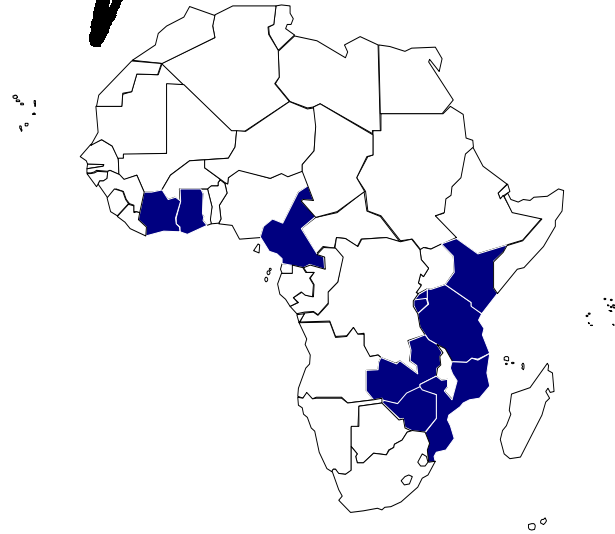


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Structure and Performance of Manufacturing in Mozambique

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Introduction

The end of civil war, structural adjustment and liberalization have led to rapid growth in the Mozambican economy since 1992. An important share of this growth has been in the manufacturing sector, which now accounts for 10 percent of GDP. In order to design policies to sustain this growth, it is first necessary to understand the nature of the manufacturing sector and its problems. While there is a great deal of information available on the economy, almost all of it is aggregate data from government statistics. There is very little information available on the manufacturing sector as a whole and almost no firm level data. To fill this need the Regional Program on Enterprise Development (RPED) of the World Bank, in conjunction with the Mozambique Council of Business Associations (CTA), undertook a survey of manufacturing firms in the summer of 1998.

This survey was designed to research a number of basic issues, including the composition of the manufacturing sector, sources of growth, major impediments to growth, the composition of the labor force, and accessibility to finance, among others. A team of World Bank staff and local consultants visited and conducted interviews with almost 150 manufacturing firms of all sizes in most parts of the country. These thorough interviews covered a number of topics, including discussions of business start up, the collection of basic accounting data, and discussions of what business services the firms would like. The interviewers also spoke with a sample of workers from each of the firms.

The survey was similar to ones conducted by RPED in seven other sub-Saharan African countries and it is thus possible to compare some of the results in Mozambique with similar countries. Although there are severe impediments to growth, including lack of finance, a shortage of skilled labor and poor infrastructure, real growth rates in the manufacturing sector in Mozambique have averaged more than 6 percent in recent years and appear poised to increase. The business environment is often cited as a particular problem, but we find that firms are extremely confident about the future, much more so than in other African countries. Mozambican businessmen are not only confident about their own future, but also that the government will continue its reform policies and the country as a whole will prosper.

In the following paper, we begin by providing a description of the sample. We follow that with a brief overview of growth and changes in the manufacturing sector since colonial times. Next we discuss what firms perceive as their major business problems. This is followed by discussions of manufacturing firms' access to finance, the labor market and infrastructure problems. Finally, a short section explores the business services firms in Mozambique need.

1. Sample

Before we begin analyzing the data, it is important to get a picture of the sample of firms that were interviewed through the survey. In particular, what are the basic characteristics of the firms in our sample, and how do these characteristics compare with those found in the broader population? If we are to make any inferences about the broader implications of the results of our survey for the economy as a whole, it will be essential to develop meaningful answers to these questions.

The Sample

A total of 153 firms were interviewed in the survey; of these, 42 were visited in early 1997, while the remainder were interviewed during July and August of the same year. For 7 of these firms, even basic statistics such as total employment were not obtained, so for the remainder of this section, we will concentrate on the 146 firms for which at least some data are available.

The purpose of the survey was to study formal sector manufacturing firms covering a broad range of industries. To avoid 'informal' micro-enterprises, a cutoff of five employees was used for the minimum firm size. In order to obtain an adequate sample size for each industry, we limited ourselves to four broadly-defined sectors: Food Processing; Textiles and Garments; Wood and Furniture; and Metal Products. Food processing includes drinks, bakeries, flour mills and soap producers; textiles and garments also includes shoe manufacturers, including the makers of PVC shoes. In terms of location, firms were interviewed in Maputo, the Central region (including Beira, Chimoio, and Quelimane, though heavily weighted toward Beira), and the North (Nampula, Nacala, and Mossuril; primarily Nampula).

Table 1.1 shows the basic breakdown of firms by industry and location. Firms listed under 'North' include all those in Nampula province, while 'Central' firms include companies located in Beira, Quelimane, and Chimoio. Consistent with the general distribution of manufacturing activity in Mozambique, the majority of our sample comes from the area around Maputo. We attempted to sample according to the geographic distribution of firms, as given by the 1988 UNIDO Industrial Survey, our most recent source of information on the geographic distribution of economic activity. According to this document, approximately fifty percent of firms were located in Maputo, ten percent in Nampula province, and twenty five percent in the central provinces that we visited. As Table 1.1 makes clear, firms in Nampula were oversampled at the expense of firms in the center of the country. This was because we had difficulties in engaging firms in Beira, thus biasing the sample towards firms in the North.

Table 1.1: Number of Firms, by Region and Industry

<i>District</i>	<i>Industry</i>				<i>Total</i>	<i>Percent</i>
	<i>Food</i>	<i>Metal</i>	<i>Textiles</i>	<i>Wood</i>		
Maputo	31	22	19	20	92	63
Central	10	5	6	8	29	20
North	14	3	2	6	25	17
Total	55	30	27	34	146	
Percent	38%	21%	18%	23%		

In order to assess the distribution of economic activity across industries, we used data from *Moçambique em Números 1997*, which lists the value of output by industry. According to this source, Food Processing accounted for 60.5 percent of manufacturing output, while textiles, wood, and metals accounted for 6.2, 1.3, and 5.0 percent of output respectively. This is due to the fact that Mozambique remains largely an agricultural economy. Note also that average firm size is far larger in Food processing than in other industries. Both of these characteristics are reflected in our sample: we interviewed nearly twice as many firms in Food Processing as in other industries, and the average firm size (as measured by total sales) was three times that of Textiles, and nearly ten times that of the other two sectors. For the non-Food industries, we interviewed approximately 30 firms per industry, rather than apportioning the interviews based on industry size, since this would have resulted in too small a sample size in the Wood and Furniture sector.

In terms of employment, the sample was intended to be representative of the population of manufacturing firms in Mozambique, stratified by industry and region. To achieve this, we used a standard ‘bore hole’ approach in our sampling, whereby the probability that a firm is interviewed is proportional to the size of its labor force. There was no available list of the universe, so we attempted to construct one. We used information from the CTA membership list and a 1996 list of firms supplied by the Ministry of Labor. We augmented these lists by scouring the phone book, personal visits to industrial areas and by asking firms about their competitors. While we may have missed some firms, we believe that we constructed the most accurate list of operating manufacturing firms currently available in Mozambique. Unfortunately, due to a high rate of churn among Mozambican manufacturing firms, we cannot be certain that our sampling design was fully reflected in the final sample. Tables 1.2a and 1.2b show the breakdown of firms by size class, cross-tabulated with location and sector respectively. Consistent with the idea of reflecting total *employment*, very few ‘micro’ enterprises were interviewed. It is interesting to note that there is a paucity of mid-sized firms in the regions outside of Maputo. One potential explanation for this pattern is given in the section on Infrastructure below.

Table 1.2a: Number of Firms by Size and Location

<i>No. of Workers</i>	<i>Maputo</i>	<i>Beira</i>	<i>Nampula</i>	<i>Total</i>	<i>Percent</i>
1-10	4	2	2	8	5%
11-50	46	7	12	65	45%
51-100	22	6	2	30	21%
101+	20	14	9	43	29%
Total	92	29	25	146	
Percent	63%	20%	17%		

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 1.2b: Number of Firms by Size and Sector

<i>No of Workers</i>	<i>Food</i>	<i>Metal</i>	<i>Textiles</i>	<i>Wood</i>	<i>Total</i>	<i>Percent</i>
1-10	5	1	1	1	8	5%
11-50	25	15	9	16	65	45%
51-100	7	9	6	8	30	21%
101+	18	5	11	9	43	29%
Total	55	30	27	34	146	
Percent	38%	16%	18%	23%		

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Thus far, we have described only the frequency distribution of firms, cross-tabulated along various dimensions. However, in making inferences about manufacturing more generally in Mozambique, it will be necessary to have a sense of how our sample, in terms of total sales and employment, compares with the universe of manufacturing firms in Mozambique. Cross-tabulations of total sales and total employment are listed in Tables 1.3 and 1.4 respectively, stratified by industry and location. Note, however, that we obtained accounting data for only 124 of the 146 firms in the sample. To get a sense of the approximate sales data for the remaining 22 firms, we regressed firm sales on firm employment, using a log-linear specification, to obtain an elasticity of sales with respect to employment. This regression yielded a coefficient of approximately 1.1 on $\log(\text{employment})$, had an R-squared of 0.48, and was robust to the addition of a variety of covariates. We then used this model to obtain fitted values for the omitted sales observations.

Table 1.3: Total (Fitted) Sales for Firms in the RPED Sample, in Billions of Meticais

	<i>Maputo</i>	<i>Central</i>	<i>North</i>	<i>Total</i>	<i>Percent</i>
Food	1,285,941	206,423	154,435	1,646,800	79%
Metal	79,756	6,788	1,018	87,562	11%
Textiles	44,176	194,058	16	238,249	6%
Wood	79,979	39,989	1,555	121,523	4%
Total	1,489,852	447,258	157,024	2,094,134	
Percent	71%	21%	8%		

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 1.4: Total Employment of Firms in RPED Sample, by Location and Sector

	<i>Maputo</i>	<i>Beira</i>	<i>Nampula</i>	<i>Total</i>	<i>Percent</i>
Food	6,118	1282	3,093	10,494	47%
Metal	1,690	366	89	2,145	10%
Textiles	2,302	3701	492	6,495	29%
Wood	1,050	1,682	416	3,149	14%
Total	11,160	7,031	4,090	22,283	
Percent	50%	32%	18%		

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Weighting the Data

Unfortunately, the most recent data we have on the geographical distribution of manufacturing employment and sales in Mozambique comes from 1988. Moreover, we do not have information on firm growth over a sufficiently long time horizon to allow us to impute what the appropriate geographic weights would be for Mozambique's current situation. It would thus be futile to try to establish weights based on a location-industry stratification. Instead, we determine industry weights for the entire population, and assume that they are constant across regions.

The most recent data on the value of Mozambican manufacturing output come from *1996 Mozambique Statistical Yearbook*, published by the Instituto Nacional de Estatística. This source, meant to capture the vast majority of economic activity in Mozambique, uses data from 247 firms for its section on industrial production. This alone suggests that our survey had very strong coverage of the four sectors of interest, given that our sample was nearly 150 firms.

**Table 1.5:
Comparison of Total Output by Sector for RPED and Government Samples**

	<i>Food Processing</i>	<i>Textiles and Clothing</i>	<i>Wood and Furniture</i>	<i>Metal</i>
Full Sample Output Data ¹	1,646,800 79%	238,249 11%	121,523 6%	87,562 4%
Government Output data ²	2,400,316 83%	267,848 9%	45,837 2%	176,595 6%

Source: ¹Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

²*Mozambique Statistical Yearbook*, National Institute of Statistics, 1996.

Using industry-level growth statistics on prices and output from the preliminary version of *Moçambique em Figuros 1997*, we were able to infer the value of output for 1997, which is the latest year for which most of our firms reported sales data. Table 1.5 lists statistics obtained through this approach, as well as the total sales by industry for firms in our sample (using fitted sales values for firms that did not report accounting data). It is somewhat disconcerting to note that the value of output in Wood and Furniture in our sample actually exceeds the comparable value for the government's data. We attribute this to a

couple of factors. First, the government's sample was presumably somewhat incomplete. More likely, though, this discrepancy results from the underreporting of income, which is likely to be worse in the government data. Assuming that the latter effect dominates, we may still use the government statistics to weight the *relative* importance of observations in our data by industry. That is, if we assume that the *rate* of underreporting is consistent across industries, then the proportion of output given by each industry in the government's sample should not be biased. To weight observations in each industry so as to reflect their relative importance in the economy, we need to simply divide the values of output in our sample by comparable values reported in the government sample. In other words, for each industry i :

$$W_i = \frac{(\text{Gov't Output})_i}{(\text{Survey Output})_i} \quad (1)$$

This yields a weight of less than unity for Wood and Furniture, which obviously makes little sense. However, we can still take away some information from this exercise. First of all, for all sectors, total output as reported in our sample is at least half of total output as reported by government statistics. In other words, our sample makes up a very large proportion of total manufacturing activity, according to government statistics. Hence, we may feel reasonably comfortable with making inferences about the general population of firms based on our data. Moreover, if we wish for our analyses to reflect the proportions of industrial output as reported by the *Instituto Nacional de Estatística*, we may use the values computed using equation (1) to weigh each observation. We could similarly calculate weights by region, using the 1988 UNIDO data.

Table 1.6: Weights for RPED Data, based on Government Statistics

	<i>Food Processing</i>	<i>Textiles and Clothing</i>	<i>Wood and Furniture</i>	<i>Metal</i>
Weights	1.46	1.12	0.38	2.02

Source: Moçambique em Números 1997, National Institute of Statistics

Some Characteristics of the Data

The basic lesson from the previous section is that our sample is probably reasonably close to representing the 'true' distribution of manufacturing activity in Mozambique. With this in mind, we now look at some basic characteristics of the firms in our sample. The previous subsections have already given us a good sense of the distribution of manufacturing by employment, output, location, and industry.

Mozambique's legacy of communist rule meant that, until a few years ago, many firms were run by the state. An ambitious privatization program, begun in earnest in 1991, has helped to put many state-run companies in the hands of the private sector. In our sample, a total of 44 firms were privatized, with most of these privatizations taking place during the 1990's. Note that this transfer of ownership has not worked to put more assets into the hands of African Mozambicans, at least not in a relative sense -- the proportion of ethnic ownership for privatized firms is virtually identical to that of the full sample. Similarly, the proportion

of firms with foreign ownership is almost the same for both privatized firms and the full sample.

In terms of the ownership structure of the full sample, we find that 45 percent of all firms were at least partially owned by foreign citizens, with foreigners having a majority holding in over 80 percent of these cases. As expected, firms with foreign ownership tend to be larger.

There is similarly considerable variation in the legal structure of firms in our sample — just over 50 percent were either sole proprietorships or partnerships, while about 40 percent were limited liability enterprises. The remainder were corporations or subsidiaries of larger corporate groups. Not surprisingly, most (8 of 11) of the ‘corporate’ firms had at least some foreign involvement.

Among the firms that are proprietorships or partnerships, the survey collected a great deal of information on the personal characteristics of the owners. Among Mozambican-owned firms, there is a wide distribution in the ethnicity of the owners: 41 percent are African owned; 23 percent are European, and 36 percent Asian. Those of European origin are primarily Portuguese, many of whom never left after the country won its independence; the Asians are almost exclusively Indian. There is some evidence that ethnic groups seem to cluster in particular industries. More precisely: Africans own over 50 percent of metal firms, while they are proprietors of only 17 percent of garment firms; the opposite pattern is observed among Asians, who own about 50 percent of textile firms, but only 13 percent of metal manufacturers. Finally, Europeans are relatively concentrated in food processing.

In terms of education, a majority (64 percent) of owners had completed their secondary educations, and nearly a quarter had gone on to study at a university. Prior to starting their businesses, most (70 percent) of the owners had worked for another firm; a sizeable percentage (24 percent) had parents who had worked in the same business. Consistent with the perception that Mozambican firms are highly diversified, 70 percent of the owners we interviewed owned other businesses. Very often, these additional businesses were trading or service companies.

Many firms had been taken over by the state after independence, so it was difficult to obtain other ‘historical’ statistics, such as firm age and information on initial ownership. Understanding some broader historical patterns will be useful, however, in examining Mozambique’s current situation. In the next section, therefore, we provide a short history of Mozambique’s economic development, along with a description of recent patterns of growth and investment.

2. Manufacturing

History

The structure of Mozambique's manufacturing sector today reflects the historical legacy of a colonial past, the scars of a civil war that devastated the nation's productive capacity and infrastructure, the inefficiencies of government's experimentation with central planning, and finally the resurgence of growth brought on by peace, policy reforms, and privatization, which began in the early 1990s.

At independence in 1975, Mozambique was the eighth largest industrial producer in Africa. Manufacturing value-added was about 12 percent of GDP. The sector had grown and diversified over the colonial period from a small agro-processing base. Small-scale factories had emerged in the 1930s to produce products mainly for the small colonial community — cement, bricks, soap, beer and cigarettes. Over the next 30 years, industry had diversified somewhat into other consumer goods and intermediate goods, such as food, garments, footwear, furniture, glass and metal products under high protection. Also important is the fact that during the colonial administration there had been a ban on trade by Africans and restrictions on the jobs they could hold, which insured that at independence most existing companies of any size were reliant on foreign management and technicians, the country had no significant indigenous business class, and most companies of any substantial size were in the hands of Portuguese owners or other foreigners, such as the British and South Africans.

After independence, three pivotal factors dramatically changed the structure and performance of manufacturing. First, in the immediate post-independence period, 1975 to 1977, there was a large-scale exodus of Portuguese and other foreign owners, managers, and technical personnel, which had a devastating effect on production. The government was forced in the wake of this human capital flight to assume control of many industrial enterprises in order to maintain some level of output. Unfortunately, many of these firms were in bad shape, having been stripped of assets or neglected, and some had heavy debt burdens. Second, the government's economic policies of price controls, centralization of production, and state ownership of farms and firms worsened the situation. Agricultural production was hit particularly hard by these policies, which reduced the supply of basic raw materials to industry, as well as lowering the overall demand for its final products. Over the decade following independence, cotton and sugar production collapsed to 9 and 16 percent of their 1980 levels, respectively. Tea and cashews, which, combined, contributed a third of the country's total exports and vital inputs to agro-processing factories, declined to 30 percent of 1980 levels. Third, the situation in the post-independence period was exacerbated by civil war. Sabotage of infrastructure crippled domestic and international distribution channels and destroyed production capacity, and shops and other marketing points in rural areas were destroyed or moved into district or provincial capitals. All of this raised the costs of marketing manufactured products and cut demand severely.

By the end of the 1980s, the manufacturing sector was in serious shape. Most enterprises had been nationalized or taken over by the state. Production capacity had either been destroyed or run-down, or was operating with old equipment at 10 to 30 percent of capacity, and average labor productivity had declined by more than 60 percent. The

agricultural sector was operating at a basic subsistence level. Exports were about one-third of pre-independence levels. To stop the economic deterioration, the government initiated a comprehensive Economic Rehabilitation Program (ERP) in 1987. Under this program and the subsequent Economic and Social Rehabilitation Program (ESRP) of 1989-90, major reforms were introduced to move the economy to a market-oriented system and to start rehabilitation of infrastructure. Unfortunately, before these reform programs could have an impact, several events intervened to shock the manufacturing sector once again. Aid and trade with the former Soviet Union collapsed in 1991, and key markets, particularly in textiles and garments, were lost. The civil war also worsened, causing even greater disruption to internal markets and infrastructure. And, in 1991 and 1992, a severe drought hit agriculture — the worst in a century.

Notwithstanding these negative shocks, over this period of early reforms, the decline in manufacturing began to slow and, in some sectors, actually reversed. In particular, improvements in production were recorded in textiles, wood, and basic metal products, as donor programs began providing development aid (\$35 million) and spare parts. But the prerequisites were not yet in place for any sustainable increase in growth rates. It was not until 1992-93, when rainfall resumed its normal pattern, civil war came to an end, macroeconomic, trade and financial reforms began to bear fruit, and privatization began in earnest that manufacturing growth took off in a sustainable way. At this juncture, as Table 2.1 indicates, the structure of manufacturing was relatively unchanged from its colonial pattern. Enterprise surveys at the time reported that the composition of registered enterprises was also roughly the same as at independence, due to the extremely low level of post-independence investment. Shutdowns had been numerous, and production by establishments that continued to function was substantially lower because of old machinery, lack of spare parts, and breakdowns.

Table 2.1:
Structure of Manufacturing Output

<i>Percent Shares</i>	<i>1973</i>	<i>1988</i>	<i>1991</i>	<i>1997</i>
Food, Drink and Tobacco	43.9	41.5	43.7	60.5
Textiles and Clothing	15.8	23.0	18.2	6.2
Wood, Paper, Publishing	10.3	8.2	5.4	4.7
Chemicals	8.8	10.7	13.3	11.6
Minerals (non-metal)	7.0	4.5	6.9	11.7
Base Metals	1.2	1.2	4.2	2.2
Metal/Engineering	12.3	10.8	8.1	2.8
Other manufacturing	0.5	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0

Source: National Institute of Statistics, Mozambique

Since mid-1992, industrial growth has assumed a new and higher trajectory. Real rates of growth per annum have averaged more than 6 percent and appear to be accelerating. Part of this growth surge is due to the “peace dividend,” part to good luck in the form of good rainfall since 1992, and part to government policy reforms. It is difficult to measure the separate, distinct contribution of each of these factors, but it is clear that government

initiatives to promote macroeconomic stability, free up markets, and privatize state control of productive resources have had a substantial impact on getting growth going again.

Table 2.1 shows that the resurgence of growth has begun to reshape the structure of manufacturing. The food (food, drink and tobacco) and the minerals (non-metal) sectors have experienced the largest change in their shares of aggregate output to date. This has skewed the structure of manufacturing output even more heavily towards food, drink and tobacco than was evident in the pre-independence period. The drinks sub-sector (led by firms like Coca Cola, Macmahon and Manica), which now represents the largest share of output in the food sub-sector, exhibited the highest growth rates over the period. The food processing component of the sub-sector has not grown much at all. Metal working and engineering, whose share in total value-added is often taken as a measure of industrial diversification and modernization, declined over the period as a proportion of total manufacturing output. Textiles and clothing also saw a reduction in its share of output after 1991. This decline can mostly be attributed to the loss of textile and clothing markets in Eastern Europe. More recently, official figures indicate that, while the drinks sector continues to grow, textile and clothing and non-electrical machinery are beginning to show signs of a revival. All three of these sectors recorded more than 50 percent gains in output (at current prices) in 1997, leading the way for a 49.3 percent nominal jump in manufacturing output.

Thus, viewed today, Mozambique's manufacturing sector appears small with production highly concentrated in a few sectors. It also exhibits a low degree of intra-sectoral linkages: Most producers, with the exception of agro-processors, source their raw materials from abroad rather than from the local economy. In addition, manufacturing firms are overwhelmingly inward-oriented. Very few firms export a substantial portion of their output. Together, these indicators establish that the country still has an early-stage, undeveloped manufacturing sector — hardly a surprising outcome, given Mozambique's recent history. What *has* changed significantly in recent years is the ownership structure of manufacturing. The radical change in ownership towards state control, which took place at independence, has been reversed. Privatization of more than 850 entities has shifted ownership and control of most manufacturing enterprises into private hands, although the government continues to hold shares in some of these firms. This change in enterprise governance may already be beginning to have a positive effect on efficiency, as the results of subsequent sections will show.

Where is Growth Coming From?

In addition to assessing the current state of the Mozambican economy, the survey collected information about the recent growth histories (sales and employment) of manufacturing firms, which allowed for an assessment of where growth has come from since reforms began in 1992. As Table 2.2a indicates, the average annual growth rate of sales in manufacturing firms (in constant prices) has been quite robust, in line with the recorded official aggregate growth data noted above. Sales in the sample enterprises grew at an average annual rate of 30 percent in the years 1992 through 1997. Growth in employment in the sample firms, however, has been flat (Table 2.2b). This suggests that the growth

resurgence to date has mostly been the result of increased capacity utilization rather than of the expansion of existing capacity or new entry.

**Table 2.2a:
Real Growth Rate of Sales, 1992-1997(Percentages)**

	1992-1995	1995-1996	1996-1997	1992-1997
All Firms	0.4	39.0	40.9	30

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

**Table 2.2b:
Growth Rate of Employment, 1992-1997 (Percentages)**

	1992-1995	1995-1996	1996-1997	1992-1997
All Firms	-2.1	0.8	1.4	0.3

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

An examination of the regional dimension of enterprise growth shows a surprising result. In terms of sales growth, firms outside of Maputo appear to be growing as rapidly, or in the case of the central region, more rapidly than firms in the capital (see Table 2.3a). This is unexpected because it is presumed that firms outside Maputo operate at a distinct disadvantage — lower quality infrastructure, reduced access to government services, and so on. One reason for the high average growth rates of sales outside Maputo may be that firms are bouncing back from a lower base rate of output and sales. In terms of growth rates of employment, firms in the Central and Northern regions had the largest average increases (Table 2.3b). On average, firms in Maputo lost jobs over the 1992 to 1997 period at a rate of 1.7 percent per annum. It should be noted that, given the fact that about 60 percent of manufacturing value-added is produced in and around Maputo, the rates of sales and employment growth there have much greater implications for national income growth and job creation.

**Table 2.3a:
Real Growth Rate of Sales, by Region, 1992-1997 (Percentages)**

Location	1992-1995	1995-1996	1996-1997	1992-1997
Central	15.3	32.5	64.6	38.0
Maputo	-0.3	48.2	30.5	30.0
Northern	-15.5	24.0	49.5	25.0

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

**Table 2.3b:
Growth Rate of Employment, by Region, 1992-1997 (Percentages)**

<i>Location</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
Central	6.6	9.2	-1.9	4.1
Maputo	-4.3	-0.8	-0.9	-1.7
Nampula	-1.6	-0.2	11.0	3.7

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

The growth of sales by sector in the sample enterprises is similar to the output growth figures found in the official data. Robust growth was recorded in all sectors. Textiles & garments and wood (lumber, wood products, and furniture), have been the leading growth sectors, followed closely by food (see Table 2.4a). Wood is the only sector that had a positive rate of job creation over the period (Table 2.4b). However, textiles & garments producers have begun to expand employment in the last few years.

Table 2.4a: Real Growth Rate of Sales by Sector, 1992-1997 (Percentages)

<i>Sector</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
Food	8.4	37.1	33.4	28.7
Metal	-3.5	21.9	25.2	16.1
Textiles	-6.9	54.8	56.8	42.1
Wood	-2.8	42.4	50.9	34.3

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 2.4b: Growth Rate of Employment by Sector, 1992-1997 (Percentages)

<i>Sector</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
Food	-1.5	-2.6	-0.9	-1.6
Metal	-4.7	1.7	-4.2	-2.3
Textiles	-5.7	-0.5	1.8	-1.2
Wood	3.9	7.2	9.7	7.5
All Firms	-1.9	0.8	1.4	0.3

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

What about the types of firms which are driving the growth resurgence? In terms of firm-size categories, it is clear from the survey that the largest firms (100+ employees) experienced the highest average growth rate of sales over the 1992-97 period (see Table 2.5a). But small and medium enterprises have not been far behind. In terms of job creation, however, there is no contest. The largest enterprises are creating just about all the new employment in manufacturing, with an average annual growth rate of employment of 4

percent since 1992, compared with negative or flat growth in the other two size cohorts (Table 2.5b).

**Table 2.5a:
Real Growth Rate of Sales by Size of Firm, 1992-1997 (Percentages)**

<i>Size</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
1-50	-4.8	33.3	34.8	23.5
50-100	41.1	38.3	29.1	27.1
100+	10.2	48.4	58.1	44.3

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

**Table 2.5b:
Growth Rate of Employment by Size of Firm, 1992-1997 (Percentages)**

<i>Size</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
1-50	-3.1	-0.2	0.9	-0.5
50-100	-1.1	-3.4	2.4	-2.4
100+	-0.5	6.1	5.1	4.1

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

It is also interesting to examine what is happening in *older firms* (private firms established before 1991) versus *new entrants* (private firms established after 1991) versus *privatized firms*. The survey indicates that all three types of firms have experienced strong average growth rates in sales (see Tables 2.6a and 2.7a), with new entrants achieving slightly higher rates over the 1992-97 period. Sales growth of the new entrants has been highly volatile over the period, however. An important point to note is that the privatized firms have been doing quite well. Their average sales growth rates have kept pace with the sales growth of private firms. As expected though, employment growth in the privatized firms has been declining or flat over the period as they restructure to improve efficiency. It is the new entrants that are creating most of the new jobs, their firms recorded a 6 percent average rate of employment growth from 1992 through 1997 (Tables 2.6b and 2.7b).

**Table 2.6a:
Real Growth Rate of Sales, New vs. Older Established Firms, 1992-1997
(Percentages)**

<i>Age of Firm</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
All Firms Founded before 1992	-0.2	26.2	40.5	24.4
Firms Founded after 1991	10.2	37.4	41.6	29.9

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 2.6b:
Growth Rate of Employment, New vs. Older Established Firms, 1992-1997
(Percentages)

<i>Age of Firm</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
Firms Founded Before 1992	-1.7	-0.5	1.2	-0.2
Firms Founded 1992 and Later	-5.3	0.2	4.3	1.5

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 2.7a:
Real Growth Rate of Sales, Privatized vs. Non-Privatized Firms, 1992-1997
(Percentages)

<i>Status</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
Non-privatized	-0.4	31.2	46.2	28.8
Privatized	3.8	63.5	29.1	37.8

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 2.7b:
Growth Rate of Employment, Privatized vs. Non-Privatized Firms,
1992-1997 (Percentages)

<i>Status</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
Private Firms Founded Before 1992	-1.3	-1.1	2.0	0.0
Privatized Firms	-3.2	2.7	-3.2	-0.8
Private Firms Founded 1992 and Later	-5.7	5.4	9.4	6.1

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Have foreign firms and exporters played a comparatively more important role in the growth resurgence? An examination of sales and employment growth indicates that, in fact, there is not much difference between foreign and domestic firms in terms of sales growth or job creation — sales in both cohorts have grown rapidly with domestic firms marginally outpacing foreign companies, while employment growth in each group has been negligible (Table 2.8a and 2.8b). Exporters, on the other hand, have done much better than non-exporters in both sales and employment growth — the average annual rate of sales growth for exporters over the period was more than 50 percent higher than for non-exporters; the average annual growth rate of employment was a respectable 2.5% for exporters, while it remained negative for non-exporters.

**Table 2.8a:
Real Growth Rate of Sales, Foreign vs. Domestic Firms, 1992-1997 (Percentages)**

<i>Ownership</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
Domestic	-4.4	45.0	42.2	32.5
Foreign	7.1	28.5	40.0	27.2

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

**Table 2.8b:
Growth Rate of Employment, Foreign vs. Domestic Firms, 1992-1997 (Percentages)**

<i>Ownership</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
Domestic	-1.9	-0.1	2.4	0.3
Foreign	-2.1	2.8	-0.4	0.3

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

**Table 2.9a:
Real Growth Rate of Sales, Exporters vs. Non-Exporters, 1992-1997 (Percentages)**

<i>Status</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
Non-exporter	-6.9	40.6	32.9	25.6
Exporter	15.1	36.0	56.2	39.3

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

**Table 2.9b:
Growth Rate of Employment, Exporters vs. Non-Exporters, 1992-1997
(Percentages)**

<i>Status</i>	<i>1992-1995</i>	<i>1995-1996</i>	<i>1996-1997</i>	<i>1992-1997</i>
Non-exporter	-2.9	-0.7	0.3	-0.8
Exporter	-0.3	3.7	3.3	2.5

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Three principal sources of growth account for the turnaround since 1992: increased capacity utilization, investment, and productivity growth. Increased capacity utilization has surely made the most significant contribution to date. Liberalization of imports and increased availability of foreign exchange have improved access to strategic raw materials and significantly reduced production bottlenecks. Domestic demand has also increased since the end of the war. Both these factors have had a positive influence on average capacity utilization. Table 2.10 indicates that capacity utilization in manufacturing now averages about 48 percent. By contrast, in 1989, a study of manufacturing estimated that capacity utilization was approximately 10-30 percent, depending on the industry and the location of

production.¹ Compared with the current capacity utilization figures, this suggests that average capacity utilization has risen more than 100 percent since the late 1980s. An increase in the capital utilization rate of this magnitude must have had a significant impact on productivity.

Investment has made a more modest contribution to the growth resurgence. New private investment in manufacturing, the survey shows, has averaged about 2-3 percent of GDP per annum over the three-year period from 1995-1997. Investment activity, however, has not been broadly distributed across firms or sectors.

Table 2.10: Average Capacity Utilization, 1998

All Firms	48
Location	
Central	47
Maputo	50
Northern	47
Sector	
Food	47
Metal	50
Wood	47
Garments and Textiles	47
Firm Size	
10 or fewer Workers	53
11-50 Workers	45
51-100 Workers	41
More Than 100 Workers	55
Ownership	
African	46 ¹
Asian	48
European	49
Mozambican African Only	48
Mozambican Asian Only	51
Mozambican European Only	42
Age of Firm	
Firm Entered after 1991	41
Privatized Firms	47
Always Private/Pre-1992	51

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mossuril.

¹This category includes firms with foreign owners. They were subjectively assigned to ethnic groups depending on who the interviewer thought was the main manager.

²Includes only firms with Mozambican owners.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

¹ Mozambique: Industrial Enterprise Restructuring Project, Staff Appraisal Report, November 21, 1989. World Bank.

Country-wide, more than half of manufacturing firms made investments in the 1995 to 1997 period (see Table 2.11). A slightly higher proportion of firms appear to have invested in the central region of the country. By sector, food (food, drink, and tobacco) and wood (sawmills, wood products and furniture) firms appear to be making more investments than firms in other sectors. Most striking is the difference in investment activity by firm size. Seventy-two percent of firms with more than 100 employees made investments in the last three years. In fact, these large firms account for 66 percent of the total volume of investment in the sample (see Table 2.12). Most of these investing firms are “new” foreign-owned firms, which entered business as the war ended in the early 1990s. This is indicated by the fact that firms which entered after 1991 were responsible for 55 percent of the total volume of investment in the sample and investment activity in Mozambican-owned firms was very low (for example, European-owned firms were responsible for 62 percent of the total volume of investment, but Mozambican firms of European origin were responsible for only 7 percent of the volume of investment).

Table 2.11: Firms Investing in the Period 1995-1997

	<i>Percent</i>	<i>Number</i>
Location		
Central	66	29
Maputo	55	86
Northern	50	22
Sector		
Food	62	53
Metal	40	25
Wood	64	33
Garments and Textiles	50	26
Firm Size		
10 or fewer Workers	50	8
11-50 Workers	48	61
51-100 Workers	55	29
More Than 100 Workers	72	39
Ownership		
African	40	45
Asian	67	43
European	61	49
Mozambican African Only	38	37
Mozambican Asian Only	59	27
Mozambican European Only	60	15
Age of Firm		
Firm Entered after 1991	68	25
Privatized Firms	58	40
Always Private/Pre-1992	50	72
All Firms	56	137

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mossuril.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 2.12:
Investment As A Percentage Of Total Investment in Country, 1995-1997

Location	
Central	35
Maputo	64
Northern	1
Sector	
Food	71
Metal	12
Wood	9
Garments and Textiles	8
Firm Size	
10 or fewer Workers	0.1
11-50 Workers	14.8
51-100 Workers	18.5
More than 100 Workers	66.6
Ownership	
¹ African	25 ²
Asian	13
European	62
³ Mozambican African Only	3
Mozambican Asian Only	4
Mozambican European Only	7
Age of Firm	
Firm Entered after 1991	55
Privatized Firms	9
Always Private/Pre-1992	36

Notes: Total investment for the 137 reporting firms for the years 1995-1998 is about \$59 million. This does not take into account the more than \$30 million Ferpinta claims to have invested in Beira. Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mossuril.

¹This category includes firms with foreign owners. They were subjectively assigned to ethnic groups depending on who the interviewer thought was the main manager.

²This includes Chibuku. If this Zimbabwean owned firm is deleted then this number falls dramatically.

³Includes only firms with Mozambican owners.

Overwhelmingly, investment funds have gone into capital equipment (85 percent) rather than into land and buildings (Table 2.13). This is true for all of the sectors. By region, only the Northern region seems to be an exception. Firms in the North appear to be making more investments in land and buildings. It is difficult to say why this difference in investment patterns exists. Similarly, more “micro” enterprises appear to be investing in land and buildings than in equipment. The volumes of investment made by micro enterprises and firms in the North have been very small; hence, these differences in investment patterns do not mean much in the scheme of things.

Table 2.13: Percentage of Investment in Buildings and Equipment, 1995-1997

	<i>Buildings</i>	<i>Equipment</i>
Full Sample	14	86
Location		
Central	6	94
Maputo	28	72
Northern	66	34
Sector		
Food	15	85
Metal	4	96
Wood	15	85
Garments and Textiles	31	69
Firm Size		
10 or fewer Workers	76	24
11-50 Workers	12	88
51-100 Workers	10	90
More than 100 Workers	16	84
Age of Firm		
Firm Entered after 1991	10	90
Privatized Firms	25	75
Always Private/ Pre-1992	19	81

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mossuril.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Mean investment as a proportion of enterprise capital stock (measured as replacement value of capital stock) over the three years 1995 to 1997 has been 10.5 percent (Table 2.14). This investment rate compares favorably with an average firm investment rate of about 10 percent of capital stock per year in developed countries. As we noted above, however, investment varies substantially across the size distribution of firms. Large enterprises (100 employees and above) made investments equal to about 15 percent of capital stock per year as against 5 percent for smaller enterprises (5-50 employees). One would not expect to find such a high degree of investment variance in firms in more developed countries. This variance in investment rate across firms may be a reflection of cross-firm differences in cash flows (retained earnings) and credit rationing (more on this issue later).

Table 2.14:
Mean Yearly Investment/Replacement Value of Capital Stock, Percent, 1995-1997
(94 Firms)

All Firms	10.5
Location	
Maputo	7.8
Central	20.9
Nampula	3.6
Sector	
Food	12.9
Metal	5.0
Wood	10.3
Garments and Textiles	9.5
Firm Size	
10 or fewer Workers	6.6
11-50 Workers	4.5
51-100 Workers	9.2
More than 100 Workers	14.6
Age of Firm	
Firm Entered after 1991	29.7
Privatized Firms	4.8
Always Private/Pre-1992	8.8

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mossuril.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Productivity growth is also playing a part in the growth resurgence. The fact that output and sales are growing much faster than employment, as noted in the figures earlier, means that labor productivity must be increasing in firms. Table 2.15 indicates that aggregate labor productivity in manufacturing grew almost 30 percent in the 1992-97 period. The textiles and garments sector has recorded the highest rates of productivity growth over the period, but productivity growth in the food sector, because of its prominence in the composition of manufacturing output, has made the largest contribution to aggregate productivity growth. Privatization is also raising overall manufacturing efficiency as evidenced by the rapid average growth rates of labor productivity of privatized firms in the sample. Moreover, investment in new equipment and increasing capacity utilization are beginning to improve the productivity of capital in exporting firms whose labor productivity increased at an average rate of 35 percent over the period. Considering the resource shifts that have occurred since 1992, evidenced by the changes in the structure of manufacturing output, one might also add that it appears resources are beginning to move into lower domestic resource cost activities. This reallocation of resources to more efficient uses should make an increasing contribution to aggregate manufacturing productivity over time.

Table 2.15
Growth Rate of Labor Productivity, 1992-1997

	<i>1992-1995</i>	<i>1995-1997</i>	<i>1996-1997</i>	<i>Total</i>
All Firms	0.8	41.0	29.5	27.5
Location				
Central	0.4	18.1	63.0	28.8
Maputo	3.4	56.4	17.8	29.8
Northern	-5.5	20.4	31.3	20.5
Sector				
Food	5.8	30.9	40.0	29.0
Metal	-3.2	21.3	15.8	13.6
Wood	-4.6	47.1	21.2	25.9
Garments and Textiles	1.1	67.8	33.3	40.3
Firm Size				
1-50	0.6	28.4	25.1	20.3
50-100	-10.0	71.2	27.2	39.7
100+	8.5	38.9	39.0	33.1
Ownership				
Domestic	0.0	49.5	25.9	30.0
Foreign	1.7	27.4	34.7	24.1
Privatization Status				
Non-privatized	0.5	39.2	32.3	27.1
Privatized	2.6	49.8	22.1	30.3
Export Status				
Non-exporter	-3.0	37.8	24.5	23.0
Exporter	9.0	46.5	37.5	35.5
Age of Firm				
Firms Founded Before 1992	0.8	30.9	31.4	23.6
Firms Founded 1992 and Later	n.a.	90.4	20.4	47.8
Age of Firm and Status				
Private Firms Founded Before 1992	0.4	25.3	39.3	24.2
Privatized Firms	2.6	49.8	22.1	30.3
Private Firms Founded 1992 and Later	n.a.	130.0	-7.1	47.7

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

3. Productivity

Despite the recent productivity growth the average efficiency of manufacturing firms in Mozambique remains both far below the world average and significantly less than its closest African neighbors. This extraordinarily low efficiency prevents Mozambican firms from being able to compete against imports or export to the world market. Consequently it stifles growth and is a major factor in the low level of capacity utilization

Examining the overall technical efficiency of firms across African countries in Table 3.1, we see that Mozambique has the lowest technical efficiency index.² Technical efficiency refers to the ability to obtain the largest value of output from a given bundle of capital and labor. A firm that is operating at the highest level of efficiency possible in Africa is expected to have a technical efficiency index of 1. Thus, the average Mozambican firm with a technical efficiency of .386 is operating well below the frontier of what is possible in Africa. As would be expected, firms in countries such as Zimbabwe and Kenya, that have better developed infrastructure and education systems have much higher average efficiency. If the efficiency index was calculated on the basis of the best global practice, not just the best practice in Africa, the relative inefficiency of Mozambican firms would be even worse.

Table 3.1:
Average Technical Efficiency of Firms by Country

<i>Country</i>	<i>Average Efficiency</i>	<i>Standard Deviation</i>
Mozambique	.3857	.1902
Ghana	.5424	.1639
Tanzania	.5582	.1765
Zambia	.6236	.1341
Kenya	.6432	.1320
Zimbabwe	.7134	.0847

Source: Regional Program on Enterprise Development Surveys, World Bank, Africa Region, 1993-1998.

Estimates of firm-level technical efficiency in Mozambique, as in other African countries, show a high degree of variation between firms. In more developed countries, estimates of cross-firm efficiency do not exhibit such wide dispersion. As shown in Table 3.1 the standard deviation for firms in Mozambique is around .19, larger than any other country in the RPED data base. This large inter-firm heterogeneity in technical efficiency reflects the wide variation in capability of firms currently operating in Mozambique. The large foreign owned firms that have recently begun operating or the privatized firms that have been renovated have access to the latest production techniques, new capital equipment and the expertise of expatriate managers. Consequently, they have much higher levels of

² Technical efficiency is estimated using a translog production function in which labor, the value of physical capital and the value of raw material are used as inputs. We also added location and sector dummies and capital utilization as additional variables in the production function.

efficiency than the older and smaller firms operating with antiquated machinery and out of date production techniques.³

As shown in Table 3.2 when efficiency is based upon the best practice in Mozambique the average technical efficiency is .684. Thus the average firm is not even operating close to what is theoretically possible for the best firms in Mozambique. When the sample is divided by size, trade orientation and ownership the distribution of efficiency is as expected. Although the difference is smaller than found in other countries and is not statistically significant, estimated technical efficiency increases with the size category. This probably does not reflect economies of scale so much as it does large firms' better access to capital and other types of business support.

Table 3.2:
Distribution of the Estimated Technical Efficiency in Mozambique

	<i>Technical Efficiency</i>	<i>Std. Deviation</i>
By Sector		
Food	0.695	.08
Metal	0.687	.08
Textile	0.733	.07
Wood	0.647	.22
By Size		
Small	0.660	.17
Medium	0.690	.12
Large	0.701	.08
Very Large	0.735	.10
By Trade Orientation		
Closed	0.667	.14
Open	0.728	.09
By Ownership		
Domestic	0.633	.16
Foreign	0.735	.07
Overall	0.684	.013

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Trade oriented firms are defined to be those that use large amounts of imports in their production process or export much of their output. It is no surprise that such firms are much more efficient than domestically oriented firms. In order to be successful on the world market a firm's efficiency must be close to that of its competitors from other countries. For this same reason there is less variation in the efficiency level of open firms than in closed firms. Firms with foreign ownership are also estimated to have higher technical efficiency than those solely Mozambican owned. This undoubtedly reflects foreign owned firms' better access to capital, modern production techniques and knowledge.

³ Some of the heterogeneity can be accounted for by the problems in classifying firms with in well-defined industry groups (aggregation problems) but this can not account for all or even most of it. Since many of the smaller firms in our sample did not provide complete information and could not be used in our calculations of technical efficiency the actual level of inter-firm heterogeneity is probably underestimated.

**Table 3.3a:
Average Technical Efficiency in the Food Sector by Country**

<i>Country</i>	<i>Average Efficiency</i>	<i>Standard Deviation</i>
Mozambique	.3709	.2036
Tanzania	.5582	.1765
Ghana	.5631	.1477
Zambia	.5913	.1458
Zimbabwe	.6277	.1257
Kenya	.6615	.1130

Source: Regional Program on Enterprise Development Surveys, World Bank, Africa Region, 1993-1998.

**Table 3.3b:
Average Technical Efficiency in the Metal Sector by Country**

<i>Country</i>	<i>Average Efficiency</i>	<i>Standard Deviation</i>
Mozambique	.4067	.1674
Tanzania	.5434	.1779
Ghana	.5451	.1443
Kenya	.6138	.1404
Zambia	.6699	.1046
Zimbabwe	.7028	.1024

Source: Regional Program on Enterprise Development Surveys, World Bank, Africa Region, 1993-1998.

**Table 3.3c:
Average Technical Efficiency in the Textile Sector by Country**

<i>Country</i>	<i>Average Efficiency</i>	<i>Standard Deviation</i>
Mozambique	.2818	.1487
Tanzania	.5443	.1910
Ghana	.5560	.1665
Zambia	.6260	.1397
Kenya	.6393	.1401
Zimbabwe	.7178	.0732

Source: Regional Program on Enterprise Development Surveys, World Bank, Africa Region, 1993-1998.

Table 3.3d:
Average Technical Efficiency in the Textile Sector by Country

<i>Country</i>	<i>Average Efficiency</i>	<i>Standard Deviation</i>
Mozambique	.4343	.1900
Ghana	.5007	.1837
Tanzania	.5355	.1841
Zambia	.6098	.1274
Kenya	.6607	.1257
Zimbabwe	.7169	.0772

Source: Regional Program on Enterprise Development Surveys, World Bank, Africa Region, 1993-1998.

The high level of inter-firm heterogeneity in technical efficiency suggest that it is possible to increase growth by reallocating resources away from less efficient firms and by raising productivity of less productive units. The shift towards food processing and other changes to the composition of Mozambican manufacturing demonstrates that this process is already well underway and is a major contributor to the recent high growth rate. Textiles has the highest level of efficiency relative to other sectors in Mozambique. Many textile factories shut down when they lost their protected market status or their guaranteed contracts with Eastern Bloc countries. However, those that have remained have become export oriented and have had to improve their productivity enough to compete on the world market. Much of the success in reallocating resources to more efficient use can be attributed to the governments economic liberalization and privatization policies, which forced firms to become more competitive.

Technical efficiency in Mozambique lags behind its closest neighbors in all sectors. The greatest difference between any sector in Mozambique and the most efficient country among its neighbors is in textiles. As shown in Table 3.3c technical efficiency in the Mozambican textile sector is about .28 while in Zimbabwe it is over twice as large, almost .72. Although this is the most efficient sector in Mozambique it is among the least efficient relative to other African countries. This is easily explained because garments is one of most competitive industries in the world and the fierce competition has forced firms in involved in the world market to become extremely efficient. While textile manufacturers may be very efficient relative to other Mozambican industries, they are still far from the world efficiency frontier. Within Africa Mozambique appears to be most competitive in the wood and furniture sector. Since few wood firms in Mozambique have invested in new equipment or production techniques, this is probably due to the large amount and high quality of Mozambican wood. However, this advantage will decrease as its stock of easily accessible high quality wood becomes depleted.

While the productivity has dramatically increased in recent years the worker level task efficiency is still comparatively low in Mozambique. In the garments industry, studies have found that Mozambican workers are about one-half as productive as workers in competitor countries like Mauritius, China and India. Such worker productivity differentials are to be expected in countries where manufacturing is just beginning and workers have not had much

experience. But, in Mozambique, inexperience is only part of the problem. Because of the legacy of colonial rule and war thereafter, current basic education levels are quite low. Firms report that basic literacy and numeracy are so low in some cases that it is difficult to train workers beyond simple, repetitive sequences of specific job tasks. A part from deficient cognitive and manual labor skills of workers, the RPED enterprise survey indicates that managerial skills in formulating business strategies, organizing plant layouts, and devising effective worker incentive schemes are low. These low managerial skills also influence basic worker task-level efficiency. So does the use of old machinery, or machinery with low capacity ratings, which are common in Mozambican factories.⁴

Table 3.4:
Task Level Efficiency in Standardized Garment Production in Selected Countries, 1996

	<i>Zim.</i>	<i>Kenya</i>	<i>Ghana</i>	<i>Moz.</i>	<i>Lesotho</i>	<i>RSA</i>	<i>India</i>	<i>EPZ China</i>
Men's Casual Shirts	12-14	12-15	12	10-11	18	15	16	18-22
Monthly Wage ^a	\$105	\$60-65	\$30-45	\$40-50	\$82-95	\$255	\$70-75	\$150
Index of Unit Labor Cost (for Men's Casual Shirts)	0.034	0.026	0.022	0.029	0.035	0.050	0.027	0.040

^aWage for a semi-skilled sewing machine operator in the garments industry.

Source: Interviews with African garment producers, 1996

The causes of low enterprise efficiency in Mozambique include factors which operate at the national and industry levels, as well as a number of capabilities that are internal to firms. It is difficult to disentangle these separate influences because factors external to the firm at the national or industry levels may have productivity impacts mitigating firm-level factors and vice versa. In the following sections we use the survey data to attempt to sort through these influences. We investigate national policies, firm level determinants and other factors affecting growth and productivity in order to identify impediments to growth and increased productivity.

⁴ One might also add that worker productivity can be affected by demand-side factors, like the type of orders a garments factory gets. Large production runs of similar products raise worker efficiency; smaller, dissimilar orders reduce it. Garments factories in Maputo report that orders from South African buyers have been small, dissimilar orders, which reduce the ability of workers to be more efficient. In addition, worker productivity has also been influenced by the decline of output in some plants due to various factors, such as the end of protected market positions, the reduction in real incomes during structural adjustment, and privatization. In many cases, the steep declines in sales have not been met with reductions in employees. Government labor regulations, agreements with government in privatization, and loyalty to old employees are all reasons for this.

4. Business Problems

In order to design policies that will facilitate growth and help firms take advantage of the opportunities created by structural adjustment, it is necessary to identify the problems faced by business in Mozambique. There is often a significant difference between the perceptions of the Government and aid agencies and those of private business. To this end, the RPED survey asked each firm to list its three biggest problems in doing business in Mozambique. Each problem was assigned to a general category (see Table 4.1 for a list of problems in each category) and then each category was given a score determined by weighting the number of times it appears by whether the appearance was as the first, second or third major problem. As shown in Table 4.2a, private firms perceive problems associated with the government to be the most serious impediment to doing business in this country. Over the last ten years, the government has made vast strides towards becoming more business-friendly. However, most firms still view government policies and bureaucracy as imposing substantial costs on their operations. Government overshadows any other problem, including lack of finance, low demand, poor infrastructure and lack of skilled labor.

Table 4.1:
Specific Problems Listed Under Each Major Category of Business Problem

<p>1. Skilled Labor</p> <ul style="list-style-type: none"> • Lack of quality 	<p>7. Competition</p> <ul style="list-style-type: none"> • Dumping • Lack of protection • Lack of subsidies • Competition from other firms • Competition from imports
<p>2. Finance</p> <ul style="list-style-type: none"> • Lack of consumer credit • Inadequate access to credit • High interest rates • Lack of export finance 	<p>8. Government</p> <p>(a) Enforcement</p> <ul style="list-style-type: none"> • Courts don't enforce contracts • Official corruption • Crime and theft • Security <p>(b) Policy</p> <ul style="list-style-type: none"> • Plan for private sector • High taxes/tax structure • Cashew policy • Uncertainty about future • Smuggling • Labor regulations • Ownership regulations • Regulations for starting a new business • High duties on inputs • High duties <p>(c) Bureaucratic Burden/Admin.</p> <ul style="list-style-type: none"> • Bureaucratic burden • Lack of clear laws • Illegal or informal competition • Gov. inspections • Customs
<p>3. Shortage Of Inputs</p> <ul style="list-style-type: none"> • Lack of imported raw materials • Lack or high price of domestic inputs • Shortage of building material 	
<p>4. Business Support</p> <ul style="list-style-type: none"> • Lack of financial data • Finding foreign markets • Lack of business support services • Marketing 	
<p>5. Infrastructure</p> <ul style="list-style-type: none"> • Transport cost • Ports • Shipping schedule • Inadequate supply of infrastructure • Utility prices 	
<p>6. Demand</p> <ul style="list-style-type: none"> • Insufficient demand 	

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998

The government category is extremely broad and encompasses everything from customs delays to high taxes and labor regulation. To better analyze the impact of government on the business environment, it is helpful to break down this category into sub-categories covering three distinct areas of government involvement in the economy: Policy, Bureaucratic Burden and Administration, and Enforcement. Policy contains problems relating to the formation of government policies such as tax laws, import duties and labor regulations. Bureaucratic Burden and Administration covers problems with administering laws and implementing policies. Even if the government policies are appropriate, they can still be an impediment to business if they are improperly administered. Enforcement contains complaints about the courts, police and other mechanisms for law enforcement. Although it is sometimes unclear exactly where a given complaint should fall, this breakdown is a useful way to identify how government affects the cost of doing business and where future reform efforts should focus.

When government is broken into the more specific sub-categories, it ceases to be the most important problem. As seen in Table 4.2b, inadequate access to finance then becomes the major complaint in all classes of firms. Businesses believe that poorly functioning capital markets hamper their ability to operate and invest and this problem overshadows any other. Government policy and then bureaucratic burden and administration are the next most important categories followed by inadequate demand, poor infrastructure and the lack of skilled labor, enforcement, competition, lack of local inputs and lack of business support. In this section we will discuss some of these problems in more depth starting with the government sub-categories.

Government

Policy

Among the three sub-categories of government, firms reported policy as the biggest problem. Most complaints in this field were about smuggling, which results partly from poor enforcement but mostly from high and capricious tariffs. Almost all firms that sell on the domestic market complained bitterly about competition from smuggled goods. These firms believe that they are at an unfair disadvantage because they must pay high duty on legally imported inputs while the government does little to stop smuggled goods. The complicated import regime also adds substantial costs to business by creating delays and disputes. Before importing, firms must obtain permission and have their imports assigned to a tariff category. Since this survey was undertaken in the summer of 1998, the import regime has been substantially revised. It is no longer necessary to obtain import licenses (BRI). However, firms reported that it is common to be given permission by the ministry to pay duty as if a good were an input, only to have customs inspectors demand duty at the higher rate for a final product when it arrives at the border. This problem is exacerbated by the absence of adequate mechanisms for contacting the proper authorities and quickly resolving such disputes. As a result, the complicated tariff regime cause firms to suffer long delays and uncertainty about the final costs of imported goods.

Labor regulation is another policy area where firms often complain. Mozambican regulations require that firms file monthly reports containing large amounts of data on the names of workers they employ, what jobs they hold, how much they are paid, etc. While

reporting is not one of the major problems with labor policy, it is certainly onerous that almost 21 percent of firms said that reporting labor data was a problem (see Table 4.8). Far more troubling are the regulations governing layoffs and hiring foreign workers. While the law allows firms to reduce their work force, employers are forced to make such high severance payments, even when an employee is being terminated for theft or some other just cause, that firms often keep unproductive workers on the payroll. This policy leads many firms, especially smaller ones, to hire only temporary workers who do not benefit from the same job protection. One owner of a small firm in Maputo stated that he regularly fires and then rehires his entire work force every three months so that he is not be subject to labor regulations that protect regular employees. Such labor market rigidities add to the already considerable risks of doing business and act to discourage firms from expanding.

The most serious difficulty firms have with the labor laws is hiring foreign workers, and over 35 percent of firms employing foreign workers cited this as a big problem. Many firms who use modern production techniques and who need to hire highly skilled expatriates find it difficult to do so. First, to receive permission to hire an expatriate they must prove that no Mozambican has the same qualifications. This is sometimes difficult because a Mozambican may have the same degree as an expatriate but lack the practical experience required to perform the job adequately. Next, firms sometimes have trouble paying expatriates in foreign currency. Firms claim that if they pay expatriates in foreign currency they must pay a higher tax rate, so they often include these payments in the cost of an imported machine or hide it in some other way. Finally, the complicated process for hiring foreign workers creates a perfect opportunity for officials to seek favors. One manager with a foreign passport told how he had to buy breakfast for a Ministry of Labor inspector every week for a year until he finally received his work permit. This was despite the fact that he had been born and lived all of his life in the town. The interviewed firms believe it is becoming more difficult to hire expatriates and, given Mozambique's need for expertise and skilled workers, this may become a significant obstacle to future economic growth.

Bureaucratic Burden and Administration

Bureaucratic burden was the most often cited problem in the survey, but most firms were not specific and just cited the overall burden. Many managers think that while policies are improving and the government is trying to be more business friendly, most civil servants have not yet adopted this new philosophy. They retain the attitude learned under the old central planning regime, that they are there to regulate and control business and not to be a helping hand. Thus, it is not surprising that many firms complained about the attitude of government workers.

Among the specific bureaucratic problems firms did cite, delays and difficulties caused by customs and the import regime were by far the biggest. While similar, the complaints about customs are different from complaints about the tariff regime found in the section on policy. The policy section discussed problems arising from the underlying laws covering imports. Here we are referring to inefficiencies in administering the law as it is written. Almost 63 percent of firms that import reported that they had difficulty bringing in raw materials or capital equipment. Almost 73 percent of these importers said that the difficulty was with delays caused by Crown Agents or INTERTEK. However, only 43 percent of the 81 firms who responded to the question said that corruption by customs officials is a

problem, which is lower than might be expected. Firms reported that on average it takes anywhere from two weeks to a month to get permission to import and it takes longer the farther away from Maputo a firm is located. While it may take only two weeks for a firm in Maputo to import a shipment from South Africa, it can easily take over a month to get the same shipment into Nampula.

The time it takes to process import requests and the delays caused by improperly filled out paper work or disputes over tariff rates all add enormous costs to doing business in Mozambique. Several firms reported that they have turned down opportunities to export because delays in the import regime made them uncertain about meeting export schedules. The problem of delays in the import regime are so severe that most firms were candid that they regularly smuggle in goods, especially spare parts. This was the case even when firms would willingly pay the duty, because they could not afford the time it takes to legally import. Firms that import on a regular basis and have established a reputation for adhering to the laws complained that they are treated no differently than first time or sporadic importers, and no effort is made to smooth the process for regular importers.

Another major problem under bureaucratic burden and administration is informal or illegal competition. Many small and mid-sized firms said that they face serious competition from informal sellers because the government does not administer the tax laws, labor regulations and other laws equitably. These firms complained that they must follow all government regulations and need a tax number in order to make a sale because they are subject to regular inspection. However, the government does not inspect the small and informal sellers, who therefore can undercut the formal distributors because they do not follow labor regulations or pay the circulation and other taxes. The importance of this is shown in Table 4.3 where bureaucracy and administration ranks just behind government policy for firms with less than 51 workers, while it is less important for the other size classes. These firms believe they are too big to hide from the tax collectors and inspectors but not big enough to obtain tax concessions or waivers from the government.

As shown in Table 4.7, bureaucratic burden is a much larger problem for foreign-owned firms, where it ranks second only to finance, than it is for domestic firms. This difference can also be seen by looking at Table 4.8. While only 35 percent of firms in the entire sample reported hiring expatriates to be a problem, almost 64 percent of foreign firms did. Likewise, a greater percentage of foreign firms claimed that reporting labor data and dealing with the labor inspectors was a problem than did the overall sample. Foreign firms suffer more from bureaucracy for two reasons. First, they do not know or understand all of the government regulations and do not have personal contacts in the government to help resolve problems. Second, because foreign firms are both wealthier and more vulnerable, they are more frequently targeted by officials seeking favors. Given that large foreign-owned firms are responsible for much of the recent growth in the manufacturing sector, it should be of great concern to the government that they are more likely to suffer from the bureaucratic burden.

Enforcement

Enforcement only contains complaints about the legal system and law enforcement. It appears to be the least serious government problem and ranks quite low for all groups, except

the smallest size category. Enforcement does not rank among the major problems for firms in the survey because most have developed alternative methods of dispute resolution and have found ways to provide their own security.

However, this is not to say law enforcement is not a problem. All firms have to provide their own security and 35 percent of firms in the sample stated that crime and theft is a significant cost of doing business. In addition, firms were quite emphatic that the reason they do not seek recourse in the courts to solve business disputes and very rarely call the police when they are the victims of crime is that the legal system does not function effectively. Many firms said that they do not take advantage of the national market because it is too expensive to provide security when they ship goods outside of their local area. Firms also claimed that they are hesitant to establish business relations with customers outside of their local area because it is difficult to use informal methods to enforce contracts and the legal system is ineffective. Finally, foreign firms reported that since they depend mostly upon the formal legal system, its effectiveness is one of the main factors they consider when deciding to invest or expand. Although enforcement currently does not rank high as a business problem, the poor legal system will certainly become more of an impediment as the economy grows.

Table 4.2a
Business Problems — All Firms In The Sample

	<i>1st Problem Frequency</i>	<i>2nd Problem Frequency</i>	<i>3rd Problem Frequency</i>	<i>Weighted Score</i>
Government	47	53	40	287
Finance	38	39	22	214
Demand	19	11	9	88
Infrastructure	12	17	16	86
Skilled Labor	9	9	11	56
Competition	9	7	11	52
Shortage of Local Inputs	8	5	4	38
Business Support	2	1	3	11

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 4.2b:
Business Problems —All Firms in the Sample
Gov. Enforcement, Policy and Bureaucracy/Administration Separate

	<i>1st Problem Frequency</i>	<i>2nd Problem Frequency</i>	<i>3rd Problem Frequency</i>	<i>Total Frequency</i>	<i>Weighted Score</i>
Finance	38	39	22	99	214
Gov. Policy	23	26	11	60	132
Bureaucratic Burden/Admin.	16	15	23	54	101
Demand	19	11	9	39	88
Infrastructure	12	17	16	45	86
Skilled Labor	9	9	11	29	56
Enforcement	8	12	6	26	54
Competition	9	7	11	27	52
Shortage of Local Inputs	8	5	4	17	38
Business Support	2	1	3	6	11

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 4.3:
Business Problems — Small Firms, 5-50 Workers
Gov. Enforcement, Policy and Bureaucracy/Administration Separate

	<i>1st Problem Frequency</i>	<i>2nd Problem Frequency</i>	<i>3rd Problem Frequency</i>	<i>Weighted Score</i>
Finance	22	17	12	112
Gov. Policy	8	14	5	57
Bureaucratic Burden/Admin.	9	6	13	52
Demand	8	7	3	41
Enforcement	4	8	4	32
Infrastructure	4	7	4	30
Competition	5	4	5	28
Shortage of Local Inputs	6	3	2	26
Skilled Labor	3	5	3	22
Business Support	1	0	0	3

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 4.4:
Business Problems — Medium Firms, 51-100 Workers
Gov. Enforcement, Policy and Bureaucracy/Administration Separate

	<i>1st Problem Frequency</i>	<i>2nd Problem Frequency</i>	<i>3rd Problem Frequency</i>	<i>Weighted Score</i>
Finance	7	9	6	45
Demand	8	3	3	33
Gov. Policy	5	4	1	24
Infrastructure	2	4	4	18
Bureaucratic Burden/Admin	0	5	5	15
Competition	3	1	2	13
Enforcement	3	1	0	11
Skilled Labor	0	2	4	8
Shortage of Local Inputs	2	1	0	8
Business Support	1	1	1	6

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 4.5:
Business Problems — Large Firms, > 100 Workers
Gov. Enforcement, Policy and Bureaucracy/Administration Separate

	<i>1st Problem Frequency</i>	<i>2nd Problem Frequency</i>	<i>3rd Problem Frequency</i>	<i>Weighted Score</i>
Finance	9	13	4	57
Gov. Policy	10	8	5	51
Infrastructure	6	6	8	38
Bureaucratic Burden/Admin.	7	4	5	34
Skilled Labor	6	2	4	26
Demand	3	1	3	14
Competition	1	2	4	11
Enforcement	1	3	2	11
Shortage of Local Inputs	0	1	2	4
Business Support	0	0	2	2

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 4.6:
Business Problems — Domestic Firms
Gov. Enforcement, Policy and Bureaucracy/Administration Separate

	<i>1st Problem Frequency</i>	<i>2nd Problem Frequency</i>	<i>3rd Problem Frequency</i>	<i>Weighted Score</i>
Finance	26	25	14	142
Gov. Policy	11	17	5	72
Demand	14	9	6	66
Infrastructure	7	10	10	51
Bureaucratic Burden/Admin.	6	4	13	39
Competition	6	3	5	29
Skilled Labor	2	7	6	26
Gov. Enforcement	4	4	2	22
Shortage of Local Inputs	3	3	0	15
Business Support	2	0	2	8

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 4.7:
Business Problems — Foreign Firms
Gov. Enforcement, Policy and Bureaucracy/Administration Separate

	<i>1st Problem Frequency</i>	<i>2nd Problem Frequency</i>	<i>3rd Problem Frequency</i>	<i>Weighted Score</i>
Finance	12	14	8	72
Bureaucratic Burden/Admin.	10	11	10	62
Gov. Policy	12	9	6	60
Infrastructure	5	7	6	35
Gov. Enforcement	4	8	4	32
Skilled Labor	7	2	3	28
Competition	3	4	6	23
Shortage of Local Inputs	5	2	4	23
Demand	5	2	3	22
Business Support	0	1	1	3

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Other Business Problems

Inadequate demand ranks behind finance, government policy, and bureaucracy and administration for the entire sample. It is important for the two smaller size categories as well as domestic firms (see Tables 4.2-4.7), but is much less of a problem for the larger firms and foreign-owned firms. In Mozambique, insufficient demand refers to more than low consumer purchasing power, which affects all firms. Smaller firms and Mozambican owned firms claimed they also face low demand because their products lacked the style and quality necessary to attract local consumers. Many of these firms started and prospered under the protection accorded by central planning and war, but are struggling now that liberalization has forced them to compete on the world market. They complained bitterly that demand for their products has fallen substantially since the liberalization policies began and the market was opened to imported goods and foreign firms. The large firms, mostly foreign-owned, are used to competing on the world market and would not have entered Mozambique if not confident that their products were competitive. So while foreign firms sometimes mentioned low consumer purchasing power as a problem, lack of demand was not nearly as important for them as for the domestic firms. Closely related to insufficient demand is competition.

This category refers to complaints about competition from imports or lack of protection. Here again, small and locally-owned firms complained far more than large firms or ones with foreign ownership.

The difference in importance attached to the lack of demand and competition between domestic and foreign-owned firms points to deeper issues. The opening of the market brought about both by the liberalization policies and by the end of the war has created many opportunities for Mozambican firms. However, not all firms are able to take advantage of them. Domestic firms, which until recently have been cut off from the world market, do not have the knowledge or skills to compete against imported goods or international firms. Most of these companies continue to use the same processes to make products of the same quality and design that they did when they faced little competition. Consequently, their products are no longer competitive and the firms complain bitterly of insufficient demand, foreign competition and the need for government help.

Mozambique's poor infrastructure was another important area of complaint. Although it is a severe problem for all firms, large firms, which must distribute their products over a wider geographic range, considered it more important. While poor infrastructure affects all firms, small firms have many more serious problems so they complain less about infrastructure than large firms. As discussed in a following section, firms in the North complained relatively less about infrastructure than did firms in the other regions. On the surface this is surprising, since roads, power supply and water facilities are far worse in the North. However, firms operating in the North face so many severe obstacles that they consider inadequate infrastructure one of their lesser problems.

The shortage of skilled workers was an often cited problem but it ranked low relative to other problems. The untrained work force appears to be more of an impediment for large and foreign-owned firms than for small or domestic firms. This reflects the fact that such firms not only need more workers, but that they are using more sophisticated production techniques. The unskilled work force in Mozambique is probably a much more serious problem than is reflected by this question in the survey. Throughout the survey, firms stated their need for training and better quality. Even when the smaller firms spoke of inadequate demand they linked it to their inability to produce quality goods because of low skilled workers. However, the immediacy of the other problems, particularly government bureaucracy and lack of finance, overshadows the lack of skilled labor.

The lack of local inputs and business support were not perceived as very serious problems. Business support services ranked at the bottom for all classes of firms. The lack of local inputs was more important for foreign-owned firms than domestic firms but also ranked low. Most firms import the bulk of their raw material inputs. This is true for all sectors, except for the wood and furniture sector, and it creates problems in two ways. First, shipping bulky items is expensive, particularly in the food processing industries. Second, the lack of local inputs leads to uncertain supplies. This problem should become less important as growth increases and the agricultural sector rebounds. The lack of business support services was not seen as a major problem. However, this may be because firms have never had access to them and don't understand how valuable they can be.

Business Confidence and Government Relations

Despite the many complaints about government policies and bureaucracy, the overall picture is not as gloomy as it may appear. The government has made tremendous progress in becoming more supportive of the business community and is continuing to move in that direction. While there are still many areas that could benefit from improved policies, there are others where firms seem satisfied with government actions. Referring again to Table 4.8, almost no firms complain about restrictions on activities in which they can engage, repatriation of profits, joint venture restrictions or hiring local workers. Even on labor regulations, well over half of firms state that they pose no problem at all. Customs was one of the most bitterly complained about problems, but it is striking to note that over 70 percent of the firms who responded stated that customs was improving.

Table 4.8:
Percentage of Firms Who Cite No Problems with Selected Regulations

	<i>Full Sample</i>	<i>Foreign Firms</i>
Restrictions on Activities	95.0	91.2
Joint Venture Restrictions	97.0	98.0
Restrictions on Repatriation of Profits	98.0	97.0
Hiring Procedures for Local Workers	91.3	90.1
Hiring Procedures for Foreign Workers	65.3	46.0
Reporting Labor Data	79.2	72.6
Dealing with Inspectorate of Labor	62.8	53.3

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Although many problems remain, relations between government and business have dramatically improved over the past ten years. This is clearly shown by two indices we constructed from questions in the survey. The first index is a government predictability index based on three questions: 1) “Do you fear changes in government regulations that do not take into account your views?” 2) “Do you expect the government to stick with its policy reforms?” 3) “Do you regularly have to cope with unexpected changes in rules, laws or policies?”. This index ranges from zero if the government is perfectly predictable, to one if it is perfectly unpredictable. As shown in Table 4.9, the predictability index is about .41 in Maputo and the Central region while it is almost .8 in the Nampula area. This shows that most firms believe that the government is predictable and will stay with its policy reforms. Because the government has few offices in the North and transportation costs are so high, firms in the North feel cut off and out of touch with the government. This communication problem is what leads firms in the North to believe that government is much less predictable than do firms in the south and central regions.

**Table 4.9:
Indices of Government Predictability and Government Relations**

	<i>Maputo</i>	<i>Central</i>	<i>Nampula</i>
Predictability Index	.42	.41	.79
Gov. Relations/Efficiency	.59	.61	.625
Gov. Relations/Efficiency — 10 years ago	.855	.855	.944

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

The second index is for government relations/efficiency and is based on two questions. The first asks the firm to rate the government as a helping hand or opponent. The second asks the firm to rate government services as efficient or inefficient. Here the index is 1 if the government is an opponent and perfectly inefficient, .5 if it is neutral and 0 if the government is a helping hand and perfectly efficient. These questions were asked about today and ten years ago. As shown, there has been a dramatic improvement. The scores 10 years ago ranged from .85 in Maputo and the Central region to .94 in Nampula. Today they range from .59 to .61. This clearly demonstrates that while the government is still viewed as a problem for business, it has gone from being a major impediment to being almost neutral; that is the situation is improving.

Along with the fact that the government is improving, it must also be noted that despite the many problems, entrepreneurs in Mozambique are extremely confident, especially about the medium term. Almost 72 percent of the firms interviewed expect sales to rise in the next year while only 13 percent expect them to fall (Table 4.10). A similar, though somewhat stronger, pattern holds for sales in the next three years with almost 77 percent expecting sales to increase in the next three years (Table 4.11). In order to support these higher sales about 60 percent of firms expect to make major investments in the next three years (Tables 4.12 and 4.13). A higher proportion of firms in the Nampula area plan to make major investments in the next three years than in the Maputo or Central regions. This probably reflects the fact that the North is starting from a lower base and must catch up with the rest of the country. The fact that firms are more confident about three years into the future than next year adds credence to the view that business believes government is committed to its reforms and will continue to improve the business environment.

**Table 4.10:
Expected Sales in the Next Year**

	<i>Maputo</i>	<i>Central</i>	<i>Nampula</i>
Lower than today	15%	17%	0%
The Same as Today	15%	3.5%	10%
Higher Than today	68%	79.5%	85%
Don't Know/N.A.	2%	0	5%

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

**Table 4.11:
Expected Sales in the Next Three Years**

	<i>Maputo</i>	<i>Central</i>	<i>Nampula</i>
Lower than today	11%	11%	0%
The Same as Today	6.5%	3%	15%
Higher Than today	75%	86%	75%
Don't Know/N.A.	7.5%	0%	10%

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

**Table 4.12:
Firms Expecting to Invest in the Next Year**

	<i>Maputo</i>	<i>Central</i>	<i>Nampula</i>
Yes	60%	58.5%	0%
No	37%	41.5%	15%
Don't Know/N.A.	3%	0%	75%

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

**Table 4.13:
Firms Expecting to Invest in the Next Three Years**

	<i>Maputo</i>	<i>Central</i>	<i>Nampula</i>
Yes	56.5%	71.4%	70%
No	36%	28.6%	15%
Don't Know/N.A.	7.5%	0%	15%

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Conclusion

The Government of Mozambique has made enormous progress in improving the business environment and inspiring confidence in private business. This is clearly demonstrated by the fact that almost all firms in the survey believe the government will continue with its reforms, and consequently plan to make substantial investments in the next three years. Due to the improvement in government policies, firms now believe that their biggest single obstacle is obtaining funds to finance the desired investment. However, there is still much work to be done and the government must continue to reform policies that add to the costs and difficulties of doing business in Mozambique. Primary among these are the import regime and labor regulations. The government should also make efforts to improve the bureaucracy by encouraging civil servants to view themselves as partners in development with private business and not as adversaries. Currently, the poor legal system is not viewed as one of the most pressing problems. However, as the economy grows it will become more important and improvements will not be easy. Consequently, the government must begin to devote substantial resources to improving the courts and police.

As the economy continues to grow and the business environment improves we expect to see other problems move to the fore. Among them, the lack of skilled labor, poor infrastructure and inadequate business support services. In the following sections we will look more in depth at finance, the labor market, the effects of poor infrastructure and the need for business support.

5. Finance

Manufacturing firms in Mozambique consistently report that lack of access to finance has a significant impact on their ability to invest and their operational efficiency. Almost 70 percent of firms interviewed reported access to credit among their top three business problems, ranking it second among all problems, just behind government regulation and corruption. When firms do not have access to external credit, they are forced to rely on their own often inadequate internal funds for investment and operations. This can reduce their ability to respond to policy reforms and reduce their competitiveness both at home and abroad.

Lack of External Credit

Formal Credit

Bank loans are one of the few sources of formal credit in Mozambique, but due to high real interest rates and high collateral requirements, few firms can afford them. Some credit is available from development agencies and from a newly established leasing company, however, corporate bonds, bills discounting, equity markets and other forms of external finance do not currently exist in Mozambique.

Only 35 percent of interviewed firms reported having any bank loans as shown in Table 5.1. The proportion of firms with bank loans increases in the larger enterprise size cohorts. Most firms that did not have loans had never applied for one. Only about 8 percent of firms in the sample reported ever being rejected for a loan. Some 14 percent of the firms that had never applied said that they did not need one. Most of these stated that their parent company funded them, but a small number said that they were operating at such low capacity that they did not need a loan. The vast majority of firms that had never applied for a bank loan reported either that they did not want to take on debt or that interest rates were too high. Eight firms reported that they did not apply because they expected rejection, primarily due to inadequate collateral. Only three firms said that the application process was too difficult. So it appears that it is high interest rates and collateral requirements that keep firms from borrowing and not bureaucratic restrictions or regulation.

Table 5.1:
Firms with Bank Loans, by Size

	<i>Full Sample</i>	<i>5-50 Workers</i>	<i>51-100 Workers</i>	<i>> 100 Workers</i>
Percentage with Bank Loans	35	21	38	50

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

There is very little term finance currently available in Mozambique and what does exist, goes to the largest firms. Most new bank credit is provided as short term lines of credit that must be fully backed with collateral and renewed every year. Only a few firms, mostly foreign-owned, have true overdraft facilities (i.e., a line of credit based upon the firm's

performance and not secured by collateral). The lack of term finance makes it more difficult for firms to undertake large scale capital investment because they must wait until they have built up enough internal funds to finance a project. The fact that all credit, even short term credit, must be fully secured with collateral increases the cost of funds and further reduces firms' ability to borrow.

Informal Credit

The manufacturing sector in Mozambique also has little access to “informal” finance. Few enterprises receive or extend significant amounts of trade (or supplier) credit. About 50 percent of firms claim to extend trade credit and almost 69 percent report receiving some trade credit. But firms extend only small volumes of trade credit to a very select group of customers with whom they have close social ties or have had long term business relations. The median of the ratio of accounts receivable to sales in the survey is .064 and the median of the ratio of accounts payable to cost of inputs is only .117. It is clear from these small magnitudes that firms receive and extend relatively little trade credit.

Why Don't Credit Markets Work Better in Mozambique?

Information, communication, and imperfect enforcement are at the heart of credit market problems in Mozambique. These problems appear in every country, but in Mozambique they are particularly severe for three reasons. First, many firms in Mozambique are “new.” There are many new entrants who have just started in business or have bought newly privatized firms. These firms have not had time to establish a track-record or a strong reputation in business. Also, many older firms that do have a track-record are heavily indebted because of a combination of currency devaluation, which raised the value of their foreign debt, and increased borrowings for restructuring and other purposes. In summary, the real side of the economy is not in very good shape to receive credit — it is populated by many untested firms and/or highly indebted firms. Second, the institutions designed to reduce information costs and opportunistic behavior are not well developed in Mozambique. Accounting standards and the accounting profession are weak, credit information bureaus are non-existent, and banks and other lenders do not generally share information. In addition, contract enforcement via the legal system is costly, lengthy, and uncertain as to the outcome. Third, government ownership of most of the land, and uncertain titles to land for the rest, reduces the collateralizable assets available to firms. In a financial system where collateral is acting as an important substitute for the lack of good information and enforcement, this lack of collateralizable assets seriously reduces the ability of financial intermediaries to lend.

Banks generally have an advantage over individual lenders in gathering information because they have long term relationships with their borrowers and gather information on them when they provide other services such as checking accounts, letters of credit, savings accounts or financial advice. All firms in the survey reported that they or their owners have checking accounts, but very little other good information is available to banks because firm accounts are notoriously inadequate and banks are not providing many other services. Very few firms have full time accountants and most book keepers are not formally trained. Company books are often purposely made inaccurate to mislead the tax collector and there

are few outside accounting firms that will certify company accounts. The few accounting firms that do operate in Mozambique charge high fees, which only the largest corporations can afford. In addition, many Mozambican managers are not financially sophisticated and do not have experience in how to approach banks with business plans. Also, many firm managers consider book keeping as only necessary for tax purposes and do not understand the benefits of financial management. This is clearly demonstrated when firms are asked about the business support services they need. Only eleven firms cited a need for help in accounting and financial management. Moreover, few managers of locally owned firms understood, or at least could articulate, their cost structure. It is unlikely that a firm with limited understanding of its costs and inadequate accounts can convince a bank to make a term loan. Without the information to properly assess firms' opportunities and risks, banks will ration credit or, if they do make loans, charge high interest rates, demand high levels of collateral, and/or restrict loans to short durations.

In order to mitigate the information problems and opportunistic behavior, lenders require detailed contracts restricting firm behavior. However, given the lack of information in Mozambique, anticipating potential problems and writing complete contracts is impossible. More importantly, detailed contracts are only useful if they can be adequately enforced, which is problematic under the weak Mozambican legal system. Almost none of the surveyed firms reported having ever successfully resolving a debt dispute using the legal system. Firms claimed that the legal process was generally slow and very expensive and, if they were to win a judgement, they were unlikely to be able to collect.

Given that lenders are unable to accurately assess risk and unable to control firms' behavior with detailed contracts, banks are forced to depend upon collateral to secure loans. All firms in the sample, even well established ones, reported needing collateral of between 125 and 300 percent of the loan value to secure a loan. This collateral requirement is one of the primary reasons firms reported for not wanting to borrow. For collateral, banks prefer trading goods such as cashews, imported consumer goods, automobiles and other items that they can quickly sell in the case of default. Land tenure laws are unclear, making it difficult to take and dispose of real estate; so most lenders are reluctant to accept land and buildings as collateral. When lenders do accept land as collateral, they demand very high levels. For example, banks will not usually accept a single building or part of a firm's property but instead demand the entire premises. Given the risk of losing everything, few businesses are willing to put up their premises, which is usually their largest and possibly only asset. Consequently, the lack of suitable collateral is a severe impediment to obtaining finance.

Trade (or Supplier) Credit

About one-third of firms in the sample cited lack of working capital as a major impediment to capacity utilization. These firms were often unable to buy raw materials at critical times because of a working capital shortage and therefore had to produce at lower rates of output. If trade credit were widely available much of this problem could be alleviated. Though trade credit lending involves some of the same information and enforcement problems that afflict formal credit intermediation, trade credit lenders can mitigate some of the difficulties. Firms have frequent contacts with their clients and therefore are better able to evaluate a buyer's creditworthiness. Trade credit lenders can also

use the threat of not doing business with a borrower as a way to enforce loan repayment. If the lender has some market power as a supplier this can be a very effective enforcement device.

Notwithstanding the fact that firms have some advantages over banks in lending to businesses in their industries, trade credit is not common in Mozambique and firms only give credit to businesses with which they have very long established contacts or close social relationships. This lack of trade credit reflects the difficulty in gathering information and enforcing contracts even by firms that have regular dealings with their clients. The survey did find some firms willing to extend credit when they are the sole suppliers and can effectively use the threat of cutting off their client. For example, one large mill in the survey is the only supplier in its city. It readily extends credit to most of its customers. It knows that it can quickly put out of business any baker who does not pay by cutting off flour deliveries. Most firms, however, do not have such market power. Since they cannot seek legal remedies to enforce contracts, they are not willing to take the risk of extending credit. Unfortunately, the fact that suppliers refuse credit to most clients, and particularly to new clients, makes it very difficult to establish or expand businesses in Mozambique.

As noted previously, firms are more willing to extend trade credit to customers with whom they have close social ties. Social connections not only allow them to gather information through informal mechanisms but more importantly allows them to use social sanctions to enforce contracts. Anyone who defaults might lose his position in the social structure of his community. Managers of all ethnic backgrounds, frequently cited the Muslim traders in Mozambique as much more willing to extend credit among themselves than members of other ethnic groups to each other. They attributed this to the role that clerics play in resolving business disputes among members of the Muslim community.

Table 5.2 shows that more than twice as many European owned firms in the sample receive bank loans than do African owned firms.⁵ More European and Asian owned firms also receive trade credit than African owned firms, though the difference is not as great as it is for bank loans. But, when we control for firm size and other attributes, ethnicity is not significant in determining the ability to obtain bank loans.⁶ That is, the reason why Africans receive fewer bank loans than Europeans is not because they are Africans, but because they manage smaller firms, which, in general, do not get loans from banks. However, when the same investigation is conducted for trade credit, ethnicity and location are significant along with size. All else being equal, African owned firms are less likely to receive trade credit than either European or Asian owned firms. The central reason for this result is that African businessmen and women do not have an effective “reputation mechanism” or “social enforcement mechanism” which can be used by trade credit lenders to gain information about borrowers and enforce loan contracts, while Asians and Europeans do. The fact that the survey shows that firms in Maputo are more likely to receive and extend trade credit is probably due to the increased density of private businesses in the capital, which makes it easier to gather information about customers than in other parts of the country.

⁵A firm is considered European owned if it has any significant owners of European descent. This category includes the multi-nationals. Firms with significant Asian ownership and no European ownership are considered Asian owned. The rest are African owned.

⁶This was done using a probit model for whether a firm had that type of credit.

Table 5.2:
Firms with Bank Loans and Firms Receiving Trade Credit: By Ethnicity

	<i>African</i>	<i>Asian</i>	<i>European</i>
Percentage with Bank Loans	21	34	44
Percentage Receiving Trade Credit	42	50	59

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Effects of Lack of Finance

Because Mozambican firms have limited access to external sources of finance they must rely primarily on internal funds for investment. This is clearly shown by the way firms funded their last major equipment investment (Table 5.3). Personal savings or retained earnings funded 64 percent of the purchase, while bank loans or new equity accounted for only 23 percent with the remainder coming from parent companies. This does not mean that firms financed investment solely with funds generated by sales. In fact, very few firms reported that they could finance investment and operations using only operating income. Most enterprises are associated with trading businesses owned by the same person or a member of his family and when questioned closely, many managers claimed that much of their funding comes from these sources. A few firms even said they were only being kept alive by transfers from related commercial enterprises. It appears that most small business owners do not distinguish between business and personal funds and when answering the survey, usually reported any funds from retained earnings, personal savings, family loans or loans from related businesses as either retained earnings or personal savings. Though it is difficult to distinguish among these different sources of funds, firms clearly receive little external finance from banks, leasing companies or equity sales to fund equipment investment. As shown in Table 5.4, firms receive even less external funding for investment in land and buildings than they do for equipment purchases. This is probably because unclear land tenure laws make it difficult to use land and buildings as collateral.

Larger firms are less dependent upon internal finance for investment than are smaller firms. They not only receive more bank loans but many are also multinationals which receive funds from their parent company. As shown in Table 5.3 the largest firms relied on internal funds, defined as retained earnings and personal savings, for about 45% of their most recent equipment purchases. In contrast, firms with between 11 and 49 workers had to rely on internal funds for almost 84 percent of such purchases.

Firms are even more dependent upon internal funds for start up financing than they are for expansion investment. Only two enterprises reported receiving loans from private Mozambican banks to help fund their acquisition or start up. A few firms indicated that they had received bank loans to fund their start up before the banks were privatized. About five percent of firms, all of whom had some foreign ownership, reported receiving some start up finance from private foreign banks. The rest of the interviewed firms relied completely on personal or family funds to purchase or establish the enterprise. Most owners said that they obtained their start up capital from other businesses, particularly trading companies, that they

or close members of their family owned.⁷ It appears that entrepreneurs spread risk by using profits from trading enterprises to diversify into manufacturing.

Reliance on internal funds for investment restricts growth in the Mozambican manufacturing sector. Since firms receive few bank loans and little trade credit, they must often forgo investment and use their limited internal funds as working capital. Poor infrastructure and inefficiencies in the import regime also exacerbates the pressure on internal funds. For example, the poor roads restrict the transportation of raw timber to only a few months a year, consequently wood firms are forced to tie up large amounts of working capital in timber stocks. Similarly, at the time of the survey in August 1998, it took from two to four weeks to obtain the necessary documents to import. As a consequence, firms had to hold much larger stocks of raw materials and spare parts than they would normally have done if they were operating with a more efficient import regime. Excess inventories tied up large amounts of working capital, which could otherwise have been used for capital investment, worker training, or other activities to increase productivity and spur growth.⁸

Table 5.3:
How Last Major Equipment Purchase was Financed

	<i>All Firms</i>	<i>≤ 10 Workers</i>	<i>11-49 Workers</i>	<i>50-100 Workers</i>	<i>> 100 Workers</i>
Retained Earnings	39.2%	30%	41.8%	48.5%	37.7%
Personal Savings	29.3%	40.0%	42.9%	0%	7.7%
Bank Loan	20.7%	30.0%	8.2%	41.5%	25.9%
Parent Company	13.3%	0%	7.1%	10.0%	21.0%
Equity	2.8%	0%	0%	0%	7.7%

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 5.4:
How Last Major Building Purchase Was Financed

	<i>All Firms</i>	<i>≤ 10 Workers</i>	<i>10-49 Workers</i>	<i>50-99 Workers</i>	<i>> 100 Workers</i>
Retained Earnings	49.5%	33.3%	63.6%	48.2%	46.7%
Personal Savings	29.3%	66.6%	36.4%	36.4%	13.3%
Bank Loan	5.4%	0%	0%	6.4%	10.0%
Parent Company	13.4%	0%	0%	9.0%	23.3%
Equity	2.4%	0%	0%	0%	6.7%

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

⁷A few enterprises indicated that the entrepreneur had used collateral outside of the country to obtain foreign bank loans and then brought the money to Mozambique. Others said that they used their stores or trading companies to obtain bank loans, which they then transferred to the manufacturing firm. But these loans are not on the books of the manufacturing firm and what is important is that entrepreneurs are not able to obtain start up capital based upon the potential of manufacturing enterprises.

⁸ One textile firm whose owner has an identical operation in Zimbabwe claimed that it held three months stock of cloth on hand in Mozambique while in Zimbabwe it kept only one month's stock. The owner estimated that at any one time he had almost \$50,000 more tied up in working capital in Mozambique because of the low import regime than he would need in Zimbabwe. This same owner had a Metical loan with a 27 percent interest rate to help finance his Mozambique operation .

The reliance on internal funds by Mozambican firms is similar to the historical pattern observed around the world. Historical studies indicate that, particularly in early stages of development, firms rely primarily on internally generated funds to finance major investments. But this is also true in the developed world where financial markets are both broad and deep. Yet, much has been made of the importance of long-term finance and the role that banks play in providing capital for large scale fixed investment. A scheme to provide long-term finance is a major part of most development programs.

To support this view, many historical examples are cited, from the role of universal banks in industrializing Germany to the experience of the famed *Crédit Mobilier* in France. It is often suggested that the close relations between banks and industrial firms, in countries such as Germany and Japan, were instrumental in their rapid industrialization. It is argued that these close relationships allowed the banks to provide long-term capital and be involved in entrepreneurship. This enabled German firms in the 19th century to make large scale, long-term fixed investments and to rapidly catch up with England and other early leaders. However, in fact, banks in these countries historically focused on short-term, self-liquidating loans, just as banks did in countries that followed the English pattern and maintained arm's length relationships with borrowers. Historically, firms in all these countries grew mostly through the re-investment of profits, but banks still played an essential role. By providing short-term loans, they enabled firms to manage liquidity, economize on working capital, and free up more earnings for investment in fixed capital. Thus, given the difficulty of resolving problems of providing long-term finance, it may be more effective to concentrate on developing sources of short-term finance, such as trade credit and bank overdrafts, as an intermediate step, before attempting to develop sources of long-term finance.

Conclusion

Lack of access to credit is one of the most severe constraints faced by the manufacturing industry in Mozambique. It forces firms to forgo profitable investment opportunities until they can raise the necessary funds from their own resources. It also makes it difficult for them to manage liquidity and react to shocks. This lack of access results from high interest rates, high levels of required collateral, and other forms of rationing. Making more long term credit available will not completely solve the problem. The institutions required to provide accounting and creditworthiness information problems and enforce contracts do not exist or do not adequately function. Until these institutions are strengthened, manufacturing firms in Mozambique will continue to face a shortage of external funds.

6. Labor in Mozambican Manufacturing Industries

The purpose of this section is to analyze the structure of the labor market. We will begin by giving a general description of the labor force in Mozambique, and follow with an analysis of the country's wage structure, that will address issues of labor market efficiency and segmentation. Finally, we will consider some of the non-pecuniary forms of compensation that firms provide their workers. The basic finding of this section is that the Mozambican labor market appears to be functioning remarkably well, though there may be some evidence of labor market segmentation across regions.

The Mozambican Workforce

The distribution of Mozambican employment by industry and location was given in the introductory section of this paper. Beyond these basic statistics, we are also interested in the distribution of worker *types* across different firm characteristics. One worker characteristic that is of particular interest is the percentage of blue collar workers in the labor force.

It has sometimes been suggested that African manufacturing enterprises have an excessively high ratio of non-production ('white collar') workers in their labor force, and that this is one of the reasons for the relatively high cost of labor on the continent (Mazaheri & Mazumdar, 1998). Previous RPED surveys have found that in other African countries (Cameroon, Côte d'Ivoire, Kenya, Ghana, Tanzania, Zambia, Zimbabwe), blue collar workers comprise 70-80 percent of the workforce. The distribution of blue collar workers in Mozambique is similar, though at the high end of this range, with blue collar workers making up slightly more than 80 percent of the workforce of an average firm.

Also consistent with previous findings on the labor force in Africa, we find that the share of blue collar workers is increasing in firm size (see Table 6.1). This is probably a function of the fact that white collar labor is, to some degree, a fixed 'overhead' cost, which may be spread over a larger total workforce in a large firm. In terms of the distribution across industries, we find that the rate of blue collar labor is highest in textiles, and lowest in metals.

Table 6.1: Percentage of Blue Collar Workers by Firm Size and Industry

Sector	Size			Total
	1-50	50-100	100+	
Food	76	74	86	79
N	(30)	(6)	(18)	(54)
Metal	74	75	75	75
N	(16)	(9)	(5)	(30)
Textiles	78	81	95	86
N	(10)	(6)	(11)	(27)
Wood	77	85	91	83
N	(17)	(8)	(9)	(34)
Total	76	79	88	80
N	(73)	(29)	(43)	(145)

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

The Structure of Wages

The wage data come from a subsection of the RPED survey, in which a sample of up to 10 workers was interviewed at each firm. Workers were classified according to job function, using the following categories: foreman; maintenance; office; production; service; and technician. At a given firm, at least one worker of each type was interviewed where possible. A total of 1222 workers were interviewed at the 148 firms where we were permitted to speak with the workers.

Table 6.2 shows the breakdown of average monthly wages by worker type, expressed in dollars using the 1996 exchange rate. Monthly salary averaged 72 dollars, though ‘unskilled’ (production & service) workers averaged 43 dollars. This is substantially above the country’s minimum wage of approximately 25 dollars per month. In fact, the distribution of wages is such that *very* few workers earn at or below this value, suggesting that minimum wage legislation does not provide a binding constraint for Mozambican businesses. This perspective finds further support from the results of the survey’s section on labor regulations, where a the vast majority (over 85 percent) of firms reported that the minimum wage posed ‘no problem’ to the functioning of their businesses.

Direct government intervention aside, there may be other factors that affect the functioning of Mozambique’s labor market. In particular, constraints on geographic and/or sectoral mobility, as well as informational shortages, may result in a segmented labor market. If this were the case, then for otherwise identical workers, wage differentials might be expected to persist across industries and locations. To examine this possibility, it is desirable to look at a single worker ‘type’, to minimize the biases created by unobserved worker characteristics. We focus here on unskilled production workers, since these workers are most likely to be comparable across firms. To further lessen the problems of unobserved differences across firms, we will compare only workers within the same industries.

Table 6.2: Monthly Wages in US\$ (1996 Exchange Rate)

<i>Job</i>	<i>Mean</i>	<i>Freq.</i>
Foreman	121.96	184
Maintenance	65.19	90
Office	94.00	241
Production	42.56	532
Service	42.44	106
Technician	139.32	69
All Workers (Average)	71.78	1222

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 6.3 shows the distribution of production wages by industry. As expected, wages are considerably higher in the metal industry, which generally requires some skills and training of its workers. At the other extreme are textile firms, which utilize low-skill, low-wage workers.

Table 6.3:
Monthly Wages of Non-skilled Production Workers, by Industry (US\$)

<i>Sector</i>	<i>Mean</i>	<i>Freq.</i>
Food	42.32	186
Metal	55.47	80
Textiles	39.64	119
Wood	44.95	144
Total	44.42	529

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Previous studies of wages in Africa have found differentials, sometimes vast, among different classes of firms. In particular, foreign firms often pay higher wages than their domestic counterparts; large firms pay higher wages than small firms; and exporters pay higher wages than non-exporters (see Teal, 1996; Velenchik, 1997; Mazaheri & Mazumdar, 1998). In general, these differentials in Africa have been found to be more extreme than those found in other developing economies (Mazaheri & Mazumdar, 1998). There are several possible interpretations of these findings, including unobserved heterogeneity of labor pools across firm types and profit sharing. These explanations have arisen essentially in an attempt to explain wage differentials that might imply a failure in the functioning of the market.

To examine the extent to which these differentials exist in Mozambique, we look at the distribution of wages by ownership, size, and export status. Tables 6.4–6.6 show these relationships, stratified by industry. Surprisingly, in contrast to the patterns that exist in other African countries (and the developing world more generally), there is apparently no systematic relationship between wages and any other firm characteristics. Wage differentials by firm size are not statistically significant at conventional levels; there is similarly no statistical difference in wages when firms are compared by size or export status. One exception worth noting is that wages are positively correlated with size in the food processing industry. This is due to the fact that the smaller firms in food processing are almost exclusively bakeries, where very little skilled labor is required. Larger food processors are more likely to require skilled labor in production, due to greater mechanization and product complexity.

Table 6.4: Monthly Production Wages by Ownership and Industry(US\$)

	<i>Food</i>	<i>Metal</i>	<i>Textiles</i>	<i>Wood</i>	<i>Total</i>
Domestic	39.47	53.30	41.05	44.90	43.39
N	(100)	(39)	(69)	(111)	(319)
Foreign	45.63	57.53	37.70	45.14	45.99
N	(86)	(41)	(50)	(33)	(210)
Total	42.32	55.47	39.64	44.95	44.42
N	(186)	(80)	(119)	(144)	(529)

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 6.5:
Monthly Wages of Production Workers, by Industry and Firm Size (US\$)

<i>Size</i>	<i>Food</i>	<i>Metal</i>	<i>Textiles</i>	<i>Wood</i>	<i>Total</i>
1-50	38.56	55.74	40.93	41.32	42.38
N	(114)	(45)	(54)	(82)	(295)
50-100	42.78	55.80	45.22	54.42	50.45
N	(18)	(27)	(24)	(30)	(99)
100+	50.26	52.83	35.76	45.39	44.99
N	(47)	(8)	(35)	(32)	(122)
Total	42.06	55.47	40.24	44.95	44.57
N	(179)	(80)	(113)	(144)	(516)

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 6.6:
Monthly Wages of Production Workers, by Industry and Export Status (US\$)

	<i>Food</i>	<i>Metal</i>	<i>Textiles</i>	<i>Wood</i>	<i>Total</i>
Non-Exporter	40.99	52.23	42.36	43.83	43.88
N	(120)	(54)	(66)	(104)	(344)
Exporter	44.73	62.18	36.25	47.88	45.43
N	(66)	(26)	(53)	(40)	(185)
Total	42.32	55.47	39.64	44.95	44.42
N	(186)	(80)	(119)	(144)	(529)

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

One further dimension along which wages might be expected to differ systematically is by region. That is, due to poor informational flows and labor immobility, wage differentials might persist across regions, implying some geographic segmentation of labor markets. Table 6.7 shows the distribution of wages by region. As expected, wages are relatively low in the northern region of the country, and this difference is ‘statistically significant’ at 5 percent. While wages are higher in Maputo than in the central region, this difference is not significant in a statistical sense. One possibility is that these differentials are due to differences in human capital across regions in worker education or experience. Table 6.8 and 6.9 show, however, that there are virtually no differences across regions along either of these dimensions.

Table 6.7:
Monthly Wages of Production Workers,
by Industry and Location (US\$)

	<i>Food</i>	<i>Metal</i>	<i>Textiles</i>	<i>Wood</i>	<i>Total</i>
Central	44.42	50.93	34.32	38.63	40.92
N	(31)	(18)	(34)	(28)	(111)
Maputo	44.95	60.19	41.97	49.06	47.68
N	(112)	(53)	(83)	(84)	(332)
Northern	33.95	36.73	33.22	39.69	36.36
N	(43)	(9)	(2)	(32)	(86)
Total	42.32	55.47	39.64	44.95	44.42
N	(186)	(80)	(119)	(144)	(529)

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 6.8: Worker Education by Region (Percent)

	<i>Primary or less</i>	<i>Middle or Secondary</i>	<i>Higher than Secondary</i>
Central	57	41	2
Maputo	65	33	2
Northern	66	33	1
All Regions	64	34	2

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 6.9:
Mean Years of Experience by Region

<i>Sector</i>	<i>Years</i>	<i>Freq.</i>
Central	4.9	104
Maputo	4.8	328
Northern	5.3	89
All Regions	4.9	521

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Note that these wage differentials do not necessarily imply a segmentation in the labor market. We do not have price indices for the various regions, but the cost of living could very well be lower in the (relatively rural) north. While retail store prices are quite high in Nampula, workers in this region probably make most of their purchases in informal markets.

Moreover, in contrast to their counterparts in the southern cities, residents of Nampula province are often able to supply their dietary needs with home-grown foods. Hence, the wage differentials across regions may be indicative of differences in living costs, and do not *necessarily* imply geographic segmentation of labor markets.

In summary, there is surprisingly little variation in wages across different firm types in Mozambique, suggesting that labor markets are indeed well-integrated, and functioning quite efficiently.

Estimating an Earnings Function

Obviously, the above tables provide *unconditional* relationships between wages and various firm characteristics. To look more carefully at the determinants of wages, it is necessary to run a regression, which allows for numerous firm and individual characteristics to be controlled for simultaneously. In addition to the firm-level characteristics described above, variables describing an individual's level of education (Primary, Middle School, and Secondary), as well as experience (as proxied by $\log(\text{AGE})$ and $\log(\text{YRS})$, where AGE is the individual's age, and YRS is the number of years that the individual has worked at the firm) are included in the regression.

The results, listed in Table 6.10, confirm the firm-specific patterns described in the previous section. In terms of worker-specific characteristics, we find positive returns for both experience and education. The education coefficients imply that the returns to education are about 7 percent in moving from no education to primary education, and 10 percent in moving from middle school to secondary education. However, there are apparently no wage increases associated with obtaining a middle school education (relative to only a primary school education). Note, however, that these coefficients are not statistically significant. The coefficients on the proxies for 'experience' – age, and years worked at the firm (YRS) – are positive, though only age is statistically significant.

Table 6.10:
Determinants of Wages of Production Workers

Dependent Variable — log(WAGES)	
FOOD	-0.43 (0.09)
WOOD	-0.23 (0.10)
TEXTILES	-0.44 (0.10)
PRIMARY	0.07 (0.08)
MIDDLE	0.00 (0.10)
SECOND	0.10 (0.10)
log(YRS)	0.02 (0.03)
log(SIZE)	-0.01 (0.03)
FOREIGN	0.01 (0.06)
EXPORT	-0.02 (0.07)
log(AGE)	0.20 (0.11)
Beira	-0.13 (0.09)
Nampula	-0.39 (0.08)
CONSTANT	12.66 (0.36)
Obs.	379
R-Squared	0.18

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Non-Pecuniary Compensation – Healthcare and Training

While firm-level characteristics do a poor job of explaining wages differentials, it may be that other, non-financial forms of compensation may differ systematically across firm types. We consider the determinants of the provision of a number of forms of non-pecuniary compensation, including healthcare (HEALTH), transportation (TRANSPORT), food allowances (FOOD), clothing (CLOTHING), and training (TRAIN). Here, HEALTH is a dummy variable defined at the firm level, which is equal to one if the firm provided healthcare support to at least 50 percent of its workers; TRANSPORT, FOOD, and CLOTHING are similarly defined. TRAIN is defined to be equal to one if the firm provided any of its workers with internal or external training. Table 6.11 lists regressions showing the

determinants of training and healthcare provision. While there are not any good predictors of training, several firm-level characteristics are highly correlated with healthcare provision. In particular, large firms and foreign firms are considerably more likely to provide their workers with healthcare. Similar (though weaker) patterns exist for the other 3 variables.

Table 6.11: Determinants of Non-Pecuniary Compensation

	TRAIN	HEALTH	TRANSPORT	FOOD	CLOTHING
log(SIZE)	0.008 (0.014)	0.099 (0.028)	0.032 (0.03)	0.034 (0.04)	0.045 (0.04)
EXPORT	0.004 (0.028)	-0.013 (0.086)	0.096 (0.081)	0.109 (0.100)	-0.154 (0.093)
FOREIGN	0.026 (0.022)	0.123 (0.080)	0.149 (0.072)	-0.017 (0.088)	0.158 (0.090)
FOOD	0.040 (0.030)	-0.014 (0.101)	-0.066 (0.087)	0.162 (0.110)	0.144 (0.105)
WOOD	0.002 (0.022)	-0.125 (0.120)	-0.034 (0.094)	0.022 (0.116)	0.039 (0.117)
TEXTILES	0.025 (0.032)	-0.208 (0.120)	-0.131 (0.101)	-0.075 (0.116)	0.124 (0.129)
Beira	0.028 (0.043)	0.040 (0.105)	0.214 (0.101)	0.088 (0.119)	0.038 (0.115)
Nampula	-0.016 (0.047)	-0.022 (0.121)	-0.165 (0.103)	-0.033 (0.138)	0.042 (0.141)
CONSTANT	-0.022 (0.058)	0.299 (0.157)	0.092 (0.154)	0.082 (0.193)	0.060 (0.188)
Obs	145	146	145	146	145
R-Squared	0.05	0.13	0.2	0.06	0.07

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

7. Infrastructure

Mozambique has been the beneficiary of massive expenditures on infrastructure over the past couple of decades. Nonetheless, years of civil war, poor maintenance and, more recently, recurrent neglect, have left the country's physical infrastructure in ruins. In this section, we use the RPED data to try to assess the effects that inadequate roads, power supply, and water supply have had on firms in different parts of the country. Finally, we examine the implications of these findings for firms' cost structures. Not surprisingly, we find that poor infrastructure is a serious impediment to growth, particularly in the North.

Is Infrastructure a Big Problem: What Do Managers Say?

As part of the RPED survey, managers were asked to list their three most serious business problems. In response, 70 percent of firms in the Central Region and 54 percent of firms in the North list infrastructure as one of their most pressing problems; by comparison, it was listed by only 35 percent of firms in Maputo. However, it is difficult to make an overall assessment of the regional quality of infrastructure based on these data, since it only gives us information on the importance of infrastructure *relative* to other problems. To try to get an absolute measure of the difficulties posed by poor infrastructure, we look to the infrastructure section of the survey.

Managers were asked directly to rank from one (no problem) to five (severe problem) the quality of infrastructure service provision for various forms of infrastructure. For simplicity, we rescaled the responses to take on three values: zero (if response was one or two); 0.5 (if response was three); and one (if response was four or five). These rescaled data are reported in Table 7.1 for the case of electricity disaggregated by region. Not surprisingly, electricity was rated as being more a serious problems by managers in the underdeveloped north than in the (relatively) well-developed south.

Table 7.1: Is Electricity a Big Problem? (0 = not a big problem)

<i>Location</i>	<i>0</i>	<i>0.5</i>	<i>1</i>	<i>Total</i>
Central	10	8	11	29
	34.48	27.59	37.93	100
Maputo	38	16	38	92
	41.3	17.39	41.3	100
Northern	3	6	14	23
	13.04	26.09	60.87	100
Total	51	30	63	144
	35.42	20.83	43.75	100

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Note, however, that this type of 'subjective' questioning might not yield meaningful responses, since the perception of what constitutes an infrastructure 'problem' probably differs across regions. Hence, we look at some more concrete measures of infrastructure

performance. In particular, the RPED data contain information on whether firms own their own generators, and the number of power outages that they experience per month. These data are summarized, by region, in Tables 7.2 and 7.3. As we see in Table 7.2, a far higher percentage of firms in the north rely on their own power generators. Table 7.3 suggests an explanation as to why this pattern might exist: firms in the Maputo region report only about 4 power outages per month, whereas firms in the Central and Northern regions report more than three times that number! So, firms in those regions are required to purchase generators to provide power when the public supply fails.

Table 7.2: Power Outages per Month

<i>Location</i>	<i>Mean</i>	<i>Freq.</i>
Central	14.5	30
Maputo	4.4	73
Northern	24	24
Total	10	127

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Table 7.3: Firms Owning Own Generator

<i>Location</i>	<i>Frequency</i>	<i>Percent</i>
Central	15	52
Maputo	23	23.96
Northern	13	53.33
Total	52	34.44

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Managers were similarly asked to rate the extent to which their water supply presented a significant problem (again, on a scale of one to five). The results are listed in Table 7.4. In contrast to their responses regarding electricity, relatively few managers in the Northern region report any significant problems with their water supply. Complaints about the water are relatively common in the Central region, which recently suffered from a cholera epidemic.

Table 7.4: Is Water a Big Problem? (0= not a big problem)

<i>Location</i>	<i>0</i>	<i>0.5</i>	<i>1</i>	<i>Total</i>
Central	13	3	12	28
%	(46.43)	(10.71)	(42.86)	(100)
Maputo	52	21	17	90
%	(57.78)	(23.33)	(18.89)	(100)
Northern	15	2	7	24
%	(62.5)	(8.33)	(29.17)	(100)
Total	80	26	36	142
%	(56.34)	(18.31)	(25.35)	(100)

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Consistent with these subjective assessments, a much higher proportion of firms in the Central region have built their own cisterns, to cope with these water problems (see Table 7.5).

Table 7.5: Firms Owning Own Cistern

<i>Location</i>	<i>Frequency</i>	<i>Percent</i>
Central	21	72
Maputo	43	44.79
Northern	10	42
Total	76	50.33

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Very few firms rely on their own roads, so we are forced to rely entirely on subjective data to assess the difficulties that firms face because of poor transportation infrastructure. These data, listed in Table 7.6 below, show that firms in the Central region complain the most about poor roads, followed by those in the Northern region. This is somewhat surprising: the roads around Nampula are acknowledged to be the worst in the country. One explanation is that the Central region is close enough to Maputo that firms there actually consider it as a potential market, but are inhibited by the lack of good roads. Firms in the Northern region, on the other hand, may be so cut off from such markets that they never even consider the possibility that they might be accessed.

Table 7.6: Are Roads a Big Problem? (0= not a big problem)

<i>Location</i>	<i>0</i>	<i>0.5</i>	<i>1</i>	<i>Total</i>
Central	3	4	22	29
%	(10.34)	(13.79)	(75.86)	(100)
Maputo	33	18	40	91
%	(36.26)	(19.78)	(43.96)	(100)
Northern	5	5	13	23
%	(21.74)	(21.74)	(56.52)	(100)
Total	41	27	75	143
%	(28.670)	(18.88)	(52.45)	(100)

It is harder to assess the difficulties posed more generally by the quality of railroads, since relatively few firms make use of these services. Of the full sample, 73 firms responded that they do not need railways; of those that rated the degree to which the quality of the railroads is a problem, 36 percent say that it is a moderate or serious problem. While complaints seem to be more common in the North, the sample size is too small to further decompose the data. This may be somewhat misleading, however – many of the firms that responded that they did not need railroads would presumably make use of the railways if services were adequate. Theft, lack of cars and delays were all cited as reasons to avoid using the railroads.

A similar situation exists with the use of ports – 45 firms report that they do not need the ports, while among those that do use the ports, 45 percent reported that they were a moderate or serious problem. Once again, the numbers would probably appear worse if they accounted for ‘latent demand’.

We may try to better quantify the costs associated with poor infrastructure, by comparing the cost structures of firms across regions. Table 7.7 shows the ratio of various types of overhead costs to total costs, with Electricity and Water in the first column; transport costs in the second column; and finally total overhead costs (excluding rent) in the third column.⁹ Consistent with the previous results of this section, firms in Nampula have the highest fraction of their costs accounted for by electricity and water. Similarly, transportation costs are highest in the north. By contrast, *total* overhead costs are actually lower in Nampula than in the south.

⁹ Unfortunately, we do not have data on Water and Electricity costs separately.

Table 7.7: Ratio of Overhead Costs to Total Costs (Percent)

	<i>Electricity and Water</i>	<i>Transport Costs</i>	<i>Total Overhead Costs (excluding Rent)</i>
Central	6.4	3.9	34.5
No. of Firms	(20)	(21)	(21)
Maputo	4.0	0.8	3.6
No. of Firms	(71)	(69)	(67)
Northern	4.4	1.3	25.7
No. of Firms	(23)	(23)	(22)
All Firms	4.5	1.5	33.8
No. of Firms	(114)	(113)	(110)

Note: Central region includes Beira, Chimoio and Quelimane. Northern region includes Nampula, Nacala, and Mozambique Island.

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

8. Business Support Services

Table 8.1: Percentage of Firms Requesting Business Support in Given Areas

	<i>All Firms</i>	<i>Foreign</i>	<i>Domestic</i>	<i>5-50 Workers</i>	<i>51-100 Workers</i>	<i>>100 Workers</i>
Employee training	47.3	53.33	43.18	44.59	53.13	47.62
Advice on Productivity improvement	28.4	20.00	34.09	20.27	40.63	33.33
Quality Control	32.4	36.36	26.67	27.03	46.88	30.95
Inst. Calibration	20.9	21.67	20.45	22.97	15.63	21.43
Product Design	29.1	18.33	36.36	36.49	18.75	23.81
Packaging Design	17.6	21.59	11.67	18.92	21.88	11.90
Finding new Tech.	42.6	30.00	52.14	47.30	37.50	38.10
Maintenance of tools, dies and other fixtures	11.5	6.67	14.77	14.86	12.50	4.76
Maintenance Of Factory Equip.	22.3	21.67	22.73	14.88	40.63	21.43
Accounting Services	18.2	16.67	19.32	18.92	15.63	19.05
Legal Services	11.5	11.36	11.67	10.81	9.38	14.29

Source: Survey of Mozambican Manufacturing Firms, Regional Program on Enterprise Development, World Bank, Africa Region, 1998.

Studies in other African countries have found that enterprise access to “learning mechanisms” is a major determinant of efficiency. In short, operating a business in an “information rich” learning environment is a major determinant of the rate and efficiency with which a firm creates, upgrades, and deploys its technical capabilities. In the long-run, it is the technical capabilities of a firm which determine its operational effectiveness and strategic positioning and thus its ultimate competitiveness.

In all countries, the leading source of technical learning is via private mechanisms — that is, from internal technical efforts of firms themselves, from sustained interactions with buyers and suppliers, from interactions with other firms in the same industry, and from the hiring of consultants and other technical experts. When firms cannot meet all their learning needs internally, there is a demand for “collective” technical support services from government, NGOs, and donor agencies.

The RPED survey in Mozambique found that “private” as well as “collective” learning mechanisms are very weak or missing. In-house training within firms is very underdeveloped, buyers and suppliers are not coming to Mozambique in great numbers, the availability of local expert consultants is very limited, and few foreign investors or experienced local firms exist, as yet, to serve as role models for local firms to “benchmark” their operations. Good public or private business training sources external to firms are also quite limited, and government technical support services are either non-existent or are under-financed and poorly managed. The NGOs, business associations, and donor-supported

programs to assist enterprise learning are also limited, although they are making a positive contribution where they exist.

For much of its history the policies of Mozambique's colonial rulers prevented native Africans from developing technical skills or management expertise. Consequently, independence resulted in the departure of most of the skilled workers and managers in 1975. This exodus not only cut firms' current capabilities but reduced their ability to learn and upgrade through their own efforts. This lack of expertise was exacerbated by the isolation caused by the war and the governments central planning policies. By preventing Mozambican firms from hiring foreign consultants or forming close ties with suppliers and customers outside of the country, isolation kept firms from improving their internal technical capabilities. Thus, private mechanisms, which are the leading source technical learning in most countries, are particularly weak in Mozambique.

There are very few consulting firms or other institutions that firms can turn to in order to make up for this deficit and those that do exist charge extremely high rates. While there are some government and international organizations that attempt to provide advice and introduce new technology they are not active and very few firms take advantage of them. In addition, the services that have been made available are concentrated in Maputo and do not adequately reach other parts of the country. In the sample only about 15 percent of firms received help from any organizations including both government sponsored and non-governmental organizations. In fact, most firms in the North had not even heard of IPEX or IDIL. With the hopes of directing future aid to firms, the survey asked a number of questions on that types of services and business support firms in Mozambique feel they need.

Given the many serious obstacles to doing business in Mozambique it is remarkable that relatively few firms perceive a need for business support services. As shown above, for all firms in the sample just over 47 percent recognized a need for employee training, and that was the most desired category. Help in finding new technology and assuring quality control were the next most important categories with 42.6 and 32.4 percent of the firms wanting help in these areas respectively. It is also interesting to note that despite the serious information and enforcement problems accounting and legal services were the least desired.

When the sample is divided into foreign and domestically owned firms some differences can be discerned between groups. A larger percentage of the foreign firms see a need for worker training suggesting that they either have more sophisticated technology or are used to working with a higher quality work force. However domestic firms are much more likely to want help in finding new technology, improving productivity and product design. Undoubtedly these are all areas where the foreign firms bring much needed expertise.

When the sample is divided by size category the intermediate category of firms appear to need more help on productivity improvement, quality control, employee training and maintenance of factory equipment. The largest firms are undoubtedly better able to do these things themselves while the smallest firms have less need for this type of help given their small scale and relatively low technology. Overall there appears to be little difference between any groups and none of the groups appear to want a great deal of business support. The fact that few firms recognize the need for help could be explained by the fact that they do not realize what type of help is available, they "don't know what they don't know" or that

they are so overwhelmed by day to day survival that they have not given thought to the types of help they could use.

Conclusion

Having suffered the successive ravages of colonialism, communism, and civil war, Mozambique finally seems headed for a promising future. However, many elements of the country's troubled past may be affecting its ability to grow and develop its manufacturing base. The data collected through the RPED survey have allowed for the first systematic analysis of Mozambican manufacturing which may be used to guide government policies in the future.

Our findings show that, while Mozambican manufacturing is still at the early stages of development, it has been growing extremely rapidly in recent years, though much of this may be due to increased capacity utilization. Furthermore, managers expect this growth to continue into the future, and many firms are therefore planning capital investments in the future.

Though the overall picture is positive, many problems remain. Poor infrastructure, resulting from years of neglect and civil war, continues to be a drag on firm productivity. Government policy and services, while improving, are still problematic in many areas. While labor markets seem to be functioning well, there is shortage of skilled workers that may be hampering firms' attempts to move into export markets and higher value added activities. Finally, there is a serious shortage of financial capital that is hampering the ability of firms to invest, in spite of general optimism about the future.

Thus, growth in Mozambique is likely to continue into the future, but there remain a number of problems which if resolved, could make this growth even stronger.