



Determinants of Exports and Investment of Manufacturing Firms in Tanzania

by

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Abstract

Since the mid-1980s Tanzania has implemented a number of trade and fiscal policy reforms that were partly intended to encourage increased export activity by manufacturing firms. Macroeconomic data suggest that there has been little response. To understand this lack of response we need to increase our understanding of the features of manufacturing exporters in Tanzania. This paper is a first attempt, by presenting the findings from a survey of 83 firms. Large firms are more likely to export than other firms, and more large firms sustain their investments than smaller firms. We also find, independent of this relationship to size, that firms that sustain investment are more likely to export than those which do not sustain investment. One distinction between our findings and other studies is that parastatals, including firms with some government ownership, tend to be larger and are more likely to export and sustain investments than non-parastatals. Subscription by shareholders and personal savings are the two main sources of start-up capital, while company earnings are how most investments are financed. The findings are consistent with the view limited access to bank financing has been a major constraint to manufacturing, especially exporting.

Outline

1. Introduction
2. The Economy and Manufacturing in Tanzania
3. Characteristics of African Manufacturers
4. Exporting and Investment
5. Growth and Other Features
6. Conclusions

I INTRODUCTION

The independent, socialist-oriented, development strategy adopted by Tanzania since the Arusha Declaration of 1967 worked relatively well, at least in terms of human development indicators, until the late 1970s when a series of external shocks, combined with internal constraints and weaknesses, created severe economic imbalances. By 1980, Tanzania displayed many of the economic problems that beset numerous developing countries and that contributed to the introduction by the World Bank of Structural Adjustment Programmes (SAPs). In the 1980s, Tanzania adopted four successive programmes that could be defined as ‘adjustment programmes’ (although the Bank was not directly involved in the first of these). Tanzania’s mixed experience with adjustment has been reviewed elsewhere (Basu and Morrissey, 1997; Morrissey, 1995) and is only peripheral to the focus of this paper (although it is, of course, relevant to incentives for exporters).

While the SAPs implemented by Tanzania contained numerous specific reforms, the overriding objective was to restructure incentives in the economy to reduce the bias against exports, so establishing a basis for export-led growth. Primary commodities, especially cash crops, have accounted for more than half of export revenues, and privatisation of marketing, decontrol of official prices and trade liberalisation were all intended to increase incentives for agricultural exports. Although growth of the agricultural sector was relatively high in the 1980s, this was largely due to increased food production; agricultural exports declined throughout the period, partly due to persisting production constraints but largely reflecting declining world prices for export crops (McKay, Morrissey and Vaillant, 1997, 1998). In principle, trade liberalisation should encourage an increase in manufacturing exports, by reducing protection and increasing the relative return on exports. In practice, industry’s share of GDP fell in the 1980s, from 18 per cent in 1980 to 12 per cent in 1986 (as agriculture’s share rose), recovering to 15 per cent in the 1990s (as services’ share fell), and manufacturing exports showed no signs of growth (see below). In this paper we analyse evidence on the structure of the manufacturing sector in Tanzania to try and identify the characteristics of exporters related to this limited response.

Section 2 presents a brief overview of the performance of the Tanzanian economy since about 1980, paying particular attention to the composition of and trends in manufacturing

output. This allows us to establish the ‘economic environment’ facing Tanzanian manufacturers in the mid-1990s. In Section 3 we review some of the existing evidence on the performance of manufacturing enterprises in Africa, and identify a number of hypotheses to assess against our survey evidence. The Regional Programme on Enterprise Development (RPED) has published many analyses of surveys in Cameroon, Ghana, Kenya and Zimbabwe; we review the principal findings from these surveys and compare them directly with the results of the survey we analyse. Section 4 addresses two questions: are there identifiable features shared by firms which have higher levels of investment; and are there any characteristics identifying which firms are more likely to export? Section 5 covers other results from the survey, and Section 6 presents our conclusions.

II. THE ECONOMY AND MANUFACTURING IN TANZANIA

A variety of factors in the late 1970s combined to generate large budgetary and balance of payments deficits in Tanzania, precipitating the economic crisis faced in the early 1980s (for more detail see Basu and Morrissey, 1997; Collier, 1991; Morrissey, 1995). The principal external factors were the collapse of the East African Community in 1977, the costly war with Uganda in 1978 and the second oil price shock in 1979, all of which contributed to the deficits. The decline in world prices for agricultural commodities, which eroded the value of export earnings, persisted throughout the 1980s. The principal internal factors which tended to amplify the impact of external shocks were the weak incentives to agricultural producers; expansionary fiscal policy, with increasing deficits which led to an accumulation of debt; and the ubiquitous overvalued exchange rate.

Macroeconomic Performance 1980-95

Extending the summary in Morrissey (1995) we can distinguish four sub-periods over 1980-95. The period 1980-82 is the ‘crisis’ period; although there were attempts at adjustment, notably the National Economic Survival Programme (NESP), the measures were short-term and rather unfruitful. This was not a success but was quickly followed by the Structural Adjustment Programme (SAP) over the period 1982/3 to 1984/5 involving some Bank funding. The phase 1986-90 covers the life of the Economic Recovery Programme (ERP) launched in June 1986. We refer to 1990-95 as the Economic and Social Action Programme (ESAP, also called ERP II), although it was launched in 1989 (with Bank and Fund support). The adjustment momentum of the late 1980s weakened in the 1990s and many elements of ESAP were not fully implemented.

There were not many significant differences in average annual performance between the two early periods, but four trends deserve mention. First, the virtual stagnation of GDP growth can be attributed to the large decline in real manufacturing output, partly offset by agricultural growth in real terms over 1982-86. Second, there was a dramatic increase in the level of inflation, the urban RPI hovering around an annual average of 30 per cent over the first half of the 1980s. Third, the budget deficit was reduced slightly, but this was associated with a virtual halving in development spending; there was also a decline in external financing as a share of GDP². Fourth, the current account deficit fell slightly, relative to GDP, but there was an ominous decline in investment.

Trade liberalisation appeared as early as the National Economic Survival Programme (1981-82). Export taxes were abolished in the 1981 budget, with the intention of providing a boost to exports, but any potential revenue loss was offset by increases in rates of sales tax and import duty. The increase in export revenue never materialised; in fact, the value of exports declined in the face of falling world commodity prices in the early 1980s, and it was only a severe contraction of imports in 1982-83 which allowed a reduction in the current account deficit. The SAP was more articulate than the NESP and included plans THAT addressed the foreign exchange constraint, notably a Bank Export Rehabilitation Loan of \$50m agreed in May 1981 for the period to March 1983. The 1984 budget was a turning point, representing an attempt by the government to demonstrate to donors that it was willing to institute changes. A variety of import controls were lifted and 'own-funds' imports were instituted, a trade liberalisation which directly addressed the foreign exchange constraint. The Tanzanian shilling was devalued by almost 40 per cent following the 1984 budget and the issue of parastatal reform, the initial mooting of privatisation, was also raised in 1984 (although only very recently has any real progress been made; see Due, 1993).

The ERP was launched in June 1986 and was intended to be responsive to donor ideas regarding market-oriented economic reforms, trade liberalisation, privatisation and reduction of government intervention. Major devaluations of the currency (TSh) began in 1986: frequent changes to the nominal exchange rate had the effect of a devaluation of over 100 per cent in mid-1986 and of a further 70 per cent by August 1987. The move towards an equilibrium exchange rate was allied to the gradual removal of restrictions on

trade and access to foreign exchange. The ERP period was one of mixed performance. Adjustment appeared to be having some effect in restoring growth, but the trade and fiscal deficits escalated. Continued real agricultural sector growth of five per cent per annum with manufacturing growth of four per cent per annum ensured real GDP per capita growth. The relative importance of external financing more than doubled, accounting for 26 per cent of total spending on average, and may have been needed to support imports and recurrent spending.

The ESAP was launched in 1989, intended to continue the momentum of the reform process and, specifically, to reduce dependence on external support. Privatisation intentions, to limit government intervention to social and physical infrastructure, along with further reductions and rationalisations of both import duties and domestic sales taxes, were announced in 1990. There were some significant economic improvements over 1990-93 as real per capita GDP rose by almost five per cent, merchandise exports rose from 15 to 22 per cent of GDP, investment increased from around 30 to almost 40 per cent of GDP, government spending increased in real terms and inflation was stabilised, although remaining above 20 per cent (Nyoni, 1997). Many problems persisted as terms of trade continued to decline, aid dependence remained high, manufacturing output stagnated at around eight per cent of GDP and the current account deficit continued to rise, reaching 20 per cent of GDP in 1993 (Nyoni, 1997).

Although investment increased in the 1990s, most of this was directed into costly infrastructure and growth of private sector investment in productive activities has been limited. The early 1990s were a period of failed or stalled reforms, and negotiations with the Bank often broke down. The government had failed to establish the consistent macroeconomic stability that would boost business confidence. While many trade policy reforms were implemented they were mostly of the tariff 'manipulation' type as tariff rates, exemptions and exceptions applying to specific goods were altered. There were no reforms that appear to have effectively supported increased manufacturing exports. While foreign exchange retention schemes, and rebate schemes, were introduced many exporters complained of long delays in gaining payment.

As already indicated, the manufacturing sector performed poorly in the 1980s. There was a steep decline of output in the early 1980s whereas growth was strong during ERP and

ESAP, although there were signs of stagnation by the mid-90s. Manufacturing as a share of GDP declined from about 10 per cent initially, to six per cent in the mid-80s, and to as low as four per cent by 1991 (Basu and Morrissey, 1997: 152). The ratio of manufacturing investment to GDP, initially around seven per cent, declining to five per cent in mid-80s, recovering in late 1980s to stabilise at just over seven per cent during ESAP (Nyoni, 1997).

In the context of the economic environment for manufacturing, there are three issues to elaborate. First, trends in real exchange rate. The continued devaluation of the Tanzanian Shilling from the mid-80s should have been of benefit to exporters of agricultural commodities who were world price takers in \$US (however, these world prices were in decline). It is less obvious how exporters of manufactures would be effected. In principle, the elimination of currency overvaluation should reduce the anti-export bias and therefore increase relative incentives to exporters. However, manufacturing exporters import a larger share of their inputs than do non-exporters (see below) such that devaluation, without offsetting reduction in tariffs, increases their costs and may reduce competitiveness. Furthermore, almost half of firms export within the region, hence what matters to export prices is movements of the Shilling relative to the currency of other African countries. Second, trends in investment, as public sector capital formation complements private investment and provides infrastructure. The indications here are broadly positive, but any impact occurs with a long lag. Third, macroeconomic stability is an important source of business confidence. On this the Tanzanian government have not evidently been successful.

Table 1 presents data on industrial sectors for various years over 1985-95 (insofar as possible with the same sector categories as used in Section 3 below). The volume of manufacturing production rose slowly but fairly steadily until 1991, by when it had increased by seventeen per cent over 1985, but then fell back to its 1985 level by the mid-90s. The experience of particular sectors varied considerably, in comparison and over time. All sectors except food increased production up to 1990 (the buoyant period), but only Paper, Chemical and non-Metals sustained growth (relative to 1985) by 1995. Food

showed slight growth over the decade, while Textiles, which grew rapidly, was back to about its 1985 level by the end of the period. Wood, Basic and Fabricated Metals had all declined by the end of the decade. It is not possible to relate this directly to our survey evidence, although we can look at the growth of (surviving) survey firms in each of these sectors.

Table 1 includes some information on employment and value added for 1985-90. Overall employment growth during this buoyant period was significant, being almost a third higher in 1990 than 1985, and there was growth in almost every sector (surprisingly, perhaps, the greatest growth was in Food). The underlying weakness of sectors is revealed by the figures for value-added, which fell from 25 per cent to 17 per cent of gross output for manufacturing, fell in almost every sector, and was low in most sectors by 1990. The data in Table 1 is not very revealing, but does indicate that the survey on which we report was at a time (1994) when manufacturing was performing poorly.

III CHARACTERISTICS OF AFRICAN MANUFACTURERS

Recent years have witnessed a noticeable increase in research on manufacturing enterprises in Africa, and a number of reasons can be suggested for this. First, prior to the widespread adoption of SAPs in the 1980s, industry in most African countries was dominated by the parastatal sector; the private sector tended to be small and comprised mostly micro-enterprises (which were often effectively informal sector). Privatisation has meant that private sector enterprises have become economically more important. Second, and related, trade liberalisation is intended to encourage exports, including of manufactures; one obvious reason for the slow response of manufacturing to liberalisation is that it takes time for the sector to establish itself before exporting is likely. It is not generally the case that producers can quickly shift from domestic markets to export markets if anti-export bias is removed. With the possible exception of those exporting within the region, the product characteristics and marketing information required differ between domestic and export markets. Third, and perhaps most important from the research perspective, only recently have large-scale surveys of manufacturing in Africa become available for analysis. At the forefront of this is the World Bank and bilateral donor-sponsored Regional Programme on Enterprise Development, which has funded surveys in a number of African countries. While ours is not an RPED survey, it will be

useful to establish any 'stylised facts' from these surveys. We also refer to our limited information on the RPED for Tanzania.

Two studies compare results from panels of firms for four African countries: Cameroon, Ghana, Kenya and Zimbabwe. Bigsten and others (1997a) use panel data for a total of 502 firms over 1991-95 to try and identify the determinants of exporting, estimating equations for the decision to export and the share of output exported. They find that most large firms export (71 per cent on average over the four countries), but export a small proportion of output (28 per cent on average); 35 per cent of medium-sized firms export on average, but only about 20 per cent of output. No factors other than size consistently influence the decision to export. Given that a firm exports, the only factor that seems to be associated with a higher share of output exported is being in the Wood group (except for Kenya, where it is Food). In a related study, Bigsten and others (1997b) use panel data for a total of 714 firms over 1992-95 to estimate an investment function for each country, taking into account effects for firm size. Profit appears to be the only consistent determinant of investment, especially for small firms, although the effect is small. Teal (1995) obtains similar results for a panel of some 200 firms over 1991-93 in Ghana.

Parker *et al* (1995) present the results of a survey of 303 firms over 1989-91 in five countries: Ghana, Malawi, Mali, Senegal and Tanzania. While they were interested in the characteristics of entrepreneurs, asking questions about sources of start-up capital and constraints on exporting, some of their findings are relevant. In cases where the survey we analyse asked comparable questions, we compare the results with those of Parker *et al* (1995).

Few studies have analysed evidence for manufacturing firms in Tanzania. Helsinki School of Economics (1995), as part of the RPED studies, report on evidence for a survey of 204 Tanzanian firms, and their focus is different to ours. Only 24 of their sample exported (the majority of which were large and almost half of which were parastatals); they do, however, find that larger firms are the more likely to export. They also found that a majority of exporters sell directly to a foreign buyer; 84 per cent of firms in the sample we analyse sell directly to a foreign buyer, and 58 per cent use that channel only; private trading agencies are the only other exporting channel frequently used by exporters in both samples. They find interesting results on the nature of (subjective) competition.

Parastatals, and firms in the Food processing sector, report little effective competition; informal sector, small enterprises and those in the Wood sector face intense local competition, whilst it is only medium or larger firms that report competition from imports. The principal constraints to expansion reported by firms are deficient capital markets, poor infrastructure, heavy regulation and weak entrepreneurship (in that order).

Bagachwa and Mbelle (1995) review case studies of nine firms to address factors determining export competitiveness. They consider four privately owned firms in the Metal sector (one of which is foreign owned), and five Textiles firms (three of which are parastatals, and four of which were established as part of the import substitution strategy but latterly began to export). Their principal finding was that exports tend to require specific technological capacity as, in general, the products have to meet higher (or different) quality standards than production for the domestic market. The principal constraint identified was investment capability, especially access to financing (but more generally information and capacity to adapt). Another finding was that exporters were more dependent on imported imports than were firms producing for the domestic market. This finding is echoed in the sample we analyse: 79 per cent of firms that export use imported raw materials, but 43 per cent of firms that do not export use imported inputs; 48 per cent of the raw materials used by exporting firms are imported, whereas non-exporting firms import on average only 30 per cent of raw materials (these differences are all statistically significant).

The survey whose results form the basis of the analysis in this paper was conducted in early 1995 as part of the African Economic Research Consortium's (AERC) collaborative research project on Regional Integration and Trade Liberalisation in Sub-Saharan Africa. A number of country case studies were undertaken as part of this project, most of which involved the conduct of a small, selective survey of manufacturing enterprises. These surveys were principally intended to collect information on the extent to which firms were engaged in international trade, and on how they were affected by changes in trade policy and by local regional integration arrangements. However, they also collected a lot of information on the characteristics of the enterprises themselves.

The survey conducted in Tanzania collected usable data on 83 manufacturing enterprises, covering the following industrial sectors: food, textiles, wood, paper, chemicals, metals, and covering five main cities, including Dar-es-Salaam. The sample was selected in such a way as to provide a reasonable coverage of main industrial sectors and of the main manufacturing cities in Tanzania. The firms selected were predominantly if not exclusively within the formal sector, and the coverage of very small (or micro) firms is limited. Table 2 provides information on the distribution of firms by size, showing that 43 per cent employ more than 100 people. The mean firm size is 158, although the median size is 80; this difference obviously reflects the presence of a few very large firms in the sample.

In this respect, among others, our sample is very different from that of the RPED for Tanzania (as reported in Helsinki School of Economics, 1995). The RPED sample comprised 204 firms, of which 26 per cent were micro (four or fewer employees) and 12

per cent were large (100 or more employees). By comparison, the survey we analyse is far more biased towards large firms. This may explain why, while both surveys had a similar absolute number of exporting firms (24 for the RPED versus 21 for ours), exporting firms constituted a mere 12 per cent of the RPED sample (compared to 27 per cent in the survey we analyse). Perhaps as a consequence, the RPED survey we refer to devotes little attention to exports; hence its focus differs from ours. It is also worth noting that the RPED survey covers only firms in the Food, Textile, Wood and Metal industries, whereas the survey we analyse includes also Paper and Chemicals.

Another important characteristic of the firms covered by this survey is that there are very few 'young' firms; the average age of the firms is 22 years, and only 6.5 per cent of the surveyed firms were established in the five years preceding the survey. This is partly because our sample is biased against micro firms, and helps explain the high share of exporting firms. Table 2 also reports the distribution of the surveyed firms according to their legal status; for the 80 firms for which this can be defined, partly or wholly government owned firms account for 28 per cent of the sample; this too may reflect the bias towards older firms. It can also be seen that nearly half the surveyed firms report some foreign involvement; this is generally restricted to private limited liability firms and mixed public-private firms.

Two main difficulties arise in investigating the manufacturing sector on the basis of this survey. First, the data are cross-section, so providing little evidence of changes over time. While some questions ask for information pertaining to earlier years, we are not convinced of the reliability of the detail in the answers (e.g. we will accept if a firm states it invested in 1990 but will not concern ourselves with how much it claimed to have spent on investment). Second, the sample is biased as only firms that were still in business at the time are included, there is no information on closures or survival (the RPED survey does address this issue). Consequently, we can only draw a few inferences on the dynamics of firms' performance.

Table 2 presents the distribution of the firms in the sample according to industry, size, age, export status, legal status and foreign involvement. All 83 firms can be classified into one of six industries, most of which have 11 to 15 firms, except for the metal industry which is represented by 19 firms. A little less than one firm in three is exporting. Micro firms are

the exception, constituting only nine per cent of the sample; large firms account for almost half of the firms. There are only five recently established firms (since 1989), and more than half were established before 1979. The average age is 22, not far from the median age of nineteen.

Forty-two firms (half of the sample) are entirely indigenous (in that they report no foreign ownership and are owned by people whose country of origin is Tanzania and whose ethnic origin is reported as African). Slightly more than half of the firms in the sample are private firms with limited liability (including subsidiaries of another firm). Private firms without limited liability and cooperatives are not common: six and seven firms respectively. Firms with some government ownership account for slightly less than a third of the firms (23 in total, 17 of which are completely government owned) but they employed 55 per cent of the total labour force in the sample.

We analyse the survey results in the next two sections. Section 4 considers the two, inter-related, themes with which we are most concerned: the distinguishing characteristics of exporting and investing firms. We utilise the concept of 'sustained investment' to represent those firms that reported some investment (in physical capital) in each of the four years 1990 to 1993 (we excluded 1994 due to a poor response rate). Section 5 reviews findings on a variety of other issues: industry effects, growth, and ownership. Given the data, our only usable measure of growth is the change in numbers employed between the time of establishment and the time of the survey; similarly, our measure of size is numbers employed.

IV EXPORTING AND INVESTMENT

A total of 21 of the firms in the sample answered yes to the question whether they export or not, and these are the firms we define as exporting. A few firms which did not respond in the affirmative to this question nonetheless stated that a percentage of their sales were to foreign markets; we do not consider such firms as exporting. For example, an enterprise producing wood carvings (if one accepts this as manufacturing) may sell almost exclusively to tourist. Such sales are domestic, yet they end up in foreign markets. Of the firms in the sample that reported a destination of exports, 63 per cent exported to Africa, 50 per cent to Europe and 25 per cent to Asia; other destinations were not important.

While the percentage of output exported varied quite significantly, on average 20 per cent of sales were exported (Table 3).

The distinguishing feature of exporting firms is that they are relatively large (as measured by numbers employed): 41 per cent of the large firms (more than 100 employees) export compared to 14 per cent in the case of the other firms (Table 4). It also appears that in our sample being partially or completely owned by the government is related to exporting: 50 per cent of the firms with some government ownership export as opposed to 17 per cent of the firms without any (Table 5). Half of the firms that sustain their investments export but only 14 per cent of the firms that do not sustain their investments export. Alternatively, if we compare on the basis of export status, we find that 67 per cent of the firms that export also sustain their investments, whereas only 25 per cent of the firms that do not export sustain their investments (Table 6).

As government ownership and sustained investment are both themselves related to size, we attempt to separate the size effect. Table 7 reports the cross-tabulations between sustained investment and export status and between government ownership and export status, controlling for size. Within the ‘not-large-firm’ category, a larger proportion of firms with government ownership export than firms without. This shows that the tendency for parastatals to export is independent of the tendency for parastatals to be large (and thus have a greater export tendency). It is also true that a larger proportion of the not-large-firms that sustain their investments export compared to the firms that do not sustain their investments. In the large firm category, the difference in proportion between groups vanishes or cannot be tested for. These results suggest that the government ownership effect and the sustained investment effect are not only capturing a size effect but are independent determinants. We show also that there is no significant relationship between sustained investment and government ownership (Table 5, panel C).

For two other variables, a partial foreign ownership dummy and a Tanzania dummy (recording whether or not Tanzania is the sole country of origin of the owners), there is some evidence in support of a relation (a significant chi-square test, although the sample is small), reported in Table 8. The firms owned by Tanzanians are less likely to export than the firms that have owners reporting at least one other country of origin than Tanzania. Furthermore, as in Bigsten *et al* (1997a), we find a relation between partial foreign ownership and exports: 54 per cent of the firms with some foreign ownership export compared to 22 per cent of the firms with no foreign ownership. Location in the capital city has no effect on export status (Table 8).

To summarise, size, government ownership and investment are all linked to exporting. Large firms export in a larger proportion than not-large firm (41 per cent versus 14 per cent). This is also the case for parastatals, and for firms that sustain their investments. There is weak evidence that foreign ownership and the country of origin of the owner(s) are related to exporting. Because the survey is a snap-shot, we cannot investigate any causality between exporting and sustained investment, although government ownership precedes exporting (allowing for the fact that some firms were established by the government in order to export). While parastatals would have easier access to credit than private firms (except perhaps those with foreign ownership), we found no evidence of a significant relationship between parastatals and investment. A plausible inference is that parastatals have easier access to exporting channels than other firms, whilst among private firms it is the relationship between sustained investment and exporting that is important.

These results are comparable to the findings of other studies. Bigsten *et al* (1997a) conclude that large firms are more likely to export. They find that 71 per cent of large firms export (taking all four countries together): 58 per cent of the large firms export in both Ghana and Kenya while 76 per cent and 79 per cent of them do in Cameroon and Zimbabwe respectively. It should not be surprising that the extent of exporting in the countries they analyse is greater than for Tanzania, as the other countries are more industrialised. They also find that the foreign ownership dummy has a positive effect in two countries on the decision to export but no effect on the percentage of output exported. As for the effect of government ownership on export, they find no evidence on the decision to export but evidence that it has a negative influence on the percentage of output exported in Zimbabwe. They include a capital city dummy to capture the effect of

infrastructure. This is significant in two of the countries for explaining the decision to export but is not significant when included to explain the percentage of output exported.

Influences on Investment

As already noted, size and exporting are associated with sustained investment. Most firms (70 per cent) have invested at least once during the five-year period covered in the survey (Table 2). Whether a firm has invested at least once is unrelated to any of the other variables we have focused on like size, age, export status, legal status or owner's country of origin. The proportion of firms in the sample with sustained investment is only 39 per cent (Table 2). As Table 6 illustrates, half of the firms that sustained their investments export whilst only 14 per cent of the firms that do not sustain their investments export (the difference in the proportions is significant). Size and sustained investment are also related (Table 6). The proportion of firms that sustained their investments and are large is 71 per cent while the proportion of firms that did not sustain their investments and are not large is only 25 per cent (again this difference in proportions is significant). Finally, we find no evidence of a significant relationship between sustained investment and government ownership.

There is evidence that sustained investment is related to exporting: firms with sustained investment export in a larger proportion than the firms without. Sustained investment is also related to size, as larger firms are the most likely to sustain their investments, and does not appear to be related to government ownership. These results are consistent with other studies. Teal (1995) uses a survey of manufacturing firms in Ghana to estimate a probit model of the decision to invest. He takes into account the effect public policies may have on the decision but finds that profits and exports are the variables that explain investment. Bigsten *et al* (1997b) also find a positive and significant profit effect in their estimation of a logit model of the decision to invest for four African countries. The panel data they are using enables them to control for firm size: the impact of profits on the decision to invest for small firms is less in the African countries than observed in other countries.

The importance of Parastatals

Parastatals are here defined as firms with some government ownership; in legal terms, these firms are either government-owned or jointly government and private owned.

Parastatals are present in all industries in about the same proportion (29 per cent), but we do not know how representative the sample is in this respect. The proportion of parastatals versus non-parastatal firms does not vary in relation to age, but in the sample, there is no parastatal in the 'new firm' category (established since 1989), which is not surprising as a gradual process of privatisation has gained momentum since the late 1980s. The youngest parastatal is actually 11 years old. We find no evidence of a relation between government involvement and investment: the two distinguishing features of parastatals are size and export status. Parastatals are significantly larger on average than other firms (Table 5; a chi-square test confirms that parastatals tend to be larger). They have on average 310 employees compared to 99 employees on average for the other firms. Altogether, parastatals account for 55 per cent of employment even though they represent only 29 per cent of firms in number. Also, as previously mentioned, parastatals are significantly more likely to export. This is contrary to the findings for other countries. Bigsten *et al* (1997a) include a dummy variable for 'any state ownership' and find that it is never significant in explaining the decision to export but in Zimbabwe state ownership has a negative impact on the percentage of output exported.

Financing of Start-up Capital and Investment

Respondents were asked to report the importance of eleven sources of start-up capital, indicating all of which were used. There is considerable variability in the sources listed: although 72 per cent raised their start-up capital from one source only, five firms out of 60 report using three sources or more (Table 9). Subscription by shareholders and personal savings are the two most frequently used sources of start-up capital, 35 per cent and 30 per cent respectively. Personal savings are mainly used by small firms while subscription by shareholders is used mainly by large firms. The next most common sources are investment by a parent company, 25 per cent of the firms had some of their start-up from this source, and bank loans (13 per cent). Any of the other specified sources are marginal (savings from other owned businesses, liquidation of assets of other businesses, borrowing from friends or relatives, foreign bank loan, borrowing from other sources, and government contribution). The sources of financing for start-up do not vary by age of firm except for one noticeable difference: only firms established within the last

15 years used savings from other owned businesses or liquidation of assets of other businesses (Table 9).

We can make comparisons with Parker *et al* (1995) by limiting attention to firms in the sample with less than 50 employees, as Parker *et al* (1995) analyse exclusively such firms. Some differences limit the scope of the comparisons. First, the firms in the two sample are of different generations (based on average age): the 'average' firm in Parker *et al* (1995) started up around 1981 while the 'average' small firm in our survey started up in 1973. Second, the two surveys' list of sources differs slightly. As reported in Table 10, personal savings are the main source of start-up capital for small firms in both surveys. Parker *et al* (1995) find that this is true for the five African countries they look at, including Tanzania, and that the second most important source of start-up capital is either loans or gifts from friends or family, or profits from another business, depending on the country. Both sources are important in all countries.

In Tanzania, profits from another business come ahead of loans or gifts from family or friends. In our survey, only loans are included in the friends/relatives section. The difference in the definition appears to be important as we find that only four per cent of the firms have used loans from friends or relatives, while Parker *et al* (1995) find that 20 per cent of the firms have used loans or gifts from friends/family. However, 12 per cent of our sample reported the source as 'other/unspecified' whereas this was only chosen by two per cent in Parker *et al* (1995). Earnings from 'rent seeking' may be reported as from family/friends or other, and this may explain the differences in the surveys.

Turning now to the financing of investment, company earnings is by far the most commonly used source (69 per cent, Table 11); personal savings and domestic bank loans are the next most commonly used, but to a far lesser extent, about 20 per cent each (similar to 'other'). Foreign bank loans are the exception. Borrowing from friends or relations is also rare and, when used, it comes only as a third source of financing (Table 11). In Table 12, we compare the findings of Parker *et al* (1995), who did not collect this information for Tanzania, to our findings in the case of firms with less than 50 employees. Differences in the questions asked, the average age of the firms, and in the number of respondents limit the scope of the comparison. Still, there are indications that both

company earnings and personal savings are an important source of financing in all countries but Mali.

Thus, we may conclude that two main sources of start-up capital are subscription by shareholders and personal savings. The former is predominantly used by large firms while the latter is mainly used by small firms. Loans from friends or relatives as a source of start-up capital is negligible even among small firms. Personal savings and bank loans are the next most important sources of investment financing.

V GROWTH AND OTHER FEATURES

Due to the cross-sectional nature of the data, it is not possible to explain the dynamics of growth but it is possible to identify some characteristics associated with growth. As only firms that were still in business at the time the survey was conducted are in the sample, we can only focus on the surviving firms. Keeping in mind that this bias exists, it is not surprising to find that average size is now significantly larger than at establishment, although by only five employees on average. In general, size at establishment is a good predictor of current size (the correlation of 0.47 and significant). The overall correlation does not reveal the differences in growth that exist when we control for size at establishment: the average increase in size for the firms that have significantly grown is between 18 and 102 employees, depending on the size category. Also, such disaggregated figures reveal that large firms have not expanded whereas other sizes have all significantly expanded (Table 13). The evidence that large firms (more than 100 employees) have experienced an average decline of 180 employees is not statistically significant, although five of the ten large firms have actually shrunk by more than 500 employees. This group is rather diffused around the mean: the standard deviation of size at establishment in that group is very high compared to the standard deviations in other categories (Table 13), and the coefficient of variation is also higher. The large firms' size at establishment varies between 100 and 1500 employees.

Another way to investigate growth is to cross-tabulate size at establishment with current size. Table 14 presents such a matrix: almost half of the firms (48 per cent) stayed in the same size group, while 44 per cent moved up and eight per cent moved down. It is noticeable that even though the large firms decreased on average by 180 employees, eight out of ten are still large. Age is not significantly correlated to size but we see in Table 13 that young firms (less than 15 years old) have grown significantly. The change observed in the case of older firms is not significant. The only industry effect detected is an expansion of the firms in the metal industry.

It is evident that growth is strongly related to size. All sizes but the largest in our sample have expanded. Size is the most relevant factor for growth, and size at establishment is a good predictor of current size, as well as a good indicator of the direction of growth. Age alone is not associated with growth but, when we control for size, we find that young firms have expanded, but there is no evidence that old firms have grown significantly. Other studies have addressed the dynamics of firm growth using larger samples. In his study of Ghanaian enterprises, Teal (1995) compared average size at different points in time; firms that are large when established have tended to decline, whereas all other sizes (at establishment) have tended to grow. Mengistae (1997) uses a panel of 159 Ethiopian firms over 1983-93 to estimate a dynamic model of firm growth: age and size have some effect on growth for small and young firms, in that young firms grow faster controlling for size and small firms grow faster controlling for age. He also finds that firm growth is affected by industry growth, but this effect is less important than the size and age effects. Parker *et al* (1995), looking exclusively at small-scale and micro enterprises in five African countries, compare start-up versus current employment using a transition matrix. They observe that the vast majority (71 per cent) of firms stayed in the same category; 25 per cent moved up while only four per cent moved down.

Foreign Ownership

Half of the firms in the sample are entirely indigenous: they report no foreign ownership and their owners are reported as Tanzanian of African ethnic origin. Foreign ownership is, according to our sample, not frequent and not substantial: 13 out of 79 firms (15 per cent) report foreign ownership and in only four cases does it constitute majority ownership. There is one sector, however, where foreign ownership appears to be frequent: four out of

six joint public and private firms report some foreign ownership, between 20 per cent and 32 per cent. None of the cooperative firms report foreign ownership (Table 15).

In the case of privately-owned firms, nine out of 50 report foreign ownership, that varies between four and a hundred per cent; only four of those nine cases have more than 50 per cent foreign ownership. In only two cases out of the 13 firms reporting a positive amount of foreign ownership is the owner's country of origin Tanzania and the owner's ethnic origin African. Overall, the large majority of the owners originate from Tanzania: 80 per cent declared Tanzania as their sole country of origin and, in addition, another five per cent declared Tanzania as one of their countries of origin. The majority of the owners (60 per cent) are declared of African ethnic origin; the second most represented ethnic group is Asian with 32 per cent (Table 2).

Foreign involvement is limited but seems to be a factor in exporting. There are indications that having partial foreign ownership and that having owners of foreign nationality are related to exports. Parker *et al* (1995) also found that a majority of Tanzanian firms are of indigenous ownership; average foreign ownership was only two per cent. Bigsten *et al* (1997a) find that foreign ownership has a positive and significant impact on the decision to export in Kenya and Zimbabwe but not in Cameroon and Ghana. They find no evidence of foreign ownership affecting the percentage of output exported.

Industry Effects

There is no evidence in the sample to support the existence of industry effects, with the exception that growth in firm size in the metal industry is significantly greater than in other industries. Finding little evidence in support of some industry effects is not surprising in the present context as we only have a small number of firms in each industry. Mengistae (1997) finds evidence that the growth rate of a firm depends more on its age and size than on industry effects (measured by the rate of growth of the market demand in the industry). Also, Bigsten *et al* (1997a) include industry dummies in their estimation of functions describing both the firms' decision to export and the percentage of output exported; only the wood industry dummy is repeatedly significant, suggesting that any industry effect is limited. Thus, our results are consistent with other studies that found that industry effects were not large.

VI CONCLUSION

Overall, while statistically our results may be weak there are few findings that are not consistent with those of other studies. This suggests that our sample may not be unrepresentative and that the features of Tanzanian manufacturers are comparable to other African countries. There is no evidence in the sample to support the existence of industry effects, which is not surprising as we only have a small number of firms in each industry. We do find that firm size is strongly related to growth, which is consistent with other studies. In general, the results are consistent with comparable studies, which lends credibility to utilising the survey.

Size, government ownership and investment are all linked to exporting, and all appear to have some independent influence. Large firms export in a larger proportion than 'not-large' firms; this is also the case for parastatals, and for firms that sustain their investments. We were unable to investigate the direction of causality between exporting and sustained investment. However, it is clear that government ownership precedes exporting; while parastatals would have easier access to credit than private firms, we found no evidence of a significant relationship between parastatals and investment. A plausible inference is that parastatals have easier access to exporting channels than other firms, whilst among private firms the relationship between sustained investment and exporting is important.

In this regard, there is evidence that firms with sustained investment are more likely to export. Sustained investment is also related to size, as larger firms are the most likely to sustain their investments, and does not appear to be related to government ownership. Investment is clearly important and we also know that the two main sources of start-up capital are subscription by shareholders and personal savings, predominantly used by large and small firms respectively. To finance continuing investment, which should capture working capital, company earnings are by far the most important source.

The prevalence of parastatals among exporters may be a particular historic feature of Tanzania. As the sample was biased towards older and larger firms, parastatals may have been over-represented. Furthermore, privatisation (or at least government divestiture of majority holdings) has proceeded in recent years, since the survey of 1995. Looking to the implications of our findings for the future, little emphasis needs to be attached to the role

of parastatals. The important issue is what can be done to help and encourage exporting by private firms.

Sustained investment is clearly important for private exporters, hence access to credit is important. Weaknesses in the banking sector have been a major problem to Tanzanian manufacturers; few firms reported bank loans as a source of start-up or investment capital. While there have been measures to revitalise the banking sector, venture capital is scarce and access to bank loans remains constrained. Small firms are usually only started and sustained by those with access to personal savings (from whatever source), and hence are likely to remain relatively small-scale and could not be expected to become significant exporters. The Tanzanian capital market is underdeveloped hence larger firms, and those most likely to be significant exporters, will probably require an injection of funds from foreign sources; (partial) foreign ownership is likely to become an increasingly important feature of Tanzanian exporting firms. This should not divert attention from encouraging domestic smaller-scale firms, and improved access to credit is essential here. Finally, government policy failed to instil business confidence in the early 1990s; successful implementation of trade liberalisation and policies to restore macroeconomic stability may help to instil confidence.

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