Trade Liberalisation, Regional Integration and Firm Performance in Africa's Manufacturing Sector

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Executive Summary

The Objective of the Study and Principal Issues Addressed

This study reports on survey work carried out in Africa's manufacturing sector to assess the effects of trade liberalisation on the performance of firms in the sector. The objective of the surveys was to assess the reasons for the low level of manufacturing exports and to identify the factors that limit the expansion of the sector.

The report is structured by placing the macro performance of the countries in context and then using firm level surveys to link the macroeconomic policy environment to the performance of firms in the manufacturing sector. The regional dimension to trade within Africa is important to understanding the patterns of trade in manufacturing exports. One objective of the study was to understand the role of regional trade and its effects on the performance of firms. In this Report we provide an analysis of firm level response by comparing firm exports both within and outside the region.

The report consists of five sections. After an introduction section 2 provides an account of the macroeconomic framework within which the firms in the countries surveyed operated. The microeconomic framework is presented in section 3. Section 4 examines the factors that explain the extent of exporting from firms in Africa's manufacturing sector. In section 5 the role of regional integration, and other policies towards the manufacturing sector, are considered.

The principal questions posed were the following:

. Have manufacturing exports increased in response to the depreciation of real exchange rates that adjustment has brought about in most countries?
. What kind of firms have responded most in terms of export supply, and why?
. What kind of policy, resource or infrastructural constraints are preventing firms responding to the more liberal trade regimes that now exist in Africa.
. What are the factors that influence the decision to export to the region or to the world market?

We now summarise the main findings of the Report.

Aggregate Performance of Manufacturing Exports and Macro Policy

There is evidence from the macro data that manufacturing exports have performed much better than overall export volumes. At the firm level there was no evidence of shifts in firm export performance over the relatively short period available for analysis. These survey based findings do not imply that macro policy is ineffective at enabling manufacturing exports to grow. The longer term evidence from the macro data strongly suggests that, with competitive exchange rates, rapid growth of manufacturing exports has been possible. However both macro and micro evidence confirm that the extent of manufacturing exports from Africa is very low.

From the macro evidence it was found that for only three countries in the sample, Zimbabwe, South Africa and Mauritius are manufacturing exports a significant part of exports, 33 per cent in the case for both Zimbabwe and South Africa and 53 per cent for Mauritius. In terms of exports per capita Mauritius is by far the most successful economy with export values over the period 1980 to 1995 averaging US$ 493 per capita, more than twice that of South Africa. Macro data shows the nature of the rapid growth in manufactured exports which has occurred in

Ethiopia, Ghana and Zambia. Comparing the decade of the 1980s with the period 1990-95 all these countries witnessed at least a doubling of per capita manufactured exports but from such a low level that in Zambia, where the rise was nearly threefold, per capita exports at US$16 were negligible compared to the Mauritius figure, over that period, of US$823.

Evidence on Firm Response

The percentage of firms which were exporters varies greatly across countries, and within countries by sector. At one end of the spectrum are Mauritius and Zimbabwe where over half of the firms export. At the other end of the spectrum are Ethiopia and Ghana, the former with only 4 per cent of the surveyed firms exporting, the latter with 9 per cent. The picture captured by the micro surveys is very similar to that observed in the macro data. Mauritius, Zimbabwe, the Cameroon and Côte d'Ivoire are relatively successful exporters while Ethiopia, Ghana, Kenya and Zambia manage only very modest levels of exports.

If attention is confined to large firms across most of the countries, over 70 per cent export. The exceptions are Zambia and Ethiopia. It is possible that the extent of state involvement in these countries, until relatively recently, accounts for the failure of large firms in these countries to enter the export market to any substantial extent.

The finding from the surveys is that while most African manufacturing firms do not export, which might indeed be inferred from macroeconomic data on the low level of African manufactured exports, the microeconomic evidence reveals the more surprising result that, for most of the countries, most large firms do export. Discussion of the problems facing potential exporters in Africa frequently assume that the problem is enabling them to break into export markets. The micro data from the surveys suggest that the problem is rather different. Most large firms in Africa's manufacturing sector do export. The problem is to explain why they export, on average, less than 30 per cent of their output.

Evidence on Firm Efficiency

The difference in efficiency can be measured and the results of comparisons across some of the countries is provided in the Report. We take Zimbabwe as the base and ask how efficient are firms, on average, compared with Zimbabwe. This comparison is done for exporting and non-exporting firms separately and then for all firms. Considering the efficiency levels for all firms taken together it is found that there are large differences in efficiency across countries. Manufacturing firms in Mauritius are far more efficient than those in any of the other countries. They are 65 per cent more efficient than the next most efficient country which is the Côte d'Ivoire. The gap between the most and least efficient country (Zambia) is six times.

In comparing the efficiency of firms in the export as compared with the non-exporting sector there was a finding, for most countries, that those in the export sector were more efficient. In the Côte d'Ivoire exporting firms were 32 per cent more efficient than non-exporting firms. In Kenya they were 15 per cent more efficient.

It was also found that for exporting firms there are no increasing returns to scale. One interpretation of this result is that exporting firms have reached an efficient minimum cost size while non-exporting firms have not. Again the differences imply large cost reductions through size increases for non-exporting firms. The average size of an exporting firm is nearly six times

those not exporting. The extent of increasing returns to scale imply that an increase in size of this range decreases the costs of production by about 30 per cent. While such a cost gain is large it is small relative to the differences in technical efficiency between the countries.

The issue which is central to interpreting these results is the issue of causality. Are firms large and efficient because they export or is increased size and efficiency necessary to enable them to enter the export market? Analysis of the data suggests there is a causal relationship running from productivity to exports. It may also be the case that exporting helped productivity but our sample is over too short a period to allow this to be established.

These results provide important insights into the reasons for the poor export performance of manufacturing firms in Africa. The levels of efficiency with which such firms operate are often too low to prevent them from entering the export market.

There is no evidence that, at the present levels of operation of the manufacturing sector, that skill shortages prevent the expansion of output. Skill, as measured by years of education and years of tenure, is remarkably uniform across sectors within countries and across the countries. The workforce in the textile and garment sector of Côte d'Ivoire is more educated than the workforce in the same sector in Mauritius. In all the countries where manufactured growth has been poor jobs for secondary school completers are regarded as scarce and becoming scarcer. This is consistent with the rapid expansion of education combined with a low level of expansion of job opportunities. It remains possible that skill shortages are important in explaining one aspect of the pattern of African firm manufacturing, its lack of specialisation. This may be due to strategies of diversifying risk, but it may be due to the fact that export sales can only be expanded at increased cost. One reason for such increased cost may be that the marketing skills required to export on more than a small scale are highly skill intensive activities and these skills are very expensive for African firms.

Manufacturing Exports and Regional Integration

The survey data is used to show what proportion of those firms that do some exporting export to the world. In Mauritius, of those firms that export, 80 per export outside the region. In the case of the other countries the percentages range from 33 to 34 per cent in the Cameroon and Ghana to a high of 60 per cent in Côte d'Ivoire. The pattern that emerges for both Ghana and the Cameroon is that world exports, as distinct from regional exports, are dominated by the processing of natural resources. It is true for Ghana that 75 per cent of firms that export in the garment and textile sector, which do export, export to the world. However the surveys show that only 3 per cent of firms in the sector export. For Zimbabwe there are significant exports outside the region for garments and textiles. If a Zimbabwean firm from the garment and textile sector exports then 62 per cent of its output is exported to the world and 38 per cent to the region. This contrasts with figures of 88 and 12 per cent for Mauritius.

There is clear evidence that access to regional markets does improve the efficiency with which firms operate. However these efficiency gains are not large enough to enable the firms to become internationally competitive. The key finding in the Report is the extent of the productivity gap between Mauritius and the other countries surveyed. The question posed by these results is the following: if the productivity gains to enable the economies to become competitive on the world market can be achieved what is the role of regional trade arrangements?

There are several reasons why regional arrangements may, with other appropriate policies, be able to play a role in enabling firms in the manufacturing sector to grow. First such an arrangement may provide an element of macroeconomic stability then that can greatly enhance the prospects for exports. Both the Cameroon and the Côte d'Ivoire perform relatively well in the comparisons of macroeconomic policy outcomes shown in the study. Both, since the 1980s, have had lower rates of inflation than Mauritius and far below that of the other countries. The fixed exchange rate regime under which the two countries operated was undermined by the fiscal deficits that were run from the 1980s. In the context of fiscal imbalance fixed exchange rate regimes harm exports by inducing overvalued exchange rates. The inference, clearly, is that the advantages of the fixed exchange rate regime are real but can readily be undermined without appropriate fiscal policies. These advantages flow from the monetary arrangements of the CFAF rather than regional trading arrangements.

As has been widely noted regional trading arrangements have proved ineffective at stimulating regional trade. Indeed there is evidence that unilateral tariff reductions have enhanced regional trade. A possible reason for this is apparent from the survey results. Regional trade is particularly important in sectors where firms cannot compete internationally. One of the reasons for such uncompetitivenss may be transport costs which are of importance for the metal working sector. With the exception of Mauritius it is this sector which exports most regionally. Unilateral trade reductions may enhance the prospects for this sector by allowing firms geographically close to a border to export in a way that was not possible before. If this is correct then it is unnecessary to co-ordinate tariff reduction if the intent is to stimulate regional trade. This can occur by unilateral actions.

Three key policy findings emerge from the surveys.

. The first is that firm level efficiency plays a major role in enabling firms to export. Good macro policy is an essential pre-condition for growth but policies designed to enhance efficient firm level operation must complement such policies.

. The second policy issues relates to firm size. Firms in Mauritius are small relative to several of the other countries in the surveys. In the successful Mauritian exporting sector the firms are among the most labour intensive in the survey. Labour intensive growth is possible but only with policies that promote labour intensive technology in firms of moderate size.

. Public sector controls of firms in Zambia and Ethiopia have ensured that they perform well below the average in exporting. Policies of privatisation are an essential component of policies to promote exports.

1 Introduction

1.1 Background to the Study

The AERC has conducted a major project evaluating trade liberalisation in Africa. The macroeconomic aspect of the project was concerned to evaluate the consequences for fiscal stability, growth and the exchange rate of liberalisation measures. The countries covered in the study were South Africa, Mauritius, Kenya, Zimbabwe, Zambia, Nigeria, Côte d'Ivoire, Tanzania and Ghana. To complement this macro work micro studies on manufacturing enterprises were carried out to establish the consequences of trade liberalisation for the industrial sector in African countries. The surveys on trade liberalisation were organised to complement the studies carried out as part of the Regional Programme on Enterprise Development organised by the World Bank. In this report we draw on the survey work to provide a comparative framework for the performance of manufacturing exports in eight countries.

The report is structured by placing the macro performance of the countries in context and then using firm level surveys to link the macroeconomic policy environment to the performance of the manufacturing sector. The regional dimension to trade within Africa is important to understanding the patterns of trade in manufacturing exports. One objective of the study was to understand the role of regional trade and its effects. In this Report we provide an analysis of firm level response by comparing firm exports both within and outside the region.

The report consists of five sections. The next section provides an account of the macroeconomic framework within which firms in the countries operated. This is followed by an analysis of the microeconomic framework. Section 4 examines the factors that explain Africa's manufacturing exports. In section 5 the role of regional integration is considered and an assessment is made of how effective have been policies towards the manufacturing sector.

1.2 The Issues

Trade and exchange rate liberalisation is central to the structural adjustment programmes being implemented by most countries in Sub-Saharan Africa. The policy measures implemented have included the elimination of non-tariff barriers to imports, the rationalisation and reduction of tariffs, the institution of market determined exchange rates and the removal of fiscal disincentives and regulatory deterrents to exports. If coupled with fiscal and monetary discipline, appropriate financial sector reforms and the decontrol of domestic prices, such measures are expected to raise international competitiveness. The growth of the manufacturing sector in Africa in the 1960's and 1970's was the outcome of a policy of import substitution. Such policies harmed exports partly through the increasing overvaluation of domestic currencies, partly through the encouragement of low return investments by preferential credit policies and direct public investment in industrial ventures. Established firms in the manufacturing sector are therefore expected to be among the main losers from adjustment in general and trade liberalisation in particular. Exposure to world prices generates a process of competitive selection which firms might not survive if they owe their existence largely to previously sheltered markets or subsidised input supplies. On the other hand the same process should raise productive and allocative efficiency among survivors and new entrants to industries. This in turn should lead to efficiency in import substitution and greater production for export markets, the larger size of which means greater scope for scale economies and firm growth than domestic markets have been able to offer so far.

In this study we analyse firm level data from eight countries with the aim of examining the constraints and prospects manufacturing in Africa faces in the context of current policy reforms.

The questions posed include the following:

. Have manufacturing exports increased in response to the depreciation of real exchange rates that adjustment has brought about in most countries?
. What kind of firms have responded most in terms of export supply, and why?
. What kind of policy, resource or infrastructural constraints are preventing firms responding to a more liberal trade regime?
. What are the factors that influence the decision to export to the region or to the world market?

The response of firms to changes in the incentives structure of an economy should depend on such observable characteristics as age, size, entrepreneurial human capital and technology the influences of which cannot be observed from sectoral aggregates. The international nature of the sample of firms being investigated enables us to assess the role of cross country differences in policy regimes, regional trading arrangements and states of development of infrastructure may play in determining export performance given firm characteristics.

2 The Macroeconomic Framework

In this section we present the macroeconomic framework within which the firms operated in the 1990s. The presentation of the data on the aggregate performance of the economies and on the growth of manufacturing exports from the economies surveyed enables the micro data to be seen in context. We also examine later in the Report the effects of macroeconomic policy on firm performance.

2.1 The Regional Context

Since the early 1980s more than two-third of countries in Sub-Saharan Africa have implemented structural adjustment programmes with the support of the World Bank and the IMF. The countries differ in terms of pre-reform levels of development and how effectively and consistently they have implemented reform measures. The eight countries covered by study are broadly representative of the wider population in these respects as well as in terms of diversity in geographical location, official language and membership to regional trading or monetary arrangements. The countries are the Cameroon, Côte d'Ivoire, Ethiopia, Ghana, Kenya, Mauritius, Zambia and Zimbabwe.

The representation of geographical regions among the countries covered by the study is as follows : Côte d' Ivoire and Ghana for west Africa, Cameroon for central Africa, Ethiopia and Kenya for east Africa, Zambia and Zimbabwe for southern Africa and Mauritius for Indian Ocean islands. Côte d'Ivoire, Cameroon and Mauritius represent Francophone Africa while the remaining countries are Anglophone with the exception of Ethiopia. Côte d'Ivoire and Cameroon are both in the CFA franc zone- the former as a member of the West African Monetary union and Cameroon as a member of the Central African Customs and Economic Union. As a common monetary and exchange rate regime the CFA franc zone can be a potential facilitator of trade between its members. The membership of countries included in the study to other trading arrangements is as follows: Côte d'Ivoire and Ghana are member of the 16-country Economic Community of West African States (ECOWAS), Côte d'Ivoire also belongs to the West African Economic Community (CEAO); Ethiopia, Kenya, Mauritius, Zambia and Zimbabwe are members of the Common Market for Eastern and Southern Africa (COMESA) the total

membership of which at present is 23. Mauritius, Zambia and Zimbabwe are also members of the Southern African Development Community (SADC) with nine other countries.

2.3 The Countries

Three of the eight countries, namely, Côte d' Ivoire, Cameroon and Mauritius are middle income countries with per capita incomes of US$650, US$660 and US$3,380, respectively for 1995. The others are all in the low income category per capita incomes ranging from US$100 in Ethiopia to US$540 in Zimbabwe for 1995, Table 1. Manufacturing is a far more important sector of activity in Côte d'Ivoire, Mauritius, Zambia and Zimbabwe than in the others with a share in GDP of 20 per cent to 30 per cent. It is least important in Ethiopia and Ghana, where it accounts for less than 10 per cent GDP, Table 2. Agro-processing, textiles and clothing and metal and wood work account for the bulk of manufacturing employment and value added in all eight countries, Table 3. However, the manufacturing sector is relatively diversified in Côte d'Ivoire, Kenya and Zimbabwe, where the production of machinery, transport equipment and chemicals accounts for a significant share of sectoral value added.

With export shares in GDP of about 60 per cent and 40 per cent respectively, Mauritius and Côte d'Ivoire are the most export oriented while Ethiopia and Ghana are the least open. The remaining countries have an export share in GDP of 25 per cent and 30 per cent, Table 4. Services account for between 35 per cent and 40 per cent of exports in Ethiopia, Kenya and Mauritius: Ethiopia because of the relative size of its international air line industry and Kenya and Mauritius on account of the scale of their tourism industries. The share of services in export earnings is under 20 per cent for the other five, Table 5. Merchandise exports are most diversified in Mauritius and Zimbabwe where manufactured exports account for about 65 per cent and 35 per cent respectively. The value share of manufacturing in merchandise exports ranges from 12 per cent to 17 per cent for all the others excepting Ethiopia for which the figure is under 5 per cent.

Ethiopia and Zimbabwe launched their adjustment programmes much later than the rest of the group, Zimbabwe in 1991 and Ethiopia in late 1992. The other countries started their programmes in the early 1980's with the exception of Cameroon, which began its reforms after 1986. Of the five who started earlier Mauritius had achieved adjustment by 1985 while Ghana's policy reforms are judged by the World Bank to have been implemented with greater rigour and consistency than was the case in Côte d'Ivoire, Kenya or Zambia. Adjustment efforts were largely abandoned in Côte d'Ivoire in 1986, resumed in 1989 and did not gather momentum, especially on the trade liberalisation front, until 1992. Reforms followed an even more pronounced stop-and-go pattern in Kenya and Zambia at least until the early 1990s. In this sub-section we will examine the following aspects of the policies pursued by these countries:

. the timing and scope of structural adjustment programmes in general and trade and exchange rate policy reforms in particular
. current macroeconomic and trade policy stance
. the performance of exports, manufacturing output and manufacturing exports

Table 1	**GNP per Capita (US$)**			
	1980	1985	1990	1995
Cameroon	700	780	920	650
Côte d'Ivoire	1,290	630	800	660
Ethiopia	.	130	170	100
Ghana	430	360	400	390
Kenya	450	300	380	380
Mauritius	1,240	1,060	2,440	3,380
Zambia	630	350	450	400
Zimbabwe	760	630	710	540
Source: World Bank Development Indicators				

Table 2	**Manufacturing Value-added as Per Cent of GDP**			
	1980	1985	1990	1995
Cameroon	8.8	11.0	14.2	10.0
Côte d'Ivoire	13.3	15.2	21.3	17.8
Ethiopia	.	4.9	4.9	.
Ghana	7.8	11.5	9.2	5.9
Kenya	12.8	11.7	11.7	10.8
Mauritius	15.3	20.6	23.6	23.3
Zambia	18.5	22.9	31.9	30.4
Zimbabwe	24.9	22.9	26.4	.
Source: World Bank, World Development Indicators				

Table 3	**The Percentage Share of Industrial Groupings in Value-added 1990**				
	Food, beverages and tobacco	Textiles and clothing	Machinery and transport equipment	Chemicals	Other*
Cameroon	60.8	12.8	5.2	4.6	42.2
Côte d'Ivoire	34.3	12.5	7.5	0.0	45.7
Ethiopia	61.6	21.0	1.1	2.4	14.0
Ghana**	45.8	5.6	1.6	7.9	39.1
Kenya	38.5	9.6	9.6	9.2	33.2
Mauritius	30.4	45.7	2.4	4.2	17.4
Zambia	.	.	.	.	.
Zimbabwe	27.7	19.3	9.5	5.2	37.8

* Mainly wood work, metal and printing.
** Figures refer to 1985

Source: World Bank Development Indicators, 1987.

Table 4	**Exports of Goods and Services as Per Cent of GDP**			
	1980	1985	1990	1995
Cameroon	26.8	33.4	20.4	25.9
Côte d'Ivoire	35.0	46.8	31.7	41.4
Ethiopia	.	8.2	7.8	14.7
Ghana	8.5	10.7	16.0	25.0
Kenya	27.9	25.3	26.1	32.6
Mauritius	51.2	53.5	65.2	58.4
Zambia	41.4	36.4	37.3	31.5
Zimbabwe	30.3	28.8	29..4	.

Source: World Bank, World Development Indicators

Table 5	**Structure of Exports of Goods and Services, 1990**			
Country	Percentage Share of Merchandise Exports in Total Exports	Percentage Share in Merchandise Exports in 1990		
		Fuels, minerals and metals	Other primary commodities	Manufactured exports
Cameroon	83.7	56.8	34.7	8.5
Côte d'Ivoire	83.1	14.8	68.4	16.8
Ethiopia	54.5	6.2	88.5	5.3
Ghana	92.8	24.6	62.0	13.4
Kenya	48.9	15.6	67.1	17.3
Mauritius	71.9	1.6	30.3	68.1
Zambia	87.3	..	..	..
Zimbabwe	86.9	16.6	52.5	30.9

Source: World Bank, *World Development Indicators*, 1997.

Cameroon

Cameroon is unique among the eight countries in that it is a petroleum exporter. Pre-reform economic performance was characterised by rapid and steady growth in output throughout the 1970s and the first half of the 1980's largely as the outcome of the boost provided by the beginning of oil exports in 1977. During the same period the manufacturing sector grew quite rapidly increasing its share in GDP from under 5 to nearly 20 per cent and accounting for a significant share of exports. While government involvement in economic ventures grew over the same period through a proliferation of parastatal units and heavy public investment in infrastructure and social sectors, public policy was not hostile to the development of private enterprise, at least compared to what was happening in many countries in the region.

Cameroon's structural adjustment was launched in 1987 following a sharp fall in oil prices the same year which led to unsustainable fiscal and external imbalances and decline in real per capita income. One outcome of the consequent contraction of domestic demand was a fall in manufacturing output, which was exacerbated by falls in sectoral exports as the real exchange rates appreciated steadily. Implementation of the adjustment programme started with large cuts in government investment spending. At the same time domestic prices were decontrolled more or less completely. The early 1990's saw the liberalisation of its employment and investment

laws. The new investment law provides a range of fiscal incentives and legal guarantees to both foreign and domestic investment and has been accompanied by some privatisation measures which have significantly reduced the direct involvement of the state in economic ventures. In early 1994, the CFA franc was devalued by 50 per cent against the French franc. Major reforms aimed at liberalisation foreign trade were also introduced the same year. The measures included the elimination of all quantitative restrictions on imports, the simplification of the import tariff schedule, reduction in tariff rates and the elimination of a variety of internal trade taxes. Import tariffs are now all ad valorem with an average rate of under 20 per cent. Export licensing requirements have also been dropped. In conjunction with the new investment code of 1990, the government had also legislated for the establishment of export processing zones - officially known as Industrial Free Zones - in which a range of fiscal and regulatory incentives would be provided to production for exports. Four such zones had been established by the end of 1994.

Côte d'Ivoire

Côte d'Ivoire is notable among the eight countries covered by the study for following an agricultural export oriented growth strategy, creating a policy environment that was relatively friendly to domestic and foreign private investment and maintaining fiscal discipline during the first decade of its existence as a sovereign state. The benefit of this was growth in real GDP at an average annual rate of 8 per cent between 1965 and 1975. Over the same period manufacturing value added grew by more than 9 per cent per annum benefiting from both relatively large inflows of foreign investment and a government policy of heavy protection to industry. At the same time manufacturing firms were able to export around 40 per cent of sectoral output mainly to other countries within the West African Economic Community.

As in Cameroon, structural adjustment policy reforms in Côte d'Ivoire were launched as the governments response to external and internal macroeconomic imbalances which evolved out of negative terms of trade shocks and real exchange rate appreciation during the second half of the 1970's. Unlike Cameroon reforms began much earlier here in 1981 with a government commitment to reducing trade and fiscal deficits, restoring competitive real exchange rate and liberalising foreign trade. However, reforms were suspended in 1987 with little progress on the trade front until another terms of trade shock and appreciation of the real exchange rate forced the government to resume them in 1989. Indeed the reform process did not gather significant momentum until 1993, when the policy of fiscal discipline was encoded in a new Finance Law, public sector reforms were carried out and a privatisation scheme launched. During the next two years the employment and investment codes were liberalised with specific provisions targeted at attracting foreign investment.

Although domestic price controls remain pervasive a trade liberalisation programme was initiated in 1994 following the devaluation of the CFA franc. To date liberalisation has consisted only in the lifting of quantitative restrictions on imports and a 50 per cent reduction in duties to an average ad valorem rate of 24 per cent. Unlike the case with Cameroon there has been little policy change with a view to directly promoting exports. Export taxes and licensing requirements are still in force and no export processing free zones have yet been established.

Ethiopia

Ethiopia is by far the poorest country in the group and the latest to embark on structural adjustment. It also differs from the other seven countries in two important respects. First, it had

been in a state of civil war for more than 15 years by the time it started significant policy reforms. The reforms coincided with the end of the war and efforts at reconstruction. Secondly, economic policy of the civil war period was one of extreme socialism in which the state owned and managed nearly all medium to large scale establishments in all sectors and pursued an inward looking development strategy under a strictly enforced regime of central planning which actively sought to progressively marginalise private sector enterprise. At the start of the reforms public sector enterprises accounted for about 60 per cent of employment and more than 80 per cent of value added in the manufacturing sector. The state also owned all urban land, exercised monopoly in foreign trade, banking and insurance, telecommunications, power supply, freight transport and mining while state owned enterprises were dominant in the construction industry, wholesales trade and public transport. Although import duties were as high as anywhere in the region these were made redundant by the administrative rationing of foreign exchange from which private businesses had practically been shut out by the mid 1980s.

Between 1975 and 1990 per capita real GDP fell by an annual average rate of 1.1 per cent. This was mainly as a result of the extremely poor performance of the agricultural sector, the value added of which grew over the period by a mere 1.2 per cent per annum against an average population growth rate 2.8 per cent. The manufacturing sector fared much better registering an annual average growth rate of 4.2 per cent over the same period essentially on account of its growth in the first half of the 1980s at a rate of around 10 per cent and despite the fact that manufacturing output actually contracted between 1988 and 1990. Manufacturing has never contributed significantly to the country's merchandise exports which continued to consist entirely of the same half a dozen agricultural commodities as they did prior to 1975. Probably even more important than the appreciation in real exchange rates as the source of the poor exporting performance of the economy were the low producer prices, due to heavy export taxes and low compulsory farm gate prices that the government enforced throughout the period.

Policy reforms began in mid 1992 with the enactment of a new investment code removing the scale and sector restrictions the socialist regime had imposed on private enterprise and providing for a range of fiscal incentives to foreign investment. The following reform measures were also taken the same year: decontrol of domestic prices, significant liberalisation of the employment code and the reconstitution of public enterprises into establishments financially autonomous of central and local government as a first step to privatisation. Implementation of the privatisation programme is now under way but progress has so far been rather slow particularly in the manufacturing sector. The government also retains a defacto monopoly in banking and insurance despite the legalisation for private investment in both.

The national currency, the Birr, was devalued by about 60 per cent in October 1992 following which a Dutch auction system of allocation of foreign exchange was instituted. Auctions are held weekly. Taxes on exports other than coffee were eliminated in 1993 when the maximum rate of tariffs on imports was also reduced from 230 to 80 per cent. Further tariff reductions and improvements in the import duty drawback system are planned.

Ghana

Ghana won its independence a decade earlier than most countries in the region and is one of the best endowed in natural resources and trained manpower. While its early post independence development policy avoided the extreme variants of statism practised in some countries of the

region such as Ethiopia, its development strategy until the early 1980's was much more inward looking and less friendly to foreign investment than was the case in Cameroon, Côte d' Ivoire, or Kenya. The period between independence and 1980 was also characterised by more political instability than was the case with the other countries in the group with the exception of Ethiopia. This translated into a dismal economic performance through out the 1970s, during which per capita real income fell by about 15 per cent, manufacturing value added contacted at an average rate of more than 3 per cent a year and inflation spiralled to more than 40 per cent. One of the earliest to launch a structural adjustment programme, the country is today regarded by international development agencies as a good example late reformers in the region should follow in implementing policy reforms. The overriding concern throughout the reform period has been bringing inflation under control through the tightening of fiscal and monetary policies. Despite the remarkable success in attaining policy objectives in other areas price stability has yet to be achieved. The more structural elements of the reform began with the enactment of a relatively liberal investment code in 1981 the main thrust of which was the provision of a guarantee for foreign investors against the risk of expropriation. A series of amendments have been made to the code since then which have opened up all lines of activity to foreign investment, lowered capital thresholds to the same and provided specific fiscal and regulatory incentives for exporters. Ghana has also put more into its privatisation efforts than many of the other countries, partly as a result of the creation the Ghana Stock Exchange in 1991. By 1986 most domestic price controls had also been lifted.

On the foreign trade front the most significant development was the full liberalisation of the exchange rate system in 1992 with the creation of an inter-bank market in foreign currency replacing an auction system which had been in operation since 1987. The introduction of the auction system itself followed a series of major devaluations of the national currency, the Cedi, between 1983 and 1986 during which period a dual exchange rate system operated. Progress in the liberalisation of the exchange rate system was matched by fiscal measures aimed at import liberalisation. The first step in import liberalisation was taken in 1983 when quantitative restrictions were replaced by ad valorem tariffs which were themselves reduced and simplified into three tiers. Import licensing requirements were then dropped entirely in 1989. As of 1991, a new tariff structure has been in operation in which one of three tariff rates applies to a particular good, namely a zero tariff, a 10 per cent tariff and a 25 per cent tariff. The main export promotion measures taken during the same period were the raising of the export retention ratio and the expansion of the coverage of the duty draw back system.

Kenya

The Kenyan economy grew at an average rate of 6.5 per cent a year during the first ten years following independence in 1963. Manufacturing value added grew even faster during the same period at an average rate of over 8 per cent per annum. This was a period during which the government followed macroeconomic policy which avoided fiscal and external imbalances. Trade policy was also far more open during the same period than was the case with most other countries in the region. Although industrial policy was geared to import substitution, there were no import controls at the time and exchange rates stability was maintained. Inappropriate government fiscal responses to the series of negative and positive shocks that hit the economy between 1973 and 1977 generated an inflationary situation, a balance of payments crisis and loss of international competitiveness in the late 1970s. The government's response to these

developments was to introduce a system of import controls which grew tighter and tighter as the crises continued into the first half of the 1980s.

Although adjustment efforts have been made in Kenya since 1979 lack of government determination in maintaining fiscal and monetary discipline remained a point of contention between Kenyan authorities and donors at least until 1993 leading to repeated suspension of adjustment lending facilities by the World Bank and the IMF. When adjustment lending resumed in 1993 the government entered into a commitment for spending controls and monetary restraint at the same time as it devalued the national currency, the Kenyan Shilling, by 33 per cent. Although there were a series of devaluations in the early 1980s, the government had continued to administratively allocate foreign exchange until 1991 when an export retention scheme was introduced at 50 per cent for traditional exports and at 100 per cent for non-traditional exports. A series of further liberalisation measures culminated with the elimination of all exchange controls in 1994.

The first attempt at liberalising foreign trade was also made in the early 1980s with the aim of promoting an export oriented industrial growth. However, many of the reforms of those years were reversed later and were reintroduced in the late 1980s. Import licensing requirements have now been dropped, quantitative import restrictions eliminated and all specific tariff rates replaced by ad valorem rates. The maximum tariff rate has also been reduced from 170 in 1988 to 70 per cent while the number of tariff rates has fallen from 24 to 12. The import weighted average tariff rate currently stands at around 20 per cent. Export promotion measures taken under the 1988 trade liberalising programme include the simplification of export licensing requirements and procedures, the establishment of export processing zones and the abolition of export taxes on several traditional exports.

Zambia

Zambia is unique in the group of countries covered by the study in that more than 80 per cent of its exports come from mining, while its agricultural sector accounts for under 20 per cent of employment. Until 1992, its economy was the most state controlled in the group, excluding that of Ethiopia, whereby the state maintained monopoly in mining, energy, finance and telecommunications and state owned enterprises were major players in manufacturing, transport, real estate, trade and catering. The development strategy the country followed since its independence in 1964 was one of import-subsituting industrialisation based on heavy taxation of mining and agriculture for its financing. Manufacturing value added grew at an annual average rate of 10.5 per cent during the first decade after independence. However, the corresponding average annual growth rate of 2.4 per cent in GDP was not very impressive and the economy was thrown into stagnation starting in the mid 1970s when unsustainable fiscal and external imbalances developed as a combination of a number of factors, namely the oil shocks of 1973 and 1978, persistent falls in copper prices as the country's main export and the depletion of mining reserves. Although the manufacturing value added continue to grow at an average rate of around 5 per cent over the period 1973-87, GDP fell at an annual average rate of 0.1 per cent during the same period, the budget deficit grew to about a fifth of GDP and the rate of inflation spiralled to more than 80 per cent.

Attempts at structural adjustment were first made during 1983-87. One of the measures taken then was the repeated devaluation of the national currency, the Kwacha, and the introduction of an auction system of allocation of foreign exchange and an own-funds scheme. Import licensing

and quantity restrictions were also abolished and import tariffs rationalised and reduced. On the export side, the duty drawback was simplified as were export licensing procedures. Reforms were then reversed in 1987 when the auction system foreign exchange allocation was abandoned and import licensing and domestic price controls were reimposed. Reforms did resume in 1988 leading to the introduction of a dual exchange rate system in one window of which was operated an open general licensing scheme in 1990. The maximum import tariff rate was reduced at the same time from 100 to 50 per cent. However, the pace of adjustment did not pick up until a new government launched a three-year reform programme in 1992.

Macroeconomic stabilisation was one of the priorities of the new programme as was the case with earlier attempts at adjustment. However, the scope of the new refoms was much wider. One major new reform was the privatisation of all public enterprises, in which the government has achieved considerable sucess. Complementing the privatisation programme was the enactment of a liberal investment code and the decontrol of domestic prices. Building on earlier reforms, the government also lifted all foreign exchange controls in 1994 and abolished all export taxes and licensing requirements. The maximum import tariff was reduced to 25 per cent in 1996.

Zimbabwe

Zimbabwe's economy is the most diversified of the group and is characterised by relatively highly commercialised agriculture and a large and divesified manufacturing sector. It has also an important mining sector which accounts for about a third of its merchandise exports. As was the case elsewhere in the region, industrial growth in the 1960s and 1970s was achieved under a policy of import substitution. The economy was one of the fastet growing between 1965 and 1973 registering an average annual GDP growth rate of 8 per cent. GDP growth sharply decelerated thereafter averaging just over 2 per cent a year between 1980 and the launching of the country's first structural adjustment programme in 1991. Although terms of trade shocks and drought played a major role in inducing this decline government policy was also responsible for the poor growth perfomance: large fiscal deficits reduced domestic investment and the existing trade and exchange rate regime quickly led to foreign exchange shortages the effect of which was most acute in the manufacturing sector.

The five year economic reform programme launched in 1991 sought to attain macroeconomic stability and an incentive structure which would enable the economy to cope better with external shocks. The main stablilisation measure was cuts in government spending which brought the budget deficit from well over 10 per cent of GDP in 1990 to around 5 in 1994. Structural reforms included domestic price decontrols, public enterprise reforms and selective privatisation, liberalisation of the employment code, financial market deregulation and the removal of investment sanctions.

By mid 1995 the government had also abolished the adminstrative allocation of foriegn exchange, raised the export retention ratio to 100 per cent and lifted import licensing requirements. There are no quantitative restrictions on imports and sectoral customs duties averaged below 40 per cent. On the export promotion front, the government has replaced the duty drawback system by an inward processing scheme which allows exporters to import inputs duty free. Although no export processing zones exist in Zimbabwe at the moment there are plans to establish some.

2.4 Comparative Macroeconomic Performance

All the countries surveyed, with the exception of Mauritius, faced acute difficulties in their macroeconomic environment that had important implications for the performance of the manufacturing sector and for the performance of manufacturing exports. The firm surveys were conducted in the period 1992-94. The longer term comparative macroeconomic performance of the countries, over the period 1970 to 1995, is shown in Table 6. In the first part of the period, 1970-85, five of the countries experienced positive per capita real GDP growth, although only in three was this greater than 1 per cent, the Cameroon, Kenya and Mauritius. In the second part of the period, 1985-1995, only Mauritius, of the relatively good performers in the first part of the period, actually improved its performance. The two Francophone countries, the Cameroon and Côte d'Ivoire, experienced particularly large falls. In the case of the Cameroon a per capita GDP growth of 4.2 per cent was changed to a 6.4 per cent decline in per capita income. The result was a halving of per capita GDP in the decade. In contrast both Ghana and Uganda achieved major turnarounds from per capita falls of GDP of close to 3 per cent per annum to rises in per capita income in excess of 1 per cent. It is clear from Table 6 that only Mauritius achieved a sustained long run growth of income over the whole period from 1970 to 1995. This is also true for the performance of exports which is shown in the second part of Table 6. Three countries experienced a substantial decline in performance for their exports, the Cameroon, Côte d'Ivoire and Ethiopia.

Table 6 Trend Rates of Growth of Real GDP per Capita and Real Exports per Capita:1970-1985 and 1985-1995

	Real GDP per Capita (%pa)		Real Exports per Capita (%pa)	
	1970-1985	1985-1995	1970-1985	1985-1995
Cameroon	4.2	-6.4	7.5	-1.2
Côte d'Ivoire	0.5	-4.7	2.9	-1.7
Ethiopia	-0.7	-1.0	-1.9	-5.5
Ghana	-2.7	1.3	-10.2	4.4
Kenya	1.6	0.0	-3.1	3.1
Mauritius	2.9	4.3	1.6	5.1
Nigeria	-1.3	1.7	-2.9	0.9
South Africa	0.2	-1.5	-2.1	0.6
Tanzania	Na	0.5	Na	Na
Uganda	-3.0	3.3	-7.4	3.1
Zambia	-2.4	-2.1	-4.9	0.0
Zimbabwe (a)	-0.3	-0.4	-1.2	0.0
All	0.4	-0.4	-2.0	0.8

Table 7	**Trend Rates of Growth of Real GDP per Capita, Real Exports per Capita and Real Manufacturing Exports per Capita: 1980-95**		
Country	Real GDP per Capita (% pa)	Real Exports per Capita (% pa)	Real Manufacturing Exports per Capita (% pa)
Cameroon	-2.6	0.0	4.7
Côte d'Ivoire	-3.8	-2.2	0.0
Ethiopia	-1.0	-5.9	13.7
Ghana	0.5	1.8	17.0
Kenya	0.3	1.8	0.0
Mauritius	4.9	7.5	14.7
Nigeria	0.0	-1.2	9.1
South Africa	-1.4	0.0	-4.0
Tanzania	0.5	Na	-4.0
Uganda	2.1	2.0	-15.0
Zambia	-2.2	-2.9	17.3
Zimbabwe (a)	-0.3	1.0	-2.6
All	0.2	0.2	4.0
Source: World Bank Data: (a) Zimbabwe is 1980-94			

Table 7 shows the pattern of the changes in real per capita GDP, real exports and real manufacturing exports for all the countries from 1980 to 1995. Table 7 in its final column shows the growth rates for real manufacturing exports per capita. On average the growth of these exports was far higher, at 4 per cent per annum, than overall export growth, at less than 1 per cent per annum. The growth rates were particularly high in some countries experiencing falls in overall exports, for example, Ethiopia and Zambia. These figures must be seen in context, Tables 8-10. The growth rates shown in Table 7 are from very low level of manufacturing exports. Tables 8-10 show the percentage of exports which are manufactures, the amount of manufactured exports in US$ and, to place the figures in context given the very different population sizes of the countries, the per capita figures. Table 8 shows averages for the whole period 1980 to 1995 while Tables 9 and 10 present the sub-periods, 1980-90 and 1990-95 to show what changes have been effected in the 1990s. For only three countries in the sample, Zimbabwe, South Africa and Mauritius are manufacturing exports a significant part of exports, 33 per cent in the case for both Zimbabwe and South Africa and 53 per cent for Mauritius. In terms of exports per capita Mauritius is by far the most successful economy with export values over the period 1980 to 1995 averaging US$ 493 per capita, more than twice that of South Africa. A comparison of Tables 9 and 10 shows the nature of the rapid growth in manufactured exports which has occurred in

Ethiopia, Ghana and Zambia. Comparing the decade of the 1980s with the period 1990-95 all these countries witnessed at least a doubling of per capita manufactured exports but from such a low level that in Zambia, where the rise was nearly threefold, per capita exports at US$ 16 were negligible compared to the Mauritius figure, over that period, of US$823.

Table 8 Manufactured Exports: 1980-1995

Country (Means)	Percentage of Exports which are Manufactures	Manufactured Exports (Millions of US $)	Manufactured Exports per Capita (US$)
Cameroon	9	169	15
Côte d'Ivoire	13	368	33
Ethiopia	2	7	0.1
Ghana	9	83	6
Kenya	14	174	8
Mauritius	53	53	493
Nigeria	1	166	2
South Africa	33	7,169	207
Tanzania	11	49	2
Uganda	1	3	0.2
Zambia	6	70	9
Zimbabwe (a)	33	492	56
All	15	774	69

Source: World Bank Data:
(a) Zimbabwe is 1980 to 1994.

Table 9 Manufactured Exports: 1980-1990			
Country	Percentage of Exports which are Manufactures	Manufactured Exports (Millions of US $)	Manufactured Exports per Capita (US$)
Cameroon	7	138	13
Côte d'Ivoire	11	308	31
Ethiopia	1	6	0.1
Ghana	7	52	4
Kenya	13	144	7
Mauritius	48	352	341
Nigeria	1	93	1
South Africa	35	7,145	218
Tanzania	11	45	2
Uganda	1	4	0.3
Zambia	4	43	6
Zimbabwe	33	459	56
All	14	733	57
Source: World Bank Data:			

Table 10 Manufactured Exports: 1990-95			
Country	Percentage of Exports which are Manufactures	Manufactured Exports (Millions of US $)	Manufactured Exports per Capita (US$)
Cameroon	13	224	18
Côte d'Ivoire	17	498	38
Ethiopia	4	12	0.2
Ghana	13	147	9
Kenya	17	232	9
Mauritius	67	899	823
Nigeria	2	319	3
South Africa	30	7,369	188
Tanzania	12	55	2
Uganda	1	1	0.1
Zambia	16	132	16
Zimbabwe (a)	34	573	56
All	18	876	98
Source: World Bank Data: (a) Zimbabwe is 1990-94			

Table 11	**Macroeconomic Variables**					
	Rate of Inflation (% pa)		Change in Real Exchange Rate (% pa)		Real Rate of Interest (% pa)	
	1980-89	1990-95	1980-89	1990-95	1980-89	1990-95
Cameroon	8.8	6.8	1.1	-2.2	0	3.4
Côte d'Ivoire	6.2	7.3	-1.5	-1.7	0.3	5.6
Ethiopia (a)	4.3	11.0	0.6	-8.7	0.4	-3.1
Ghana	36.7	24.8	-3.5	-1.6	-17.6	7.8
Kenya	11.0	20.4	-2.7	3.6	2.3	4.9
Mauritius	10.1	7.8	-2.3	4.1	2.9	3.3
Nigeria	19.8	33.5	-8.8	13.8	-10.4	-16.4
South Africa	13.6	11.1	-1.4	4.2	0.2	3.7
Uganda	67.1	19.9	-16.5	-6.2	-41.2	11.7
Zambia	30.8	71.7	-1.4	1.4	-10.5	-47.6
Zimbabwe	11.9	22.9	-3.0	-2.1	-3.4	1.6

Table 11 presents the rates of inflation, the rates of depreciation of the real exchange rate and real interest rates from 1980 to 1995 for the countries. In the period 1990-95 the largest real depreciations were effected in Ethiopia and Uganda, while in Nigeria there was a substantial real appreciation. All the countries, with the exception of the two Francophone countries, have in common high, and highly variable, rates of inflation. The variation in the real exchange rate across time for the countries is even greater. In three of the countries real interest rates, measured simply as the difference between nominal rates and the rate of inflation, have moved from substantial negative to substantial positive numbers. This change was particularly pronounced in Ghana and Uganda which in the 1990s had very substantial positive real interest rates after a decade or more of even larger negative ones. It is clear that the macroeconomic environment in which the firms worked ensured the potential for substantial uncertainty. Uncertainty about the real interest rate they would face, uncertainty about the real exchange rate and uncertainty about the credibility of government policies to maintain incentives to export. Such uncertainty may play a major role in explaining the poor performance of the firms.

3 The Microeconomic Framework

In this section we provide an account of the comparative microeconomic framework within which the firms operated. In the next section we describe the characteristics of the firms in the surveys. In section 3.2 we consider the possible role of industrial policy in the context of macro policies of trade liberalisation. In section 3.3 we set out the pattern of exports from firms in Africa's manufacturing sector.

3.1 Firm Characteristics

The samples were drawn from firms in the manufacturing sectors of the Cameroon, Côte d'Ivoire, Mauritus, Ghana, Kenya, Zambia and Zimbabwe ranging in size from micro (less than five employees) to those employing over a thousand.The sample was chosen by sampling mainly from four sectors within manufacturing - textile and clothing, wood and furniture, metal working and machinery and foods - and stratifying by size and location. The average size of firms in the samples is smallest in Ghana, at 39 employees, and largest in Zimbabwe at 338 employees, Table 14 below. In the results that will be presented in the following sections we focus on four sectors, food, textile and garments, wood and furniture and finally, metal working and machines. We also provide a three-fold classification by firm size with large firms defined as those with more than 100 employees, medium firms with from 30 to 99 and small firms those with less than 30 employees.

3.2 Trade Liberalisation and Industrial Policy

African manufacturing firms have yet to break into the world market in manufactures on any scale. The extensive trade liberalisation and macroeconomic policy changes of the last decade have had as one of their objectives facilitating the growth of manufacturing exports. While the macro data on manufacturing exports has been extensively investigated (Wood,1994; Wood and Berge,1997 and Owens and Wood, 1997), relatively little is known about export performance at the firm level in sub-Saharan Africa. In firm level studies of other developing countries it has been found that sunk costs are important in determining the firm's response to export incentives, Roberts and Tybout (1995). Such a finding implies that even if macroeconomic liberalisation were to make exporting profitable the response may be modest unless profitability crosses the threshold at which firms are willing to invest in exporting.

While it is clear that inward looking policies of import substitution industrialisation failed to provide the basis for the sustained growth of the manufacturing sector there remains uncertainty as to whether simply removing these policies is sufficient to promote the growth of the sector. Lall (et al) (1994) argues that it is the failure to develop what they term technological capabilities that underlies the failure of the manufacturing sector in Africa generally, and in Ghana in particular, to grow. They quote as summarising their view a World Bank study as arguing that "the core of this strategy is the step-by-step acquisition of skills necessary to operate and adapt new techniques. Industrial strategy in Africa has tended to overstress the hardware (plant and machinery) and neglect training labour and management to master new technologies", World Bank (1989). If technological capabilites are viewed as an inclusive definition of skills then a similar argument is advanced by Wood (1994). An ability to export certain goods depends on skills and African manufacturing suffers from the generally low skill levels in the economy. In the short term there is little that can be done to alter this position but in the longer term such a view emphasises the importance of training and investment in education as key policies impacting on the ability to develop a successful manufacturing sector. The empirical question which lies at the core of these issues is the determinants of productivity levels, and their growth, in the manufacturing sector and the role of the export sector in this process. The data presented in this report allows these issues to be addressed.

A growing literature has examined the relationship between trade liberalisation and the performance of the manufacturing sector. Harrison (1994) considers the consequences for the manufacturing sector of the trade reforms introduced in Côte d'Ivoire in 1984-87. These reforms changed the extent of competition facing the sector and Harrison seeks to show both the effects of increased competition and to assess whether there was a direct effect from trade policy. She

finds that market power, as measured by price-cost margins, is significantly higher in sectors with lower import penetration and higher tariffs. She also finds that productivity growth was four times higher in the less protected sector where protection is measured by tariffs. A particularly dramatic form of trade liberalisation occurred in Chile in the 1970s and is examined by Tybout, de Melo and Corbo (1991) who have industrial census data for 1967 and 1979. The existence of data for the end of the 1960s and of the 1970s enables a clear-cut case of before and after trade liberalisation to be analysed. By 1967 quantitative restrictions were widespread, the average effective protection rate for manufacturing was over 100 percent and there were extensive controls on the domestic credit market and on prices. By 1979 Chile had achieved one of the lowest and most uniform rates of protection in the world, Tybout, de Melo and Corbo (1991, p.233). Comparison of the pre- and post-liberalisation data reveals lttle productivity improvement. The authors stress that interpreting this outcome is difficult due to the extent of macro economic shocks experienced by the Chilean economy between the two census years. Tiebout and Westbrook (1995) examine data for Mexico and find that there were increases in efficiency during a period of liberalisation. They find that the dominant source of productivity increase was the movement of individual plants towards the production frontier. Hay (1997) finds strong productivity effects associated with declines in the demand for labour following the Brazilian trade liberalisation although, as with the Chilean experience, separating the effects of the trade liberalisation from macro policy is a problem as the trade liberalisation occurred at the same time as a major recession.

There is a widespread empirical finding that exporting plants are more efficient than their domestically oriented counterparts, Aw and Hwang (1995), Cheng and Tang (1987), Handoussa, Nishimimizu and Page (1986), Tybout and Westbrook (1995) and Haddad (1993). There are two possible explanations for this finding. One is that firms learn from exporting. The second is that more efficient firms are more likely to be able to export. It is, of course, possible that both processes are at work in the economy. Some evidence is provided by Clerides, Lach and Tybout (1997) for Colombia and Morocco. They find that there is stronger evidence that more efficient firms export than that exporting has a feed-back effect on firm efficiency. There is thus rather strong evidence that exporting firms are more efficient than non-exporting firms and more tentative evidence that periods of trade liberalisation have been followed by improved productivity.

3.3 The Pattern of Exports from Africa's Manufacturing Sector

In this section we examine firm export performance across the countries in the sample and across sectors within the countries. Tables 12 and 13 present the data from the surveys for the characteristics of the exporting firms. We will analyse firm performance in terms of 'export orientation'. We define export orientation as the percentage of output (by value) which is exported. For many firms the export orientation is zero. Especially because of the possibility of threshold effects, it is useful to distinguish both between non-exporters and exporters, on the one hand, and between exporting firms with different degrees of export orientation, on the other. Table 12 shows both these dimensions of export orientation where firms are classified into four broad sectors. These are food, textile and garments, wood prcessing and furniture and metal working and machines. It is possible, at this level of aggregation, to compare across all the countries for which we have survey data.

Table 12 Export Orientation: by Sector					
	Food	Textile and Garments	Wood and Furniture	Metal Working and Machines	All Sectors
Cameroon N	32	19	23	42	116
Percentage Exporting	25	26	39	38	33
Percentage Exported	5	3	25	10	11
Percentage Exported if Exporting	20	10	65	27	32
Côte d'Ivoire N	41	32	41	27	141
Percentage Exporting	54	19	56	44	45
Percentage Exported	33	7	47	12	27
Percentage Exported if Exporting	63	37	81	28	60
Ethiopia N	35	114	26	28	203
Percentage Exporting	3	5	0	4	4
Percentage Exported	<1	1	0	<1	1
Percentage Exported if Exporting	2	37	0	10	36
Ghana N	37	35	34	36	142
Percentage Exporting	0	3	18	11	8
Percentage Exported	0	0.03	8	1	2
Percentage Exported if Exporting	na	25	46	8	28
Kenya N	32	45	44	47	168
Percentage Exporting	22	16	18	34	23
Percentage Exported	13	4	4	7	7
Percentage Exported if Firm Exports	60	25	24	21	30
Table 12 continued	Food	Textile and Garments	Wood and Furniture	Metal Working and Machines	All Sectors

Mauritius N	2	12	3	18	35
Percentage Exporting	50	67	67	50	57
Percentage Exported	1	65	35	26	39
Percentage Exported if Exporting	2	98	53	52	68
Zambia N	44	45	30	34	153
Percentage Exporting	5	13	7	6	8
Percentage Exported	1	3	3	0.04	2
Percentage Exported if Firm Exports	15	21	48	1	21
Zimbabwe N	36	72	21	29	158
Percentage Exporting	47	58	38	62	54
Percentage Exported	5	15	8	9	11
Percentage Exported if Firm Exports	10	27	20	14	20

The percentage of firms which were exporters varies greatly across countries, and within countries by sector. At one end of the spectrum are Mauritius and Zimbabwe where over half of the firms export. At the other end of the spectrum are Ethiopia and Ghana, the former with only 4 per cent of firms exporting, the latter with 9 per cent. These survey figures can be compared with the macro figures given in Table 10. It seems clear that the picture captured by the micro surveys is very similar to that observed in the macro data. Mauritius, Zimbabwe, the Cameroon and Côte d'Ivoire are relatively successful exporters while the other countries

Table 13 Export Orientation: by Firm Size				
	Large	Medium	Small	All
Cameroon N	24	36	56	116
Percentage Exporting	79	31	14	33
Percentage Exported	30	5	6	11
Percentage Exported if Exporting	38	15	41	32
Côte d'Ivoire N	36	38	67	141
Percentage Exporting	94	53	10	45
Percentage Exported	68	31	4	27
Percentage Exported if Exporting	72	51	35	60
Ethiopia N	29	21	153	203
Percentage Exporting	31	10	<1	4
Percentage Exported	6	<1	<1	2
Percentage Exported if Exporting	52	5	10	37
Ghana N	15	21	106	142
Percentage Exporting	40	10	3	8
Percentage Exported	12	5	1	2
Percentage Exported if Exporting	31	50	7	28
Kenya N	36	48	84	168
Percentage Exporting	61	29	2	23
Percentage Exported	20	7	1	7
Percentage Exported if Exporting	33	24	26	30
Mauritius N	12	10	13	35
Percentage Exporting	92	30	46	57
Percentage exported	62	11	39	39
Percentage Exported if Exporting	67	37	84	68

	Large	Medium	Small	
Zambia N	28	43	82	153
Percentage Exporting	25	7	2	8
Percentage Exported	7	1	1	2
Percentage Exported if Exporting	29	7	13	21
Zimbabwe N	84	33	41	158
Percentage Exporting	77	58	2	54
Percentage Exported	18	5	.01	11
Percentage Exported if Exporting	23	9	1	20

Table 14 Firm characteristics: by Sector
Employee is number of Employees, Value-added and Capital are measured in purchasing power parity US$, Education and Tenure are in Years

	Food	Textile and Garments	Wood and Furniture	Metal Working and Machines	All Sectors
Cameroon N	32	19	23	42	116
Employment	242	100	123	55	127
Value-added/ Employee	31,377	7,863	20,236	33,105	25,942
Capital/ Employee	33,783	23,278	24,394	23,985	26,653
Education	9.7	8.5	8.7	10.2	9.5
Tenure	6.0	5.4	5.0	6.1	5.8
Côte d'Ivoire N	42	30	40	27	139
Employment	206	103	151	77	142
Value-added/ Employee	37,109	8,099	39,095	35,044	31,018
Capital/ Employee	47,497	3,025	7,936	14,816	20,166
Education	11.2	10.7	11.0	11.2	10.9
Tenure	7.1	5.3	5.4	8.0	6.4
Ethiopia N	35	114	26	28	203
Employment	214	153	27	58	147
Value-added/ Employee	12,532	5,854	6,119	11,612	8,038
Capital/ Employee	5,879	4,498	8,009	25,735	8,315
Education	7.4	8.7	8.6	8.9	8.6
Tenure	7.4	6.3	5.0	7.0	6.6
Ghana N	37	35	34	36	142
Employment	29	15	55	56	39
Value-added/ Employee	7,624	2,110	4,183	5,216	4,830
Capital/ Employee	8,607	1,338	3,709	5,380	4,824
Education	8.7	8.4	8.6	9.0	8.7
Tenure	4.7	3.6	3.8	5.4	4.4

Table 14 continued	Food	Textile and Garments	Wood and Furniture	Metal Working and Machines	All Sectors
Kenya N	32	45	44	47	168
Employment	128	120	90	117	111
Value-added/ Employee	28,108	4,625	12,810	25,166	18,547
Capital/ Employee	30,819	21,766	10,928	36,099	22,208
Education	7.7	7.6	7.9	7.8	7.6
Tenure	8.2	4.9	7.7	7.2	7.3
Mauritius N	2	12	3	18	35
Employment	136	181	200	96	136
Value-added/ Employee	41,405	14,174	94,955	43,264	37,615
Capital/ Employee	55,984	3,555	7,573	30,784	20,900
Education	10.3	10.0	6.8	10.5	10.0
Tenure	na	na	na	na	na
Zambia N	44	45	30	34	153
Employment	115	120	46	81	95
Value-added/ Employee	8,342	4,625	5,024	7,390	6,387
Capital/ Employee	13,184	21,766	8,541	27,150	17,901
Education	7.0	7.6	7.4	8.2	7.5
Tenure	4.7	4.9	4.2	4.6	4.6
Zimbabwe N	36	72	21	29	158
Employment	415	428	108	185	338
Value-added/ Employee	26,605	9,593	8,327	17,210	14,700
Capital/ Employee	34,531	14,471	8,895	44,724	23,853
Education	8.6	8.3	7.7	8.2	8.3
Tenure	9.2	8.7	9.1	10.3	9.2

for which we have survey information, Ethiopia, Ghana, Kenya and Zambia mangage very modest levels of exports.

The second feature of the firms that we will examine is the pattern of exporting by firm size. In Table 13 the data is disaggregated according to firm size. Large firms are those defined as having more than 100 employees. It is clear from the cross-tabulation that most exporting is done by large firms, although both Mauritius and Ethiopia are partial exceptions to this generalisation. If attention is confined to large firms across most of the countries countries, over 70 per cent export. The exceptions are Zambia and Ethiopia. It is possible that the extent of state involvement in these countries, until relatively recently, accounts for the failure of large firms to enter the export market to any substantial extent.

The finding from Tables 12 and 13 is that while most African manufacturing firms do not export, which might indeed be inferred from macroeconomic data on the low level of African manufactured exports, the microeconomic evidence reveals the more surprising result that, for most of the countries, most large firms do export. Discussion of the problems facing potential exporters in Africa frequently assume that the problem is enabling them to break into export markets. The micro data from the surveys suggest that the problem is rather different. Most large firms in Africa's manufacturing sector do export. The problem is to explain why they export, on average, less than 30 per cent of their output.

There is an exception to this finding of a lack of specialisation and that is for the textile and garment sector in Mauritius. Here the extent of specialisation is much greater than that observed elsewhere in the surveys. These firms are primarily located in the Export Processing Zone (EPZ) that was set up in Mauritius in the 1980s. A condition for attracting the incentives to operate in an EPZ is that all output must be exported. Other countries are currently considering the possible advantages of EPZs, and as noted in section 2.2 the Cameroon has established similar zones, so the Mauritian experience is important.

What are the potential gains from such arrangements? The comparative data in Table 14 shows that the firms in the textile and garment sector of Mauritius are among the most labour intensive sectors across all the countries. Further these high levels of labour intensity are not associated with low labour productivity. For example, comparing the Côte d'Ivoire and Mauritius the capital labour ratios are similar for the textile and garment sectors while value-added per employee in Mauritus is 75 per cent higher than in Côte d'Ivoire. The contrast with other countries in the survey for this sector are even more striking. In the Kenyan textile and garment sector the capital labour ratio is six times higher than that for Mauritius while the value-added per employee is one- third. While the differentials with most of the other countries are smaller they remain large. It seems clear from the data that for all the countries, except Ghana, that firm size does not play an important role in explaining differences of productivity across countries for the garment and textile sectors. While at 181 employees the average size of firms in Mauritius is larger than in Kenya those in Zimbabwe have more than twice the number of employees and, with a higher capital labour ratio, Zimbabwean firms produce one-third less value-added per employee than those in Mauritius.

In the country analysis presented in section 2.2 it was noted that Ghana was the country which is widely viewed as having pursued a reform programme more systematically than the other

countries undertaking structural adjustment programmes. The textile and garment sector in Ghana uses by far the most labour intensive technology of any country. Capital per employee in Ghana is about one-third of that in Mauritius. However value-added per employee is one-seventh, so while very labour intensive the sector is about half as efficient as that of the same sector in Mauritius. In this case firm size may play some role in explaining productivity differentials. There is evidence from the surveys that non-exporting firms operate with an increasing returns to scale technology. Firms size in Ghan is very low and these small sizes inhibit both productivity and the ability to export. The problems facing the Ghana economy need to be seen in context. From the macro data presented in Tables 9 and 10 Ghana's manufacturing exports per capita doubled between the 1980s and the 1990s. Although a breakdown at the macro level is not available the micro survey evidence suggests the bulk of this rise would have been in processed wood products. Very little indeed would have been in garments. While the macroeconomic reforms have enabled some sectors to take advantage of new export opportunities the micro survey evidence indicates that underlying problems of low firm level efficiencies inhibit the spread of those gains to other sectors. We return below to the issue of firm level efficiency across the surveys.

A study of trade liberalisation in Mauritius, Milner and Wright (1998), is mainly concerned with adjustments in the labour market, rather than industry efficiency effects, but their findings of a sharp rise in employment contrasts strongly with the experience of the countries considered in this study. In nearly all levels of formal sector employment are falling. In contrast Milner and Wright (1998, pp. 515-516) identify three phases in terms of overall employment change in Mauritius; growth up to the mid 1970s, stagnation between 1977 and 1983, and rapid growth after 1983.

"Within manufacturing there were two distinctive features of the post-1983 growth. One is the dominant role of the exportables sector, especially clothing and textiles, in that growth. The second distinctive feature is the disproportionate growth in female employment in clothing and textiles in this post-1983 period. After 1983 an up to 1988 Mauritius experinced a sharply and constantly increasing demand for labour (in particular female labour) from the manufacturing, exportables sector. The levels of employment in the non-exportables sector remained relatively stable however throughout the stabilisation period (1979-83) and in the intial liberalisation phase (1983-5). Indeed, after 1985 employment in importables increase somewhat." (p.516)

The net increase in employment in the manufacturing sector was dramatic, from about 20,000 in 1968 to about 150,000 in the early 1990s. Milner and Wright also show that while real wages rose with the rapid expansion of employment after 1983 the rise was modest and by 1991 real wages in the exportable sector were at their level of 1968. The growth in income in the economy occurred almost entirely by a reallocation of labour from the household to the market sector. This transformation of the Mauritian economy has failed to occur in any of the other countries included in this study. In the next section we consider the factors that have limited the growth of African manufactured exports.

4 Explaining African Manufacturing Exports

This section focuses on explaining export orientation, defined as the percentage of output which is exported, and in section 4.1 examines whether such orientation can be observed to have changed. The method chosen is to examine whether there are shifts either in the decision to

export or in the amount exported, given the decision to export. We wish to see if there are links from macro policy to firm behaviour. In section 4.2 we return to the issue as to whether exporting firms are more efficient than non-exporting firms. This leads into a consideration of the role of regional exports within Africa in the following section.

4.1 Macroeconomic Policy

The objective in this part of the Report is to consider the possible links between macroeconomic policy and firm performance. The data used is from the Cameroon, Ghana, Kenya and Zimbabwe as for these countries a comparison can be made across sectors, across countries and over (albeit a short) time period. Over this period the pace of trade and exchange rate liberalisation differed markedly between the countries. The cross country and panel dimensions of the study enable us to assess whether these macro policy changes had a measurable impact on the performance of manufacturing exports.

The objective of macroeconomic policy operating on the real exchange rate is to increase the profitability of exporting by increasing the prices of traded relative to non-traded goods. The manufacturing sector will contain firms belonging to both the traded and non-traded sectors. The firm level response to a real devaluation will depend in part on the composition of the sector and in part on the reasons for the low levels of specialisation noted in the previous section. If firm level specialisation was extensive then a real exchange rate depreciation could be reflected in an expansion of exports only by the entry of new firms. As most African firms do not specialise, part of the response could come from an increase in their output going to exports. For such firms, which are not specialised, the change in profits that results from the real devaluation depends on how closely substitutable are the goods exported and those for the domestic market. If they are close substitutes then the real devaluation will increase the profitability of supplying both the export and the domestic market. The real devaluation will improve the incentives to increase output but may not change the extent of export orientation. In contrast, if the exported and domestic goods are not close substitutes then the response may be a rise in the share of output exported. Even in these circumstances firms may be unwilling to specialise because of the risks such specialisation incurs. If the real exchange rate change occurs in the context of increased risk then the firm may wish to remain diversified even if export markets became more profitable. Further, increased exports may only be possible with investment in new equipment to upgrade the quality of the firm's products. In this latter case the already exporting firm is in a similar position to a firm outside the export sector in that it faces fixed costs to increased exports.

If fixed costs of expansion into export markets are important, many firms may be locked out of exporting unless relative price changes are large and credible. Roberts and Tybout (1997) in their study of three export booms state that the export responses in Colombia, Mexico and Morocco were predominantly of firms which had not been exporting breaking into the export market. Firms which were already exporting only modestly increased their export orientation. However, in circumstances where incentives change less decidedly, the composition of the export response may be very different. Whichever of these explanations for the low levels of exports observed in African manufacturing firms is correct, they all caution that there may be no strong link from macro policy to firm export performance.

We assess the extent of changes in export orientation by examining whether there are shifts in exporting behaviour of firms over the sample period. Such changes could occur in two ways. The first is the simplest to observe; there could be a shift in the export equations which would appear as a significant time dummies in the regressions. One possible explanation for such shifts is the changes in the macro environment described in section 2 above. The second possible route by which macro policy could affect firm performance is that, over the period, the coefficients on the export equations could change. That would imply that, for any given characteristic, either the propensity to export had changed or, given that the firm was exporting, the amount it exported had increased. One interpretation of macro policy is that it is intended that both these aspects of export orientation should be reflected in firm performance.

The variables that enter the decision to export are intended to reflect the factors determining the profitability of being an exporter. These include its size, measured by the number of employees, the capital labour ratio, the firm's age, its location, sector and ownership. Size may be important for a number of reasons. Exporting may involve the firm in higher marketing costs than domestic sales. The larger the firm the lower the average cost of exporting. Size may lower capital costs and increase access to banking services which may be more important for export than domestic sales. Such arguments suggest that larger firms may be better able to export. Clearly there may be an effect by which exporting firms are able to grow faster so that exporting increases firm size. The capital labour ratio acts to proxy both for productivity and underlying factor endowments that may affect the ability of firms to export. In so far as firms with higher capital labour ratios are more efficient this will increase the ability to export. If exporting is concentrated in sectors processing natural resources and such sectors are capital intensive then again there will be a positive relationship between the capital labour ratio and exporting. In contrast, if exporting is a concentrated in labour intensive activities then export propensity should fall with the capital labour ratio. Capital intensity varies by sector, so that sectoral variables may affect exporting by reflecting the incentives provided by differing factor intensities. Firm age may affect capital costs and the extent of a firm's learning experience. The structure of ownership may be important for access to foreign markets. Foreign ownership may provide information which facilitates access to foreign markets. Location in the capital city may act as a proxy for infrastructure and business services.

We have investigated changes in the pattern of export performance. In all four countries exporting is associated with larger firms. In three of the countries it is also associated with greater capital intensity, although only in Ghana is this effect significant. In two of the four, location in the capital city is significant and positive. Either location in the capital city directly induces exporting, or those firms which plan to export are more inclined to locate in the capital city. State ownership has no consistent effect, but foreign ownership is always positive and is significant in two of the four countries. For the Cameroon and Ghana the wood sector is more likely to have exporting firms than other sectors. For both Kenya and Zimbabwe none of the sectoral variables are significant.

In terms of possible macro induced shifts in micro behaviour the finding for all countries is that none of the time dummies are significant. There is also no evidence that there have been shifts in the underlying propensity to export and no evidence that the export function has changed.

The second dimension of the decision to export is the percentage of output exported, once the firm does export. Using the same variables as for the decision to export it was again found that

there was no change in the propensity to export. For the Cameroon there is some evidence of a shift in the export decision if the sample is confined to large firms. The results suggest that the percentage exported increased by 16 per cent over two years following the devaluation of the CFA franc. For the other three countries confining the sample to large firms fails to produce any evidence of a shift in the export function.

While for the decision to export there were marked differences across the coefficients on the sectoral dummies for the four countries, for the amount exported there is more uniformity. With the exception of Kenya, the wood sector is the one where firms are most likely to export a relatively high proportion of their output. The effect is highly significant in both the Cameroon and Zimbabwe.

Table 11 above showed that all the countries had experienced changes in the real exchange rate. We tested if changes in an index capturing these changes in real exchange rates could be shown to affect the decision to export. There appears to be no measurable effect on the dimensions of firm performance that we have been able to assess. It is clearly possible this result simply reflects the shortness of the time period for which we have data. However it is also possible that changes within the manufacturing sector are important which the macro variable cannot capture. Shifts in the export function for large firms can have large effects on the proportion exported. It was found when analysing the percentage of output exported that, for the Cameroon, there was evidence of a shift in the function for large firms. There may well be a link from macro policy to firm performance but this link will not be picked up by a macro variable that cannot distinguish the importance of firm specific effects.

There was a common finding across all the countries that firms did not specialise in exporting. Most large firms in the African manufacturing sector export, but they export relatively small amounts. There are several possible reason for this lack of specialisation. Risk may underlie a reluctance to specialise. Quality may differ between the domestic and foreign market. Whatever its source, it seems clear that the problem faced by such firms is not entering the export market but growing in it.

A detailed analysis of the export response by firm size showed the importance of firm level heterogeneity. Large firms dominate in the export market. Rises in the propensity of such firms to export can have a large effect on the total percentage of output exported. In the case of the Cameroon while the average across firms in the amount exported rose from 12 to 14 percent between the first and third rounds of the survey, the percentage of total output exported rose from 31 to 41 per cent. This finding suggests that the effects on firms of different size is going to be of great importance in understanding the linkages between macro policy and firm performance.

4.2 Firm Efficiency and Exporting

Trade and development economists have identified at least three main channels through which the trade regime may be related to technical efficiency. First, to compete against international producers, domestic firms must adopt newer and more efficient technology or use the same technology with less x-inefficiency in order to reduce costs (Nishimizu and Robinson 1984). If the domestic firms are heterogeneous and characterized by different degrees of inefficiency, the exit of the less efficient firms results in lower average costs and higher productivity. The firms that remain in the industry are forced to adjust in two ways: by expanding the scale of production and exploiting economies of scale, and by reducing technical inefficiencies. Both these adjustments will decrease the average industry cost and increase productivity (Krugman, 1984;

Roberts and Tybout, 1991). Second, in the case of developing countries, it may not be possible to replace imports of intermediate and capital goods by domestically produced goods. The imported inputs may include differentiated intermediates that are not available domestically. Hence, increased availability of such imported intermediate and capital goods enables local researchers to obtain more insights from inspecting and using these goods, and this increased knowledge in turn leads to better technical efficiency. Third, higher volumes of imports and exports increase international technical knowledge spillovers. This may happen through suggested improvements to the manufacturing process from foreign purchasers, for example by recommending that new intermediate inputs be used (Grossman and Helpman 1991).

These arguments imply that we should observe three features of manufacturing exports. The first is that the firms exporting should be more efficient than those not exporting. The second is that non-exporting firms will be observed with increasing returns to scale. The third is that the returns to learning should be higher in exporting than non-exporting firms.

In contrast to a view that stresses the importance of technical efficiency in the firm is the view, advanced for example by Wood (1994), that sub-Saharan Africa lacks the skill base to be a successful exporter of manufactured goods. In Wood's analysis SSA lacks the skills for a manufacturing export base and its natural resource abundance explains its pattern of exports concentrated in agricultural goods and primary products. It is possible that natural resource intensive economies will be able to efficiently export the goods in processed form, essentially if transport costs are sufficiently high to outweigh other cost disadvantages. Owens and Wood (1997) argue for SSA that this is not the case. They find that processing requires higher levels of skills than are available in Africa.

How important is firm level efficiency in determining the ability of firms to enter the export market? We begin by considering labour productivity. The measure of productivity is value-added per employee where value-added has been converted to purchasing power parity US dollars so it can be compared across countries. We will consider three factors determining value-added; labour, physical capital and human capital. Labour is simply the total number of employees in the firm. Physical capital is the replacement value of capital to the firm. Human capital is measured as a simple average of the average years of education and the average tenure of workers in the firm. The capital stock is also valued at purchasing power parity dollars. In Table 14 the data is presented for labour productivity and the values of physical and human capital across countries and across sectors. In Table 15 the data is presented by country and classified as to whether or not the firm exports. From Table 15 it is clear that in all countries exporting firms are substantially larger in terms of employment than non-exporting firms. The importance of size has been noted by Berry (1993). Aw and Hwang (1995) find for a sample of Taiwanese electronics manufacturers that the larger size of exporters relative to non-exporters explains the bulk of the difference between the two groups

Table 15 Firm Characteristics: by Export Status
Employee is number of Employees, Value-added and Capital are measured in purchasing power parity US$, Education and Tenure are in Years

	Exporting Firms	Non-Exporting Firms	All Firms
Cameroon N	38	78	116
Employment	319	34	127
Value-added/ Employee	41,839	18,198	25,942
Capital/ Employee	37,880	21,183	26,653
Education	9.7	9.4	9.5
Tenure	7.9	4.7	5.8
Côte d'Ivoire N	63	75	139
Employment	289	26	142
Value-added/ Employee	53,653	12,292	31,018
Capital/ Employee	37,736	5,422	20,166
Education	11.4	10.5	10.9
Tenure	7.6	5.4	6.4
Ghana N	11	131	142
Employment	144	30	39
Value-added/ Employee	6,510	4,689	4,830
Capital/ Employee	8,209	4,541	4,824
Education	11.3	8.5	8.7
Tenure	6.2	4.2	4.4

Table 15 continued	**Exporting Firms**	**Non-Exporting Firms**	**All Firms**
Kenya N	38	130	168
Employment	326	48	111
Value-added/ Employee	34,490	13,887	18,547
Capital/ Employee	35,165	18,421	22,208
Education	8.8	7.2	7.6
Tenure	8.8	6.8	7.3
Mauritius N	20	15	35
Employment	188	68	136
Value-added/ Employee	32,655	44,228	37,615
Capital/ Employee	12,174	32,532	20,900
Education	10.0	9.9	10.0
Tenure	na	Na	Na
Zambia N	12	141	153
Employment	220	84	95
Value-added/ Employee	7,870	6,260	6,387
Capital/ Employee	34,007	16,531	17,901
Education	9.8	7.3	7.5
Tenure	6.4	4.5	4.6
Zimbabwe N	85	73	158
Employment	528	117	338
Value-added/ Employee	16,375	12,747	14,700
Capital/ Employee	29,526	17,247	23,853
Education	8.5	8.0	8.3
Tenure	10.7	7.4	9.2

Table 16 Efficiency and Firm Exporting

	Exporting Firms	Non-Exporting Firms	All Firms
Cameroon	116	113	119
Côte d'Ivoire	261	197	238
Ghana	49	109	103
Kenya	152	132	140
Mauritius	na	na	394
Zambia	44	55	62
Zimbabwe	100	100	100

The numbers are index numbers of the level of firm efficiency in which Zimbabwe is taken as 100. Firm efficiency measures the extent to which firms in other countries produce more, or less, output for given levels of inputs relative to Zimbabwe.

of producers. Again in all the countries exporters are more capital intensive (for both physical and human capital) than non exporters. It will be noted that the variation in human capital is much less than that for physical capital.

It was noted above that exporting firms should be more efficient than those not exporting and that it is non-exporting firms that will be observed with increasing returns to scale. Both these predictions are consistent with the results from the surveys. The difference in efficiency can be measured and the results of comparisons across some of the countries is provided in Table 16. We take Zimbabwe as the base and ask how efficient are firms, on average, compared with Zimbabwe. In Table 16 we do this comparison for exporting and non-exporting firms separately and then for all firms, shown in the final column of the Table. We begin with differing efficiency levels for all firms taken together. These differences in efficiency are very large. Mauritius is by far the most efficient country, it is 65 per cent mor efficient than the next most efficient country which is the Côte d'Ivoire. The gap between the most and least efficient country (Zambia) is six times.

For three of the countries, the Cameroon, Côte d'Ivoire and Kenya firms which export are more efficient than those which do not, which is consistent with the findings for other studies discussed above. This is not true for Ghana and Zambia but these countries have such small export sectors that little can be inferred from the sample sizes that are available.

It was also found that for exporting firms there are no increasing returns to scale. One interpretation of this result is that exporting firms have reached an efficient minimum cost size while non-exporting firms have not. Again the differences imply large cost reductions through size increases for non-exporting firms. The average size of an exporting firm is nearly six times those not exporting (Table 15). The analysis suggests that an increase in size of this range decreases the costs of production by about 30 per cent. While such a cost gain is large it is small relative to the differences in technical efficiency between the countries.

The issue which is central to interpreting these results is the issue of causality. Are firms large and efficient because they export or is increased size and efficiency necessary to enable them to enter the export market? The first step to addressing the causality issue is to ask if size and factor proportions do determine the decision to export. For all the countries, except Ghana, size enters as a highly significant determinant of the decision to export while for none of the countries do factor proportions influence the decision. The result shows there is a causal relationship running from productivity to exports. It may also be the case that exporting helped productivity but our sample is over too short a period to allow this to be established.

These formal results provide important insights into the reasons for the poor export performance of manufacturing firms in Africa. The levels of efficiency with which such firms operate are often too low to allow them to enter the export market. We noted above the experience of Ghana's garment and textile sector which combined high levels of labour intensity with low productivity. The policy issue is how high labour intensity can be combined with higher levels of efficiency.

There is no evidence that, at the present levels of operation of the manufacturing sector, that skill shortages prevent the expansion of output. As can be seen from Table 14 skill, as measured by years of education and years of tenure, is remarkably uniform across sectors within countries and across the countries. The workforce in the textile and garment sector of Côte d'Ivoire is more educated than the workforce in the same sector in Mauritius. In all the countries where manufactured growth has been poor jobs for secondary school completers are regarded as scarce and becoming scarcer. This is consistent with the rapid expansion of education combined with a low level of expansion of job opportunities. It remains possible that skill shortages are important in explaining one aspect of the pattern of African firm manufacturing noted above, its lack of specialisation. This may be due to strategies of diversifying risk, but it may be due to the fact that export sales can only be expanded at increased cost. One reason for such increased cost may be that the marketing skills required to export on more than a small scale are highly skill intensive act ivies and these skills are very expensive for African firms.

5 Regional Integration and the Pattern of Exports

In the last section the focus was on the factors determining the decision to export. In this section the role of regional exports is considered. In section 5.1 the factors determining regional exports are considered. In section 5.1 the issues raised by trade liberalisation for regional integration are analysed.

5.1 Regional Exports

The analysis so far has shown the importance of efficiency in determining exports. However much of the exporting from Africa's manufacturing sector is regional and these regional trade

arrangements are complex. It is therefore of importance to ask if the results so far for exporting carry over to exporting outside of Africa. In Table 17 we show what proportion of those firms that do some exporting export to the world. While in Mauritius of those firms that export 80 per export outside the region in the case of the other countries the percentages range from 33 to 34 per cent in the Cameroon and Ghana to 60 per cent in the Côte d'Ivoire. The pattern that emerges for both Ghana and the Cameroon is that world exports, as distinct from regional exports, are dominated by the processing of natural resources. It is true for Ghana that 75 per cent of firms that export in the garment and textile sector, which do export, export to the world. However from Table 12 it is known that only 3 per cent of such firms export. For Zimbabwe there are significant exports outside the region for garments and textiles. If a Zimbabwean firm from the garment and textile sector exports then 62 per cent of its output is exported to the world and 38 per cent to the region. This contrasts with figures of 88 and 12 per cent for Mauritius.

We only have data that allows us to distinguish between exports within and outside of Africa for two of the countries, the Cameroon and Zimbabwe, on a comparable basis for two years. So we now carry out a more detailed comparison for the effects of regional and world exports for those two countries. We can test whether factor proportions determine the decision to export to the world. It is now the case for Zimbabwe, which has nearly twice the sample size of that for the Cameroon, that physical capital intensity is inversely related to the decision to export to the world. Factor proportions may matter in the determination of African manufacturing international exports. It appears that natural resource intensive exports are possible to a world market for firms which are not relatively efficient.

The issue of the determinants of the percentage exported to the world, given that a firm exports, can also be addressed. For the Cameroon this percentage is high at 64 per cent while for Zimbabwe it is 29 per cent which is similar to the findings reported for the analysis of exporting to any country. The only factor which plays an important role is the sectoral variable wood. The reason for the Cameroon relatively high percentage of output exported is that such exports are concentrated in the wood sector.

The contrast between Mauritius and Zimbabwe is clear. While both export from the garments sector one is far more successful than the other. This difference is due primarily, not to the extent with which firms enter the export market but, given that they do export, the proportion of their output exported. From Table 12 it can be seen that while 67 per cent of firms in the garment and textile sector export from Mauritius the figure is also high, at 58 per cent, for Zimbabwe. However while nearly all of the output of Mauritian firms is exported in the case of Zimbabwe only 27 percent is exported.

Table 17 Firm Regional Export Orientation: by sector					
	Food	Textile and Garments	Wood and Furniture	Metal Working and Machines	All Sectors
Cameroon N	38	19	24	40	121
If firm exports:					
Percentage Exporting to the World	21	36	87	29	34
Percentage Exported to the World	11	5	65	15	21
Percentage Exported to the Region	9	5	0	12	11
Côte d'Ivoire N	22	6	23	12	63
If firm exports:					
Percentage Exporting to the World	50	100	83	17	60
Percentage Exported to the World	47	37	77	12	50
Percentage Exported to the Region	16	0	4	16	10
Ghana N	0	7	24	9	40
If firm exports:					
Percentage Exporting to the World	na	75	80	0	33
Percentage Exported to the World	na	13	44	0	26
Percentage Exported to the Region	na	12	2	8	2
Mauritius N	na	8	na	9	20
If firm exports:					
Percentage Exporting to the World		88		78	80
Percentage Exported to the World		75		41	54
Percentage Exported to the Region		23		10	14

Table 17 continued	Food	Textile and Garments	Wood and Furniture	Metal Working and Machines	All Sectors
Zimbabwe N	46	112	23	54	235
If firm exports:					
Percentage Exporting to the World	17	62	22	21	42
Percentage Exported to the World	2	20	15	0	12
Percentage Exported to the Region	8	7	5	14	8

The figures in Table 14 above reveal the extent of the contrast between productivity across the two countries for the sector. The productivity gap already noted for the country as a whole is even greater for the textile and garment sector. This productivity gap may explain the lack of expansion within the Zimbabwean manufacturing sector given that it has entered the world market. The problems may be due to the differing factor prices that the countries may face. While within the Zimbabwean manufacturing sector the textile and garment sector is relatively labour intensive, it is much more capital intensive than the same sector in Mauritius. The average size of firms, in terms of employment, in Zimbabwe is also much higher - over twice as big - as firms in Mauritius. This suggests that the economies of scale which appear to be important in allowing firms to enter the export market have been exhausted at firm sizes much below those observed in Zimbabwe. Larger firms require more skilled labour to run, and may pay higher wages than smaller ones. Both of these factors will add to their costs and inhibit their expansion onto the world market.

We now return to the issue that was raised above as to why other countries have not developed a successful garment and textile export sector. We took Ghana as an example and showed the very large differences in efficiency that exist between Mauritius and Ghana. What can account for these very large efficiency differentials? One possible answer is a combination of differing quality management and high capital costs. The macroeconomic data presented in section 2 showed that the environment in which firms operate is much higher risk than that in Mauritius. It is possible that the high capital costs which will be associated with high risk play an important role in preventing large firms from emerging. Such lack of large firms implies a lack of leaning opportunities for management. It is possible, given the efficiency gains that are available, that a more stable macroeconomic environment would have a dramatic impact on the entry of Ghanaian firms into the international market. The extent of the potential gains that are available are difficult to over-state. A four or five fold increase in productivity should be possible with minimal investment. This would transform the industry to one whose profitability would render its expansion assured.

5.2 Trade Liberalisation and Regional Integration

The results of the last section, combined with those of section 4, provide insights into the nature of the problems and opportunities posed by trade liberalisation for regional integration. In the

past regional integration has been seen as a protective measure. If manufacturing firms cannot compete on the world market then regional preferential trading arrangements offer the opportunity to expand output behind protective barriers. The problem with such measures is that the countries to which the exports go are clearly paying higher than world prices for their imports without any of the (assumed) benefits from the manufacturing production. Regional trading arrangements of this form have been common in Africa and their problems have as their common source the tensions set up by allowing imports from relatively high world cost producers but low regional cost producers. The results presented in this Report allow some of these issues to be assessed more fully.

There is clear evidence that access to regional markets does improve the efficiency with which firms operate. However these efficiency gains are not large enough to enable the firms to become internationally competitive. The key finding is in Table 16 above which shows the extent of the productivity gap between Mauritius and the other countries included in this Report. The question posed by these results is the following: if the productivity gains to enable the economies to become competitive on the world market can be achieved what is the role of regional trade arrangements?

There are several reasons why regional arrangements may, with other appropriate policies, be able to play a role in enabling the manufacturing sector to grow. First such an arrangement may provide an element of macroeconomic stability then that can greatly enhance the prospects for exports. Both the Cameroon and the Côte d'Ivoire perform relatively well in the comparisons of macroeconomic policy outcomes shown in Table 11. Both, since the 1980s, have had lower rates of inflation than Mauritius and far below that of the other countries. The real rate of interest has not been negative over the period, again in contrast to most of the countries in the comparison. In terms of manufactured exports per capita (Table 10) these two countries have also done relatively well. However, it is clear that, compared with Mauritius their performance is poor. The fixed exchange rate regime under which the two countries operated was undermined by the fiscal deficits that were run from the 1980s (see section 2.2 above). In the context of fiscal imbalance fixed exchange rate regimes harm exports by inducing overvalued exchange rates. The inference, clearly, is that the advantages of the fixed exchange rate regime are real but can readily be undermined without appropriate fiscal policies. These advantages flow from the monetary arrangements of the CFAF rather than regional trading arrangements.

As has been widely noted regional trading arrangements have proved ineffective at stimulating regional trade. Indeed there is evidence that unilateral trade reductions have enhanced regional trade. A possible reason for this is clear from Table 17. Regional trade is particularly important in sectors where firms cannot compete internationally. One of the reasons for such uncompetitivenss may be transport costs which are of importance for the metal working sector. With the exception of Mauritius it is this sector which exports most regionally. Unilateral trade reductions may enhance the prospects for this sector by allowing firms geographically close to a border to export in a way that was not possible before. If this is correct then it is unnecessary to co-ordinate tariff reduction if the intent is to stimulate regional trade. This can occur by unilateral actions.

The importance of transport costs for some of the sectors suggest that regional integration may be able to assist the development of a competitive manufacturing sector if it focuses on

investment in infrastructure. There may be for many of the countries, particularly in Southern Africa regional projects which by lowering transport costs will enhance both regional and international trade.

Regional trade can be a method for firm growth providing it is treated as a stepping stone to the international market and not used as a device to protect firms that cannot compete internationally. The findings of the surveys in this Report is that most countries do have firms which are internationally competitive. The exceptions are Ethiopia and Zambia where the history of state control is still too recent to allow levels of efficiency that bring firms in those countries close to international levels of efficiency. Table 17 show that if firms export then most export to the world. If attention is confined to the textile and garment sector then, with the exception of the Cameroon, if a firm exports, over 60 per cent export to the world.

The feature of the data that needs to be explained is why African firms, when they do export, export only a relatively small percentage of their output. There are two exceptions to that generalisation. The first is in the area of primary processing which, for these surveys, is mainly the wood processing sector. For firms in the processing sector not only are they relatively specialised but they export to the world market. They are also not relatively efficient. There are two possible explanations for this finding. The first is that there are cost savings in transport that allows the efficient processing of raw materials. The second is that the sector is protected by paying below world prices for its inputs. If firms are now allowed to export, except by processing, that is another form of protection to the sector. It is not therefore possible from a knowledge of the fact of exporting to infer that such firms are internationally competitive.

The second exception to the finding of a lack of specialisation is for the textile and garment sector in Mauritius. Table 12 shows that for firms which do export nearly all of their output is exported. As already noted this may be due o the regulations which affect the EPZ. What is unclear is how effective these regulations are in the context of firms which are, by sub-Saharan African standards, very efficient. It may be the case that not being subject to certain regulations has enabled the firms to operate at a higher level of efficiency than would otherwise be the case. However there is insufficient information available to be sure of how much of the success of the Mauritian export sector can be ascribed to the existence of EPZs.

With the exception of natural resource processing and the Mauritian textile and garment sector the general finding is that firms which do export do not specialise in exporting. There would appear to be at least two explanations for this finding. One which is presented in Clerides, Lach and Tybout (1996, p. 5) is that the market for the products is imperfect and firm face downward sloping demand curves in both domestic and foreign markets. In their analysis marginal costs are flat. If this analysis is correct then export growth will depend on the development of new products. An alterative explanation is suggested by a qualitative analysis which is presented of garments exports from sub-Saharan Africa in Biggs et al (1994). While they do not formalise their argument they show that demand greatly exceeds supply available from sub-Saharan Africa within the garments sector. The problems lie on the supply side. More formally this suggests an upward sloping cost curve and the cause of the increase marginal cost could well be the greater skill intensity of large scale marketing.

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