

Africa's (Mis)-fortunes in the global trade and the Continent diversification regimes¹

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Abstract:

In this article, Africa's diversification trends are explored to try and uncover some stylized facts that can be stated on how Africa has fared. The stylized facts show that efforts towards diversification at the continental and sub-regional levels have positive results in the 1970s and early 1980s. However, these gains were reversed in most cases beginning the mid-1980s, as they could not withstand the pressures occasioned by the economic crises of the period. And where gains occurred, they were highly volatile and fragile. The most significant result of the response of African countries is that the diversification efforts have resulted into what this study has characterized as five regimes. After presenting the diversification patterns in Africa, this paper will characterize the different diversification regimes in the continent.

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1. Introduction

The performance of economic growth in Africa and the accompanying slow rate of economic and social development have been linked to the lack of diversification in the African economies. While the link between diversification and economic growth, mainly through trade has remained largely an empirical question, there is an emerging body of literature that is revisiting the role diversification plays in both trade and economic growth. In this article, Africa's diversification trends are explored to try and uncover some stylized facts that can be stated on how Africa has fared.

The paper in section 1 first briefly takes a critical look at the current opportunities that African countries have in global trade within the context of ongoing trade negotiations. It arrives at some conclusions that point to the reality that might soon confront African countries. The thrust of this critical analysis is the argument that while there are likely to be benefits arising from current trade negotiations at multilateral and bilateral level, these benefits are insufficient to provide the growth momentum that African countries need if they are to have significant impacts on reducing poverty and unemployment. As a result it is argued that economic diversification should be seen as one of the invaluable pillars upon which African economic development could be re-energized. In section 2 the paper then goes straight to applying some of the methodologies for computing diversification indexes to show the state of diversification for African countries at the continental, sub-regional and national level. In section 3, the article analyses selected export experiences of some African countries. The section aims at demonstrating whether African countries have managed to have some breakthrough in their diversification efforts by using the export experiences to tease out the extent of horizontal and vertical diversification in the selected countries. In section 4, the evidence from the previous two sections on diversification trends and cumulative exports experiences is used to highlight diversification regimes that characterise the results of the African countries diversification efforts. Section 5 concludes.

2. Africa's fortunes in the global trade: What are the prospects?

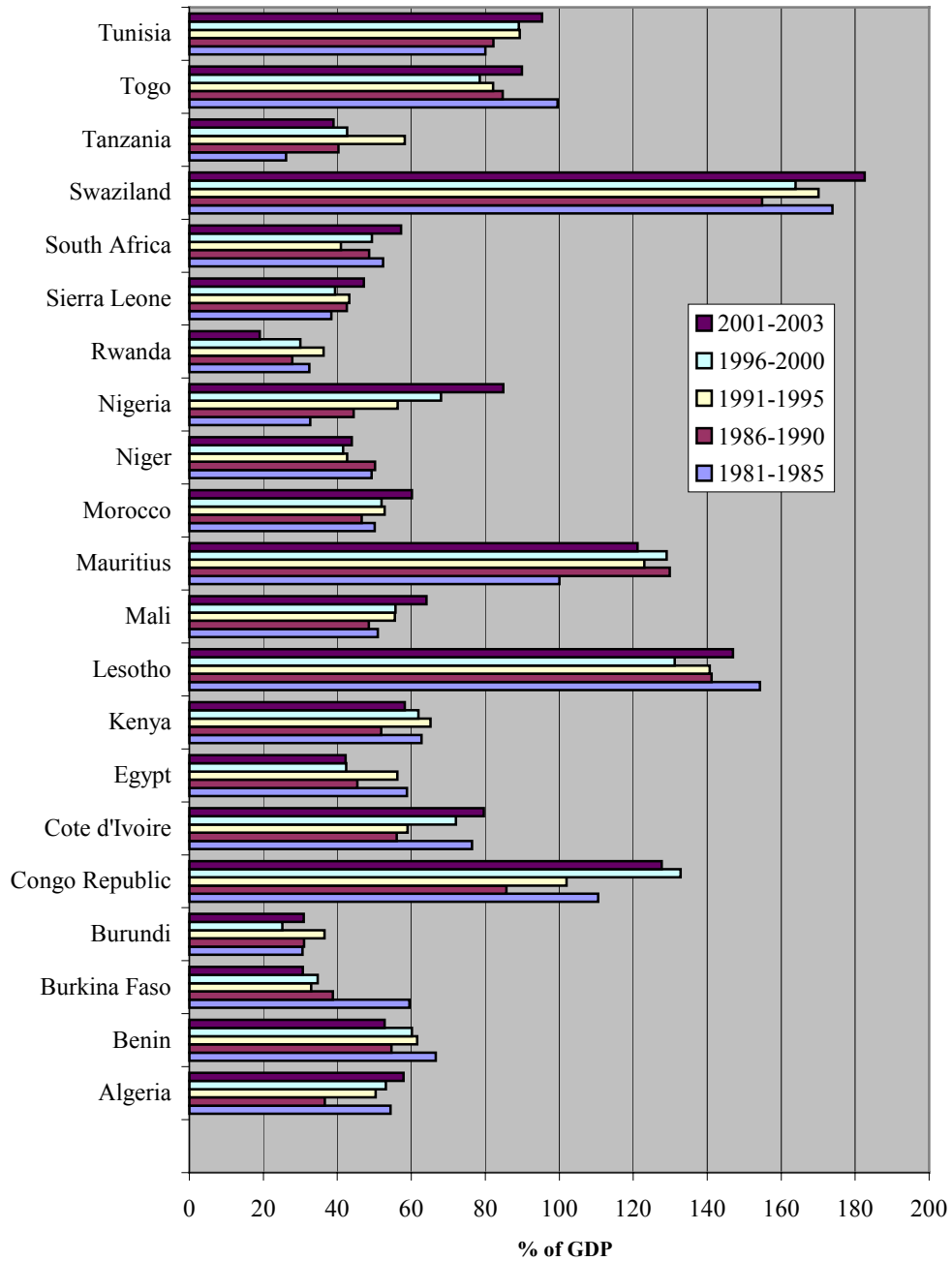
The low level of integration of Africa in the global trading system and the sub-optimal outcomes in regional integration at the continental level has been an issue of concern for the last two decades. Since 1980, Africa's share in international merchandise trade has fallen substantially; from six to two percent while other developing regions have been gaining (UNCTAD, 2004). Figure 1 shows the conventional trade openness measure of selected African countries. In the

majority of cases, African economies are more open today than they were at the beginning of the 1980s. This increased openness has however not translated into the continent's increased share of global trade. The main explanation to this lack of correlation between increased openness and the declining share of the continent's trade in the global economy has been attributed to the production structures in the African economies. The continent has not managed to diversify into the exports that are experiencing rapid growth and African economies have continued to be stuck with exports in the lower end of the value chain. These are exports with a tendency for having low-income elasticity and on the whole are of low value.

To explore the limited diversification as an explanation for the lack of link between trade openness and the continent's share in the global total trade it is more insightful to analyze the exports share in a country's total income. The focus in this case is to see whether a country has been able to increase its share of exports in total income. Trade openness, which is used as the indicator for share of total trade in the GDP, masks the difference in rates of growth between imports and exports. The distinction between exports share and trade openness and the information one can get regarding diversification is more important because trade liberalisation almost always results in imports growing at a faster rate than exports.

Figure 2 shows the share of exports in the incomes of selected African economies. For some countries, the exports share in total income has fallen over the last twenty years. But in other cases, the exports share is now higher than it was in the early 1980s. An important observation however is that in structural terms, for most of the countries shown in Figure 1, the share of exports in total GDP has not changed in any significant way. This is evident for countries such as Bénin, Burkina Faso, Egypt, Kenya and South Africa. But there are some countries where exports share has witnessed dramatic increases such as in Republic of Congo, Mauritius and Swaziland. Nigeria and Tunisia have consistently increased the shares of exports to their GDP in a steady way. And as will be clear in later discussions, these two countries are examples of how in one case, and that is Tunisia, diversification may have played a significant part in the increasing export share. While in Nigeria, the increased share has occurred with increasing concentration.

Figure 1: Trade openness (total trade as share of GDP)

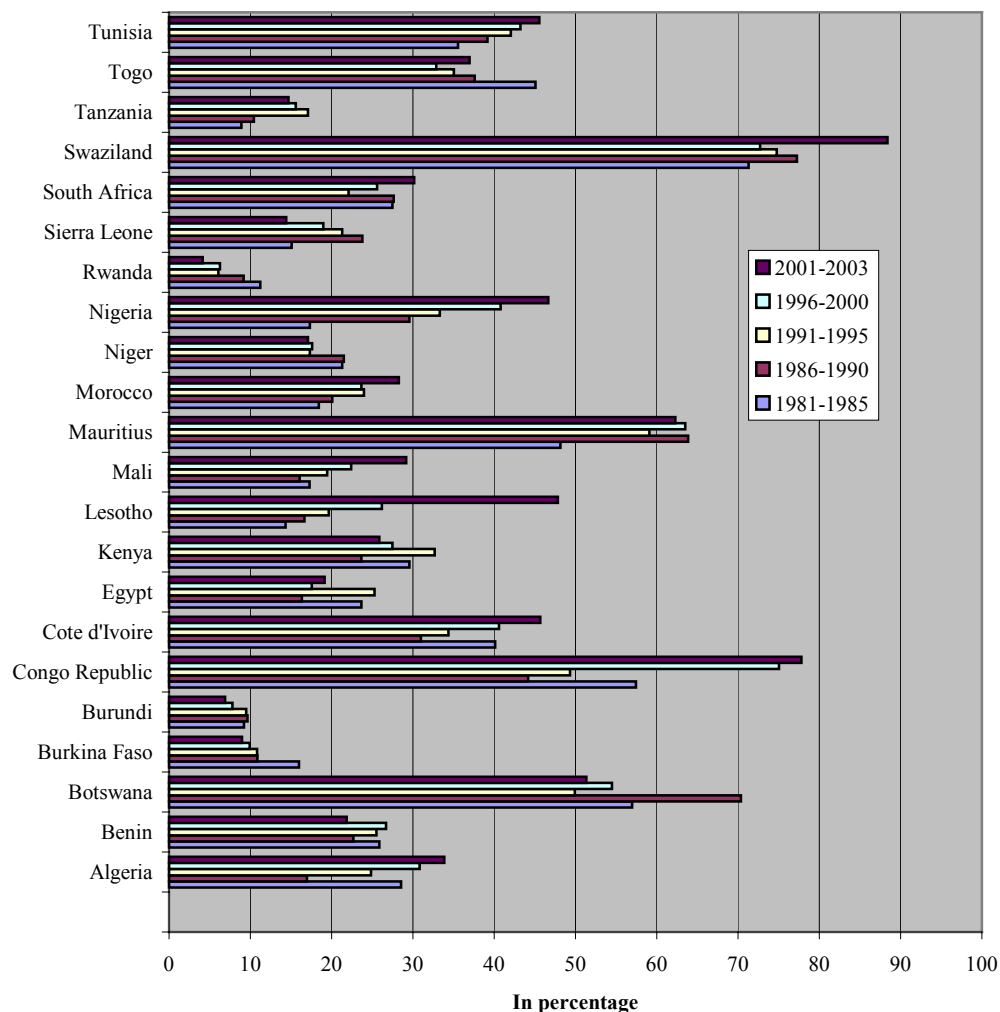


Source: UNCTAD, 2004.

The African region also accounts only for barely one per cent of global GDP. Its share of global manufactured exports is almost zero. In addition, over the past 30 years it has lost market shares in global trade even in traditional primary goods and failed to diversify (World Bank, 1999). Africa therefore remains almost totally dependent on its traditional export commodities despite their low-income elasticity and declining and volatile terms of trade. It is now accepted that continuing concentration on these traditional exports would have adverse consequences for income and employment.

As Africa's trade performance has continued to decline, a lot of work has gone into establishing how Africa could maximize gains from the global trading system, especially in the last ten years. This has spawned a lot of research, most of it focusing on helping Africa in the multilateral and bilateral negotiations at the WTO and with the European Union in the context of Economic Partnership Agreements respectively (Economic Commission for Africa 2004; Karingi et al. 2005). Some studies have looked at specific issues dealing with market access questions and have tried to estimate the potential gains for Africa if there is a successful conclusion of the Doha Round of trade negotiations (Economic Commission for Africa 2004; Hammouda et al. 2004; Hammouda et al. 2005). The expected gains for Africa quantified from these studies given these economies current structures do not look too promising. The gains from trade liberalisation to the developing world will be unevenly distributed (Economic Commission for Africa 2004; Cline 2004; Fernandez de Cordoba et al. 2005). Estimates of welfare effects from multilateral trade liberalisation showing global effects and developing countries are summarized in Charlton and Stiglitz (2005).

Figure 2: Average Share of Exports on Country's GDP (in %)



Source: UNCTAD, 2004.

Several other studies have tackled the question of trade preferences currently being enjoyed by African countries (Mold, 2005; Olarreaga and Ozden, 2005). And as reiterated in both Mold (2005) and in Olarreaga and Ozden (2005) most of the preference schemes have delivered sub-optimal gains due to various reasons. These include product exclusions, rules of origin requirements, quotas (export ceilings), and non-permanent nature of the schemes. In other words, the preference schemes have also not helped the African countries diversify their exports in manner consistent to the expectations of these schemes. This

shortcoming in the preference schemes is highlighted also in Hammouda et al. 2005 where the unrestricted market access for sub-Saharan Africa countries in the QUAD is quantified.

Olarreaga and Ozden (2005) do however raise an important constraint that is overlooked in looking at the shortcomings in the preferential schemes. Using the case of AGOA, the study shows that in spite of AGOA being less restrictive, in terms of rules of origin for the least developed countries, the proportion of tariff rent captured by the preference receiving countries is reduced since the importing firms in America are able to capture a significant portion of the tariff rent. More specifically, prices of apparel from seven sub-Saharan African countries increased by only six per cent while the tariff phased out for the same products under AGOA were 20 per cent. This means that the African exporters were able to capture only one-third of the tariff rent. It may not be difficult to link this limited bargaining power compared to that wielded by the importers to the exports base of firms from these countries. Exporters from South Africa on their part captured at least half of the tariff rents in apparel exports under AGOA.

The following are some of the main conclusions that can be deduced from the results of most of this research effort:

- There are gains still to be realised from the market access agenda and most of these gains could accrue to developing countries. However, there is going to be little benefits for Africa from the multilateral negotiations given the current structure of the African economies and so their marginalization in the global trading system is likely to continue.
- The risks of de-industrialization of some of the African economies that have made some steps towards development of some industries are real within the context of full reciprocity. In the same vein, reciprocity unless it is deeply asymmetric will undermine regional integration given the prevailing structures and competitiveness of African economies.
- While there are some benefits from preferences, these benefits could be greater, with internal supply capacities being one main reason why gains have not been maximized.
- Erosion of preferences in the context of multilateral liberalisation is real and this will be worsened by possible declines in government revenues as the liberalisation is deepened unless there is significant restructuring within these economies.

It can therefore be argued that at the heart of the results upon which these conclusions are made is a crosscutting explanation of the weak supply responses of African economies. This raises some interesting issues. Firstly, a question on the efficacy of the economic policies implemented since the mid-1980s arises. It can be argued that these policies failed to provide the catalyst or complementary push sufficient to help Africa achieve the response capacity necessary for it to benefit fully from trade. Put differently, it could be reasonable to conclude that while macroeconomic stabilization achieved in the continent has been a welcome result of these policies, the reforms may have failed to achieve the expected benefits in terms of improving Africa's supply capacity.

Given the conclusions above, major challenges lie ahead for Africa, including continued fragile growth and weak international competitiveness. Unemployment and poverty are likely to remain major concerns for the continent in many years to come unless there is a significant shift on how trade among other things could be utilised more effectively to overcome these challenges. The overriding question here is what policies should Africa pursue to promote trade and growth that would enable it tackle the twin challenges of unemployment and poverty. Nested in this question are issues such as what sectoral policies are growth enabling; what trade policies can improve international competitiveness; and how can regional integration be made more efficient?

Charlton and Stiglitz (2005) observe the dramatic transformation in the industrial pattern of the global economy. The advanced industrial economies transformed in the 19th century from agriculture into manufacturing and are currently becoming more service and knowledge based economies. On the other hand, the developing countries comprise those that are subsistence agriculture based; export agriculture oriented; or experiencing rapid transformation from agriculture, as they become increasingly manufacturing based. The per capita incomes and levels of poverty today depend on whether the country is service and knowledge-based, centered on manufacturing, export agriculture or subsistence agriculture oriented.

Much of Africa is subsistence agriculture based with some of the countries being export agriculture based. This points to the need to revisit the idea of diversification of African economies. In so doing, it will become necessary to ask questions such as what macro policies can promote diversification; what sectoral policies enable economies to diversify; how can diversification be optimally exploited to help in regional integration and in international competitiveness. It is important, as noted in Charlton and Stiglitz (2005), to observe that while agriculture is important for most developing countries, many of these countries have dramatically diversified their industries and moved up the value-added

chain. The 2004 Global Economic Prospects report of the World Bank show that in low-income countries, the shares of manufactures in total exports have risen from 20 per cent in 1981 to more than 80 per cent in 2001 (World Bank, 2004). However, much of this dramatic transformation of exports is associated to the rapid economic growth in India and China. The World Bank (2004) report further showed that even when the export shares are unweighted, on average, manufactured exports share in total exports in low income countries have doubled from 25 per cent to 50 per cent. A point further emphasized in World Bank (2005) where the changing structure of export composition is taken as one of the three fundamental changes in which international trade has changed. Exports of manufactured products from developing countries have become increasingly important in almost all the developing regions except Africa.

3. The diversification trends in Africa

a. Diversification trends at regional level

The different measures of diversification were presented in the previous chapter. And so in this section, the focus is on presenting the indices computed to show the trends of diversification in the continent. This is done at the continental, sub-regional and country level. Figure 3 shows three diversification measures for the African economies as a whole. The first two measures on the left-hand scale are the normalized-Hirschmann index and the aggregate specialization index. On the right scale is the Ogive index. The figure presents the regional picture and three clear messages can be drawn from these indices.

The trends for the three measures of diversification are similar and as a result, the messages from Figure 3 could be elaborated by focusing on the normalised Hirschmann index. The index defines four time-periods providing an interesting picture for the African economies diversification debate. These defined time-periods are: 1980-1982; 1982-1991; 1991-1998; and 1998-2002. The first time period up to 1982 exhibits a declining trend of the diversification index implying that the African economies were making some progress at becoming more diversified. Clearly, although the African economies were at this time experiencing the adverse effects of the economic crises that started around this period, the improving normalised Hirschmann index suggest that the efforts for diversification during the 1970s were still achieving positive results that continued in the early 1980s.

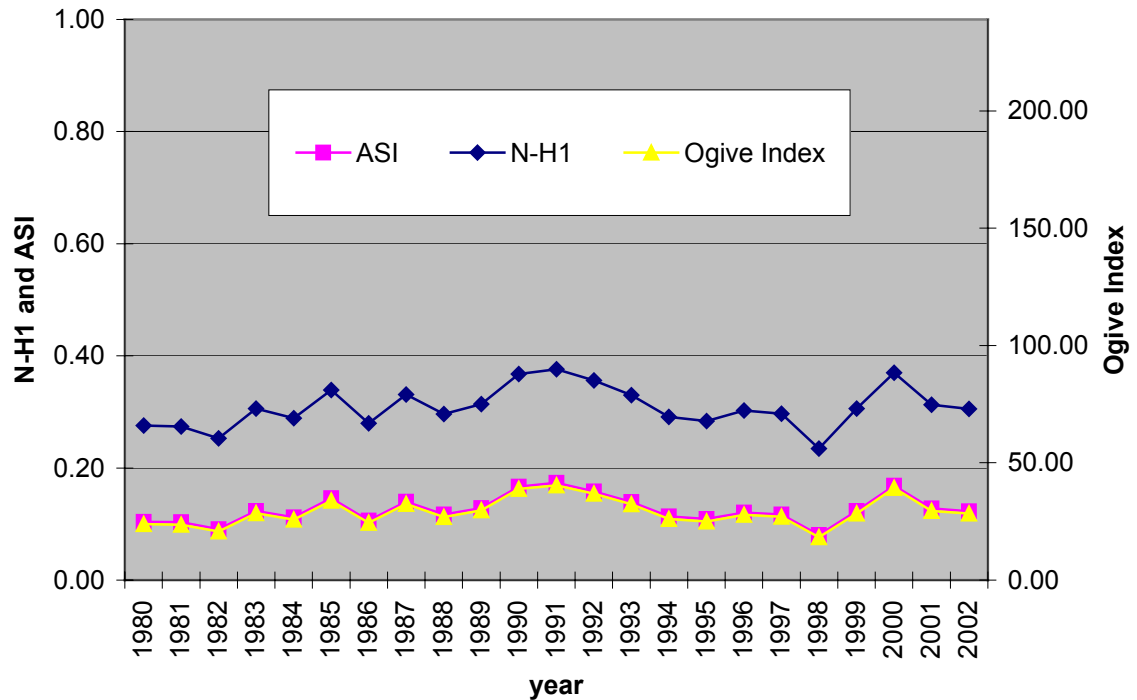
However, the escalation of the economic crises in the first half of 1980s and the adjustment measures that were required to be instituted to deal with the crises,

appear to have had negative impacts on the diversification efforts. Thus, as Figure 3 indicates, there is a second clearly defined period 1982-1991, in which the diversification index is upward trending. The gains of diversification that had earlier been achieved were reversed over these ten years. The extent to which this reversal of the diversification gains could be attributed to the economic crises and to possible negative effects of the measures put in place to address the crises in the form of structural adjustment policies has remained a matter of great empirical interest.

The third distinct period of the results of African efforts toward diversification starts in 1992. The diversification index shows some progress towards having more diversified economies. One could suppose that the macroeconomic stabilization policies of the 1980s may have contributed to this positive development. Unfortunately, the gains registered were fragile as the improvement in the diversification index lasted only up to 1998. Since then, the African economies have taken towards becoming more concentrated, considering the upward trending nature of the normalised Hirschmann index from 1998 to 2002. This current trend (1998-2002) defines the fourth episode of diversification experience in the continent and clearly needs to be reversed if the continent will be able to trade its way out of the challenges it currently faces.

In some ways, the trend in diversification index and the defined phases can easily be correlated to the exports growth. Figure 4 summarizes the merchandise export growth by sub-regions while Table 1 provides some selected country level performances of the same. In the period up to early 1980s, rapid exports growth took place in all the sub-regions. But this growth dissipated for most of the period covered between 1980 and 2001. The nominal growth rates during these 20 years were very low at the regional level. It is noteworthy that in 2002 and 2003 there has been some recovery at the continental level and generally in all the sub-regions.

Figure 3: The Diversification Indexes for Africa



Source: Author's computation²

At this point, one can be able to provide some concise comments on the general trend of Africa's diversification experience.

- Firstly, the African economies exhibit very low level of diversification. By all measures and accounts, there has been limited diversification of exports by the African economies. Over the last 25 years or so, there has been very little change towards improved diversification in the African economies in general.
- Second, the African diversification experience has been volatile. Considering the evidence from different measures of export diversification, there is no distinct and general trend of the African experience. On the whole, the diversification trend lacks a clear and definite direction. What is clear though is at the continental level, there has been volatility in the diversification indicators.

² See the appendix 1 for a presentation of the different indexes.

- And thirdly, where there have been some gains towards improved diversification, these gains have been fragile. Associated with the volatility noted above, African economies have been unable to register on the aggregate, any sustainable movements towards deepening diversification. The periods where the deepening of diversification is indicated by declining trend of the various indices, have turned out to be quite fragile and indication that probably that the fundamentals that would support such a deepening are not in place.

Table 1: Growth of merchandise exports in the different regional economic communities in Africa, 1970-2003 (per cent)

	1970-80	1980-85	1985-90	1990-95	1995-00	2001	2002	2003
Africa	21.62	-6.77	6.36	-0.03	2.71	-5.54	2.99	22.63
North Africa	23.68	-5.75	5.27	-2.72	5.29	-7.19	2.48	22.88
Algeria	31.23	-2.22	1.67	-6.34	10.4	-12.17	-1.14	20.23
Egypt	12.95	2.7	12.81	-6.39	3.86	-11.97	14.05	13.8
Morocco	16.14	-2.57	14.02	8.66	0.8	2.63	9.89	15.66
Tunisia	26.89	-6.38	15.96	8.39	1.58	13.35	3.67	16.77
COMESA³	10.79	-1.19	10.96	0.34	2.38	-6.83	11.86	15.22
Burundi	17.4	10.69	-9.96	7.15	-8.48	-23	-21.57	24.72
Kenya	16.97	-4.61	-0.62	12.42	-2.62	12.12	8.86	13.94
Mauritius	21.07	1.17	19.54	4.75	-0.81	4.52	10.67	7.63
Rwanda	21.65	3.55	-8.32	-18.71	-1.02	62	-34.44	-1.24
ECOWAS⁴	26.9	-10.56	4	-1.59	3.07	-11.57	-0.1	31.28
Benin	1.56	33.74	15.37	7.65	-2.91	-4.78	19.96	23.6
Burkina Faso	18.24	-2.88	12.57	9.3	-2.28	11.96	1.28	37.55
Côte d'Ivoire	22.95	-0.48	-1.36	2.9	0.81	1.5	33.67	10.79
Mali	18.88	-7.87	18.59	4.63	5.67	31.73	22	5.11
Niger	33.73	-15.02	-1.24	-2.77	-0.73	-3.74	2.59	21.15
Nigeria	33.01	-13.56	3.49	-4.08	5.15	-17.71	-12.48	47.04
Sierra Leone	7.25	-8.2	-0.18	-17.68	-30.75	122.56	67.79	89.55
Senegal	15.89	4.84	5.29	5.1	-0.57	9.05	6.33	24.75
Togo	20.97	-8.9	6.69	5.28	-1.62	-1.64	19.53	44.32
SADC⁵	16.39	-6.04	9.48	2.33	0.51	-3.86	6.36	19.25
Angola	11.68	4.05	15.71	-2.52	10.41	-17.5	16.31	13.97
Botswana	31.84	14.55	16.85	2.68	2.68	-9.7	2.49	21
Lesotho	25.98	-17.64	26.65	22.97	3.89	28.18	29.43	30.68
South Africa	21.12	-7.5	7.16	3.25	-0.18	-2.42	1.59	22.74
Swaziland	15.8	-13.88	23.95	9.38	1.51	15.87	-11.05	22.59
CEMAC⁶	26.26	-2.78	9.45	0.69	3.28	9.84	1.35	16.69
Congo	36.3	4.61	2.51	1.67	12.14	-20.05	12.36	16.23
Cameroon	21.18	-10.8	23.93	-4.56	-1.06	36.97	8.33	27.57
Gabon	32.33	-2.49	3.55	3.72	-5.01	7.6	-20.73	22.99

Source: UNCTAD, 2004

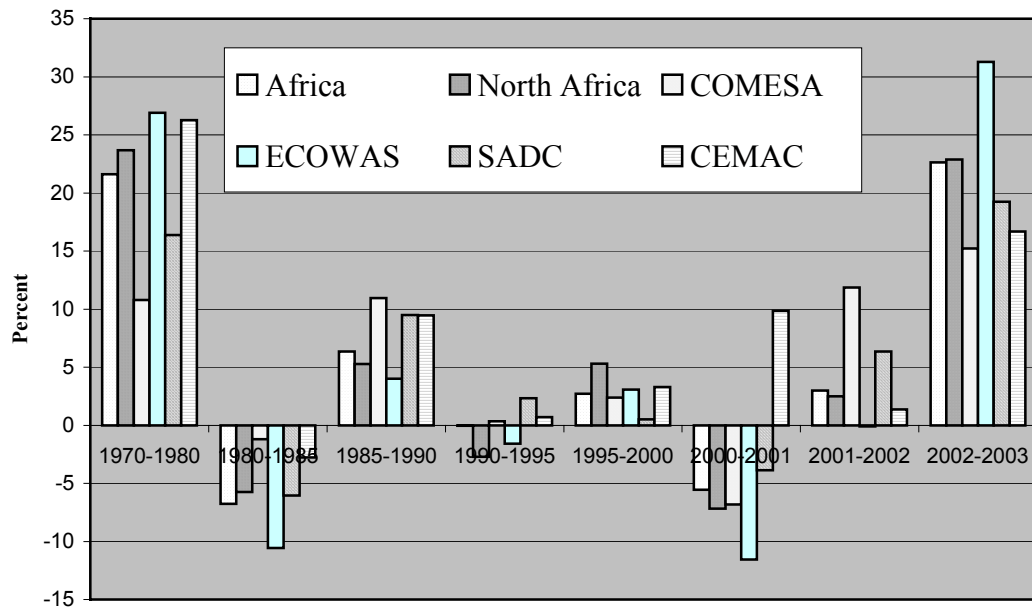
³ Common Market of eastern and Southern Africa

⁴ Economic Community Of West African States

⁵ Southern African Development Economy

⁶ Communauté Économique et Monétaire de l'Afrique Centrale

Figure 4: Africa and Sub-regions: Growth of Merchandise Exports



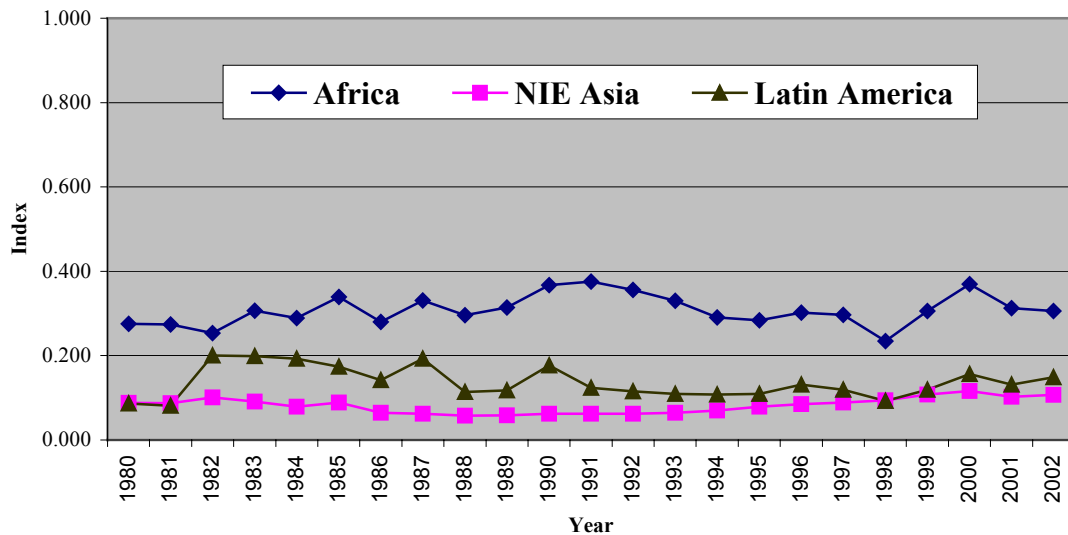
Source: Author's computation from UNCTAD statistics database 2004

But how does Africa's diversification trend compare with those of other regions. Figure 5 shows the results of diversification efforts in Latin America and Newly Industrialised Economies (NIE) of Asia compared with the African situation. The countries included in NIE - Asia are Korea, Hong Kong, Taiwan, Indonesia, Malaysia, Philippines, Singapore and Thailand.

The diversification indices of the three regions indicate firstly that at the beginning of the 1980s, both Latin America and the NIE Asia had the same level of diversification. Secondly, Africa was at a less diversified position in comparison to the other two regions and has remained so to date. The NIE Asia economies have managed to maintain their highly diversified nature. The Latin American region, like Africa was significantly affected by the economic crises of the 1980s. The diversification index for Latin America indicates loss of diversification gains up to 1987. But unlike Africa, the Latin America economies managed to reverse the trend towards exports concentration. For the period 1987 to 1999, the diversification index for the Latin American economies show a move towards becoming more diversified. It is worth noting that by 1998, the Latin America and NIE Asia economies had the same level of diversification again.

Although for the remaining period to 2002 the Latin American economies were left behind again by NIE Asia. But the important result from this comparative analysis of the indices given in Figure 5 is that the NIE Asia and Latin America economies have managed to achieve positive results from their diversification efforts while Africa's effort have not been sustainable. Whether this could be attributed to higher variability in policy timelines is an important issue worth exploring. In empirical terms, establishing the factors that in the first instance have enabled the NIE Asia economies to maintain their high level of diversification is critical. Secondly, what are the different factors that enabled the Latin American economies to be able to reverse the losses that resulted from the economic crises while the African economies could not manage to sustain the diversification endeavours? But it needs to be recognized that by 1980, the African economies were already behind the other two regions and it may not be fair to expect that they would be in the same position today. However, one would expect to see similar trends in the diversification indices if similar efforts were being put in the three regions.

Figure 5: Normalized-Hirschman Index: Africa, Latin America and NIE Asia



Source: Author's computation from UNCTAD statistics database 2004

The following could be summarized as the key points that can be drawn from the comparison of Africa's efforts to those of the other regions.

- In the period running from 1970s to the early 1980s, all the three regions had concerted efforts towards diversification. However in the 1980s, the intensity

of the economic crises that ravaged mainly the developing world had very serious impacts on the results of the diversification efforts.

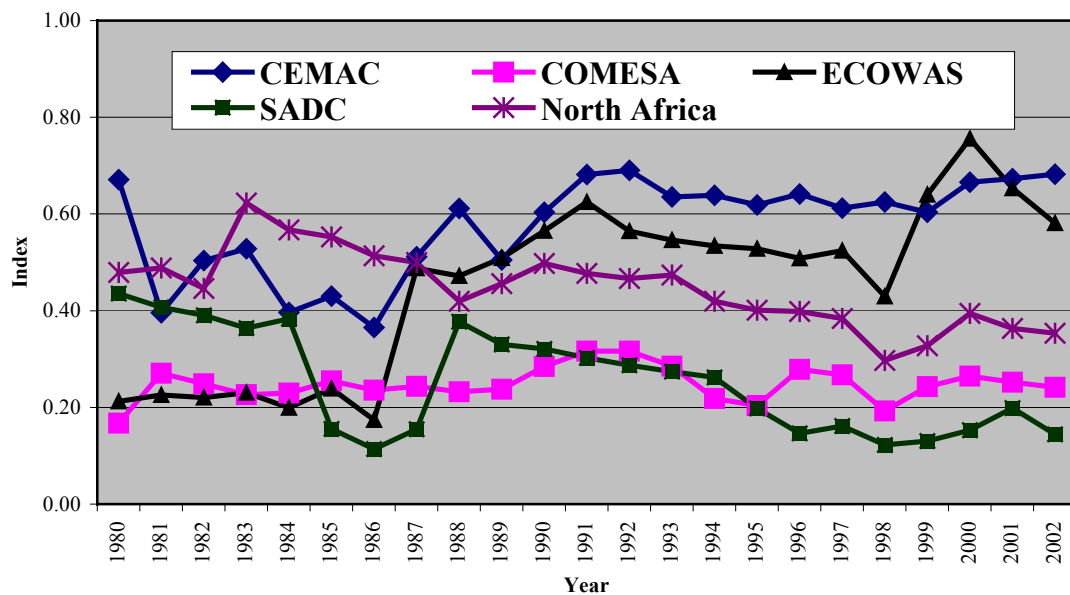
- The main determining factor of the impact the crises had on the different regions appears to be the nature of response. The NIE Asia from the early years of the crises resorted to a dynamic response. This dynamic response was by accelerating investments and the diversification process. Clear policies aimed at integrating the NIE Asia economies to the production value chains have been documented. But in Africa, it appears that the region was less dynamic and its response was one of more concentration on a few commodities. The African countries on the larger part seem to have adopted a defensive reaction instead. The windfalls in some of the commodities sectors underpinned this defensive reaction. This is especially the case with regards to the oil factor that has dominated the exports of the Central and Western African region. Rather than exploiting the oil exports towards more dynamism in exports, the African countries took a defensive reaction backed up by the growing oil revenues leading them towards a more concentrated as opposed to a diversified path.

b. Diversification trends at sub-regional level

The general picture that was shown in Figure 3 on the continental performance masks the gains and losses made on diversification efforts at the sub-regional and country levels. In this sub-section, we consider a more disaggregated view of the diversification of exports. Figure 6 gives the situation at the sub-regional level and it compares five sub-regions defined around some of the regional economic communities. In 1980, the most diversified sub-regions were COMESA and ECOWAS. The least diversified was CEMAC with SADC and North Africa in-between. By 2002, the diversification gains at the sub-regional level had changed. The most significant gains have been made by SADC, which is now the most diversified region in the continent. It is followed by COMESA and North Africa. CEMAC has remained as the least diversified sub-region. SADC's index of diversification especially in recent years is attributed more to South Africa's heavily diversified economy. There are other countries such as Botswana that have been concentrating on achieving more diversification of their economies, but all in all, it is South Africa that has had the most impact on the outcome at SADC of the level of diversification. The South African influence notwithstanding, the experience of SADC makes a case worth some further inquiry. For the best part of the 1980s, SADC index for diversification consistently improved, falling from 0.44 to 0.11. Nevertheless, some of the SADC gains were lost for a period as the index started trending upwards peaking at 0.38 in 1988 before starting to trend

downwards again. Understanding the policy timeline of the SADC performance might help to unravel the role macroeconomic stabilization policies could have played.

Figure 6: Normalised Hirschmann Index: Africa's Sub-Regions



Source: Author's computation from UNCTAD statistics database 2004

In the case of North Africa, there is a clear trend towards diversification. Compared to other regions such as COMESA, North Africa's diversification index has improved from 0.48 to 0.35. This could be attributed to the efforts of Morocco, Egypt and Tunisia to diversify given the proximity to the large and lucrative European market. Tunisia in particular, as will be seen in later discussions, focused policies aimed at deepening the manufacturing industries, especially those related to textiles.

Unlike the experience in North Africa, COMESA has lost some of the diversification edge it had at the beginning of the 1980s, as its index has risen from 0.17 to 0.24 with no major dramatic movements registered in its performance. But probably COMESA is one region that had a great incentive to diversify. Unlike the other sub-regions such as West, Central and North, the East African region has not been endowed with new discoveries of export commodities such as oil. This means that it ought to have been more innovative on ways to ensure that it is able to trade more and achieve rapid economic growth. But the reality is that the sub-region failed to put in place policies that could have led to a

more dynamic response to the challenges that it faced after the main economic crises. Rapid investments that could have launched the economies in the sub-region to become more diversified failed to occur and the sub-region remains with a weak infrastructure to date. The sub-region also had its share of political and hence institutional constraints that might have limited its capacity to deepen diversification or at least minimize erosion of the gains that had already been registered prior to the economic crises. Conflicts in the horn of Africa and political instabilities in some of the countries in the sub-region had a negative impact to the East African region capacity to deepen diversification processes.

Yet the most interesting case of all is ECOWAS, which at the beginning of the period was one of the most diversified sub-regions. The sub-region was even more diversified in its exports than COMESA from 1981 to 1984. And even though SADC appeared to have more diversified exports in 1985 and 1986, ECOWAS was still more diversified than the COMESA region. But beginning 1986 onwards, ECOWAS sub-region started to become a more concentrated region and has remained so ever since. ECOWAS was probably the region that lost the most in the process of diversification. Within 25 years, the gains that had already been made on diversification were eroded as the sub-region became more and more concentrated. Clearly, the response of the ECOWAS countries to the early crises in the 1980s appears to have tended towards more concentration on a few commodities, a situation made worse by the abundance of oil exports. At one stage in 1998 – 2000, it was even more concentrated than CEMAC. The ECOWAS experience is to a large extent all about the oil factor.

As Figure 5 indicates, in the 1970s and early 1980s there were gains already made in diversification efforts in the ECOWAS sub-region. This happened in economies such as Nigeria, Ivory Coast and Senegal. But since oil exports emerged as the leading exports especially in Nigeria, the largest economy in the sub-region, the gains made on diversification were eroded as the sub-region's economy became more concentrated. The diversification experience of ECOWAS could also be linked to political factors. It is not possible to discount the possibility that political factors associated with conflicts and instabilities could have played a part in the erosion of the diversification gains. Conflicts and instabilities in ECOWAS member states such as Cote d'Ivoire, Liberia and Sierra Leone might have undermined efforts being made to diversify the economies in the region. This is particularly the case with the recent history of Cote d'Ivoire, which at one point was a leading economy in the sub-region.

It is useful to note however that, while the prominence of oil exports in ECOWAS and CEMAC is a good explanation to the picture that is seen, there is the other

important element of whether policy could have played a major role in achieving these results. In any case, the North African sub-region also comprises of countries that are oil exporting and yet this sub-region managed to make some progress in moving from being too concentrated to some reasonable diversification, placing it as the third most diversified sub-region in Africa. The role of policy in determining diversification outcome is an issue that is worth coming back to.

What Figure 6 has demonstrated is that to understand the African concentration and diversification stories, it helps to look into more details on the sub-regional performances. It is apparent that the continental gains could be attributed to just a few African countries whose experience could be replicated elsewhere if these gains could be attributed to better economic and social performances. Figure 6 serves to strengthen this assertion that country level performances are important if one was to understand what is happening at the continental level. At the start of the period, Africa as a whole was more diversified with normalised Hirschmann index of 0.28 than both Tunisia and Mauritius whose indices were 0.48 and 0.67 respectively.

For the interim period 1982 to 1991, Africa's gains on diversification were being reversed while in the case of Tunisia and Mauritius; the diversification index was trending downwards, indicating positive achievements towards becoming more diversified economies. The key issue then is, what is it that Mauritius and Tunisia did that made the two economies overcome the constraints posed by the economic crises that so negatively affected the continent as a whole. What did the economic policies or even other policies pursued in these two countries have to do with the gains made on diversification? Very minimal volatility is discernible in the diversification indices of both Tunisia and Mauritius, unlike the one experienced in the continent as a whole. The minimal volatility could be an indication of a stable and sustained policy regime aimed at very specific outcomes, in this case, increased diversification.

The volatile nature of the diversification indices could also be seen from trends for selected countries at each of the sub-regions. SADC sub-region has generally improved its diversification index. But the overall SADC diversification index is being driven largely by South Africa. The diversification results in other SADC countries appear to easily masked by the dominant nature of the South African economy.

Central African economy's performance is weaker than the continent's average performance. In addition, the diversification index shows volatility for most of the

1980s. The oil factor appears to be a dominant factor through Gabon, whose economy is one of the most concentrated in the sub-region.

The North African experience shows that the region is now having diversification results that is close to the overall African results. It is noteworthy that while the North African economies diversification was weaker in 1980, the gap between these economies and that of the whole of Africa has been significantly diminished. The Tunisian economy's experience on diversification seems to have played a big role in achieving the sub-regional outcome given that the performance of economies such as Algeria after making some significant progress till 1985 or so have remained static. In the same vein, the COMESA region is probably one of the most diversified sub-regions in Africa. The sub-region is even more diversified than Africa on average. But like in the other regions, a few economies have a dominant effect on the overall sub-regional diversification picture. For instance, Mauritius must have had a strong influence on COMESA's overall index.

The incidence of the oil factor in the African economies is most pronounced in ECOWAS where Nigeria's diversification index shows a near perfect concentration. For the period 1991 to 1998, the ECOWAS trend line for the sub-region's index correlates positively with that for the whole continent despite the dominating feature of Nigeria. This implies that some of the other economies in the sub-region such as Ivory Coast were making substantial progress on diversification. In addition, economies like that of Senegal managed to safeguard the little gains they had achieved at diversification. However, as intimated earlier, conflicts and political instability have had a negative impact to any counteracting effect that efforts in other countries would have been expected to have to neuter the Nigerian oil effect.

- c. Weak structural dynamics in exports diversification: The cumulative exports experience functions of selected African countries

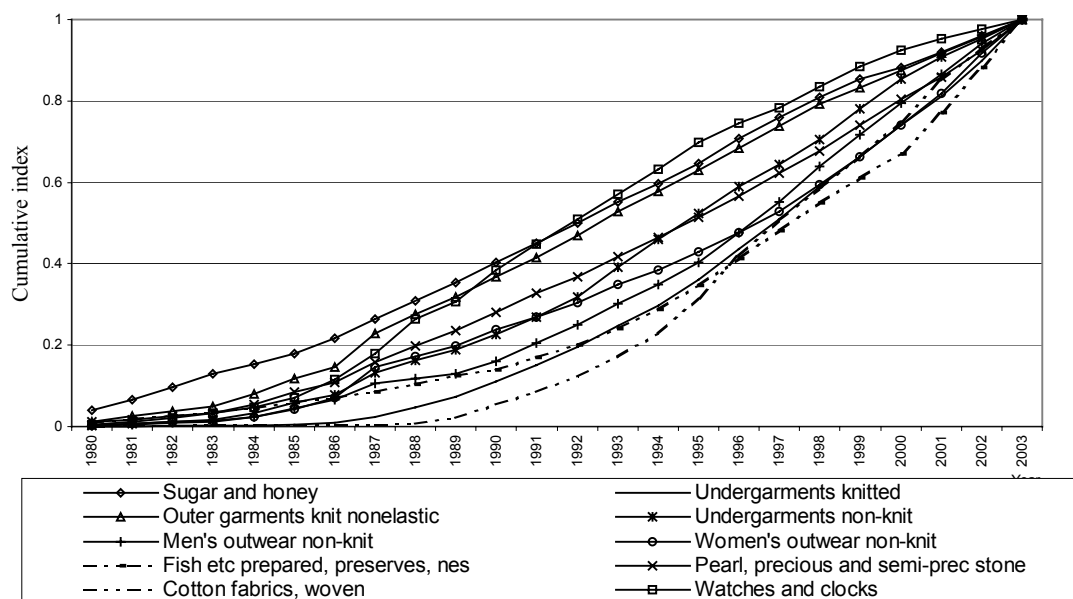
The discussion so far on some of the diversification trends in relation to African economies indicates that different countries have achieved varying results in diversification. The conclusions based on assessment of the normalised Hirschmann indices for different countries have indicated that overall, the African economies have failed to make gains beyond their initial positions in the early 1980s. It has also been pointed that the African economies took defensive reactions to the crises that beset them in the 1980s and the macroeconomic

stabilization policies may not have created a conducive environment for a dynamic response such as was the case in a good number of countries in Asia and Latin America. This defensive reaction that perpetuated the status quo in some instances was worsened by the oil factor, which eroded earlier gains in such countries as Sudan, Nigeria and Gabon.

In this sub-section, some selected results on the different outcomes at country level for countries efforts to diversify are discussed. The evidence on how some of the countries have responded is based on the exports experience functions. The cumulative export experience functions for the top ten commodities for selected countries are employed to make the point that exports diversification experience in Africa has been varied, but largely, most countries have not managed to break out of their traditional exports to more dynamic non-traditional sectors with higher exports earnings potential. Figure 7 presents the cumulative exports experience for Mauritius, one of the more diversified African economies. The interpretation of the information in the cumulative export experience functions is as follows (Gutierrez de Pineres and Ferrantino, 1997). For two different industries whose cumulative export experience functions are plotted together, an industry whose export experience was concentrated earlier would have its export experience function shifted to the left. The sectors whose export experiences were concentrated earlier are the ones normally referred to as traditional. On the other hand, those sectors whose export experience is concentrated later in a given sample period is often referred to as the non-traditional industries. Increasing numbers of industries that are concentrated in later years is an indication of a country's efforts to break from relying too much on the more traditional exports. The more the number of sectors with cumulative export experience functions shifted to the right, the more the indication of some dynamism in new exports development.

In the Mauritius case, the more traditional sectors whose cumulative export experience functions are shifted to the left are sugar and honey; knitted outer garments; and watches and clocks. This indicates that the largest proportion of their exports occurred early in the 22-year period under consideration. Considering the slope of their functions, the real exports of these three commodities are now growing at a constant rate. On the other hand, Mauritius has managed to develop non-traditional export sectors as shown by the functions shifted to the right. These include fish; woven cotton fabrics; knitted undergarments, and non-knitted women's outerwear. These are sectors whose export experiences have been in the more recent years. The last three of these exports that are related to the textiles and apparel sector could also be an indication of some vertical diversification.

Figure 7: Cumulative export functions of top 10 Mauritius export products

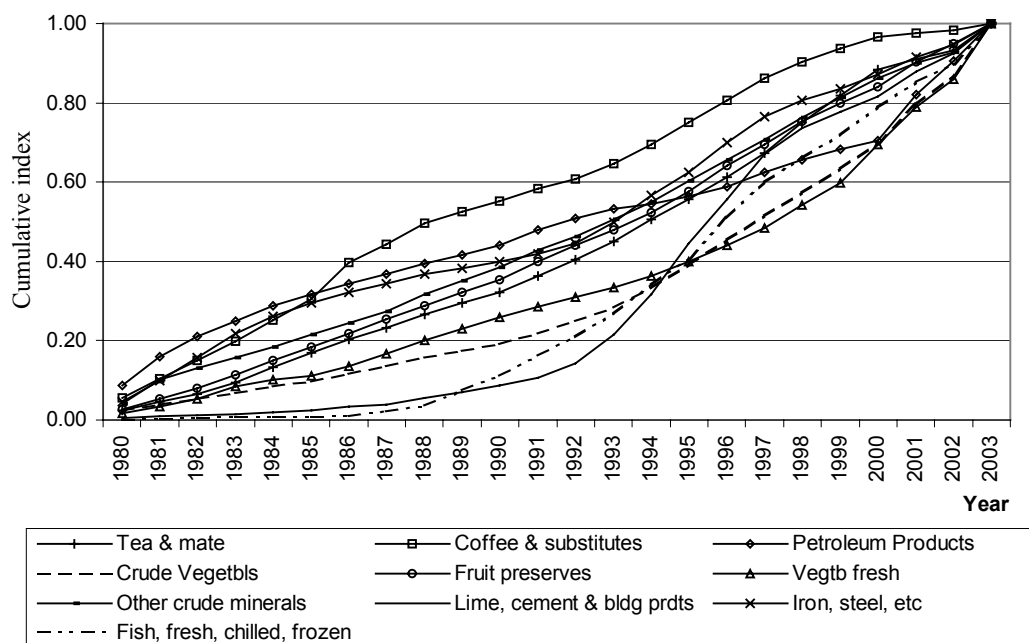


Source: Author's computation from UNCTAD statistics database 2004

The Kenyan experience as depicted in Figure 8 does not differ much from the experience of Mauritius. However, the experiences in the different sectors are more pronounced. Kenya is also one of the more diversified economies. However, looking at the exports experience functions, it is evident that the top ten commodities have not broken into the manufacturing range where there is generally evidence of more dynamism. The most traditional sector is coffee in Kenya. The export function of iron and steel is also showing a strong tendency towards shifting to the left, an indication that it is becoming more of a traditional export. As for the non-traditional industries, Kenya has managed to attain strong real growths in recent years in vegetables in particular. But more interestingly, petroleum products⁷ export experience has shifted in recent years strongly to the left, a clear indication that exports in this industry is also becoming traditional in nature.

⁷ Kenya handles a substantial portion of petroleum products re-exports in the neighbouring landlocked countries through its oil refinery based in the coastal town of Mombasa.

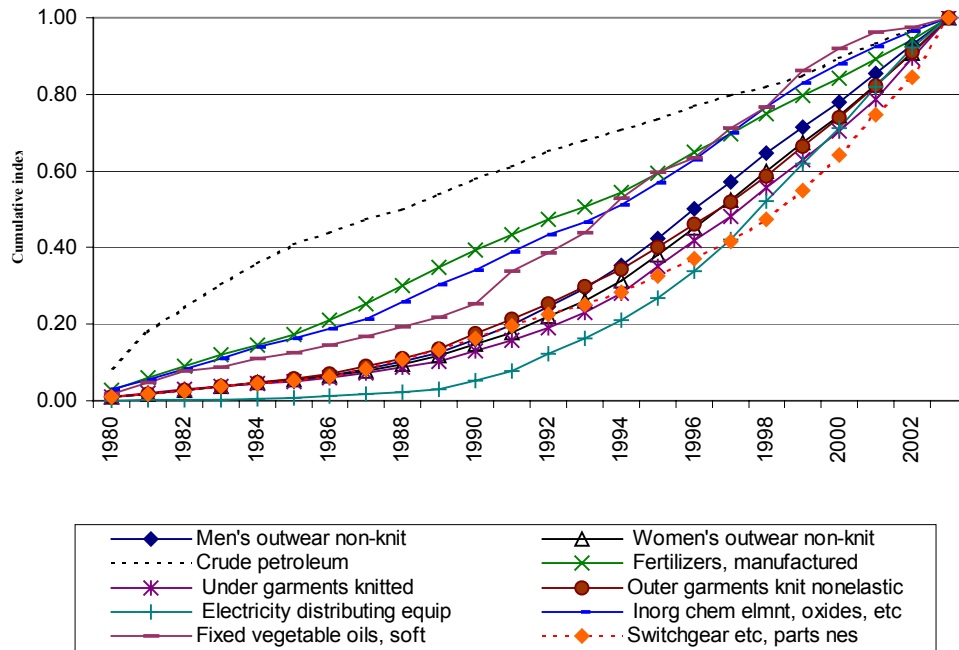
Figure 8: Cumulative export functions of top 10 Kenya's export products



Source: Author's computation from UNCTAD statistics database 2004

The Tunisian diversification experience is one example that indicates significant horizontal diversification in exports (see Figure 9). Most of the cumulative export experience function plots for Tunisia's top ten products are shifted to the right for the period 1980-2002. These products are mostly garments such as knitted non-elastic outer garments; non-knitted men and women's outerwear, knitted under garments. The others are switchgear etc, and electricity distributing equipments. These products indicate greater export experiences in the recent period. These items are the emerging or newer products in the export mix. On the other hand, the plots of manufactured fertilizer, and inorganic chemical elements, oxides and others remained relatively flat for the same period implying that no significant structural changes took place in these commodities for 24 years. The plot of crude petroleum, which is Tunisia's traditional product, has shifted to the left implying that relatively large percentage of its exports took place in the earlier period. Crude petroleum share of exports at the beginning of the period was about 50 % of the total exports while in 2002 its share went down to about 7 % of the total exports.

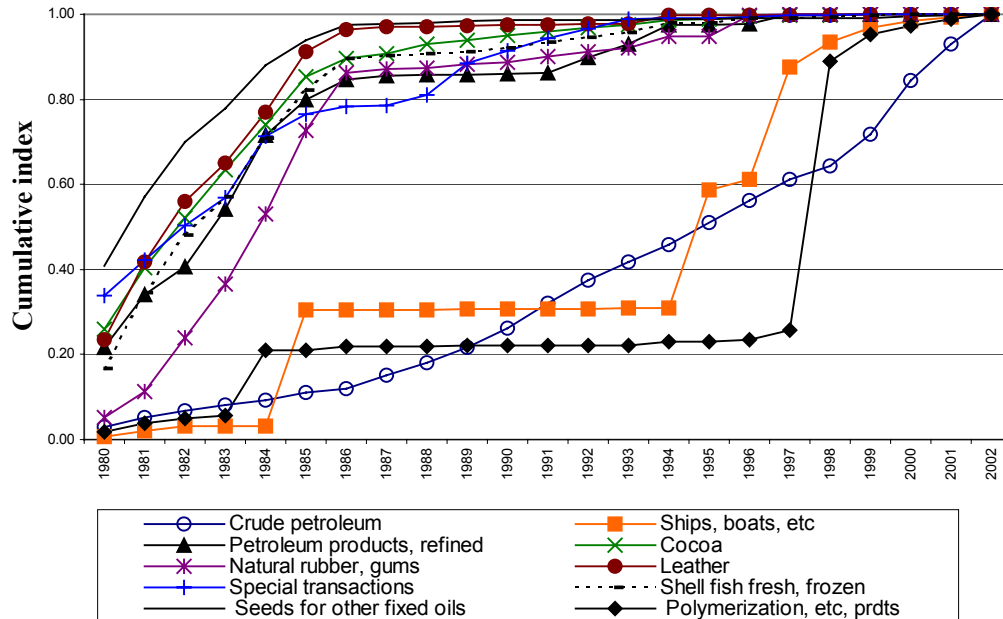
Figure 9: Cumulative Export Function for Tunisia's Top 10 Commodities



Source: Author's computation from UNCTAD statistics database 2004

The Nigerian experience shown in Figure 10 provides a distinct feature associated with the oil factor that was earlier mentioned. Nigeria's overall picture of the cumulative exports experience function is somewhat unique as most of the top export products are shifted to the far left. These commodities include seed for other fixed oils, leather, cocoa, shellfish fresh and frozen, natural rubber and gums, petroleum products refined and special transactions. These traditional export products decreased their share in the total country's export around the middle of the 1980s, as crude petroleum became the dominant export product in Nigeria. From 1987, crude petroleum export share rose to almost 95 per cent of the total of the country's exports and maintained its level and then again increased to over 99 per cent in 2000. As can be observed, the cumulative export experience functions plot of Nigeria's crude petroleum is leaning toward right. The two other products such as ships and boats, and polymerisation products do not have steady directions as in the earlier period they are not among the traditional exports but there are periods where their exports were very high. And finally, in the late 1990s, these two products were actually dominated by the exports of crude petroleum.

Figure 10: Cumulative Exports Function for Nigeria's Top 10 Commodities



Source: Author's computation from UNCTAD statistics database 2004

4. Diversification regimes in Africa

Using the diversification indices used in the foregoing discussions and analyzing the cumulative export experience functions, it is possible to define diversification regimes that are distinct and that characterise varying diversification experience in Africa. Analyzing the various diversification indices and the structure of composition of the top ten export commodities for selected countries over the last 22 years has provided some useful insights which can be used to define the diversification regimes that can be discerned from Africa's experience. Five diversification regimes can be identified from Africa's experience. It is noteworthy that these regimes should not be viewed as providing a step-wise or continuum that a country must follow as it moves from a concentrated to a diversified economy, but rather the regimes are a result of the policy actions that a country has set in place over a given period of time. In other words, the particular regime that a country falls into is likely to be a result of the mix between the various determinants of diversification.

Recognizing diversification as an endogenous process in economic development, the trend of the diversification indices and the structure of the cumulative export

experience for a given country that have been the basis of the discussion so far could be explained by socio-political and economic factors. Examples of these factors include physical variables such as rates of investment; macroeconomic variables such as exchange and inflation rates; institutional variables such as governance and investment climate or country risk; international variables such as market access; and other variables such as trade and industrial policy. In the following chapter, the empirical investigation of the role of these variables on diversification is explored. But in this section, the five regimes that can be identified to have resulted from Africa's diversification efforts are summarized.

- Little economic diversification: The countries exhibiting this regime are those that have not achieved much. These are the countries that even though they have not experienced any conflicts have been unable to achieve any diversification gains that can be pointed at. Countries that exhibit this regime are exemplified by Burkina Faso, Senegal and Zimbabwe.
- Countries that started the process but have not made any significant breakthrough: The second regime that is evident in the African experience is the one that characterizes those countries that have not made major breakthroughs in their diversification efforts from their status over the last 20 years. An example of the countries that fall under this regime is Kenya. Even though these countries are among the more diversified in the continent they have not managed to achieve deep horizontal diversification that encompasses high-value export commodities. As indicated by Kenya's cumulative export experience functions, vertical diversification has occurred leading to new agricultural related exports⁸. However, the vertical diversification is still not into the higher valued exports that have been characteristic of the NIE Asian and Latin American countries. The vertical diversification that has taken place in the countries that fall under this regime is still very labour intensive where returns tend to be low and as such it has not enabled these economies to use these exports as catalysts for rapid economic growth. This is unlike in the NIE Asia countries where both vertical and horizontal diversification has occurred, leading to exports of high-value capital-intensive commodities.
- Deepened diversification process: A strengthened diversification regime is one that bears potential to be sustainable. This is a regime that is characterized by both horizontal and vertical diversification. The diversification indices presented in the foregoing sections coupled with the cumulative experience

⁸ This is horizontal diversification at agriculture sector level but the new exports are still not high-value type.

functions of the different African countries indicate that there are countries that have managed to move beyond their situation 20 years ago to reasonably deepened diversification. Examples that stand out that would fit in this regime are Tunisia and Mauritius. Tunisia has managed to achieve horizontal diversification into higher-value exports. Mauritius on the other hand has achieved deep vertical diversification, which has led to more textiles related exports.

- Backsliders in the diversification process: The fourth regime that that one categorize African countries into is for those countries that started well and were registering positive diversification gains but later fell back. It is a regime characterized by countries that after the economic crises of the early 1980s responded by concentrating on an internal focus. An example of the countries that fit into this regime is Nigeria. The Dutch-disease might have played a major part in the characterisation of the countries under this regime. In the majority of the cases, export booms based on a single commodity in these countries played a part in the diversion of factors of production away from other tradable, especially the exportable. The Dutch-disease factor, especially that associated to oil reversed and diminished the contribution of earlier industries in the exports diversification process. The export experience of Nigeria and Gabon are good examples of the evolution of exports of the countries that fall in this regime. These two countries were unable to follow the strategy that Tunisia adopted whereby the traditionality of the petroleum related exports continued but new sectors were able to emerge and thrive.
- Conflict and post-conflict countries: The fifth regime in this characterisation of African economies is the one that captures conflict and post-conflict countries. Liberia, Democratic Republic of Congo and similar countries exhibit diversification efforts experience that cannot be attributed to particular policy actions.

5. Conclusion

The results at regional and sub-regional levels indicate that the efforts towards diversification in the 1970 and early 1980s had positive results in that for most countries, the indices for diversification were in general trending downwards, showing movements towards some diversification. However, the diversification gains were not sustainable as they could not withstand the pressures of the economic crisis and the attendant adjustment policies that needed to be instituted to deal with the crises. The gains made when this happened remained low and the diversification results were more reminiscent of volatility and fragility. Africa has

been unable to sustain a strong foundation of diversified economies. Yet, other regions such as Latin America and Asia came under similar pressures but managed to protect and even deepen their diversification gains. Overall, the African economies appear to have responded differently to the challenges posed by the economic crises of the early 1980s as opposed to the kind of response that the Asian economies adopted. But it is important to point out that there have been clear differences between sub-regions and between countries in the same sub-regions. In spite of between and within sub-regions differences, it is clear that the African economies were on the whole less dynamic compared to the Asian countries kind of response to diversification challenges. Five regimes characterise Africa's experience with diversification. The policy mix in the various African countries ranging from macroeconomic factors to institutional issues have played a major part in determining the regime in which each African country falls into.

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APPENDIX 1. Description of the diversification indexes

Ogive Index

The Ogive index is one of the most commonly used indexes of industrial diversification. This index measures the deviation from an equal distribution of employment in all sectors, that is the mean of the distribution. This index may also be used as a measure of export diversification or concentration and is given as:

$$\text{OGV} = N \sum_{i=1}^N (P_i - 1/N)^2$$

or

$$\text{OGV} = \sum_{i=1}^N \frac{(P_i - 1/N)^2}{1/N}$$

where $P_i = (x_i / X)$ is the actual share of i th commodity (x_i) in total exports ($X = \sum x_i$), N represents the total number of export commodities in the export portfolio and $1/N$ is assumed to be the “ideal” share of export earnings, which is the mean export share for each commodity. The minimum value of OGV, that is zero, is attained when the share of export is distributed equally among commodities. When the value of OGV approaches 0, this implies an economy is highly diversified. On the other hand, a larger value of OGV indicates a relatively less diversified economy, which means that there are only few commodities in its export portfolio.

The Entropy Index

Entropy is a form of measurement that has been applied to many areas such as in sciences, communication theory, business and finance, and economics. For example, in biological and behavioral sciences, entropy has been used as a measure of disorganization. In a marketing context, entropy can represent the distribution of consumer preferences for various brands. Applications of entropy statistics were developed mainly during the late 60s and the 70s. As a measure of diversity, entropy measure gives the diversity or spread of the distribution. The entropy index is given as:

$$ENT = - \sum_{i=1}^N P_i \log_2 P_i$$

Or

$$ENT = \sum_{i=1}^N P_i \log_2 (1/P_i)$$

Where N and P_i is defined as above. The maximum value of ENT given by $\log_2 N$, is attained when all P_i are equal. This value denotes greater diversification as all commodities in the export portfolio have identical share. If the i th commodity is the only contributor to the total exports, the $P_i = 1$, all the other $P_i = 0$, and $ENT = 0$. This value indicates extreme specialization or concentration in one commodity.

Hirschman Index

Another measure of an index of diversification/concentration is the Hirschman Index⁹. This index has been the most widely used measure of trade and commodity concentration. The Hirschman index may be written as:

$$H_1 = \sqrt{\sum_{i=1}^N \left(\frac{x_i}{X} \right)^2}$$

where x_i represents the export value of a specific i th commodity, X is the country's total exports, and N is the number of commodity groups. Again, the higher the value of H_1 indicates greater concentration of exports on few commodities and vice versa.

This index is designed as a measure when concentration is a function of both unequal distribution and fewness. The traditional measures of concentration, generally devised in connection with income distribution and the Lorenz curve, are sensitive only to inequality of distribution.

It is observed that H_1 is a function of the mean and variance of the value of exports share in different commodity groups. Specifically, H_1 is the index that would results if a country's export receipts were divided evenly among $1/(H_1)^2$ different commodities. This means that when the share of exports is identical or equally distributed to all commodity groups, then the variance is equal to zero and

⁹ This index is also commonly known as the Hirschman-Gini index, or Gini-Hirschman Index, and also commonly refers to as the Herfindahl-Hirschman index or the "H" index.

N is equal to $1/(H_1)^2$. This also implies that for a given N , the minimum value of H_1 , which occurs when the variance is zero and all shares are identical, is $1/\sqrt{N}$.

As a measure of geographic concentration of exports or trade concentration, the Hirschman index may be expressed as:

$$G = \left(\sum_{i=1}^T c_i^2 \right)^{1/2}$$

Where c_i is the proportion of each country's exports purchased by country i in a given year. And T is the number of destination countries for each year.

Normalized-Hirschmann Index

The Hirschman index may also be used as a relative measure of diversification by expressing its value between 0 and 1 according to the following formula:

$$N-H_1 = \frac{\sqrt{\sum_i^N P_i^2} - \sqrt{\frac{1}{N}}}{1 - \sqrt{\frac{1}{N}}}$$

Where $P_i = \frac{x_i}{X}$, x_i is the value of exports of commodity i , $X = \sum_1^N x_i$, and N is the number of products. The normalized-Hirschmann ($N-H_1$) index is used to discriminate between two countries, which are relatively more concentrated and used as an explanatory variable in growth regression. The value closer to 1 represents the most extreme concentration. Likewise, a low value of this index indicates lower exports concentration or a relatively diversified economy.