IS ECONOMIC GROWTH WITHOUT HUMAN DEVELOPMENT SUSTAINABLE? SUB-SAHARAN AFRICA'S RECENT GROWTH ACCELERATION IN CONTEXT

THESIS

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by

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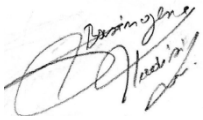
DECLARATION

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



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ABSTRACT

The purpose of the study has been to assess the question of sustainability of economic growth and human development, particularly using sub-Saharan Africa in context. Sub-Saharan Africa is an interesting case study because, on the one hand, it has been mired in poverty and remains the least developed region in the world, and on the other, it has experienced a revival in economic growth since the mid-1990s.

Economists tend to use the term economic development and economic growth interchangeably. However, questions have been raised about whether Africa's latest growth episode is indeed 'development'. Although there are many issues at stake, the key question, and the focus of this thesis, is whether sub-Saharan Africa's revival is sustainable.

The paper sets out the debate between the 'World Bank view' and the 'alternative view'. The main debate lies around how genuine development should be achieved. Firstly, the 'World Bank view' claims that economic growth is necessary and sufficient condition to achieve development. Economic growth will be generated by 'orthodox' policies and this growth will automatically trickle-down and stimulate development. Secondly, the 'alternative view' argues that economic growth is necessary but it is not sufficient to stimulate sustainable development. Economic growth without 'qualitative' change is not 'sustainable'. Indeed, human development shortfalls (as well as other, social, political and structural problems), if not addressed through appropriate policy interventions, can undermine economic growth. The 'alternative view' appears to be strongly supported by evidence from other developing regions such as Latin America and East Asia.

The empirical study conducted in this thesis reinforces doubts about 'sustainability'. Even though there are signs of convergence in some indicators; this is not the case for all indicators. More importantly the gap between sub-Saharan Africa and other developing regions remains very wide. Sub-Saharan Africa's development path remains uncertain. The intention in this study is not to be conclusive that sub-Saharan Africa cannot achieve sustainable development. Rather the study attempts to identify potential hindrances to sub-Saharan Africa's development and to provide a solid foundation for further research in the same direction.

This Thesis is dedicated to

My father Kandara Hadisi and my mother Mayala Maliro for their sacrifices.

My siblings, Alice, Joelle, Armel, Grace, Elie and Benit for their affection.

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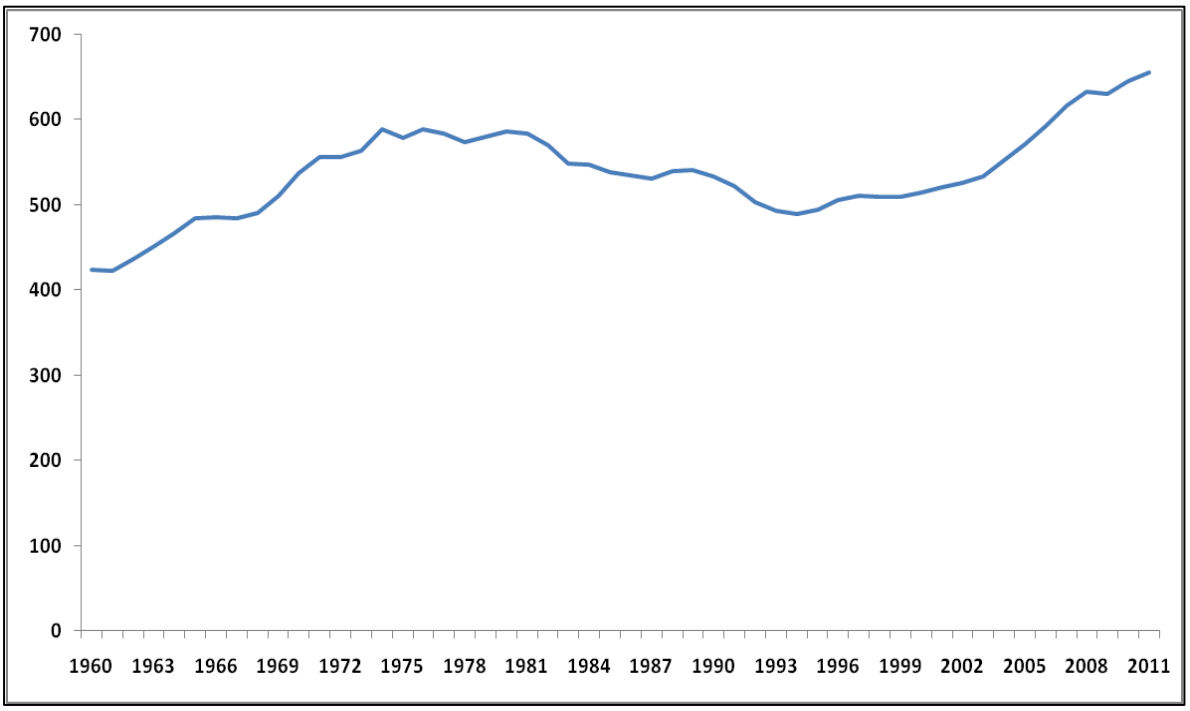
Figure 1.1: GDP per capita in sub-Saharan Africa (constant 2000 US$)



Source: World Bank 2012 [NY.GDP.PCAP.KD] (World Development Indicators).

As shown in Figure 1.1 sub-Saharan Africa's GDP per capita has recorded positive growth in the 1960s and mid-1970s. However, in the 1980s sub-Saharan Africa's GDP per capita dramatically declined. From the mid-1990s, growth started to recover. From the 2000s, sub-Saharan Africa has experienced significant growth acceleration. This reveals that sub-Saharan Africa over the past 50 years has been characterised by an episodic growth path. The important question which comes to mind is whether sub-Saharan Africa's recent growth path constitutes 'development' and is 'sustainable'. The main issue here is that economists often tend to use the terms economic development and economic growth interchangeably. However, since the 1970s, development economics have moved from a single-minded focus on distribution, capital accumulation, incomes, and economic growth toward a more complex understanding of development as broad-based wellbeing improvement (Chakraborty, 1997: 3).

In particular, a debate has emerged regarding globalisation. On the one hand is what Kiely (2004) calls the '*World Bank view*'. The World Bank view claims that economic growth and globalisation is the only means to fight against and reduce poverty and inequality. In this view, economic integration and liberalisation will encourage competitiveness and efficiency, which will produce

economic growth. Through this channel, the income of poor people and the quality of life of poor people will be improved (Kiely, 2004: 7-8).

On the other hand there is the 'alternative view' which claims that globalisation has contributed to the amplification of poverty and inequality (Bhagwati, 2004: 4). The point here is that 'development' is regarded as not just the result of economic growth, that is, 'quantitative'. Economic growth itself does not necessarily reduce poverty. Sen (1999, in Szirmai, 2005: 7) argues that "a country can have a rapid growth, but still do badly in terms of literacy, health, life expectancy and nutrition". Most proponents of the 'alternative view' do not dispute that economic growth is necessary. But they argue that economic growth is not sufficient. Development involves more than just growth (Szirmai, 2005: 7). Instead, they have emphasised 'balanced growth'. Growth without 'qualitative' change is not sustainable and human development is a necessary component of 'sustainable development'.

The debate about pro-poor growth is a case in point. There is increasing emphasis on 'social policy' and 'poverty reduction' (through such instruments as social grants) in orthodox development economics (Bezemer & Heady, 2008: 1352). This is evident in the Millennium Development Goals (MDGs) and "the enthusiastic financial and intellectual support" of agencies like the World Bank for the upsurge in social grants in many developing countries (Teichman, 2008: 448). The objection to this shift in focus is that anti-poverty policy is 'residualist', that is, it treats symptoms rather than structural causes, and continues to assume that the primary solution to development is 'orthodox' pro-growth policy (see also Ellis et al., 2009).

There remains considerable distance between the two views. On the one hand, authors like Dollar and Kraay (2002) assert that the best way to fight poverty is to target growth. On the other hand, authors like Ranis et al. (1997) assert just as strongly that growth without human development is not sustainable.

This has remained a debate for empirical and conceptual reasons. Firstly there are many concerns regarding the quality of data. Kiely (2004: 5) criticises the World Bank for making periodic adjustments from the base year on economic growth data. With specific reference to the debate at hand, there are major issues regarding the measurement of GDP per capita and the measurement of globalisation. Pogge and Reddy (2003, cited in Harrison, 2007: 46) argue that the updating or the adjustments of the PPP base year will cause overestimation of the incomes of poor people to get progressively worse as average incomes rise (Harrison, 2007: 46).

The tendency to measure globalisation or openness by the trade/GDP ratio is questionable. It is possible to have a high ratio of exports to GDP but still have different degrees of import restrictions. Generally, poor countries depend on the export of a few primary commodities and have very low and sometimes negative rates growth (Kiely, 2004: 8-9). Kiely (2004) points to the failure to specify exactly which types of goods are being traded and to ignore the impact of liberalised trade on countries at different stages of development, based on different structures of production (UNCTAD, 2002a: 102 cited in Kiely, 2004: 9). Thus, both of these can completely change the interpretation of the data and give different results. These empirical issues are sufficiently significant to constitute a critique to the *'World Bank View'*.

Secondly there are concerns related to conceptual issues. Much literature has been preoccupied with the question of what constitutes 'development'. Evidently this is a multidimensional issue that incorporates much more than gross domestic product per capita (Bérenger & Chouchane, 2007: 1259). Issues regarding the distribution of income, subjective and objective wellbeing, and environmental quality are discussed briefly in chapter 2 (Gough & McGregor, 2007: 59-60). Although alternatives like the Human Development Index are increasingly used in comparative studies, it seems very hard to come up with a broader measure which should be considered as a valid estimate of wellbeing (Ross, 2004).

1.2 Aim of the research

Although the empirical and the conceptual issues discussed in the last two paragraphs are explored in this thesis, the thesis focuses on a more tractable and arguably more pertinent question. This is the issue of the 'sustainability' of economic growth itself. As discussed, there is a tendency to assume that sub-Saharan Africa's growth acceleration since the late 1990s constitutes development. However, sub-Saharan Africa still lags far behind in other indicators of human, social, political and economic development. In particular, the study intends to investigate the hypothesis of Ranis et al. (1997) that only countries that have promoted human development achieved sustained growth paths. The hypotheses of the research are:

1) That economic growth is a necessary but not sufficient condition for sustainable economic development;
2) That sub-Saharan Africa remains far behind not only in terms of human development but also in terms of economic structure;
3) That the lack of human and social development raises concerns about the sustainability of sub-Saharan Africa's recent growth.

1.3 Thesis plan

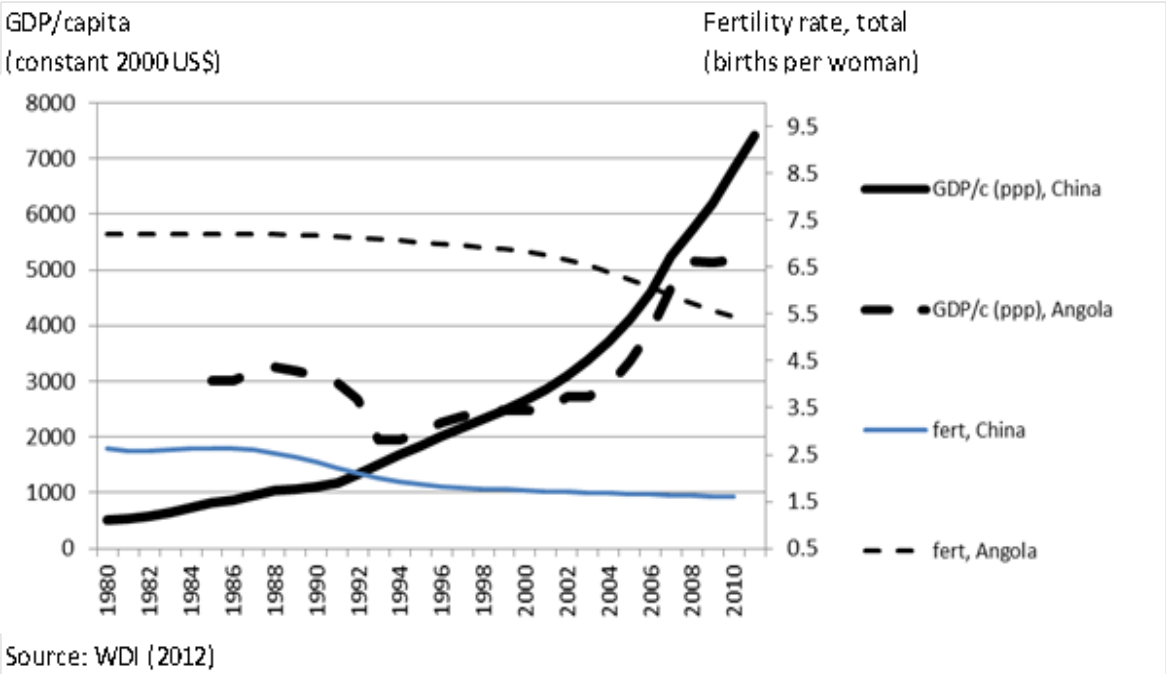
The thesis is divided into five chapters. Chapter One is the introduction. Chapter Two presents the theoretical framework by reviewing the conceptual issues under study. Chapter Three describes and investigates sub-Saharan Africa's economic development trajectory, focusing on the political and socio-economic post-colonial legacy in sub-Saharan Africa. Chapter Four is an empirical assessment of the hypotheses. And finally, Chapter Five concludes the study by summarising and suggesting further research.

CHAPTER TWO: THEORETICAL FRAMEWORK

2.1 Introduction

This chapter reviews the theoretical issues regarding the question of sustainability of economic growth and human development, focusing on the role of human development. The chapter aims to give more understanding and to clarify the relationship between economic growth and development. The two concepts are often used interchangeably. However, it is possible to experience long period of economic growth without necessarily having development. Countries can experience similar growth rates and similar levels of GDP per capita yet may be very different in terms of other indicators of development. Figure 2.1 give such an example, China and Angola had similar GDP per capita in 1993 and grew at similar rates between 1993 and 2006. However, social indicators (one of which, the fertility rate is shown in the figure) illustrate that Angola is much less developed than China.

Figure 2.1 Fertility rate and GDP per capita in China and Angola



In fact there is no simple answer to the question 'what is development?' Section 2.2 defines the concepts related to economic development and economic growth. Section 2.3 discusses the issues around growth theory and modernisation, describing the Lewis model and the notion of trickle-down as a procedure to achieve a genuine development. Section 2.4 elaborates on the 'alternative view' and the question of sustainable development. Finally, Section 2.5 concludes the chapter.

2.2 Definition of the concepts: Economic growth and economic development

In comparing the level of development between countries, there are some important questions which come in mind. These include: what development is, what development is supposed to achieve, and how development is to be measured. To improve the quality of life for the whole population or to ensure people's freedom and security is a more delicate objective than increasing the national output (Soubbotina, 2004: 7). As mentioned in Chapter 1, it is very important to define what economic growth is and what development is.

On the one hand, economic growth is 'quantitative': that is growth in the absolute amount of goods and services produced. This is obviously associated with increased consumption and hence material wellbeing (Wald, 1994: 317). To some extent, economic growth is considered as an indicator of development. However, there is broad recognition that there is more to development than growth. For instance, Stiglitz argues that "society ought to adjust its policies so as to target goals other than just economic growth...like reductionsincome inequality or carbon emissions" (Economist, 2009). On the other hand, therefore, development is defined as a broad issue which includes improving the quality of life (wellbeing or human development) in a sustainable way. Therefore, this is where the concept of wellbeing comes in. The concept of wellbeing includes two major branches, namely 'objective wellbeing' and 'subjective wellbeing'.

Objective wellbeing includes social indicators based on objective, quantitative statistics (such as health, infant mortality, longevity, education, levels of crimes and so on). Subjective wellbeing is about the individuals' subjective experience of their lives, under the assumption that wellbeing can be defined in terms of hedonic feelings or cognitive satisfaction (Denier & Eunkook, 1997: 189-191; Gough & McGregor, 2007: 59-60).

However, the wellbeing concept is very hard to quantify. This problem has two components. The first concerns the measurement of individual indicators (i.e. 'happiness'). This is a particular difficulty with 'subjective wellbeing', but 'data problems' (such as missing data, problems with

data consistency across years and countries, etc.) also plague more 'concrete' statistics. Secondly, human development is a multidimensional phenomenon (Bérenger and Chouchane, 2007: 1259). This raises the problem of how to pick which individual indicators to use and how to aggregate them (Ross, 2004). There are several indices that attempt to aggregate the concept of wellbeing. The best known of these is the Human Development Index (HDI) which includes measures of life expectancy, literacy and education as well as income and has been used since 1990 by the United Nations Development Programme (UNDP, 2005 cited in McGillivray, 2006: 2). But there are other alternatives such as Human Poverty Index (HPI), the Inequality-adjusted Human Development Index (IHDI), and theMultidimensional Poverty Index (MPI) and so on (see UNDP, 2013 and Kenny, 2005: 200).

A final problem is that, these indices can be used to capture 'wellbeing' but cannot explain other 'qualitative' dimensions such as 'modernisation' or 'development' and in particular whether any improvement or increase in wellbeing (or human development) is sustainable. It is this problem assessing whether any 'development' episode is sustainable that is the main focus of this thesis. The rest of this chapter considers two broad perspectives of sustainable development and how it is achieved, namely, the 'World Bank view' and the 'alternative view'.

2.3 Growth theory and modernisation: The 'World Bank view'

As discussed in the previous section, "economic growth" is not the same thing as "development." This is not disputed. However, the 'World Bank view' implies that the distinction does not matter, because it argues that growth is sufficient to generate genuine development. Thus, the 'World Bank view' argues that there is no need for special policies or government intervention to ensure that growth is creating development. This sub-section elaborates on the views concerning the growth theories and highlighting whether growth itself is sufficient to generate genuine development.

The first issue is 'why economic growth is good for the poor'. As mentioned by Kiely (2004), the 'World Bank view' believes that globalisation (openness) and economic integration through financial and trade liberalisation will encourage competitiveness and efficiency, which will produce economic growth, that will 'trickle-down' to the poor (Kiely, 2004: 7-8). Dollar & Kraay (2002: 196-199) argued that the average incomes of poor people varies proportionally with the average per capita income, and that any growth-enhancing policies and institutions which raise the average incomes of poor people can be successful for poverty reduction. In short, economic growth is good for poor people and can benefit anyone else in the community proportionally

(Dollar & Kraay, 2002: 196-199). That is why Dollar & Kraay call for 'pro-poor' growth policies capable of increasing the share of income of poor people in society. (Dollar & Kraay, 2002: 196-199).

As mentioned previously, the 'trickle-down' effect means that, economic growth is going to trickle-down causing structural changes by creating new opportunities such as new investment, creation of jobs, increase the income of poor people and reduce poverty. This expectation is derived from the standard neoclassical growth theory which predicts the 'convergence property' centred on the idea that '*laissez-faire*' generates economic growth in poor countries.

The neoclassical growth model uses a Cobb-Douglas production function of the form:

$$Y= A\ (t)\ K^{1-\beta}L^{\beta}$$

In the expression, Y symbolises the net national product, K symbolises the stock of capital, L symbolises the stock of labour, and A symbolises the level of technology. Technology in the neoclassical model is improved from outside of the model (Romer, 1994: 4). The convergence property is drawn from the neoclassical growth property of diminishing returns to capital. This means that with a low starting level of real GDP per capita, a country is expected to have higher economic growth (Barro, 1996: 4; Arjona et al., 2003: s121). The only impediment to convergence in this view is the state implementing 'bad' polices that 'interfere' with market processes. This argument (i.e. blaming the state) is prevalent in explanations of sub-Saharan Africa's post-colonial performance. This is discussed further below and more extensively in Chapter 3. The convergence property means that countries will conditionally converge to the same levels of income, if they have the same economic characteristics (labour force growth, saving rates, and so on) (Todaro & Smith, 2011: 146). The low savings rates that continue to characterise sub-Saharan Africa (see Chapter 4) are not necessarily an impediment to growth in this conception, because developing countries can access global savings by embracing foreign investment and 'financial globalisation' (Fisher, 2003: 14; Mishkin, 2006, cited in Rodrik & Subramanian, 2008).

The second issue is whether growth causes development. Neoclassical development theory also claims there will be a qualitative effect: i.e. that growth will lead to economic development. The argument is that the economy will go through the Lewisian turning point whereby underdeveloped countries move from being dominated by a traditional subsistence sector to a more urbanised and industrialised economy (modern sector) (Todaro & Smith, 2011: 115). This suggests that in the early stage of economic development there is significant surplus labour

supply in the traditional or subsistence agriculture sector which is available for employment in the expansion of the industrial or modern sector. It is assumed that the marginal productivity of this unskilled labour force supply is below the subsistence wage which in turn constitutes a wage base in the modern sector (Golley & Meng, 2011: 556). Economic growth in the modern sector draws labour from the traditional sector, with a rapid expansion of labour demand at constant wages. This continues until the surplus of labour is used up, after which shortages of labour would mean that wages then start to rise in both sectors, and inequalities between the two sectors begin to decline. The Lewisian turning point leads to structural transformation with a more capital and technology-intensive growth process (Hofmeyr, 1994: 63-65, see also Knight, 2007: 3-4 and Golley & Meng, 2011: 556). This leads to 'modernisation' with both rural and urban areas forced to improve productivity in order to afford more expensive labour (Hofmeyr, 1994: 63-65). This describes how some developed countries and recently industrialised countries (such as South Korea and Taiwan) achieved industrialisation (Knight, 2007: 3).

Considering that people are moving from traditional occupations in the rural areas into non-traditional occupations in the urban areas, this also stimulates a social demographic transition particularly for women. Women are expected to be more educated in urban areas than in rural areas. For instance, women with a higher level of education tend to make greater use of birth control (Bongaarts, 2010: 3). Thus, there is a significant decline of the fertility rate, while there is an increase of the surviving number of children. In other words, the Lewisian turning point is also associated with a demographic transition (see Ryder 1986; Bongaarts, 2010: 3).

Furthermore, many studies have identified a positive relationship between development (modernisation) and democracy. Structural change (such as urbanisation, factory production, improvements of communication and transportation) gives the working classes and urban middle classes and small farmers the opportunity to organise themselves and put pressure on the dominant groups (upper classes, landlords and bourgeoisie) in terms of economic and cultural power. Hence, this will lead to democracy and political maturation (Huber et al., 1993: 74-75). The idea is that development induces democratisation and the upsurge of the middle classes and working classes in the urban area is going to counterbalance the dominant groups. The level of democracy is related to the level of development (Huber et al., 1993: 76). Huber et al. (1993: 83-84) argued that "capitalist development transforms the class structure... thus making it more difficult for elites to exclude them politically. Simultaneously, development weakens the landed upper class, democracy's most consistent opponent".

In essence, the 'World Bank view' is that growth (caused by the 'basic package') is sufficient to generate development. So, for example, growth leads to the Lewisian and demographic transitions. Society is transformed from agrarian dominated to urban middle class dominated. The urban middle class is educated and has a strong work, savings and democratic ethic. Briefly, the economy is 'modernised' and its subsequent growth path sustained.

Collier (2006: 189-190) accepts the 'World Bank view' that African countries would flourish and modernise if they followed the 'World Bank view' policy package. But Collier (2006: 189-190) argues that this tends not tohappen because politics interferes in the process. This echoes the point made above about why convergence might not occur. The argument is that African countries made 'bad choices' (i.e. excessive economic regulation, attempts to redistribute resources to favoured groups, conflict and boom-bust cycles etc.). Collier (2006) acknowledges that it is difficult for such countries to break out of patterns determined by 'bad choices'. That is why Collier (2006) argues that, African governments need the IMF (International Monetary Fund) and WTO (World Trade Organisation), which force them to embrace globalisation and weaken the grip of local elites. The assumption here is that if Africa follows the 'basic package' of the 'World Bank view', then growth and development would follow. The only problem is that the political interference and structural problems of African countries prevent them to follow the 'basic package'.

The extreme market fundamentalism (free-markets, private property and individual incentives, and a restricted role for government) of the "Washington Consensus" has softened to the "Post-Washington Consensus" (Gore, 2000: 790-794). Nevertheless, this is just a minor change from market fundamentalism, but with a particular attention on the social aspects and the role played by government intervention in case of market failure (Gore, 2000: 792-794). It appears that the Washington Consensus has shifted away from market fundamentalism, but in fact the free-market and liberalisation (privatisation) remain the pillars of neoliberalism.

2.4 The 'alternative view'

As discussed in Section 2.3, the Bretton woods institutions (the World Bank and the IMF) have advocated liberalisation and free-market policy to developing countries as the main channel to stimulate economic growth and development and to fight poverty. Contrary to this, the 'alternative view' argues that liberalisation and laissez-faire have been more harmful than curative. Section 2.4.1 considers evidence (focussing on South Korea and Latin America) that

appears to contradict the 'World Bank view'. Section 2.4.2 explains the logic of the 'alternative view', and in particular, why growth might not be sufficient for sustainable development.

2.4.1 Did other developing countries follow the orthodox path?

Before the crisis of 1997, Korea was known as a protectionist economy. Korea did not open itself to foreign industrial and financial investors who wanted to invest in the Korean economy, which was providing a lot of profit opportunities (Crotty & Lee, 2009: 150). Western economists (IMF and World Bank) praised the East Asia economic model; by which Korea sustained long term development (Crotty & Lee, 2009: 150). But in the decade preceding the crisis, the government stopped implementing industrial policy and removed regulation and coordination concerning the Chaebol conglomerates investment decisions. Domestic financial markets were substantially liberalised (the creation of new non-bank financial intermediaries that were not under government regulation). Finally, government reduced restrictions on short-term capital inflows. In addition there was a big pressure coming from the external neoliberal forces (Crotty and Lee, 2009: 153).

Therefore, industrial policy was stopped and government regulation removed, and the Chaebol conglomerates could freely invest in the financial foreign market. The reforms undertaken by the Korean government to liberalise brought the huge problem of debts to foreign banks, which increased between 1994 and 1996, and peaked at $120 billion by late 1997. These debts were used to finance Chaebol investment spending (Crotty & Lee, 2009: 153). In other words, liberalisation was leading Korea toward an inevitable financial crisis. After the crisis, under the neoliberal economic regime imposed by the IMF on the Korean economy, economic performance was not good. For example, GDP growth declined from 8.0% to 4.3% and real consumption growth declined from 7.7% to 3.0% between 1998 and 2006, compared to the earlier period, 1987 to 1997(Crotty & Lee, 2009: 154). Crotty & Lee (2009: 151) argued that "…the major cause of the crisis was not inefficiencies in the structure of the Korean development model, but rather contingent inefficiencies created by liberalisation … This liberalisation process weakened the structural integrity and coherence of the traditional Korean economic system." Crotty and Lee (2009: 149-154) claim that the IMF imposed on Korea to adopt radical structural reforms and the neoliberal model because it was good for their own interests. The IMF was not trying to help Korea to solve their problem of liquidity during the financial crisis in 1997. The Korean development model was functioning correctly without adopting the orthodox policies (neoliberal model). Martin Feldstein, chairman of the Council of

Economic Advisors under President Reagan, said that, Korea needed just to restructure its foreign bank loans; so; that Korea could have the time to accumulate necessary reserves to services its debts (Crotty & Lee, 2009: 154).

For the Latin America case, Wood (2009: 139) contests Reid's assessment about the positive effects of the Washington Consensus, based on the three main elements: macroeconomic stabilisation, liberalisation and privatisation. These policies were implemented to fight against inflation, to remove protectionist barriers and allow trade and investment and good redistribution or allocation of goods and services through markets (Wood, 2009: 139). Reid (2007 cited in Wood, 2009: 136) has recognised that at the end of 1990, Latin America was the most open continent in the world and implementing all the policies imposed from the Washington Consensus. Reid (2007cited in Wood, 2009: 136) argued that Washington consensus policies achieved success in Latin America (particularly in Chile, Argentina, Mexico and Brazil) (Wood, 2009: 136).

The Washington Consensus did well in the privatisation of public services by promoting greater efficiency in productivity and improving infrastructure (Wood, 2009: 139). But the benefits of that privatisation have been insignificant or almost invisible. Reid (2007) admitted that overall the Latin American economic performance was disappointing. Growth rose in the early 1990s and stagnated between 1998 and 2002. The reason for the bad economic performance was because many reforms needed to be made (technology needed to be updated or modernised, a need to improve transport, to reinforce and strength institutions and so on). Latin America was following the neoliberal programmes but with a new upsurge of a new consensus which emphasised equity and the role of government to achieve it (Wood, 2009: 140). For example, Chile has achieved the most significant growth in Latin America. Brazil and Mexico have pursued anti-poverty programmes, focused on the social aspects. The rate of poverty declined and income distribution became less unequal in Brazil. Reid (2007) argued that the neoliberal model freed up resources for social spending which were held by the state-owned companies in Latin America (e.g. Brazil and Mexico) (Wood, 2009: 140).

Wood (2009: 142) disagreed with the all assessments made by Reid (2007) concerning the positive impact of the Washington Consensus in Latin America. For example, employment and real wages were severely affected by the effects of the neoliberal restrictions (Latin America's unemployment rate picked up from 5.8% to 10.4% between 1990 and 2000) (Wood, 2009: 142). Wood (2009: 142-143) did not accept the fact that the inequality was reduced between rich and poor people in Latin America. Wood (2009: 142-143) did not deny that the number of poor

income people measured by income probably dropped. However, the living standards of the poorest did not have an impact on the social level of poor people. In Chile, the stated-subsidised pension system represents 5% of the GDP contribution, which is insufficient to deal with the levels of social disparities (Wood, 2009: 142-143).

The Washington Consensus has not only brought some changes in terms of opportunity and wealth distribution on the economic structure in the different countries in Latin America. These processes have been accomplished through de-industrialisation and tertiarisation with a great emphasis on export-growth which has compressed levels of domestic consumption, even though urbanisation has overflowed the cities with unsatisfied needs (Wood, 2009: 147). Latin America has inherited neoliberal legacies which have caused much damage to the economy. For example, Mexico was struck by the financial crisis in 2008 with a decrease of capital inflows and a high rate of unemployment (Wood, 2009: 147). In short, Latin America has been left with huge socio-economic dislocations from the orthodox policies (neoliberal model), which have weakened any potentiality of self-development. The sad reality is that the rich are still getting better off, while the poor remain in precarious living conditions and Latin America remains very vulnerable to outside shocks (Wood, 2009: 147).

In summary, Korea and Latin America did follow the neoliberal model and structural adjustment programmes. A case can be made that, not only has the neoliberal doctrine failed to promote sustainable development, it has in one way or another disrupted the good functioning of their economies. However, the 'alternative view' argued that the bottom line that is the laissez-faire or the invisible hand did not work in the way to promote the general welfare but rather to keep and maintain those who are already well-off, and failed to give many opportunities toward a high level for the vast majority of people (Todaro & Smith, 2011: 130). As Crotty & Lee (2009: 167) argue, developing countries should not accept any liberalisation policies, which can harm and weaken the economy. The liberalisation policies affect and destroy the capacity of nations to achieve their own economic goals.

2.4.2 Sustainable development: the theoretical basis of the 'alternative view'

So far, this chapter has set out the 'World Bank view' and considered some evidence that appears to be at odds with it. This section will elaborate on the alternative view which argues that development goes beyond economic growth and calls for particular attention to human development as an important element for sustainable economic development.

Often 'development' is associated with the term 'sustainable'. Concerning the notion of 'sustainability', diverse definitions have been proposed. One of the most widely accepted and known is defined by the Brundtland Report that development is sustainable if it "meets the needs of the present without compromising the ability of future generations to meet their own needs" (The World Commission on Environment and Development, 1987, cited in Munier, 2003: 10). The main concepts in the Brundtland Report are: development, present, and future. Let us examine the different concepts as explained by the Brundtland Report (Munier, 2005: 10-11):

- Development means economic growth, social progress and environmental protection;
- The present refers to the need to act in the present with a view to achieving growth that comprises not just economic progress but also environment and social advancement;
- The future refers to the long-term future inhabited by our descendants, that is, the children of our children's children, not to the immediate future.

Sustainable development has been broadly defined as "the kind of human activity that nourishes and perpetuates the historical fulfilment of the whole community of life on earth" (Bossel, 1999: 2). Whereas 'sustainability' is often associated with the natural environment, it should also clear that economic, human development and political aspects are included.

Indeed, Bossel (1999) argues that sustainable development of human society embraces all aspects such as environmental, material, ecological, economic, legal, cultural, political, social and psychological. These aspects require more much attention to constitute an acceptable form of sustainable development (Bossel, 1999: 2-3). For example, a democratic society may be more securely sustainable than a brutal dictatorship. To some extent, human development is self-sustaining. Often, when people reach a certain levels of human development, they attempt to maintain and sustain that level such as good health and education for the coming generation (Ranis & Stewart, 2000: 55).

Although it is not the main focus of this study, environmental conditions are an important aspect in improving the quality of life and the maintenance of ecosystems. This is particularly so in sub-Saharan Africa, where 'growth' remains largely dependent on the exploitation of natural resources (Arbache & Page, 2009). Economic development and environment management are often assumed to be at odds with each other. The idea is that rapid growth only comes with environmental degradation, and an improved environment can come only at the cost of reduced growth and development.

In some situations, rapid economic growth is creating pollution that reduces welfare and incurs clean-up costs in the future. If rapid economic growth is possible only through depleting resources (such as clear-cutting forests to support the timber industry), growth may not be sustainable and may come at very high cost (Perkins, Radelet & Lindauer, 2006: 758). For example, prudent management of fisheries can help provide a sustainable source of food for fishers and their families or support larger-scale commercial fishing (Perkins et al., 2006: 757). Development and environmental goals are complementary, and reducing environmental degradation can help lower production costs and directly improve economic output and welfare (Perkins et al., 2006: 758).

As mentioned in the previous section, economists have broadly defined the notion of sustainability in economic terms. Economists define sustainable economic development as an improvement in wellbeing today which will not reduce or decrease the improvement of wellbeing tomorrow (Barbier, 2005: 14). In other words, sustainable economic development must guarantee that future generations should also experience at least the same levels of economic welfare as the present generation. Economists have clearly expressed that sustainable economic development as a sustained increase in per capita welfare over time (Pezzey, 1989 cited in Barbier, 2005: 14). Furthermore, "sustainable economic development is… directly concerned with increasing the material standard of living of the poor at the 'grassroots' level, which can be quantitatively measured … in general terms, the primary objective is reducing the absolute poverty of the world's poor through providing lasting and secure livelihoods" (Barbier, 1987: 103 cited in Redclift, 1992: 396). This clearly shows that sustainable economic development is really concerned with social economic goals rather than only environmental aspects (Redclift, 1992: 396).

There are very serious questions about the sustainability of the sub-Saharan African growth path. In the 1980s and early 1990s, sub-Saharan Africa experienced a pattern of "continuous economic decline, persistent stagnation, and spurts of growth which simply proved unsustainable" (Akyüz & Gore, 2001: 265). The 'alternative view' argues that the adjustment programmes did not address the structural problems whichAfrican countries have confronted (Mkandawire & Soludo, 1999: 50). According to Arbache and Page (2009: 1) the average GDP per capita growth (Purchasing Power Party) has been increasing in sub-Saharan Africa, along with the rest of the worldsince the mid-1990s. Nevertheless, African countries are still characterised by primary sector and tertiary sector dominance and other structural problems. This suggests that African countries have not developed a good structure of production which encourages sustained

investment. Akyüz (2006: 8) argues that developing countries need to increase investment at least between 20% and 25% in order to break out of the trap of low investment, low savings, and heavy reliance on primary export sectors.

Contrary to the neoclassical growth model, the return to capital (and market profitability) is not 'naturally' high in poor countries. Huang (2002: 547-550) argues that market failure is caused by the presence or the failure to develop competitive domestic firms and industries. Therefore, there is a need for various strong policies which directly encourage and channel investment towards profitable sectors, where firms are able to produce at lower cost and achieve economies of scale. In other word, firms should be able to invest and produce high value exports which in return give profitability and enable firms to increase savings; as a result firms reinvest in new investments and improve productivity growth (Huang, 2002). In addition, Akyüz and Gore (2001: 267) emphasise that investment needs to be sustained and to lead to 'investment transitions' through a long-term process of capital accumulation based on a virtuous circle of rising savings, investment and exports. Investment should be directed to the correct industries and firms that have the potential to achieve economies of scale through imitation, adaptation and learning process by promoting oriented exports, whereby these generates profits and savings which turn flow back into new investment (Akyüz & Gore 2001: 267).

By contrast, as discussed in Section 3.2, African growth seems to be driven by 'external' factors (e.g. commodities price booms) and high domestic consumption expenditure. Sub-Saharan Africa boom growth has been followed by "investment slump, rather than being translated into a virtuous growth process" (Akyüz & Gore, 2001: 267). From that note, it is important to mention that the agriculture sector is a very indispensable ingredient to promote industrialisation, particularly at early stage of development. Thus, there is also a need for policies designed to increase the contribution and productivity of agriculture to the rest of the economy. This is discussed in detail in Chapter 3.

In the 'World Bank view', the failure to boost savings in sub-Saharan Africa (in contrast to regions that have experienced 'investment transitions') does not necessarily constitute a barrier to development (as discussed in Section 2.3). In this view, any shortfall in domestic savings would be supplemented by capital inflows which would be attracted by higher returns in developing countries. However, there is a debate about the effectiveness of capital inflow to boost 'development'. The idea here is that capital inflows (including foreign direct investment (FDI) and aid) are not necessary 'good for development'. Firstly, there is evidence that sub-Saharan Africa has experienced significant capital outflows (Jomo & Rudiger, 2008: 10), many of them

illegal. Secondly, even when developing countries do experience capital inflows there is evidence that financial globalisation has not been increasing investment and promoting economic growth (Rodrik & Subramanian, 2008). It seems that countries which experienced rapid and sustained growth (investment transitions) did not depend on capital inflows (Rodrik & Subramanian, 2008).

Even in the form of foreign direct investment, capital inflows may have a negative effect on economic activity. Capital inflow can lead to appreciation of the currency of receiving country, reduce profitability in the tradable sectors and promote consumption (Ibarra, 2011: 2080). For instance, Mexico received an enormous amount of capital inflows in the 1990s and early 2000s (Ibarra, 2011: 2080). But despite this, Mexico did not experience rapid economic growth. Instead, investment slowed down due to the low profitability caused by the appreciation of the currency (peso) (Ibarra, 2011: 2080). The effect of capital inflows such as foreign direct investment is still debatable concerning its role played in developing countries in promoting investment and economic growth.

The section has argued as follows. Firstly sub-Saharan Africa may still be trapped in an economic vicious cycle signalled by low saving and weak industrial structure. To come out of this vicious cycle there is a need for good policy. Moreover, the low savings problem cannot be solved easily by financial globalisation and capital inflows. Secondly, the growth and investment that has been experienced has been based on primary sector (externally driven) and tertiary sector expansion.

Apart from the structural problem mentioned above (related to the vicious cycle with low investment, low economic growth and low savings), low human development seems to be part of this vicious cycle. According to Human Development Report (1996) from 1960 to 1992, there was not a single country that moved successfully from 'EG-lopsided' development (i.e. with low levels of human development and fast economic growth) to a virtuous circle (i.e. under which economic growth and human development are reciprocally reinforced) (Soubbotina, 2004: 8).

Ranis et al. (1997: 1-2) explored the link between economic growth (EG) and human development (HD). Ranis et al. (1997: 2) argue that there are chains of causality between EG and HD. Firstly, there is a relation from EG to HD. Increases in income contribute to HD through household and government activity and civil society. For instance, households spend their income on items which contribute directly to HD, e.g. food, potable water, education and health. These expenditures depend on the level and distribution of income between different

households as well as on who controls the allocation of expenditures within households (Ranis et al., 1997: 2).

Secondly, there is also a relation from HD to EG, which is supported by ample evidence that when people become healthier, well-nourished and educated they contribute more to economic growth (Ranis et al., 1997: 8). In addition they argue that a higher level of HD affects the economy through improving people's capabilities and consequently their creativity and productivity. The health and education of a population constitute an important factor for growth (Ranis et al., 1997: 8).

This analysis implies that countries need to follow a 'balanced growth' with both economic growth and human development. In order to explore this empirically, Ranis et al. (1997) divided country performance into four categories namely virtuous, vicious and two types of lop-sidedness. HD lop-sidedness means there is a good HD but weak growth. EG lop-sidedness means having strong economic growth which is not accompanied by human development improvement. In the vicious cycle, both human development and growth perform poorly and in the virtuous cycle, both human development and growth perform well (Ranis et al., 1997: 19).

Ranis et al. (1997: 21-22) said that "Our most significant finding is that… in the case of EG-lop-sidedness, all the cases reverted to a vicious cycle… Our analysis suggests that it is not possible to move to virtuous via EG lop-sidedness, as this proved a dead end." Ranis et al. (1997: 23) argue that any economic development reforms or policy reforms must be focused on strengthening human development, not only on economic growth. This consideration is very important for the developing countries (especially most sub-Saharan African countries) experiencing growth for a certain period without significant improvements in human development.

If this is correct, it is essential to enact policies that address both economic and social dimensions. However, it is also important to emphasise that such policies need to be carefully designed. Thus, economic policies need to target more than economic growth. They also need to target structural transformation. Adésínà (2007: 25) argues that it technically impossible to deal with the objective of poverty reduction without developing the productive capacity of the sub-Saharan African economies. As Chapter 3 argues, many of the factors that are described as causes of sub-Saharan Africa's poor performance (such as corruption, civil wars, and 'bad' policy choices) can be regarded (at least in part) as a consequence of its lack of economic development.

2.5 Conclusion

The objective of this chapter was to clarify some conceptual issues around economic growth and sustainable development. The problem arises when it comes to asking how 'development' or 'sustainable development' can be achieved. The chapter reviewed two different views concerning sustainable development.

Firstly, the 'World Bank view' claims that economic growth is sufficient for long-run economic development. In this view economic growth is the only alternative to fight against and reduce poverty and inequality and trigger development. The notion of the 'trickle-down' effect suggests that growth automatically leads to economic development and countries experience qualitative effects (structural changes and demographic transitions). The argument is that the economy will go through the Lewisian turning point whereby underdeveloped countries move from being dominated by a traditional subsistence sector to a more urbanised and industrialised economy (modern sector). This expectation is derived from the standard neoclassical growth theory which predicts the 'convergence property' centred on the idea that 'laissez-faire' generates economic growth in poor countries. This suggests that with a low starting level of real GDP per capita, a poor country is expected to have higher economic growth. However, the only obstacle to convergence in this view is that of the state implementing 'bad' policies that 'interfere' with the market processes. This argument prevails in explanations of sub-Saharan Africa's post-colonial performance.

Secondly, the so called 'alternative view' argues that liberalisation and laissez-faire have been more harmful than curative. The 'alternative view' claims that economic growth by itself cannot automatically generate sustainable development. This view argues that economic growth is necessary, but it needs to be accompanied with an improvement in human development and an implementation of certain socio-economic policies capable to promote development. Human development is considered as the condition sine qua non to achieve genuine development. In addition, some empirical evidence has been presented to assess and confront the two opposite views concerning the question of sustainable development.

As mentioned in this, chapter sub-Saharan Africa has experienced an episodic growth path, but it remains characterised by primary sector and tertiary sector dominance and other structural problems. As a result, sub-Saharan Africa is unable to build a sustained long-term accumulation process through a virtuous cycle of high savings, investments and exports which lead to 'investment transitions'. This suggests that growth must be the 'right' growth (it must have

'qualitative' dimensions and lead to structural change), and there is a need of right economic policies designed to achieve it. Furthermore, sub-Saharan Africa continues to exhibit poor human development. That is why Ranis et al. (1997: 23) argued that any economic development reforms or policy reforms must be focused on strengthening human development, not only on economic growth. This is particularly relevant for sub-Saharan Africa as a case study to investigate the question of sustainable development. The next chapter is going to elaborate on the challenges faced by sub-Saharan Africa to achieve sustainable development.

CHAPTER THREE: THE LITERATURE ON CHALLENGES TO SUSTAINABLE ECONOMIC DEVELOPMENT IN SUB-SAHARAN AFRICA

3.1 Introduction

Chapter 2 presented an overview of the broad theory of development covering two dissimilar views and giving some illustrative evidence on the issues concerning how to achieve genuine sustainable development. Sub-Saharan Africa has experienced episodes of economic growth which tend to be short and unsustainable (fragile). Nevertheless, excluding South Africa, sub-Saharan Africa's real GDP per capita growth was expected to attain 6.4% in 2011 and 6.2% in 2012 making sub-Saharan Africa one of the fast growing developing regions comparable with China, India and Brazil (World Bank, 2011: 3). This chapter attempts to analyse all the evidence and to explain past and recent sub-Saharan African growth, focusing on its episodic nature. In particular, the chapter explores the debate about whether it is still useful to consider sub-Saharan Africa as 'post-colonial' and whether its recent growth episodes mean that sub-Saharan Africa has shaken off the colonial legacy. The rest of the chapter is divided as follows: section 3.2 provides an overview of African growth trends and proximal causes. Section 3.3 describes and analyses the political and economic post-colonial legacy in sub-Saharan Africa. Section 3.4 deals with the constraints. Finally, section 3.4 concludes the discussion.

3.2 Overview of Africa's growth trend

Economic and social performance in post-colonial Africa can be divided into four periods. The first period, from the mid-1960s to the early 1970s was characterised by fast economic growth. Gross domestic product per capita increased by an average of 3% annually. The second period began roughly in the early 1970s; it was characterised by an augmentation of foreign debt, deterioration in terms of trade and decline of economic performance. The third period in the 1980s is marked by the debt crisis (Mugerwa, 2001: 13-14). During this period, there were attempts at stabilisation and of reforms in the market (i.e. devaluation, reduction of budget deficits, elimination of food and transport subsidies). In the same period, the Bretton Woods institutions advocated the implementation of Structural Adjustment Programmes (SAPs). The fourth period starts in the 1990s, characterised by several reforms and associated with political changes associated with the 'Washington Consensus' policies (Mugerwa, 2001: 14-15). By the 1990s, there were signs of returns to growth. Briefly, Africa's growth path has been episodic.

Between the 1960s and 1970s, the growth rate was positive, and between the early 1980s and 1990s, GDP growth started to fall significantly. In the mid-1990s, Africa's growth again started to become positive, with signs of an increased growth rate in the early twenty-first century (Fosu, 2010: 62). But there is still a concern that this growth may be episodic and unsustainable.

In addition to the fact that African growth seems to be episodic, sub-Saharan African growth patterns differs across the regions. For instance, most of the African countries which were considered as growth leaders during the 1960s such as Cote d'Ivoire, Gabon, Kenya, South Africa, Togo, and Zambia had fallen significantly behind by the 2000s (Fosu, 2010: 64). In contrast, some African countries that had been doing badly started to take the lead in terms of growth in the early 1990s, such as Burkina Faso, Ghana, Benin, Sudan and Senegal (Fosu, 2010: 64). Exceptionally, Botswana sustained a growth rate of about 10% annually over the entire period (1960-2000). Botswana has registered an average growth rate of at least 5% every ten year period (Fosu, 2010: 64). It is very important to note that from the 1990s up to now, most African countries have started to get back to the growth paths and continue to show a progressive growth (World Bank, 2011: 3).

Arbache & Page (2009: 2-5) attempted to identify and analyse Africa's growth accelerations and decelerations across countries. Arbache & Page (2009: 2-5) explored growth accelerations and decelerations before and after 1995 according to the characteristic of each African country (such as resource-rich economies, non-rich economies, resource-poor landlocked, non-resource-rich coastal, coastal economies and conflict countries). They conclude that economic growth has been different among Africa countries and followed divergent growth patterns. For instance since 1995, oil exporters grew faster than other all other African economies, at approximately 4.5% per year. Other resource-rich countries grew at the same level as other non-resource-rich countries, (approximately 1.4% per year) from 1995 to 2005. Landlocked countries without natural resources and coastal economies grew approximately at the same level of growth. Non-resource-rich coastal countries grew at 1.3% after 1995, compared to 0.2% between 1975 and 1995. Countries with major conflicts experienced slow economic growth before and after 1995, and countries with minor conflicts recoveredsignificantly after 1995, compared to their bad economic growth performance in 1975-1994 (Arbache & Page, 2009: 2-5).

The recent upsurge of good economic performance in Africa could probably be explained by domestic demand and externally driven factors. Arbache and Page note that investment and foreign direct investment (FDI) rose primarily in the resource-rich countries. A small change has been observed in investment as a share of GDP for all countries between 1975-1994 and 1995-

2005. However, there was significant augmentation of FDI after 1995 (Arbache & Page, 2009: 11-20). Besides that, strong domestic demand was observed in a number of sectors, particularly in the telecommunications sector over the past few years and is still rising (World Bank, 2011: 5). For example, mobile phone penetration in Ghana rose from 63% to 68.4% between January and August 2010. Similarly in Nigeria, the number of GSM mobile operators increased to 8.5 million new lines. Briefly, the upsurge of investment in these sectors (e.g. the telecommunications sector) has been simply driven by private and public consumption; most investment was directed to extractive industry sectors and construction sectors (World Bank, 2011: 5).

Arbache and Page (2009: 11-20) argue that during the growth episode, most African countries experienced increases in exports and imports. Trade as a share of GDP increased by 8% in the period after 1995; however, there were more significant increases of exports as share of GDP in resource-rich economies than the non-resource-rich economies. The evidence is that the growth in trade as a share of GDP was stimulated by the augmentation of trade exports from the resource-rich countries and that African countries are highly dependent on a few traditional commodities. For instance, the rise of commodity prices and hence terms of trade has been important for metal, mineral, and oil exporters (e.g. Republic of Congo, Gabon, Angola and Zambia). Overall, growth acceleration was more significant in resource-rich economies (mineral-rich economies) than non-resource-rich economies (without natural resources) (Arbache & Page, 2009: 20).

In summary, the proximate causes of growth patterns in Africa have been driven by external factors (such as commodity prices, trade, aid and so on) and domestic consumption. They do not seem to be caused by improvements in the total factor productivity or the propensity to save. The main concern here is whether the current growth is different to the previous growth experiences. Is there any reason to think that it will lead to genuine and sustainable development? The next section will describe and analyse the political and economic post-colonial legacy in sub-Saharan Africa in order to explain and understand how it influenced growth patterns in the past and whether it continues to jeopardise potential sustainable development.

3.3 Political and economic post-colonial legacy in sub-Saharan Africa

3.3.1 Introduction

In 1885, the African continent was divided into different territorial units by the colonial powers at the Berlin Conference. The division of the territories was made arbitrarily in a way that kingdoms, states, communities and peoples were just joined together, without taking into

account their socio-economic and cultural aspects. Those colonial boundaries inherited from the colonial powers by the newly independent African states during the 1960s constituted a challenge for them to achieve territorial integrity and national unity (African Renaissance, 2004: 10). In addition, the framework of colonial laws and institutions was not designed to overcome local division, but to exploit it.

In the 1960s, sub-Saharan African colonies were portioned as sovereign states. In 1960 seventeen sovereign states became independent and between 1961 and 1964 eight more obtained their independence. These new states were superficially democratic. But unfortunately this was followed by a series of coups d'état and constitutional revisions that led to the establishment of one-party states (Waites, 2012: 1). The important question here is whether and how these frontiers, language and culture inherited from the colonial power affected the new states and whether this is still a relevant factor in the contemporary world (Waites, 2012: 2).

On the one hand, Waites (2012: 31-32) argues that the persistence of poverty and under-development in sub-Saharan Africa can no longer be linked directly to the colonial legacy. Post-colonial states have had opportunities (for example, the 'wasted' commodity boom of the 1970s) to decide on policies and economic orientation which could promote development and reduce poverty (Waites, 2012: 31-32). On the other hand, there is a strong case that the colonial legacies still prevail from the past to the present and remain visible and painful (see Waites, 2012: 25 for references). Collier (2006: 190) argues that African countries made the 'wrong choices' in the 'critical decade' of the 1980s, and these choices have trapped countries in vicious cycles of excessive regulation, boom-bust cycles, interethnic redistribution and violent conflicts. However, it can be argued that 'choice' was very constrained in, after, and before the 'critical decade'. The notion that African countries uniformly 'chose' the wrong development paradigm (or were kleptocratic) in the 1960s and 1970s is disputed by authors like Adésínà (2009). African states were still struggling with nation-building and with the colonial legacy. In other words developing countries that had accumulated debt, whether through mismanagement or attempted national building were unable to make the kinds of 'policy choices' that led to successful development in countries like South Korea. This led to African countries being very economically vulnerable in the 1980s. Arrighi (2003: 55) argues that the 1980s were decisive in the history of the 'global South': the high interest rates that followed the Volcker deflation (1979) 'provoke[d] a major bifurcation in the fortunes of Southern regions in the 1980s and 1990s'. Thus initial conditions (e.g. frontiers, languages and cultures, weak economies and weak states) in the colonial experience have shaped the political and socio-economic path of sub-Saharan Africa.

3.3.2 The post-colonial legacy

Sub-Saharan Africa is politically divided into 48 states with a combined population of only half that of India. Sub-Saharan Africa is very fragmented and ethnically diverse compared to South Asia (Waites, 2012: 11-12). The colonial period and the process of decolonisation had an important impact on the political and ideological foundation in sub-Saharan Africa (SSA). Considering that African countries had been dominated under colonialism, in most of the African countries the new emerging leadership was trying to build a new sense of nationalist identity (Moss, 2007: 29). This was a new emerging force to fight against colonialism, which started to develop from the growing number of educated Africans.

African nationalism was a cultural and political movement which was trying to re-establish Africa's right not to be dominated or controlled by foreigners and to fight against all colonial ideology that oppressed African freedom and self-worth (Moss, 2007: 29). But there is something important which needs to be mentioned. Most African countries gained their independence without having to defeat the colonial regimes, albeit in many cases independence was an unwilling gift (reluctant) from their colonisers. Nonetheless, the coloniser handed over power to their chosen African successors, to some extent educated and trained in their political system. As a result, the colonisers still maintained their economic power on the new independent states and these successors continued to serve their interests of their colonisers (Rowley, 2000: 138). For example, in Cameroon the French managed to maintain control through their proxy AhidjoAhmadou, and used this experience as a model for decolonisation of their other African territories (Conchiglia, 2012). In most African countries, independence was declared and accompanied through nationalist movements. The primary aim of the nationalist movements was to constitute national cohesion and to implement plans of development once in power. The state declared that it would stand above all divergence and narrow interest groups and classes (Waites, 2012: 8-9). These nationalist movements attempted to promote national cohesion, but unfortunately they did not achieve it.

The accession of new elites to administrative power conferred great opportunities to benefit and to exploit public office for their own gain during the period of prosperity (i.e. boom of commodity prices) and led to political rent-seeking (Waites, 2012: 35). Unfortunately, decolonisation and transfer of power and sovereignty to the new states brought segmentation and fragmentation within these newly independent states. For example, ethno-regional conflicts broke out in Sudan, Nigeria, the Democratic Republic of Congo, Cameroon and other African

states soon after independence (Waites, 2012: 36; Conchiglia, 2012). The political conflicts between regional and ethnic based parties tended to destroy the nationalist struggle.

Even in African countries that had not experienced major military conflicts, major issues of governance arose. In particular, there was the problem of self-interest of African elites. Therefore, politics become completely patrimonial which lead to 'big men' in positions of power exploiting the public resources for their own interest (Waites, 2012: 192). The 'big men' position give them power over the public resources, as if they were privates assets, attached to their own and kinsmen's pockets and promoted social redistribution of goods to favoured clients (Waites, 2012: 192). Nevertheless, the politics system in Africa has emerged as oligarchic system rather than a dictatorial system. For instance, the president was surrounded by politicians, businessmen, military officers and bureaucrats utilising clientelistic networks to reinforce and reciprocally offering each other support in exchange for political power and wealth (Waites, 2012: 192).

In the post-colonial periodAfrican leaders have failed to improve the quality of life of people who reside in the urban and rural areas (Ukaga & Afoaku, 2005: 13). The nature of political power in many African states is characterised by centralising power (single party dominance) and self-interest leading to the patrimonial culture of 'big men'. This must probably be associated with the lack of democracy, lack of transparency, absence of peaceful means to change or replace leadership and absence of accountability (Mills, 2010: 1-4; African Renaissance, 2004: 12). For example, Nigerian oil revenues have been estimated at $400 billion over the last 40 years. From 1965 to 2000, oil revenues per capita increased from $33 to $325. Despite that, the number of Nigerians living on less than one dollar per day increased from 19 million (of a population of 70 million) to 90 million (of a population of 120 million) (Mills, 2010: 3). This reveals that the oil revenues did not really benefit the majority of the population.

These elites inherited from the political system of colonial regimes, concentrated all the power and attempted to repress economically and politically those who competed or challenged them for the apparatus of government (Rowley, 2000: 137). One of the reasons is that the state became the main channel of access to wealth and status. Unqualified and inexperienced staffs were promoted quickly to high positions as a result of ethnic favouritism, political patronage and nepotism (Waites, 2012: 191-192). For instance in Nigeria, at every level there was patronage and nepotism favouring home communities (Waites, 2012: 231-232).

The result was the weakening of state institutions in the sense that there was no distinction between public sources and private wealth. For example, the resources of the country are split

between the president and those around him (Moss, 2007: 38). Moreover, data shows sub-Saharan Africa countries with a low average score of corruption in public transactions compared to all developing countries, except Botswana and Namibia. Cameroon, Uganda, Kenya, Nigeria, Madagascar and Angola achieved the worst scores (Project Syndicate, 2005).

The real question is why African countries tended to have these characteristics. One the one hand, several authors has blamed African states for wasting the chance to develop their countries. Often African leaders tended to associated others (e.g. external factors) responsible of their failings (Mills, 2010: 1-4). Africa is not poor or underdeveloped because of lack of natural resource; instead these natural resources have been often used for self-enrichment of African elites, spreading corruption practices and causing deviate away from socio-economic development strategies (Mills, 2010: 1-4). Waites (2012: 232-233) suggests that Nigerians were naively indifferent to any unethical or immoral behaviour in public life (e.g. corruption).

On the other hand, authors such as Adésínà argue that not all African governments wasted their chance to consolidate democracy and to pursue development strategies. Indeed, in several African countries national unity and social development were very important to consolidate a new nation state and overcome ethnic or regional loyalties (Adésínà, 2009: S37-S39). The new African leaders were determined to promote education and economic development creates jobs opportunities, national cohesion and reduces poverty and the inequalities set up by the colonial legacy (Adésínà, 2009: S41). The national and local governments were keen to provide universal access to primary education (e.g. Tanzania, Ghana, and Nigeria) (Adésínà, 2009: S41-S42). For instance between 1965 and 1975 in Nigeria, public funds were allocated to promote universal access to primary education (Adésínà, 2009: S41-S42). The problem was not that all African leaders were unwilling to develop their countries. It was that conditions were against them.

The Democratic Republic of Congo is the most obvious case. Although, independence was given by the Belgian colonial regime, the Belgians rulers were not ready to encourage Congolese political autonomy. Instead, the granting of independence was precipitated by the surge of events. As a result there were very few elite Congolese (i.e. with secondary education or experience in public administration). Furthermore, the territory was characterised by extreme ethnic-linguistic diversity. In addition, the colonial power also attempted to maintain control over resources. For instance, several companies were inter-connected passing through the giant Belgian premier capitalist institution Société Générale and the colonial regime was the main shareholder in the corporate economy (Waites, 2012: 234). After the first election, the country fell predictably into total fragmentation and civil war (Waites, 2012: 228-270). The

misgovernment and kleptocratic excesses of the subsequent Mobutu regime, and the descent into 'Africa's first world war' in the 1990s, should be regarded not as the cause, but as the result, of these initial conditions.

In contrast, because of the different colonial practices of the British in West Africa, Nigeria had had practically a decade of experience with competitive party politics and democratic elections when it acceded to independence. Since the late 1940s, their political leaders had been familiarised with the exercise of self-government and because of policies of indigenisation, there was less foreign interference in the economy (Waites, 2012: 227-230). Despite this, Nigeria also descended into civil war and kleptocracy. Cultural and political differences among Nigeria's dominant ethnic groups were sharp. The Eastern region was dominated by the National Council of Nigerian Citizens (NCNC) which represented the Ibo ethnic group. The Western region was dominated by the Action Group (AG) which was the main drive for Yoruba political activism. The Northern region was dominated by the Northern People's Congress (NPC) representing the Hausa-Fulani Islamic elites (Waites, 2012: 230-231). Elected Nigerian politicians abused the powers of public office (e.g. bribery in the allocation of public contracts and other malfeasances), self-enrichment and led to corrupt practices (Waites, 2012: 231-232). This resulted in several back-to-back military coups and civil war. These sequences of events led to increased ethnic tension and violence (Waites, 2012: 255-270).

Another interesting case (and, not coincidentally, also one of Africa's 'big three' in terms of sheer size and diversity) is Sudan. According to El-Affendi (2002:7-9), Sudanese society is characterised by values of civility, generosity, loyalty and solidarity within family, tribes and the religious fraternity. El Affendi argues that there is very strong 'civil society' in Sudan based on ethnic and religious group solidarity and regional loyalties which tend to be closely identified witha particular traditional groups or communities. These are not good for democracy or development. Therefore democracy tends to result in political stagnation, whereby the main traditional groups or communities use political power for their own rent-seeking. In other words, these civil society values (solidarity and loyalty) do not converge to the national interest but lead to fragmentation (e.g. conflicts within ethnic and tribal groups) when they are brought into the apparatus of state. This has encouraged successive military coups. The military regime thentries to restore order and to consolidate national unity; however, military regimes prove incapable of overcoming the underlying fragmenting forces (El-Affendi, 2002: 9-10).

In summary, because of their fragmentation and weak social development, a pattern of corruption, favouritism, civil war, etc. emerges. For example, politicians are being 'loyal' and

'honest' in their own eyes when they serve only their kin. This means that democracy tends to be weak as El-Affendi illustrates. Because democracy proves unsatisfactory, there is a tendency to resort to authoritarian solutions such as military coups.

Some authors have used the East Asian development state as an example of how 'authoritarianism' is capable of imposing certain disciplines (series of reforms) on groups of firms and the business class (capitalist class) for national interest rather than individual and group interests (Chibber, 1999: 310-311). However, Chibber (1999: 311) argues that the Korean state did not simply impose a discipline over the business class, but made the capitalist or business class work together and to pursue an Export-Led Industrialisation (ELI) strategy for the national interest and mutual benefit rather than individualistic interests. Briefly, the Korean state under President Park was able to realign business class interests away from internal 'rent seeking' toward activities consistent with the national interest and hence to achieve the industrial transformation of Korea (Chibber, 1999: 338-339). By contrast, African states did not succeed in overcoming regional and group fragmentation (e.g. ethnic and tribal conflicts) and failed to consolidate democracy. African leaders have been trapped in a vicious cycle and unable to promote sustainable development.

This section has described the nature of the political system which emerged after the colonial period and how Africa's colonial experience had an important influence on political and socio-economic conditions across the African continent. Political tribalism and what Waites (2012: 214) calls 'moral ethnicity' were major obstacles to the consolidation of solidarity and national interest after independence. There is no dispute that African politicians faced these challenges. However, it is very flawed to use the post-colonial experience as a permanent excuse to justify African leaders' failures. To some extent, it is also wrong to simply adhere to the view that good governance, accountability, transparency and free-marketsas suggested by the 'World Bank view' will promote development. Nonetheless, from all of these, there is a strong sense that development needs the implementation of good economic policies. African leaders did attempt to make good decisions at some level, but failed to avoid the post-colonial traps. The next section will describe individually the strong effect of post-colonialism on the subsequent trajectory in economic, political and social aspects of growth in sub-Saharan Africa.

3.4 Constraints to Sub-Saharan African economic development

3.4.1 Introduction

The previous sections have provided an overview of sub-Saharan Africa's economic growth trends and the proximate cause of that growth. They have described the political and economic post-colonial legacy in sub-Saharan Africa (SSA). The next section will attempt to define what is called the 'external' and 'internal' constraints to sub-Saharan African development. On the one hand, SSA's economic growth has been extremely dependent on external conditions which makes sub-Saharan Africa very vulnerable to any external shocks (such as the terms of trade, pre-conditions for getting aid, in terms of competitiveness and so on). This can be defined as 'external' constraints. On the other hand, the post-colonial syndrome was discussed in section 3.3, and as explained, the political and societal structures inherited from the colonial period have left weak states unable to transform their economies. The internal constraints can be designated as political instability, concentration of political power, ethnic fragmentation, structural problems, poor infrastructure, failure to address the social issues and so forth. Furthermore, the external and internal factors are not independent of each other. The main reason that sub-Saharan Africa remains externally dependent is because of its internal constraints. The following sub-sections will try to analyse in detail and individually the structural problems (especially in the industrial and agriculture sectors) and social challenges faced in sub-Saharan Africa.

3.4.2 Fragile industrialisation and extreme dependency on external conditions

The World Bank, International Monetary Fund (IMF) and the United Nations Conference on Tradeand Development (UNCTAD) argue that low-income countries are significantly vulnerable to external shocks such as terms-of-trade fluctuations, decline of commodity prices, changes in international aid flows and conditionalities, and other adverse shocks. This has a negative impact on macroeconomic stability, debt sustainability and poverty reduction in developing countries (Raddatz, 2007: 156). The fact that African economies are still dependent on primary exports is evidently the result of their failure to adjust their economic structure. It is also related to the political factors discussed in the previous section. However, external shocks do not explain entirely the poor economic performance and underdevelopment in sub-Saharan Africa. Many authors argue that Africa's economic performance is caused by the lack of good economic policy implemented, poor infrastructure, poor quality of education and low skilled labour force, conflict and political instability and rent-seeking behaviour (Bigsten & Durevall, 2003, and Acemoglou, Johnson & Robinson, 2001 cited in Round, 2007: 4). Raddatz (2007: 156) argues that African

policy makers did not attempt to deal with the external factors and failed to implement policies which could transform their productive structures.

Most successful developing countries (particularly in East Asia) have maintained fast and sustained economic growth by developing a structure of production (industrialisation: shifting away from the primary sector to manufacturing, more technology and capital-intensive activities across sectors) which has promoted competitiveness in a range of activities (Akyüz & Gore, 2001: 266-267). Many African countries remain highly dependent on commodity exports as the main source of foreign exchange earnings and are reliant on external financing (Kousari, 2005: 169-170). For example, African countries such as Angola and Nigeria are heavily dependent on oil exports, and countries such Burkina Faso and Mali are deeply dependent on cotton exports. In general, African countries are highly dependent on exports of one or two commodities. They are therefore very vulnerable to any external shocks and this has been reinforced by their failure to diversify their export products in international markets (World Bank, 2011: 14-15). The decline in commodity prices and the failure to obtain enough foreign exchange contributed to decreases in the levels of savings and investment necessary for human and physical infrastructure development (Kousari, 2005: 169-170). That is why several developing countries have been unable to sustain economic growth through a long-term process of accumulation, rising savings and investment in the virtuous circle manner (Akyüz & Gore, 2001: 267). This process has been missing in SSA production structures, except in Botswana and Mauritius (Akyüz & Gore, 2001: 267).

The presence of poor physical infrastructure constitutes another important constraint to structural transformation and to sustainable economic development in Africa economies. Many African countries rely on infrastructure inherited from the colonial period. Sub-Saharan African infrastructure is typically deficient in three dimensions, namely quantity, quality and accessibility. For example, an indicator of quality is the percentage of roads that are paved. Data show that only 12% of roads in SSA were paved in 2000, compared to 68.4%, 34% and 31% in the Middle East, East Asia and South Asia respectively (Ajakaiye & Ncube, 2010: i5). In terms of quantity, electricity consumption per capita in sub-Saharan Africa was only 534Kwh compared with 1,665.5Kwh for East Asia in 2000. And lastly in terms of mobile phone accessibility, in 2008 the cellular pre-paid tariff was $11.8 in sub-Saharan Africa while in East Asia it was only $5 (Ajakaiye & Ncube, 2010: i5-i6). Ajakaiye & Ncube (2010: i7) argued that infrastructure has contributed to reduced inequality far more in East and South Asia than in sub-Saharan Africa.

Another important 'qualitative' issue that brings into doubt whether Africa's recent growth has entailed structural transformation is in terms of the sectoral structure of the economy. Sub-Saharan Africa's manufacturing sector declined from 17.5% of GDP in 1965 to 13.1% of GDP in 2005 (Aryeetey & Moyo, 2012: ii64). By 2011, the figure was down to 11.8% (World Development Indicators, 2012). Low and declining manufacturing shares of GDP are a concern. African countries need to modernise the structure and features of the manufacturing industry in such a way that they can diversify and transform their products before exporting, so that African products can be competitive in international markets (African Renaissance, 2004: 39). By contrast, East Asia moved from agriculture production activities into more industrial production activities (Aryeetey and Moyo, 2012: ii64). These differences in the evolution of economic structure are discussed further in Chapter 4. This also refers us back to the Lewisian model of modernisation mentioned in Chapter 2. African governments have failed to transform low productivity raw material-based economies into modern high productivity economies (Aryeetey & Moyo, 2012: ii64).

In the 1960s and 1970s, African governments prioritised industrialisation, but based it on import-substitution which included import tariffs, exchange rate controls and subsidies (Aryeetey & Moyo, 2012: ii64-ii65). This did not help domestic industries to compete with foreign industries even with a protectionist policy imposed by the state. However, sub-Saharan Africa's manufacturing sector collapsed because of several issues such as the presence of uncompetitive firms, appreciation of the exchange rate and high government debt. In the 1980s, African governments shifted away from protectionist policies.

From 1981 to 1991, Structural Adjustment Programmes (SAPs) were advocated by the World Bank (Schatz, 1994: 679). The objective of the SAPs was to stimulate countries' GDP growth, exports, savings and investment ratios. However, the critics argued that the adjustment programmes did not address the structural problem which African countries confronted (Mkandawire & Soludo, 1999: 49-55).

In other words, the manufacturing sector was not structured in such a manner that it could compete with other foreign firms (Aryeetey & Moyo, 2012: ii69). In addition, African countries did not diversify their exports away from the primary sector (extractive sectors: raw materials) (Mugerwa, 2001: 16). It seems that the import-substitution policies and the Structural Adjustment Programmes followed by African countries have not caused structural transformation. For example in Ghana, the share of GDP in industry and the agriculture sector has decreased, while the share of GDP in the services sector has grown (Aryeetey & Moyo, 2012:

ii69). This seems to indicate that structural transformation in Ghana remains questionable, despite it experiencing positive economic growth during the last two decades (Aryeetey & Moyo, 2012: ii69). Chapter 4 shows that this pattern is typical in Africa.

This reinforces the idea that African countries have failed to achieve structural transformation by shifting from the traditional sector to the modern sector. African countries wanted to build a modern sector capable of creating jobs without first fulfilling the pre-conditions (to invest in and develop the agricultural or rural sector). Because of this, people moved from the traditional sector (rural areas) to the modern sector (urban areas) without any skills to match the modern sector's requirements (Aryeetey & Moyo, 2012: ii66). This situation led to high unemployment and reduced productivity which reduced economic growth and deepened Africa's poverty. In contrast, East Asian economies invested in improving agricultural productivity before moving to industrial productivity. This helped set a foundation to facilitate the structural transformation process (Aryeetey & Moyo, 2012: ii66). For instance, Japan, South Korea and Taiwan actively promoted rural-industrialisation by directly allocating resources to the rural areas (traditional sector) (Hung, 2009: 12-13). Furthermore, high domestic savings rates allowed East Asian countries to support a strong investment-profit nexus (Akyüz & Gore, 2001: 266-267).

3.4.3 Agriculture performance

After independence, African agricultural performance started to decline. The decline of African agriculture was often associated with policies which promoted the industrial sector (urban development) rather than improving the agricultural sector (Mkandawire & Soludo, 1999: 14). The decline of Africa's agricultural production can be partly explained by colonial policies which were designed to satisfy the colonial regimes or the metropole to the detriment of Africa (Ukaga & Afoaku, 2005: 191-192). Furthermore, in the 'Africa of the labour reserves' (including such countries as South Africa, Zimbabwe, and Kenya) lands had been dispossessed from the African indigenous people who were forced into poor regions without means and modernisation to develop their farming (Arrighi et al., 2010: 412). This contrasts with countries such as China and Korea. Huang (2010: 87-91) argues that China was 'biased' towards agriculture up to about 1990. Since then it has gradually shifted to favouring the cities.

Rural African indigenous people were left with no choice other than to become temporary or permanent migrants, providing a cheap labour force to the urban (modern) sector (Arrighi et al., 2010: 412). African farmers were forced to produce crops that the colonial regimes needed rather than what African indigenous people needed (Ukaga & Afoaku, 2005: 191). This created an

imbalance between the local populations' needs, the local environment and the resources available for agricultural production (Ukaga & Afoaku, 2005: 191-192). Arrighi et al. (2010: 417-420) argue that firstly, the shortage of labour force in the traditional sector, created by further increases of labour force in the modern sector, undermined subsistence agriculture to the point where traditional agriculture collapsed and this caused urban wages to rise. Urban workers now needed enough means to improve their living conditions rather than live as migrant peasants. Urban workers needed to earn wages sufficient to cover their full cost of subsistence, which provided them with secure wages during their working life and old age and, above all, helped them to support their families outside of the peasant sector (Arrighi et al., 2010: 419). Secondly, urban wages rose due to the transformation in the nature of industry (such as the use of mechanisation and automation in mining and manufacturing which created a strong demand for an African labour force with skills) and the changes in class, racial relations and government policies (Arrighi et al., 2010: 417-420).

These points arguably make the Lewisian model and the 'World Bank view' regarding modernisation irrelevant to southern Africa's development experience. The main dispute is with the idea that growth in the modern sector attracted surplus labour from the agricultural sector (rural areas) to the modern sector (urban areas), because of economic growth in the modern sector. Unfortunately, after independence, many new political leaders failed to promote and implement the reforms needed in the agriculture sector (Ukaga & Afoaku, 2005: 192).

There is an argument that African agriculture has been suffering from a systemic 'urban biased' policy. The idea is that any policy which goes against agricultural development tends to stop economic growth and poverty reduction (Bezemer & Headey, 2008: 142-143). In addition,most agricultural policies failed because of lack of investment in the sector to increase productivity and to support an augmentation in net agricultural surplus (Akyüz & Gore, 2001: 274-275). Much of the resources collected from the agricultural sector through exorbitant taxation on export crops were reinvested into urban-industrial or urban consumption.

In contrast with East Asia, the tax funds collected for the agricultural sector were divided in two; one part was oriented to improve basic infrastructure of production and the other part was invested in the urban-industrial sector (Akyüz & Gore, 2001: 275). Briefly, this 'urban biased' policy resulted in the persistence of a big gap between the rural and urban sectors in terms of welfare. The rural areas remained struggling to access basic education, health, infrastructure and other social services compared to urban areas (Bezemer & Headey, 2008: 150). It is important to note that; most of the international donors between the 1980s and 1990s shifted their funding

from African agricultural development towards the health, environment and social sectors, while public investment in rural infrastructure declined due to a decrease in public expenditure (see Dembélé & Staatz, 2008: 23 and Akyüz & Gore, 2001: 280). Bezemer & Headey (2008: 1351) found that the levels of aid allocated to the agriculture sector and other productive sectors declined to the detriment of social sector assistance. The reduction of aid to agriculture in favour of more social sector spending has been supported as a way of reducing poverty and achieving the Millennium Development Goals (MDGs). As argued by Bezemer & Headey (2008: 1342):

> … there has been inefficient and systemic bias against agriculture... The bias is inefficient because no currently advanced country of some size became advanced without the agriculture sector first achieving substantial productivity gains in the early stages of development. The bias is systemic because it has fundamental institutional causes grounded in the political economies...

The failure to transform agriculture in Africa is linked to poverty and unemployment. The agricultural sector remains under-developed and unable to satisfy the needs of the majority of the African population living in the traditional sector. As result, the unskilled labour surplus moving from the agricultural sector becomes a burden on the urban sector, increasing the level of poverty and unemployment (Janvry & Sadoulet, 2010: ii10-ii11). Agricultural growth is very important to boost SSA's GDP, as it constitutes a large sector in the economy which can have a spill-over effect on other economic sectors. The agricultural sector represents approximately 62% of the population of sub-Saharan Africa (excluding South Africa), which is mainly constituted of poor people living in the rural areas, producing only 27% of total GDP of these countries. Nearly a third of the African population lives on less than one dollar a day, and poverty still has a strong impact in sub-Saharan Africa, particularly in the rural areas with a malnourished population (Janvry & Sadoulet, 2010: ii12-ii13; Dembélé & Staatz, 2008: 3).

Furthermore, the colonial legacy affected African industrialisation policies (Bezemer & Headey, 2008: 1352-1355). The prevalence of civil conflicts, poverty, corruption; and inter-ethnic conflicts has contributed to deteriorate and hinder agricultural performance and development. Widespread corruption has contributed to the misappropriation of resources supposed to finance the agricultural sector and deterred any entrepreneurship and private investments, and in addition, diseases such as malaria, intestinal parasites, guinea worn, bilharzia and HIV/AIDS affect labour force productivity (Ukaga & Afoaku, 2005: 201-205). Civil wars and political instability have destroyed and stopped Africa's agricultural development. Countries such as Somalia, Sudan, Rwanda, Mozambique, Liberia, Sierra Leone, the Democratic Republic of

Congo, Angola and Zimbabwe have experienced civil wars and political instability which have reduced and undermined agricultural productivity (e.g. reduced human, material, financial capacity and other resources needed to improve the agricultural sector) (Ukaga & Afoaku, 2005: 201-205).

3.4.4 Political and social aspects

The political aspects have an important influence on the social aspects in terms of structuring efficient social policies capable of inducing sustainable development. Furthermore, effective social policy is driven by social actors (political institutions, NGOs, aid donors and transnational corporations) and cultural values of society. The political institutions or political regimes (elitist, populist, democratic, authoritarian, colonialist, nationalist and so on) determine and indicate which types and how social policies will be implemented and achieved (Mkandawire, 2001: 18-20). The post-colonial period was very critical, particularly in the political aspects in Africa. African political leaders attempted to promote social policies as a channel for social cohesion and nation building during the early nationalist phase (Adésínà, 2009: S47). However, the social aspects continue to be undermined by politics. The post-colonial period with the inheritance of borders and institutional structures (e.g. political centralisation) continues to have a big impact on the success of African development and the building of national unity (Project Syndicate, 2005). As discussed above in section 3.3, African political leaders have created a system which has developed cults of personality to maintain themselves in power for decades, as the consequence of cronyism and corruption, which removes anypotential of implementing effective economic and social development (Project Syndicate, 2005). Post-colonial sub-Saharan Africa has been marked by weak states unable to provide social and infrastructure services and meet the needs of their populations. When the state becomes unable to provide social services such as healthcare, education, and human security, to its own population, state legitimacy is undermined and this can lead to domestic conflicts (Adésínà, 2009: S48).

Between the 1960s and 1970s, economic growth was considered as the main driver to achieve development. It was assumed that wellbeing and equity would be achieved automatically via 'trickle-down' (Mkandawire, 2001: 10-11). However, with time, it has been realised that economic growth has not automatically led to development. On the contrary, by the end of the 1970s, the economic growth period had been accompanied by income inequality and poverty. Hence, late in the 1970s, economists and policymakers started to think that there was a need to implement policies which could effectively address the issues of poverty and inequality (Mkandawire, 2001: 11). Human development therefore became the centre of interest.

Social protection became important in African development programmes because of the persistence of many African people living in poverty and very vulnerable (Ellis et al., 2009: 3). Basically, social service delivery targeted vulnerable people called the 'deserving poor', rather than the entire population (Adésínà, 2007: 16). The 'World Bank' policies based on stabilisation and liberalisation started to consider the social dimensions, but despite that, African countries did not experience good results or improvement in social performance (Adésínà, 2007: 16). The imposing of user-fees or cost-sharing has worsened the living conditions of poor people. Structural Adjustment Programmes were based on fiscal contraction of government (reducing public spending on the social services such as in healthcare services and education services) and they did not bring any relief in terms of reducing poverty and inequality. The burden of healthcare provision moved away from a national fiscal responsibility to the end-user, and this has increased the burden on women to supply and fulfil their home needs (Adésínà, 2009: S44-S45). The premise of those user-fees did not improve equality, resource mobilisation, quality of care or efficient use of services, and did not reduce poverty (Adésínà, 2009: S45). For example, in 2002, Nigeria spent only 1.2% of total GDP on healthcare. The diminution of health provisioning has reduced the capacity of many African governments to respond effectively to the HIV/AIDS pandemic (Adésínà, 2009: S45).

The debate here is how to formulate a social policy capable of achieving equity and reducing poverty. This is not only about the Bretton Woods Institutions' view or donor countries in general; the reality is that SSA is heavily dependent on aid and external resources. African governments have failed to implement social policies capable of improving the life of poor people, due to weak administration (Adésínà, 2009: S47). Governments have been unable to mobilise the necessary resources to finance and implement these social policies. This situation has undermined the capacity of governments to provide efficient social policies. Some studies on social policies have shown that even good state administrations were unable to develop good social policies. Most of the state's social policies suffered from under-coverage, where people who deserve to receive help are left out and the social benefits go to those are not the target group (Adésínà, 2009: S47).

Overall, it is important that African countries improve the productive capacity of the economy. This must involve structural changes in the economy, moving from extractive activities to manufacturing activities which can lead to economic development. An effective social policy objective must be sustainable and capable of reducing poverty and inequality. In addition, the achievement of sustainable development capable of reducing poverty and inequality depends on

a solid social policy regime (Adésínà, 2009: S49). Noyoo (2000: 454) argues that people constitute the means and the end of development (improving education, health, nutrition are ends in themselves). Healthy and educated people are the source of achieving development. The government must implement national policies which take into account individuals, local communities, cooperatives, private enterprises and non-state organisations capable of pursuing social objectives and providing good services, hence, to satisfy their welfare, cultural and economic requirements (Noyoo, 2000: 454-455).

3.5 Conclusion

The aim of this chapter was to give an overview of the literature on sub-Saharan Africa's growth paths and the pattern of economic development. Sub-Saharan Africa's growth paths have been episodic and not sustainable for a long period. Most sub-Saharan African countries have recently experienced growth accelerations. However, the concern remains as to whether sub-Saharan Africa growth is durable. The chapter has attempted to describe and investigate how the political and economic post-colonial issues have affected the growth pattern and the development of sub-Saharan Africa. As demonstrated in the chapter, the post-colonial legacy has played an important role in the political and socio-economic trajectory of sub-Saharan Africa. Apart from the colonial legacy in sub-Saharan Africa, the chapter has also described some constraints faced by sub-Saharan Africa. In economic terms, these challenges have been considered as structural problems which include internal and external constraints. Internal constraints include a lack of good infrastructure, and lack of structural transformation in agriculture and industry. External constraints include the dependence of sub-Saharan Africa on external conditions (e.g. terms of trade, aid, foreign direct investment, commodities prices and so on). In the social aspects, the human development or social indicators continue to perform badly.

In other words, the new political leaders have failed to promote genuine development expected by their population since the post-colonial period. As briefly reviewed in this chapter, sub-Saharan Africa is still struggling to improve the social conditions, despite attempts to implement new social policies and improve social conditions for the population (e.g. education and health). Unfortunately, the politics have influenced the social aspects. Politics has interfered and shifted away from the general interest and focused on individual agendas. As mentioned, political leaders have been interested in gaining power rather than implementing socio-economic development policies capable of generating genuine development. In short, the economic development of sub-Saharan Africa lies in its own hands. It is not fair to put the blame only on African political leaders for their failures to promote development, nor on the post-colonial period as the main

cause which undermines any potential to promote African development. Both African leaders and the post-colonial period have played a critical role in Africa socio-economic development. Moreover, it is also a fallacy to say that 'good governance and accountability' and the 'free market' will promote development. Most important is that African leaders must implement the 'right' socio-economic policies needed by the country and capable of generating sustainable development.

CHAPTER FOUR: EMPIRICAL ASSESSMENT OF GROWTH PATTERNS AND HUMAN DEVELOPMENT IN SUB-SAHARAN AFRICA

4.1 Introduction

Recall that the research is addressing the question of sustainable development, particularly in terms of economic growth and human development. The previous chapters have helped to build hypotheses and to examine the economic development trajectory in sub-Saharan Africa.

Firstly, the debate rests on how economic development should be achieved. This has led us to two opposite views, the 'World Bank view' and the 'alternative view'. On one hand, the 'World Bank view' maintains that rapid economic growth will stimulate development and on the other hand, the 'alternative view' is that development does not occur automatically. Economic growth is not sufficient; it needs to be accompanied by qualitative change observed in the political and social aspects (education, healthcare and so on). Secondly, a descriptive overview and assessment has been conducted on post-colonial sub-Saharan Africa growth trends and socio-economic trajectories.

As noted, many African economies have recently recorded fast economic growth, however, the main concern in this chapter is to assess whether the current growth episodes are sustainable. In order to do this, this chapter used the World Development Indicators (WDI) database (World Bank, 2012). Section 4.2 presents a data description. Section 4.3 outlines the methodology for the study. Section 4.4 presents the empirical findings. Finally, Section 4.5 summarises the chapter and outlines the results.

4.2 Data description

This section is simply describing and presenting some relevant data on the socio-economic performance of sub-Saharan Africa and attempts to do a comparison with other regions and countries in form of charts and tables. The dataset use in the study is presented in the appendices. Appendix 18 contains the list of countries used in the study and Appendix 19 is the list of variables. The list of countries includes 77 countries in 5 different regions such as East Asia and Pacific, Latin America and Caribbean, South Asia, sub-Saharan Africa and high income OECD (Organisation for Economic Cooperation and Development) countries for which GDP per capita (constant 2000 US$) was available for every year from 1960 to 2011. World

Development Indicators include a wide range of variables on economic and humandevelopment indicators. However, for many of these, data is missing (especially from sub-Saharan African countries). Furthermore, the intention is to provide an overview of the main statistical patterns rather than to report on all of the data in the WDI database. A smaller set of variables is used in the econometric model (section 4.3).

There are several limitations in the research study. Firstly, it was not possible to analyse other countries and variables because data were missing, sporadic and sometime started earlier or later than the period under study. For example, for most African countries, data on human development such as on school enrolment are missing and sporadic for certain years. Economic infrastructure data (such as paved roads and telephones as a share of GDP) for most African countries are missing from the 1960s to the 1990s. On economic structure variables, data on the manufacturing sector as a share of GDP only started from 1980s to 2011 and are missing for certain years and countries (e.g. the Democratic Republic of Congo, Gabon, Zambia, Cameroon, Republic of Congo and Angola).

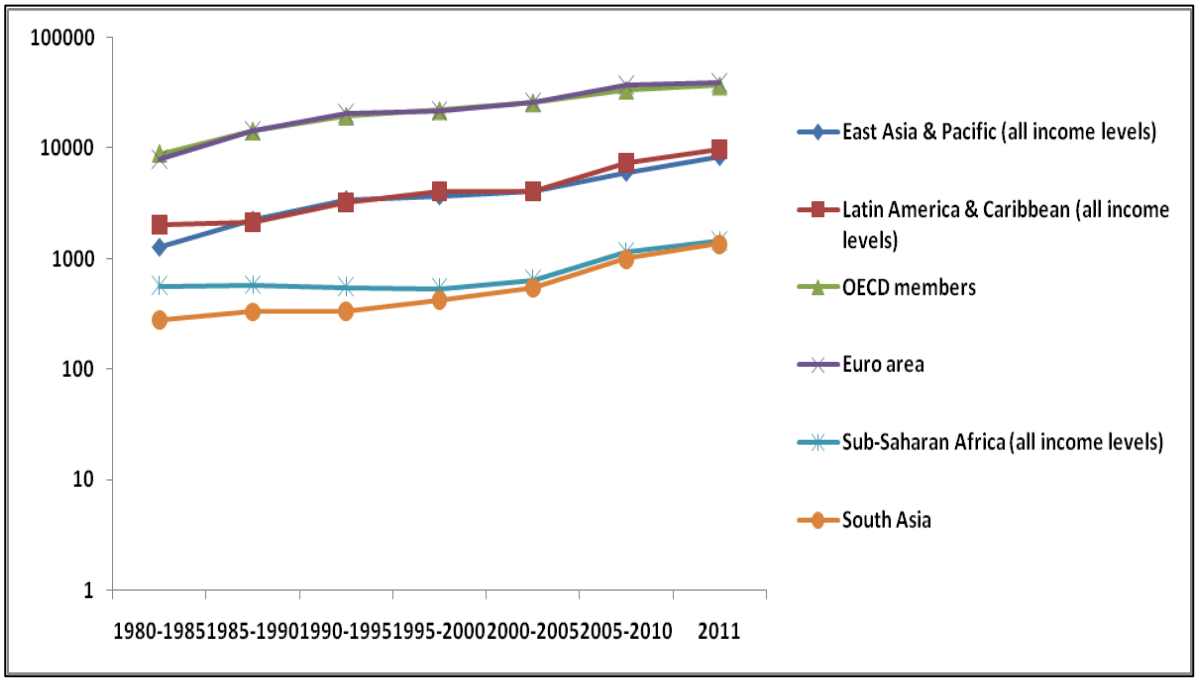
Secondly, even when data are not missing there are major questions about their quality. The Human Development Index seems also to be rebased periodically without explanation (e.g. UNDP report 2009 and UNDP report 2011). There are also major questions about the World Bank data, for example, how they evaluate the degree of economic openness and per capita income for different countries. Kiely (2004: 5), for example, argues that the way that the World Bank compiles GDP data is not transparent and may introduce systematic biases. This is particularly so with purchasing power parity (PPP) based figures. These issues are beyond the scope of this chapter. However, because it is not clear how accurate data are, it is important to be careful in interpreting the results.

The rest of this section uses tables and graphs to give an impression of sub-Saharan African socio-economic performance compared to other regions and countries, and whether sub-Saharan Africa's recent growth is 'catching up' and 'sustainable'. Sections 4.3 and 4.4 attempt to develop and test the hypotheses more formally.

4.2.1 Economic indicators

This section aims to come up with an overview on whether the recent economic growth in sub-Saharan Africa has been driven by structural transformation of the economy.

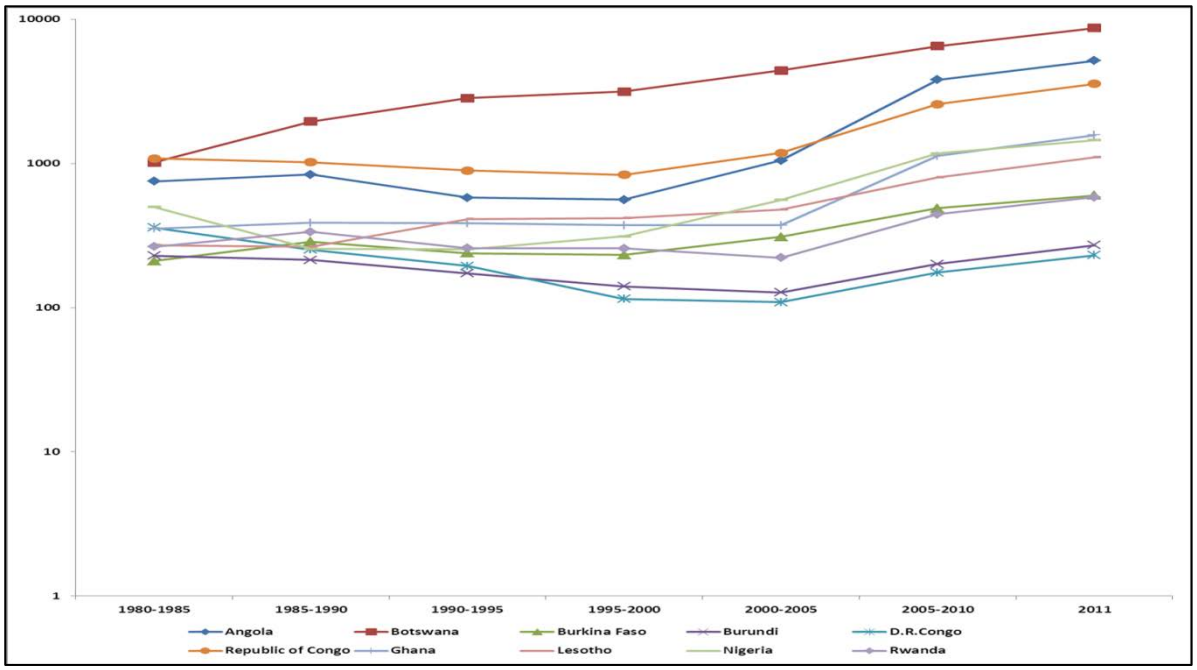
Figure 4.1: Sub-Saharan Africa region compared with other regions in terms of GDP per capita (current US dollars, log scale)



Source: World Bank Database 2012 (World Development Indicators).

As shown in Figure 4.1, the sub-Saharan Africa region showed an economic acceleration since the mid-1990s. This recovery follows the trend of the global economy. This also suggests that sub-Saharan Africa has benefited from the growth in the emerging countries such as China and India through trade and investment (African Economic Outlook, 2013). In addition, sub-Saharan Africa's growth has been characterised by strong commodity prices, new resource exploitation and improvement of domestic conditions (IMF, 2012: 1-2). Despite the global crisis of 2008 and 2009, sub-Saharan African growth has been robust. It is expected that sub-Saharan Africa's growth will rebound to 4.5% in 2012 and to 4.8% in 2013 (African Economic Outlook, 2013). However, it is important to note that in comparison with other regions (except South Asia); sub-Saharan Africa's GDP per capita remains low (see Appendix 4 for details).

Figure 4.2: Some sub-Saharan Africa countries have experienced fast GDP per capita (current US Dollars, log scale)



Source: World Bank Database 2012 (World Development Indicators).

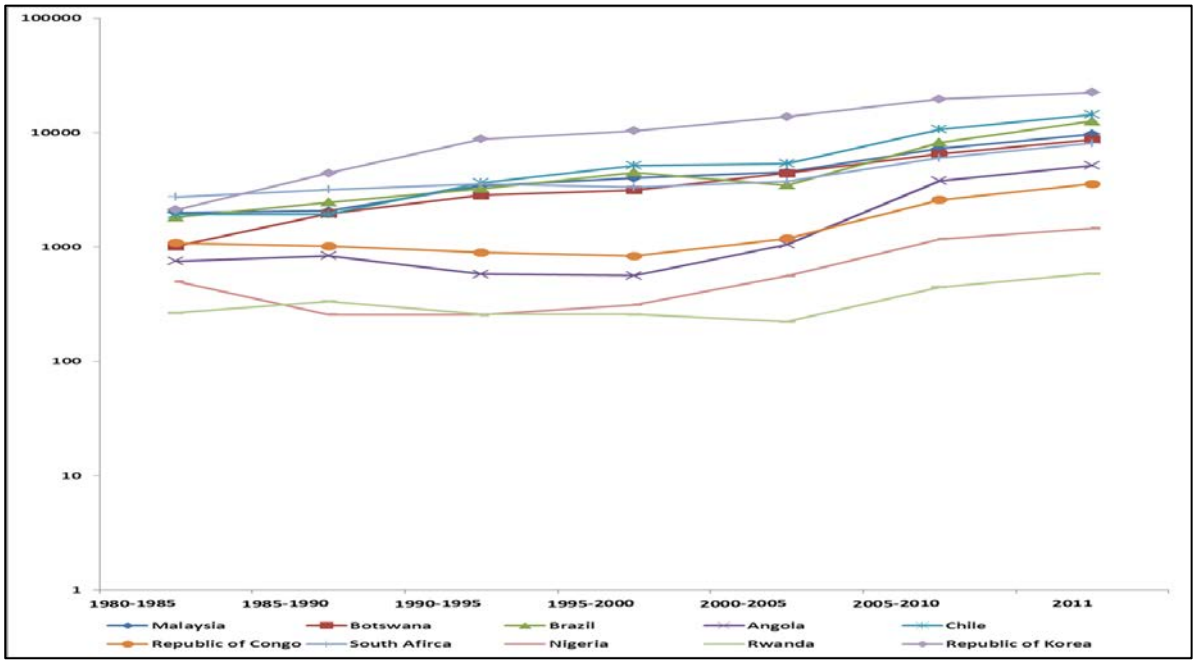
As shown above in Figure 4.2, the period from 2005 to 2011 observed a significant rebound of growth in most of sub-Saharan Africa countries such as the Democratic Republic of Congo, Burundi, Burkina Faso, Republic of Congo and Angola (see also Appendix 2 for details). For instance, Angola's GDP per capita rose from 579.330 to 1049.076 between the periods 1990-1995 and 2000-2005. It increased to 3792.627 between 2005 and 2010 and to 5147.71 in 2011. Democratic Republic of Congo, Burundi, Rwanda, Republic of Congo, Ghana, Nigeria, Lesotho and Botswana are other examples of countries that experienced rapid growth in this period (see also Appendix 2). Let us illustrate these countries' growth cases:

Angola's economic growth has been driven by the augmentation of oil prices and strong increases in domestic demand. Although it has implemented reforms (including fiscal and monetary tightening, enhancing the exchange rate system, public finance management, banking reforms), Angola's economy has remained highly dependent on oil revenues (African Economic Outlook, 2013). In Nigeria over the past decade, economic growth has been robust. However, this has again been driven by the oil sector and domestic demand (telecommunications, construction, wholesale and retail trade, hotel and restaurant services) (African Economic Outlook, 2013). Rwanda's growth has been strong and boosted by good harvests, rising export receipts and expansion in credit to the private sector. The rise in commodity prices, expansion in the agriculture, mining, and construction sectors, and high domestic demand sustained by the

expansion of credit in the private sector contributed to Rwanda's economic growth (African Economic Outlook, 2013).

Ghana has made considerable progress by maintaining stable macro-economic policies. Ghana's growth has been stimulated by oil revenues, mining sector and robust export performance of cocoa and gold (African Economic Outlook, 2013). Lesotho's economy has recovered from the global economic crisis and the effect of floods in the early 2011. Lesotho's economic growth has remained moderate stimulate by good performance of the mining sector and construction sector. Lesotho's government has undertaken reforms which include improving public financial management, reduction of public debts and building sufficient levels of international reserves (African Economic Outlook, 2013). Botswana has succeeded in maintaining stable macroeconomic policies, good governance, good management of diamond resources and well-functioning institutions. Botswana's growth has been stimulated by the mining, construction, and manufacturing sectors.

Figure 4.3: Some sub-Saharan Africa countries compared to other countries in terms of GDP per capita (current US dollars, log scale)

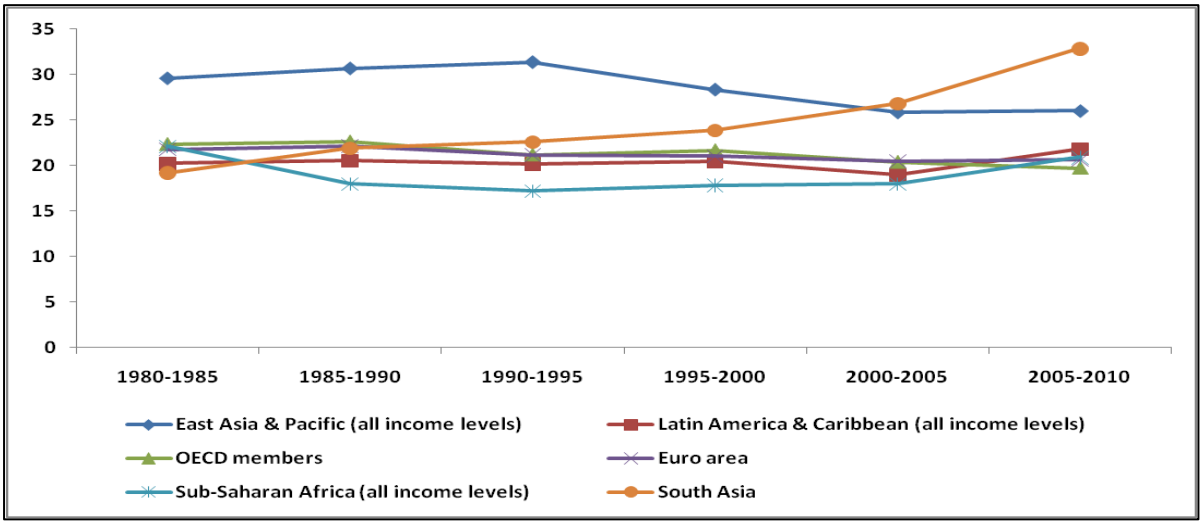


Source: World Bank Database 2012 (World Development Indicators).

Figure 4.3 shows a comparison between some African countries with other developing countries. Some African countries have been growing relatively fast compared to other developing countries from 2000 to 2011 (for instance, Angola, Republic of Congo, Botswana, Nigeria,

Rwanda and South Africa). Despite this, GDP per capita remains very low compared to countries such as Brazil, Chile, Malaysia and Republic of Korea (see also Appendix 3).

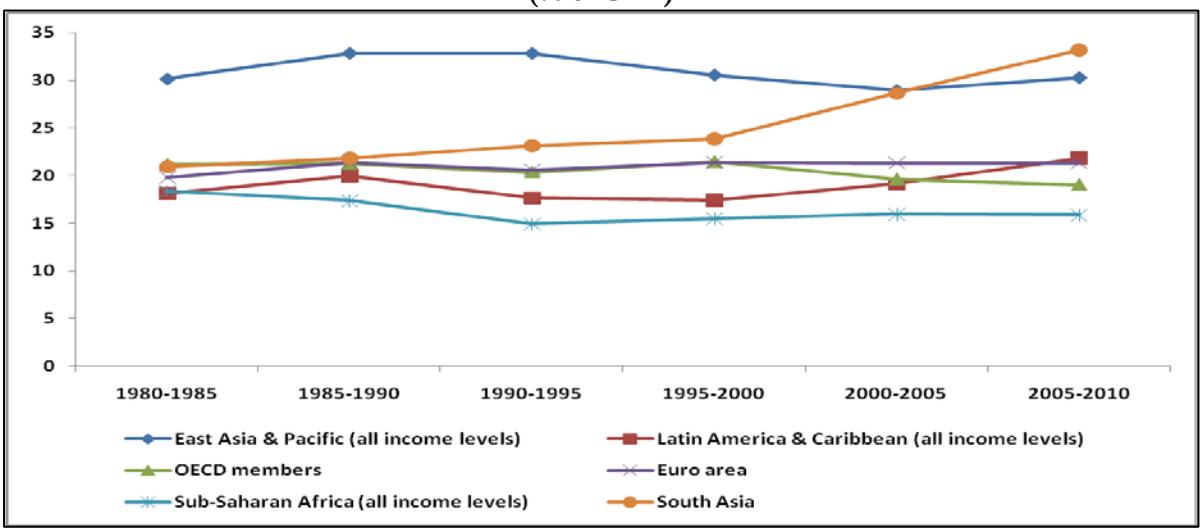
Figure 4.4: Sub-Saharan African region compared with other regions in terms of gross capital formation (% of GDP)



Source: World Bank Database 2012 (World Development Indicators).

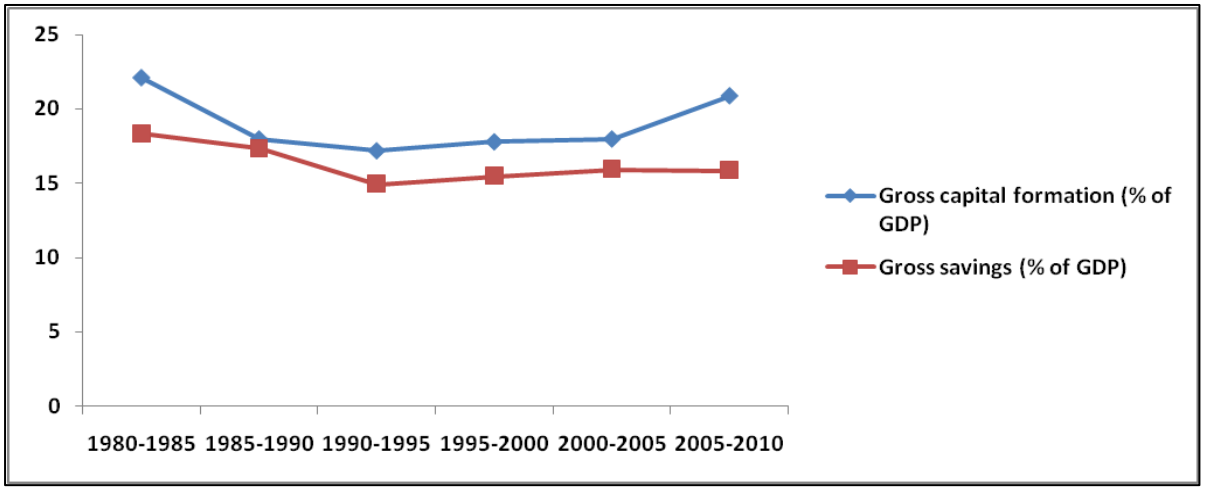
Figure 4.4 shows that from 1990 to 2010, sub-Saharan Africa's gross capital formation increased slightly. Historically low, sub-Saharan Africa's gross capital formation seems to have improved and caught up with Latin America and Caribbean and rich countries. This can be probably explained by the augmentation of capital spending in natural resources and other sectors (e.g. infrastructures sector). Despite this, SSA is still far behind compared to East Asia and Pacific and South Asia.

Figure 4.5: Sub-Saharan African region compared with other regions in terms of gross savings (% of GDP)



Source: World Bank Database 2012 (World Development Indicators).

Figure 4.6: Sub-Saharan Africa in terms of gross capital formation and gross savings (% of GDP

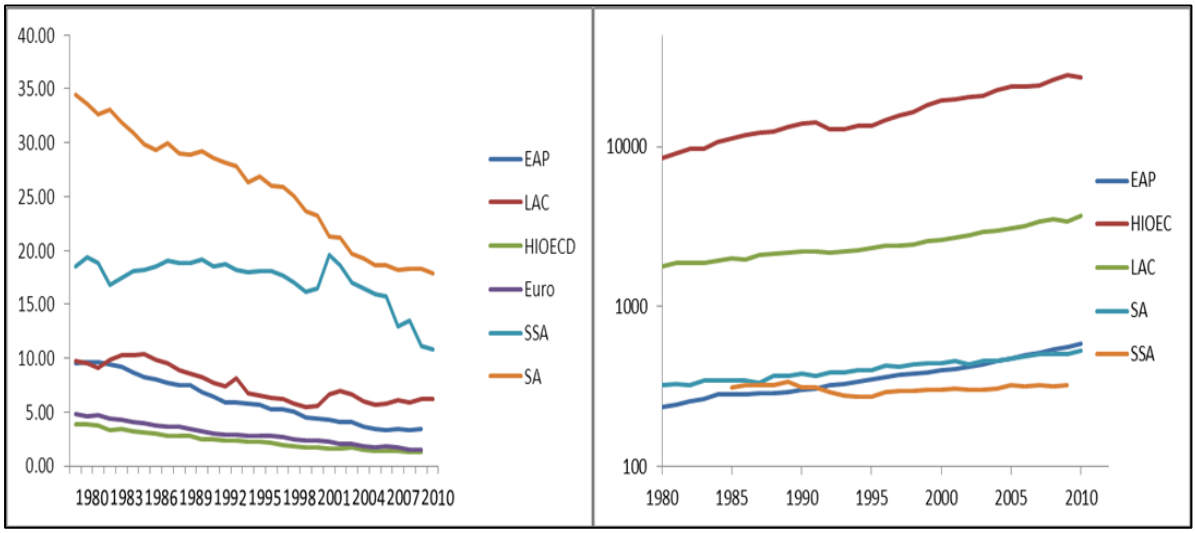


Source: World Bank Database 2012 (World Development Indicators).

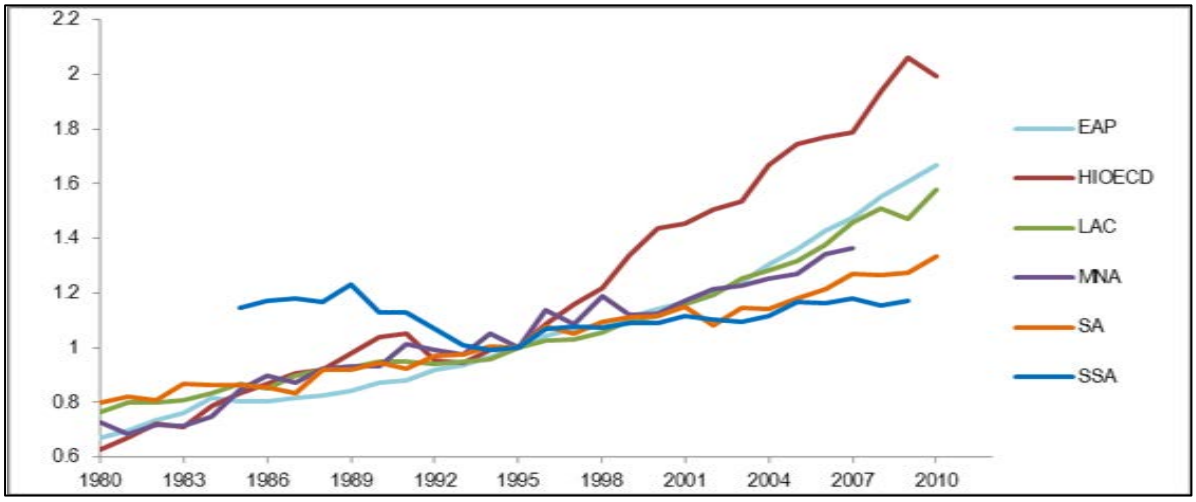
Figure 4.5 above shows that from 1980 to 1995 sub-Saharan Africa's gross savings decreased from 18.35% to 14.93%. Although, it recovered slightly, from 1995 to 2010, sub-Saharan Africa's gross savings remains low in comparative perspective. The patterns indicated by Figures 4.4 and 4.5 suggest that South Asia is experiencing an 'investment transition', whereas sub-Saharan Africa is not. This impression is reinforced by Figure 4.6. Although, investment has recently picked up in sub-Saharan Africa, there is no sign yet of savings following suit. Sub-Saharan African gross capital formation remains dependent on external funds (African Economic Outlook, 2013).

Figure 4.7: Agriculture value added (% of GDP) by regions including sub-Saharan Africa

a) Value added (% of GDP) **b) Value added per worker (constant 2000 US $)**



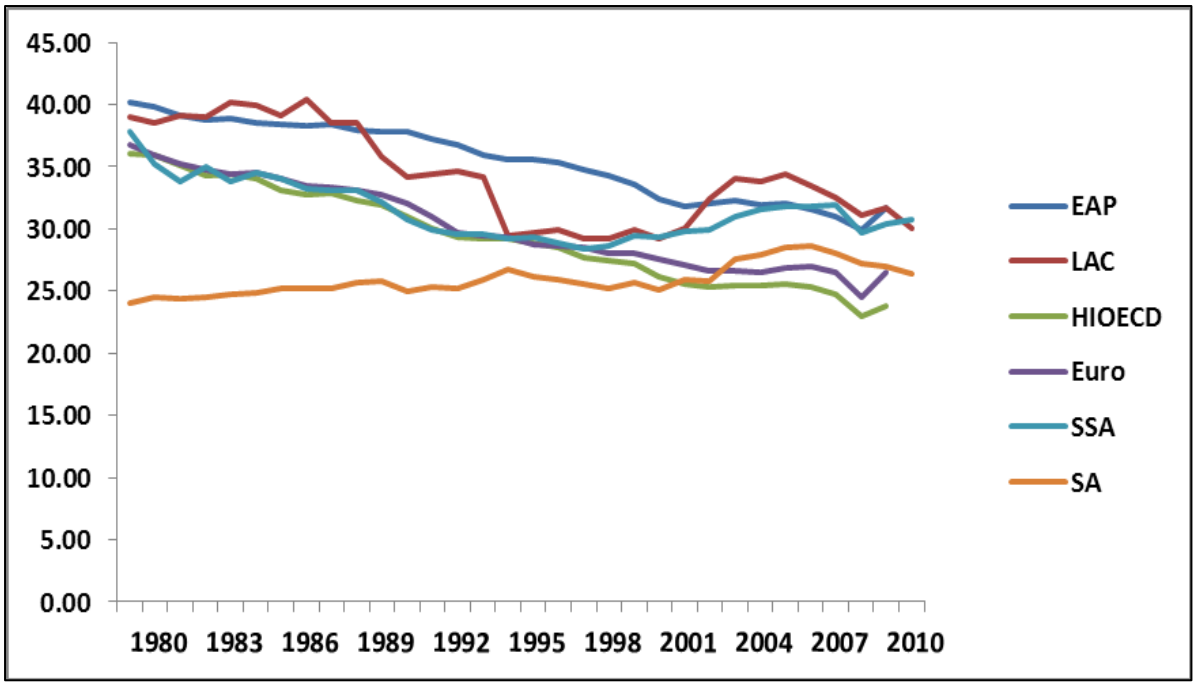
c) Index of (b): 1995=1



Source: World Bank Database 2012 (World Development Indicators).

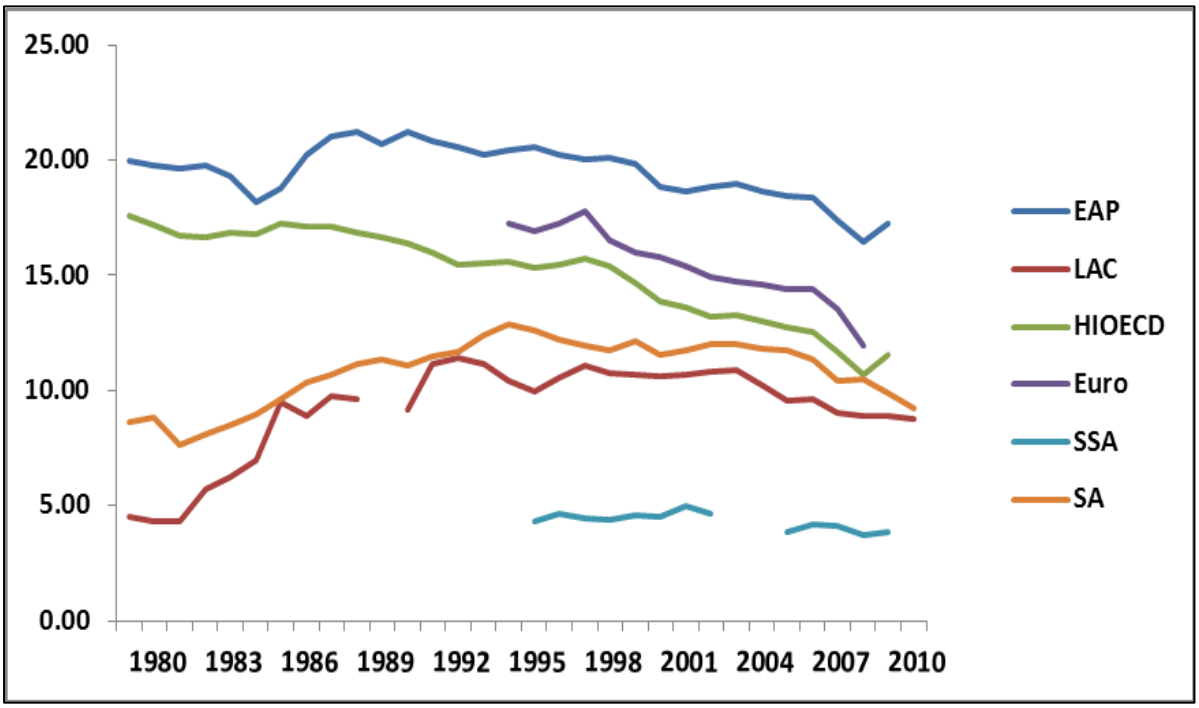
Figure 4.7a clearly shows that sub-Saharan Africa agriculture sector has a declining contribution to GDP after about 2000. This is not unexpected as a relative decline in agriculture is an anticipated part of economic modernisation. However, given the critical role for agriculture identified in Chapter 2, the speed of the decline, and the absence of other indicators of structural change raise concern (see also Appendix 6). Figures 4.7b and 4.7c reinforce this picture. Value added per worker is dramatically lower in SSA than in all other regions. Furthermore, unlike other regions, value added per worker has been virtually stagnant in sub-Saharan Africa, and was no higher in the late 2000s than it was in the mid-1980s. This suggests that sub-Saharan African agriculture is still facing major obstacles which undermine it development.

Figure 4.8: Industry value added (% of GDP) by regions including sub-Saharan Africa



Source: World Bank Database 2012 (World Development Indicators).

Figure 4.9: Manufactures exports as a share of GDP by regions including sub-Saharan Africa

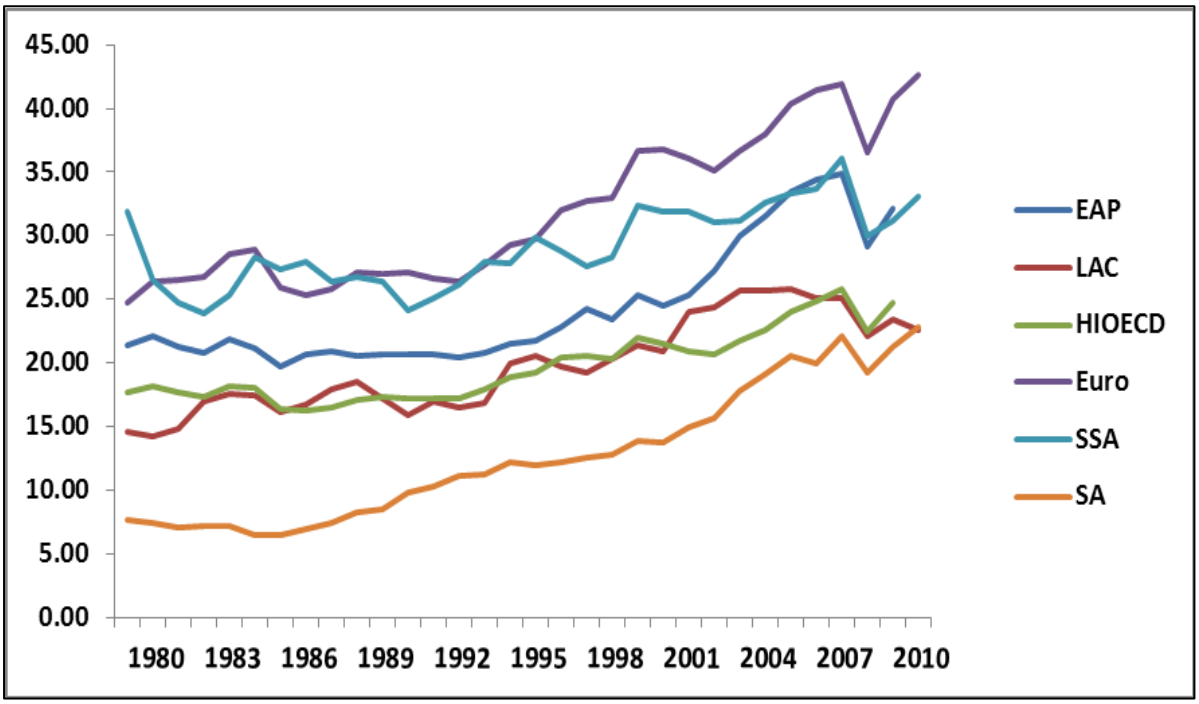


Source: World Bank Database 2012 (World Development Indicators).

Figure 4.8 shows that, from 1990 to 2005 sub-Saharan Africa's (SSA) industry sector as a share of GDP significantly improved, after decreasing from 1980 to 1992.

Figure 4.9 above shows that although industry has increased its share of GDP in SSA (see also Appendices 5 and 15); manufactures exports have continued to decline as a share of GDP. All regions, including South Asia now exceed sub-Saharan Africa in this regard. Although the data is sporadic, this indicates that an improvement in industry sector as share of GDP could be probably explained by an increase in the extractive sector. This shows that sub-Saharan Africa's industrial sector has not moved away from the primary sector and reinforced the argument that sub-Saharan Africa has not begun to go through an 'investment transition' process. Figure 4.10 below shows that the sub-Saharan Africa region's exports have been higher than all other regions, except the Euro region. However, the improvement in sub-Saharan Africa's export sector can be probably explained by an increase in raw materials and has been helped favourably by the increase of commodity prices (see also Appendix 7). This demonstrates that sub-Saharan Africa's export sector continues to be dominated and dependent on natural resource exports (e.g. oil).

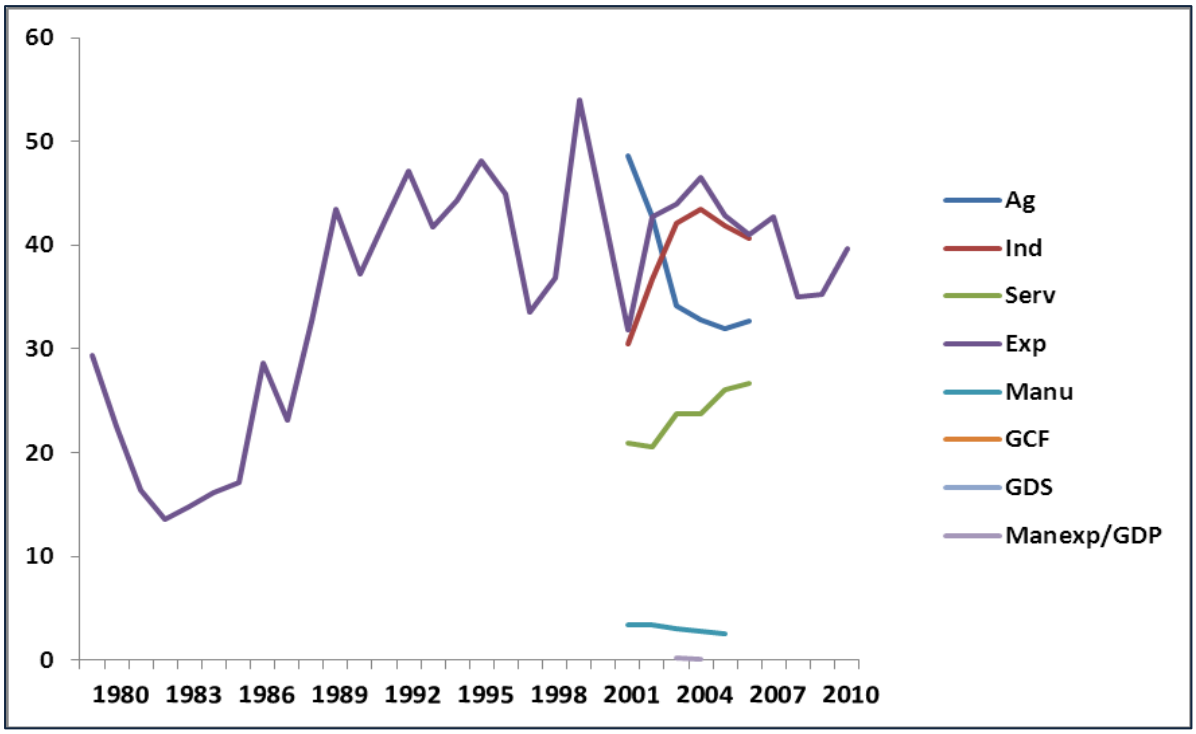
Figure 4.10: Exports of goods and services (% of GDP) by regions including sub-Saharan Africa



Source: World Bank Database 2012 (World Development Indicators).

The impression that growth has been dominated by primary exports and consumption, and has not reflected an 'investment transition' is reinforced by considering individual country cases. Only four countries are discussed here to avoid clutter. For other countries, see Appendix 17. Figures 4.11, 4.12, 4.13 and 4.14 present the sectoral structures of selected African countries.

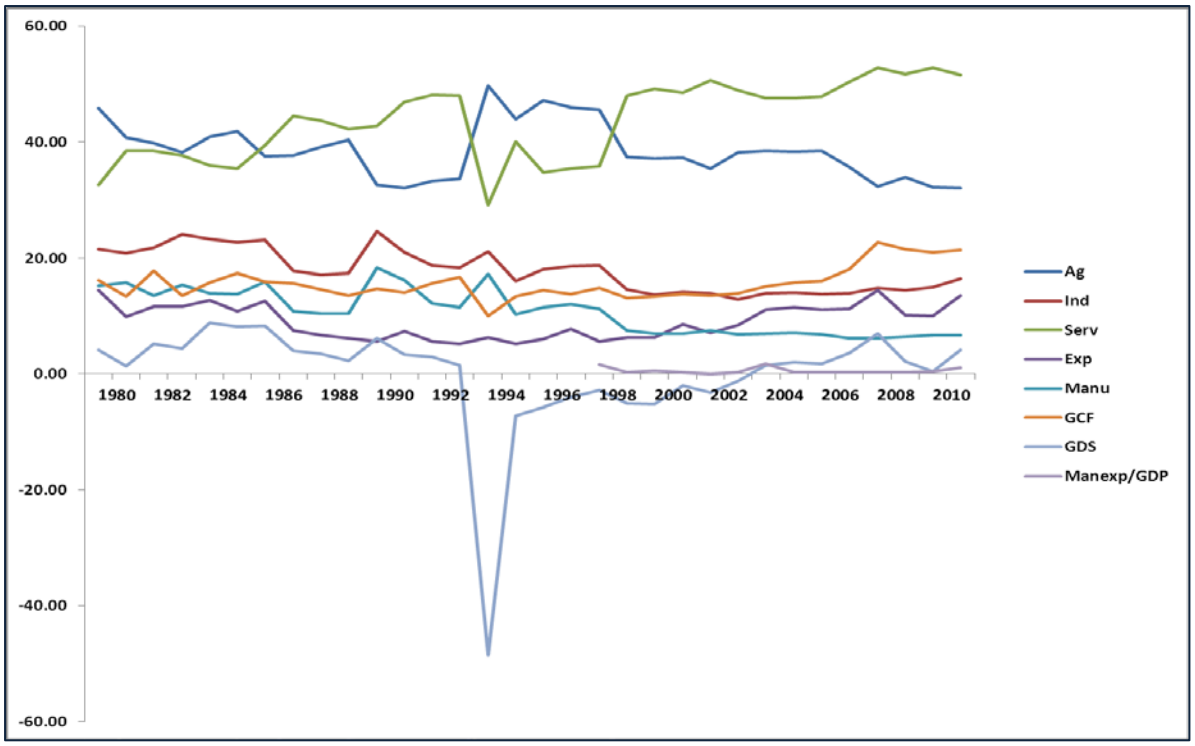
Figure 4.11: Sectoral composition: Nigeria



Source: World Bank Database 2012 (World Development Indicators).

Figure 4.11 above shows that Nigerian's exports (EXP) have significantly improved. The good performance observed in exports can be probably attributed to the rise in oil price (African Economic Outlook, 2013). The services sector (SERV) seemed to be improved. This might be driven by telecommunication, construction, hotel and restaurant and business services (African Economic Outlook, 2013). However, manufactured exports as a share of GDP (MANEXP/GDP) and manufacturing value added (MANU) have been low as a contribution to GDP. Manufacturing only represented 2.2 % of GDP, mainly in cement and oil refining activities in 2011 (African Economic Outlook, 2013). Although, the data are sporadic or missing, this indicates that Nigeria has not experienced structural transformation.

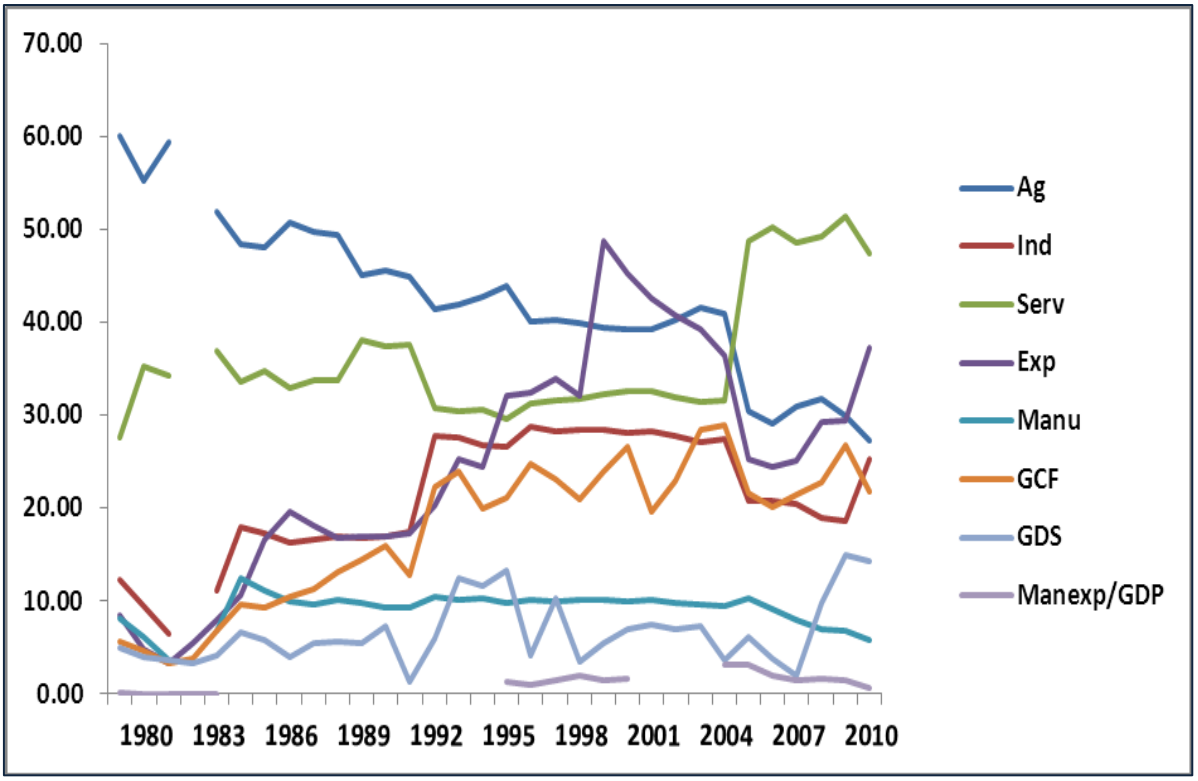
Figure 4.12: Sectoral composition: Rwanda



Source: World Bank Database 2012 (World Development Indicators).

Figure 4.12 above shows Rwanda's services sector (SERV) has largely contributed to GDP. The expansion in the services sector has been driven by trade, transport and telecommunications and augmentation in finance and insurance (African Economic Outlook, 2013). It observed that Rwanda's export sector (EXP) improved as a share of GDP. The export earnings have been stimulated by stable and rising prices of main exports products such as coffee, tea and minerals, which together accounted for 74.8% of export earnings in 2011. In addition, the recovery in tourism contributed to higher export earnings. However, although gross capital formation (GCF) has slightly improved, gross domestic savings (GDS) has shown a negative trend. Similarly, manufacturing value added (MANU) and manufactures exports as a share of GDP (MANUEXP/GDP) have contributed very little to GDP. This gives the impression that the secondary sector is not yet developed and Rwanda is very vulnerable to outside shocks. Savings and investments are too low to generate a sustained 'investment transition'.

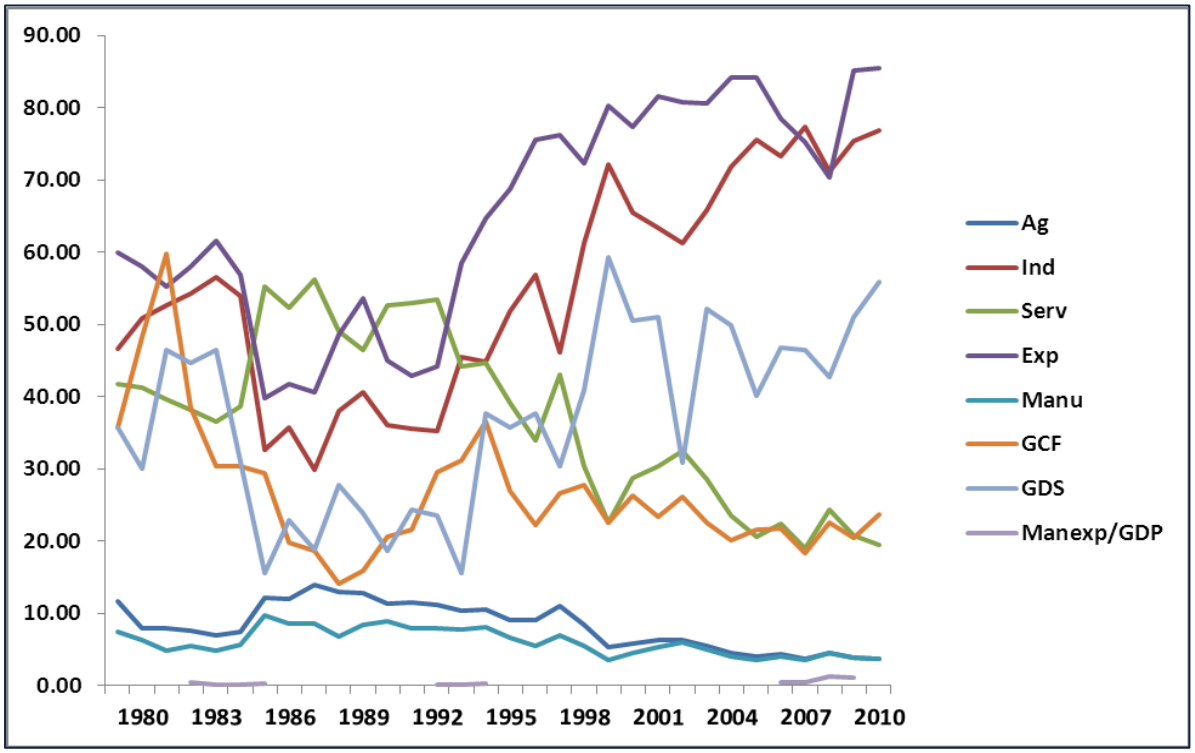
Figure 4.13: Sectoral composition: Ghana



Source: World Bank Database 2012 (World Development Indicators).

Figure 4.13 above shows that Ghana's export sector (EXP) started to recover from 2007 to 2010. This might be explained by the good performance of mining and quarrying, which includes petroleum, and which increased by 225.4% in 2011. The services sector (SERV) has improved. This might be driven by the construction sector and the high domestic demand of public and private consumption (African Economic Outlook, 2013). However, manufactured exports (MANEXP/GDP) and manufacturing value added (MANU) both remain small as a share of GDP. Once again, the same pattern of savings falling to increase casts doubt on whether the increase in investment (GCF) constitutes a sustained 'investment transition'.

Figure 4.14: Sectoral composition: Republic of Congo



Source: World Bank Database 2012 (World Development Indicators).

Figure 4.14 shows the Republic of Congo's exports sector (EXP) has a large contribution to GDP. In the Republic of Congo, the good performance experienced in the export sector has been probably driven by an augmentation in the international oil prices. However, the oil sector remains the largest contributor with 67% to GDP and 89% of exports (African Economic Outlook, 2013). Gross domestic savings fluctuated between 1980 and 2010. Gross capital formation (GCF) has shown a negative trend. Manufacturing value added (MANU) and manufacture exports as a share of GDP (MANUEXP/GDP) have contributed less to GDP. Once again, this reinforces the impression that secondary sector remains underdeveloped and that the Republic of Congo is highly dependent on external factors. Savings and investment are too low to generate a sustained 'investment transition'.

In summary, the sub-Saharan Africa region as a whole has experienced growth acceleration. However, sub-Saharan Africa remains highly dependent on the primary and tertiary sectors. Furthermore, and unlike in other developing regions, there is no sign of 'investment transitions' occurring. The worry remains that the growth acceleration is not leading to structural change or sustainable development.

4.2.2 Human development indicators

Theory and evidence have shown that growth is not the same thing as 'development' and economic growth by itself is unlikely to be sufficient to generate genuine development, particularly in terms of human development. It is important for us to look at how SSA has performed compare with other regions in terms of human development and social indicators. Data on the Human Development Index (HDI) have been presented in two different tables because they come from two different UNDP reports and it is not possible to reconcile them. As discussed in section 4.2, it seems that all the years in the reports have been re-based without explanation and it is very difficult to assess their validity. Despite these data limitations, it is clear that sub-Saharan African countries human development indices remain very low compared to other regions and countries.

Table 4.1a: Human development index of some sub-Saharan Africa countries and some other countries

	1985	1990	1995	2000	2005	2006	2007
Botswana	**0.579**	**0.682**	**0665**	**0632**	**0673**	**0.683**	**0.694**
Burkina Faso	**0.264**	**0.285**	**0.297**	**0.319**	**0.367**	**0.384**	**0.389**
Burundi	**0.292**	**0.327**	**0.299**	**0.358**	**0.375**	**0.387**	**0.394**
Cameroon	**0.498**	**0.485**	**0.457**	**0.513**	**0.520**	**0.519**	**0.523**
Brazil	**0.694**	**0.710**	**0.734**	**0.790**	**0.805**	**0.808**	**0.813**
Republic of Congo	**…**	**0.597**	**0.575**	**0.536**	**0.600**	**0.603**	**0.601**
Côte d'Ivoire	**…**	**0.463**	**0.456**	**0.481**	**0.480**	**0.482**	**0.484**
Malawi	**0.379**	**0.390**	**0.453**	**0.478**	**0.476**	**0.484**	**0.493**
Mali	**0.239**	**0.254**	**0.267**	**0.316**	**0.361**	**0.366**	**0.371**
Chile	**0.762**	**0.795**	**0.822**	**0.849**	**0.872**	**0.874**	**0.878**
Mozambique	**0.258**	**0.273**	**0.310**	**0.350**	**0.390**	**0.397**	**0.402**
China	**0.556**	**0.608**	**0.657**	**0.719**	**0.756**	**0.763**	**0.772**
Nigeria	**….**	**0.438**	**0.450**	**0.466**	**0.499**	**0.506**	**0.511**
Rwanda	**0.361**	**0.325**	**0.306**	**0.402**	**0.449**	**0.455**	**0.460**
Malaysia	**0.689**	**0.737**	**0.767**	**0.797**	**0.821**	**0.825**	**0.829**
South Africa	**0.680**	**0.698**	**…**	**0.688**	**0.678**	**0.680**	**0.683**
India	**0.453**	**0.489**	**0.511**	**0.556**	**0.596**	**0.604**	**0.612**
Zambia	**…**	**0.495**	**0.454**	**0.431**	**0.466**	**0.473**	**0.481**

Source: UNDP report 2009.

Table 4.1b: Human development index of some sub-Saharan Africa countries and some other countries

	2009	2010	2011
Botswana	**0.626**	**0.631**	**0.633**
Burkina Faso	**0.326**	**0.329**	**0.331**
Burundi	**0.308**	**0.313**	**0.316**
Cameroon	**0.475**	**0.479**	**0.482**
Brazil	**0.708**	**0.715**	**0.718**
Republic of Congo	**0.523**	**0.528**	**0.533**
Côte d'Ivoire	**0.397**	**0.401**	**0.400**
Malawi	**0.387**	**0.395**	**0.400**
Mali	**0.352**	**0.356**	**0.359**
Chile	**0.798**	**0.802**	**0.805**
Mozambique	**0.312**	**0.317**	**0.322**
China	**0.674**	**0.682**	**0.687**
Nigeria	**0.449**	**0.454**	**0.459**
Rwanda	**0.419**	**0.425**	**0.429**
Malaysia	**0.752**	**0.758**	**0.761**
South Africa	**0.610**	**0.615**	**0.619**
India	**0.535**	**0.542**	**0.547**
Zambia	**0.419**	**0.425**	**0.430**

Source: UNDP report 2011

Table 4.1a above shows that, from 1995 to 2007 countries such as Nigeria, Burundi, Republic of Congo, Mali, Mozambique, Burkina Faso and Rwanda have shown some improvement which did not reflect the fast economic growth achieved by these countries (UNDP report 2009). Table 4.1b shows that from 2009 to 2011 the human development indexes for countries such as Nigeria, Burundi, Republic of Congo, Mali, Mozambique, Burkina Faso and Rwanda, have also experienced slight improvement (UNDP report 2011). Between 1990 and 2007, Nigeria, Rwanda and Burundi's human development indices have improved respectively from 0.438, 0.325 and 0.327 to 0.511, 0.460 and 0394 between 1990 and 2007(see Table 4.1a). Let us illustrate some of the efforts which have been undertaken by countries such as Nigeria, Rwanda and Burundi to improve their human development indicators.

The good performance in Nigerian human development has been partly caused by the implementation of reforms in the education and health sectors, particularly with the introduction of Universal Basic Education programmes. Budget spending in education increased from 4% in 2010 to 6% in 2011. The Nigerian government has improved the health care system. Budget spending on health increased from 4% in 2010 to 6% in 2011. Nigerian government adopted several policies; in order to improve the health system, including a National Strategic Health Development (HSHD) (African Economic Outlook, 2013).

The Rwandan government has prioritised health sector by increasing public expenditure on health (including donor support) from 10.2% between 2009 and 2010 to 16% between 2010 and 2011. This has resulted in several improvements in health-sector such as reduction in infant mortality rate, reduction in under-five mortality rate and decrease in maternal mortality). The introduction of Community-Based Health Insurance (CHBI) programmes has significantly contributed to increased access to health services. In the education sector, an improvement in school completion rates and education quality has been observed. The Rwandan government has implemented a free nine-year basic education programme which increased the gross enrolment rate for secondary education from 20.7% in 2008 to 31.5% in 2010. It also provides scholarship to eligible student for tertiary education and loans to poor students who do not qualify for government scholarships (African Economic Outlook, 2013).

Burundi has achieved positive results in terms of education and health. The Burundian government offered free primary education and health provision for pregnant women and children under five, and public expenditure rose for these two sectors. For example, in primary education, enrolment increased from 81.6% in 2005 to 130% in 2010. The numbers at secondary level increased to 80% due to the rapid expansion of community colleges. The number of students at the tertiary level has doubled, caused by the augmentation of private education (African Economic Outlook, 2013). In the health care system, building and equipping new centres, training, decentralisation of services toward the creation of health districts, free provision of certain drugs and medical care for pregnant women and children under five, have resulted in significant improvement in terms of accessibility and quality of services. For example, infant mortality fell from 114 to 101 per 1,000 live births and neonatal mortality fell considerably from 21.3 to 7.2 per 1,000 live births (African Economic Outlook, 2013). However, in comparison with other countries such as Brazil, Chile, Malaysia, China and India, African countries human development continues to perform badly. For instance, from 1985 to 2007, South Africa's HDI barely improved and it remains behind compared to Brazil's HDI, which improved significantly (see Table 4.1a).

Table 4.2: Sub-Saharan Africa region compared to other regions in terms of human development index

	1980	1990	2000	2005	2009	2010	2011
East Asia and Pacific	**0.428**	**0.498**	**0.581**	**0.622**	**0.658**	**0.666**	**0.671**
Latin America and Caribbean	**0.582**	**0.624**	**0.680**	**0.703**	**0.722**	**0.728**	**0.731**
Europe and Central Asia	**0.644**	**0.680**	**0.695**	**0.728**	**0.744**	**0.748**	**0.751**
South Asia	**0.356**	**0.418**	**0.468**	**0.510**	**0.538**	**0.545**	**0.548**
Sub-Saharan Africa	**0.365**	**0.383**	**0.401**	**0.431**	**0.456**	**0.460**	**0.463**

Source: UNDP report 2011.

Table 4.2 above presents data on sub-Saharan Africa region in comparison with other regions in terms of human development index. From 1990 to 2011, the sub-Saharan Africa region HDI improved from 0.383 to 0.463. In comparison, the HDI in East Asia and Pacific (EAP) and Latin America and Caribbean (LAC) showed a significant improvement respectively from 0.498 and 0.624 to 0.671 and 0.731 between 1990 and 2011 (see UNDP report 2011). South Asia over took sub-Saharan Africa in terms of HDI from 1980 to 2011.

The improvement of quality of life in sub-Saharan Africa remains a daily struggle. Sub-Saharan Africa has experienced a small improvement in HDI but continues to remain behind compared with other regions. The improvement observed in sub-Saharan Africa's human development seems to come from all dimensions of human development. For example, some countries have introduced the universal access to primary education at various times (e.g. Uganda, Nigeria, and Lesotho). Life expectancy has improved because of new programmes or policies which aim to improve access to healthcare services and the quality of the services provided (e.g. Rwanda) (African Economic Outlook, 2013). To some extent, sub-Saharan Africa's growth has allowed for the channelling of resources to social activities which contributes to improving people's daily lives (e.g. spending on education and healthcare) and other funds through new investments (African Economic Outlook, 2013). It has been estimated that a one percentage increase in income per capita led to about a one and half per cent reduction in poverty (Fosu, 2011 cited in African Economic Outlook, 2013). The following tables present other social indicators which are used individually to evaluate sub-Saharan African growth sustainability in terms of life expectancy at birth, infant mortality rate, primary school enrolment and tertiary school enrolment. For more variables on other social indicators see the Appendices.

Table 4.3: Sub-Saharan Africa region compared to other regions in terms of life expectancy at births, total (years)

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
East Asia and Pacific	66.92	68.43	69.62	70.63	71.66	72.78
Latin America and Caribbean	65.69	67.53	69.29	70.99	72.39	73.63
OECD members	73.07	74.21	75.26	76.54	77.75	78.92
Euro area	74.45	75.65	76.65	77.83	79.04	80.32
Sub-Saharan Africa	48.78	49.48	49.39	49.44	50.77	53.16
South Asia	56.43	57.94	59.42	61.15	62.94	64.62

Source: World Bank Database 2012 (World Development Indicators).

Table 4.3 above shows that from 1985 to 2000, sub-Saharan Africa region's life expectancy stagnated and only increased slightly from 2005 to 2010. In all other regions, life expectancy significantly improved from 1980 to 2010. This shows that sub-Saharan Africa remains with an inferior life expectancy compared to other regions (see also Appendix 4).

Table 4.4: Sub-Saharan Africa compared to other regions in terms of mortality rate, infant (per 1,000 live births)

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
East Asia and Pacific	46.49	41.51	37.86	32.42	25.36	19.23
Latin America and Caribbean	54.54	45.16	37.9	30.82	24.18	18.78
OECD members	23.7	18.97	15.26	11.73	9.2	7.35
Euro area	11.56	8.99	6.91	5.31	4.4	3.74
Sub-Saharan Africa	112.17	107.68	104.47	97.31	86.69	75.57
South Asia	99.82	88.72	79.3	69.6	60.51	48.3

Source: World Bank Database 2012 (World Development Indicators).

Table 4.4 above indicates that from 1980 to 2010, infant mortality rates significantly decreased in all regions. Despite this, sub-Saharan Africa's infant mortality rate is still dramatically higher than other regions (see also Appendix 4).

Table 4.5: Sub-Saharan Africa compared to other regions in terms of school enrolments, primary (% gross)

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
East Asia and Pacific	111.33	121.34	113.59	110.67	110.32	109.22
Latin America and Caribbean	116.62	114.81	114.77	119.44	118.30	115.71
OECD members	104.20	104.71	103.62	103.70	102.91	104.80
Euro area	103.75	104.50	102.97	104.14	104.48	105.57
Sub-Saharan Africa	78.81	72.34	73.73	77.38	88.92	98.54
South Asia	79.7	83.28	88.32	88.72	97.78	107.14

Source: World Bank Database 2012 (World Development Indicators).

Table 4.5 above shows that from 1985 to 2010 sub-Saharan Africa region primary school enrolment substantially improved, but remains low compared with other regions (see also Appendix 4). Table 4.6 suggests that sub-Saharan Africa lags even further behind in tertiary education.

Table 4.6: Sub-Saharan Africa compared to other regions in terms of school enrolments, tertiary (% gross)

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
East Asia and Pacific	6.38	7.18	8.52	13.48	20.51	26.46
Latin America and Caribbean	14.6	16.75	17.23	20.34	27.64	37.44
OECD members	32.52	36.08	43.4	49.52	56.9	63.53
Euro area	27.08	30.28	39.47	49.04	55.5	59.5
Sub-Saharan Africa	2.12	2.7	3.38	3.95	5.2	6.28
South Asia	5.1	5.31	5.19	6.66	8.99	12.77

Source: World Bank Database 2012 (World Development Indicators).

In summary, sub-Saharan African countries' human development index and other social indicators have shown some improvement, but do not reflect the fast economic growth experienced by sub-Saharan African countries. In the following section, 4.3, econometric analysis will be conducted, in an attempt to investigate our hypotheses.

4.3 Econometric methodology

The study used data from 77 countries for which GDP per capita (constant 2000 US$) was available for every year from 1960 to 2011. The findings are tentative for two reasons. Firstly, the data problems with the World Development Indicators (WDI) database are severe. As discussed

in section 4.2, there is the problem of missing data. Baltagi and Heun Song (2006: 495) argued that in collecting data on a set of countries, states or firms over time, it is possible to find that some countries started recording the data later than others or some countries stopped recording the data all together. Firms may have gone out of the market, while new entrants firms may have emerged over the sample period observed. In the same way, this can also occur while using labour or consumer on households, and find out that some households moved or can no longer be included in the panel. These implications lead to "unbalanced or incomplete" panel. With a balanced panel, the individuals are observed in the entire time sample period for all cross-section units. Otherwise it is an unbalanced panel. The panel data are expected to be incomplete or unbalanced because of randomly missing observations. However, unbalanced or incomplete panel seems to be the norm in typical economic empirical settings (Baltagi, 2001: 159; Baltagi and Heun Song, 2006: 494-495). Secondly, this analysis is only intended to be indicative. The panel data technique seems to be the more appropriate research method for this study. Panel data is defined as data sets on the same set of countries over several periods of time. It is also use to explain the pooling of time series observations across a range of cross-sectional units, such as countries, regions, states, firms and households (Baltagi and Heun Song, 2006: 494). Several studies gave a number of advantages of using panel data, which allows for control for individual heterogeneity, provides more information about the data, and gives more variability and less collinearity among the variables(Baltagi, 2001: 5-7).

4.3.1 Model specification

Our panel data technique investigates three questions:

1. Is sub-Saharan Africa still different and if so, is it converging?
2. Does growth cause human development improvement?
3. Does human development improvement cause growth?

A. 'Is sub-Saharan Africa still different?'

The following three models were used to explore whether sub-Saharan Africa is different. The null hypothesis suggests: (H0: $\beta_1 = 0$); if the null hypothesis is rejected, sub-Saharan Africa is 'different'.

$$Y_{it} = \beta_0 + \beta_1 DSSA1_{it} + \beta_2 V_{it} + u_{it} \qquad (4.1)$$

Where: Y_{it} is the endogenous variable representing economic performance (measured by the level and growth of gross domestic product per capita at constant 2000 US$); β_0 denotes the intercept coefficient; $DSSA1_{it}$ represents a sub-Saharan Africa dummy variable compared to two other developing regions namely Latin America and Caribbean (LAC) and East Asia and Pacific (EAP); V_{it} is the list of control variables (which control variables are used and discussed for each case in the results section 4.4); u_{it} is the stochastic error term.

$$X_{it} = \beta_0 + \beta_1 DSSA1_{it} + \beta_2 V_{it} + u_{it} \quad (4.2)$$

Where: X_{it} is the endogenous variable representing human development (proxied by indicators of health and education as discussed in section 4.2; β_0 denotes the intercept coefficient; $DSSA1_{it}$ represents a sub-Saharan Africa dummy variable; V_{it} represents the list of control variables (which control variables are used and discussed for each case in the results section 4.4); u_{it} is the stochastic error term.

$$Z_{it} = \beta_0 + \beta_1 DSSA1_{it} + \beta_2 V_{it} + u_{it} \quad (4.3)$$

Where: Z_{it} is the endogenous variable referring to economic structure and economic infrastructure; β_0 denotes the intercept coefficient; $DSSA1_{it}$ represents a sub-Saharan Africa dummy variable; V_{it} represents the list of control variables; u_t is the stochastic error term.

B. For 'interaction': is SSA diverging or converging?

The following multiple regression equations explore whether sub-Saharan Africa is diverging or converging with other regions. The null hypothesis is that SSA is neither converging with nor diverging from other regions (H0: $\beta 4 = 0$).

$$Y_{it} = \beta_0 + \beta_1 DSSA1_{it} + \beta_2 V_{it} + \beta_3 DT_{it} + \beta_4 DSSA1*DT_{it} + u_{it} \quad (4.4)$$

$$X_{it} = \beta_0 + \beta_1 DSSA1_{it} + \beta_2 V_{it} + \beta_3 DT_{it} + \beta_4 DSSA1*DT_{it} + u_{it} \quad (4.5)$$

$$Z_{it} = \beta_0 + \beta_1 DSSA1_{it} + \beta_2 V_{it} + \beta_3 DT_{it} + \beta_4 DSSA1*DT_{it} + u_{it} \quad (4.6)$$

(4.4-4.6) is similar to (4.1-4.3) respectively, except that they include the term DT_{it} and $DSSA*DT_{it}$ where:

DT_{it} represents a period dummy; $DSSA1*DT_{it}$ denotes the 'interaction' between sub-Saharan Africa dummy variable and period dummy.

C. Causal relationship between economic growth and human development

This is a brief tentative section to explore the two 'chains' discussed by Ranis et al. (1997). In order to do that, the following multiple regression equations explore whether economic growth leads to human development or vice versa.

1. Chain A: Human development leads to growth.

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 V_{it} + u_{it} \quad (4.7)$$

Where: Y_{it} is the endogenous variable refers to economic growth (of gross domestic product per capita at constant 2000 US$); β_0 denotes the intercept coefficient; X_{it} is the exogenous variable representing human development (proxied by indicators of health and education as discussed in section 4.2); V_{it} is the list of control variables; u_{it} is the stochastic error term.

2. Chain B: Growth leads to human development.

$$X_{it} = \beta_0 + \beta_1 Y_{it} + \beta_2 V_{it} + u_{it} \quad (4.8)$$

Where: X_{it} is the endogenous variable refers to human development; β_0 denotes the intercept coefficient; Y_{it} denotes the exogenous variable of economic growth (of gross domestic product per capita at constant 2000 US$); V_{it} is the list of control variables; u_{it} is the stochastic error term.

4.4 Results

4.4.1 Economic growth

Table 4.7: Dependent variable: GROW (Growth)

variable	1	2
C	0.017601 (5.563206)*	0.022179 (11.08470)*
SSA1	-0.00388 (-0.883674)	-0.019558 (-7.038430)*
_05_11R	0.014377 (3.117267)*	
SSA1*_05_11R	-0.00398 (-0.621354)	
_95_11		0.002187 (0.631061)
SSA1*_95_11		0.013802 (2.867815)*
Total panel (unbalanced observations)	918	2754
Adjusted R-squared	0.01655	0.022644
S.E. of regression	0.048397	0.059491
Sum squared resid	2.140797	9.732656
F-statistic	6.143875	22.26061
Prob(F-statistic)	0.000389	0.000000
Durbin-Watson stat	1.967637	1.863648

Source: Author's estimation.
T-Statistics are given in parentheses.
*Significant at 1%
**Significant at 5%
***Significant at 10%

Equation (2) in Table 4.7 suggests that SSA's growth was significantly lower than LAC and EAP in the 1980-1994 period. The interaction dummy is statistically significant. This implies that the SSA growth acceleration after 1994 resulted in some convergence with LAC and EAP. However, equation (1) suggests that there is no convergence within the post-1995 period. The _05_11R dummy is positive and significant, suggesting that after 2004 all the regions experienced significantly higher growth.

4.4.2 Human development

Table 4.8: Dependent variable: LIFEEX (Life expectancy at birth, total years)

variable	1	2	3	4
C	30.38835 (29.37131)*	42.45864 (32.01037)*	43.04422 (33.79962)*	32.67906 (35.14686)*
SSA1	-9.265157 (-30.24380)*	-12.705661 (-30.33608)*	-13.37641 (-27.62762)*	-9.285198 (-30.70220)*
Log(GDP)	4.657702 (33.87052)*	3.637336 (21.11106)*	3.554603 (22.04260)*	4.030665 (32.03887)*
Health_pu		0.169243 (1.412569)		
_05_11r			1.358466 (3.281655)*	
SSA1*_05_11r			0.994954 (1.734494)***	
_95_11				7.286070 (22.10302)*
SSA1*_95_11				-2.773030 (-6.117124)*
Total panel (unbalanced observations)	2763	855	905	2763
Adjusted R-squared	0.673256	0.841921	0.847470	0.738676
S.E. of regression	6.193174	4.388266	4.303246	5.538584
Sum squared resid	105860.9	16387.61	16666.13	84604.17
F-statistic	2846.550	1517.117	1256.678	1952.818
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.389253	1.672419	1.770152	1.615571

Source: Author's estimation.
T-Statistics are given in parentheses.
*Significant at 1%
**Significant at 5%
***Significant at 10%

Table 4.8 above shows the results of regressions run on life expectancy. Life expectancy is an indicator of human development (particularly health issues). The table shows that sub-Saharan Africa dummy (SSA1) is statistically significant and negative in all equations, including that this result is robust. Equations (1) and (2) control for the level of per-capita GDP (as a rough proxy for 'economic development') and for public health expenditure as a share of GDP (Health_pu). The results suggest that life expectancy is approximately 10 years less than other developing countries. Equations (3) and (4) show two different period dummies. Equation (3) models convergence within the post-1994 period. It suggests that life expectancy in SSA has significantly converged (with life expectancy in LAC and EAP) within the 1995-2011 period. In other words life expectancy in SSA was (0.99) + (1.33) = 2.32 years higher in the 2005-2011 period than in 1995-2004 period. This increase was significantly larger than the increase than in LAC and EAP (1.35 years). Equation (4) test compares 1995-2011 with the earlier period (1960-1994). The interaction dummy tells us that life expectancy in SSA has significantly diverged at 1%. This

shows us that the gap between life expectancy has decreased in SSA and other developing regions increased by (-2.77) + (7.28) = 4.51 in 1995-2011 compared to the 1960-1994 period.

Table 4.9: Dependent variable IMORT (Mortality rate, infant per 1,000 live births)

variable	1	2	3	4
C	217.5847 (42.95441)*	156.3538 (37.55713)*	154.4435 (38.21810)*	207.9987 (46.63400)*
SSA1	20.14940 (13.34056)*	26.55853 (20.11681)*	31.28884 (20.12994)*	25.17532 (17.04290)*
Log(GDP)	-22.48049 (-33.54680)*	-15.70366 (-28.88033)*	-16.52579 (-32.37040)*	-19.86364 (-33.09320)*
Health_pu		-3.251408 (-8.391269)*		
_05_11r			-3.966781 (-2.909414)*	
SSA1*_05_11r			-8.812367 (-4.668900)*	
_95_11				-29.37333 (-18.38065)*
SSA1*_95_11				-3.753424 (-1.712065)***
Total panel (unbalanced observations)	2713	861	918	2713
Adjusted R-squared	0.532618	0.835480	0.836125	0.640248
S.E. of regression	30.54316	14.22761	14.26033	26.79658
Sum squared resid	2528117.	173478.1	185664.9	1944498.
F-statistic	1546.268	1456.779	1170.678	1207.634
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.262797	1.768711	1.944936	1.593535

Source: Author's estimation.
T-Statistics are given in parentheses.
*Significant at 1%
**Significant at 5%
***Significant at 10%

Table 4.9 shows the results of regressions run on the infant mortality rate. Infant mortality rate is taken as an indicator of human development. Once again, SSA dummies are statically significant in all equations. It observes that infant mortality rate in SSA is significantly higher than in other developing countries. Equation (1) controls for the level of per-capita GDP and equation (2) controls for the level of public expenditure on health which are statistically significant at 1%. Equations (3) and (4) indicate that both periodisations demonstrate some convergence, albeit the coefficient on the interaction term SSA*95_11 is significant only at the 10% level.

Table 4.10: Dependent variable: PRENROL (School enrolment, Primary % gross)

variable	1	2	3	4
C	18.88780 (4.011835)*	77.76171 (12.41327)*	63.02221 (9.690858)*	19.91034 (4.433870)*
SSA1	-5.935302 (-4.240867)*	-12.20111 (-5.897461)*	-10.22781 (-4.263825)*	-13.90063 (-9.137448)*
Log(GDP)	11.48273 (18.64544)*	2.916814 (3.426538)*	5.865314 (7.129638)*	11.31028 (18.99296)*
Ed_pu		1.920807 (4.781517)*		
_05_11r			0.305204 (0.143327)	
SSA1*_05_11r			15.17912 (5.122049)*	
_95_11				0.727220 (0.469951)
SSA1*_95_11				20.15635 (9.418296)*
Total panel (unbalanced observations)	1951	824	746	1951
Adjusted R-squared	0.283987	0.166594	0.191686	0.349642
S.E. of regression	23.94163	20.69792	20.13111	22.81758
Sum squared resid	1116597.	351291.2	300298.7	1013169.
F-statistic	387.7077	55.83779	45.16789	263.0876
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.755336	1.332312	1.957968	1.864596

Source: Author's estimation.
T-Statistics are given in parentheses.
*Significant at 1%
**Significant at 5%
***Significant at 10%

Table 4.10 shows the regression run on primary school enrolment. Equation (1) controls for the level of per-capita GDP which is statically significant at 1%. This shows that GDP has contributed to improve the primary school enrolment by 11.48. Equation (2) controls for the level of public expenditure on education which is positive and statistically significant. The SSA dummy is statistically significant. This suggests that sub-Saharan African primary school enrolment is significantly low and far behind compared to other developing countries. In equations (3) and (4), the interaction dummies tell us that primary school enrolments have significantly converged. In equation (3), primary school enrolment has increased by (15.17) + (0.30) = 15.47 comparing the 2005-2011 period to the 1995-2004 period. In equation (4) primary school enrolment increased by (20.15) + (0.72) = 20.87 comparing the 1995-2011 period to the 1960-1994 period. This simply means that, although primary school enrolment has significantly improved in SSA, the gap remains big compared to other developing countries.

Table 4.11: Dependent variable: TERTENROL (School enrolment, Tertiary % gross)

variable	1	2	3	4
C	-33.32925 (-13.01218)*	-48.35401 (-11.69568)*	-48.35461 (-8.970695)*	-28.82582 (-13.01665)*
SSA1	-5.303942 (-6.864652)*	-3.583611 (-2.610472)*	-4.282144 (-2.224788)**	-2.855168 (-4.026145)*
Log(GDP)	6.944576 (20.73852)*	9.521909 (17.10121)*	9.550348 (13.91864)*	5.605513 (18.99751)*
Ed_pu		-0.340890 (-1.381407)		
_05_11r			8.052847 (5.708928)*	
SSA1*_05_11r			-6.062188 (-2.927215)*	
_95_11				15.06985 (21.97260)*
SSA1*_95_11				-12.09173 (-12.20697)*
Total panel (unbalanced observations)	1406	629	409	1406
Adjusted R-squared	0.499780	0.588931	0.655228	0.631431
S.E. of regression	10.08507	10.79401	11.27831	8.656807
Sum squared resid	142697.3	72819.21	61692.09	104991.4
F-statistic	702.8812	300.9077	233.3326	602.7605
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.360288	1.771063	1.739771	1.429231

Source: Author's estimation.
T-Statistics are given in parentheses.
*Significant at 1%
**Significant at 5%
***Significant at 10%

Table 4.11 above shows the regressions run on tertiary school enrolment. Tertiary enrolment is taken as an indicator of human development. Equations (1), (2), (3) and (4) have controlled for the level of per-capita GDP which has been positive and statistically significant at 1%. In addition equations (2), (3) and (4) have controlled for the level of public expenditure on education which has been negative and statistically significant at 1%. In equations (1), (2), and (4) the SSA dummies are statistically significant at 1% and in equation (3) at 5%. This suggests that tertiary enrolment is significantly lower in SSA than in other developing region. In equations (3) and (4), the interaction dummies suggest that tertiary enrolment has significantly diverged for both periods used. This confirms the pattern observed in Table 4.6. Other developing regions have increased tertiary enrolment but SSA has largely failed to do so.

4.4.3 Economic infrastructure

Table 4.12: Dependent variable: TELE (Telephone lines, per 100 people)

variable	1	2	3	4
C	-27.19417 (-25.61217)*	-27.59827 (-25.05594)*	-32.58269 (-18.88223)*	-26.82216 (-29.07803)*
SSA1	0.134709 (0.418834)*	0.110255 (0.332914)	-0.296599 (-0.447790)	2.329029 (7.056746)*
Log(GDP)	4.699345 (33.97017)*	4.761955 (32.40370)*	5.813806 (26.66468)*	4.183871 (34.34451)*
Invest		-0.001199 (-0.078669)		
_05_11r			2.211436 (3.810414)*	
SSA1*_05_11r			-2.835690 (-3.517998)*	
_95_11				8.000202 (25.49501)*
SSA1*_95_11				-6.732842 (-15.46149)*
Total panel (unbalanced observations)	2047	1952	912	2047
Adjusted R-squared	0.483347	0.482360	0.632089	0.610191
S.E. of regression	5.601021	5.668602	6.070012	4.865123
Sum squared resid	64123.22	62595.18	33418.45	48332.96
F-statistic	958.0527	607.0089	392.2855	801.6804
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.818491	1.853790	1.995063	1.949496

Source: Author's estimation.
T-Statistics are given in parentheses.
*Significant at 1%
**Significant at 5%
***Significant at 10%

Table 4.12 above shows the results of regressions run on telephone services (telephone lines, per 100 people), which is taken as an indicator of infrastructure. In equations (1) and (2), the SSA dummy does not yield the expected sign and is even not statistically significant in (2). A simple regression (not shown) yields a negative and statistically significant relationship (at the 1% confident level) between SSA1 and TELE. This instability indicates modelling problems in the form of multicolinearity between the SSA dummy and GDP. Essentially, it is impossible to determine statistically whether TELE in sub-Saharan Africa is 'caused' by 'GDP' or 'SSA1'. Equations (3) and (4) suggest significant divergence.

4.4.4 Economic structure

Table 4.13: Dependent variable: MANEXPGDP (Manufactures exports as a share of GDP)

variable	1	2	3	4
C	-18.97536 (-8.337486)*	-20.86159 (-9.024486)*	-11.90340 (-2.461919)*	-15.46465 (-7.193647)*
SSA1	-0.193068 (-0.294404)	0.092694 (0.137958)	-4.409280 (-2.473282)*	0.500026 (0.701814)
Log(GDP)	3.837741 (12.83692)*	3.250608 (10.30448)*	3.652266 (5.962106)*	2.878409 (10.01301)*
Invest		0.284723 (8.022462)*		
_05_11r			0.757896 (0.512420)	
SSA1*_05_11r			0.804281 (0.364561)	
_95_11				9.975065 (15.05998)*
SSA1*_95_11				-5.816373 (-5.857078)*
Total panel (unbalanced observations)	1925	1839	748	1925
Adjusted R-squared	0.125242	0.150963	0.135819	0.227631
S.E. of regression	11.11064	11.11150	14.93171	10.44017
Sum squared resid	237264.0	226559.2	165656.3	209274.5
F-statistic	138.7327	109.9353	30.35054	142.7597
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.744357	1.765601	1.772088	1.902096

Source: Author's estimation.
T-Statistics are given in parentheses.
*Significant at 1%
**Significant at 5%
***Significant at 10%

Table 4.13 above shows the results of regressions run on manufactured exports as a share of GDP. A similar pattern is revealed here as in the previous Table 4.12, with unstable estimators for SSA and some evidence of divergence. The only differences are that 'Invest' is statistically significant and the evidence for divergence is weak (reflected in only one of the specifications).

4.4.5 Causal relationship between Economic Growth (EG) and Human Development (HD)

4.4.5.1 Does EG influence HD?

Table 4.14: Regressions of GROWB4 (Growth before) on various dependent variables

variable	LIFEEX	FERT	IMORT	PRENROL
C	52.55873 (98.11250)*	5.101621 (43.10781)*	78.75944 (31.27836)*	90.69780 (66.43706)*
Growb4	67.81465 (7.383260)*	-18.72276 (-9.693132)*	-342.6496 (-8.332880)*	72.93976 (3.894892)*
Health_pu	3.364370 (27.65811)*	-0.442776 (-20.47191)*	-10.62753 (-23.08660)*	
Ed_pu				1.760215 (6.556367)*
Total panel (unbalanced observations)	1207	766	768	1400
Adjusted R-squared	0.402370	0.447731	0.482202	0.037663
S.E. of regression	9.176020	1.169098	24.89478	18.66696
Sum squared resid	101376.0	1041.494	473489.0	486792.1
F-statistic	406.9863	207.7313	239.0908	28.37606
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.838928	1.901990	2.212029	1.452776

Source: Author's estimation.
T-Statistics are given in parentheses.
*Significant at 1%
**Significant at 5%
***Significant at 10%

Table 4.14 above shows regressions for 'growb4' on various indicators of human development. Growb4 is the four year 'backward' moving average of the growth rate of GDP per capita (in constant 2000 US$). For example, the value for 1995 is the moving average from 1992 to 1995. The other independent variables are included as controls. In equation (1) with the dependent variable as LIFEEX (life expectancy); growb4 is statistically significant at 1%. This indicates that growb4 has a positive effect on life expectancy. In equations (2), (3) and (4) with the dependent variables as FERT (fertility rate), IMORT (infant mortality) and PRENROL (primary education); growb4 has the expected effect and all are statistically significant at 1%. This suggests that growb4 has a positive impact on fertility rate, infant mortality and primary school. This supports the impression that growth can contribute to improve human development.

4.4.5.2 Does HD influence EG?

Table: 4.15: Dependent variable: GROWF4 (growth forward 4 years)

variable	1	2	3	4
C	-0.032946 (-10.44818)*	0.015478 (7.699123)*	0.009031 (5.571605)*	-0.012852 (-5.157489)*
Lifeex	0.000518 (9.991666)*			
Fert		-0.003602 (-11.55571)*		
Imort			-0.000161 (-11.03981)*	
Prenrol				0.000104 (3.987770)*
Saving	0.000795 (13.82837)*	0.000736 (12.65904)*	0.000757 (13.10988)*	0.000933 (15.18567)*
Total panel (unbalanced observations)	2378	2383	2390	2128
Adjusted R-squared	0.159709	0.171034	0.166992	0.128979
S.E. of regression	0.026247	0.026101	0.026208	0.026544
Sum squared resid	1.636197	1.621458	1.639497	1.497235
F-statistic	226.8905	246.7304	240.4590	158.4807
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.846368	1.870749	1.893119	1.999666

Source: Author's estimation.
T-Statistics are given in parentheses.
*Significant at 1%
**Significant at 5%
***Significant at 10%

Table 4.15 above shows the results of regressions run on the forward four years moving average of the growth rate of GDP per capita (in constant 2000 US$). Savings is included as a control variable. In equation (1), LIFEEX (life expectancy) is positive and statistically significant. This suggests that life expectancy has a positive effect on the forward four years growth. Once again here, in equations (2), (3) and (4), FERT (fertility rate), IMORT (infant mortality) and PRENROL (primary school) reflect the expected effect and are all statistically significant at 1%. This suggests that improvements in the fertility rate, infant mortality and primary school have a positive impact on the forward four years' growth. This reinforces the idea that human development has a robust influence on growth.

4.5 Conclusion

The chapter has empirically assessed recent sub-Saharan Africa growth and human development in comparative perspective. Firstly the chapter conducted a descriptive analysis using graphs and tables for the different variables mentioned. Secondly a quantitative analysis was performed using panel data analysis. This chapter attempted to establish whether sub-Saharan Africa's recent economic growth reveals signs of sustainability. To assess whether SSA's recent economic

growth differed before the 1995, on one hand, the study has investigated economic structure and economic infrastructure. On the other hand, it has investigated human development. Finally, the limitations of using of statistical significance testing highlighted by Mbatha and Gustafsson (2013) are acknowledged

In section 4.2, the descriptive analysis has suggested that SSA's economic growth has significantly improved. However, economic structure has not significantly improved. Sub-Saharan African economic structure continues to lag behind compared to other regions and continues to reflect a lack of structural transformation. This suggests that sub-Saharan Africa's economic growth has been based on the primary sector (extractive sector) and the tertiary sector (services and commerce). This means that the secondary sector is not developed and quasi-non-existent, as illustrated in Figures 4.8 and 4.9 (see also Appendices 5 and 15). Figures 4.4 and 4.5 demonstrate that investments and particularly savings in sub-Saharan Africa are lower than in other countries. This reveals that sub-Saharan African has not yet achieved the 'investment transition' through a long-term process of capital accumulation based on a virtuous circle of rising savings, investments and exports. Human development has improved in sub-Saharan Africa as shown in the tables on human development index and other social indicators (such as life expectancy, fertility rate, primary school, secondary school and so forth). However, human development levels in sub-Saharan Africa remain far behind compared to other regions (e.g. EAP and LAC). All of these raise our concern about sub-Saharan Africa's recent growth acceleration.

In section 4.3, the results have shown that even though SSA has experienced growth acceleration, it is not catching up with other regions. Tables 4.7 to 4.13 indicate that in terms of human development, economic infrastructure and economic structure, sub-Saharan Africa did not significantly improve. The evidence of convergence is mixed. For human development, there were some signs of convergence for some variables but not for others (notably, tertiary education). Infrastructure and economic structure did not show significant signs of convergence before and after 1994 compared to other regions (EAP, South Asia and LAC). This reinforces the idea that sub-Saharan Africa has not yet experienced a qualitative human development and structural transformation.

Finally, the study has attempted to investigate the causal relationship between economic growth and human development. The results reveal that economic growth does have a significant effect

on human development, and human development also has a significant effect on economic growth. Table 4.14 suggests that an increase in growth does have a positive effect on life expectancy, fertility rates, infant mortality, and primary school enrolment. Table 4.15 suggests that increased life expectancy positively influences growth. The same positive effect on growth augmentation applies for fertility rates, infant mortality rates and primary school enrolment.This reinforces the hypothesis used in Ranis et al. (1997) model. Overall, sub-Saharan Africa has experienced improvements in human development, but its economic growth remains lower and is not significantly converging compared to other regions. Therefore, there is uncertainty as to whether sub-Saharan Africa's recent growth is sustainable without a significant improvement in human development and transformation in economic structure and economic infrastructure. It is difficult to predict whether the recent accelerated growth sub-Saharan Africa will be sustainable and lead to development.

CHAPTER FIVE: CONCLUSION

The centre of interest in this study was sustainability. The paper attempted to analyse and evaluate the sustainability of economic growth and human development in sub-Saharan Africa. What drew our attention to conduct this study is the recent growth that sub-Saharan Africa has experienced from 1995 up to now.

Since the 1960s sub-Saharan African countries have been characterised by episodic growth paths. The question this raises is whether the recent growth accelerations will be any different. Underlying this question are the following questions. Has the recent growth experience been accompanied by broader 'development'? What is the relationship between development (in particular human development) and growth?

Chapter 2 set out two opposing views regarding how to achieve development, namely the 'World Bank view' and the 'alternative view'. The essential claim of the 'World Bank view' is that globalisation and economic growth are sufficient to fight against poverty and stimulate development. The main idea is that economic growth will trickle-down automatically and lead to development. The 'World Bank view' was initially characterised by the strong market fundamentalism of the 'Washington Consensus'. The 'Post-Washington Consensus' and Millennium Development Goals (MDGs) and the upsurge of Social Cash Transfers (SCTs) or social protection seem to be a shift towards direct poverty reduction. Despite this, social protection remains a passive instrument for poverty reduction and economic growth is still the primary channel of poverty reduction for the 'World Bank view'.

The 'alternative view' argues that economic growth is necessary but not sufficient to achieve development. Development requires more than economic growth. It requires structural transformation which implies a 'qualitative' change to a different socio-economic level. Furthermore, studies such as those by Ranis et al. (1997, 2000) argue that human development is an important component of this. High levels of human development can lead to high economic growth and high economic growth can promote a good human development or wellbeing, suggesting a virtuous cycle. Conversely, poor human development is implicated in a vicious cycle. Ranis et al. (1997: 21-22) make the strong claim that it is not possible to achieve sustained growth unless it is preceded by improvements in human development.

This debate between the 'World Bank view' and the 'alternative view' has remained unresolved for several reasons, including deficiencies in the major datasets such as World Development

Indicators (2012). The key issue, however, is conceptual. There is no consensus on what development is and how poor countries should achieve it. Similarly, there is no consensus about why sub-Saharan development has lagged. Chapter 3 attempted to investigate the post-colonial period in sub-Saharan Africa in order to get some insight into this question. Most sub-Saharan African countries have been characterised by authoritarian regimes, centralisation of power, series of coups d'état, the 'big men' syndrome, and ethnic and regional fragmentation, which have destabilised their political and socio-economic development. African leaders have been more preoccupied with power than with responding to the general needs of the population and improving their living conditions.

One interpretation of this is that sub-Saharan African countries 'chose' the wrong development model (heavy state involvement, import substitution, etc.). All that is necessary in this view is adherence to the 'basic package' ('market friendly' policy and 'good governance'). It follows that the more 'market friendly' policies that became entrenched in the period of structural adjustment have played a major part in the post-1995 revival and that the revival is sustainable. The alternative view is that, some African leaders attempted to consolidate democracy and implement strategies of development, but they have been trapped in the fractionalised society. African leaders failed to overcome individual or group interests or to pursue the national interest. It should be stressed that this does not imply that African leaders can hold the colonial experience as an excuse to cover their failure to engage the process of development after 50 years of independence.

Whatever the cause, post-colonial sub-Saharan African faces challenges in economic and social aspects. These challenges can be considered on one hand as internal constraints and on the other hand as external constraints. These internal and external constraints are interlinked. In the economic aspect, as part of internal constraints, these challenges include low levels of savings, episodic investment, and structural problems. And as part of external constraints, these challenges include terms of trade, aid, foreign direct investment, commodities prices and so on. In the social aspect, human development as indicated by social indicators in health and education remains a concern and continues to lag behind other regions.

Chapter 4 has empirically assessed recent sub-Saharan African growth and human development. Firstly, the chapter conducted a descriptive analysis using graphs and tables for the different variables mentioned. Secondly a quantitative analysis was performed using panel data analysis. Although growth has resumed since 1994, there is no evidence that sub-Saharan Africa is

converging with other developing countries (which have also experience growth accelerations), or that sub-Saharan growth is driven by internal structural changes. Sub-Saharan Africa has experienced improvements in human development. However, the gap between it and other developing regions remains large. Although there is convergence in some indicators (such as life expectancy or infant mortality rate) this is not the case for many other indicators. In particular, indicators of economic structure (such as telephone infrastructure and manufacturing exports) do not show signs of convergence. Once again, the economic structural and economic infrastructure of sub-Saharan Africa has remained unchanged and negatively significant compared to other regions under the examination period. This demonstrates that sub-Saharan Africa's recent growth remains a concern in terms of sustainability and to produce a genuine development.

In summary, the study argues that economic growth without human development is not sustainable, particularly in the case of sub-Saharan Africa. In addition, it shows that there is a need for strong economic policies capable of sustaining capital accumulation through high domestic savings, high rates of investment, exports to achieve an 'investment transition' and to improve productivity growth. Besides that, the improvement of human development constitutes an important element for a qualitative and sustainable economic growth. The intention in this study was not to come up with an ideal solution or to be conclusive on how to achieve sustainability, but to lay a foundation for further research, to explore the dynamics on the question of sustainable development in sub-Saharan Africa.

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APPENDICES

APPENDIX 1:

Gross domestic product growth annual % (constant 2000 US dollars) of some sub-Saharan Africa countries

Years	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2011
Countries							
Angola	…	3.28	-3.78	6.43	10.07	12.59	3.4
Botswana	10	11.86	4.06	7.44	5.28	3.01	5.05
Burundi	5.35	3.72	-2.39	-1.34	2.20	4.49	4.19
Burkina Faso	4.18	3.012	3.95	6.77	6.53	5.40	4.16
Cameroon	9.40	-2.22	-1.86	4.74	3.71	2.96	3.8
Chad	9.18	1.94	2.44	2.65	17.16	2.36	3.1
D.R.Congo	1.86	0.005	-7.11	-3.88	4.31	5.60	6.87
Congo	10.57	-0.26	0.5	2.48	4.1	5.26	4.45
Côte d'Ivoire	0.32	1.17	1.50	3.21	0.0084	2.18	-4.7
Gabon	2.55	1.72	3.13	0.40	1.74	2.85	4.81
Ghana	-0.25	4.80	4.284	4.31	5.04	6.65	14.39
Kenya	2.52	5.64	1.60	2.16	3.65	4.60	4.5
Lesotho	3.09	3.10	4.09	3.92	2.90	4.58	5.79
Madagascar	-1.54	2.74	-0.27	3.83	2.59	3.07	0.98
Malawi	2.17	2.32	3.51	3.92	2.06	7.47	4.50
Mali	-2.24	3.86	2.98	5.18	6.39	4.98	2.7
Mauritius	4.62	7.41	4.89	5.79	3.06	4.50	4.11
Mozambique	-4.62	5.61	3.58	7.52	8.83	…	…
Namibia	-0.18	2.68	4.95	3.51	5.00	4.39	3.79
Nigeria	-2.75	5.42	2.49	3.07	6.18	6.69	6.67
Rwanda	2.67	1.50	-3.95	10.22	7.68	7.44	8.6
South Africa	1.40	1.67	0.88	2.79	3.83	3.22	3.12
Sudan	0.83	4.55	5.13	6.45	5.36	7.34	-4.9
Swaziland	5.39	13.47	3.06	2.85	2.10	2.47	1.3
Uganda	0.69	5.09	7.04	6.05	6.70	8.21	6.7
Zambia	0.53	1.63	-1.28	2.83	4.804	6.42	5.90
Zimbabwe	4.35	4.59	1.39	2.40	-7.19	…	…

Source: Word Bank Database 2012 (World Development Indicators).

APPENDIX 2:

Gross domestic product per capita PPP (current US dollars) of some sub-Saharan Africa countries

Years	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2011
Countries							
Angola	750.563	836.774	579.330	561.200	1049.076	3792.627	5147.71
Botswana	1014.727	1954.287	2835.686	3147.129	4412.334	6493.833	8680.31
Burundi	228.772	213.642	173.169	140.435	127.292	200.937	271.245
Burkina Faso	210.302	287.001	238.008	231.572	309.831	488.928	600.383
Cameroon	770.897	1005.336	840.860	664.728	787.422	1139.367	1271.31
Chad	183.574	242.374	240.048	203.751	346.499	694.841	823.022
D.R.Congo	359.363	252.112	194.658	114.813	108.896	174.845	230.856
Congo	1079.996	1017.009	891.094	832.096	1179.709	2575.248	3562.54
Côte d'Ivoire	762.651	855.875	755.172	753.481	772.183	1118.900	1194.6
Gabon	4773.717	4700.053	4816.007	4300.588	4762.051	8230.976	11113.9
Ghana	352.725	387.466	384.458	372.678	372.407	1127.971	1570.13
Kenya	347.764	369.036	297.051	436.882	447.006	741.155	808.001
Lesotho	270.949	264.894	411.298	417.969	478.997	801.588	1105.91
Madagascar	354.929	260.590	245.703	261.910	282.614	401.916	466.663
Malawi	176.659	167.276	178.223	193.485	199.823	289.618	370.615
Mali	175.260	237.514	261.982	238.098	328.215	551.970	668.575
Mauritius	1091.529	1983.395	3082.642	3730.318	4507.898	6696.427	8797.05
Mozambique	281.378	215.930	149.950	229.112	254.344	392.257	534.806
Namibia	1602.550	1543.267	1910.606	1980.783	2543.195	4144.398	5292.89
Nigeria	498.588	255.563	254.336	311.974	557.883	1172.400	1452.09
Rwanda	264.522	334.853	257.828	257.513	221.494	444.854	582.787
South Africa	2733.059	3167.202	3558.464	3311.475	3731.095	6004.264	8070.03
Sudan	448.153	633.516	375.258	337.430	515.262	1260.534	1234.47
Swaziland	776.265	874.963	375.258	1590.292	1858.048	3028.807	3725.28
Uganda	183.269	319.471	194.163	273.009	264.912	439.200	487.105
Zambia	513.295	398.854	392.854	347.746	441.531	1014.306	…
Zimbabwe	894.389	766.306	642.107	606.944	482.951	420.243	…

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 3:

Some sub-Saharan Africa countries compared with other countries in terms of GDP per capita PPP (current US dollars)

Years	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2011
Botswana	1014.73	1954.29	2835.69	3147.13	4412.33	6493.83	8680.31
Brazil	1817.25	2453.94	3234.74	4484.11	3467.38	8200.79	12593.9
Angola	750.563	836.774	579.330	561.200	1049.076	3792.627	5147.71
Chile	1930.50	1925.65	3645.95	5141.30	5353.95	10662.13	14394.4
Republic of Congo	1079.996	1017.01	891.094	832.096	1179.71	2575.248	3562.54
Malaysia	1999.62	2066.15	3415.05	4009.08	4508.62	7233.82	9656.25
Nigeria	498.588	255.563	254.336	311.974	557.883	1172.4	2168.21
Rwanda	264.522	334.853	257.828	257.513	221.494	444.854	582.787
Republic of Korea	2115.19	4425.44	8778.22	10369.58	13755.94	19558.61	22424.06
South Africa	2733.06	3167.2	3558.46	3311.48	3731.1	6004.26	8070.03

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 4: Sub-Saharan Africa region compared to other regions in terms of different variables

Sub-Saharan Africa region compared with other regions in terms of GDP per capita PPP (current US dollars)

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2011
East Asia and Pacific	1288.87	2265.97	3458.93	3747.32	4087.24	6108.07	8475.2
Latin America and Caribbean	2039.80	2164.66	3216.01	4098.67	4074.75	7272.75	9753.87
OECD members	8947.55	14314.50	19593.44	22025.80	26012.11	33827.31	37029
Euro area	7933.14	14486.22	20727.78	21802.25	25989.75	37109.46	39267.8
Sub-Saharan Africa	571.12	575.17	552.94	537.47	646.66	1158.32	1445.45

Source: World Bank Database 2012 (World Development Indicators).

Sub-Saharan Africa compared to other regions in terms of fertility rate (total births per women)

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
East Asia and Pacific	2.89	2.66	2.24	1.98	1.86	1.79
Latin America and Caribbean	3.87	3.38	2.99	2.71	2.49	2.28
OECD members	2.05	1.95	1.88	1.78	1.75	1.80
Euro area	1.64	1.52	1.42	1.43	1.48	1.55
Sub-Saharan Africa	6.58	6.36	6.04	5.71	5.41	5.07
South Asia	4.79	4.39	3.95	3.5	3.1	2.82

Source: World Bank Database 2012 (World Development Indicators).

Sub-Saharan Africa compared to other regions in terms of mortality rate, under-5 (per 1,000 live births)

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
East Asia and Pacific	63.72	55.60	50.11	41.87	31.83	23.63
Latin America and Caribbean	71.02	57.65	47.29	37.56	29.05	22.73
OECD members	29.55	23.36	18.71	14.29	11.14	8.84
Euro area	13.67	10.69	8.30	6.41	5.31	4.49
Sub-Saharan Africa	187.42	179.33	173.79	160.63	140.96	120.25
South Asia	142.58	124.88	110.04	94.94	80.82	62.16

Source: World Bank Database 2012 (World Development Indicators).

Sub-Saharan Africa compared to other regions in terms of school enrolments, secondary (% gross)

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
East Asia and Pacific	39.54	42.95	50.88	61.39	67.97	77.26
Latin America and Caribbean	52.47	58.71	66.04	77.63	86.69	88.82
OECD members	83.39	85.85	90.28	94.25	97.64	98.01
Euro area	87.24	91.99	100.95	103.8	104.7	106.6
Sub-Saharan Africa	21.19	22.67	23.09	24.48	29.01	35.91
South Asia	30.3	33.97	40.53	42.95	46.78	54.31

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 5:

Industry value added (% of GDP) of some sub-Saharan Africa countries

Years	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Countries						
Botswana	53.79	63.21	54.10	53.91	52.44	48.85
Burundi	14.24	17.18	20.98	16.15	18.16	18.35
Chad	13.29	15.48	13.26	12.94	32.06	54.56
D.R.Congo	29.81	29.08	16.71	22.83	22.90	27.03
Congo	53.65	35.39	39.43	57.63	65.54	74.52
Côte d'Ivoire	20.13	22.25	21.51	23.21	23.51	25.99
Gabon	60.42	43.40	47.63	51.44	54.34	59.72
Kenya	19.51	18.94	17.64	17.46	17.90	19.15
Lesotho	25.66	31.34	41.56	42.52	33.57	34.65
Madagascar	13.46	13.46	11.28	13.28	15.21	16.14
Malawi	21.24	25.43	24.77	18.37	17.66	16.36
Mali	14.53	15.55	17.31	17.61	25.11	24.10
Mauritius	26.32	32.80	32.71	31.16	29.75	27.51
Mozambique	25.42	20.90	14.83	20.64	25.56	24.59
Namibia	43.91	41.02	31.28	27.93	30.03	32.07
Rwanda	22.50	20.01	19.02	17.66	13.66	14.39
South Africa	44.28	41.59	36.02	32.25	31.80	31.45
Sudan	15.61	15.19	11.67	16.51	23.17	30.68
Swaziland	28.24	38.94	42.75	44.27	45.60	47.36
Uganda	9.67	10.45	13.36	18.88	23.64	25.89
Zambia	43.64	49.09	43.49	29.64	27.51	37.28

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 6:

Agriculture value added (% of GDP) of some sub-Saharan Africa countries

Years	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Countries						
Botswana	9.79	5.63	4.76	3.30	2.11	2.25
Burundi	59.41	55.48	51.07	48.47	44.27	37.42
Chad	38.00	32.68	35.59	40.36	30.11	12.60
D.R.Congo	31.03	30.54	51.36	46.37	50.90	42.81
Congo	7.53	12.73	10.97	8.54	5.67	4.06
Côte d'Ivoire	24.64	30.97	29.10	23.64	24.38	23.84
Gabon	6.31	9.26	8.29	6.96	5.80	4.65
Ghana	53.73	48.58	43.31	40.70	40.25	30.43
Kenya	33.32	30.83	30.57	31.52	28.94	25.99
Lesotho	24.23	25.19	18.83	17.19	10.47	7.98
Madagascar	34.70	33.59	27.59	29.71	29.17	26.77
Malawi	41.62	46.97	37.38	36.04	35.70	30.52
Mauritius	15.52	14.26	10.85	8.38	6.47	4.33
Mozambique	36.82	42.53	35.99	30.69	26.54	29.87
Namibia	10.73	11.68	11.21	11.39	10.69	9.20
Rwanda	40.27	37.46	38.57	43.55	37.35	34.52
South Africa	5.31	5.29	4.19	3.75	3.37	2.99
Sudan	34.25	38.06	39.56	44.76	38.17	27.55
Swaziland	20.51	16.09	11.20	13.19	9.56	8.06
Uganda	55.45	56.68	50.95	39.40	26.07	24.17
Zambia	15.99	16.97	21.84	20.77	22.62	18.77
Zimbabwe	16.52	15.99	14.38	19.98	17.21	18.89

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 7:

Exports of goods and services (% of GDP) of some sub-Saharan Africa countries

Years	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Countries						
Botswana	58.69	65.65	49.70	52.83	46.33	40.55
Burundi	10.18	10.33	10.24	7.56	6.47	6.52
Cameroon	30.48	19.37	20.28	22.19	20.38	26.61
Chad	13.60	14.22	14.88	17.95	32.79	50.07
D.R.Congo	19.21	26.23	19.89	24.89	26.07	24.61
Congo	57.92	44.87	51.07	74.63	80.88	78.67
Côte d'Ivoire	40.12	33.42	34.73	40.54	47.46	45.96
Gabon	61.58	41.29	52.63	60.003	58.97	61.64
Ghana	6.46	17.60	20.83	35.85	40.85	26.68
Kenya	27.02	23.65	32.36	22.09	25.40	26.62
Lesotho	15.54	17.66	22.49	30.70	53.53	50.31
Madagascar	11.76	16.01	19.19	23.80	25.80	28.86
Malawi	24.29	22.84	24.52	26.11	24.89	27.78
Mauritius	47.94	63.57	59.04	63.21	60.16	54.77
Mozambique	6.27	6.72	13.16	14.007	28.44	31.40
Namibia	59.41	57.51	51.03	46.22	42.16	47.08
Nigeria	16.68	28.99	42.52	43.49	41.61	40.08
Rwanda	11.27	7.68	5.90	6.80	9.51	11.78
South Africa	27.28	28.17	22.08	25.63	28.94	30.36
Sudan	8.87	4.68	4.49	8.51	15.34	18.73
Swaziland	63.17	74.12	59.51	65.44	90.81	65.19
Uganda	11.90	8.76	8.76	11.57	12.19	20.75
Zambia	32.14	35.52	35.31	28.53	31.45	39.15
Zimbabwe	19.11	23.60	30.93	38.53	33.44	38.85

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 8:

Life expectancy at birth, total years of some sub-Saharan Africa countries

Years	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Countries						
Angola	40.53	41.02	41.55	43.78	47.32	49.83
Botswana	61.94	63.83	61.70	53.97	49.73	52.42
Burundi	47.77	47.28	44.93	45.35	47.03	48.99
Burkina Faso	47.44	48.30	48.73	49.64	51.46	53.96
Cameroon	52.26	53.21	52.61	50.81	49.51	50.23
Chad	49.21	50.54	50.26	49.02	48.10	48.64
D.R.Congo	46.18	46.66	46.42	45.49	46.50	47.58
Congo	56.81	56.75	55.20	54.23	54.58	56.17
Côte d'Ivoire	52.59	52.95	51.72	50.37	50.82	53.40
Gabon	57.37	60.60	61.30	60.28	59.61	61.36
Ghana	53.97	55.85	57.74	58.08	59.84	62.81
Kenya	58.94	59.57	57.68	53.63	52.32	55.10
Lesotho	55.26	58.06	58.71	51.36	44.76	45.95
Madagascar	49.00	49.92	53.08	57.74	62.41	65.73
Malawi	45.40	46.73	46.95	46.12	47.45	51.73
Mali	41.13	43.42	45.08	46.63	48.22	50.12
Mauritius	67.96	68.90	70.12	70.79	72.11	72.68
Mozambique	42.74	42.85	44.41	46.65	47.68	48.93
Namibia	59.07	60.43	60.69	58.81	57.65	60.85
Nigeria	45.80	45.77	45.30	45.59	47.90	50.46
Rwanda	49.59	40.64	28.40	40.75	50.32	54.11
South Africa	58.74	61.062	60.86	56.96	52.20	51.37
Sudan	50.33	51.86	53.57	55.79	58.64	60.48
Swaziland	56.17	58.72	58.11	51.81	46.30	47.31
Uganda	49.84	48.46	45.66	45.29	48.41	52.36
Zambia	51.71	49.16	44.94	42.36	43.03	46.96
Zimbabwe	60.65	61.29	56.55	47.63	43.47	47.17

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 9:

Fertility rate, total (births per woman) of some sub-Saharan Africa countries

Years	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Countries						
Angola	7.20	7.18	7.09	6.91	6.51	5.74
Botswana	5.86	5.04	4.25	3.63	3.15	2.85
Burundi	6.52	6.49	6.41	6.01	5.33	4.60
Burkina Faso	7.05	6.92	6.67	6.37	6.11	5.92
Cameroon	6.36	6.07	5.61	5.11	4.88	4.62
Chad	6.74	6.69	6.64	6.62	6.50	6.15
D.R.Congo	6.74	7	7.12	7.01	6.63	6.02
Congo	5.94	5.51	5.18	4.99	4.82	4.62
Côte d'Ivoire	7.24	6.54	5.84	5.30	4.99	4.60
Gabon	5.19	5.18	4.98	4.33	3.72	3.34
Ghana	6.30	5.82	5.27	4.79	4.52	4.29
Kenya	7.15	6.41	5.52	5.07	4.95	4.79
Lesotho	5.43	5.08	4.68	4.29	3.76	3.33
Madagascar	6.20	6.23	6.11	5.74	5.23	4.79
Malawi	7.28	6.93	6.47	6.17	6.03	5.99
Mali	7.07	7.08	7.00	6.87	6.68	6.42
Mauritius	2.28	2.14	2.25	2.03	1.88	1.58
Mozambique	6.43	6.30	6.09	5.81	5.47	5.07
Namibia	6.13	5.49	4.84	4.24	3.76	3.36
Nigeria	6.73	6.52	6.21	5.96	5.77	5.59
Rwanda	8.23	7.55	6.36	5.90	5.59	5.41
South Africa	4.49	3.92	3.30	2.94	2.75	2.53
Sudan	6.31	6.05	5.78	5.47	5.06	4.57
Swaziland	6.51	6.03	5.21	4.45	3.95	3.52
Uganda	7.10	7.09	7.05	6.93	6.70	6.33
Zambia	6.94	6.60	6.30	6.17	6.11	6.20
Zimbabwe	6.61	5.58	4.68	4.03	3.70	3.42

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 10:

Mortality rate, infant (per 1,000 live births) of some sub-Saharan Africa countries

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2011
Angola	162.06	148.76	136.3	123.48	112.18	101.96	96.4
Botswana	50.96	43.32	42.84	48.98	40	23.74	20.3
Burundi	114.26	110.42	108.66	102.94	96.52	90.12	86.3
Burkina Faso	111.9	105.98	102.72	97.26	90.78	84.7	81.6
Cameroon	96.06	91.26	88.42	86.8	84.82	81.7	79.2
Chad	119.6	114.92	110.66	106.64	102.88	99.32	97.1
D.R.Congo	120.44	117.3	117.3	117.3	117.3	113.9	110.6
Congo	79.18	76.12	73.26	70.38	67.82	65.28	63.8
Côte d'Ivoire	111.58	105.66	101.58	96.9	91.1	84.64	81.2
Gabon	77.34	70.76	65.6	61.64	57.8	52.6	49.3
Ghana	92.14	81.42	71.86	66.32	60.32	54.86	51.8
Kenya	64.74	61.32	69.06	71.46	63.64	53.62	48.3
Lesotho	85.06	74.08	71.08	80.14	82.58	72.38	62.6
Madagascar	106.7	102.16	88.88	72.56	58.96	47.96	42.8
Malawi	143.7	137.36	125.78	107.56	86.22	64.16	52.9
Mali	146.92	136	126.12	117.2	109.3	102.2	98.2
Mauritius	27.14	22.3	19.46	18.02	14.26	13.24	12.8
Mozambique	161.68	153.92	144.6	124.26	102.9	82.34	71.6
Namibia	56.78	51.34	47.02	47.32	46.76	36.22	29.6
Nigeria	125.52	126.02	126.38	118.18	102.14	86.44	78
Rwanda	107.16	95.22	121.24	123.64	83.16	50.9	38.1
South Africa	59.94	50.48	47.26	50.3	52.76	43.72	34.6
Sudan	84	79.58	73.86	68.52	63.69	59.3	56.6
Swaziland	74.4	63.31	62.24	72.36	81.16	75.56	69
Uganda	114.52	109	102.08	91.58	77.36	64.94	57.9
Zambia	102.38	111.74	111.28	97.72	82.42	64.48	52.7
Zimbabwe	58.42	51.58	55.82	61.56	58.96	49.8	42.8

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 11:

Mortality rate, under-5 (per 1,000 live Births) of some sub-Saharan Africa countries

Years	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2011
Countries							
Angola	273.66	251.58	230.68	207.98	187.22	168.1	157.6
Botswana	66.64	55.36	58.2	75.46	67.3	32.46	25.9
Burundi	191.1	183.92	180.7	169.9	157.9	146.12	139.1
Burkina Faso	226.58	211.36	202.88	188.58	171.28	154.9	146.4
Cameroon	156.6	147.72	142.72	140.2	137.36	131.98	127.2
Chad	223.6	212.46	202.16	192.44	183.22	174.5	169
D.R.Congo	187.88	181.4	181.4	181.4	181.4	174.42	167.7
Congo	126.24	153.6	148.36	110.44	105.88	101.34	98.8
Côte d'Ivoire	162.46	153.6	148.36	141.74	132.54	121.3	114.9
Gabon	107.98	97.84	90	84.26	79.14	71.18	65.6
Ghana	149.8	130.28	113.14	103.22	92.6	82.94	77.6
Kenya	100.22	94.12	108.04	114.92	101.8	82.94	72.8
Lesotho	107.98	92.18	88.54	109.3	119.62	102.9	86
Madagascar	177.12	168.46	143.86	114.36	90.2	70.78	61.6
Malawi	242.82	232.72	213.6	180.6	142.72	103.64	82.6
Mali	292.36	267.08	243.64	222.34	203.14	185.5	175.6
Mauritius	32.92	26.02	22.2	20.28	16.58	15.48	15.1
Mozambique	241.98	230.28	216.06	184.68	152.34	120.02	103.1
Namibia	86.18	76.72	69.36	71.02	73.4	54.39	41.5
Nigeria	211.68	212.6	213.26	198.34	168.44	139.42	124.1
Rwanda	177.46	156.38	225.58	219.42	135.54	77.3	54.1
South Africa	80.72	65.96	61.14	68.62	78.24	65.48	46.7
Sudan	134.96	126.9	116.68	107.1	98.62	90.8	86
Swaziland	103.4	86.2	85.38	104.6	124.04	117.74	103.6
Uganda	191	182.46	171.24	151.7	125.04	102.34	89.9
Zambia	168.18	187.1	188.98	165.76	138.04	105.86	82.9
Zimbabwe	88.94	77.14	87.44	102.04	100.32	81.66	67.1

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 12:

School enrolments, primary (% gross) of some sub-Saharan Africa countries

Years	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Countries						
Botswana	94.28	102.23	103.87	103.18	106.42	108.54
Burundi	36.93	63.75	70.75	54.97	77.01	135.62
Burkina Faso	20.12	28.01	33.54	40.73	48.22	68.89
Cameroon	94.59	97.77	87.42	82.11	106.08	114.59
Congo	132.08	131.90	120.97	87.83	105.77	111.16
Côte d'Ivoire	72.48	67.40	66.00	71.88	76.63	76.82
Ghana	75.33	70.14	79.29	81.78	83.56	102.62
Kenya	113.83	103.95	94.67	92.38	103.21	110.83
Lesotho	104.60	109.24	106.51	103.97	112.31	105.27
Madagascar	127.64	100.00	94.60	95.89	121.80	146.86
Malawi	62.60	63.01	107.84	143.60	133.85	130.79
Mali	24.45	23.93	31.79	48.80	65.51	77.46
Mauritius	106.75	110.13	107.61	98.41	100.07	99.58
Mozambique	88.68	67.68	61.46	69.23	90.01	111.41
Nigeria	106.82	85.77	88.92	89.44	99.185	89.68
Swaziland	94.67	93.37	94.50	93.63	97.47	111.34
Uganda	62.92	71.17	67.23	114.24	132.54	122.11
Zambia	97.45	98.63	92.63	84.34	99.16	118.70

Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 13:

School enrolments, secondary (% gross) of some sub-Saharan Africa countries

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Botswana	23.50	33.57	50.91	73.36	75.58	80.55
Burundi	2.98	4.14	6.00	…	12.14	19.10
Burkina Faso	2.91	5.34	7.10	9.42	11.39	17.35
Cameroon	19.02	23.76	26.21	25.49	29.54	36.67
Congo	68.43	61.36	48.72	42.01	41.29	…
Côte d'Ivoire	18.59	18.04	…	23.27	25.96	…
Ghana	38.85	37.04	35.33	40.35	42.69	54.52
Kenya	32.15	40.31	…	38.82	44.58	55.39
Lesotho	19.98	24.01	27.08	30.29	33.82	41.26
Madagascar	34.73	19.60	…	…	21.77	28.14
Malawi	16.87	16.60	18.48	32.28	30.17	30.74
Mali	7.12	6.25	8.49	13.22	22.69	32.10
Mauritius	46.20	50.28	56.41	72.98	78.60	88.30
Mozambique	6.87	6.58	6.86	5.63	9.84	20.62
Nigeria	23.84	25.40	…	23.77	31.31	36.73
Swaziland	37.65	…	47.59	44.84	43.31	54.14
Uganda	7.67	11.22	10.17	13.02	18.69	25.75
Zambia	17.18	20.42	20.72	…	…	…
South Africa	…	62.73	71.75	89.01	87.77	…

Source: World Bank Database 2012 (World Development Indicators).

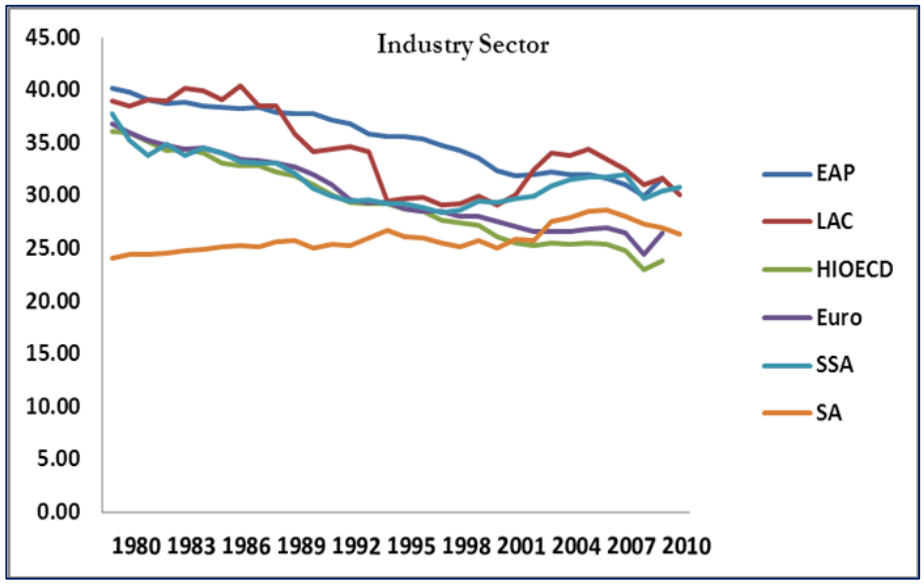
APPENDIX 14:

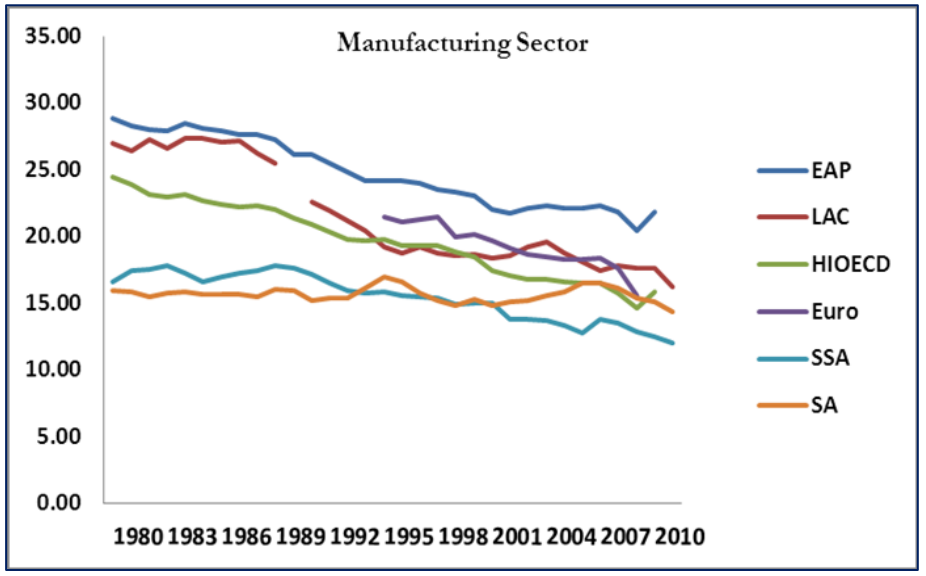
School enrolments, tertiary (% gross) of some sub-Saharan Africa

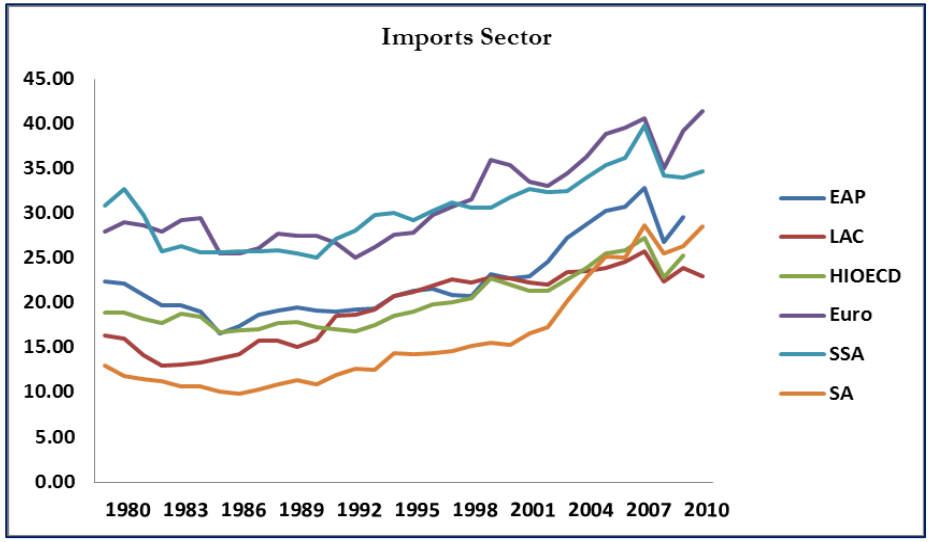
	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2011
Botswana	1.49	2.31	4.90	5.45	6.99	7.44	7.44
Burundi	0.52	0.63	0.77	1.01	1.94	2.71	2.71
Burkina Faso	0.44	0.64	0.90	0.94	1.49	2.86	2.86
Cameroon	1.72	2.42	3.08	4.61	5.07	8.59	8.59
Congo	5.49	5.49	5.30	4.44	4.04	5.99	5.99
Côte d'Ivoire	2.49	2.61	3.55	6.50	…	8.72	8.72
Ghana	1.61	…	1.18	…	5.65	7.16	7.16
Kenya	1.15	1.49	…	2.75	2.88	4.03	4.03
Lesotho	1.10	1.48	2.21	2.22	2.64	3.52	3.52
Madagascar	3.66	3.71	3.07	2.18	2.52	3.42	3.42
Malawi	0.46	0.48	0.57	0.40	0.44	0.58	0.58
Mali	0.91	0.74	0.80	1.50	2.24	5.39	5.39
Mauritius	0.77	1.74	5.22	8.42	18.18	23.63	23.63
Mozambique	0.10	0.20	0.41	0.59	1.19	…	…
Nigeria	2.78	3.70	…	6.01	9.84	…	…
Swaziland	4.05	4.00	4.14	5.16	4.71	4.43	4.43
Uganda	0.67	0.98	1.45	2.11	3.35	3.80	3.80
Zambia	1.50	2.11	…	2.37	…	…	…
South Africa	…	11.56	13.40	…	…		…

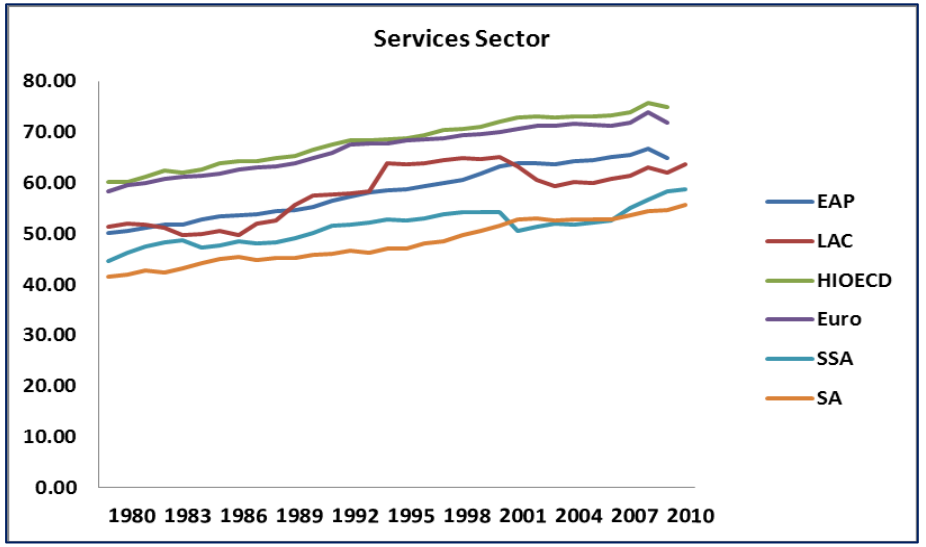
Source: World Bank Database 2012 (World Development Indicators).

APPENDIX 15: Selected indicators by regions

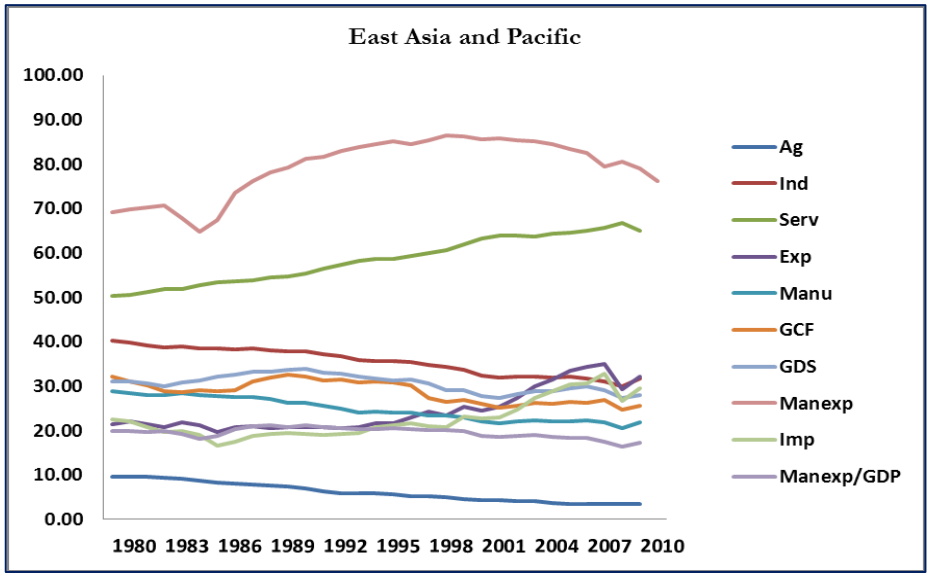


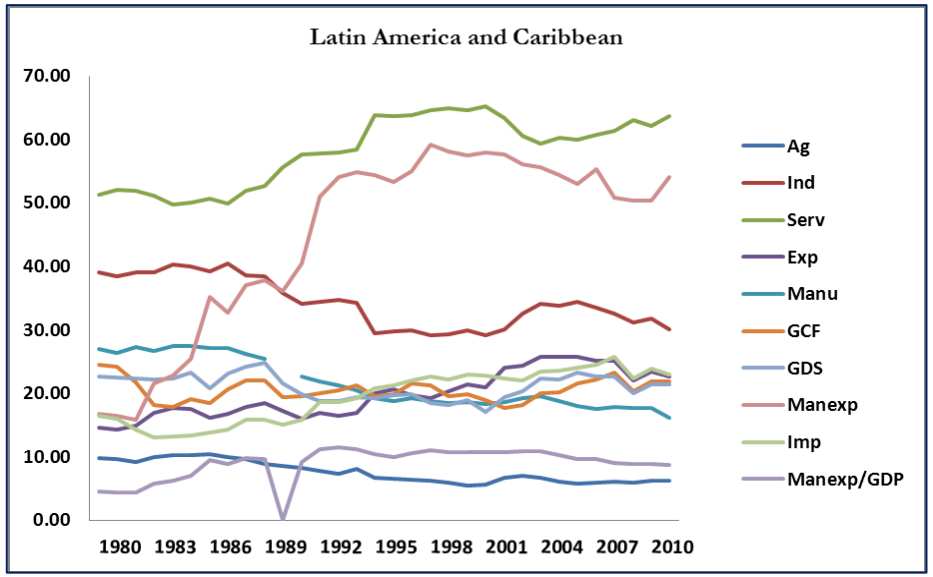


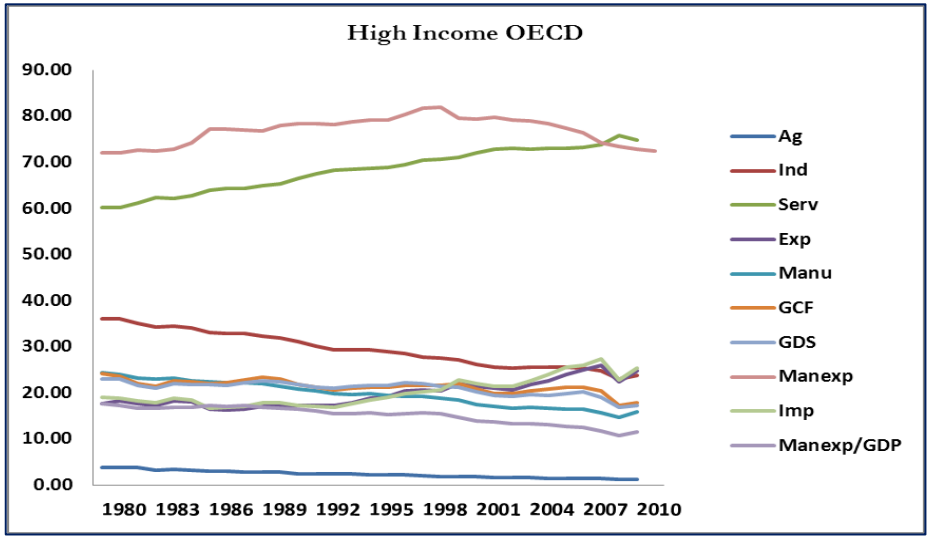


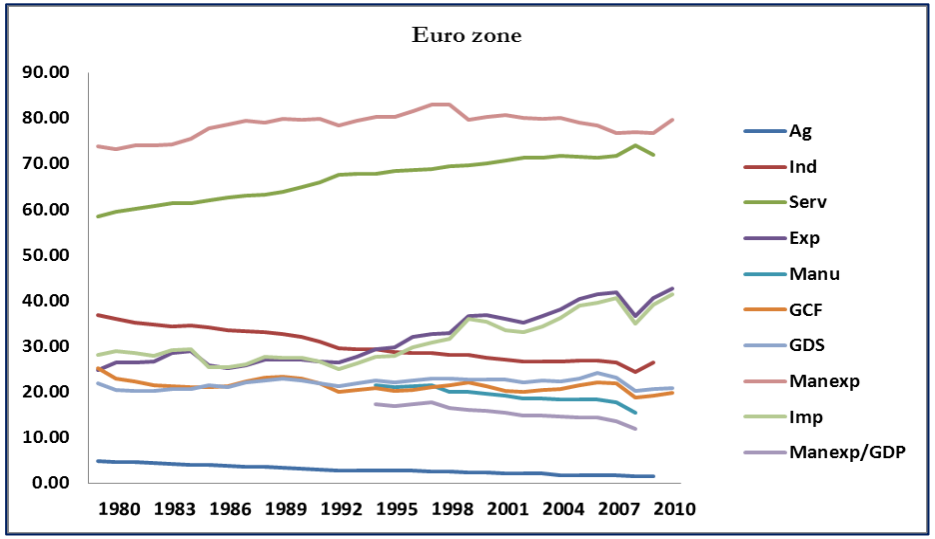


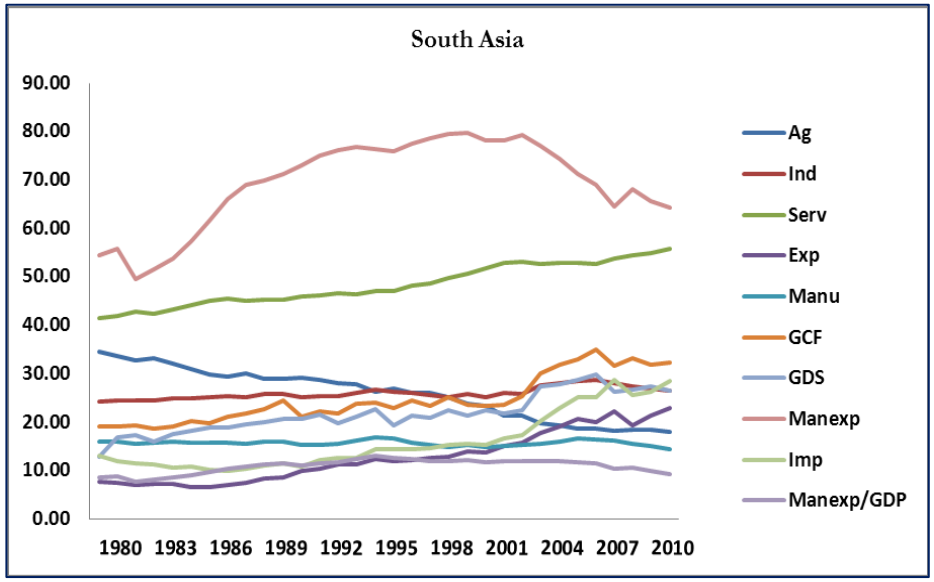
APPENDIX 16: Structural characteristic by regions







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20.00
10.00
0.00
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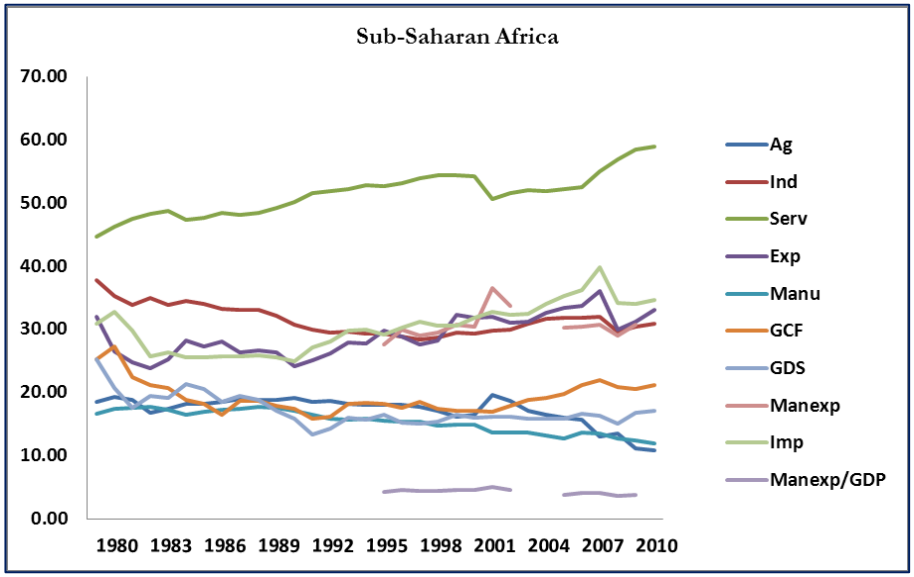
Serv
Exp
Manu
GCF
GDS
Manexp
Imp
Manexp/GDP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10.00
0.00
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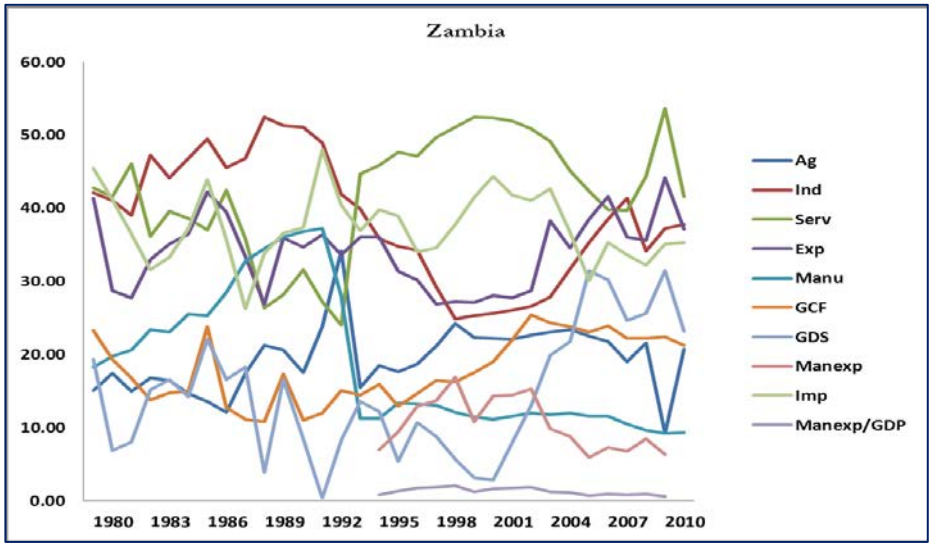
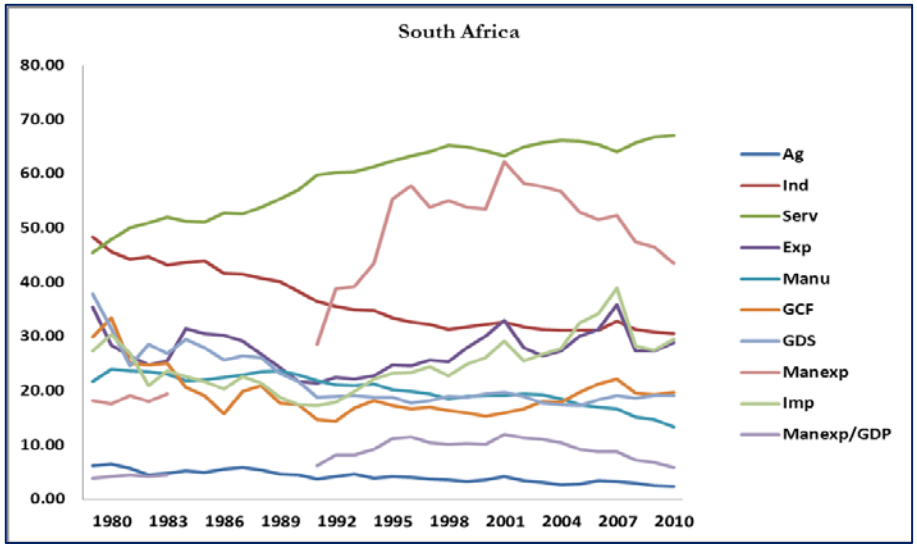
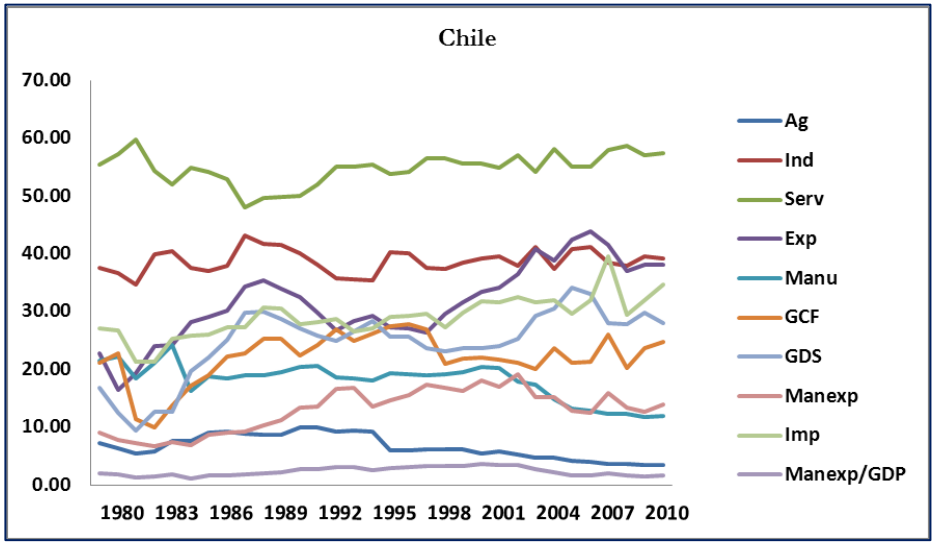
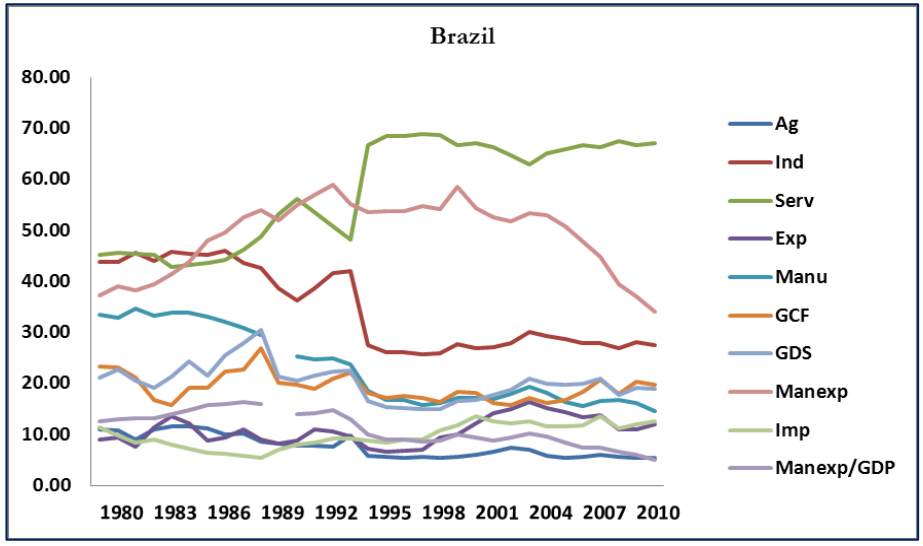
Ind
Serv
Exp
Manu
GCF
GDS
Manexp
Imp
Manexp/GDP

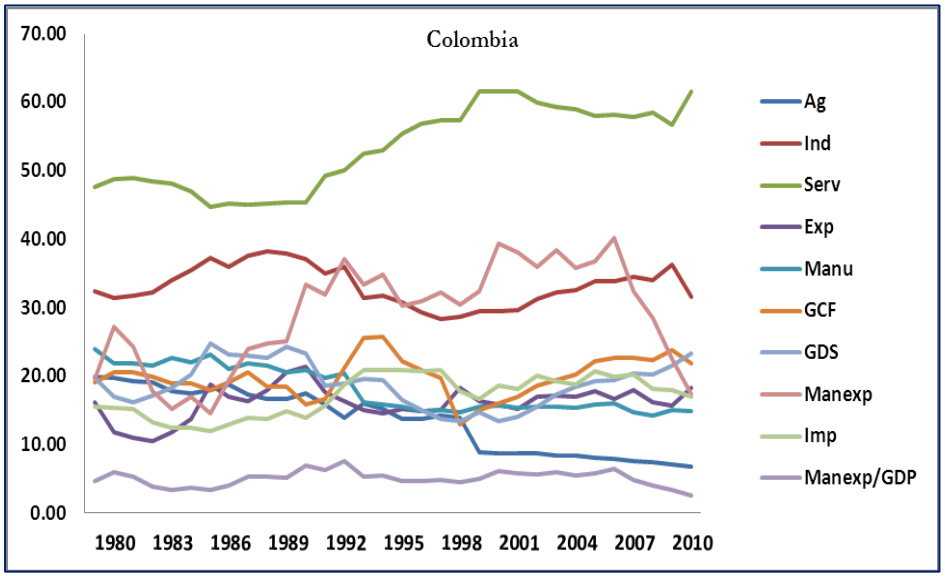
APPENDIX 17: Structural characteristic by countries







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20.00
10.00
0.00
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Ind
Serv
Exp
Manu
GCF
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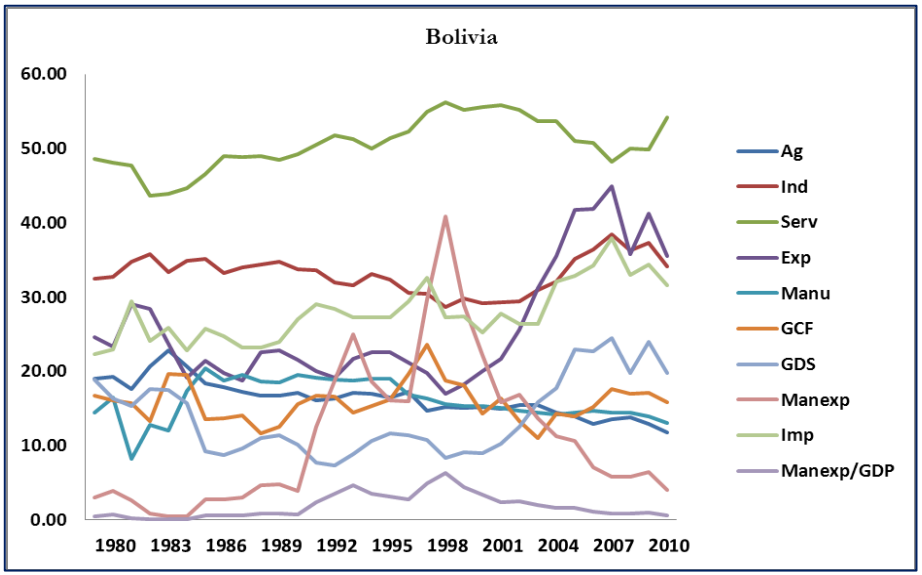
Manexp
Imp
Manexp/GDP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Serv
Exp
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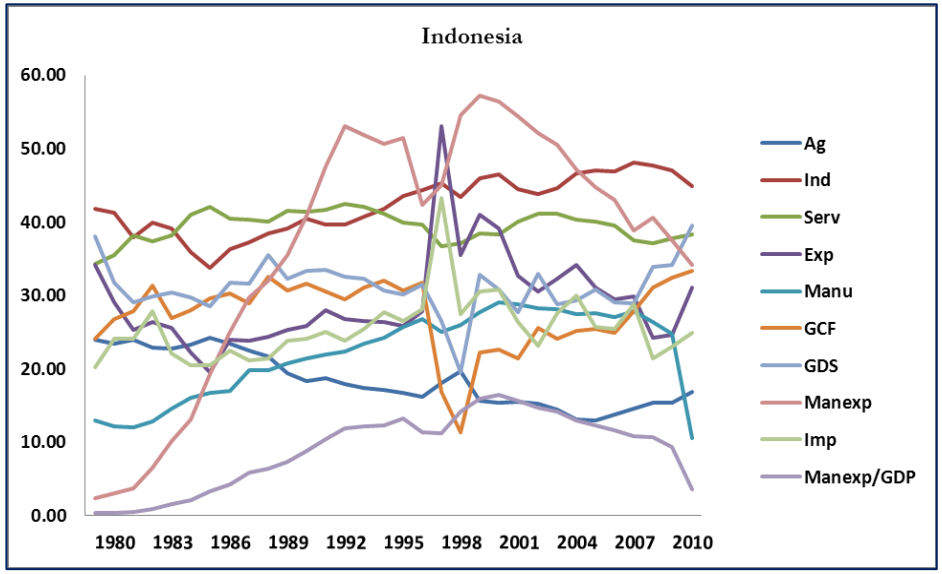
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Ind
Serv
Exp
Manu
GCF
GDS
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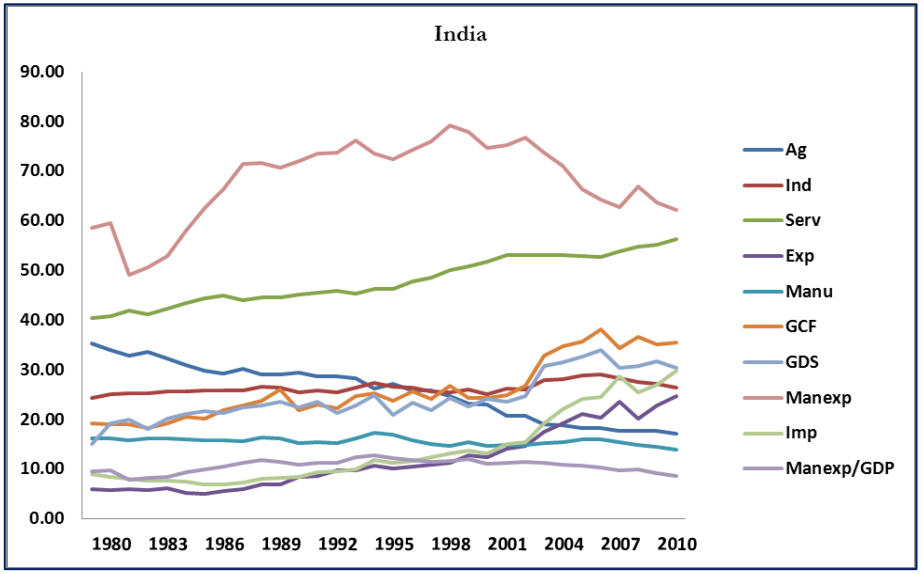
Imp
Manexp/GDP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Ind
Serv
Exp
Manu
GCF
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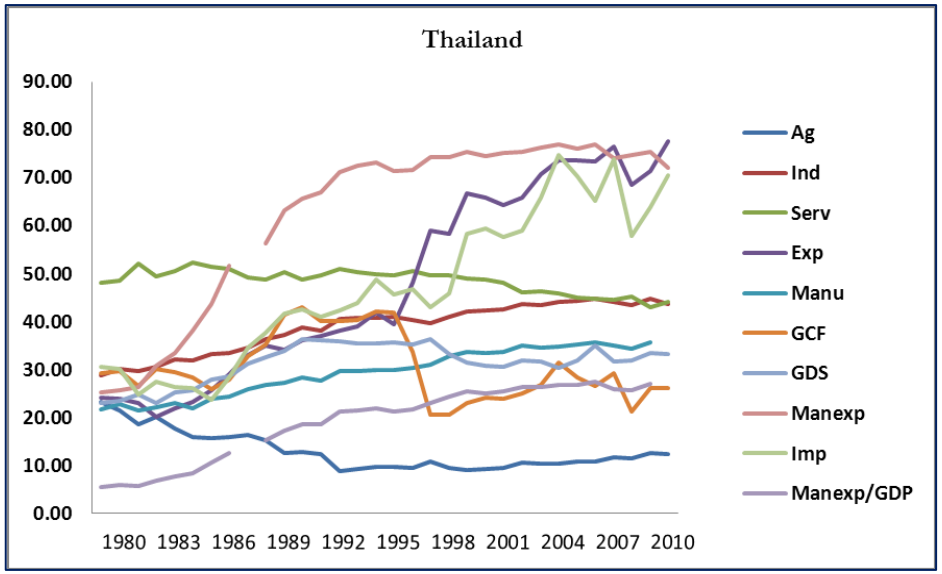
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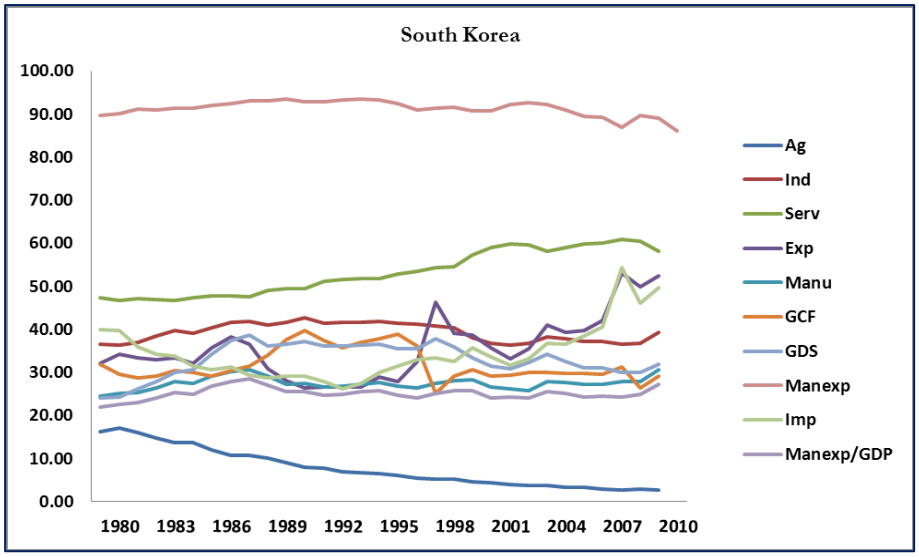
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60.00
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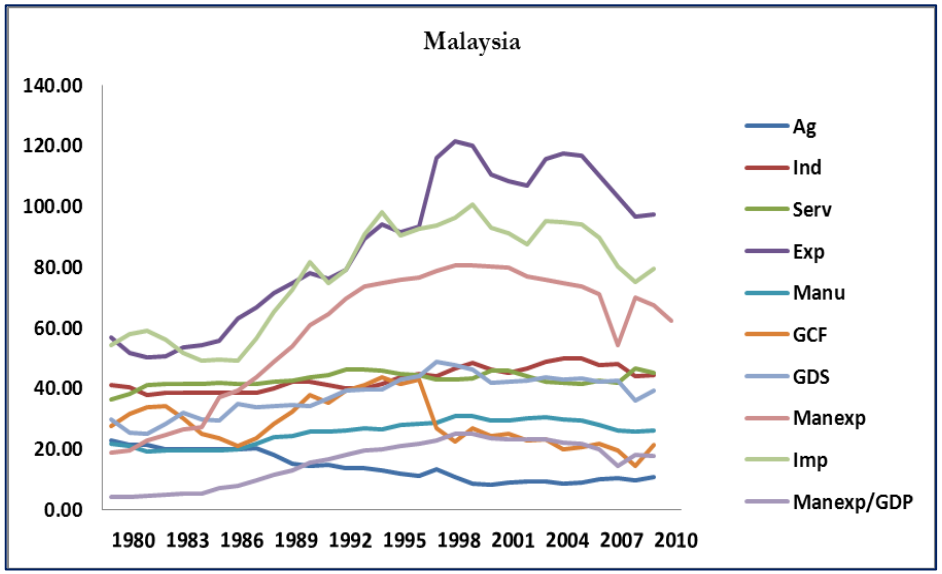
Imp
Manexp/GDP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Serv
Exp
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GCF
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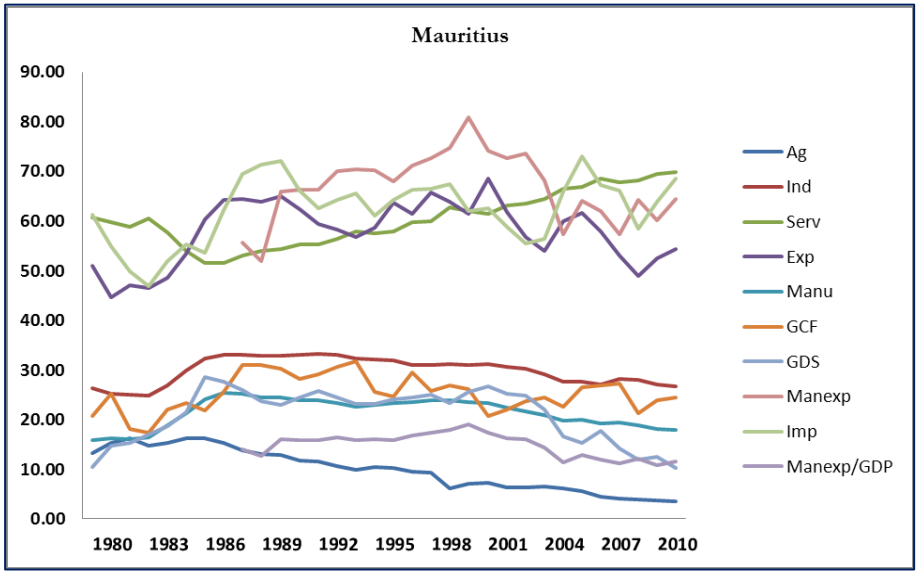
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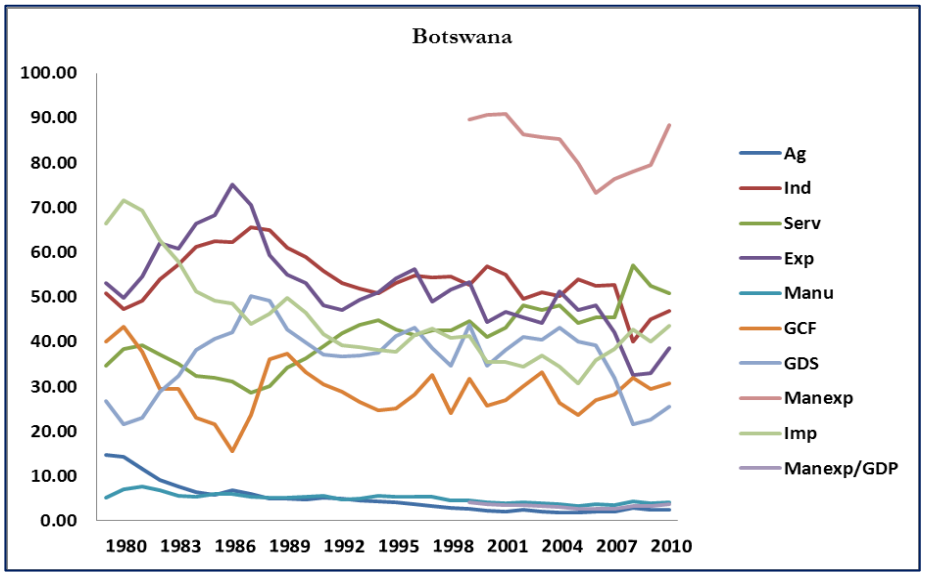
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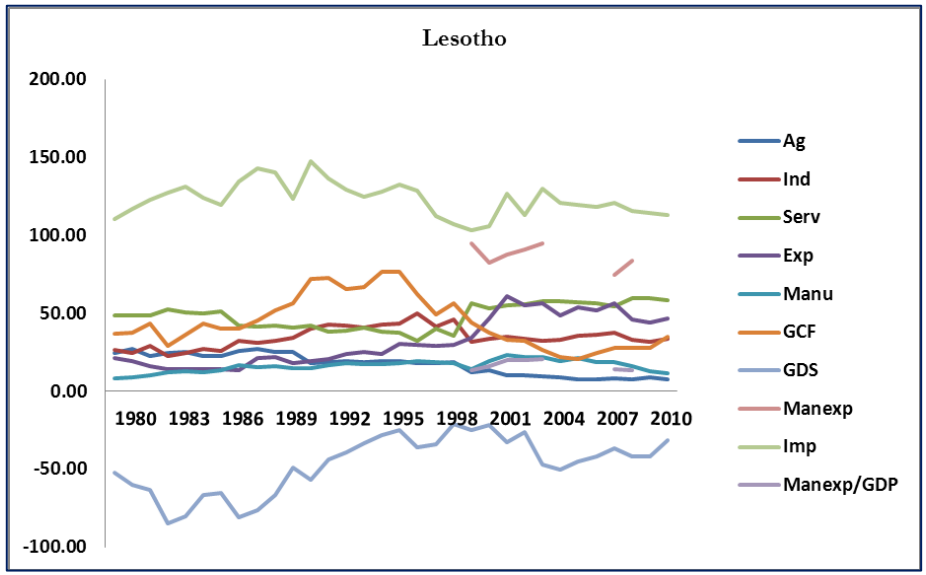
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Exp
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GCF
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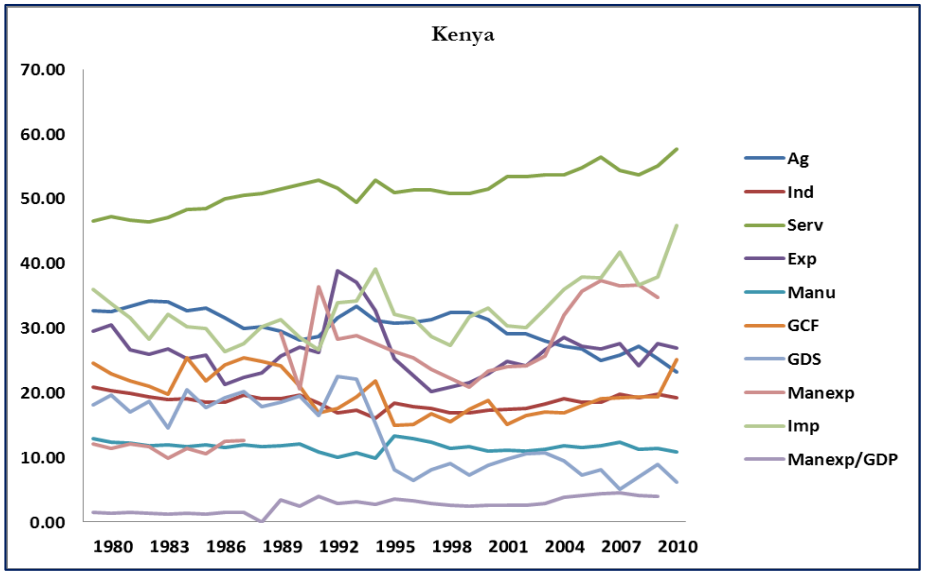
Imp
Manexp/GDP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10.00
0.00
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Ind
Serv
Exp
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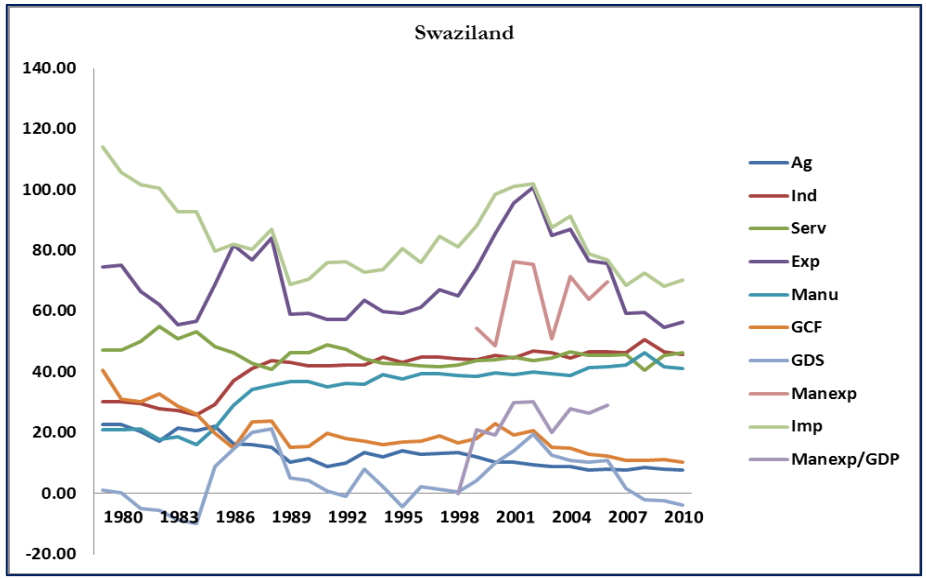
GCF
GDS
Manexp
Imp
Manexp/GDP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20.00
0.00
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1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010
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Serv
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GCF
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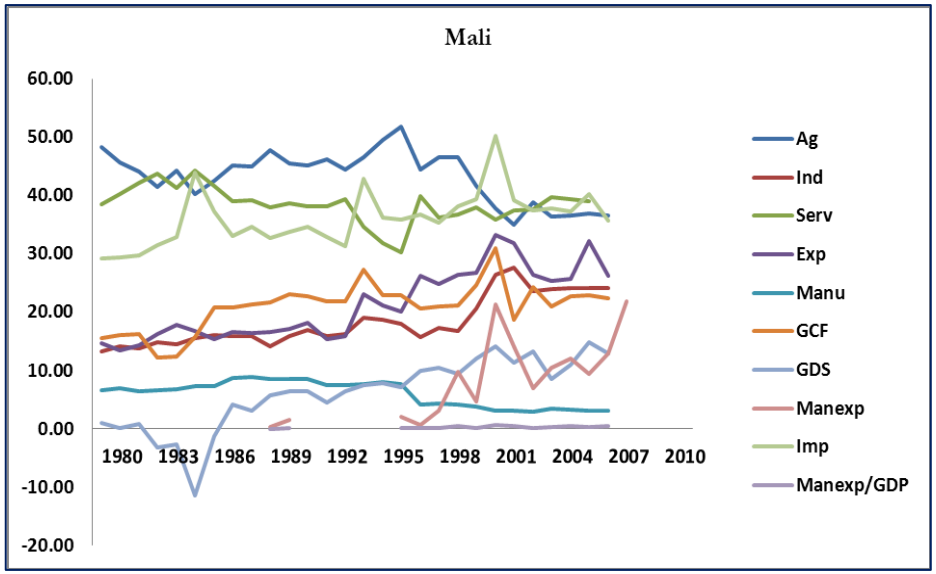
Manexp/GDP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0.00
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Serv
Exp
Manu
GCF
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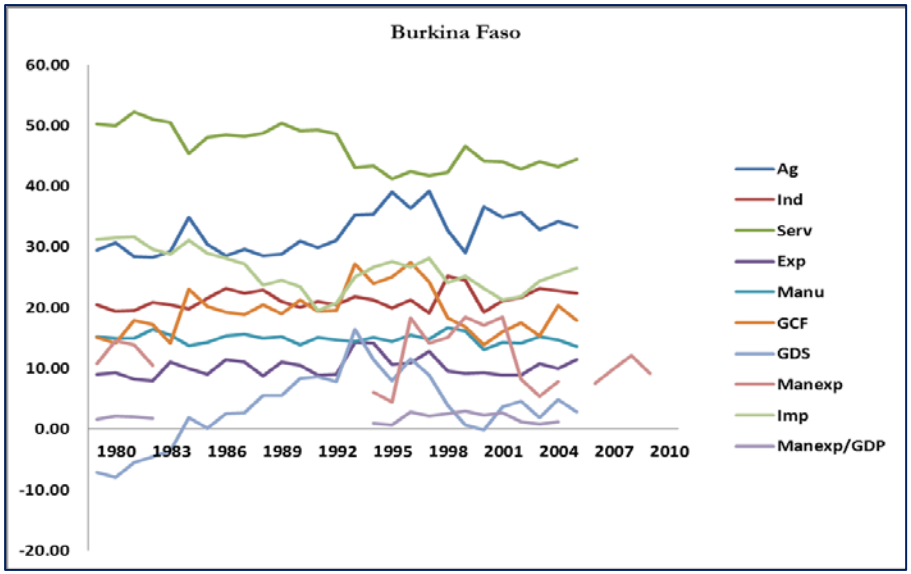
Imp
Manexp/GDP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Serv
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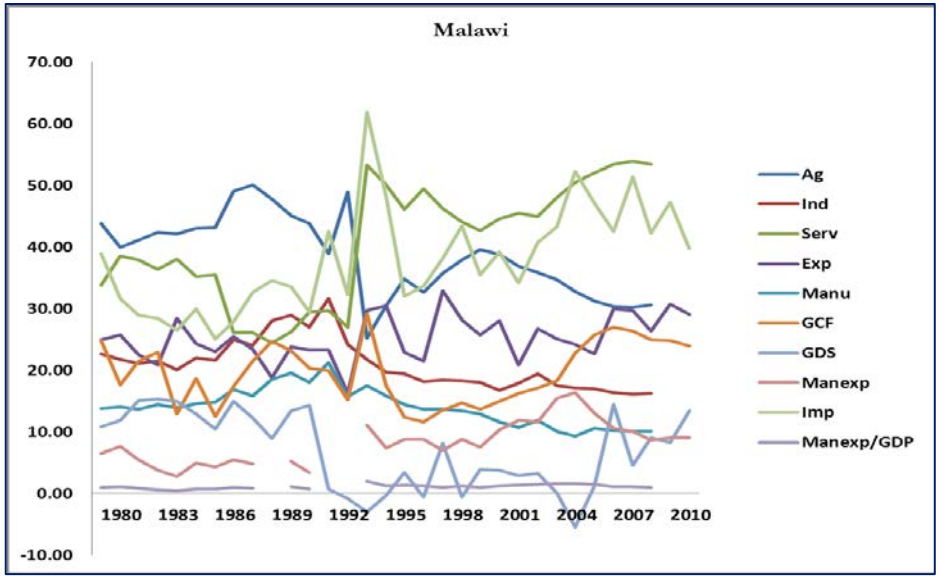
Manu
GCF
GDS
Manexp
Imp
Manexp/GDP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Manu
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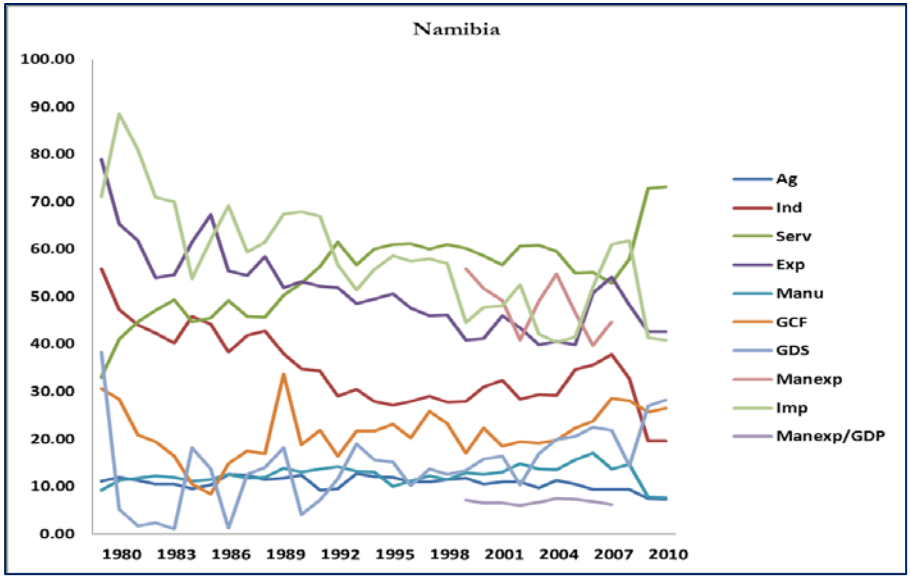
Manexp/GDP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60.00
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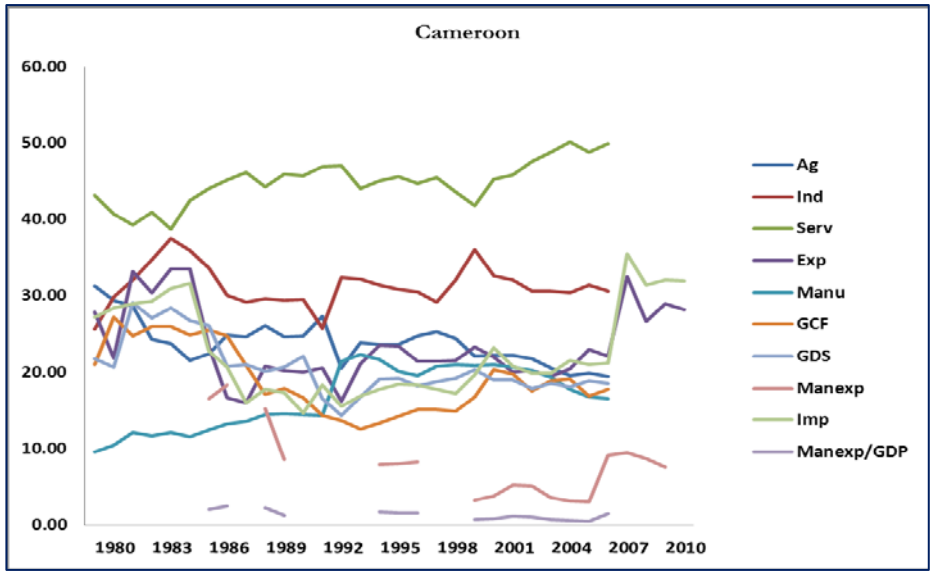
40.00
30.00
20.00
10.00
0.00
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010
Ag
Ind
Serv
Exp
Manu
GCF
GDS
Manexp
Imp
Manexp/GDP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GCF
GDS
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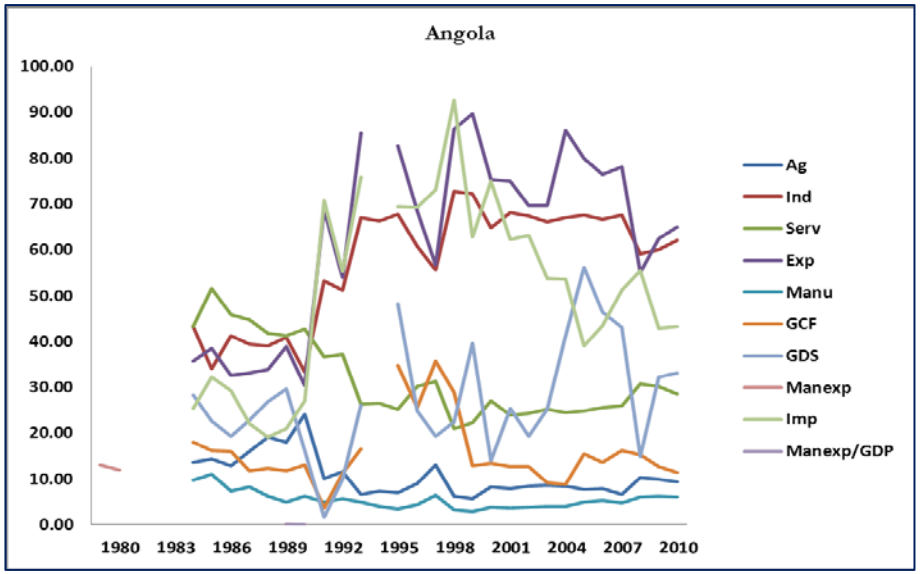
Imp
Manexp/GDP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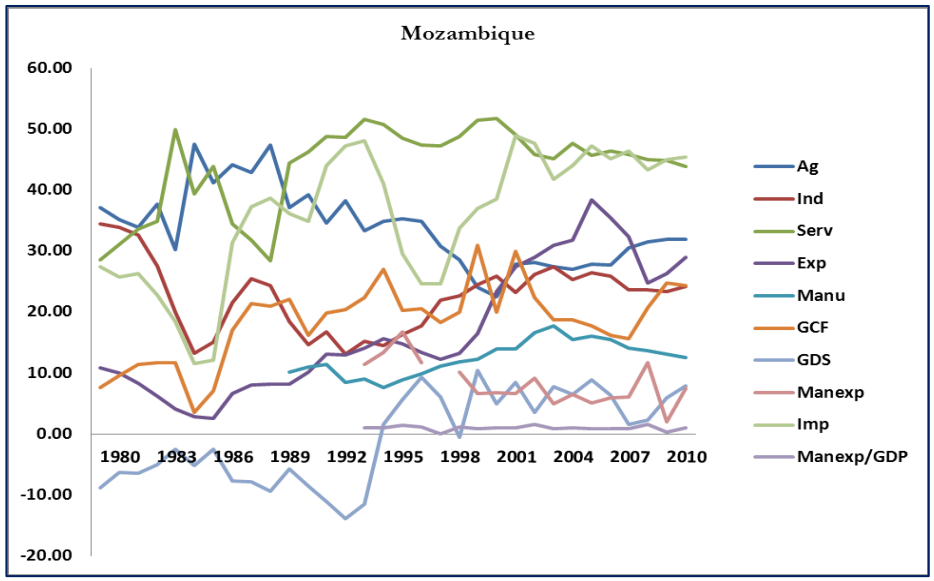
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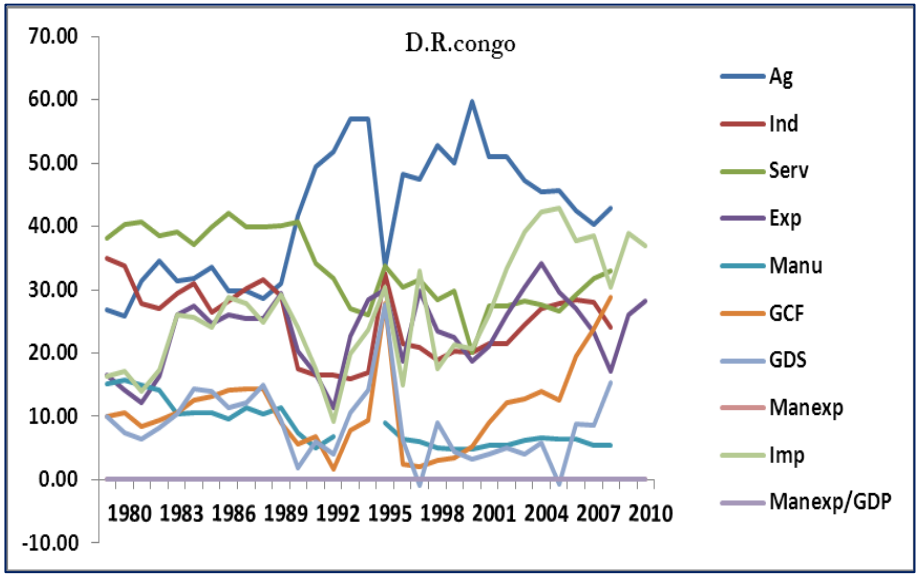
Manexp/GDP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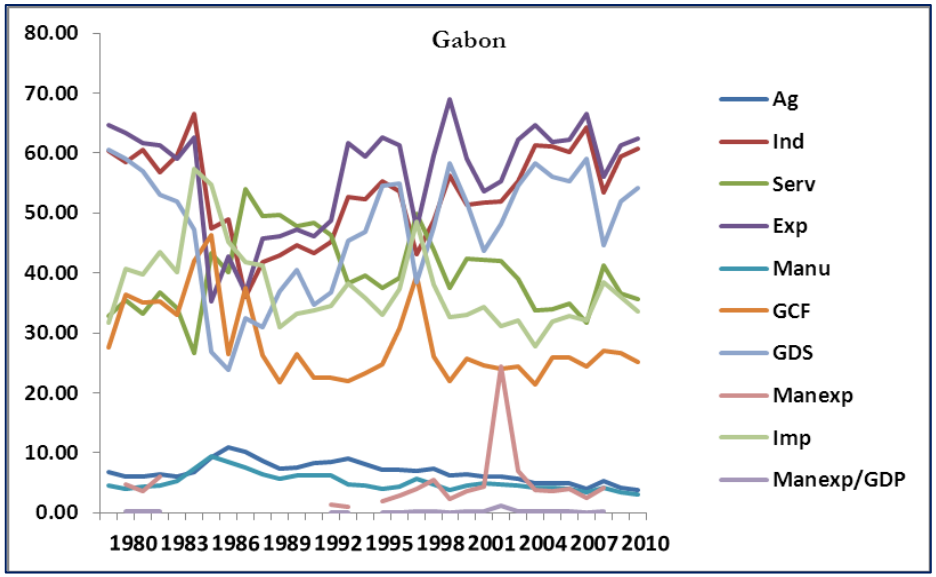
Manexp/GDP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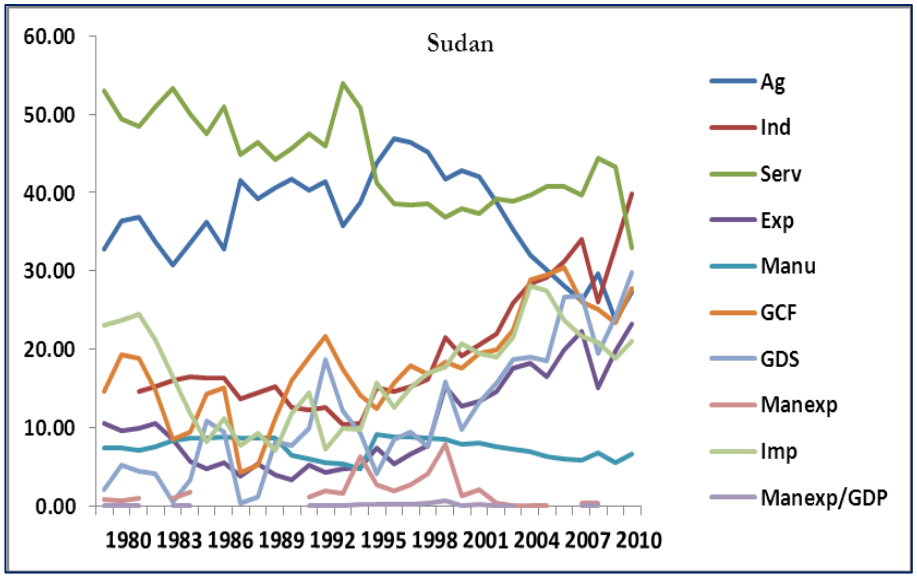
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10.00
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1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010
Ag
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Serv
Exp
Manu
GCF
GDS
Manexp
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Manexp/GDP

APPENDIX 18:

List of countries used in the panel data estimation

East Asia and Pacific (EAP)	Latin America and Caribbean (developing only) (LAC)	South Asia (SA)	Sub-Saharan Africa (SSA)	High income OECD (Dev)
China	Belize	Bangladesh	Benin	Australia
Fiji	Bolivia	India	Botswana	Austria
Indonesia	Brazil	Nepal	Burkina Faso	Belgium
Korea, Rep.	Chile	Pakistan	Burundi	Canada
Malaysia	Colombia	Sri Lanka	Cameroon	Denmark
Papua New Guinea	Costa Rica		Central African Republic	Finland
Philippines	Dominican Republic		Chad	France
Thailand	Ecuador		Congo, Dem. Rep.	Iceland
	El Salvador		Congo, Rep.	Italy
	Guatemala		Cote d'Ivoire	Japan
	Honduras		Gabon	Netherlands
	Mexico		Ghana	Norway
	Nicaragua		Kenya	Portugal
	Panama		Lesotho	Spain
	Paraguay		Liberia	Sweden
	Peru		Madagascar	United Kingdom
	St. Vincent and the Grenadines		Malawi	United States
	Uruguay		Mauritania	
			Niger	
			Nigeria	
			Rwanda	
			Sénégal	
			Seychelles	
			Sierra Leone	
			South Africa	
			Sudan	
			Togo	
			Zambia	

APPENDIX 19: List of variables

AG:	Agriculture sector
EAP:	East Asia and Pacific
EDU_PU:	Public spending on education, total (% of GDP)
EXP:	Exports sector
FERT:	Fertility rate, total (births per woman)
GCF:	Gross Capital Formation
GDP:	Gross Domestic Product Per capita (constant 2000 US$) and Gross Domestic Product Per capita (current US$)
GDS:	Gross Domestic Saving
GF4:	Growth Forward 4 years
GROW:	Annual growth rate of GDP
GROWB4:	Four year 'backward' moving average of the growth rate of GDP per capita (in constant 2000 US$)
HEALTH_PU:	Health expenditure, public (% of total health expenditure)
HIOECD:	High Income OECD
IMORT:	Mortality rate, infant (per 1,000 live births)
IMP:	Imports sector
IND:	Industry sector
INVEST:	Investment (Gross capital formation % GDP)
LAC:	Latin America and Caribbean
LIFEEX:	Life expectancy at birth, total (years)
MANEXP:	Manufactures exports (% merchandises exports)
MANEXP/GDP:	Manufactures exports as a share of GDP
MANU:	Manufacturing, value added (% GDP)
PRENROL:	School enrolment, primary (% gross)
ROADS:	Road, paved (% of total roads)
SAVING:	Gross domestic saving (% GDP)
SECENROL:	School enrolment, secondary (% gross)
SERV:	Service sector
SSA:	Sub-Saharan Africa
SSA1:	takes value 1 if country is in sub-Saharan Africa, 0 otherwise sample is restricted to LAC, EAP and DEV

TELE:	Telephone lines (per 100 people)
TERTENROL:	School enrolment, tertiary (% gross)
_80_94R:	takes value 1 if year is 1980-1994, 0 if otherwise. Sample is restricted to 1960-1979
_05_11R:	takes value 1 if year is 2005-2011, 0 if otherwise. Sample is restricted to 1995-2004
_95_11:	takes value 1 if year is 1995-2011, 0 if otherwise

APPENDIX 20: Regressions output

Dependent variable: FERT (Fertility rate, total births per woman)

variable	1	2	3	4
C	10.33645 (52.34791)*	8.328892 (25.92315)*	9.214479 (48.31006)*	9.772883 (60.61113)*
SSA1	0.674519 (11.51278)*	1.630050 (15.61322)*	0.993551 (13.66047)*	0.773076 (14.65381)*
Log(GDP)	-0.826536 (-31.50174)*	-0.654658 (-15.18751)*	-0.806356 (-33.42579)*	-0.676746 (-31.03158)*
Ed_pu		-0.058821 (-2.958124)*		
_05_11r			-0.261868 (-4.130276)*	
SSA1*_05_11r			-0.133183 (-1.518385)	
_95_11				-1.690146 (-29.30580)*
SSA1*_95_11				0.379914 (4.799621)*
Total panel (unbalanced observations)	2768	880	909	2768
Adjusted R-squared	0.488265	0.664963	0.816587	0.662051
S.E. of regression	1.192907	1.047841	0.659178	0.969414
Sum squared resid	3934.670	961.8216	392.8016	2596.567
F-statistic	1321.047	582.5313	1011.642	1356.159
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	0.972793	0.899997	1.654779	1.277010

Source: Author's estimation. T-Statistics are given in parentheses.*Significant at 1%, **Significant at 5%, ***Significant at 10%.

Dependent variable: SECENROL (School enrolment, Secondary %gross)

variable	1	2	3	4
C	-72.21607 (-19.34698)*	-61.33913 (-11.45058)*	-69.33177 (-14.19548)*	-66.83315 (-20.44836)*
SSA1	-4.350199 (-3.846844)*	-11.75086 (-6.491797)*	-5.969775 (-3.252631)*	-4.134640 (-3.704056)*
Log(GDP)	16.91539 (34.75151)*	15.59486 (21.46697)*	17.69225 (28.85432)*	15.13716 (34.87558)*
Edu_pu		1.664154 (4.764510)*		
_05_11r			7.124619 (4.653703)*	
SSA1*_05_11r			-0.297918 (-0.132703)	
_95_11				21.03803 (18.84209)*
SSA1*_95_11				-6.359317 (-3.974388)*
Total panel (unbalanced observations)	1649	729	612	1649
Adjusted R-squared	0.583313	0.651351	0.764259	0.682339
S.E. of regression	17.80927	17.16794	13.79076	15.54973
Sum squared resid	522061.9	213685.3	115442.3	397509.7
F-statistic	1154.501	454.3534	496.2063	885.9792
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.419484	1.100947	1.722178	1.662297

Source: Author's estimation. T-Statistics are given in parentheses.*Significant at 1%, **Significant at 5%, ***Significant at 10%.

Dependent variable: ROADS (Road, paved % of total roads)

variable	1	2	3	4
C	-40.76255 (-5.846829)*	-43.80460 (-6.231331)*	-46.40894 (-5.228125)*	-41.17719 (-5.832353)*
SSA1	2.097021 (0.966350)	1.842885 (0.867194)	2.462017 (0.801915)	1.786439 (0.573500)
Log(GDP)	9.464407 (10.62205)*	8.184379 (8.842266)*	10.27651 (9.081401)*	9.399698 (10.48839)*
Invest		0.551275 (6.375578)*		
_05_11r			-1.183253 (-0.358231)	
SSA1*_05_11r			5.100157 (1.016721)	
_95_11				1.325363 (0.542322)
SSA1*_95_11				0.504218 (0.143226)
Total panel (unbalanced observations)	58	564	379	578
Adjusted R-squared	0.225443	0.266920	0.240021	0.223837
S.E. of regression	19.98766	19.53261	20.63109	20.00837
Sum squared resid	229716.4	213652.7	159190.0	229392.0
F-statistic	84.97109	69.33099	30.84549	42.60023
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.571928	1.659304	1.505792	1.576504

Source: Author's estimation. T-Statistics are given in parentheses.*Significant at 1%, **Significant at 5%, ***Significant at 10%.

Dependent variable: SAVING (Gross domestic saving)

variable	1	2	3	4
C	-5.750652 (-2.583467)*	-10.80738 (-6.147267)*	2.303192 (0.692879)	-5.768676 (-2.591838)*
SSA1	0.408575 (0.626105)	0.426735 (0.830087)	-2.679315 (-2.222600)**	0.786209 (1.013303)
Log(GDP)	3.335338 (11.55236)*	1.595304 (6.830544)*	2.321963 (5.501536)*	3.267810 (11.19612)*
Invest		0.796559 (32.27353)*		
_05_11r			0.934375 (0.908540)	
SSA1*_05_11r			2.389684 (1.541681)	
_95_11				1.121743 (1.562095)
SSA1*_95_11				-0.975204 (-0.936243)
Total panel (unbalanced observations)	1745	1733	775	1745
Adjusted R-squared	0.102699	0.439178	0.098891	0.102945
S.E. of regression	10.71770	8.423619	10.62264	10.71623
Sum squared resid	200101.9	122685.3	86887.17	199817.4
F-statistic	100.8030	453.1078	22.23546	51.03462
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.729078	1.787212	1.763215	1.731804

Source: Author's estimation. T-Statistics are given in parentheses.*Significant at 1%, **Significant at 5%, ***Significant at 10%.