deficits amid inflation (Krueger, 1990). Secondly, failures of omission became apparent in the deterioration of transportation and communication facilities, maintenance of fixed nominal exchange rates and failure to maintain existing infrastructure.

With regard to selective policies, industrial regulation employing policy tools such as tariffs or subsidies and import protection has been used to promote small firms, to prevent large firms from expanding, to prevent concentration or to preserve employment and force industries to specific locations (Lall, 1992). However, excessive industrial regulation and protection could also frustrate development of capabilities and create a less open economy. The nature of selective intervention could also facilitate rent seeking, lead to misuse of trade policy tools to benefit government enterprises, and lead to picking winners without merit in the absence of quality control.

It could be argued, however, that the debate has moved beyond whether markets or governments fail. Both seem to be acknowledged by both sides. The question has become

more one of selecting appropriate policies that reflect the specific problems of any given environment (such as the problems associated with mineral-dependent growth – see Section 2.6), and the distinction between functional and selective intervention tends to break down. It cannot be said *a priori* whether poor growth is due to general market failures (and other “functional” matters such as poor infrastructure) or whether markets are functioning but the economy needs to move to a higher more multifactor productivity growth-intensive path (as in Japan). Clearly, Nigeria is a good case to examine (see Chapters 3-5), because general market failures *and* a particular dynamic path (mineral dependence) have interacted. It is these kinds of questions that Dutch Disease and associated theories examined later in this chapter deal with (see Section 2.6).

#### **2.4.2 Non-market factors**

Various authors cite a number of sources of so-called non-market failure, which, they argue, have affected the growth and development path of African economies. Bloom and Sachs (1998), for example, refer to the constraint on agriculture and the effect on health of adverse climatic factors (the “curse of the tropics”).

Transportation cost is another factor that is influenced by geographic location. In the presence of poor infrastructure high transport costs may impact significantly and deter export growth when countries are land-locked. Low population density, according to Collier and Gunning (1999a), also tends to increase costs of transportation and poor market integration. Countries with low population density, especially in Africa, have also been linked to a much higher ethno-linguistic diversity that has been associated with civil wars.

More prominently, Africa’s fragmentation into small states during colonisation has been cited as important in the lack of success of development efforts (Collier and Gunning (1999a). The resulting small domestic markets, in addition, are not attractive to investors due to the lack of scale economies. Kremer (1993) adds that small populations have also been associated with a low incidence of discoveries and technological innovation.

Although such non-market factors can only contribute to a partial explanation of sub-Saharan Africa’s current economic problems, they do provide an indication of the kinds of functional investment necessary for markets to work better.

## 2.5 New trade theories

The evolution of new trade theory emanates from discrepancies with the assumptions of the endowment theory of comparative advantage as well as the arguments brought up in Section 2.4. The new trade theories attempt to explain the pattern of trade with a different emphasis, other than relative endowments, thereby refuting most of the neoclassical trade theory assumptions. This set of theories emerged in response to the so-called Leontief Paradox, as well as the limitations of the static framework of traditional trade theory, and the inability of neoclassical theory to explain the importance of intra-industry trade.

The well-known Leontief Paradox (Leontief, 1953) unveiled failings of H-O theory from empirical evidence about U.S. export data. Exports were shown to be of relatively labour-intensive goods instead of capital-intensive goods as expected. Keesing's (1966) human skill theory attempted to explain this. He argued that differences in endowments and intensities of skilled and unskilled workers should rather be the emphasis. Hence, countries with relatively large endowments of skilled labour would have a comparative advantage in products that are relatively intensive in skilled labour. Therefore, with regard to the U.S. data of that time, U.S. labour-intensive goods could be explained by their skill content as skill-intensive goods.

This argument, however, still appears to rest on an essentially static H-O framework, whereas more dynamic theoretical explanations began to emerge with the so-called technology theories of trade. Raymond Vernon's (1966) product life cycle theory attempted to shed light on the contradiction found in U.S. exports. Simply put, according to this theory, technological innovation of manufactured goods could lead to an initial comparative advantage in a product. When a country first invents a product, in the early stage it therefore has a comparative advantage in that product. As the product matures it undergoes standardisation and with time other countries may acquire the technology to produce it themselves for export. The assumption that technology is constant and at all times identical for trading partners therefore falls away. In addition, the product cycle theory allows for economies of scale and international mobility of capital and managerial skill, and has clear relevance for both developed and developing countries. In contrast to the static H-O theory, such technology theories allow for the idea of dynamic comparative advantage, an approach that holds appeal in the light of empirical evidence (Appleyard and Field, 2001: 161-164).

An important early alternative trade theory to shed light on the occurrence of trade in similar products between countries is the similarity of preference theory, which offers a demand side explanation of trade. According to Linder (1961), industries in countries produce goods preferred by the consumers of that country. However because some consumers would prefer slightly different alternative products, they would choose to consume the other country's goods. It follows also that countries with similar standards of living or per capita income will tend to consume similar types of goods.

Although it has been argued that tastes do not differ greatly, at least among middle or high-income countries (Appleyard and Field, 2001:165), the relevance of the Linder explanation of trade and its implications for trade policy in the sub-Saharan African context is not likely to be significant.

There is more debate, however, about the relevance of the new trade theory based on economies of scale and imperfect competition for trade and industrial policy in the developing country context (Greenaway, 1991; Krugman, 1989; Alam, 1994). One major contradiction of neoclassical trade theory predictions is that the global direction of trade showed that the largest trade flows were seen to be between countries with similar production and similar endowments (Krugman and Obstfeld, 2000: 82-83; Husted and Melvin, 2001: 129-130; Subasat, 2003).

Krugman and Obstfeld (2000) attempt to explain this phenomenon by pointing out that most markets can influence prices and therefore have monopolistic elements. This automatically contradicts the perfectly competitive market assumed in H-O theory. They further add that if free trade and liberalisation tend to expand markets, firms will experience economies of scale instead of the assumed constant returns to scale. The presence of economies of scale, together with the existence of product differentiation (due to consumers' "love of variety") allows for countries to specialise in different varieties of manufacturing products, which leads to intraindustry trade between countries. Such trade would not reflect traditional comparative advantage but rather how similar countries are.

Since intraindustry trade is most prevalent among countries with high and similar per capita incomes and similar factor endowments, the question arises about the relevance of these

theories in the developing country context and their implications for trade and development policy. Greenaway (1991: 166-167) notes the existence of intraindustry trade in both North-South and South-South trade, and its growing importance as industrialisation proceeds (Cattaneo, 1998: 115). The trade policy implications for developing countries are less clear, however.

Krugman (1989) argues that the new trade theory may provide new arguments for government intervention (and perhaps trade protection) via the “rent extraction” or “import-protection-as-export-promotion” arguments<sup>5</sup>. Whether most developing countries would be in a position to exploit these arguments is another matter<sup>6</sup>. By contrast, Alam (1989) and Greenaway (1991) argue that the new trade theories reinforce the argument for open trade policies, as they provide evidence of additional gains (associated with differentiated products and attainment of economies of scale), which were not obtainable in the traditional framework (Cattaneo, 1998: 139).

## **2.6 The theory of the Dutch disease**

Dutch disease theory has an appeal in the sub-Saharan African context for it explains the structural dynamics in a resource rich country. The term Dutch disease refers to the adverse effects on Dutch production of natural gas discoveries of the 1960s through appreciation of the Dutch real exchange rate (Corden, 1984: 358; Krugman, 1987: 49; Husted and Melvin, 2001: 292-293). The Dutch disease is the consequence of export booms that set up complex effects that actually retard other sectors of the economy. The peculiarity of this phenomenon is that, it unambiguously affects the manufacturing sector, as some studies (Stijns, 2003; Sachs and Warner, 1995) discussed in later chapters will show. According to Corden (1984), the Dutch disease can be argued also as referring to the use of the booming sector revenues for social services and industrialisation that are not sustainable and politically difficult to reduce. Lewis (1984) also draws attention to the issues of political economy or of public policy bias that mineral rich countries face. More recently, Lam and Wantchekon (2003) discuss what they term political Dutch disease as government’s inflated allocative or distributive power due to resource rents.

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<sup>5</sup> The former refers to the use of tariffs, for example, to shift profits from a foreign oligopolistic firm. The latter is an extension of the standard infant industry argument to a context of imperfect competition.

<sup>6</sup> They may be applicable to countries such as South Africa, Brazil or the second-tier NICs, but far less so to many poor sub-Saharan African countries.

Corden's (1984) core model will be analysed below to explain the resource reallocation that occurs due to economic booms. The model is centred on two distinct effects of a boom: the spending effect and resource movement effect from the lagging sector (L) and the non-tradeable sector (N) to the booming sector (B).

In the model, sector B is an energy or mineral sector, while L is that which produces non-boom exportables and importables. Even though manufacturing will be mentioned as referring to L, it is not restricted to only manufacturing industry but could also be a tradeable agricultural sector. On the other hand, the non-tradeable sector, interchangeably referred to as services in the discussion, is one whose domestic prices are not determined by world market prices but by domestic demand and supply conditions. The services industry and construction would fit this description as well as possibly some protected local manufacturing, import-substitution industries or subsidised imports sectors.

The core model assumes a framework in a small open economy with two traded goods from two sectors, i.e. the booming sector and the lagging sector both facing world prices. A third good, from the non-tradeable sector is only affected by domestic prices. Output in each sector is produced by a factor specific to that sector and by labour  $L$ , which is mobile between the three sectors so as to equalise its wage employment in all sectors. All factors are internationally immobile.  $W$  is the wage and  $R_b$  is rent from the booming sector, while  $R_l$  and  $R_n$  are rents from the lagging and the non-tradeable sectors respectively.

The model ignores the monetary economy and works on a real economy where all goods are used for consumption only. It is set on the assumption of full employment therefore there are no distortions in commodity and factor markets. Trade is also balanced such that national output is always equal to expenditure. The terms of trade is also assumed to be given and only the real exchange rate, here defined as the relative price of non-tradeables to traded goods prices, is allowed to vary.

Corden (1984: 360) postulates that a boom could come from three sources: (1) a once-for-all exogenous technological improvement in B; (2) a windfall discovery of new resources, such as an increase in the supply of the specific factor; (3) B produces only for export, and there

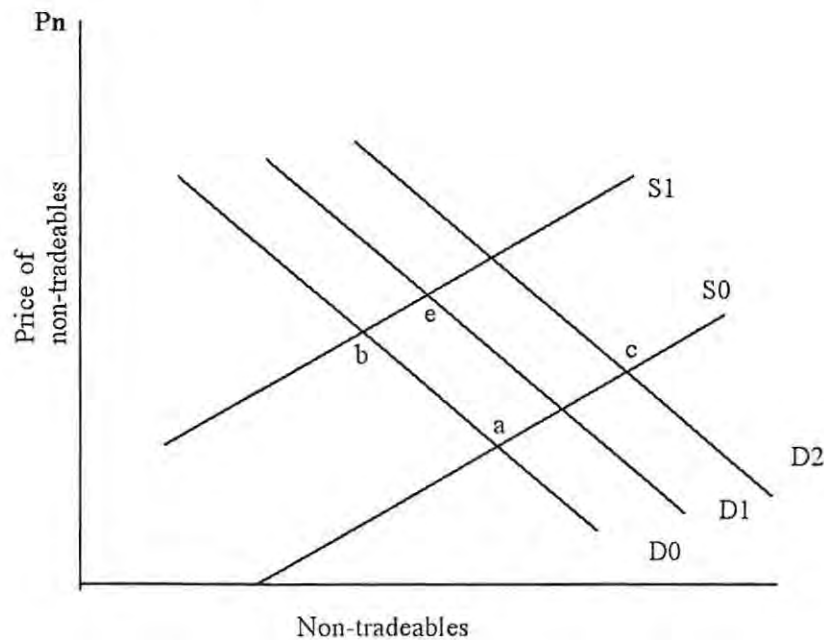
has been an exogenous price rise of its good on the world market relative to the price of imports. In the simple case described below, the core model is that of a boom due to an exogenous technological improvement in B. According to Corden and Neary (1982) this could readily be applied to other sources of the boom, including the effects of terms of trade shocks in sub-Saharan Africa, the third case of an exogenous price increase of the good in B. However, whatever scenario is employed, the resource and the spending effects are distinguished (see Figure 2.5).

The boom's impact on factor demand and the level of profitability in the manufacturing sector will also be focused on.

### 2.6.1 Spending effect

The core model considers the spending effect and the resource effect in isolation. Using Fig. 2.5,  $P_n$  on the vertical axis depicts the various prices of quantities of non-tradeables,  $N$ .

Figure 2.5: The core model: spending and resource movement effects



Source: Corden (1984)

The downward sloping  $D$  curve is the demand for  $N$ , which increases as  $P_n$  decreases, assuming non-tradeables is a normal good and expenditure is always equal to income. The  $S$  schedule denotes supply of  $N$  at different prices. The  $S$  curve is a derivative of the transformation curve between  $N$  and the two tradeables.

To isolate the spending effect, the model assumes that the booming sector does not use any labour and therefore the boom has no effect on the demand for labour from the other sectors. This assumption allows for the focus to be exclusively on demand-side effects as between  $N$  and  $L$ . Thus, as income increases in the booming sector it is spent directly by factor owners or indirectly through tax collection and spent by government. If the income elasticity for  $N$  is positive, demand shifts from  $D_0$  to  $D_1$  pushing up the price of  $N$  relative to  $B$  and  $L$  that are given by world prices. The rise in the relative price of non-tradeables to tradeables (real appreciation) thus shifts demand away from  $N$  to  $B$  and  $L$ . However, real appreciation will subsequently draw resources (mobile labour) from  $L$  into  $N$ . Although the rise in price shifts demand (relatively) away from  $N$ , the overall effect raises the output of  $N$ , i.e., at point  $c$  (Corden, 84:360). This effect is called indirect de-industrialisation.

### **2.6.2 Resource effect**

Now to consider the resource effect separately, first the real exchange rate (price of  $N$  relative to tradeables) is held constant, and then allowed to vary later. At a given wage rate, a boom in sector  $B$  raises profitability in the sector and causes a rise in marginal productivity of labour. As a result, this increases the demand for labour in  $B$ . Consequently, labour will move out of  $L$  and  $N$  into  $B$  causing a fall in employment in both sectors. This has two effects. Firstly, at a constant real exchange rate, the movement of labour out of  $L$  into  $B$  lowers output in  $L$  causing direct de-industrialisation. Secondly labour moves out of  $N$  into  $B$  at a constant real exchange rate. This causes lower output of  $N$  and thus an upward shift of  $S_0$  to  $S_1$ . The lower output in  $N$  creates an excess demand for  $N$ , the price of which must rise to restore equilibrium. Real appreciation therefore occurs in addition to the real appreciation caused by the spending effect. This further draws labour away from  $L$  into  $N$  causing more indirect de-industrialisation and supplements the direct de-industrialisation as a result of movement of labour from  $L$  to  $B$ .

The final output of N is lower than initially if the resource effect dominates and higher when the spending effect is dominant. What is unambiguous is that the output of L falls due to the effects of direct and indirect de-industrialisation on the L sector.

### **2.6.3 Effects of a boom on factor incomes: effect on real wage and profitability**

Corden and Neary (1982: 831) explain the effects of the boom on the real wage through the demand for labour. When a boom occurs in B, the wage  $W$  in terms of traded goods due to the increase in the demand for labour must rise. When resource movement alone is considered, a fall in the output of N will also raise the wage in terms of N. Therefore, the real wage in terms of a consumption basket of both tradeables and non-tradeables must rise as a result of resource movement.

There is however ambiguity in the effect of the boom on the real wage with the spending effect. The spending effect raises the output of N, and hence the wage with respect to N must fall. Since the wage in terms of traded goods must rise due to real appreciation as a result of the spending effect, the real wage may rise or fall because of the spending effect. Corden and Neary (1982: 831) consider that when both the spending and resource movement effects are taken into account, the effect on the real wage is uncertain. A fall in the real wage is most likely when the spending effect is stronger and if the share of services (N) is relatively higher in wage earners' consumption.

Since demand for labour is a function of the wage with respect to the price of that sector's output, the returns to the specific factor would thus be a measure of the impact of the boom on profitability of the sectors. Profitability in L must fall unambiguously, as a result of the boom. The spending effect brings about a rise in the profitability of N since the wage with respect to N falls. However, a fall in output of N as a result of the resource effect will raise the wage in terms of N, leading to the sectors' decline in profitability. In the booming sector, the resource effect must raise profitability. The spending effect will however prevent the specific factor in the booming sector from benefiting due to the fixed world price of the sector's good. The resulting real appreciation due to the spending effect will nonetheless lead to a fall in the output of traded goods.

It is recognised that non-profitability and de-industrialisation in L relative to the other sectors may not necessarily take place if manufacturing is capital-intensive and therefore less susceptible to wage rises (Corden and Neary, 1982: 832). It is thus possible that capital is mobile between manufacturing or some capital-intensive industries in the traded sector, and services. Hence, manufacturing could draw resources from other non-profitable traded industries or from services in the longer term. In this case some of the non-boom tradeable industries' output in the lagging sector may expand, as will be explained in the next model, even though overall output contracts.

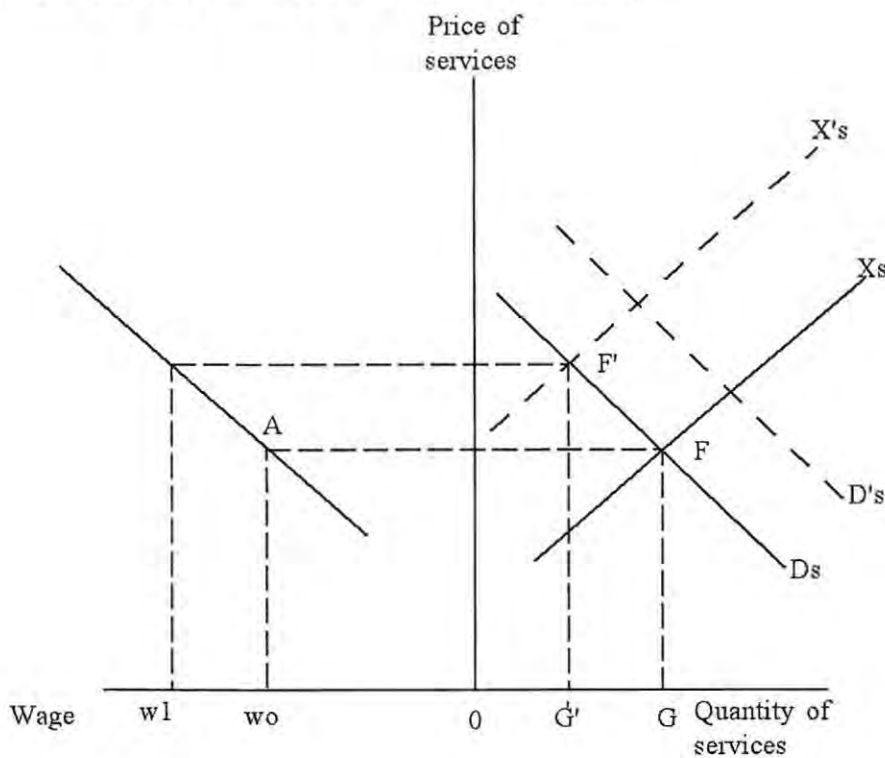
In this model, the services (N) and manufacturing (L) sectors share a pool of capital but the energy sector has its specific factor. Labour  $L$  is assumed to be mobile between the three sectors. L and N behave like a miniature H-O economy, and the assumptions of the H-O theory apply. Figure 2.6 below demonstrates the resource movement between L and N. The left side depicts a relationship between the equilibrium wage rate and the price of services that is dependent only on the technology (factor intensities) between the two sectors. This is an upward sloping curve, which demonstrates the capital-intensity of manufacturing relative to services. Subsequent explanation of the model follows.

To eliminate the spending effect a zero income elasticity of demand is assumed. At  $A$ , the initial wage rate is  $w_0$ . A boom in B draws labour from L and N due to the resource effect. Here, the Rybczynski effect applies when at constant prices the relatively capital-intensive manufacturing sector increases its output as a result of augmented capital usage. This is as a result of increased wages due to less labour being available. This gives rise to pro-industrialisation. The output of the relatively labour-intensive services falls from  $OG$  to  $OG'$  and a drop in supply from  $X_s$  to  $X's$ . Wage rises to  $w_1$  and the price of services rises at point  $F'$ . The spending effect however shifts the demand curve outward, raising the price of services and squeezing manufacturing output.

Corden (1984) details another application that will be of interest to the analysis of Nigeria in later chapters. It is a model often applied to oil booms where the booming sector does not participate in the domestic factor market and is thus an enclave. Stijns (2003) remarks that it is often pointed out regarding oil booms that one should expect resource movement effects to be shadowed by spending effects because of the "enclave economy" characteristics and high

capital intensity of oil exploitation activities. In this case, there will be no resource movement and its associated direct de-industrialisation, but only the spending effect due to the boom. The resource reallocation that takes place will be between non-tradeables and the lagging sector in terms of real appreciation. Nonetheless, whatever variation of the model is used, real exchange rate appreciation is thought to be the principal mechanism of operation of the Dutch disease (Stijns, 2003).

**Figure 2.6: Core model with a mini H-O economy**



Source: Corden and Neary (1982).

#### 2.6.4 Unemployment, the balance of trade and the exchange rate constraint

The core model gives room for a more realistic situation by recognising that the assumption of full employment, which is shown by labour reallocation between sectors, could be replaced in reality by unemployment. This is useful to apply to the context of LDCs, which in reality have surplus labour. In this case therefore, the real wage could be sticky downwards in the profitable N sector, causing unemployment. Labour in L may also demand higher wages as in the booming sector, further exacerbating unemployment (Corden, 1984).

A fall in real wages would bring about adjustments but any wage resistance in addition to rising prices in N generates more unemployment.

Where balanced trade is ruled out, generally an energy price boom brings about a trade surplus and an influx of foreign currency. To the extent that the foreign exchange rate is constant or falls, the inflationary effect due to increased income and spending creates an adverse effect on the domestic currency (Lewis, 1984:163). Currency appreciation will hence aggravate the increased spending. According to Stijns (2003:7), mineral states have been documented to spend their mineral revenues lavishly on numerous development projects and programmes. Hence, the marginal propensity to spend on non-tradeables is high. Also, since the price of imported tradeables is given, imports become relatively cheaper with the resulting real appreciation. As a result, import-competing manufacturing industries are squeezed out further. Tradeable manufactures that could have been exported become uncompetitive as a result of the domestic inflation.

To the extent that some industries in L may be capital-intensive as in the miniature-Heckscher-Ohlin model above, output in such industries could increase due to the labour drawn out of these industries, causing pro-industrialisation. Increased demand for capital-imports in L may be met as a result of currency appreciation. In addition to the demand pressures on imports due to the spending effect, pro-industrialisation will however be limited due to a foreign exchange constraint. This is brought about when export revenues are quickly spent.

Roemer (1985) has pointed out also that in developing countries the characteristics of the lagging sector or the non-tradeable sector are fuzzy. The lagging sector includes export agriculture and food production, both of which can be labour-intensive, and import substituting manufacturing that may be capital-intensive. Non-tradeables may include capital-intensive utilities and transport services, along with petty trading which are the most labour-intensive, as well as household and personal services. Identifying the sectors may not be so clear. Furthermore, many LDCs have protected their manufacturing industries and also some basic food, through tariffs and quotas such that importable goods have become non-tradeables. Thus the long-term impact of the Dutch disease cannot be generalised.

Nonetheless, these cases have been taken into consideration in the varied core models, making it appealing to the context of resource rich developing economies.

### **2.6.5 Implications of the Dutch disease and political Dutch disease**

The Dutch disease has implications for economic development, particularly in resource rich countries. As Sachs and Warner (1995) put it, if it is supposed that manufacturing has such attributes as positive externalities from learning-by-doing and backward and forward linkages to the economy (Krugman and Obstfeld, 2000), then one could say that the shrinkage of this sector would be a cause of futile diversification efforts in resource dependent countries. The wage rate increase becomes a significant issue in the employment of labour, particularly in labour-intensive sectors since the energy/mineral sector is capital-intensive.

According to Corden (1984), since a large part of the rent in the booming sector goes to the government through taxes, the magnitude and direction of government spending becomes important. He adds that the adverse effect of the Dutch disease on economic growth raises arguments for government intervention. Firstly based on the infant industry argument, if the Lagging sector experiences decumulation of human and physical capital during the boom due to negative externalities, lack of information or imperfections in the capital market, the government could step in and protect it. The second reason for government intervention is to prevent rent and income losses in the lagging sector, the booming sector may be taxed and the revenue used to subsidise losing factors in the former. The third is the employment argument, whereby real wage resistance in the lagging sector may be handled better by subsidising employment directly. Corden (1984: 375) stresses that if it is desired to protect the lagging sector, the first-best method is to subsidise the output of that sector directly, perhaps financing the subsidy from taxes levied on the specific factor of the booming sector. Against this he argues that two popular protectionist approaches are inferior. One is exchange rate protection, the result of which could bring in excess accumulation of foreign capital. The other is to increase ordinary protection by raising tariffs or tightening import quotas to avoid loss to import competing industries.

Lewis (1984: 166) states that there are social and political aspects of the Dutch disease. An example would be wage followership that exerts pressure on the government when labour in other sectors demands wages as determined in the booming sector. It makes matters worse

when the government and unions in the home country use wages in the booming sector as a standard (Roemer, 1985: 244). This may lead to an entrenched high-wage labour aristocracy and growing underemployment among those not able to find jobs in the modern sector. Wage followership could also change financial incentives such as private and public incentives to accumulate human capital in education and training due to wages being artificially high (Lewis, 1984).

Furthermore, according to Lam and Wantchekon (2003), influx of foreign currency from the booming sector and the subsequent appreciation of the domestic currency could adversely affect public decisions. They argue that political Dutch disease could consolidate the elite's allocative power or distributive influence. Gylfason (2001) agrees that rent-seeking activities, the struggle for huge resource rents, may lead to a concentration of economic and political power in the hands of elites. He adds, with stunted or weakened democracy and slow growth, once in power, the government may use the rent to placate its political supporters and thus secure its hold on power. According to Gylfason (2001), for example, tariff protection or other favours to producers at public expense creates competition for such favours among the rent seekers. Thus, the use of state enterprises in the extractive sectors appears to pose particular problems for the transparency of natural resource revenues (Swanson, Oldgard, and Lunde, 2003: 55).

Also, there is often pressure for large government development projects with huge capital and skill often requiring expatriate labour that most likely go unchecked as a result of limited capacity of government. Therefore, this makes a case against the selective interventionist approach due to the power of the government influencing policy decisions that are often sub-optimal (Lall, 1992).

Coupled with imperfect or missing markets, lax competition policy and weak legal institutions, one can imagine how social capital could be affected by rent-seeking activities with huge resource rents. Corruption in businesses and in government eventually could erode business ethics and societal trust in the home country and may lead to elevated perception of risk by private investors in the whole region.

It is also believed (Bannon and Collier, 5: 2003; Ross, 2003: 32) that some civil wars are to be blamed on resource richness. Ross (2003: 32) argues that an opposition party or a rebel group may offer resource wealth as 'booty futures' to private investors to aid them topple a current government. War itself would thus debilitate any social capital and the capacity to accumulate human capital in education and health care due to the associated poverty.

The Dutch disease concept thus covers endogenous aspects of development and explains the economic structural changes that occur due to resource wealth. Laissez-faire policies of free trade, which are believed to allow a country's 'natural allocation' of endowed resources to lead to efficient production and hence export of the good, may not work for those countries with a comparative advantage in primary resources.

## **2.7 Conclusion**

Given the positive correlation between trade, especially in manufacturing exports, and development, this chapter laid the theoretical trade foundation of the thesis.

A review of the neoclassical H-O theory pointed out that although its basic assumptions are farfetched, its welfare and growth implication for countries that trade according to their comparative advantage have useful considerations with regard to commodity dependent countries.

The Wood and Mayer (1998, 1999) model however, extends the H-O application to argue that SSA is at a disadvantage for manufacturing diversification due to the region's low skill per worker. Increasing skill may give the region comparative advantage in processed primary exports, however, due to its high land per worker ratio its comparative advantage lies in mainly unprocessed primary exports.

The reasons for poor economic performance were presented for both endogenous growth theory and neoclassical approaches to development. The former argues for government selective intervention where the role of technology is significant in growth based on the market failure argument. The neoclassical approach, despite likely government failure, favours incentives for better functioning of the market, i.e., institutional, legal, and social

incentives. Both are valid, however, the issue is rather how efficient policies are geared to the specific economic environment.

The new trade theories also offer insights on how countries could benefit from dynamic comparative advantage by acquiring technology of mature and standardised products from other countries. There are however, limitations of imperfect competition, economies of scale, international mobility of capital, and managerial skills in the context of developing countries. Still, with regard to imperfect competition, government could intervene to extract rents from oligopolistic firms and to protect infant industries.

The Dutch disease hypothesis, on the other hand, states that among other causes, an energy or mineral resources rich country could experience adverse effects on other sectors of the economy when the price of energy/mineral resources rises (applicable to other natural and primary resources). This occurs through a spending and resource effect that will lower the output of the manufacturing and or the agriculture sector(s).

There also tends to be political Dutch disease in such countries where governments have allocative power and access to resource wealth. This latter situation is worsened as social unrest and military coups destabilise the economy further.

All the theories reviewed have useful implications. However, while for instance, the Wood-Mayer (1998) model, based on H-O theory, stops at explaining comparative advantage in skill, land and labour it does not explain how the quality of land can affect skill acquisition required for economic development. The Core model, despite its use of some neoclassical assumptions for the simple case, is nevertheless flexible in explaining real situations compatible to the developing countries that are resource rich.

## CHAPTER 3

### THE DEVELOPMENT PATH OF RESOURCE RICH COUNTRIES IN COMPARATIVE HISTORICAL PERSPECTIVE: A REVIEW OF SOME OF THE EMPIRICAL LITERATURE

#### 3.1 Introduction

Studies by Wood and Mayer (1998, 1999), Wood and Berge (1997), and Wood and Owen (1997) have explained the high share of SSA's primary resources in its exports as reflected in the region's comparative advantage. SSA's trade pattern is attributed mainly to exports of unprocessed primary goods and skill-intensive imports. This conforms to traditional neoclassical theory of comparative advantage. It is thus believed that for most of the last four decades most of the countries in SSA have depended solely on their natural resources (Collier, 2002).

Thus, given the natural endowment of primary resources, this also implies that SSA's development path is inherent. However, resource richness, as pointed out in the previous chapter, is more often than not fraught with structural and socio-political problems of the Dutch disease phenomenon (Corden and Neary, 1982; Corden, 1984; Lewis, 1984; Sachs and Warner, 1995; Askari and Jaber, 1999; Sachs and Warner, 1999; Lam and Wantchekon, 2003). Should SSA therefore follow her development path and rely on resource-based industrialisation?

By reviewing existing empirical work, this chapter will attempt to address the importance of endowment in the development paths of the countries under study based on both the W-M (1998, 1999) country classification and Leamer et.al.'s (1999) definition of endowments. This chapter argues that the measure of land per worker used in classifying Nigeria as a labour abundant country is contradicted by Nigeria's pattern of development. This contradiction will also be highlighted in the cases of Malaysia, Indonesia and Thailand in Section 3.4. The issues of wages, skill or human capital accumulation and economic linkages to the economy and infrastructure brought up in Section 3.2 will make connections to the discussion in Section 2.6 on some of the Dutch disease effects of natural resources. The type of development path could also be said to serve as a diagnosis of natural resource effects on the demand for skill influencing the emergence of manufacturing.

Brief development experiences of South Africa, Nigeria, Mauritius and Côte d'Ivoire will be compared with those of international examples from the second-tier South East Asian newly industrialising countries (SEANICs) and Latin America (LA). This is in order to highlight the peculiar development paths of the countries with reference to their endowments, as well as the implications of their successes and failures.

### **3.2 Differences in development paths of countries**

With this said, Leamer, Maul, Rodriguez and Schott (1999), applying H-O theory, use three production factors or endowments, i.e., land, labour, and capital to explain the expected development outcomes of countries. In contrast to Wood and Mayer (1998, 1999), they differentiate the qualities of these endowments. For instance, land is distinguished into cropland, or as having metal and fuel resources. Capital is also differentiated into human and physical capital.

The difference in classification of a country compared to the Wood and Mayer (1998, 1999) model is apparent when the quality of endowment is considered. For instance, as Section 3.3.1 will argue, Nigeria has an atypical economic development path when considered as labour abundant according to Wood and Mayer (1998, 1999). This is because they used land area as a measure of natural resources. When natural resource abundance is considered, in this case oil, Nigeria may be better classified as natural resource rich as her development path suggests (see Section 2.3.3 and 2.6). Also, Section 3.4 will show that the availability of arable land and natural resources in the SEANICs places Malaysia and Indonesia as land abundant and Thailand as moderately land abundant (Leamer et. al, 1999: 32). In the case of the SEANICs, there is ambiguity in their development paths, since both capital-intensive primary resource processing and labour-intensive manufactures have emerged. Therefore, the argument that natural resources slow the emergence of manufactures due to low skills demand becomes questionable when looking at the SEANICs' development pattern.

Leamer et al. (1999: 19-21) argue that the development path of a labour abundant country with very little natural resources starts off with peasant farming, wood-working and handicraft. With increased capital accumulation a labour abundant country will experience a shift of labour from the handicraft and woodworking sectors into manufacturing. Handicraft

and wood working is moved to a more formal setting, i.e., to factories for apparel production in the case of handicraft. The absorption of labour when more is needed comes only lastly from farms, where land is eventually consolidated for capital-intensive permanent crop farming. Deeper capital accumulation is manifested in augmented capital-intensive manufacturing such as the machinery and chemicals sectors, and capital-intensive extraction of any meagre natural resources. Leamer et al. (1999: 20) state that this process is accompanied by an elevated need for a more educated workforce. Coupled with the decline in the rate of return to capital, wages for "raw labour" (unskilled labour) will gradually increase in a labour abundant country with increased capital-intensive production. Human capital development is fostered earlier in this type of economy.

On the other hand, a land abundant resource rich country begins with abundant under-cultivated land with peasant agriculture and unsophisticated "harvesting" of natural resources. Capital accumulation shifts the country towards more capital-intensive extraction of its abundant resources. Capital accumulation also has the effect of moving farmers out of peasant agriculture, which is labour-intensive and leads to the consolidation of lands into farms for crops such as grains, fruits and vegetables. In contrast to labour abundant countries, the consolidation of farms and mechanisation comes with declining wages for "raw labour". It is thus capital and unskilled labour that generates wealth in the initial stage of capital accumulation (Leamer et. al 1999: 20). Although resource abundance supports high wages, capital accumulation is designed to economise on the labour input in certain sectors such as the low skilled agricultural sector (Leamer et. al., 1999: 20). This is to maintain low wages to compete with labour abundant countries with meagre primary resources that are already in the market for those agricultural products. Intuitively, human capital accumulation in this sector degenerates. A land abundant country therefore, will have a low education incentive and thus, low demand for skilled labour associated with the initial stage of development. Further accumulation of capital in a land abundant country is accompanied by more capital-intensive processing of natural resources, e.g. pulp and paper manufacturing, and agri-business. In the final stage, when capital accumulation has been substantial, development for this particular economy should move it into the production of very capital-intensive machinery manufacturing and chemicals.

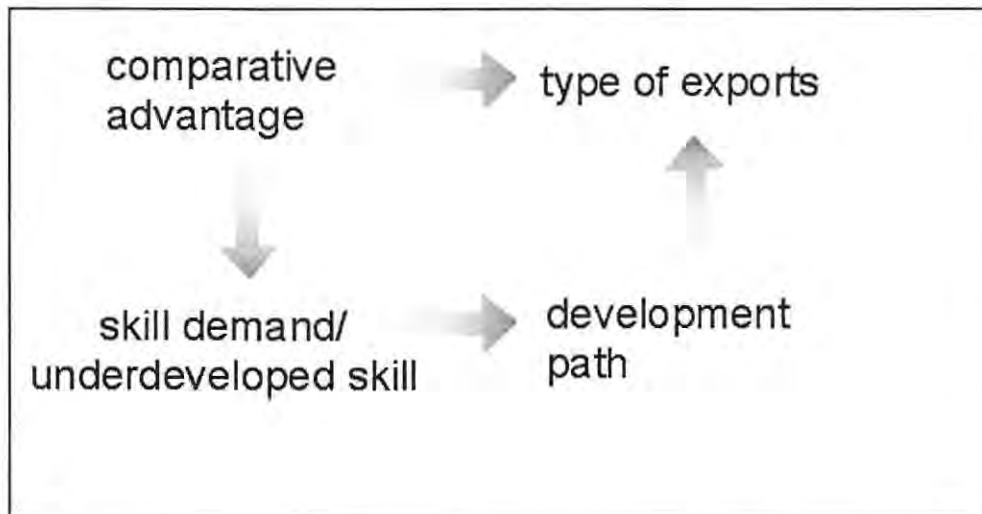
The crux of this difference between the two development paths, according to Leamer et. al (1999) is that a labour abundant country has a development path that gradually raises the skill requirement and the emergence of manufacturing. On the other hand, a land abundant-resource rich country is short of the skilled labour it requires for the later stage when capital accumulation is substantial for the production of machinery and chemicals. This suggests that manufacturing will develop much later in land abundant, resource rich countries.

Skill, unlike land and natural resources, is therefore not an endowment that just happens to be. The mix of resources (land, labour and capital) of a country suggests a peculiar development path and to some extent explains the demand for skill. This in turn determines human capital accumulation. Therefore, to say that SSA cannot compete in manufacturing exports because the region is relatively natural resource abundant with relatively low skill per land, dismisses the diagnosis of why skill is scarce in SSA, the economies of which differ in endowment mix. This has implications for selective policy.

### **3.3 Empirical classification: South Africa, Côte d'Ivoire, Nigeria and Mauritius**

How then do endowments fit with the notion of development paths of the countries under study? As noted in Chapter One, Wood and Mayer's (1998: 26-40) findings place South Africa and Côte d'Ivoire as having abundant land due to their land per worker ratios being higher than 4 sq. km per 100 workers. In this category only South Africa is relatively endowed with the skill to land ratio (within 50 person-years of schooling per square kilometre, YS/sq.km) expected for higher shares of manufactured and processed primary products in total exports. Based on 1990 data, Wood and Mayer (1989, 1999) found that the manufacturing export share was over 60% in South Africa. Actual manufacturing export share was just 3.7% points less than predicted for South Africa observed from the Southern African Customs Union (SACU) data. Thus, South Africa is a "good performer" in manufacturing exports. In addition, an over performance in processed primary exports, i.e., actual exports exceeding the predicted exports, was found for the same country. In contrast, Côte d'Ivoire's share of manufacturing exports in total exports was found to be lower than

**Figure 3.1: Relationship between endowment and type of exports**



Source: Author

20% at 15 points less than expected. In addition, the actual share of processed primary products in total primary exports were 13 points higher than expected.

Mauritius is classified as being a land scarce country according to the criterion of less than 4 sq. km per 100 workers. With relatively the highest skill/land endowment in Africa of 2000 YS/sq.km comparable to that of the NICs, Mauritius according to the 1990 W-M (1989, 1999) data had a relatively high proportion of manufacturing in its total exports also greater than 60% (Wood and Mayer, 1998: 37). Nigeria is also a land scarce, labour abundant country according to Wood and Mayer (1998, 1999). However, its actual share of manufactures is under 5%. Despite a skill per land ratio within 50 YS/sq.km similar to South Africa's, manufacturing exports share in Nigeria is 28% points lower than predicted and its share of processed primary exports was 9% points lower than predicted (Table 8, Wood and Mayer, 1998: 31).

Figure 3.1 above integrates, in summary, the notion of endowment and skills demand. It argues that endowments influence the development path of a country. Furthermore, one can add that if the argument for the characteristics of manufacturing goods mentioned in Chapter One stands true, then the relatively early development of manufacturing exports, i.e., apparel

and footwear in labour abundant countries, will develop linkages associated to manufacturing in the economy relatively quicker. In contrast, land abundant, resource rich countries establish their processed natural resources as exports and the type of linkages to the rest of the economy may be different and not associated to labour-intensive manufacturing like that of the labour abundant countries.

To reiterate from Chapter One, the backward and forward linkages of manufacturing, due to external economies of scale, have the advantage of developing other sectors of the economy, particularly infrastructure. Consequently, labour abundant economies can be expected to develop these attributes quicker as they move into manufacturing production earlier. Nevertheless, in resource rich countries, both agricultural and mining sectors could also impact on backward and forward linkages. For example, agricultural exports can link backward to fertiliser, farm implements and fuel suppliers; food processing, textiles, leather goods and certain chemicals form forward linkages (Roemer, 1985: 245-6). In mineral and oil exporting economies, given that more capital-intensive processing emerges earlier in their development (Leamer et al., 1999), it is thus expected that steel, electricity, and high technology and machinery sectors needed to develop the source sectors will form backward linkages (Askari and Jaber, 1999). Smelting, mineral processing and oil refining link forward (Askari and Jaber, 1999) as will be shown later in the case of South Africa (see Section 3.3.1). However, due to the low demand for skill and hence, its accumulation, the establishment of these linkages in mineral and oil rich countries could be challenged as a result of the low level of human capital, the accumulation of which has been delayed at the first stage of capital accumulation. This latter problem is more apparent in the case of Nigeria and Côte d'Ivoire, as data in Chapter Four will point out.

### **3.3.1. Development path of land abundant countries**

This section will give a sketch of the development experiences of Côte d'Ivoire, South Africa, Nigeria and Mauritius. This will serve as a comparison in line with the Leamer et al. (1999) development path hypothesis. The section will also argue that even though Nigeria's land per worker is small, her development path is that of a land abundant country tied to natural resource abundance.

In Rapley's (1993: 13) account of Côte d'Ivoire:

The role assigned to Côte d'Ivoire in the colonial economy (of French West Africa) gave it an edge over other sub-Saharan African countries. It was an exporter of cash crops to France and thus by this virtue, infrastructure investment tended to be near the coastal regions.

The suitable soil and coastal climate conditions for plantation agriculture made Côte d'Ivoire the choice for French settler planters. These settlers were deemed to have influenced the mode of production, introducing capitalist farming (Rapley, 1993: 23-29).

The old class system based on chieftdom and reciprocal obligation was replaced by the French administration with that of employment and remuneration. Some of those employed on farms left to obtain their own farms adopting the new farming technology and improving upon it. An Ivorian planter bourgeoisie that was to exploit Côte d'Ivoire's comparative advantage was formed in this way. Commodity export revenues to the Côte d'Ivoire government gave special consideration to bourgeoisie interests by introducing policies to protect the latter's emerging agro-industries.

In South Africa, Western capitalism, as recounted by Kenny (1997), started off with the Dutch East India Company ousting the Portuguese as the dominant power in the Cape. It was not for the mineral wealth, that was unknown at the time, but rather because the Cape was a settlement station for their ships.

Before the discovery of diamonds and gold in South Africa, the economy was dependant on wool exports and arable production for the limited market at the Cape (Kenny, 1997).

According to Kenny (1997), gold mining then dominated the South African economy between 1886 and 1914 and henceforth was to change the country's structure into a typical modern economy. He argued that capital growth rose in relation to the labour force, and services and manufacturing output increased.

A pool of labour was readily available to prospective capitalists in Côte d'Ivoire (Rapley, 1993: 30-33). Côte d'Ivoire cocoa plantations and the government's migration policies tied to land ownership attracted migrant workers from neighbouring countries in the north to work in the southern region where the cocoa farms are located (Bax, 2004; Crook, 2002). In South Africa by contrast, labour was forced through laws such as the poll tax that put pressure on African farmers to provide mines with cheap labour (Kenny, 1997). In addition, white

farmers fearing competition from enterprising black farmers pressured politicians to put in place laws that would protect them at the expense of the latter. This highlights the difference in labour relations between Côte d'Ivoire, an agricultural economy, and South Africa, which was a mineral rich economy.

The autocracy of the apartheid governments over time in South Africa allotted the privilege of land to the Europeans and used policies, even after the gold discovery, to favour themselves at the expense of Africans (Schneider, 2000). Influx control and residential segregation and other legislation restricting the mobility of blacks (Fryer and Vencatachellum, 2002) can be described as the concentration of economic and political power and distributive influence in the hands of the government (Lam and Wantchekon, 2003; Gylfason, 2001). This may be thought of as a manifestation of political Dutch disease, previously discussed in Section 2.6.5, associated with mineral wealth. Many inequalities arose in the form of restrictions on black labour that limited mobility, training, education and the size of the domestic market. It has been argued that land abundant countries would tend toward maintaining low wages and thus will have a low incentive to educate unskilled labour (see Section 3.1).

Côte d'Ivoire and South Africa thus started off with subsistence agriculture, with the latter turning to mining eventually and the former diversifying into cash crop and agri-business. In Côte d'Ivoire, French settlers introduced mechanised farming and cash crops for exports to France. The accumulation of capital moved the economy to agro-industry specialisation. In South Africa, however, labour was moved from subsistence farming to the mines. Clearly mining development was favoured over agriculture. This process seems to accord with Leamer et al's (1999) first phase of development for land abundant countries with cropland and mineral resources.

As regards how linkages in the economy develop according to the types of endowments (see Section 3.2 above), the development of infrastructure by the state of Côte d'Ivoire over the two decades after independence sought to connect the production of crops in the north to factories and to the coast in the south. A good transport system thus also aided in moving labour that came mostly from the north to the south. In the mineral economy of South Africa, however, railways served to connect white agricultural areas to the ports and urban markets.

According to Fine and Rustomjee (1996: 109), later, state investment extended to providing fuel pipelines and telecommunication facilities to the mining core sector.

In addition, various agencies can be thought of as having promoted linkages in the economy of Côte d'Ivoire. Agencies such as Fonds de Garantie des Crédits Accordés aux Entreprises Ivoiriennes (FGCEI) served the purpose of assisting and diversifying capital investment in agriculture. Office de Promotion de l'Entreprise Ivoirienne (OPEI) or the Office for Ivorian Enterprise Promotion consulted with entrepreneurs and also linked foreign capitalists with domestic businesses. Côte d'Ivoire, with its endowment of cropland, does not seem to show an atypical development path of a land abundant country. Capital accumulation has moved it to capital-intensive agri-business as further empirical analysis on production and exports will show in Chapter Four.

The advent of mining made the South African state, in the words of Kenny (1997), passively respond to the rent-seeking behaviour of pressure groups with the most political muscle. Fine and Rustomjee (1996: 91-98, 168) suggest that industrial policies of South Africa stemmed from mining and subsequent industries resulted with peculiar corporate structures that they termed the mineral-energy-complex, MEC. According to them, established government corporations such as Eskom expanded electricity generation; ISCOR produced steel and Sasol I and II enhanced the MEC's demand for liquid fuel (Fine and Rustomjee, 1996). They add that from these, private corporations were linked to form the various industries of the MEC with a dominant tariff protection and conglomerate ownership that extends to the manufacturing and financial sector (Fine and Rustomjee, 96:1996). South Africa, therefore, appears to have readily established forward linkages connected to mining.

Despite the social and economic inequality in South Africa, Moll (1991) considers that:

South Africa after 1945 had a tense but stable political system, an advanced socio-economic environment for capitalist development with access to skilled immigrants and foreign markets.

A large supply of low-wage African labour was also available for low skill work. The trade, transport and communication systems were among the best in the Developing World. In terms of physical resources, the mining sector earned foreign exchange. South Africa also had cheap coal for power and enough good land for sufficient food and export agricultural products.

With regard to manufacturing, Schneider (2000) states that the pursuit of local manufacturing stemmed from the Pact government in 1924. The hostility of various groups to mining interests, and the need to commit to local economic development pushed manufacturing via import substitution industrialisation (ISI) in South Africa.

Nevertheless, South Africa's development is argued to have by-passed labour utilising sectors and is currently capital-intensive in production (Moll, 1991; Fine and Rustomjee, 1996). If that is the case then this would conform to Leamer et al.'s, (1999) model of development. To investigate this further, sectoral MVA and capital investment will be analysed in Chapter Four and Five.

In Nigeria, however, prior to independence private capital was small scale, mainly in commerce, residential property and finance, with very little local agricultural or landed wealth (Forest, 1993). Small farmers provided for the rural economy and brought in most of the export earnings. Farming production was on a small scale, dependent on family labour, kin and clients. In contrast to Côte d'Ivoire's indigenous capitalist development Forest (1993:26) cites that:

Capitalist agriculture was restricted by the colonial power via political alliance with traditional authorities by way of taxation, the mobilisation of labour for public works and the acquisition of land for government and commercial purposes. Indigenous capital expanded in export trade but there was very little industrialisation due to the colonial banking monopoly, which only advanced credit to foreign enterprise.

Agricultural exports in the 1950s formed the main source of Nigeria's revenue and provided the dynamics for growth in the economy. Petroleum exploitation started in 1908 when a German company, Nigerian Bitumen Corporation, drilled fourteen wells in Lagos (Falola, 1987). It was not until the 1960s that serious exploration was undertaken by Shell, Mobil Exploration Nigeria Incorporated, Tennessee Nigeria Incorporated, Gulf, and Eastern and Standard Oil of New Jersey (Olayiwola, 1987:79).

The pattern of development from agriculture to oil exploitation points to the development of Nigeria's comparative advantage in natural resources. Nigeria from all indications should be expected to be classified as a land abundant (resource rich) country and not as labour

abundant as Wood and Mayer (1998, 1999) have categorised it. Nigeria is a land abundant country, given the development pattern of natural resource exploitation. The second phase of capital accumulation, according to the development path hypothesis, is expected to move Nigeria towards mechanised farming and increased capital-intensive oil extraction. Theoretically, agricultural land would be consolidated for permanent crop farming (which is mechanised) and further accumulation of capital would lead to greater capital-intensive processing of natural resources.

What resulted in Nigeria however, is indicative of the social and political aspects of the Dutch disease dealt with in Chapter Two. An unequal interdependence promoted by the trade pattern in Nigeria during the colonial period persisted (Ikein, 1990:63; Falola, 1987:124). For instance, Forest (1993:21) writes that before 1960 the western region was the richest by virtue of cocoa production, early access to western education, the location of industrial development and the presence of the capital and major port Lagos. The western region also had the most revenue allocated since it had the most agricultural activity, taking over 30% statutory revenues in 1954/55.

As a result of the political divide in terms of ethnic groups and a centralised government, patronage arose amongst the Nigerian bourgeois to seek wealth and protect their ethnic groups. Forest (1993:21) postulates that this was to shape the socially conditioned values with a major influence on political behaviour. Forest (1993) also describes the impact of the government's position on capital accumulation:

The educated elite sought after careers in the civil service, which were means of getting access to funds and contracts. Here, capital accumulation was facilitated; Energy was focused on obtaining control and patronage and much of the capital gained was not put into productive enterprise. A close relationship was created between business, elite and the government. This was the major determinant that affected the general character and public policy of Nigeria (Forest, 1993: 21).

Industries that had been created in the 1960s in Nigeria under (ISI) were the cigarette factories, breweries, textile mills, plywood factory and cotton gins, as well as heavy industries in coal mining and cement works (Toyin, 1987:121). It is worth noting that the first industries established seem to be of relative capital-intensity. This is in contrast to the

development of labour-intensive sectors such as apparel and footwear expected for labour abundant countries if Wood and Mayer's (1998, 1999) categorisation of Nigeria is applied. However, Nigeria's development path seems more in accordance with Leamer et al.'s (1999) model. Therefore, Nigeria appears to behave as a land (resource) abundant country.

With regard to infrastructure linkages, Olayiwola (1987:97) argues that sectoral investment in transport, communications and electricity only improved part of the economy by subsidising the income of urban dwellers. Thus, according to Olayiwola (1987:97), income distribution came from rural dwellers to urban dwellers to complement private foreign investment particularly in IS industries. This point to similarities with South Africa's unequal development of transportation that connected white agricultural areas to ports and markets, and fuel pipelines and telecommunication facilities to the mining core sector.

Nigeria's development path thus differs from that of a country with relatively low land per worker ratio, a labour abundant country in other words, because of her exceptional oil resources. From agriculture as the mainstay, Nigeria turned to oil exploitation as the main source of government revenue contributing over 90% of earnings (World Bank 2002). The unsustainable domestic industries may be indicative of structural problems of Dutch disease with adverse effects on manufacturing. Chapter Four will seek to analyse the production pattern linked to other macroeconomic and microeconomic factors that deal with this aspect of Nigeria's economy.

### **3.3.2 Development path of a labour abundant country**

Mauritius, like Nigeria with cocoa, started as a mono-crop, agrarian economy. It relied entirely on sugar cane and its by-products, accounting for 98% of total exports in the 1960s (YeungLamKo, 1998). The fact that the sugar plantations were predominantly owned by locals is believed to have created a network of local supportive activities and local entrepreneurial talent (Lamusse, 1997). Unlike South Africa, Nigeria and Côte d'Ivoire, it seems that local entrepreneurial activity was separate from the ruling government.

According to YeungLamKo (1998), in the 1960s the bleak unemployment rate, the rapid population increase and economic decline prompted the colonial government to diversify the economy despite a shortage of management and technical skills and capital for investment

purposes. Hence, the government of Mauritius chose ISI that encouraged the establishment of import substitution enterprises (ISEs) in edible oil refining and chemical fertiliser firms. ISI, however, did not solve the problems, unemployment rose even more, to 20% (YeungLamKo, 1998). It is no surprise to see that for a labour abundant country with few primary resources this type of development goes against what is predicted in Leamer et al.'s (1999) hypothesis, since it does not utilise its abundant factor. YeungLamKo (1998) states that the new government after independence had noted examples of successful export industries in Puerto Rico and Taiwan, which eventually led to the implementation of export-oriented industrialisation (EOI) strategies. Export-oriented enterprises (EOEs) were founded in knitwear, clothes, tuna canning and jewellery manufacturing. Knitwear and clothing (apparel) conform to the labour-intensive manufacturing that is expected to emerge first in a labour abundant country like Mauritius. The ISEs took advantage of the local market, profiting from the available cheap labour and the privileged access of Mauritius into the then European Community (EC) market.

Lamusse (1997) distinguishes the export pattern of ISEs as that which targets small markets of neighbouring countries. These markets are specialised and are likely not to be attractive to large producers. However, while ISEs targeted specialised markets, EOEs aimed at large markets such as Europe and Japan. The use of marketing affiliates is also employed by EOEs to infiltrate their markets. The role of the export processing zones (EPZs) in Mauritius will be dealt with in this regard, later in Chapter Four.

Currently, labour shortage in Mauritius is expected to shift firms to more capital-intensive production, where examples of such shifts are occurring in the paint and knitwear firms (Lamusse, 1997). Furthermore, absorption of labour is now being met with upgrading of skills and technology particularly in the paint and knitwear-manufacturing firms. This evidence supports the argument that there will be gradual skilled labour demand in the manufacturing sector in labour abundant countries as capital-intensity increases in production.

Mauritius shows a development path that conforms to that of a labour abundant country. It started from a mono-crop economy and eventually moved to labour-intensive manufacturing in apparel production after capital-intensive ISI failed to lower unemployment. Currently,

labour has been absorbed into manufacturing and scarcity of labour is moving the country toward capital-intensive production and upgrading of labour skill to meet technological advancement in production (Lamusse, 1997).

### **3.4 International empirical examples: the SEANICs and Latin America**

The difference in the definition of endowments compared to the W-M (1998, 1999) model will also extend to the SEANICs. The discrepancy in the definition of land per worker endowment as applied to Nigeria in earlier Section 3.2 also arises here. Jomo and Rock's (1998) analysis considered below outlines the industrial development of the South East Asian newly industrialising countries (SEANICs), i.e. Malaysia, Thailand and Indonesia. Like Mauritius, Malaysia, Thailand and Indonesia have relatively low land to worker ratios according to Wood and Mayer (1998, 1999). However, unlike Mauritius with sugar as the major primary (agricultural) product, these economies have relatively more primary resources, thereby placing them as land abundant in the case of Malaysia, or moderately land abundant in the case of Indonesia and Thailand (Leamer et. al, 1999: 32). A combination of high skill per worker also enables Malaysia, Thailand and Indonesia to process most of their primary resources for exports as well as having a relatively higher export share of manufactures (Wood and Mayer, 1998:13-20; Wood and Owen, 1997: 146).

In Malaysia, for instance, tin and rubber brought in the primary earnings even after independence in 1957. By the 1970s, the economy had diversified into crop farming, i.e. oil palm, cocoa and tropical hard wood and later petroleum and gas production (see Booth, 2004). As expected, from Leamer et al. (1999), Malaysia's availability of natural resources and crop land made capital available that helped to diversify into capital-intensive processing of minerals, oil and crops. The diversification effort also successfully utilised petroleum and natural gas revenues, investing it to increase the processing capacity of refineries. Industries existed during the colonial period to reduce the transportation cost of exports or imported goods. Thus, primary-resource-type linkages such as factories for smelting tin ore, processing rubber sheets and bottling imported drinks were already established (see Felker, 2003). This has enabled the take off of the first stage of ISI and has made it possible for local industries to develop even after economic relations with the colonial powers weakened.



Similar to Côte d'Ivoire, diversification of agriculture in Indonesia was by way of microeconomic policy via sectoral agencies targeted especially towards agricultural markets, particularly rice. Markets for inputs credit markets and output markets were deliberately directed to encourage investment in rice farming which made the latter available to feed the local population. Incentives also existed to redirect farmers into crop farming and later plywood for exports. Other selected sectors were the automobile and machinery industries. An export oriented incentive system drew manufacturing conglomerates into the manufacture of shoes, toys and leather goods as well as processed primary goods. Export promotion of liquefied natural gas (LNG) has seen a shift in the LNG plants to run between 120% and 145% capacity.

In Thailand, growth accelerated also due to both manufacturing and primary commodity exports. Textiles, integrated circuits, plastics and shoes were the leading manufactured goods and are largely based on foreign investment. Later in the 1980s Thailand's non-traditional agro-industrial and labour-intensive manufacturing exports were successfully promoted.

The SEANICs started with labour-intensive agriculture and later capital-intensive ISI in the primary resource industries from the 1950s up to the 1970s in the case of Malaysia and Thailand, and up to the mid-1980s in Indonesia. While EOI began in the mid-1980s in Indonesia, EOI policy alongside ISI was implemented from the late 1960s in Malaysia and in the 1970s in Thailand. Both ISI and EOI policies sought to diversify the production of primary resources and to promote labour-intensive manufactures (Jomo and Rock, 1998; Rasiah, 1998). Capital accumulation enabled more capital-intensive processing in the primary resource sector since the 1950s (see Felker, 2003). Later EOI policy played a major role in the diversification of labour-intensive manufacturing exports. It can thus be argued that trade policy played a major role in creating skill demand in manufactures in these countries that could have chosen to continue with only resource-based industrialisation (Jomo and Rock, 1998).

Selective intervention is thought to have initiated diversification (Jomo and Rock, 1998). For instance, government initiatives in the sponsoring of research for new crops and varieties in Malaysia contributed to the diversification of the agricultural sector. In Thailand, government support in the rice industry stabilised rice prices and generated revenue. Also,

investment and relatively modest protection in agro-processing helped sustain industries. In Indonesia, the government also captured most of the resource rents from oil. Resource endowments hence, were favourably used to avoid balance-of-payment problems (Rasia, 1998).

Selective support from the government also encouraged firm savings and reinvestment (see Booth, 2004). Subsidiaries or firms linked to foreign multinationals were important in that they produced most of the manufacturing exports (Jomo and Rock, 1998). In addition, to enhance human capital, supportive institutions in the areas of R&D, education and marketing were established as a result of government effort. Organised trade fairs, export promotion missions, bilateral government-to-government and private sector involvement also created markets for the SEANICs (Jomo and Rock, 1998).

Unlike the land abundant, resource rich countries that develop from agriculture (primary resources) to capital-intensive processing of primary resources, leaping to highly capital-intensive machinery and chemicals, labour-intensive manufacturing emerges earlier alongside natural resource processing in the SEANICs. Even though the SEANICs have been categorised as having low land to labour ratios in the W-M (1998, 1999) model, these countries, however, show development paths peculiar to resource abundant countries as in the Leamer et al. (1999) thesis. On the other hand, the emergence of both sectors, i.e. manufacturing and primary resource processing could be due to their combined characteristics of being land scarce and moderately resource abundant.

Another regional development that may be briefly considered is that of Latin America (LA). The countries of LA are typically resource rich, land abundant and moderately skilled (Wood and Mayer, 1998; Leamer et. al. 1999:8). Like SSA and the SEANICs, the region too had a history of colonisation, by Spain and Portugal in the 1400s and the 1500s. Export patterns were also similar, with crops and minerals as the major exports to Europe.

According to Franko (2003), LA's development history began from subsistence agricultural activity. Political Dutch disease in LA emanated in a system of feudal elite control of capital and political power. Land holdings were concentrated under the *latifundia* system in Spanish Latin America and the *fasanda* system in Brazil. The main sources of revenue were from

exports of sugar from Cuba, coffee from Brazil, Colombia and Costa Rica, bananas from Central America, guano from Peru, cattle from Argentina and silver from Chili (Franko, 2003). In addition to the political control, LA experienced the Dutch disease problem when their commodity exports prices dropped. Lower external demand, for instance during the Great Depression, and the subsequent growing international protectionism, further hurt LA nations (Franko, 2003:45).

Most of the countries of LA have had an industrial base for over 100 years, characterised by dependence on natural resources akin to that of South Africa's (Dijkstra, 2000; Fine and Rustomjee, 1996). Franko (2003) argues that industrialisation in LA may be linked therefore, to the increase in foreign investment along with infrastructure in the late 1800s and 1900s. He states that industrialisation and the demand in Britain and the United States expanded agricultural exports. The rise of the industrial sector in the region has also been ascribed to ISI, where basic consumer goods and heavy capital industries in machinery and shipbuilding were established in some countries. For example, the auto industry in Mexico, Brazil and Argentina became a successfully targeted industry even after ISI (Franko, 2003). However, the economies of LA by the 1980s were faced with negative effects of ISI. One of the problems was that national manufacturing goods failed to meet international quality standards and therefore, became globally uncompetitive (Franko, 2003: 66-68; see also Weiss and Jalilian, 2004).

LA development could be summarised as starting with labour-intensive farming and mineral extraction in the early phase of development. Subsequent single commodity booms and capital accumulation enabled the countries to invest in industries linked to natural resources. Any indication of the emergence of Leamer et al.'s (1999) third phase of economic development would be the ISI established capital-intensive sectors in machinery and automobile industries.

Latin America thus, appears to reflect a straightforward explanation of the development path hypothesis as shown by its endowment in land and resource abundance. In addition, as mentioned elsewhere in Section 3.3, LA's skill per land average within which Nigeria (and South Africa) lies (Wood and Mayer, 1998, 1999) reinforces the characteristic of the latter as land and natural resource abundant and not land scarce.

### 3.5 Conclusion

The brief historical perspective used in this chapter reveals the pattern of economic development of the countries under study. In this context of development paths, as capital accumulates, the land abundant (resource rich) countries, i.e. Côte d'Ivoire, South Africa and Nigeria, respectively, moved up to more capital-intensive agri-business, mining related activities, and oil exploration in the case of Nigeria each with different linkages to the economy. Comparison with LA, also a land abundant region, points to the establishment of capital-intensive sectors such as the automobile sector, mechanised machinery and chemicals sectors.

In labour abundant Mauritius and the SEANICs, resource-based industries exist along side manufacturing industries. Industries in oil (seed) refining, tuna canning, fertiliser, and knitwear and textiles were developed in Mauritius. The SEANICs, when their endowments of primary resources are considered, are described rather as land abundant instead of land scarce. The availability of primary resources enabled the countries to develop agri-business, oil refining and mineral processing. The relatively resource rich Malaysia diversified into more capital-intensive permanent crop (rubber) processing and petroleum refining. Thailand with cropland, developed capital-intensive agri-business along side labour-intensive textiles, circuits, shoes and toys manufacturing. The pattern is similar in Indonesia, which started off with subsistence rice farming. Later Indonesia diversified into capital-intensive crop farming of plywood, petroleum refining, and the highly capital-intensive automobile and machinery manufacturing.

Nigeria under Wood and Mayer's (1998, 1999) classification of labour abundance has not shown a development path of a labour abundant country as well. The unsustainable capital-intensive IS industries in Nigeria also raise questions about the country's resource-based industrialisation similar to the SEANICs. There are indications that industrial policy "forced" the economies of Malaysia, Indonesia and Thailand to diversify their resources and to establish their manufacturing sectors.

The endowment-development path hypothesis of Leamer et. al. (1999) suggests that countries have inherent development patterns tied to their endowments. In the light of this, one can

conclude that anticipatory policies that are sector specific may be considered for implementation to enhance the successful emergence of the next development stage for countries as in the cases of Malaysia, Indonesia and Thailand.

The Leamer et al. (1999) hypothesis served to refine the Wood and Mayer (1998, 1999) model with regard to the land per worker as a measure of natural resource endowment used. By considering the resources of a country, the hypothesis refines the W-M (1998, 1999) model discussed in Chapter Two. Therefore, this is appropriate for distinguishing, in particular, Nigeria as a land abundant country rather than land scarce due to its resource richness. This partially explains Nigeria's departure from the share of manufactures in total exports that is expected to be similar to that of Mauritius.

## CHAPTER 4

### CASE STUDIES: ECONOMIC STRUCTURE AND EXPORT PERFORMANCE

#### 4.1 Introduction

Chapter Three gave a brief overview of economic development in South Africa, Nigeria, Mauritius and Côte d'Ivoire. It highlighted the different resource-based-industrialisation experiences of these countries and the development through labour-intensive manufacturing in Mauritius.

This chapter will attempt to refine the Wood and Mayer (1998, 1999) analysis of manufacturing and performance that is based on endowments of land per worker and skill per land ratios. Manufacturing value added and manufacturing export shares will be assessed in Section 4.4 to see which countries perform better in the relatively skill-intensive narrow manufactures. This is because the argument that good economic performance is based on the success of manufacturing exports relies on relative skill-intensity between the former and non-processed primary products (Wood and Mayer, 1998; 1999). Section 4.2 will distinguish between the "good performers" and the "poor performers" in manufactures and manufacturing exports by first examining the broad size and development indicators and the endowment criteria under the Wood and Mayer (1998, 1999) (W-M) model. This gives an indicator of how the countries 'fit' the crude Wood-Mayer hypothesis, and how they diverge from it. The rest of the chapter attempts to refine the statistical analysis to consider whether a 'refined' version of Wood-Mayer is appropriate. In Section 4.3, the Dutch disease phenomena will be tested and a comparative analysis will be undertaken to show the importance of individual economic sectors in each country by highlighting the economic structure, shares of sectoral GDP and sectoral growth trends of the countries. In addition, in Section 4.5, endogenous factors including human development factors will also be examined in an attempt to understand the difference between the "good performers" and the "poor performers" of manufacturing exports further.

Against this backdrop, GDP has most often been employed as a measure of a country's economic size. To compare standards of living, however gross national income (GNI) per capita will be included, as well as gross domestic product (GDP). In both cases the

purchasing power parities (PPP) will be used to take account of currency differences between the countries. The population density per square kilometre (sq. km.), the inverse of the land per worker ratio, allows for a comparison in line with the Wood and Mayer (1999) analysis.

The International Standard Industrial Classification (ISIC) will be used for sectoral contributions to GDP in discussing economic performance and output of the different industries. The ISIC is chosen because this classification is based on the type of economic activity or type of production. However, to analyse the countries' export shares, the Standard International Trade Classification (SITC) of manufacturing will be used. As has been mentioned elsewhere in Chapter Three, the SITC classification will be employed to differentiate narrow manufactures from processed primary products, in line with Wood and Mayer's (1998, 1999) argument regarding skill endowment. Since MVA is a function of technical efficiency and the investment rate (Soderbom and Teal, 2002), sectoral MVA in will be assessed for economic performance in manufacturing. The revealed comparative advantage (RCA) indices (Table 4.11) will also be compared together with MVA in order to connect production performance with global competitiveness. The RCA of a country is a number that if greater than one, shows a country's global export specialisation. Due to unavailability of more recent data for Nigeria, 2002 figures have been chosen in order to allow comparison with the other countries for which data is available.

#### **4.2 Economic size and per capita income**

The economies of sub-Saharan Africa (SSA) are diverse in terms of population, land area and economic size. Of the four countries in Table 4.1, South Africa has the most area of land covering a total of 1,221,040 sq. Its population size in 2002 was 45 million, second to Nigeria's 133 million. With a total land area of 910,700 sq.km, Nigeria ranks (*R*) second while Côte d'Ivoire ranks third in total land area and in the size of population. Compared to these countries, Mauritius has the smallest land area and a population of just over 1 million. Mauritius is thus the most densely populated, followed by Nigeria, then Côte d'Ivoire and, lastly, South Africa.

In 2002, GDP in absolute terms ranged from US\$ 113.4 billion for South Africa to US\$ 4.7 billion for Mauritius (see Table 4.1). The country with the highest standard of living, i.e.,

**Table 4.1: Population size, density and land area (2002)**

Country	South Africa	R <sup>a</sup>	Côte d'Ivoire	R	Nigeria	R	Mauritius	R
Total land area (km <sup>2</sup> )	1,221,040	1	18,000	3	910,700	2	2,030	4
Total Population (millions)	45	2	17	3	133	1	1	4
Population density (/km <sup>2</sup> )	37	4	52	3	146	2	597	1
GDP <sup>b</sup> (billion U.S. \$)	113.4	1	10.2	3	39.5	2	4.7	4
GNI <sup>c</sup> per capita (PPP, billion U.S.\$)	9,160	2	1,500	3	800	4	5,940	1

<sup>a</sup> Ranking: 1-4, highest to least

<sup>b</sup> GDP (current U.S. \$)

<sup>c</sup> GNI (current U.S. \$)

Source: World Development Indicators (World Bank, 2004).

GNI per capita, is Mauritius, followed by South Africa. Income per head is lowest in Africa's most populous country Nigeria, while Côte d'Ivoire is little short of having twice the income per head of the latter. In terms of GNI per capita, which is a broad measure of development, South Africa and Mauritius are dramatically "more developed". These two countries have GNI per capita more than ten times that of Nigeria and over six times that of Côte d'Ivoire. It has been suggested in Chapter Three that development in all four countries had started from the primary sector, with Mauritius and South Africa later diversifying into manufacturing. If this pattern of development is related to Table 4.1, the table indicates what theory suggests, that resource-based industrialisation has a significant impact on development. We see that the countries with land abundance or resource rich, i.e., Côte d'Ivoire and Nigeria, are the least developed. However, South Africa is land abundant and resource rich but its performance is comparable to that of Mauritius.

Also, if one considers population density, the inverse of Wood and Mayer's (1998, 1999) land per worker, one observes from Table 4.1 that Nigeria is the second most densely populated after Mauritius, but it has the lowest standard of living. Population density is also fairly similar in Côte d'Ivoire and South Africa, however GNI per capita is about six times less in Côte d'Ivoire. Therefore, land intensity does not correlate with GNI per capita. This is probably because using land/worker ratio is a crude measure. This divergence perhaps is due to Nigeria being very natural resource abundant, as its development path suggests in Chapter Three. However, this does not explain South Africa's performance, being a mineral rich country itself. This raises the argument in Chapter Three, that the type of endowment has a peculiar effect on development. Correlating Mauritius' economic performance with low land per worker, shown by its high share of narrow manufactures, is straightforward while Nigeria's can be explained because it is resource rich. High land per worker ratios that are expected to explain the low share of manufactures are similarly straightforward in the case of Côte d'Ivoire but do not clearly explain South Africa's "good" performance. Therefore, explaining economic performance in these three countries may be complicated because "land" is a poor proxy for natural resource endowment and thus this suggests that there are possibly other important factors to consider in the countries under study.

Recall that non-market factors (see Section 2.4) such as high transportation cost and poor market integration have been linked to countries that have large land areas with low population density. Further, the problems of ethnic diversity with possibly higher incidence of political and social setbacks that erode social capital have also been associated with countries of low population density (Collier and Gunning, 1999a). Section 4.5 will analyse how these non-market factors apply to the four countries. However, this is also not clear-cut since large land area with low population density characterises one of the "good performers", i.e., South Africa. While these do not offer clear-cut explanations, the kind of investment in the countries could give an indication to how the markets function in these countries, as further discussion in Section 4.5 will show.

### **4.3 Four-country study: economic structure and growth performance**

This section will detail the overall economic structure of the four countries based on the ISIC classification (see Table 4.2). Although this classification does not isolate skill-intensive

sectors (Section 4.4 considers the narrow manufacturing sector in more detail), it does highlight some relevant interesting structural features and trends, particularly with respect to three main sectors, i.e., the manufacturing, agricultural and services sectors. This is done in order to shed light on the economic structural changes and to allow an analysis of the booming, lagging and non-traded sectors as with the core model of the Dutch disease hypothesis in Section 2.6.

Therefore, as defined in the core model, in this classification agriculture and manufacturing<sup>1</sup> (broad) will be sometimes referred to as the lagging sectors since these sectors' products are exported. Services will be taken as the non-traded sector since price in this sector is determined domestically. Services include wholesale and retail trade, hotels and restaurants, transport, real estate services as well as government, financial, professional and personal services such as education and health care. Also included in services are imputed bank service charges and import duties (World Development Indicators, 2004). The booming sector is the mining sector (or the energy sector referred to in Section 2.6) whose price is determined by the world price. Mining which is a part of total industry, but is not shown for all the countries, will be analysed as the booming sector in Nigeria and South Africa in order to test the Dutch disease phenomenon that has been said to adversely affect their economies. Although the core model does not use agriculture as a booming sector, an attempt will be made to explain Côte d'Ivoire's structural changes using agriculture as a booming sector in that country since its importance in Côte d'Ivoire is huge.

Therefore, the price trends in the booming sectors in Appendix 2 will be considered together with sectoral output trends in Tables 4.2a, b and Table 4.3. This is because the core model analysis dealt with in Chapter Two is concerned with the price increase in the booming sector and its effect on sectoral output changes.

Table 4.2a and 4.3 present data on sectoral output trends for the countries under study. To highlight Nigeria's apparent data inconsistencies, Table 4.2b and Appendix 1, which also show sectoral output shares for Nigeria will be referred to as well.

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<sup>1</sup> The ISIC definition includes heavy industry (metal processing) and other primary resource processing sectors.

From Table 4.2a, while agriculture and total industry contribute similar amounts to GDP in Côte d'Ivoire, the share of agriculture in Mauritius and South Africa is relatively small compared to total industry. Total industry shares of GDP in Nigeria and South Africa are distinctly higher relative to the other countries. Later discussion will show that the high share of industry is mainly due to the high share of manufacturing in South Africa, as it is in Mauritius unlike in Nigeria where the large share of industry is attributed to crude oil.

Sectoral growth trends of output point to a decline in the growth of agriculture between 1990-2002 compared to 1980-90 in the countries with the lowest shares in agriculture relative to other sectors, i.e., South Africa and Mauritius (see Table 4.3). In contrast to these two countries, agricultural output growth increased in Côte d'Ivoire and Nigeria where its proportion of GDP is relatively higher. Manufacturing output growth increased in all the countries in the 1990-2002 period compared to 1980-90. However, although Mauritius showed positive growth rates, the latter have declined except the growth of services. Only Nigeria with relatively the smallest services sector had experienced a decreased output growth in services.

#### **4.3.1 Agriculture**

As noted above, economic performance varies in the agricultural sector in each economy (Table 4.2a and 4.3). Although South Africa's agricultural sector is the lowest contributor to GDP, it nevertheless plays a significant role in output and employment (EIU, 2001). Maize is the most important crop in South Africa and recently, wine exports for niche markets are being developed (Economist, 2005). Since 2000 agriculture's contribution was only 3% of GDP. The historical importance of agriculture was discussed in Chapter Three.

Nigeria, however, once had a comparative advantage in agricultural produce that accounted for up to 60% of domestic production in 1960 but is now a major importer of food (Fidel, 1993; EIU, 2005). This sector employed 32% of the labour force in 2002, down from over 40% in the 1990s (FAO, 2004). Groundnut oil, palm kernel and palm oil, cocoa beans, rubber, timber and cotton were the major exports. Now very little cocoa, rubber and palm products are exported (EIU, 2005). It has been suggested that the agricultural sector is held back by traditional farming methods, an inefficient input supply system and diseases (African Business, 2002a). However, cocoa production has recently become significant due to a price

support policy and favourable weather (EIU, 2005). Later discussion in Section 4.3.4 will point to the adverse effect of the Dutch disease and political Dutch disease (see also Chapter Five) on Nigeria's biased production in oil.

The share of agriculture to total GDP in Nigeria, shown in Table 4.2b, conflicts with IMF data in Appendix 1 and data from UNCTAD (Table 4.2a) where agriculture is 31.3% and 29% of GDP respectively. This therefore shows that interpretation of Nigeria's data will vary depending on the data source. Nevertheless, agriculture's share of exports (see Table 4.10) seems to reflect its lack of competitiveness, as detailed discussion in Section 4.4 will explore.

In comparison, Côte d'Ivoire's economy relies mainly on agriculture, which accounted for 60% of export earnings in 2002, and employed an estimated 60% of the labour force (OECD, 2004a). A huge jump in growth rate in this sector can be seen in Table 4.3 where average annual percentage growth improved from 0.3% between 1980-1990 to 3.4% in 1990-2002. The growth improvement in agriculture has been more dramatic than in manufacturing and services. An attempt will be made later, to apply the core model hypothesis to understand this structural change in Côte d'Ivoire further. Apart from non-processed products, the importance of agriculture to GDP links forwards to manufacturing that is based on food processing. This sector's fluctuation to external demand makes it a candidate to check for the Dutch disease in later discussion below.

Like in South Africa, agriculture in Mauritius has the lowest share of GDP, employing 14% of the work force. Since independence in 1968, Mauritius has developed from a low-income, agriculture-based economy into a middle-income diversified economy with annual growth of 5-6% (Table 4.3). Sugar is however, the centrepiece of agriculture and is tied to fluctuations in the weather and of external demand,

**Table 4.2a Sectoral shares of gross domestic product<sup>a</sup> at current prices :  
percentage shares of total GDP**

Country	Year	Agriculture	Industrial Activity of which <sup>b</sup> :		Services
			Total	Manufacturing	
<b>Côte d'Ivoire</b>	1980	26	20	13	54
	1990	33	23	21	44
	1995	29	20	17	51
	2000	29	20	19	48
	2001	24	22	19	54
	2002	24	22	19	54
<b>Mauritius</b>	1980	12	26	15	62
	1990	12	32	24	56
	1995	10	33	24	62
	2000	6	32	24	63
	2001	6	32	24	63
	2002	6	31	23	62
<b>Nigeria</b>	1980	21	46	8	34
	1990	33	41	8	26
	1995	32	47	5	22
	2000	30	46	4	25
	2001	29	43	4	29
	2002	29	37	11	28
<b>South Africa</b>	1980	6	48	22	46
	1990	5	40	24	55
	1995	4	35	21	61
	2000	3	31	19	66
	2001	3	31	19	31
	2002	3	31	19	66

Source: UNCTAD Handbook of Statistics (2002, 2004)

<sup>a</sup>Gross Domestic Product by kind of economic activity. The major sector being agriculture, manufacturing and services (GDP=100%)

<sup>b</sup>Total industrial activity comprises manufacturing and mining. The former is not the focus and thus, it is not indicated.

**Table 4.2b Nigeria sector contribution to GDP (% total) at current factor cost**

Sector	1998	1999	2000	2001	2002
Agriculture	40.1	41	40.6	40.4	41.2
Services	27.9	28.1	28	29.7	28.8
Crude oil	11.9	10.7	11.5	10	9.7
Manufacturing	5.9	6	6	6.2	6
Building and construction	2.1	2.1	2.1	2.7	2.6
Mining and quarrying	0.3	0.3	0.3	0.4	0.4

Source: Annual Report and Statement of Accounts (Central Bank of Nigeria, 2002).

especially in the European market (OECD, 2004 d). For instance the effects of Cyclone Dina caused the agricultural sector in 2002 to experience a decline in production (OECD, 2004d). Nevertheless, agriculture, mainly the sugar sector, constitutes 20% of domestic exports compared to 70% two decades ago (African Business, 2003c).

#### **4.3.2 Industrial activity**

From overall industrial activity, manufacturing will be highlighted because the thesis argument relies on the significance of this sector. Mining in Nigeria and South Africa will also be looked at, so as to explore the Dutch disease phenomenon later.

Table 4.2a depicts Nigeria and South Africa as having relatively larger shares of industrial activity in GDP than the other two countries. The growth rates of industry as a whole were slower in 1990-2002 than in 1980-90 in Côte d'Ivoire and Mauritius (dramatically so in the latter) while Nigeria and South Africa experienced faster growth.

**Table 4.3: Average annual GDP growth rates (%): constant 1995 prices (US\$)**

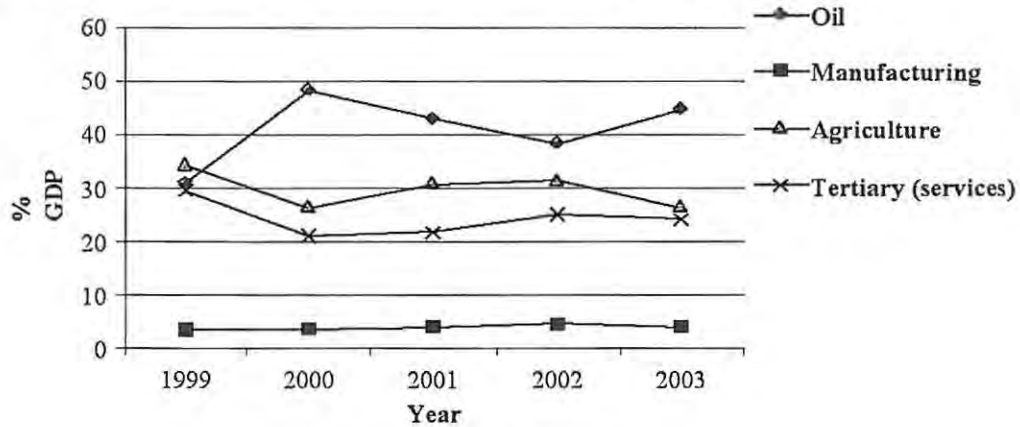
Period	Industrial Activity									
	GDP (average annual % growth)		Agriculture		Total		Manufacturing Services			
	1980- 1990	1990- 2002	1980- 1990	1990- 2002	1980- 1990	1990- 2002	1980- 1990	1990- 2002	1980- 1990	1990- 2002
Côte d'Ivoire	0.7	2.8	0.3	3.4	4.4	4.2	3.0	3.4	-0.1	2.0
Mauritius	6.0	5.2	2.6	0.4	9.2	5.4	10.4	5.3	5.1	6.3
Nigeria	1.6	2.4	3.3	3.5	-1.1	0.9	0.7	1.2	3.7	2.8
South Africa	1.0	2.2	2.9	1.2	0.7	1.3	1.1	1.6	2.4	2.8

Source: World Development Indicators (World Bank, 2004)

The growth trend in output of manufacturing in Table 4.3 points to Mauritius' manufacturing as the fastest growing sector in 1980-90, although this trend had slowed in 1990-2002. In contrast, all the other countries had grown in the latter period. As part of the industrial sector, manufacturing is comprised of the heavy metals industry, petrochemicals and fertiliser, and processed primary products. In contrast to Nigeria's relatively low manufacturing share, in South Africa and Mauritius, a large GDP share of total industrial activity comes from manufacturing, which has been more than half of total industry (Table 4.2a). With skill per land of 2000 person-years of schooling per square kilometre, (YS/sq.km) and 50 YS/sq.km in Mauritius and South Africa respectively (see Section 3.3), this is expected in the W-M (1998, 1999) model.

The importance of manufacturing in South Africa is due mainly to the engineering and metal products, food and tobacco processing, and the car industry along with the spare parts sector (Data Monitor, 2004).

Figure 4.1: Nigeria, GDP by sectors at national current prices (N)



Source: Based on Nigeria: Selected Issues and Statistical Appendix (IMF, 2004)

In Nigeria, textiles, beverages, cigarettes, detergents and cement account for around 60% of total manufacturing output (EIU, 2005b). In 2000, textile and food and beverages had the highest employment share of 38% and 19% respectively (World Bank, 2002). However, production in manufactures was just 11% or 6% of GDP in 2002 (Table 4.2a and 4.2b). The manufacturing sector also heavily relies on imports and employment is said to be declining fast (EIU, 2005b).

The industrial sector as a whole is nonetheless the largest GDP contributor in Nigeria, probably due to the importance of oil where for example, it was 44.7% of GDP in 2003 based on IMF (2004) data, (Appendix 1; Figure 4.1). However, according to the Central Bank of Nigeria (CBN, 2002a), crude oil made up between 9%-11% of total GDP from 1998 to 2002 (see Table 4.2b). The data is dramatically different from the IMF (2004) data, and is questionable as with data for the shares of agriculture discussed above.

From Table 4.10, Nigeria's export structure nonetheless shows crude oil to be more important than its GDP suggests from CBN (2002a) data. The significance of oil in Nigeria is reflected also in its derived revenues dependent on the world price of oil. For instance, revenue in 2003 accounted for 85% of the federal government revenue (CBN, 2004).

Other minerals mined are coal, iron ore, tin, uranium, phosphate, limestone and marble. However, mining and mineral processing experience backlogs. Therefore, production in the heavy metal industry, which links to mineral and ore mining, is globally insignificant due mainly to power failures and obsolete equipment (Country Profile, 1999). These sectors are characterised by imports of capital goods and physical investments, and are dependent on additional expenditure on imported processing equipment (African Business, 2002a). In addition to this, a major problem affecting the heavy industry sector has been associated with lack of funds for imported spare parts as well as a shortage of inputs from the refineries that slow down the petrochemicals industry. These problems culminate in poor maintenance and poor management (African Business, 2002a).

In Mauritius, growth in the industrial sector, as a whole, has been fuelled mainly by the EPZ manufactures and food processing (OECD, 2004b). However, although industrial activity is relatively large, GDP average annual percentage growth in manufacturing in the 1999-2002 period has more than halved to 5.3% from 10.4% of GDP in the 1980-1990 period, but is still higher than the other countries (see Table 4.3).

Industrial activity in Côte d'Ivoire reflects its endowments seen from the type of manufacturing industry, which is mainly based on processing of foods and raw materials such as coffee, cocoa, wheat, fruit and vegetable oils, and includes crude oil production and other mining activities. Textiles and rubber are also important in the manufacturing sector as well as a wide range of industry, including plastics, packaging, chemicals, pharmaceuticals, tobacco, timber, construction and building materials (EIU, 2004c). However, as a result of input shortages from the agricultural sector, the industrial sector in Côte d'Ivoire has been affected due to the social and political conflict in 2002 as discussed in Section 4.5.4 (EIU, 2004c).

#### **4.3.3 Services**

This sector has been defined previously as that which includes various services and the financial sector. Its significance relative to agriculture and manufacturing is illustrated by its high contribution to GDP in all the countries (see Table 4.2a). South Africa and Mauritius have relatively the highest GDP shares of services in comparison to Côte d'Ivoire and Nigeria, where it accounts for over 60% in both economies. All four countries experienced a

positive growth in services between 1990-2002. This growth was strongest in Mauritius. Observations point to large GDP shares of services in the countries with large GDP shares of manufacturing, i.e., South Africa and Mauritius. According to Wood and Mayer (1998, 1999), this is expected, since the skill requirement in manufactures is similar to services. Subsequently, as expected, Nigeria with the lowest GDP share of manufactures also has the lowest share of services.

Mauritius enjoys vibrant financial and business services (African Business, 2003b). The country has also diversified into the information, communication and technology (ICT) sector owing to its dense network of telecommunication of 235 lines per 1000 inhabitants (OECD, 2004b).

In Côte d'Ivoire, services, as seen in Chapter Three, play a crucial intermediary role in the production and marketing of agricultural and manufactured products. The services sector employed 11.5% of the labour force and accounted for over one third of GDP in 2000 (Trade and Development Case Studies, 2003). However, poor business climate and transport problems have debilitated the services sector as a result of the conflict in 2002 (EIU, 2004c). Nevertheless, services have grown to 54% of GDP in 2002 (Table 4.2a).

Nigeria's services sector, however, is relatively the smallest at 28% of GDP in 2002, compared to 54%, 62% and 66% of GDP in Côte d'Ivoire, Mauritius and South Africa respectively. The size of the sector has been linked to grave problems of poor management especially in the financial sector as well as under-capitalisation and dwindling foreign exchange business probably due to uncertainties and the high risk associated with the volatile macroeconomy (see Chapter Five). Tourism is also debilitated by the problem-ridden accommodation (EIU, 2004c).

In contrast, South Africa's services sector makes a significant contribution to GDP of over 60% (Table 4.2a). Services is driven by an advanced financial sector that has significant employment potential, and an active retail sector (Economist, 2005).

#### 4.3.4 Structural change and the Dutch disease

To apply the Dutch disease hypothesis explained in Chapter Two, Appendix 2 will be referred to for price trends of the commodities. In the classic Dutch disease case, output falls in the lagging sector(s) (manufacturing and/or agriculture) as a result of resource and spending effects (see Section 2.6). This is due to a decline in profitability as wages rise and labour moves out of the lagging and non-tradeable sectors into the booming sector causing direct de-industrialisation or de-agriculturalisation. Subsequently, the rise in income in the booming sector when spent on services increases demand for the latter. This raises the price of services and thus its profitability relative to tradeable products from the lagging sector, the prices of which are determined in the world market. As a result of real appreciation, labour moves from the lagging sectors into services causing indirect de-industrialisation or de-agriculturalisation when output of the lagging sector(s) decline further. Therefore, if the spending effect is stronger, the expected outcome is higher output of services than the initial period. The inverse is the case if the resource effect is stronger. Output in the lagging sector unambiguously falls.

However, output in the lagging sector(s) may not necessarily decline when the variant Dutch disease with a mini H-O economy and the Rybczynski effect is taken into account (see Section 2.6). In this case, the lagging sector(s) and the non-tradeable sector behave as a mini H-O economy due to their differences in capital and labour intensities. Thus, a resource effect that draws labour out of the lagging sector into services may increase output in the former. The increase in output in the lagging sector with less labour is explained by the Rybczynski effect. Basically, capital usage increases in the lagging sector as a result of decreased capital employment if the lagging sector is capital-intensive relative to services.

With this said, for South Africa, increasing price trends in minerals, ores and metals and gold will be taken as a booming period for these resources from 1990-2003 (see Appendix 2 for commodity price trends). Although an increase in international price does not necessarily constitute a rise in domestic production or increase sales value to create a boom in any given country, the mining production indices for South Africa in Appendix 3 generally point to an increase in the percentage change of mining production in more or less the same period. To analyse the data from Table 4.3 with regard to the boom therefore in South Africa, it can be expected that a boom will draw labour away from the other sectors into the booming mining

sector. This resource effect may cause an increase in wages in the economy due to the demand rise for labour. Employment and output in services and the lagging sectors may therefore drop. However, if a rise in income in mining, through a spending effect, is expected to increase demand for services, real appreciation will make services more profitable relative to the lagging sectors. In Chapter Three, we have seen how agricultural labour was substituted by mining labour. The mineral-energy-complex (MEC) has also been linked to conglomerate ownership that extends to the financial sector (Fine and Rustomjee, 96: 1996). It is thus possible that booms in the mining sector may compete for agricultural labour and may positively affect services, given that the financial sector is the backbone of South Africa's service sector.

Actual observation from Table 4.3 shows an increased growth in services and de-agriculturalisation. Growth of the manufacturing (lagging) sector has increased only marginally. What seems plausible in this case is to argue that labour drawn from the manufacturing sector might have led to an augmented usage of capital in capital-intensive manufacturing as in the Dutch disease model with a mini H-O economy (Rybczynski effect). For instance, it is likely for there to be growth in South Africa's comparative advantage sector, basic metal manufacturing, due to its capital-intensity and forward linkages to the booming sector.

In the case of Nigeria, given the importance of oil, this sector will be taken as the booming sector. Agriculture and manufacturing are the lagging sectors while services is the non-tradeable sector. Figure 4.1 points to an inverse pattern of changing shares between oil and agriculture and services (the latter two moving in the same direction). There is a somewhat direct relationship however between movements in oil and manufacturing GDP shares. Appendix 2 shows that the rate of change in the oil price was on the rise from 1990-2003, thus indicating an (international) oil boom period. Comparison of the longer-term sectoral change in the 1990-2002 period in Table 4.3 shows in the lagging sectors, while the growth in agriculture was relatively the strongest compared to manufacturing. Growth of services, although also stronger than that of manufacturing, was slower in 1980-90 compared to 1990-2002.

Analysis of the Dutch disease in Nigeria takes into account that the oil sector is an enclave (Stijns, 2003). What will be considered here are the sectoral changes in growth rates in the

two periods looked at above rather than comparing growth rates between the sectors. Therefore, the resource effect (labour mobility) is assumed to take place only between the lagging and non-tradeable sectors through the mechanism of real appreciation (see Section 2.6). Hence, in Nigeria's case, it is possible that labour is mobile between agriculture, manufacturing and services and thus, direct de-industrialisation may not be expected. However, through the spending effect, a boom in the oil sector may raise demand for services thereby increasing its price relative to manufacturing and agriculture (real appreciation). The hypothesis suggests that in this case, a fall in wage in terms of services and a rise in wage in terms of tradeables may cause a shift of labour from the latter into services (indirect de-industrialisation and de-agriculturalisation). Instead however, Table 4.3 suggests that, compared to 1980-90, in the oil boom period coinciding with the 1990-2002 GDP growth analysis period, industrialisation (albeit very slow) and agriculturalisation seemed to have taken place. However, growth in services fell from 3.7% in 1980-90 to 2.8% in 1990-2002. A possible interpretation could be that wage in terms of services was sticky downwards. The argument for a Rybczynski effect between capital-intensive and labour-intensive manufacturing and agricultural sectors and between services and the two latter sectors may also be considered. Therefore, labour-intensive agriculture might have drawn some of the excess labour leading to an increased growth rate. Also, given that favourable price policy has been initiated in this sector, as mentioned earlier, the profitability of agriculture may have risen. It is plausible that the capital-intensive manufacturing sectors' output increased as a result of the effect of real exchange rate appreciation (i.e., rise in the price of non-tradeable goods relative to the price of traded goods) during an oil boom. To explore this, further effects on production of the exchange rate movements will be presented in Chapter Five (see Section 5.1).

The outcome of the structural changes that take place is dependent on interpretation of reliable data, which for Nigeria differ dramatically between the sources, and variability of the figures also seems questionable. Nevertheless, what is unambiguous is that the size of the manufacturing sector is constantly smaller relative to all other sectors.

To extend this analysis to agriculture as a booming sector in Côte d'Ivoire, it can be assumed that a boom in agriculture draws labour away from the services and manufacturing sectors during a period of increasing prices in agricultural raw materials from 1990-99 (Appendix 2).

Table 4.3 shows growth in all the sectors in the ten-year period between 1990-2002. Total industry grew the fastest (4.2%) in 1990-2002, with similar rate of growth in manufacturing (3.4%) and agriculture (3.4%). The slowest growth was shown to be in services (2.0%) in the same period. Thus from Table 4.3, it can be seen that in 1990-2002 compared to 1980-90, the growth change that took effect saw the largest change in agriculture followed by services. The growth change in manufacturing was the slowest, while total industry declined. Again, resource movement is possible between services, capital-intensive agro-industry and manufacturing. Therefore, there might have been augmented capital usage in the capital-intensive sectors of manufacturing due to labour movement out of this sector (see Figure 2.6 in Section 2.6). Thus, agriculture output increased due to the resource effect of the boom; services could have become more profitable with the spending effect and wage in terms of this sector fell leading to higher output; capital-intensive agro-industries could have benefited from decreased labour employment that are drawn to agriculture and services. The hypothesis suggests however, that de-industrialisation may occur in those sectors of manufacturing that are labour-intensive as a result of decline in profitability brought about by increased wages when labour demand in the economy is raised by the boom. This makes for the argument that profitability is rather the main explanation for labour-intensive manufacturing exports in most of sub-Saharan Africa. Subsequently if the possibility of a spending effect is considered in Côte d'Ivoire, the increased income from agriculture may have generated higher demand for services that led to increased output in the latter. This is expected due to real appreciation when price and profitability of services rise relative to the tradeable sector.

Insights from the Dutch disease model therefore imply that structural dynamics tied to resource endowments and external demand for these resources determine the pattern of growth. Sector profitability is likely to be the invisible hand guiding the choice of production. Thus, if the capital-intensive manufacturing sectors become more profitable as a result of growth in the natural resource sector, the demand for physical capital and perhaps the demand for human capital in these sectors may increase. As Chapter Three alluded, if the economy could source these demands internally, then linkages will aid the spill over of growth to other industries. However, as the previous chapter showed, historically the alternative for most sub-Saharan countries is to import intermediate goods, which is dependent on the availability of foreign exchange.

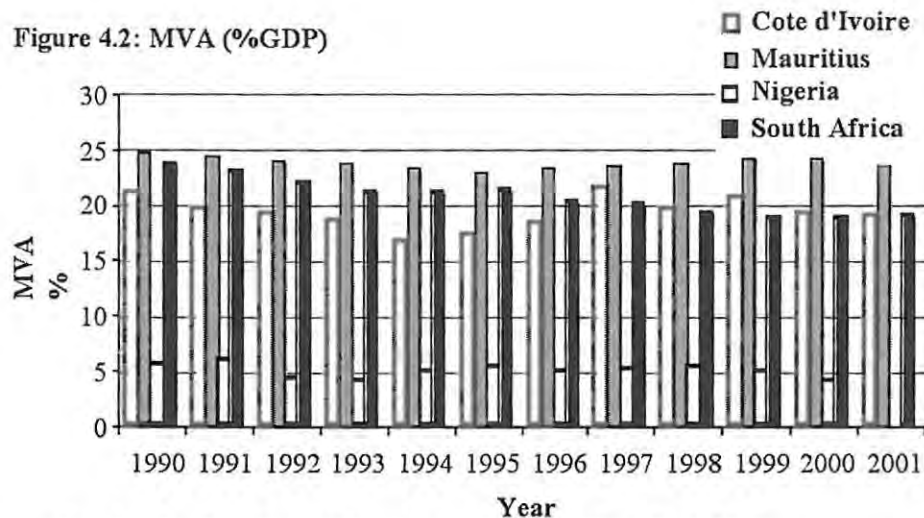
**Table 4.4: Manufacturing value added (% of GDP at 1995 prices)**

<b>Country</b>	<b>Cote d'Ivoire</b>	<b>Mauritius</b>	<b>Nigeria</b>	<b>South Africa</b>
Year				
1991	19.43	24.3	5.9	22.86
1992	19.07	23.85	4.32	21.83
1993	18.5	23.55	4.00	21.14
1994	16.47	23.19	4.94	20.92
1995	17.22	22.78	5.36	21.22
1996	18.21	23.21	4.84	20.16
1997	21.30	23.46	5.08	19.92
1998	19.55	23.75	5.24	19.25
1999	20.48	24.10	4.89	18.79
2000	19.11	23.97	4.12	18.75
2001	18.83	23.48	-	18.9

Source: World Development Indicators (World Bank, 2004)

In terms of this explanation, it is anticipated that a fall in profitability and decreased labour demand in the relatively labour-intensive sectors will shrink the latter's output since the alternative is to augment capital usage. Therefore, this culminates in the argument that labour (skill) demand is as important a cause of SSA's manufacturing export drive as its supply (see Figure 3.1, Chapter Three). Thus, one could grasp the idea that a land abundant country may have a low incentive to develop its skill in its initial development path since the capital-intensive manufacturing sectors are preferred over the relatively labour-intensive ones (Leamer et al., 1999).

This section has therefore highlighted some relevant economic structural features and trends, particularly with respect to three main sectors, i.e., the manufacturing, agricultural and services sectors.



Source: Based on data from the World Development Indicators (World Bank, 2004)

#### 4.4 Narrow manufacturing: structure and exports shares

The analysis of the previous sections was based on the ISIC classification and therefore, the manufacturing sector was defined as broad and consisted of primary product processing in addition to other manufactures. Based on this, the analysis of sectoral structure in the countries under study suggested that growth in agriculture in Côte d'Ivoire and mining industry in Nigeria (oil) and South Africa (minerals, metals and ores) are likely to have a significant impact on the structure of other sectors of their economies.

In this section however, distinction is made between the SITC and the ISIC manufactures so as to differentiate narrow manufactures and processed primary products. As in Wood and Mayer (1998, 1999), this is to consider the hypothesis that skill endowment reflected in narrow manufactures is the determinant of SSA performance in manufacturing exports. The SITC thus defines manufacturing activity as that which produces final goods of the category 5 to 8 less 68. All other products, whether processed or unprocessed are primary products. This is different from the broader ISIC definition, which in addition to the SITC definition includes goods produced using large inputs of local raw materials (Wood and Mayer,

**Table 4.5 Manufacturing value added (annual % growth)**

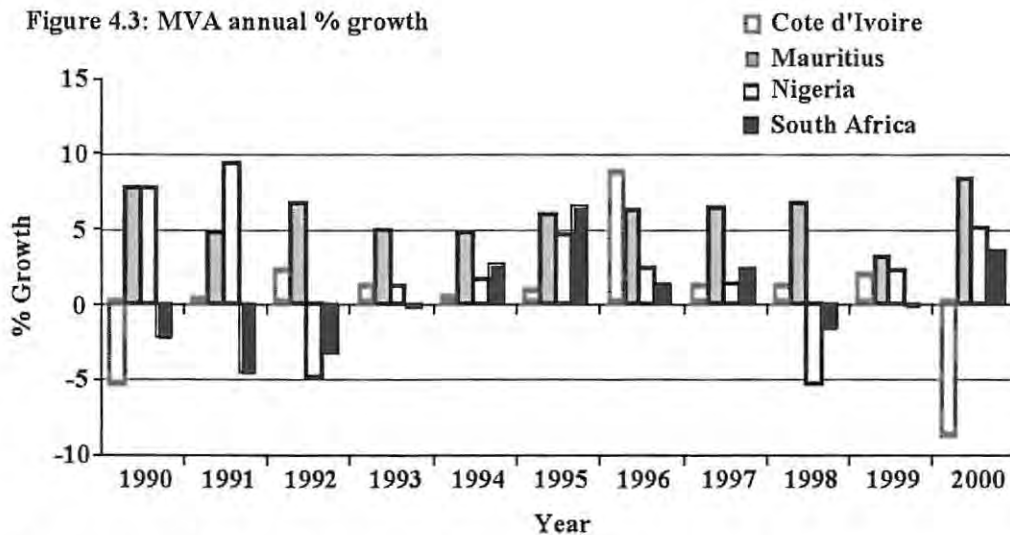
Year	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1990	-5.41	7.72	7.62	-2.25
1991	0.12	4.61	9.31	-4.57
1992	2.02	6.53	-4.83	-3.28
1993	1.01	4.75	1.16	-0.18
1994	0.35	4.63	1.64	2.67
1995	0.80	5.86	4.59	6.49
1996	8.54	6.20	2.38	1.38
1997	11.00	6.35	1.30	2.42
1998	11.00	6.65	-5.43	-1.63
1999	1.80	3.01	2.14	-0.15
2000	-8.90	8.27	4.93	3.61
2001	-1.67	6.55	-	2.00
Average	1.80	6.46	2.25	0.59

Source: World Development Indicators (World Bank, 2004)

1998:6). For example, the ISIC categories "Food, beverages and tobacco" and "Other Manufacturing" are called manufactures by ISIC. However, these are categorised here, according to the SITC and similarly by Wood and Mayer (1998), as processed primary.

Since both the ISIC definition and MVA refer to production, they will be used to assess the specific economic sectors in South Africa, Mauritius, Nigeria and Côte d'Ivoire.

Table 4.4 and Figure 4.2 introduce the overall shares in manufacturing for the four countries. Mauritius in 1990-2000 had the highest MVA percentage share of GDP as noted in Section 4.3.2 followed by South Africa. Côte d'Ivoire had the third largest MVA, and Nigeria the lowest.



Source: Based on data from the World Development Indicators (World Bank, 2004).

Therefore, there seems to be a correlation between higher shares of MVA to GDP and annual rate of growth in MVA with relatively higher shares of manufactures in total exports. Mauritius has the highest annual growth rate of MVA that appears to be the most steady, varying from 3% to over 8% MVA (Tables 4.5 and Figure 4.3), with no negative growth between 1990-2000. South Africa's annual growth rate of MVA ranged from -4.59% to 6.49% and has often been negative. Nigeria's MVA growth has been mostly weak by comparison to Mauritius since 1992, but varies a lot relative to South Africa's. Côte d'Ivoire's -8% to 11% rate of MVA growth seems to show the most instability followed by Nigeria's and South Africa's. However, one observation stands out. Côte d'Ivoire and Nigeria surpass South Africa in their average annual growth rates in MVA. To understand the performance of manufacturing, the structure of the countries' narrow manufactures will be the next focus below.

#### 4.4.1 Structure and export shares of manufactures: South Africa

Manufactures, according to Wood and Mayer (1998, 1999), can be distinguished as narrow manufactures (NM) or processed primary (PP). For instance, South Africa's non-ferrous basic metal (SITC 667), pulp (SITC 246) and part of some wood sectors are processed or non-processed primary products. The other manufactures group (see Table 4.6 and Figure 4.4), consists of wood and related products, paper and related products, petroleum and related

products, basic metals and mineral products, fabricated metal products and professional goods, machinery, and chemicals. This group contains NM, PP and NP categories.

Table 4.11 depicts South Africa's specialisation in this order: basic manufactures (NM), minerals (NP), wood products (PP and NP), fresh foods (NP), and processed foods (PP). To focus on basic manufactures, according to the factor intensity classification of the Empirical Trade Analysis Center (ETC, 2004), the latter is human-capital intensive in contrast to textiles and clothing. How then does this fit in with the W-M (1998, 1999) analysis of skill per land endowment, given that South Africa's skill endowment is relatively lower than that of Mauritius? This type of Wood and Mayer (1998, 1999) analysis thus, fails to explain South Africa's high share of narrow manufactures in total exports due to its skill proportion relative to land (resources).

In Chapter Three, however, it was argued that land abundant resource rich countries have a capital intensity bias towards the processing of their resources as we see in South Africa. In addition, the Dutch disease analysis suggests that natural resource booms (metals, ores and minerals in the case of South Africa) create resource re-allocation in the economy and that tends to shift profitability to the capital-intensive sectors, basic manufactures in the case of South Africa. This is also Leamer et al.'s hypothesis, that such a country will by-pass labour-intensive sectors in the early stage of development. Thus, it is expected that due to the production bias, other manufacturing sectors such as the labour-intensive ones may lag behind in South Africa.

Nonetheless, South Africa's "good performance", with regard to its relatively higher shares of manufacturing in total exports according to Wood and Mayer (1998: 26-40), could be explained by the nature of its basic metal industry being linked to the mining booming sector and the MEC (see Chapter Three). Further, this forward linkage to the MEC and the financial service sector may have aided the manufacturing sector, leading to the gradual upgrading of skill requirement. This points to a distinction in economic structure from Nigeria's oil sector enclave.

**Table 4.6 Other manufacturing<sup>a</sup> (%MVA)**

Year	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1990	-	17.36	-	49.98
1991	-	16.82	21.64	47.67
1992	-	16.45	17.69	46.52
1993	-	17.57	31.16	47.07
1994	42.7	17.89	45.28	47.8
1995	36.68	16.63	27.79	48.02
1996	34.22	17.3	25.21	48.67
1997	32.93	15.27	-	48.9
1998	-	-	-	48.89
1999	-	-	-	48.55
2000	45.72	-	-	49.53
2001	-	15.3	-	58.4

Source: World Development Indicators (World Bank, 2004)

<sup>a</sup> Other manufactures (ISIC) includes wood and related products, paper and related products, petroleum and related products, basic metals and mineral products, fabricated metal products and professional goods, machinery, and chemicals.

Therefore, the same effect of resource booms as far as manufacturing performance is concerned does not seem to manifest.

#### **4.4.2 Structure and export shares of manufactures: Nigeria**

It was mentioned (Section 4.3) that from broad manufacturing, Nigeria's significant sectors were the textile industry (NM), wood (NP), paper (PP), food and beverages (PP), cigarettes (PP), detergent (NM), and the chemical sector (NM).

It would be expected that given Nigeria's booming oil sector, the country would specialise in narrow manufacturing linked to crude oil such as petrochemicals. However, specialisation as we see is only in minerals (Table 4.11) and is reflected by the large share of oil in total exports (Table 4.10).

Also, Nigeria's sectoral shares of MVA (see from Table 4.6-4.9 and Figures 4.3-4.6 below) appear as the most variable from 1990-2000 compared to the other countries, either due to data inconsistency or other effects of economic fluctuations as a result of the Dutch disease phenomenon. Chapter Five will look into this variation to try to understand this performance further in Nigeria. For example, shares of "other manufactures" fluctuated from as low as just over 17% to over 45% of MVA in two years (see Table 4.6). Nevertheless, the broad product group, "other manufactures", has the highest share of MVA in Nigeria as in South Africa probably due to biased production in capital-intensive processing activities. Also, textiles and clothing, a narrow manufacture group, fluctuates from 52% in 1992 to 8% of MVA the next year (Table 4.7). Chemicals went from more than 1% of MVA in 1994 to 25.71% in the next year (Table 4.8), while the share of the food, beverage and tobacco group went to 46.6% in 1993 from 14% in 1992 (Table 4.9). The variability of MVA in textiles and clothing, also a narrow manufacturing group but of low-skill intensity demonstrates instability in this sector.

Further, in Nigeria, despite total MVA being very small, fluctuations to high levels in chemicals, and textiles and clothing show potential competitiveness. However, studies on Nigeria's manufacturing sector have shown that the narrow manufacturing categories textiles and the chemicals sectors are relatively capital-intensive and more so than the food sector; clothing is the most labour-intensive sector (Soderbom and Teal, 2002). Here again, however small MVA is, there seems to be a choice of capital-intensive over labour-intensive production.

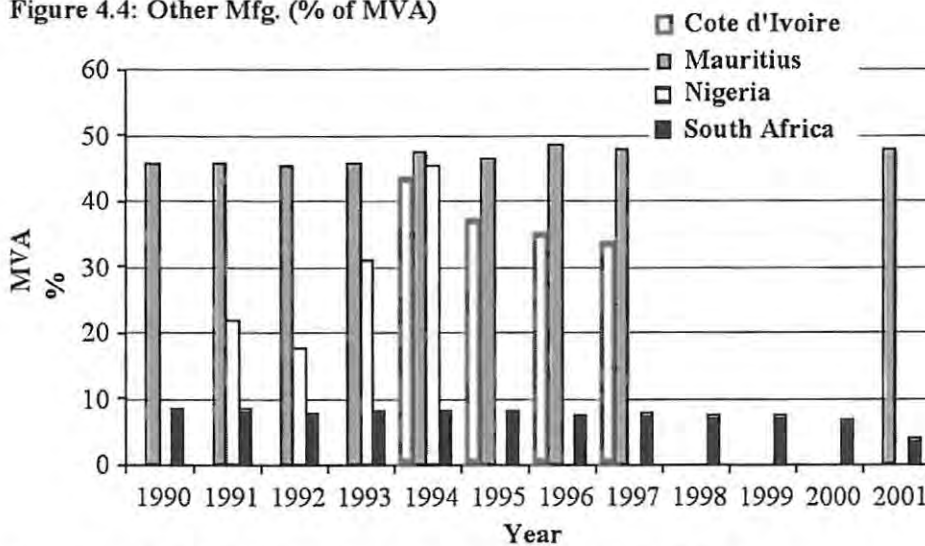
However high MVA shares fluctuate to, when the average of the annual growth rate of MVA is considered, manufacturing performance as a whole is still relatively modest compared to Mauritius but surprisingly higher than South Africa's average (see Table 4.5). Nigeria's case suggests a less straightforward explanation than lack of skill since its skill per worker is within the South African range (Wood and Mayer, 1998: 31).

**Table 4.7 Textiles and clothing (% MVA)**

Year	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1990	-	45.69	-	8.38
1991	-	45.64	46.07	8.16
1992	-	45.37	52.28	7.634
1993	-	45.53	8.08	7.94
1994	8.89	47.24	13.87	8.03
1995	10.95	46.15	12.59	8.04
1996	13.23	48.19	11.09	7.43
1997	10.08	47.64	-	7.54
1998	-	-	-	7.17
1999	-	-	-	7.15
2000	17.212	-	-	6.63
2001	-	47.6	-	3.7

Source: World Development Indicators (World Bank, 2004)

**Figure 4.4: Other Mfg. (% of MVA)**



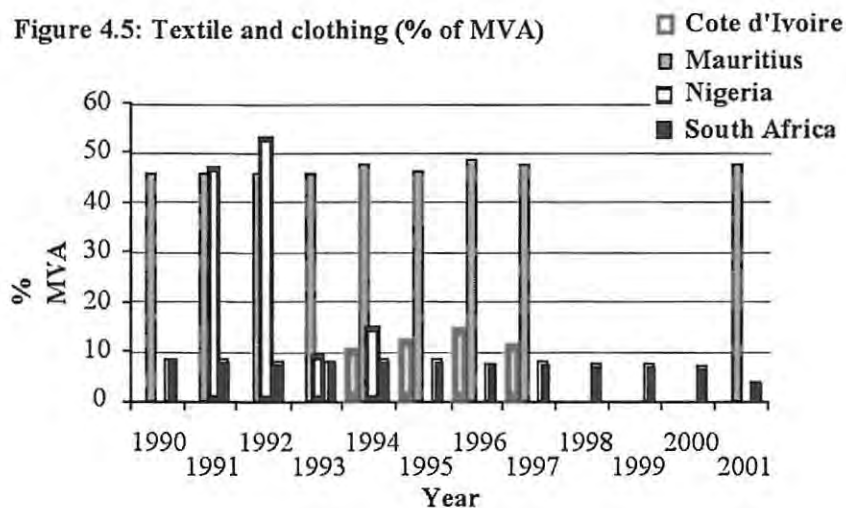
Source: Based on the World Development Indicators data (World Bank, 2004)

**Table 4.8: Chemicals (% MVA)**

Year	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1990	-	4.2	-	9.44
1991	-	4.57	4.14	10.31
1992	-	4.11	5.7	9.95
1993	-	4.31	1.9	9.89
1994	11.22	4.03	1.76	9.67
1995	10.82	4.63	25.47	9.47
1996	11.88	4.26	25.71	9.48
1997	12.02	4.52	-	9.45
1998	-	-	-	9.56
1999	-	-	-	9.57
2000	-	-	-	9.38
2001	-	4.5	-	9.8

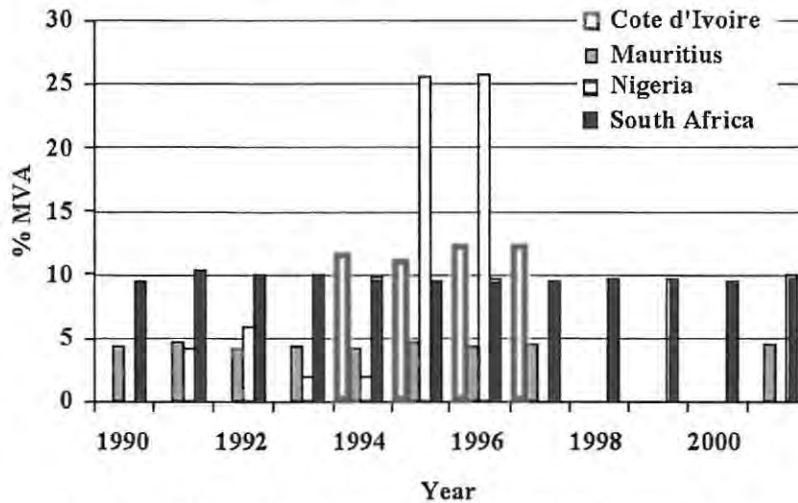
Source: Based on the World Development Indicators data (World Bank, 2002)

**Figure 4.5: Textile and clothing (% of MVA)**



Source: Based on the World Development Indicators data (World Bank, 2002).

Figure 4.6: Chemicals (% MVA)



Source: Based on the World Development Indicators data (World Bank, 2002).

Therefore, further analysis of the microeconomic factors in later sections of this chapter as well as the macroeconomic effect of the Dutch disease in Chapter Five will need to be considered.

#### 4.4.3 Structure and export share of manufactures: Côte d'Ivoire

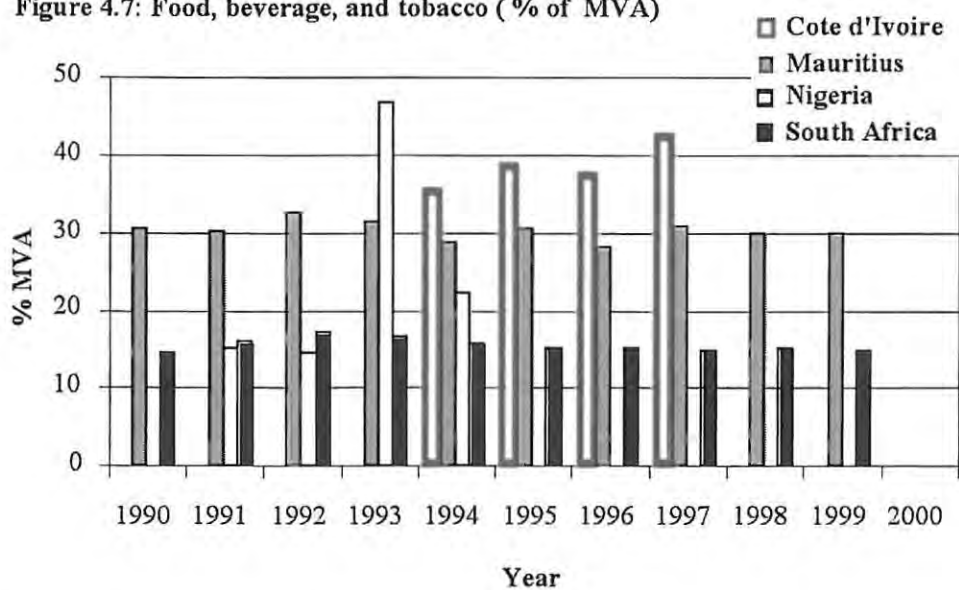
The pattern of capital-intensive production in processed foods is also expected in the case of Côte d'Ivoire. This is intuitive because the country has abundant cropland and agricultural raw materials are available. It was noted in Section 4.3 that wood, textiles, chemicals, and pharmaceuticals of the narrow manufacturing category were significant in Côte d'Ivoire. The relatively high share of MVA in the "other manufactures" group (Table 4.6) also depicts the country's specialisation in wood. However, the share of MVA in textiles and clothing is relatively small (Table 4.7).

**Table 4.9: Food, beverages and tobacco (% MVA)**

Year	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1990	-	30.36	-	14.48
1991	-	30.07	15.15	15.86
1992	-	32.34	14.29	17.04
1993	-	31.1	46.6	16.38
1994	34.71	28.56	22.06	15.96
1995	37.85	30.4	25.43	15.29
1996	36.86	27.99	30.27	15.31
1997	42.01	30.58	-	15.1
1998	-	-	-	15.34
1999	-	-	-	15.18
2000	27.33	-	-	14.02
2001	-	30.6	-	10.8

Source: World Development Indicators (World Bank, 2004)

**Figure 4.7: Food, beverage, and tobacco (% of MVA)**



Source: Based on the World Development Indicators data (World Bank, 2004).

Overall, the narrow manufacturing sector (category 5-8), nonetheless, was 14.3% of the total value of exports compared to 0.4% in Nigeria in 2000 (see Table 4.10). Côte d'Ivoire's export structure depicts machinery and transport equipment export shares at a significant level relative to Mauritius. This sector, according to the ETA classification, is technology-intensive and thus, human capital-intensive. Also, world competitiveness as reflected in its RCA in transport equipment (see Table 4.11), also places Côte d'Ivoire even ahead of Mauritius in this sector. This is unexpected given Côte d'Ivoire's low skill to land ratio according to the Wood and Mayer (1998, 1999) model. It is possible that profitability could direct capital employment to this capital-intensive sector. In addition, from Table 4.5, as with Nigeria, Côte d'Ivoire's annual growth average in MVA is relatively higher than that of one of the "good performers" of manufacturing exports, i.e., South Africa.

The question that arises then is, does skill ratio, as the W-M (1998, 1999) thesis indicates, also explain Côte d'Ivoire's higher shares than Mauritius, of machinery and transport equipment (at least for 2002) of the NM category (Table 4.10).

With regard to processed primary, data for Côte d'Ivoire, where available, indicate that the country has relatively a higher percentage share of MVA in the food, beverage and tobacco category (Figure 4.7). This is backed by Côte d'Ivoire's world competitiveness with an RCA of 2.07 for processed foods, its third strength after fresh foods and wood products (Table 4.11). African Business (1999) regards Côte d'Ivoire as one of the top ten African countries with respect to MVA. The MVA referred to, however, as seen above, is that of processed primary production. For instance, all food items' share of total exports was 55.6% in 2003 (Table 4.10). This is expected as it conforms to Côte d'Ivoire's endowment in cropland.

#### **4.4.4 Structure and export share of manufactures: Mauritius**

Manufactures in Mauritius originates mainly from the Export Processing Zone (EPZ) and contribute 36.1% of domestic exports (African Business, 2003c). EPZ manufactures were the largest foreign exchange earner and account for 12% of GDP and bring in almost three-quarters of export earnings. In Table 4.11, Mauritius' specialisation index places it with a RCA in clothing (RCA 19.48), processed foods (RCA 4.50), and textiles (RCA 2.03), of which clothing and textiles are narrow manufactures. This is reflected in Mauritius' consistent relatively high MVA shares in these sectors (Figures 4.5 and 4.7).

**Table 4.10: Export structure by main categories (SITC)**

Country	Year	Total value of exports (constant 1995 \$US, millions)	All food items 0+1+2 2+4 NP	Agric raw materials 2 less (22+27+28) NP	Fuels 3 NP	Ores and metals 27+28+68 NP	Mfg. Goods 5 to 8 less 68 NM	Chem. Prod 5 NM	Other mfg. goods (6+8) less 68 PP, NM	Machinery, transport equipment 7 NM
			Percentage share of total export value							
Côte d'Ivoire	1995	3032	62.8	19.7	9.5	0.2	6.5	2.4	3.7	0.4
	1999	4314	66.0	10.0	12.6	0.1	21.3	4.4	10.6	6.2
	2000	3628	<u>49.8</u>	<u>13.8</u>	<u>20.3</u>	0.2	<u>14.3</u>	3.9	9.4	1.0
	2003	5493	55.6	9.2	12.8	0.2	20.0	4.0	6.2	9.7
Mauritius	1980	420	72.6	0.1	0.0	0.0	27.4	0.5	24.0	2.8
	1990	1221	31.9	0.5	1.4	0.2	65.8	0.9	63.5	1.4
	1995	1538	28.6	0.7	0.0	0.2	70.2	0.8	67.1	2.3
	2000	1490	<u>17.8</u>	0.5	0.0	0.2	<u>80.8</u>	0.9	<u>76.6</u>	1.3
	2001	1521	24.4	0.5	0.0	0.2	74.2	0.8	71.7	1.7
	2003	1839	24.8	0.4	0.1	0.3	73.6	1.7	67.5	4.3
Nigeria	1999	21331	0.3	0.1	98.9	0.0	0.6	0.1	0.2	0.4
	2000	39016	0.1	0.0	<u>99.6</u>	0.0	0.2	0.0	0.1	0.1
1 South Africa	1980	25585	8.7	2.5	3.8	7.0	18.1	2.2	13.9	2.0
	2000	26075	8.5	3.8	<u>10.2</u>	<u>10.7</u>	<u>53.9</u>	<u>7.8</u>	<u>28.6</u>	<u>17.5</u>
	2003	30897	9.9	3.3	9.8	19.0	57.3	7.5	29.1	20.7
2 South Africa (SACU)	1995	28226	7.9	4.1	8.9	8.0	43.1	7.0	27.4	8.8
	1999	23189	10.2	3.6	9.8	21.2	54.4	8.0	29.0	17.5

Source: UNCTAD (2004).

Mauritius' case is straightforward in that the unavailability of natural resources focuses profitability in relatively more labour-intensive sectors such as clothing compared to other land abundant, resource rich countries. If Mauritius' endowment in higher worker to land (high population density) is considered as in the Wood and Mayer (1998, 1999) model, then this lends support to the choice of labour-intensive production. Leamer et al. (1999) argue that the lack of natural resource endowments sets an incentive for a relatively quicker emergence of manufacturing due to the demand for labour.

**Table 4.11: Specialisation index (2002)**

Côte d'Ivoire	Mauritius	Nigeria	South Africa	Sectors	Wood and Mayer <sup>2</sup> .			
<i>R</i> <sup>3</sup>	<i>R</i>	<i>R</i>	<i>R</i>					
0 <sup>4</sup>	<u>19.48</u>	1	0	0.29	Clothing	NML		
0.55	<u>2.03</u>	3	0	0.40	Textiles	NML		
0.20	0.78		0	0.28	Misc. mfg	NML		
0.29	0.11		0	<u>2.70</u>	1	Basic mfg	NML	
<u>2.07</u>	3	<u>4.50</u>	2	0	<u>1.34</u>	5	Processed foods	PP
<u>2.96</u>	2	0	0	<u>1.62</u>	3	Wood products	NML	
0.75	0	0	0	0.72		Leather products	NML	
0.04	0	0	0	0.81		Transport equipment	NMH	
0	0.06	0	0	0.70		Non-electric Machinery	NMH	
0.39	0.09	0	0	0.95		Chemicals	NMH	
0	0	0	0	0.15		Construction electronics	NMH	
0	0	0	0	0.16		Electronic components	NMH	
<u>1.76</u>	4	0.22	<u>8.39</u>	1	<u>2.27</u>	2	Minerals	NP
<u>11.92</u>	1	0.32	0	<u>1.47</u>	4	Fresh food	NP	

Source: Revealed comparative advantage statistics from ITC (2002); Wood and Mayer classification (Appendix 1, 1998)

<sup>2</sup> See Figures 2.3a and b, where NML is low-skill narrow manufacturing (NM) and NMH is high-skill NM.

<sup>3</sup> Ranking *R* compares the four countries in that export category: 1-4, most important to least.

<sup>4</sup> Specialisation index is the revealed comparative advantage (RCA) of a country: 1 and above shows a country's comparative advantage in global exports in that category.

Thus, we see that textile and clothing manufacturing were the basis of growth in Mauritius. That Mauritius' success in narrow manufacturing and processed primary product exports rests largely on its high skill to land ratio is debatable since the clothing and textile sectors, the basis on which Mauritius has grown, are sectors that are low-skill intensive. It has been pointed out previously that in South Africa, which has relatively lower skill to land ratio has a comparative advantage in a relatively more human-capital intensive sector, i.e., basic manufactures. However, intuitively, the absence of resource endowments in Mauritius and the profitability in the labour-intensive sectors could explain augmented labour employment

in such sectors. Nonetheless, from its stable annual and sectoral MVA, it appears that Mauritius' manufacturing sector does not go through intense economic cycles that seem to be the case especially in Nigeria and Côte d'Ivoire.

#### **4.4.5 Summary**

Output share of GDP of the economic sectors of the four countries under study pointed to each sector's significance and contribution in the economy. The countries with a high share of manufacturing in total exports, South Africa and Mauritius, have relatively higher shares of MVA as a proportion of GDP. Also, high proportions of narrow manufactures constitute the two countries' total manufacturing exports. This is expected for Mauritius given her low land per worker ratio in accordance to the W-M (1998, 1999) model. The model extends this explanation to South Africa where its high land per worker explains its high share of primary products. In both countries the W-M (1998, 1999) model explains their relatively high shares of narrow manufactures due to their high skill to land ratio. However, the structure of narrow manufactures points to a more human-capital intensive specialisation in South Africa in basic manufactures, while Mauritius' clothing and textiles specialisation is based on low-skill labour. Nonetheless, using these measures to explain Mauritius' export performance seems straightforward.

Unlike Côte d'Ivoire and Nigeria, the relatively steadier MVAs in Mauritius and South Africa also depict the sustainability of their manufacturing sectors over time. When connection is made with their GNI per capita, it conforms to theory that resource-based industrialisation may not sustain development. South Africa's high land per worker ratio cannot explain her higher GNI per capita but the economic structural changes suggested by the Dutch disease hypothesis point to production bias in profitable basic metal industry. This industry's characteristic economic linkages may have permitted the development of other sectors such as services, thus making it possible for South Africa to diversify into narrow manufactures.

In the "poor performers" where land per worker is high and skill to worker is low in Côte d'Ivoire, competitiveness in food products reflects its endowment of cropland. With relatively low skill to labour, however, narrow manufacturing exports in machinery and transport equipment are seen to emerge. This is supported by Côte d'Ivoire's specialisation index that is very low in this sector but relatively higher than Mauritius'. However, given that

MVA is relatively low and highly variable over the period 1990-2000, thus, this suggests that Côte d'Ivoire has the greatest variability in technical efficiency and investment rates (see Soderbom and Teal, 2002) in its manufacturing sector.

The case of Nigeria is even more complex as its low land per worker does not explain its low manufacturing output. However, Chapter Three already characterised Nigeria as a land abundant country like South Africa even though it has a low land per worker ratio. In addition, skill to worker in Nigeria, also in the South African range (see Chapter Three), does not explain the country's poor MVA. What is clear, as with Côte d'Ivoire, is that MVA varies considerably annually in Nigeria indicating some instability in production of manufactures.

When dominant sectors are identified as in the Dutch disease hypothesis, it appears that production in oil, agriculture and metals and ores in Nigeria, Côte d'Ivoire and South Africa respectively, may shape the re-allocation of resources. Thus, this confirms that economic development is significantly influenced by resources endowments. However, South Africa's relative success at manufacturing diversification when compared to Nigeria's "poor performance" leads to the following analysis of endogenous factors.

#### **4.5 Reasons for the discrepancies in economic performance**

Section 4.2 debated the use of land per worker (population density) as a factor endowment measure because "land" is a poor proxy for natural resource endowment. It was shown that correlating Mauritius' economic performance with low land per worker, depicted by its high share of narrow manufactures is straightforward. High land per worker ratios that are expected to explain the low shares of manufactures are similarly straightforward in explaining Côte d'Ivoire's poor performance but not South Africa's better performance in manufacturing exports. However, using low land per worker to explain Nigeria's economic performance has already been dismissed due to large natural resource abundance. Therefore, explaining economic performance in these countries along Wood and Mayer (1998, 1999) lines may be complicated

The argument above also follows with skill per land and skill per worker, and thus with skill endowment. When the shares of manufacturing products in total exports are considered in all four countries, South Africa and Mauritius had relatively the highest shares especially of

narrow manufactures, considered to constitute relatively higher skill than other products. The W-M (1998, 1999) model attributed this to the countries' relative differences in skill.

However, the previous discussion pointed out that the types of skills in South Africa and Mauritius' specialisations are different. Therefore, even though Mauritius' skill endowment is higher than South Africa's, its specialisation in textile and clothing is low skill labour-intensive compared to South Africa's relatively human capital-intensive basic manufactures. This suggests that the demand for skill is probably biased in particular sectors and could be deficient in the manufacturing sectors of Côte d'Ivoire and Nigeria.

Connecting demand for skill to the Dutch disease hypothesis that natural resource-based industrialisation adversely affects manufacturing profitability linked to wages, it is possible that the demand for skill in land abundant countries is low (Leamer et al., 1999). This is intuitive since a land abundant and resource rich country is specialised in the extraction of these resources or the harvesting of crops, which uses low skill labour. However, the issue that arises is that industrialisation in a land abundant country is expected to develop forward linkages to natural resource processing, which requires investment in capital as well as human capital.

Additionally, the development path, and thus the skill path of a country itself may be endogenous. This could have political implications in the form of political Dutch disease. Therefore, in the cases of two of the natural resource abundant countries, i.e., Nigeria and Côte d'Ivoire, political Dutch disease which influences public decisions through rent-seeking activities (see Section 2.6.5) will be considered. South Africa, also natural resource abundant, before diversification, may have had similar political features.

In addition to skill demand, other endogenous factors such as those reflected in the economic freedom indices, the corruption index, and human development factors (Tables 4.12a, 4.12b, 4.13) will be compared. Alongside this comparison particular issues of the countries under study will be highlighted. These are government intervention in Mauritius, biased production and skill demand in South Africa, the political Dutch disease constraints to manufacturing and war in Nigeria and Côte d'Ivoire.

#### **4.5.1 Endogenous factors**

The indices in Table 4.12a and 4.12b are based on variables that are identified to contribute to, or hinder the freedom of production and distribution of output. They compare the extent of corruption and some components of market and government failure as well as some measures of incentives. For example, informal markets, wages and prices, and trade openness; government intervention and regulation; differences in property rights, foreign investment and institutions of banking and finance. The year 2000 has been chosen to connect with the MVA analysis that extends to that year, and it is compared to more recent indices for 2004. All four countries, according to the Heritage Foundation (2004), were assessed as mostly "unfree" in 2000 (see Table 4.12 for scores and ranking of indices).

Thus in general, a set of economic conditions common to these countries, i.e., government policies, trade barriers, etc., have been shown to influence South Africa, Nigeria, Mauritius and Côte d'Ivoire within more or less the same range in 2000. Compared to 2000, Mauritius and South Africa have improved to become "mostly free" in 2004. However, the above variables do not explain the specific effects in each country, whereas the human development factors indicate the type of development path associated with endowments. For instance, they do not explain how in 2000 "unfree" trade, wages and prices, and government intervention have affected Mauritius nor do the variables explain how the "mostly free" economy of South Africa in 2004 aided manufacturing diversification especially toward non-labour absorbing sectors despite relatively "good performance" in manufacturing.

#### **4.5.2 Selective intervention in Mauritius' EPZs**

The economic freedom indices may not explain the effect of policy on industrial outcomes in the specific countries. Mauritius, with an overall score of 3 in 2000, has been ranked as repressed or less open in terms of trade, as with wages and prices, while government regulations and monetary policy are mostly "unfree". Consider policy in Mauritius for instance. Chapter Three pointed out that policy bias toward specific sectors to promote certain industries played a key role in Mauritius' success (OECD, 2002b). The EPZs' textile manufacturing exports had been supported by the quota-free and duty-free access into the European market and is a major factor in the sector's development. There has been selective intervention therefore in Mauritius, rather than trade liberalisation toward exploiting its natural comparative advantage (labour) as neoclassical theory would suggest (Section 2.2).

**Table 4.12a Index of economic freedom (2000, 2004)**

Year	Country	Overall Rank	Overall Score	Trade	Fiscal Burden	Government Intervention	Monetary Policy
2000/4	Côte d'Ivoire	180/89	3.45/3.18	5.0/4.0	3.5/4.3	3.0/1.5	2.0/2.0
2000/4	Mauritius	58/71	3.00/2.99	4.0/5.0	3.5/2.9	2.0/3.0	3.0/2.0
2000/4	Nigeria	94/142	3.60/3.95	5.0/5.0	2.0/3.5	2.0/4.5	5.0/4.0
2000/4	South Africa	61/60	3.00/2.79	4.0/4.0	4.0/3.9	2.0/2.0	3.0/2.0

Year	Country	Overall Rank	Foreign Investment	Banking / Finance	Wages/ Prices	Property Rights	Regulation	Informal Market
2000/4	Côte d'Ivoire	180/89	3.0/3.0	3.0/2.0	2.0/3.0	3.0/4.0	4.0/4.0	4.0/4.0
2000/4	Mauritius	58/71	3.0/3.0	2.0/2.0	4.0/4.0	2.0/2.0	3.0/3.0	2.0/3.0
2000/4	Nigeria	94/142	2.0/3.0	4.0/4.0	2.0/3.0	4.0/4.0	4.0/4.0	3.0/4.5
2000/4	South Africa	61/60	2.0/2.0	3.0/3.0	2.0/2.0	3.0/3.0	2.0/3.0	4.0/3.0

Free : 1.95 or less ; Mostly Free : 2.00 to 2.95 ; Mostly Unfree : 3.00 to 3.95 ; Repressed : 4.00 or higher.

Source: The Heritage Foundation (2004).

**Table 4.12b: Corruption perception index (2004)**

Country	Score	Ranking
South Africa	4.6	44
Mauritius	4.1	54
Côte d'Ivoire	2.0	133
Nigeria	1.6	144

Highly clean: 10; Highly corrupt: 0

Source: Transparency International (2004)

Thus, attempting to explain Mauritius' success in narrow manufacturing exports largely by its skill endowment relative to land is debatable because its success sectors are really just low skill labour-intensive.

However, considering that if the endogenous growth theorists' argument presented in Chapter Two is correct, the conditions above may have aided Mauritius even though policy was said to be the driving force behind the EPZ exports. Such factors within an economy that aid in the acquisition and adoption of technology necessary for sound economic performance such as industrial capabilities, entrepreneurial abilities and technological capabilities enable manufacturers to penetrate the global market (Lall, 1992; ILO, 2000). One might add that without the capacity and capability, even with policy bias toward these sectors, Mauritius could not have succeeded to increase its export shares in the textile and clothing sector. In this regard, restructuring and improved productivity in the clothing and textile sectors lends support to the sector's competitiveness (ILO, 2000). In the paint industry as well, new technology was obtained usually from overseas visits to suppliers or trade fairs. Research and development (R&D) are also invested in heavily. Depending on the industry, the role of foreign partnership provided technology, technical assistance and marketing services. Local partners of prominent and long established local firms managed production and administration (Lamusse, 1997). All these are imperative for technical efficiency, reflected in Mauritius' relatively high MVA. In addition, exporting success suggests product development, continuous product improvement, customer services and management and business know-how (ILO report, 2000). This unaccounted learning-by-doing make Wood and Mayer's (1998, 1999) schooling per kilometre of land not so precise a measure of skill.

Mauritius' low land per worker, thus, its high population density (see Table 4.1), as pointed to in Section 4.2, might have made a positive contribution to economic performance. Transportation costs may be low, making markets relatively integrated. One such advantage of low land per worker (hence high population density) mentioned in Section 4.3, is Mauritius' network of fixed telephone lines. It had the greatest density of telephone lines at 270 per 1000 people in 2000 (Table 4.13). These aspects are said to lower the transaction costs of doing business (Collier and Gunning, 1999a).

Human development factors in Table 4.13 below indicate also that, after South Africa, in the period between 1990-2001, Mauritius had an average of 360 researchers in R&D per million people. Secondary school enrolment ratio in Mauritius in 2000-2002 was the second largest at 77%, while public spending on education in 1988-2001 was at 3.7% of GNI, smaller than Côte d'Ivoire and South Africa. Along with Mauritius' policy bias toward the labour-

intensive sectors, school enrolment and government's commitment to education indicate the country's relatively high demand for skill. The relatively lower corruption perception along with these social factors suggests that these incentives could attract investments utilising social capital in Mauritius.

It is this that Leamer et al. (1999) argue, will lead to a gradual accumulation of skill as well as the learning-by-doing, that may hasten the emergence of manufacturing in labour abundant countries compared to land abundant countries.

When all these aspects are linked, i.e., Mauritius' endowment and the endogenous factors, it seems to suggest that Mauritius' development reflected by its GNI per capita is on a growth path. It is debatable however, whether Mauritius' growth relies just on an enclave type growth based on cheap labour or whether the country is on a long-term path to development. The indication from the significance of services in the information, communication and technology (ICT) sector and finance (Section 4.4) seems to point to the sustainability of growth.

#### **4.5.3 Skill demand in South Africa**

Despite its land and resource abundance, South Africa is a "good performer" in SSA, in terms of shares of manufacturing exports in total exports based on the W-M (1998, 1999) model. However, it has been shown that South Africa's main manufacturing in basic metals is nonetheless natural resource-intensive. Section 4.4.1 described this sector as relatively capital and human-intensive compared to Mauritius' textiles and clothing for example. In addition to these characteristics, the measures in Table 4.12a rate South Africa in 2004 as "mostly free" in factors that enable the production and distribution of goods in the economy.

In terms of human development indicators, Table 4.13 also shows South Africa to fare relatively better than the other three countries Mauritius, Nigeria and Côte d'Ivoire, except with respect to fixed telephone lines where Mauritius fares best. Coupled with a comparatively high standard of infrastructure and financial sector in the African context, South Africa also provides an investor-attractive environment for value added manufactures (ILO, 2000).

Education expenditure and school enrolment is the highest of the four countries in South Africa, which seems to point to a demand for skill that is comparatively higher. Therefore, one may argue that South Africa possibly could be on a more skill-intensive growth development path compared to Mauritius, even though the ratio of skill to land is relatively higher in Mauritius.

The point to make about South Africa is that the country's seemingly higher demand for skill and the deduction that this indicates a growth development path cannot be generalised. This statement is based on the difference in the type of labour demanded between basic manufactures, finance, insurance, real estate and business services sectors (FIRE), and that required in textile and clothing for instance. For example the demand for skill in South Africa may tend more towards those profitable sectors pointed out in Section 4.4.

The challenge facing manufacturing productivity in the labour-intensive sectors has been argued to be mainly due to the scarcity of skill in South Africa (Moll, 1991; Joffe et al., 1993; the South African Foundation, 1996). However, the highly skilled labour-intensive FIRE had a labour force only one third of that of manufacturing between 1993-97. Further, its increase in employment of higher skilled workers was two thirds greater than in manufactures (Bell and Madula, 2001). This seems to conform to the notion that generally the problem with the South African manufacturing sector with regards to skill is not in its supply but rather in the labour-intensive sectors' demand for skill (Bell and Madula, 2001). Thus, the possibility of skill mismatch and investment preference should not be ruled out.

For instance, in the Industrial Strategy Project (1993), comparative evidence of sectors showed that a number of firms in the apparel sector then had increased their exports but lacked substantial modification of their work organisation and production processes. Increased exports instead just allowed firms to work at a higher capacity or move to areas of lower wages (Joffe et al., 1993: 18). This seems also to infer that demand for low skill labour is the most significant in the labour-intensive sectors of South Africa.

The low skill demand in labour-intensive manufactures forms an interesting point linking to Leamer et al's (1999) hypothesis in Chapter Three, that a resource abundant country, like South Africa, is characterised by low demand for raw labour in labour-intensive

manufacturing sectors. Also, mechanisation in the labour-intensive sectors is preferred in order to compete with labour-intensive countries that are already in the market (see Section 3.2).

Therefore, a comparison between South Africa and Mauritius can be made on the basis of employment, in that the former faces a job creation challenge with unemployment rising as capital-intensive production is favoured over the latter (see Fedderke, et al., 2003). Mauritius selected the labour-intensive textile and clothing sector to boost economic growth while economic growth in South Africa is generated through basic manufactures. This goes back to the characteristics of export manufactures discussed in Chapter One such as the advantage of surplus labour absorption, especially in the labour-intensive sectors that could translate into economic growth.

Nonetheless, given these endogenous factors in South Africa and its GNI per capita similar to Mauritius', demand for skill in the former appears to point to the direction of growth and development when compared to Nigeria and Côte d'Ivoire. This is probably because the structure of the profitable sectors, i.e., basic metals and services are relatively labour absorbing at least, more so than the oil sector in Nigeria, for example.

#### **4.5.4 Constraints to manufacturing in Nigeria**

Simply put, Nigeria's domestic environment can be shown as being controlled by its natural endowment, oil. Section 4.4 already illustrated the possibility of Dutch disease effects on production in Nigeria. It was found that in the case of Nigeria, profitability in the oil sector is possibly the cause of low production in manufacturing concentrated mainly in capital-intensive sectors. Against the background of the brief history given in Chapter Three, in addition to factors considered in Tables 4.12a and 4.12b, this section will argue that political Dutch disease has also caused a low domestic demand and investment in human capital (skill) and infrastructure as a result of Nigeria's path dependency along oil export growth. Thus, the endogenous factors from Tables 4.12a and 4.12b clearly demonstrate the strained economic environment in the country. Government intervention, policy, banking and finance, property rights among others, was assessed as mostly un-free or repressed in 2000, and has further worsened in 2004.

**Table 4.13 Human development indicators**

Public Education Expenditure (%GNI)	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1980	7.2	5.3	6.1	-
1985	6.3	3.8	1.2	4.2
1988-2001	4.9	3.7	0.7	5.9

Secondary School enrolment Ratio (%) <sup>5</sup>	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1985	20	49	34	54
2000-2001	23	77	-	87

Fixed telephone per 1000 people	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1990	6	52	3	93
2002	20	270	5	107

Researchers in R&D per million people	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1990-2001	-	360	15 (1989 data)	992

Source: Human Development Indicators (African Development Bank, 2004)

<sup>5</sup> Ratio of enrolled children of the official age for education level to the total proportion of that age.

Further assessment of Nigeria's domestic condition could best be explained through its system of federalism and political control over oil, a cause of civil unrest and political Dutch disease (Lam and Wantchekon, 2003; Gylfason, 2001; Bannon and Collier, 2003; Ross, 2003). Therefore, the focus here will be on government allocative power. Since a large part of the rent in the booming sector goes to the government through taxes, the magnitude and direction of government spending becomes important (see Section 2.6.5).

Government allocative power in Nigeria emanates in public decision that is centralised, and spending that goes unchecked. This has probably been possible due to the huge oil and mineral wealth, that makes up three-quarters of total government revenue, all accruing to the federal government (Johnson, 2005). Very little of this wealth is however committed to developing human capital such as in education and health care. The following discussion illustrates Nigeria's public decision with skewed spending that does not generate growth with development.

Historically the Nigerian government has lagged behind other countries (including some Sub-Saharan countries) in spending on health and education (African Economic Report, 2002). In 1994–98 the federal government spent on average around 2.5% of GDP a year on health, compared with an average of 3.9% for Ghana, 6.9% for South Africa, and 4.0% for Sub-Saharan Africa (African Economic Report, 2002). However, the caveat is that the three-tier government (federal, state and local) in Nigeria is responsible for health and education and data is not always available from all three levels of government. Therefore, data interpretation may not be accurate if government spending is not aggregated (African Economic Report, 2002).

The commitment to education in Nigeria mirrors the declining demand for skill. For instance, public education expenditure was 6.1% of GNI in 1980 and 0.7% of GNI in 1988-2000 (Table 4.13). Between 1985–87 and 1995–97 the Nigerian government's spending on education fell from 1.7% of GDP to 0.7%, while education spending rose in most other Sub-Saharan countries, including Côte d'Ivoire, Ghana, and South Africa (African Economic Report, 2002). Nigeria, for example had 15 researchers per one million people in 1989. It is conceivable that Nigeria's low demand for skill will culminate in a lack of investment in skilled labour-intensive manufacturing.

Under-development of infrastructure evidenced from a low number of telephone lines, i.e., 3 and 5 fixed lines per 1000 people in 1990 and 2002 respectively (Table 4.13), indicates investment problems since one would expect that Nigeria's relatively high population density (in the Mauritian range) would be advantageous for lowering the cost of infrastructure. Nonetheless, the land to worker ratio has already been ruled out as a good measure applicable to Nigeria to assess manufacturing performance due to the country's huge natural resource abundance. Notwithstanding, the Manufacturing Association of Nigeria (MAN) relates the declining contribution of the manufacturing sector to such factors, among others, as the high cost of transportation due to poor and inadequate infrastructure support services (UNIDO, 2002).

Trends in Nigeria's government expenditure appear to escalate, skewed towards administration and defence (Ayodele, 2003; Ayittey, 1995). In administration, there has been an increase in spending on wages to administer projects or monitor the many government organisations. Also, expenditure has been on the rise to increase the size of internal defence against ethnic clashes and to protect oil regions like the Bakassi-Cameroon region, and for peace keeping operations in Africa (Ayodele, 2003).

Domestically, expenditure is proposed on development plans often aimed at improving infrastructure and increasing welfare for its citizenry but none have materialised. Historically large projects with long gestation periods are started when oil prices move up. However, often these projects become redundant when oil revenues dry up (U.S Library of Congress, 2003). Nigeria's development plans reflected its desire for improving economic welfare, however,

"Economic reasoning gave way before economic enthusiasm, and the necessary co-ordination and implementation were ignored" (U.S Library of Congress, 2003).

These economic plans designated substantial oil funds for prestige projects and projects toward industrialisation that required imported capital technology and foreign skilled labour (Forest, 1993: 26). Based on this, exchange rate appreciation was welcomed by the government as this facilitates the growth of imports as well as easing demand pressure on the domestic market (Chapter Five will look further into the effects of exchange rates in Nigeria).

Development plans also came with various policies such as the technology policies for foreign technology transfer (UNIDO, 2002). Domestic technology development was to be through foreign direct investment (FDI) and joint ventures employing considerable foreign labour. In all cases however, the resulting conceptualisation of technology capacity acquisition was totally deficient and hence, capacity failure was the result (Forest, 1993). This hindrance to the acquisition, adaptation, improvement and functioning of technology in the economy forms the basis of endogenous growth theorists' argument for government intervention.

However, it appears that Nigeria also faces government failure. At the firm level, the unchecked power of government, inconsistent policies and extended corruption by government officials deters from sustaining businesses (UNIDO, 2002). In addition, under-invoicing of imports and dumping, the harassment of companies by some state and local government authorities over unauthorised multiple levies and charges, all serve as disincentives to manufacturers (UNIDO, 2002).

At the societal level, discontent over the government revenue sharing formula coupled with mistrust stirs civil unrest. Nigeria's system of revenue sharing changed to a census-based formula for allocating revenue by region or state after 1960, where before regions retained their revenues from agriculture and mineral products. However, when the federal government opted to retain all revenues from oil and minerals, eventually by the 1970s, allocation of resources to various states in the country, apart from being based on population, relied on states' needs as well as the social services they provided (Ahmed and Singh, 2003).

For example, federal revenues to the states constitute up to 80% of oil revenue in 2000, making the states in Nigeria rely mainly on the federal government, itself highly dependent on oil revenue (Ahmed and Singh, 2003). This system of resource allocation is however rigged with political patronage along ethnic groups. Chapter Three already pointed out the problems of rent-seeking activities, first during the agricultural boom (cocoa exports) period, then after with oil dominance.

In addition, due to incomprehensible, non-transparent revenue sharing, an inconsistent reporting system and because the oil cost structure like anywhere else is complicated, there is growing mistrust of the government and suspicion of multinationals for tax evasion in collusion with government officials (Emmanuel, 2004). Evidence from investigations points to navy officials suspected of working with criminals in the theft of oil from tankers and pipes (Johnson, 2005). Worsening the matter is that evaluation of oil revenue expenditure is not independent of the government. For instance, the National Petroleum Investment Management Service (NAPIMS), a subsidiary of the Nigerian National Petroleum Corporation (NNPC), is both equity partner and regulator of joint venture companies (Emmanuel, 2004).

Also, Nigeria's unbalanced tax structure, because of its heavy reliance on foreign trade (mainly in the oil sector), causes problems for development (Forest, 1993). Initially, the government did not require taxation of personal incomes and incomes from private property, perhaps due to large revenues from oil (Forest, 1993). However, eventually personal income tax collection, which is irregular and unchecked, went to the state governments (Ahmed and Sing, 2003). It is likely that this has led to the political and economic significance of taxpayers being reduced. As a result, there is limited or no democratic process to check federal government expenditure.

In response to resource allocation issues, corruption in government, and abuse of power, civil unrest erupts instead of problem resolution using democratic political channels. This can be traced to economic hardship and a fight for resources. However, to make matters worse, because states and regions are along ethnically divided boundaries, issues that have their roots in the dispute over federal government revenue often turn into ethno-religious conflicts that may appear as the main source of the problem. For instance, going back in history, the civil war that occurred in 1967 was due to demand for autonomy and authority to retain tax and oil revenue by the people in the Eastern region (PBS, 2003). Nigeria has also experienced several coup d'etats under thirty years of military rule and a few civilian governments, all scrambling for government power (PBS, 2003).

Further instability in Nigeria's economy is seen in declining security within the oil producing areas as ethnic groups fight for compensation from the federal government, for the

deterioration of their environment. The oil producing regions also experience youth vandalism in retaliation for not obtaining employment they perceive as their right (Johnson, 2005).

Intuitively, the political and social instability in Nigeria coupled with poor institutions and infrastructure raises the cost of transaction in Nigeria's business environment. It is apparent that high transaction costs in Nigeria create a very low return on skill (human capital) investment and subsequently on manufacturing. According to Collier (2002:12), manufacturing and primary resource processing have a share of non-factor cost in total cost of about 65%-68% and 72% respectively, in contrast to the non-factor cost of raw agriculture (44%) and natural resource extraction (37%).

The high cost of manufacturing is further illustrated in UNIDO's (2002) study that found that the main preoccupation of manufacturers in Nigeria is how to source raw materials, spare parts and human resources. For example, the study found that most firms import raw materials because of the non-availability of local alternatives and due to the low quality of local substitutes. There is a concern over the availability of machinery and equipment as well. This is not surprising since imports depend on consistent availability of foreign exchange. Also, capacity utilisation, a significant determinant of productivity in manufacturing, is hampered by the aged machinery used in firms, the problems of finding replacement parts and deficiencies in the public provision of electricity which lead to output reduction (World Bank, 2002). This fits the explanation for the relatively low MVA in Nigeria shown in earlier tables in Section 4.4.

#### **4.5.5 Civil war in Côte d'Ivoire**

Côte d'Ivoire's ranking has been third place in almost all areas of comparison with the other countries under study. With a comparative advantage in raw agricultural products due to its relative land abundance, the country's "poor" performance in manufacturing exports, according to Wood and Mayer (1998, 1999), could be explained by its land abundance relative to skill supply. However, going further than the supply explanation, endogenous conditions indicated in Tables 4.12a, 4.12b and Table 4.13 lead the discussion to the Dutch disease problem of land abundance in Côte d'Ivoire. This section argues in particular that

Côte d'Ivoire's poor economic performance is attributable to its dependency on agricultural exports.

Côte d'Ivoire had enjoyed economic growth and political stability since its independence in 1960, at least until the 1990s. Chapter Three pointed out that the industrial and institutional linkages and a fairly good transportation infrastructure that existed after Côte d'Ivoire's independence aided agricultural development. Migration policy also attracted the required labour from neighbouring countries. The close tie between the agriculture business elite and the government discussed in Chapter Three, brought about policies to serve the latter in favour of agricultural development.

The large dependence on agriculture has, however, been attributed to the common fluctuations of exports earnings (OECD, 2004a; Trade and Development Centre, 2002). For example, coffee production fell in 2003 soon after its price rose in 2002 (OECD, 2004). Given Côte d'Ivoire's large dependency on agriculture, this economic instability is likely to destabilise the social and political arena of the country.

Human capital reflected partly by government expenditure on education is seen to have declined from 7.2% in 1980 to 4.9% between 1988-2002 (Table 4.13). School enrolment was stagnant at 23% in 2001 from 20% in 1985. This suggests that Côte d'Ivoire's growth is low skill-intensive, possibly because the country is set on a development path that does not create demand for skill (see Figure 3.1).

Despite Côte d'Ivoire's apparent success at economic and political stability compared to other sub-Saharan African countries, war has exposed the economic conflict in the country. The recent political instability is also a pointer to the political Dutch disease in Côte d'Ivoire that is eroding social capital where government corruption, ethnic and religious rivalry, and property rights among other conditions are made worse (Bannon and Collier, 5: 2003; Ross, 2003: 32). This in itself limits the capacity to accumulate human capital as well as hindering production. Section 4.4 discussed the shortage of inputs and the inaccessibility of certain production areas such as the conflict-ridden cotton region and the shortage of seeds that have adversely affected agriculture as well as food processing.

Unsustainable economic growth could possibly have triggered the civil war in 2002. It is suggested further, that this has its roots in the coup of 1999 against extensive government corruption (The Columbia Electronic Encyclopaedia, 2003). In the 1990s the country was also recovering from an economic slump since the 1980s (Bax, 2004). It has been suggested that the war has been promoted by those who stand to benefit from it (Wible, 2004). Further, since the first coup of 1999, the growing tension is believed to be worsened by politicians that use the nationalisation ideology as a solution to uplift the economy (Wible, 2004). This sentiment stems from forty years of rapid economic growth based on land and migration policies that have stirred local sensitivities in such a way that some political reaction was almost inevitable once the boom ended (Crook, 2002). Also, the clash between peoples from the predominantly Christian south, where the dominant cash crop, cocoa, is found, and the migrant labour from the predominantly Muslim north and neighbouring countries has blurred the cause of the crises. It appears that the war stems from ethnic and religious conflicts rather than economic strife focussed on cropland in the absence of other sources of income.

Thus, due to the extensive reliance on unstable export earnings from agriculture, it is also expected that poor endogenous conditions will be manifest in Côte d'Ivoire. For instance, similar to Nigeria, the index of economic freedom (Table 4.12a) ranks Côte d'Ivoire mostly un-free. Likewise, perceived government corruption is relatively high (Table 4.12b), and infrastructure development such as the number of fixed telephone lines per 1000 people is relatively low in Côte d'Ivoire (see Table 4.13).

Although the war is more recent, the historic data on the commitment to education, and school enrolment ratios since the 1980s stand out as indicators of the long term low demand for skilled labour.

It therefore seems plausible to explain the low manufacturing exports of a land abundant country such as Côte d'Ivoire, as stemming from its natural endowment that has set it on a growth path to under-development. This type of growth path frustrates diversification efforts, thereby retarding the emergence of relatively stable sectors in manufacturing.

#### 4.6 Conclusion

It has been shown in this section that relatively higher shares of manufacturing exports in South Africa and Mauritius coincide with higher MVA. Endogenous factors such as those of the economic freedom index were also investigated and it appears that all four countries in 2002 were within the same scoring range. It was thus suggested that it was possible these factors have country specific effects contrary or coinciding with what the index terms "free" or "unfree". For instance, government intervention although ranked as un-free in Mauritius, was found to have aided the establishment of the EPZs. In 2004 however, the ranking of the countries had changed to Mauritius and South Africa being mostly free while Côte and Nigeria were ranked as mostly un-free.

It was found that large divergences in the levels of public commitment to education, fixed telephone lines per 1000 people and R&D existed between the "poor performers" (Nigeria and Côte d'Ivoire) and the "good performers" in manufactures, viz. South Africa and Mauritius. Although public commitment to education had declined slightly in Mauritius, its secondary school enrolment ratio had significantly increased since 1985. South Africa experienced increased both in public expenditure and school enrolment since the 1980s. Although Côte d'Ivoire and South Africa are somewhat similar in land per worker ratios, public commitment to education and school enrolment ratio in the former is significantly lower. In this regard, Nigeria had the least favourable figures for school enrolment and public expenditure on education.

The suggestion that Nigeria and Côte d'Ivoire have not raised their demand for skilled labour because they are set on a path of natural resource dependency, and thus low skill-intensive growth appears valid. For instance, the difference in secondary enrolment ratios between South Africa and Mauritius, and Côte d'Ivoire was 50%-60%. While the number of researchers in R&D is not available for Côte d'Ivoire and Nigeria, the number of researchers per million people is in the hundreds in South Africa (992 researchers) and Mauritius (360 researchers). The comparison of the commitment to education, school enrolment ratio and the number of researchers per million people between Mauritius and South Africa also seem to point that the development path of the latter is relatively more skill-intensive than the former.

Although no one factor entirely explains the difference in manufacturing performance in the countries under study, what this chapter has attempted to do is to look into the structures of the countries' specific sectors (Section 4.4) and to consider the endogenous elements (Section 4.5), non-market and government factors. Along with indicators of human development, these have partially refined the measure of manufacturing shares in exports and thus, economic performance based on ratios of land per worker and skill per land used in the Wood and Mayer (1998, 1999) model, particularly between the "good performers" and the "poor performers".

## CHAPTER 5

### MANUFACTURING DIVERSIFICATION AMID TERMS OF TRADE SHOCKS: POLITICAL DUTCH DISEASE

#### 5.1 Introduction

In refining the Wood and Mayer (1998, 1999) model, Chapter Four established that land abundance does not correlate with GNI/per capita probably because using land/worker ratio is a crude measure. Thus, while GNI per capita is relatively higher in a land abundant country such as South Africa that diversified into narrow manufacturing, it is relatively low in land abundant Côte d'Ivoire and Nigeria.

Further, in Chapter Four, major structural features and trends of the countries under study were highlighted, and based on their economic structure it was pointed out that oil and cocoa have been Nigeria and Côte d'Ivoire's major exports. Nigeria and Côte d'Ivoire are still dependent on single commodity exports, evidenced from oil and cocoa exports recently making up 96% and 41% of Nigeria and Côte d'Ivoire's total exports in 2003 (UNCTAD, 2004; Intracen, 2005). Coupled with the high fluctuation shown in their terms of trade (TOT) and real effective exchange rates (RER), these two countries make interesting cases of the adverse influence of external shocks given the nature of commodity exports.

Mauritius could have had similar structural problems in the past when for instance, sugar was more than 70% of its total exports prior to 1990, likewise South Africa before the fall of gold production in the 1970s (Datamonitor, 2004). However, recently, while sugar exports in Mauritius accounted for 17% in 2002, in South Africa in the same period, the highest export contribution from commodities was from the precious and semi-precious stones group at about 13% of total exports (UNCTAD, 2004). Both countries have relatively diversified into manufacturing exports that accounted for more than 57% and 67% respectively in 2003 (see Table 4.10).

The difference between the two pairs of countries lie in one principal consequence of the Dutch disease phenomenon due to high dependence on single commodity exports. This is highlighted to be the probable case for Nigeria and Côte d'Ivoire (Section 4.3.4), which in

summary works indirectly through the appreciation of the real exchange rate<sup>1</sup> (see Stijns, 2003; Section 5.2.3). This process is initiated when a boom in commodity exports brings about an excess flow of foreign currency. Everything else constant, this will tend to raise the value of the domestic currency relative to a basket of foreign currencies and thus lead to an appreciation of the real *effective* exchange rate (RER). The latter term will interchangeably be referred to as exchange rate, denoting relative currency value. Therefore, it is argued that in the Dutch disease mechanism a boom could cause changes in the relative domestic prices of goods as well as cause relative domestic currency changes.

Further, the problem of single commodity dependence raises the need to compensate for the loss of foreign income, or to maintain a relatively higher exchange rate to facilitate government transactions. As a result, poor exchange rate management could adversely affect the RER in the short term.

In the long term, high commodity prices could benefit the capital import dependent sectors' industrialisation due to relatively cheaper imports. However, inflation and over-valuation of the RER could erode the profitability and competitiveness of non-booming sectors, a potential benefit for diversification. On the other hand, with sustained low prices for commodity exports, foreign exchange shortage may lead to de-industrialisation of import-intensive sectors. Although the long-term low commodity prices might curtail government spending, *ceteris paribus*, investments in social capital and infrastructure for example, could suffer.

Furthermore, because foreign reserves are depleted by the time a bust sets in soon after a boom, these cycles in the long run may lead to "permanent" foreign exchange and balance of payment (bop) constraints that will cripple or maintain a sluggish growth in the lagging sectors.

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<sup>1</sup> The real exchange rate here refers to the price of non-tradeables to tradeables (see Cordon and Neary, 1982) and not to the real effective exchange rate that is a price-deflated measure of the value of a currency against a weighted average of several foreign currencies.

Another repercussion of single commodity dependence is on the political economy where the government opt for biased policies in favour of excessive spending that is not always productive. Social and political unrest arise to this effect.

Given this backdrop, this chapter will attempt to establish that Nigeria and Côte d'Ivoire are subjected to significant price changes of their major exports. This is due in part to internal effects, in the case of Côte d'Ivoire; however, the focus is on external price instability leading to relatively high fluctuations in their TOT and RER. Thus, the question asked is whether commodity price instability created the external shocks that in turn led to bad policy implementation and political insecurity in Côte d'Ivoire and Nigeria.

Furthermore, in addition to external shocks, the chapter will also look at possible internal shocks due to Côte d'Ivoire's large global market share for cocoa. Côte d'Ivoire makes a likely case for the Rybczynski effect caused by over-production and trade of cocoa.

First, based on the countries under study, a comparative data analysis of commodity price instability with regard to the countries' TOT and RER data fluctuations will be undertaken. This is in order to establish that Côte d'Ivoire and Nigeria are more susceptible to commodity price instability than Mauritius and South Africa. Next, specific booms and busts in Côte d'Ivoire and Nigeria will be analysed to see if the relationship between the RER and TOT movements are as the Dutch disease predicts. Some policies targeted to the exchange rate will also be highlighted. Subsequently, the discussion will point to the long run effects of external TOT movements in Nigeria and Côte d'Ivoire which include problems of political Dutch disease linked to the shocks previously discussed. Subsequently, with respect to internal shocks, further discussion will show that Côte d'Ivoire, in addition, possibly experienced the Rybczynski effect with immiserising growth.

## **5.2 Commodity price instability, the TOT and the RER**

### **5.2.1 Commodity price instability: 1980-2003**

Table 5.1 depicts a time series of commodity price indices of the export products that are currently, or have been, the major exports of the countries under study. Thus, crude petroleum (oil) for Nigeria; cocoa for Côte d'Ivoire; minerals, ores and metals for South

Africa; and sugar for Mauritius. Accordingly, price instability<sup>2</sup> is measured as the percentage deviation of the commodity prices concerned from their exponential price trend levels for a given period (UNCTAD, 2004).

**Table 5.1: Commodity price instability and price trends**

Time Series	Price	Price <sup>a</sup>	Price	Price	Price	Price
	instability	trend	instability	trend	instability	trend
	1970-79		1980-89		1990-99	
All food	22.2	10.9	14.5	-3.7	10.7	0.7
Cocoa	22.5	22.9	14.8	-4.9	12.3	2.6
Sugar	58.1	7.9	50.6	-7.5	19.5	-2.7
Minerals, ores and metals	12	8.1	16.4	1.7	9.2	-2.1
Gold	22.9	21.6	14.3	-2.6	8	-2.6
Crude petroleum	25.8	28.2	12.8	-10.7	15.2	-1.6

Source: UNCTAD (2004)

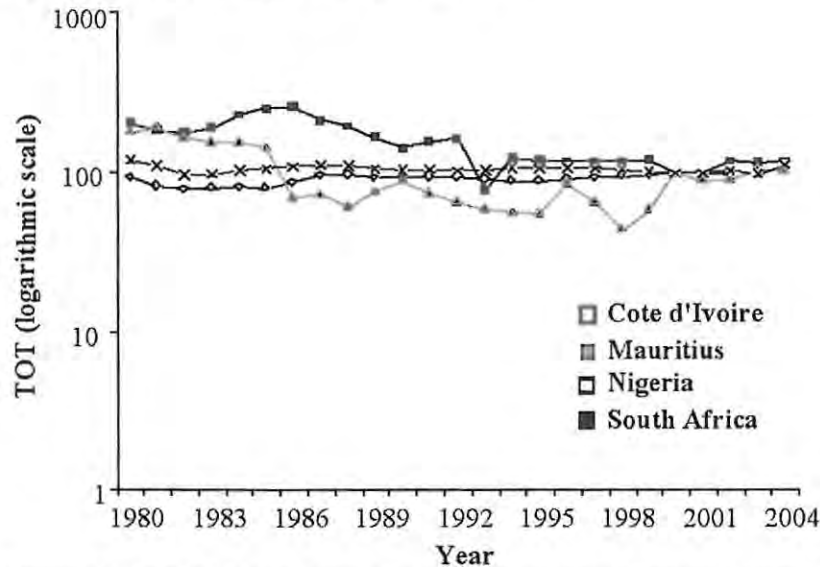
<sup>a</sup> Average rate of change per cent (current U.S dollars).

The price trend is the average rate of change in price of a commodity per cent (U.S dollars) in the given periods. Reference will be made to the commodity price instability in the relatively recent periods from 1980-1989 and 1990-99.

The terms of trade (TOT) is an index that reflects the ratio of a country's price of exports to its price of imports. This ratio is affected by the world prices of exports and imports and thus, their relative demand and supply. Higher prices of a country's exports means an improvement in the TOT. Therefore, everything constant, this implies higher real income for the country, increased purchasing power, especially for producers of the booming exports. In the case of a single commodity-dependent country, there could be increased spending that adversely affects the economy as in the Dutch disease.

<sup>2</sup> There are other definitions of price instability, however, to compare with the countries in the study, the definition used from UNCTAD captures the events under study.

Figure 5.1: TOT comparison (2000=100)



Sources: TOT and RER data are based on the World Development Indicators (Quantec Research, 2004; World Bank, 2005).

For the RER, the World Bank's definition will be used. It is a measure of the value of a currency against a weighted average of several foreign currencies (nominal exchange rate) divided by a price deflator or index of costs. The RER is a trade-weighted exchange rate expressed as an index. This is differentiated in the thesis from the real exchange rate (nominal) that refers to the relative price of non-tradeables to that of tradeables (see Section 5.1).

Given the argument that commodity dependent countries' macroeconomies are vulnerable to the external price changes of their major primary exports, this section will attempt to link commodity price instability with the TOT and RER fluctuations in the countries under study. A higher price instability index at a given period is thus expected to show relatively more fluctuations in the TOT and RER with respect to the base year in that period in a country highly commodity dependent as the data range will point out.

#### 5.2.1.1 1980-89

Looking at Table 5.1 above, there was a sharp fall in the instability of commodity price indices (except for minerals, ores and metals) in the 1980s as the trend in prices declined

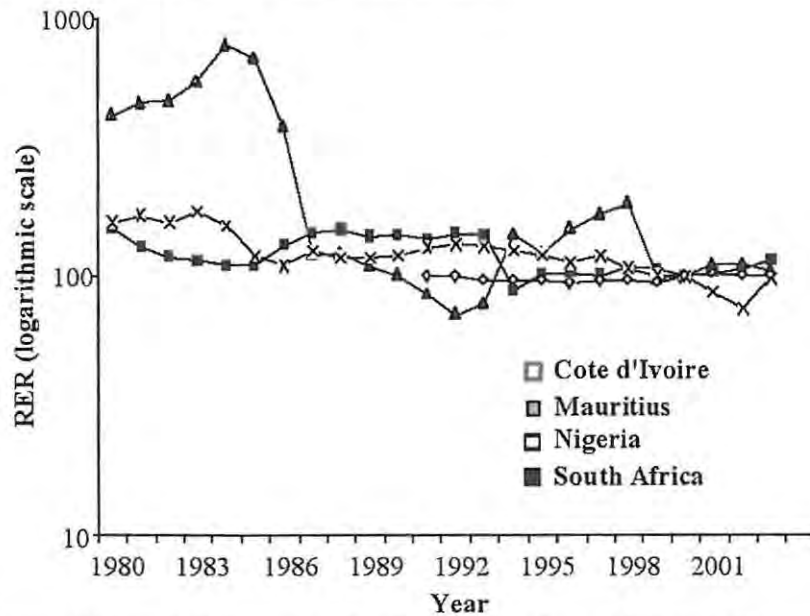
markedly in the same period. For this period, the price instability indices were in the descending order for the commodities under study: sugar (Mauritius), minerals, ores and metals (South Africa), cocoa and all foods (Côte d'Ivoire), gold (South Africa), and crude petroleum (Nigeria). Thus, according to the data, it can be inferred that comparatively, the oil price was the most stable in the 1980s in contrast to those for sugar, minerals, ores and metals, and cocoa. It would thus be expected that the relatively higher price instability for sugar, mineral, ores and metals, and cocoa in the 1980s to be reflected in higher fluctuations in the TOT and RER in Mauritius, South Africa and Côte d'Ivoire.

In Figure 5.1 and 5.2 above, however, Mauritius and South Africa had stable TOT and RERs movements in the 1980s compared to Côte d'Ivoire, and Nigeria (data for Mauritius RER for the 1980s is unavailable however). Their range of data suggests this where for example, in Mauritius and South Africa, the TOT ranged from indices of 97-78 and 121-97 respectively from 1980-89. In contrast, Nigeria and Côte d'Ivoire's TOT indices range from 192-61 and 203-165 respectively in the same period (UNCTAD, 2004). Again, this is possibly due to the former pair of countries having relatively more diversified economies. On the other hand, from the range of their data, Nigeria and Côte d'Ivoire's TOT and RERs greatly fluctuated (less so for Côte d'Ivoire) from the base year denoting relative instability in their data.

#### **5.2.1.2 1990-99**

In the 1990-99 period, while the price instability for sugar remained the highest, indices for all other commodities further decreased from their 1980s points except crude petroleum price instability that increased. Therefore, it is possible that the indices ranges in the TOT and RERs for the countries experiencing lower price instability of their major commodity exports would have been lower in this period relative to 1980-89. In Figures 5.1 and 5.2, the TOT, and RER curves for Mauritius and South Africa, and to a lesser extent, Côte d'Ivoire appear smoother and closer to the base year in the 1990s when compared to the 1980s thus depicting comparatively less price instability. However, in conformity with the increased price instability of oil in this period the TOT and RER in Nigeria fluctuated relatively more.

Figure 5.2: RER Comparison (2000=100)



Sources: TOT and RER data are based on the World Development Indicators (Quantec Research, 2004; World Bank, (2005)

In summary, the TOT and RER fluctuations, in Figures 5.1 and 5.2, shown by the range of indices from one period to the other seemingly reflect Nigeria and Côte d'Ivoire as being relatively more subjected to commodity price instability over the long term. However, as the latter decreased from the 1970-79 level to 1980-89 onwards, the RERs and TOT of the countries under study appear closer to the base year, though, to a lesser extent in Nigeria.

### 5.2.2 TOT and RER assessments in Côte d'Ivoire and Nigeria

In the previous section, commodity price instability was highlighted as a likely cause for relatively higher fluctuations of the TOT and the RER in especially Nigeria and Côte d'Ivoire from 1980-1990. The purpose of this section is to identify specific booms caused by Côte d'Ivoire and Nigeria's major exports. This is in order to find the relationship between the TOT and RER movement as predicted by the Dutch disease and to highlight other probable factors such as policy that affect the RER. Further effects of boom-bust cycles will link to the political Dutch disease problems in Côte d'Ivoire and Nigeria.

In the Dutch disease theory, due to export booms of commodities, excess flow of foreign currency, if un-sterilised, leads to an appreciation of the domestic currency relative to its trading partners' currencies. In addition, through the spending effect (see Section 2.6) the relative appreciation of non-tradeable goods real exchange rate (see Section 5.2.1) indirectly affects the RER. In this case, the relationship between the RER and the TOT is such that an export boom in natural resources would raise Nigeria and Côte d'Ivoire's TOT. Consequently, with a possible spending effect an RER appreciation occurs. The latter in turn implies that domestic exports will be relatively more expensive than foreign goods. Therefore, since there is a particular emphasis put on the competitiveness of non-boom exports and the challenges to diversification, the RER thus becomes an appropriate variable to look at.

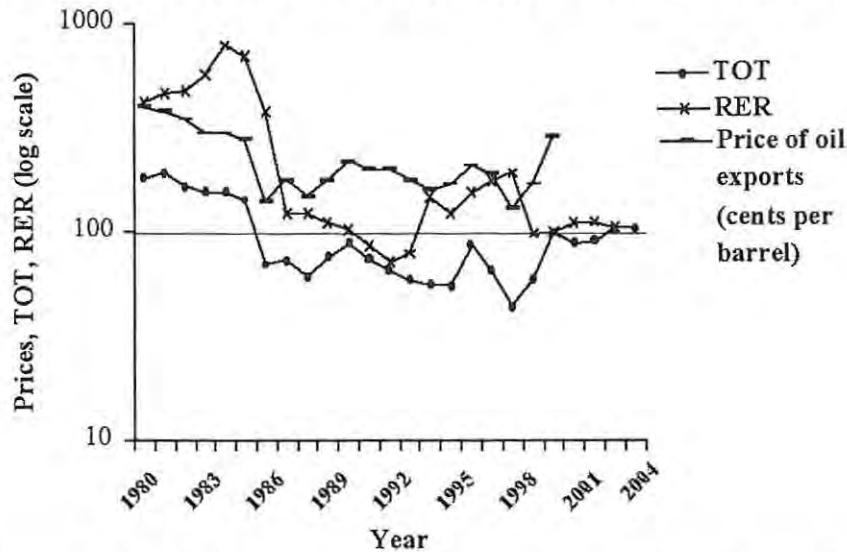
A country's RER depend on the value of its trading partners' currencies. Another factor that also affect the RER is whether a country is operating in a fixed or floating exchange rate regime as well as policies toward the nominal exchange rate.

The issue of policy brings the discussion to political Dutch disease. While policy, as will be seen later, often depends on the economic situation, the motive of governments could take over. Resource rich countries have governments that are perhaps still politically immature with politicians of different backgrounds with different agendas. However, the intense dependence on resource wealth coupled with consolidated access to resources, the lack of democracy and the government's low "bequest motive" is what conceivably gives the latter control on national wealth that is mismanaged (Lam and Wantchekon, 2003). There is, thus, unchecked spending and often personal aggrandisement aided by their choice of policies. However, at periods of down turns when the society is most hurt, more often than not, the means for society to induce redistribution is to resort to the use of force. This applies also to the ousting of undesirable governments through coup d'etats.

In addition, since political Dutch disease refers to the skewed control of natural resource wealth, another political dimension, to mention briefly, is international politics concerning export price regulation of commodities where industrialised countries control production prices. This includes developed countries supporting their agricultural sector by large

subsidies that shift the cost to producers in developing countries (Global Forum, 2003). The price regulation of sugar by the EU is one example where, although a country such as

Figure 5.3: The TOT, RER, and oil export prices for Nigeria (1980-2004)



Sources: TOT and RER data are based on the World Development Indicators (Quantec Research, 2004; World Bank, 2005).

Export prices for oil are based on the Energy Information Administration (EIA, 2004)

Mauritius has benefited, the cost has shifted to other countries like Brazil, Colombia, and Guatemala (Global Forum, 2003).

Further, there are difficulties with respect to price negotiation between producers and consumers of agricultural produce, like cocoa, due to available cocoa substitute to consumer nations. Hence, Côte d'Ivoire's membership of the International Cocoa Organisation (ICCO) has not capacitated it to exploit fully the rents from commodity exports, as did Mauritius. Instead, the flow of foreign exchange earnings has remained volatile.

### 5.2.3 Export booms and the TOT in Nigeria

The export prices of oil, the TOT, and RER curves are represented in Figure 5.3 for Nigeria from 1980-2004 above. It appears that the TOT movement was congruent with that of oil export prices in the period of study from 1980-2004 shown in Figure 5.3. However, the significant cycles suggested by the peaks and troughs that appear in the TOT curve of Nigeria point to 1980 (boom)-1986 (bust); 1990 (boom)-1995 (bust); 1996 (boom)-1998 (bust); 2003-4 (boom).

For the price of oil exports, external events (OPEC, 2005) could explain some of the changes in the curve corresponding to the significant point on the TOT curve. For instance, in 1979-1980 the Iran-Iraq war led to the increase in the price of oil exports thus, corresponding to a boom in Nigeria in 1980. Further, the rise in the price of oil exports in 1990 was when the 1990-1 Persian Gulf War disrupted production from Iraq and Kuwait, and its decline in 1998 was due to the Asian crises (OPEC, 2005). These can be seen also to coincide with an increase and decrease in the TOT in 1990 and 1998 respectively. The increasing price of oil exports from 1999 into 2000 is reflected by Nigeria's TOT curve rising into the 2000s. Furthermore, another boom cycle should be expected with the unfolding global political upheaval since the United States attack in 2001, and the latter's invasion of Iraq in 2004.

#### **5.2.4 Boom-bust cycles, the RER, and political Dutch disease in Nigeria**

##### **5.2.4.1 1980 -1986**

During a boom-bust cycle, the RER movement in Nigeria is not straightforward like that of the TOT. For instance, although in the boom of 1980 the RER appreciated as predicted by the Dutch theory, it however continued to do so even with declining export prices of oil. It is possible that the RER appreciation was also related to some adverse effects of excessive spending that carried on after the 1980 boom. This is seemingly evident from the rate of change of inflation (over 20%) and the balance of payments position in 1981. The latter was overdrawn by N3 billion, in the same year, from a surplus of over N2 billion the previous year (Table 1.2, Central Bank of Nigeria: 2004).

Further evidence of this problem was the tighter exchange rate control measures of the Economic Stabilisation Act in 1982 due to the shortage of foreign reserves (Egwaikhide, 1999). It is likely also that Nigeria's exchange rate fixed to the dollar at the time<sup>3</sup> possibly contributed to the continued RER appreciation from early-mid 1980s.

It was not until the mid 1980s that decreasing RER reflected the bust when oil export prices fell and the TOT significantly declined in 1986, as the Dutch disease theory would predict. A factor to consider however is that the Structural Adjustment Program (SAP) implemented in

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<sup>3</sup> Nigeria operated a fixed exchange rate regime from 1960-1986, under which the value of the naira was essentially tied to the U.S. dollar and to gold (Iyoha and Dickson Oriakhi).

1985 aimed at depreciating the RER. In addition, 1986 ended the fixed exchange rate regime where the naira was fixed to the dollar (Iyoha and Oriakhi, 2002). This might explain the RER moving significantly downwards from 697 in 1985 compared to 784 in 1984. By the end of the fixed exchange rate period in 1986, it had decreased to 381.

On the political front, during the bust, the economy was hit by a downturn (Table 1, CBN: 2004) and the adversities of excessive spending during the previous boom. There was increased disgruntlement with the economic situation and extensive corruption in the government that led to a military coup in 1985 (Egwaikhide, 1999). It is the absence of economic diversification and thus Nigeria's lack of foreign revenue that could have "forced" the new government into an IMF type SAP in exchange for financial assistance.

#### **5.2.4.2 1990-1995**

Figure 5.3 shows the RER depreciating into the boom period of 1990 contrary to the Dutch disease theory. This fell to an index of 79 in 1993 with the continued bust. This period was still characterised by the continued SAP and its objective to depreciate the RER. While the boom brought temporary relief, the bust was longer, the effect of which brought about the fourth change in military government, i.e., the Sani Abacha regime from 1993-1997.

Contrary to the Dutch disease theory, the RER rose to 146 in 1994 as oil export prices and the TOT fell. The rise in the RER in the mid 1990s might explain the political Dutch disease problem that has mushroomed and was surfacing at the time (see Section 5.5). During this period, the Abacha regime had ended the SAP in 1994 and implemented a dual nominal exchange rate (Ekwaikhide and Isumonah, 2001). This comprised of a fixed official rate for government transactions and an autonomous foreign exchange rate (AFEM) (Ekwaikhide and Isumonah, 2001).

#### **5.2.4.3 1996-1998**

By the boom of 1996, the RER index of Nigeria was 153, stabilising into the 2000s. However, the second part of the 1990s in Nigeria, the RER remained at high levels as the bust ensued the 1996 boom. During the Abacha rule, the government's control over oil revenues escalated as the foreign exchange rate was fixed and interest rate capped (EIU, 2005). Expenditure and revenue from oil had increased from more than N 11.4 billion and

N10.9 billion at the start of the SAP in 1985 to N 487 billion and over N 324 billion respectively in 1998 at the end of Abacha's regime (Table 3, CBN: 2004).

Further, corruption has been an ongoing problem in Nigeria; the Abacha period was characterised by immense embezzlement of national wealth to the tune of about £5.5 billion (Egwaikhide and Isumonah, 2001). There appears little doubt that the direct supervision of the Central Bank by the president, and the federal government's complete control over the sharing of fiscal revenue between the federal, state and local levels of government might have paved the way for mismanagement of funds (Egwaikhide and Isumonah, 2001).

Political repression and assassinations of political opponents during the Abacha period, as well as the non-payment or irregular payment of workers served to fuel social unrest whereby work stoppage and academic strikes generated further uncertainties in Nigeria's economy (Egwaikhide and Isumonah, 2001).

Meanwhile, internationally, Nigeria had become a pariah due to human right abuses. This caused the sanctioning of Nigeria by the Commonwealth in 1995, and the European Union (EU) following the execution of Ken Saro-Wiwa and others (Human Rights Watch, 1995).

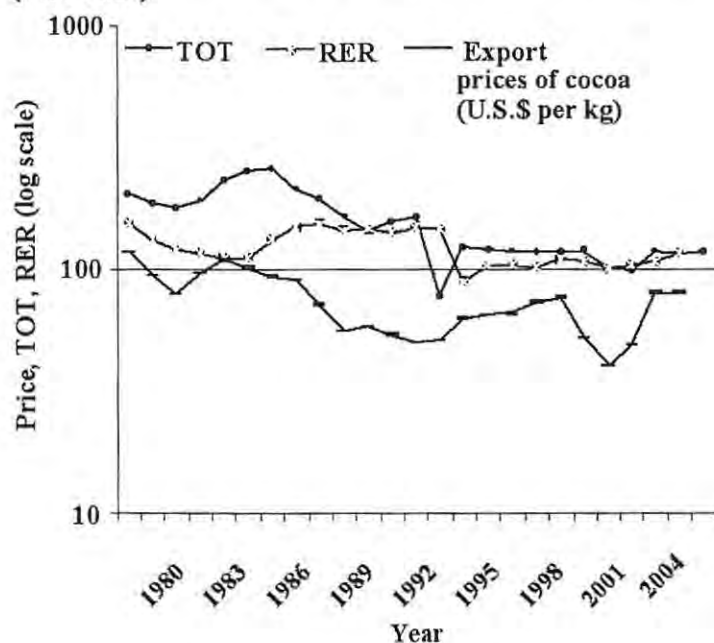
Anecdotal evidence suggests that a recent boom cycle in Nigeria started in the 2000s. It will be interesting in the future to analyse this boom's effect on the macroeconomic variables, as well as the type of policy choice affecting the political economy.

### **5.2.5 Export booms and the TOT in Côte d'Ivoire**

Figure 5.4 shows the export prices of cocoa and the TOT indices in Côte d'Ivoire. From the TOT curve likely boom and bust periods appear to be: 1984 (boom)-1994 (bust); 1995 (boom)-2000 (bust); and 2001 (boom). One interesting feature of Côte d'Ivoire's cycles is that they are less frequent and longer with gradual booms and busts. Unlike Nigeria's, the cycles are shorter with booms that tend to suddenly spike and wane (Figures 5.3 and 5.4).

It can be noted that both the TOT and export prices of cocoa moved together suggesting a positive correlation. Export prices of cocoa themselves are said to be, for the most part, affected by structural oversupply in the global market where a boom leads to over-production

Figure 5.4: The TOT, RER, and cocoa export prices for Côte d'Ivoire (1980-2004)



Sources: TOT and RER curves are based on the World Development Indicators (Quantec Research, 2004; World Bank, 2005).

Export prices for cocoa are based on the International Cocoa Organisation (ICO, 2005).

and thus a bust in the cocoa price. Structural oversupply occurs because of the waiting time between planting the cocoa tree crops and harvesting the fruits. Thus, current supply due to the time lag will be mismatched with the previous high demand that has now waned. Other than the time lag, weather and diseases play a major role in the volatility of the price of cocoa.

Côte d'Ivoire's TOT, similar to Nigeria, perhaps, could be understood through world production events according to the International Cocoa Organisation. For instance, in the second half of the 1980s world production of cocoa beans grew strongly and seven successive years of production surpluses from 1984/85 to 1990/91 led to a build-up of world stocks of cocoa beans (ICO, 2000). Côte d'Ivoire's TOT can be observed thus, to, increase during this period to peak at an index of 260 in 1986. However, as world prices remained depressed, by 1993 the TOT had deteriorated to a low level (ICO, 2000; Figure 5.4).

However, the RER movement interestingly before 1994 demonstrates an inverse relationship with the cocoa export prices and the TOT movements.

## **5.2.6 Boom-bust cycles, the RER and political Dutch disease in Côte d'Ivoire**

### **5.2.6.1 1984-1994**

Interestingly, rather than showing booms and bust of cocoa markets as do the other two variables, the RER moved in the opposite direction for most of the 1980s. The significant drop in the RER in 1994 was when the CFA was devalued. It is then that the three variables subsequently moved together. This is likely due to Côte d'Ivoire's fixed exchange rate regime that pegged the CFA franc to the French franc, and now the Euro. Therefore, even though the TOT rose in the late 1984 as the export price of cocoa increased, the RER continued to decline, and vice versa in the second part of the 1990s. Therefore, the RER movement in Côte d'Ivoire could mainly be explained by the value of the French franc rather than cocoa boom.

However, due to Côte d'Ivoire's large dependence on cocoa revenue, the collapse of the international price of the country's major export in the late 1980s led to a downturn. Subsequently, social unrest and a failed coup in the late 1980s took place (see Kouassy, Pegatienan and Bamba, 2005). This latter event had been associated with the society's dissatisfaction towards the unexplained windfalls from the 1970s and the unaccounted government expenditure and massive expansion of state owned enterprises (Answers.com: 2005). The economic situation later called for structural reform of the SAP and political opening up that continued in the 1990s.

### **5.2.6.2 1995-2000, and 2001**

This boom-bust cycle is characterised by the improvement of the TOT due to recovered global market prices of cocoa in 1995 (ICO, 2000). As expected, with no other sectors to fall back on the cocoa bust that followed carried with it civil unrest and an attempted coup concerning resource control in 1999 (Bertelsmann Stiftung, 2004).

Issues of resource control and the skewed access to resource wealth may best be understood through the state-owned enterprises (SOEs) before privatisation in 1994. For example, SOEs

had enjoyed three quarters of the public sector turnover, jobs and value added especially where government had the most stakes in the agro-industry (OECDf, 2004). This is evidenced from public investment going to the most favoured sector, i.e., agriculture, where government had 100% shares (IMF, Table 26: 2004). For instance, over CFA franc 99 billion in 1998 was invested in the agro-industry of Côte d'Ivoire, an increase from CFA franc 67.4 billion in 1997. On the other hand, investment in the tertiary sector continued to fall at CFA franc 5.3 billion in 1999 compared to CFA franc 9.8 and 10.3 billion respectively in 1998 and 1997 (IMF, 2004). In addition, current expenditure on salaries and wages also shows an escalation to CFA franc 523.5 billion in 2002 compared to CFA franc 408.1 billion in 1997 (IMF, Table 19:2004). There are indications, thus, that government employment was more profitable. Like Nigeria, the beginning of a more recent boom cycle in 2001 seems likely in 2002.

The above discussion of the relationship between the RER and the TOT has shown that while a congruent movement between the two might suggest Dutch disease mechanism, other factors such as the political economy also point to the importance of exchange rate regimes, thus the role of RER management in altering its movement. In Côte d'Ivoire and Nigeria therefore, the RER was rather more susceptible to changes in the value of the foreign currency than in the TOT movements. In this case, the RER may appreciate during a commodity bust, and therefore the opportunity for non-booming domestic exports to gain competitiveness in the global market could be lost. Most significantly, it appears that single-commodity-dependence created bad policies and societal conflict in Nigeria and Côte d'Ivoire.

### **5.3 External effects**

#### **5.3.1 Long-run TOT effects**

An interesting link to make is that between the external TOT movements and the RER in the long run. This section will limit the discussion directly to the long-term RER effects associated with external TOT shocks. As pointed out in the previous section, given that natural resources make up most of Nigeria and Côte d'Ivoire's exports, cycles of booms (rise in the TOT) and busts (falling TOT) due to commodity prices instability are expected to cause volatility in both the TOT and RER. Subsequently, two arguments are presented here.

First, while there are likelihoods of Nigeria and Côte d'Ivoire experiencing undesirable TOT shocks, there is a potential benefit of a long-term low price of commodities that could allow diversification away from major primary resources. However, there is a balance of payment constraint on diversification, and government investment during periods of low commodity export prices. Therefore, the two issues concerning long-term TOT effects emanate from the adverse effect of spending and balance of payment constraints.

Second, a TOT shock that appreciates the RER could increase growth of some import-dependent industries in manufacturing during boom periods but may hamper it in the long term if manufacturing exports become uncompetitive due to the appreciation.

In the first case, sustained low commodity prices during a bust with a depreciating RER, everything else equal, could translate into competitive exports bringing in needed foreign income. For instance, a sustained poor price of cocoa might lead to diversification in Côte d'Ivoire. However, because a commodity export boom is short lived, a typical primary exporting country soon faces a balance of payment constraint due to increased spending of foreign reserves when commodity prices were high. The caveat is that prolonged low commodity prices may lead to "permanent" foreign exchange and balance of payment (bop) constraints that will cripple or maintain a sluggish growth in the lagging sectors limiting the import-dependent sectors. As inputs become unavailable the alternative export sectors of manufacturing and agriculture are squeezed further restricting diversification. It is, hence, expected that the import dependent non-commodity exporting sectors of Nigeria and Côte d'Ivoire may not benefit from a falling RER. Consider this through manufacturing capacity utilisation for instance. The latter, taken as a measure of efficient production, suggests also that during booms the availability and access of imported inputs and perhaps also the availability of machinery utilised in manufacturing is increased. For example, in Nigeria in the short term, manufacturing capacity utilisation had increased a year after the boom of 1980, and during the booms of 1990, 1996, and in the 2000s (see CBN, Table 1.2: 2004) but decreased in the following years. As Section 4.3.4 established, in the long term in both Nigeria and Côte d'Ivoire, comparison between 1980-1990, and 1990-2002 showed that manufacturing lagged behind other sectors.

The persistently low shares of manufacturing exports experienced in both Nigeria and Côte d'Ivoire might be a manifestation of this. For instance, Côte d'Ivoire's share of manufacturing exports in total exports in 2003 was about 20% while foods and raw materials stood at over 55%. The latest data for Nigeria's manufacturing exports share is for 2000 at 0.2%, compared to over 99% of fuel exports in the same period (UNCTAD, 2004; Table 4.10).

In addition to these limits to diversification, there are further long term adverse welfare considerations linked to the balance of payment constraint for primary export dependent countries when currency devaluation disrupts the development of heavily invested projects that had begun during commodity export booms. This occurs because often than not, governments in this situation opt for loans, exacerbating their debt situation. This is highly likely to be the case for Côte d'Ivoire and Nigeria, given that both countries are classified as severely and moderately indebted countries respectively (see the World Development Indicators, 2005). For example, 90% and 76% of GNI respectively in Côte d'Ivoire and Nigeria goes to interest rate payments toward debt servicing rather than toward development spending.

### **5.3.2 Commodity price stability (sustainability of revenues)**

This section argues that the problem for commodity exporting countries is that highly volatile prices of their major commodity exports deter them from sustaining a flow of revenue for diversification. This goes to say that the problem is as much to do with high prices as it is with low prices. Perhaps this is due to the time lag for markets and agents to react to commodity price and macroeconomic changes. Consequently, economic diversification is more challenging.

Previously in Section 5.2.3, Table 5.1 illustrated that all four countries experienced instability in commodity prices. However, export revenues were relatively more effectively sustained in Mauritius and South Africa probably due to other reasons. The issue raised in this section is that, unlike Nigeria and Côte d'Ivoire, historically, Mauritius and South Africa experienced commodity price instability differently and were able to sustain revenue for diversification.

Therefore, with regard to price instability for all commodities, the latter has decreased over time (see Section 5.2.3 and Table 5.1). However, although sugar was consistently most unstable relative to the other commodities, it is striking that since the 1970s Mauritius was able to maintain a relatively steady macroeconomy as depicted by her RER and TOT. Mauritius was formerly dependent on sugar that made up 70% of total exports. South Africa, also highly dependent on the mineral-energy-complex (MEC) developed around gold, minerals, ores and metals, the prices of which fluctuated as well, has relatively diversified. However, both countries have relatively higher shares of manufacturing exports in total exports compared to Côte d'Ivoire and Nigeria.

In addition, since independence when sugar was 70% of Mauritius' exports, the country benefited from the Sugar Protocol (see Sections 3.3.2 and 4.3.1). This was an agreement with the then European Community (EC) for Mauritius to supply Europe with sugar at an agreed quota at three times its world price (African Business, 2004; OECD, 2004). Had Mauritius been lucky to benefit from international sugar price regulation? In addition to the Sugar Protocol, Mauritius' textiles and clothing exports also enjoyed protection, since the 1980s. The latter were included in the Multifiber Arrangement with preferential access into the U.S.A and the EU.

There are suggestions thus, that based on the "rent extraction", and infant industry arguments (see Section 2.5), continuous revenues from sugar exports were used to diversify a protected textiles and clothing sector in Mauritius. Therefore, in the long term the country did not face the adverse effects of fluctuations from world sugar prices as did Côte d'Ivoire and Nigeria.

In South Africa, on the other hand, while the importance of gold has been on the decline, hence suggestive of the decline of the impact of gold price instability on South Africa's economy, other metals, ores and minerals still carry great importance. Nonetheless, price instability from the latter group is still comparably lower than the other countries' commodities as has been shown in Section 5.2.

However, there is the issue of sustained capital flows in the case of South Africa as opposed to volatile flows. This goes back in history before the 1970s. Capital flows from Britain and foreign investment attracted by the oppressive wages and huge profits in the apartheid era

(Southall, 2005) could partially account for South Africa's source of capital for diversification. This has likely supplemented gold revenue, although sanctions later deterred this.

Perhaps, it could be argued also that South Africa's diversification was politically driven by economic rivalry with profit incentives. Fine and Rustomjee (1999) explain well the disjunction between English (mining) capitalists and Afrikaner nationalists, as already touched on in Chapter Three. The integration of the two interests, thus, encouraged government steel (ISCOR), electricity (ESCOM), chemicals and petroleum (SASOL) companies to form the highly protected MEC (see Chapter Three, as well as Lewis, Reed and Teljeur, 2005). These industries along with other sectors also enjoyed protection from import substitution industrialisation (ISI) between 1925 and 1973 (Schneider, 2000). Therefore, based on the infant industry argument, the country had years to build on its manufacturing sector, despite the controversial circumstances.

Unlike the development of state owned enterprises (SOEs) in Côte d'Ivoire and Nigeria (see Chapter Three), economic rivalry could have been directed toward relatively more diversified investment in South Africa. To this effect, the next section will discuss the political Dutch disease that appears prevalent in Nigeria and Côte d'Ivoire.

#### **5.4 The Rybczynski effect and internal TOT effects**

##### **5.4.1 Effect on growth and welfare**

So far, the discussion has linked Nigeria and Côte d'Ivoire's comparative advantage with unfavourable external shocks. Subsequently, the following discussion will also argue that an internal TOT effect due to the production and trade mixes of Côte d'Ivoire and Nigeria, based on their comparative advantages, exposes them to internal shocks due to the over production of their major exports. The problem that arises from over production often stems from much needed national revenue. The distinction with the TOT change here, in contrast to earlier discussions where there is an external shock, is that it is internally driven.

The focus is on Côte d'Ivoire and Nigeria because they have relatively higher shares of primary products in total exports and have relatively high dependence on single commodities (see Chapter Four). The argument is that the two countries could be subjected to the

Rybczynski and the immiserising growth effects. However, it is questionable that Nigeria alone without the cartel of the Organisation of Petroleum Exporting Countries (OPEC) it belongs to could influence the world price<sup>4</sup> of oil (see below, Section 5.4). Thus, the small country assumption of the Rybczynski effect could apply to Nigeria since the latter's world share of oil market is relatively small. This also may apply to Côte d'Ivoire with regard to other agricultural raw material and food commodity exports rather than coffee or cocoa, the prices of which Côte d'Ivoire could influence in the world market. It seems fitting thus to apply the big country case of the Rybczynski theorem with immiserising growth in Côte d'Ivoire.

Therefore, to re-iterate from Section 2.2, returns to scale, relative prices, commodity world price, and technology are assumed constant and apply to a small country case such as Nigeria. Thus, if the converse of Figure 2.1 is considered in the case of Nigeria for example, an increase in one production factor, capital, could cause a biased production and ultra-protrade of the commodity intensive in that factor which the country has comparative advantage, i.e., oil (see Section 4.3.2). However, since technical change is assumed constant, to maintain the equilibrium when capital increases, the other sectors must give up some labour for the new capital in the oil sector. The significance of this is that in the absence of technological change or innovation to redress this change in production requirement the output of the other sector(s) should decline.

Further, with the assumption of constants return to scale, which both Nigeria and Côte d'Ivoire are assumed to be characterised (see Söderbom and Teal, 2002a), one factor growth only results in less than proportionate increase in output. Therefore, employment and income growth would be less than if both factors (capital and labour) have grown in Nigeria. In addition, the non-labour-absorbing characteristics of the oil sector, and the surplus labour from the declining sectors coupled with population increase above national income could

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<sup>4</sup> Nigeria has been a member of the cartel OPEC since 1971 and the latter has about 40% share of the global market (OPEC, 2005). On the other hand, Côte d'Ivoire alone has a 40% share of the world market for cocoa and is the third coffee producer in the world after Brazil and Columbia (American University, 2005).

intensify the poor welfare condition. The benefit of growth is, therefore, counteracted for such a country.

Likewise, in Côte d'Ivoire, labour force growth (see Figure 2.1) in the comparative advantageous labour-intensive agricultural sector could lead to a production bias and an increased trade in this sector, everything else constant. It follows that at the new equilibrium, some capital (physical or otherwise) must be released from the relatively capital-intensive sectors for the new labour employed in the agricultural sector. As a result, output and income from other sectors will be lost. In addition to increased population, Côte d'Ivoire could experience lower per capita income than if both labour force and capital increased.

In this regard, Appendix 1 (Figure b) suggests a link between welfare (income per head) and annual population growth. It points to the annual growth rate of income per head slower than population growth in Côte d'Ivoire, Nigeria and South Africa. The three countries being land-abundant also suggest an implicit correlation with welfare. This is in contrast to Mauritius that has experienced relatively the highest income per head (Appendix 1, Figure a). In the case of South Africa, this is probably due to the importance of other metals and ores exports even as the relevance of foreign earning from gold declines (see Section 4.3).

#### **5.4.2 Immiserising effects**

For this discussion, Côte d'Ivoire, rather than Nigeria, will be considered as it is large enough to affect the international market price of cocoa and coffee. Therefore, the former may probably be subject to immiserising growth when its coffee and cocoa sectors grow. Therefore, since Côte d'Ivoire could affect world prices through the quantity supplied of commodity exports (cocoa or coffee) in the world market, the excess supply of these export goods is anticipated to lead to the fall in the prices they receive. In the early 1980s for instance, Côte d'Ivoire's export driven strategy of the Structural Adjustment Program (SAP) based on increasing major commodity exports is viewed to have contributed to the falling price of the country's commodity export in that period, with a consequential manufacturing output compression (Kouassy et al., 2005).

Combined with a decline in the output of non-competitive sectors (e.g. manufactures) as explained in Section 5.3.1, a rise in their demand could therefore increase the demand for

import substitutes. These two effects, i.e., a fall in the prices of major exports and a rise in the volume of imports, could result in the deterioration of Côte d'Ivoire's TOT leading to immiserising growth.

## **5.5 Conclusion**

In this chapter, examination of the terms of trade and the real effective (currency) exchange rate of the countries from 1980 to 2003 reveals South Africa and Mauritius' macroeconomic variables to be relatively steadier than those of Côte d'Ivoire and Nigeria. Overall, the variability of the TOT and the RER seemed controlled in Mauritius and South Africa. Therefore, there is indication that relatively more steady and regular foreign earnings and investment possibilities benefited South Africa and Mauritius. On the other hand, given the high dependence of Nigeria and Côte d'Ivoire on commodity exports, a link was established between commodity price instability and their TOT and RER fluctuations around the base year. This suggested conformity with the notion that their macroeconomies with respect to the TOT reflect the external price shocks from the global market.

It was suggested that while both Côte d'Ivoire and Nigeria could be subjected to the Rybczynski effect, the former may further be made worse off if by oversupplying the world market with cocoa it experiences immiserising growth.

It was also highlighted that during prolonged commodity busts, there seemed to be changes in the government, along with political and social upheavals in Côte d'Ivoire and Nigeria. The RER did not always conform to the TOT movement as would be expected, perhaps due to policies geared towards fixing the nominal exchange rate. Such government response seemed to coincide with worsening TOT and RER appreciation soon after.

In Côte d'Ivoire, the TOT seemed to move inversely with the RER. Reforms in the country such as market liberalisation and RER stabilisation seemed linked with a rising RER (currency overvaluation) and the strengthening of the French franc. However, the devaluation of the CFA was reversed in 1994. To increase the country's exports, the SAP of the 1980s was biased toward cocoa and other major agricultural exports. However, since this strategy has been argued to have an adverse effect (immiserising growth) on the country,

retrospectively and intuitively, it may have worsened the economic downturn experienced at that period.

Further, historical events, dispensations of the countries with their main trading partners, and internal political and economic rivalry were pointed out as having greatly influenced the emergence of industries. For instance, while economic and political rivalry seemingly initiated manufacturing diversification in South Africa, Nigeria and Côte d'Ivoire, however, had all the signs of political Dutch disease. Social unrest in Nigeria and war in Côte d'Ivoire, have been traced to political discontent over their corrupt governments and skewed access to natural resource wealth (see Sections 4.5.3 and 4.5.4). Historically, South Africa also once experienced political upheavals based on its biased access and control of national wealth around the MEC. However, perhaps due to manufacturing diversification and the improved political environment, external shocks tied to ores, metals and minerals in the country have a relatively less destabilised the macroeconomy. The country is still challenged by the societal inequality caused by its past growth direction which limited greater worker participation of the populace.

Nonetheless, external effects of politics tied to resources have also had undesirable effects on Nigeria and Côte d'Ivoire in that consumers of the more industrialised importing regions still dictate world prices of commodities. Perhaps Mauritius was just lucky in its sugar price negotiation. Combined with such a strategic policy of protection to develop its textile and clothing industry, the economic and political struggle was less of a challenge in Mauritius.

Finally, it is realistic to say that commodity exports are necessary for Nigeria and Côte d'Ivoire despite their associated adverse effects. It is the chicken or the egg problem that arises when primary export dependent countries need to diversify away from their primary resource sectors; but however are tied to rely increasingly on their comparative advantage in commodity exports as the source of income for investment.

## CHAPTER 6

### CONCLUSION

It is commonly believed about sub-Saharan Africa (SSA) that the region has a comparative advantage in primary resources as reflected by its high share of primary exports to total exports. Figures of the region's poor economic performance and declining world market shares, even for their commodity exports, lead to findings that competitiveness and supply side factors among other endogenous reasons are to blame. Further, given the characteristics of manufacturing, it is a common notion that SSA's solution to economic performance lies in diversifying into manufacturing exports.

However, in studies such as those by Wood and Mayer (1998, 1999), the region's comparative advantage is due to high land per worker and low skill per worker, opposite to the requirement for manufacturing exports. This would mean that SSA does not have a competitive edge in manufacturing exports. They further suggest that, even if SSA plays catch-up with their skill supply, it is likely that other countries could move further ahead since the acquisition of skill is dynamic. Wood and Mayer (1998, 1999) therefore conclude that SSA should rather extensively increase its global share of primary good exports. Increasing its skill supply however, will serve to acquire comparative advantage in processed primary products.

Unlike other research however, the argument of this thesis was not whether SSA has a comparative advantage in primary resource exports as such. Rather, in acknowledging the region's comparative advantage, the study tries to put the determinants from the W-M (1998, 1999) model in the context of two relatively diversified countries (South Africa and Mauritius) and two commodity-export-dependent countries of sub-Saharan Africa. In this respect, the question posed was, while natural comparative advantage in commodity exporting is a feature of the SSA region, does primary export industrialisation offer an escape from underdevelopment?

Hence, the thesis first considered various theories of trade, such as the neoclassical Heckscher-Ohlin trade theory and its Wood and Mayer (1998, 1999) (W-M) extension, the endogenous growth and new trade theories and the Dutch disease hypothesis, for their

implications. While the neoclassical theories, including the W–M model, explain the type of trade in SSA, they also suggest poor welfare and internal TOT effects due to the Rybczynski effect and immiserising growth (Section 2.2). This latter seemed to be the case, particularly, in Côte d’Ivoire (Section 5.4).

Endogenous growth theory and its reference to domestic factors also added insights on growth and development strategies. For example in Section 4.5, findings showed that the more diversified countries in the study, South Africa and Mauritius, had relatively higher researchers per million inhabitants, education enrolment, as well as higher commitment to education. Whereas in Nigeria and Côte d’Ivoire, the same factors mentioned above, together with relatively high corruption levels and poorer infrastructure may considerably hinder their economic activity.

While the application of the new trade theories to Africa was questionable, still the set of presumptions, among others, of non-perfect competition, international mobility of capital and skill, and economies of scale gives argument for “rent extraction” or “import-protection-as-export-promotion” strategies (Section 2.5). These suggest that, Africa’s diversification effort may be supported to limit oligopoly and for government to protect infant industries.

On the other hand, the Dutch disease hypothesis was deemed more applicable and suited to explain the economic structure and the development of mineral and oil abundant economies, as well as other primary resource dependent ones, e.g., agriculture dominated countries. South Africa, Nigeria and Côte d’Ivoire thus fit this category.

To attempt to answer if resource led industrialisation offered an escape from underdevelopment in SSA, with Nigeria, Côte d’Ivoire, Mauritius and South Africa as comparative cases, the thesis, in Chapter Three, first assessed the measures of comparative advantage, i.e., land per worker and skill per land, based on the W-M (1998, 1999) model. It appeared that Nigeria is an example that land, as a measure, does not explain the country’s low shares of manufacturing exports as in the case of Mauritius. Skill measure does not also explain why Nigeria, having similar levels of skill per worker ratio to South Africa, has not diversified. The skill ratio, in addition, does not consider the quality of skill. For instance, with relatively the highest skill per worker and per land, Mauritius’ growth was based on

textiles and clothing manufacturing. This sector is low-skill compared to South Africa's specialisation in relatively more human-capital intensive basic manufacturing.

Further in Chapter Three, the demand for skill was also considered, where it was established that there seems to be a positive correlation between the demand for skill and land abundance and a correlation with the latter and the development path. In land abundant countries, skill demand may be low in the initial stages of development, thus explaining the delay in manufacturing. However, capital-intensive processing was expected to emerge relatively earlier. Therefore, a historic perspective demonstrated that in all four countries, the stages of development differed according to whether the country was land abundant or scarce.

This perspective also pointed out that South Africa's diversification was based on the mineral energy complex (MEC), which reinforced the notion that land abundant countries will first invest in capital-intensive natural resource processing before the labour-intensive manufacturing. Also, the history of Nigeria's development around oil illustrated that its classification as land scarce in the W-M model diverged from expected findings because of its natural resource abundance. Therefore, the consideration shifted to resource abundance rather than land abundance.

The implication of delayed manufacturing in land abundant countries thus suggests that, rather than *laissez-faire*, government intervention in land abundant countries is even more significant at the critical initial development stage of the country. This was shown to be the example in the relatively resource abundant countries of the NICs of South East Asia, as it was in Mauritius when sugar export dominated. These countries employed selective industrial policy that targeted the development of both processed primary products and manufacturing along with significant investment in human resources.

Subsequently, Chapter Four established a link between the economic structure and endogenous features of the four countries. Manufactures and services grew faster in South Africa and Mauritius. In contrast to Côte d'Ivoire and Nigeria. Endogenous factors such as government expenditure on education (a proxy for the demand for skill) among others, was shown to be low in the land abundant countries in Côte d'Ivoire and Nigeria. On the other hand, although the type of government intervention prior to 1994 makes it a controversial

example, South Africa, a land abundant country, showed relatively higher government expenditure.

The W-M model was refined in Chapter Four. It was argued that population density, the inverse of land per worker, does not correlate with per capita gross national income (GNI). For instance, while population density is similar between Mauritius and Nigeria, and between South Africa and Côte d'Ivoire, Mauritius had over twelve times greater GNI per capita than Nigeria, and South Africa had six times the GNI per capita of Côte d'Ivoire in 2002. Low GNI per capita in Nigeria and Côte d'Ivoire appeared also to be correlated to land abundance and primary resource dependence.

Therefore, there are implications about generalising measures of comparative advantage, for the reason that, doing so could reinforce the inherent nature of comparative advantage by making it self-fulfilling. This could also deter from emulating successful strategies used in similar countries. In this regard, what could have been the story of Mauritius if it went along with the Meade's Report (1961) based on the pessimistic possibilities of manufacturing due to the country's adverse inheritance (Subramanian and Roy, 10: 2001)?

In Chapter Five, the Dutch disease hypothesis indicated the challenges of raising the economic and welfare standard in resource-dependent Nigeria and Côte d'Ivoire. Due to single commodity reliance, these countries experience commodity price instability tied to the global market. This seemed to create external shocks through booms and bust of commodity export prices that translated into short-term TOT effects at the given periods. In the hypothesis, TOT changes may also influence the RER positively, thus appreciating the RER when the former rises and vice versa.

In the long term, external shocks could have adverse effects on diversification when a boom and RER appreciation renders non-booming manufacturing and/or agricultural exports uncompetitive, or, when a bust and RER depreciation makes imported inputs for import-dependent sectors relatively expensive. Unambiguously, output in manufacturing will decline. This might explain the consistently poor and slow manufacturing growth in, especially, Nigeria.

It was found however, that the link between the TOT and RER and boom-bust cycles might be influenced also by unfavourable nominal exchange rate policies in both Nigeria and Côte d'Ivoire. For instance, it appeared that during periods of busts the RER did not depreciate always. There is a possibility that high RER levels are maintained to aid government transactions when national income and foreign reserves are low. Huge government spending with low investment in infrastructure and human capital, coupled with high perception of corruption in government, seem to indicate that huge inefficiencies in the allocation of natural resource wealth exist in Nigeria and Côte d'Ivoire. This highlights the incidence of political Dutch disease and government failure.

Further political instability is apparent during busts when prolonged periods of falling commodity prices and economic downturns seemed to coincide with social unrest, and military coups or their attempt. For example, in Nigeria, after the oil boom of 1980, a military coup occurred in the subsequent economic bust in the late 1980s (Section 5.2.4). In Côte d'Ivoire also, the decline of cocoa prices in the late 1980s led to an attempted coup (Section 5.2.6). It seemed that similar events in both countries that were repeated in the late 1990s were also linked to the falling prices of the countries' commodity exports and the economic downturn at the time.

Given the relative stability of the RER and the TOT of South Africa and Mauritius, it was discussed in Chapter Five that external shocks due to commodity export price instability immensely challenged one group of countries more than the other. The issue thus turned to the role of sustained national income flows for domestic investment.

In this respect, it was argued that, for Mauritius to diversify while the price instability index for sugar was consistently the highest, other factors must have been more significant for Mauritius to experience a steady TOT. To this, the study pointed out that the role of international price regulation of sugar with the European Union (EU) must have had a significant impact on stabilising national income and enabling rents for reinvestment in Mauritius' diversification efforts. It was also shown that Mauritius' strategic export processing zones (EPZs) along with trade policy connected to the Multi-fibre Agreement played a major role in attracting foreign investment in manufacturing. It is highly likely that lower costs faced by producers in its textiles and clothing sector in Mauritius enabled rent

extraction from this sector and benefited domestic reinvestment. However, the non-tariff-barriers (NTB) employed in international sugar agreements also point to the nature of imperfect competition that the new trade theory has highlighted in Section 2.5.

On the other hand, in South Africa, sustained national revenue might be explained historically on the basis of its past apartheid system. There were huge profits to be made by foreign and domestic investors from cheap labour in a highly protected economy during the controversial apartheid system (Southall, 2005).

However, manufacturing diversification appears also to have emanated from competing political and economic interests. It could be said that South Africa's domestic protectionism together with the use of mining rent to re-invest domestically contributed to build a relatively longer term learning-by-doing in manufacturing (see Krugman, 1989 for the "rent extraction" argument in Section 2.5). However, the price of prolonged domestic protectionism and the exclusion of the majority from participate in the economy come with the consequences of a dual economy inherited from the past system. Hopefully, South Africa is continually undergoing positive changes towards this.

In summarising this study, what stood out was that all the countries followed their comparative advantage in commodity exports but Mauritius and South Africa have been able to diversify relatively into manufacturing exports indicating that comparative advantage is dynamic. However, Côte d'Ivoire and Nigeria have for decades been stuck with primary export comparative advantage.

While the Wood and Mayer (1998, 1990) model can be used to show regional comparative advantage, when applied to individual countries in SSA economic growth performance seems to differ between countries due to a host of other factors. Comparative advantage attempts to determine the possibilities for regions and countries as well as implies laissez-faire policy and free trade. However, the Dutch disease hypothesis suggests that this may "permanently" leave countries to lag behind in their efforts to diversify.

It is likely that Nigeria and Côte d'Ivoire's comparative advantage in oil and cocoa may persist for a long time as long as these resources are in abundance. Moreover, global demand

for oil to fuel industrialisation will possibly be increasing with globalisation surges, and the demand for chocolate is also likely to continue rising. However, unstable macroeconomic environments in Nigeria and Côte d'Ivoire could greatly undermine manufacturing diversification as long as national income remains highly volatile. In addition, anecdotal evidence from recent world events tied to oil, as seen in Iraq, the Middle East and Latin America today, where it is argued that external political interests are entangled in oil-rich countries due to their interest in the commodity, gives the impression that the problems of political Dutch disease could increasingly become external.

In the short term both countries could channel their efforts in the processing of oil and cocoa respectively, and exporting the products. However, adding value to Côte d'Ivoire's cocoa is hijacked by international trade barriers. Moreover, both Nigeria and Côte d'Ivoire also face imperfect outcomes from their membership of OPEC and the ICCO respectively.

Recently, the political and social environment in Nigeria has a mixed one, with frequent social unrest tied to oil resource disputes in the oil-producing region. However, the change to a new elected democratic government since 1999, as opposed to the military rule, brings optimism. On the other hand, the bouts of civil unrest in Côte d'Ivoire since 2000 remain a concern.

This study stresses important policy questions about how developing commodity- dependent countries such as Nigeria and Côte d'Ivoire should adopt a harmonious blend of exchange rate policy, multilateral and bilateral trade agreements as well as tackle political Dutch disease. This will be aimed at stabilising, and sustaining national income, which in turn would increase the opportunity to diversify into less volatile manufacturing exports to maintain economic growth.

The efforts to diversify whether in manufacturing or in processed primary exports nonetheless point to human and social capital development, institution building and government failure as key issues for Côte d'Ivoire and Nigeria.

The suggested policy direction with regard to political Dutch disease, particularly in Nigeria and Côte d'Ivoire, is to minimise problems of excessive spending through transparency and

democratic leadership. Interventions, as in the infant industry argument, toward lagging sectors in manufacturing and agriculture may then work better as transparency checks government failure.

African countries need to confront international trade barriers with excellent international trade negotiation skills to benefit from multilateral and bilateral agreements for market access for their goods. In addition, with carefully negotiated trade agreements and market incentives, African countries could reap the opportunities that the global trans-national companies offer so that they can increase labour force participation rather than industrialisation skewed towards capital-intensive growth.

One possible solution to stabilise commodity export prices for Côte and Nigeria is for these countries to lock future prices of their commodity exports on a medium term basis. Such attempts at multilateral trade agreements through the ICCO, for example, are however fraught with transaction costs as disagreements drag on between the supplier and the consumer nations. However, bilateral trade agreements could be an alternative.

The goal to stabilise commodity exports through international trade agreements would however, have to work with an exchange rate that is flexible to respond to the appropriate economic changes. While the effect of booms, through the excess flow of foreign currency, on RER appreciation calls for the latter to be sterilised, this calls for greater government discipline.

This comparative study of South Africa, Nigeria, Côte d'Ivoire and Mauritius showed that an integrated management of the economy rather than biased growth is beneficial. However, the solution for economic growth focused on increased manufacturing exports alone should be taken as an auxiliary to augmenting the economic participation of the population at large. This, together with increased investment in infrastructure, human resources, health, and education will aid in realising the potential for improved economic performance along with development.

## Appendix 1

### Nigeria sector contribution to GDP (%total) at current national prices

Year	1999	2000	2001	2002	2003
Oil GDP	30.9	48.2	42.9	38.3	44.7
Non-oil GDP	69.1	51.8	57.1	61.7	55.3
Agriculture	34.2	26.4	30.7	31.3	26.4
Secondary	5.4	4.4	4.7	5.4	4.7
Tertiary sector	29.5	21.0	21.6	25.0	24.4

Source: IMF (2004)

## Appendix 2

### Commodity price trends in current U.S. dollars (Average rate of change per cent).

Year	1970-79	1980-89	1990-99	2000-03
All food	10.9	-3.7	0.7	0.6
Agriculture raw materials	12.5	0.6	-1.9	1.5
Cocoa	22.9	-4.9	2.6	23.8
Sugar	7.9	-7.5	-2.7	-5.0
Minerals, ores and metals	8.1	1.7	-2.1	-0.5
Gold	21.6	-2.6	-2.6	9.1
Crude petroleum	28.2	-10.7	-1.6	1.0

Source: UNCTAD (2004).

### Appendix 3

#### South Africa: mining production index (% change), 2000=100

Year	1980	1985	1990	1995	2000	2001	2002	2003	2004
Mining Production, gold included (weight+100)	-	0.8	-0.8	-0.8	-1.5	1.4	0.8	4.0	4.5
Mining Production, gold excluded (weight+100)	-	4.6	-1.4	5.9	0.6	4.8	0.8	7.2	7.9

Source: Statistics South Africa, Annual Indicators (TIPS, 2005)

## Appendix 4

**Figure a: Population growth and income per head**

Annual population growth rate (%)	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1975-2002	3.3	1.1	2.9	2
1990-2002	3.2	1	2.8	2.3

**Figure b: GDP per capita annual growth rate (%)**

	Côte d'Ivoire	Mauritius	Nigeria	South Africa
1975-2002	-2	4.6	-0.6	-0.7
1990-2002	-0.1	4	-0.3	na <sup>1</sup>

Source: UNDP (2004); World Development Indicators (World Bank, 2004)

<sup>1</sup> na: not available.

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