Pilot Investment Climate Assessment

Obstacles to the Expansion of Eritrea's Manufacturing Sector

Final Report

December 2002

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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
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The Eritrea Investment Climate Assessment (ICA) is based primarily on a survey conducted by the Regional Program on Enterprise Development (Africa Private Sector Unit) in Spring 2002. The team covered manufacturing firms representing about 65 percent of total employment in manufacturing. The survey was designed to examine the cost of doing business and to generate cross-country comparisons of competitiveness and the investment climate.

The recent efforts of the Government of Eritrea to promote private sector–led growth are grounded in a tradition of entrepreneurial spirit that has survived periods of conflict and other shocks. Eritrea's small economy has a GDP estimated in 2002 at $US 644 million. In 2001, industry as a whole accounted for 22.3 percent (only 7.8 percent of which was manufacturing). The government has recognized economic diversification, especially export diversification, as a key requirement for achieving sustainable, broad-based growth in the new century. The loss of the Ethiopian market and rising debt means that increasing exports is very important. Considerable attention has been given to increasing comparative advantage in labor-intensive manufacturing for export because of the potential for dramatic growth based on experience in other developing countries.

Cross-country Comparisons of Competitiveness

Firms in Eritrea are more capital intensive than many other Sub-Saharan African countries. The median amount of capital per worker in Eritrea is just over $21,000; a very high amount given the size of the country and its private sector.

The ratio of value added to capital (value added per unit of capital), is used as an approximate measure of the productivity of capital. Given the extremely high capital intensity in Eritrea, we would expect low returns to capital, and hence very low capital productivity. *Capital productivity in Eritrea is significantly lower than that of other countries in sub-Saharan Africa and beyond;* its almost to the point of zero return.

A perennial issue in the debate on whether Africa can be globally competitive is that of the competitiveness of African labor. Unit labor cost measures the total cost per unit of output in a common currency, which enables international comparisons of competitiveness of labor. Because it is very difficult to use physical measures of output across different countries, we use an approximate measure of unit labor cost which is the ratio of wages to value added at the firm level, averaged across the sample of firms. It is clear that *while Eritrea's unit labor cost (0.38) is within the range of sub-Saharan African countries, it is much higher than that of several Asian countries during periods of rapid economic growth.*

The Dynamics of Factor Markets

The Labor Market. Manufacturing employment has been declining and wages are rising sharply, presumably reflecting the impact of military mobilization In Eritrea, daily wages, overtime, bonus and other benefits for skilled production labor are about $2.63 per day while unskilled workers receive about $1.86 per day. While these numbers are not astronomically high, they are rising.

The survey found that about 15 percent of the white collar workers went on military duty in 2001. This figure comes at the end of the mobilization process that has been taking place over the last several years. The point here, is not to discuss the military rationale of the removal of such a portion of the workforce but only to underline its detrimental impact on manufacturing. The lack of demobilization has deprived the private sector of a large segment of its skilled workforce and negatively affects the quality of overall management and performance.

The scarcity of labor is a major issue for the Eritrean manufacturing sector. Our data strongly confirm that labor is in fact scarce and that this scarcity is driving up the cost of production. Between the end of 2001 and May 2002, earnings increased sharply over the sample by 17 percent. The increase in earnings was particularly significant for unskilled production workers (close to 22 percent) and also very high for skilled production workers (close to 18 percent). These are very significant wages changes, given that the time period considered is only one year. It highlights the enormous problem of scarcity of labor in an already difficult operating environment

Financial Issues. Although there are some positive elements in the country's financial sector—there seems to be adequate liquidity and an overall lack of corruption—it is unclear whether the availability of credit within the banking sector translates into adequate access to low-cost credit and satisfaction of demand at the firm level.

Our results indicate that a large proportion of firms in the private sector do have access to the formal financial sector, primarily through the use of overdrafts. However, most of the finance is clearly being used to meet working capital needs. Investment is very low in Eritrea, even when compared to the rest of Africa. Government policies to promote investment and laws encouraging credit flows to the private sector are urgently needed to put the country on a higher growth trajectory.

About 40 percent of domestic private firms do not have a loan; a majority of all other types of firms indicated that they do not currently have a loan. All firms in this category (except domestic privately owned firms) indicated that they did not apply for a loan. Of the firms that did not have a loan and had not applied for a loan, 75 percent indicated that they did not need a loan, and 17 percent argued that interest rates are too high. The fact that such a large number of firms did not apply for a loan may indicate powerful deterrence effects, such as the problem of accessing land to submit as collateral. The ratio of the value of collateral to loan value is very high for domestic private firms (172 percent) and high for other firms as well.

With three state-owned banks that do not truly compete with each other and essentially fixed interest rates, there is real rigidity in the financial sector. The main concern with these rates is the lack of variance. *Interest-rates do not appear to take into account the varying degrees of risk represented by the firms in our sample.* This reflects the broader problems of the financial sector—by latching onto a 12 percent interest rate "ceiling," and paying depositors 5-6 percent, the financial sector has settled into lending at a risk-invariant rate of 9 percent while imposing substantial collateral requirements.

Access to Land. Firms were asked if "access to land" was a significant obstacle to doing business in Eritrea. A close examination of the answers indicates in fact a bi-modal pattern, with companies usually answering either "not a problem" or a "severe" problem. This division of answers could be due a deterrence effect. The results have also been influenced by the fact that a majority of the 35 privatized firms in Eritrea were included in the sample study. These companies had unique privileges regarding access to land and other resources prior to their transfer from government ownership. *For those firms that do need land and attempt to obtain it, land is extremely difficult to get.* On average, firms that were able to obtain land within the last five years had to wait 316 days and had to pay about 127,185 N (roughly $US 9,080) for processing.

Regulatory Constraints and Infrastructure

During the RPED survey, owners and managers of manufacturing firms were asked both qualitative "ranking" questions and quantitative "cost" questions regarding infrastructure and government regulations. General business regulations and infrastructure are covered, in order of importance for the manufacturing firms in our sample. Some of the more important issues outlined by the private sector were macroeconomic stability and inadequate supplies of electricity.

Macroeconomic Stability. The worst rating was given to "Macroeconomic Stability" (defined as the stability of inflation and exchange rates). *The evidence shows that macroeconomic instability is perceived by the private sector as the largest factor dragging down performance.* These findings roughly correspond to questions on the impact of lack of foreign exchange on capacity utilization. The majority of firms classified lack of exchange for imports as a severe problem (63 percent).

Electricity. While 27 percent of the sample answered that electricity was not a problem, 18 percent considered it a "severe" problem and a further 11 and 15 percent, "major" and "moderate," respectively. In addition, the average firm owner had to wait 99 days to obtain an electrical connection, although the distribution of answers was skewed by one answer and a more meaningful number is probably the median, 30 days. According to sample firms, there were an average of nine electricity interruptions (median equals five days) a month during the year 2001. It is not surprising then that 43 percent of the sample firms own a generator from which they obtain an average of 22 percent of their electricity. Thus, *the uncertain supply of electricity imposes higher business costs,* both to acquire a generator and to operate it when the public grid is not supplying electricity.

Corruption. The majority of respondents (84 percent) in a ranking exercise answered that corruption is not a significant obstacle to doing business in Eritrea. This perception was corroborated by answers to other related questions throughout the survey.

Labor Regulations. A majority (85 percent) of respondents stated that labor regulations were not a problem. When asked about specific types of labor regulations (hiring local or foreign workers, procedures and cost of retrenchment, limits on temporary hiring, and so on) the average answer was consistently that they were not obstacles. Although some firms complained about the burden of providing six months of pay when a worker is fired (18 percent of the sample said that "layoff procedures and cost of retrenchment" were a problem), most firms agreed that the labor regulations were not the main problem and repeated that the major problem was the *lack* of workers.

Business Licensing. There is evidence that efforts to streamline the licensing of businesses have had some success as well. Generally, the private sector sees the license as a comprehensive instrument, which is reducing the amount of time required previously to obtain various licenses. For those firms established within the last five years, the average number of licenses required was indeed one. The average answer for the time it took to get a license was two days (for those firms that were established during the last two years). One should bear in mind, however, that the RPED approach only covers existing businesses that were by definition successful in overcoming these hurdles. Other assessments have pointed out that potential investors are still having business license applications turned down for arbitrary reasons (World Bank 2002a). However, overall, the average time spent by senior management on government regulations was 5 percent, much lower than RPED results in other sub-Saharan African countries.

Main Conclusions

The RPED survey of Eritrea yielded several results of value to the government in terms of designing policies regarding the private sector. The Eritrean manufacturing sector is very capital intensive, capital productivity is quite low, and there is a shortage of skilled labor, causing wages to rise. Firms do have access to the formal financial sector to some extent, primarily through the use of overdrafts. However, most of the finance is clearly being used to meet working capital needs and investment is very low. Interest-rates do not appear to take into account varying degrees of risk. Access to land is also presenting a severe problem for some firms. With regard to the general business environment, access to foreign exchange, macroeconomic instability, and intermittent provision of electricity are among the largest obstacles. There exist a host of “second generation” issues that are not apparent at this time because the labor shortage dominates above all other constraints. It may well be the case that once labor is freed up and some key problems are addressed, there will be a surge in productivity and exports. At that point, the “second generation issues” will become the binding constraints.

Recommendations

A number of general and specific recommendations arise from the analysis and conclusions of this study. The two key obstacles to resuming growth are the lack of foreign exchange and the severe shortage of labor. As these obstacles are removed, another set of constraints will likely become binding. The survey suggests that the top four obstacles in this “second generation” are 1) infrastructure constraints such as: unreliable electricity supply, poor telecommunications, and high costs for sea and air transport; 2) limited access to finance at a reasonable cost; 3) low levels of education and skills in labor force; and 4) limited access to land.

- *Foreign Exchange.* The lack of availability of foreign exchange is mostly a macroeconomic issue. Above all, business people want a predictable environment, which means slow and predictable changes in exchange rates, interest rates, and the rates of inflation. This can only come about from macroeconomic stabilization. Until that is achieved, inflation rates will continue to be high (double digit) and variable. That in turn will play havoc with exchange rates and interest rates. While stabilization in the current situation in Eritrea will probably result in a major devaluation of the official exchange rate, it will likely bring a number of benefits. Net earners or receivers of foreign exchange will be better off. Foreign aid will put greater resources in terms of Nakfa at the disposal of government. Receivers of remittances will be better off. Flow of remittances and foreign private investment is likely to rise as confidence returns. Supply of foreign exchange will no longer be much of a constraint on private businesses. Costs of imported inputs will increase but will now be correctly reflected on the firms’ balance sheets. To the extent that domestic production competes with imports, the higher cost of foreign exchange will give the enterprises additional protection. New export earners will emerge, further increasing the available foreign exchange and thus help stabilize both nominal and real exchange rates in the future.

- *Supply of Labor.* The results of the survey analysis clearly indicate that the current overarching constraint is labor. The labor shortage affects firms’ ability to grow and become competitive, either in the regional or international marketplace. Due to the severe shortage of labor, firms are relatively less productive in Eritrea. The ratio of capital to labor is much higher than the optimal ratio, and wages have been rising. Unit labor costs, a rough indicator of competitiveness, show that Eritrean labor is expensive relative to labor in other parts of the world. When coupled with other constraints highlighted in the report, the labor shortage creates a severe drag on competitiveness in the private sector. It may well be the case that once labor is freed up and other key problems mentioned in this report are addressed, there will be a surge in productivity and exports of existing firms and a high demand for new investment.

Immediate and effective demobilization is necessary if the private sector in Eritrea is to function normally. Demobilization will also make it easier to achieve macroeconomic stability.

Infrastructure. Power, telecommunications, and transport are not currently the most important binding constraints but may well become more problematic once labor is freed up and the private sector starts growing. The uncertain supply of power already imposes some extra costs on firms and may quickly emerge as a larger constraint once the labor situation improves. Telecommunication reforms need to be pushed vigorously to set the framework for a much expanded landline and wireless access to the world. Costs of sea and air transport are high and need to be brought in line with those of the neighboring countries.

- *Access to and Cost of Finance.* At a general level, macroeconomic stabilization, by reducing the crowding out of private sector by the public sector, should increase the availability of funds for lending and decrease the average level of interest rates. At a specific level, financial allocation needs to take into account varying degrees of risk. Low-risk investment will then benefit from lower interest rates, and high-risk investment will at least get the opportunity to succeed (or fail). Banks need to restructure to achieve this as well as increase profitability. This should also lead to lower collateral requirements, at least in some cases. In addition, more training in credit assessment would facilitate this shift in operating procedure. If these adjustments are not made, finance could very well be an even larger obstacle for existing and potential firms once the labor supply is increased, especially where long-term investment is concerned.

- *Educated and Skilled Labor Force.* The study found both direct and indirect evidence of the negative impact of low levels of education and skills of the Eritrean workers. At the direct level, employers complained that even when workers are available, they were not easily trainable because of a generally low level of education and experience in jobs that require skill. Indirect evidence comes from the fact that the unit labor costs (ULCs) are high when compared to successful exporters. A strong rise in productivity would reduce ULCs, because ULCs in domestic currency are just a ratio of nominal wages to labor productivity. But greater productivity is a function of better education and greater skills.

- *Access to Land.* Our survey shows that some firms have serious problems with access to land; others report that they do not have a constraint. It is very clear that the administrative process for accessing land is problematic. Aggressive follow-up by the relevant authorities on existing applications for land is urgently needed; the government needs to sort out exactly what is holding things up from the point of view of administrative barriers. Using market mechanisms to price the leasing of land may make sense as well; one possibility is to auction off leases for land. In most market economies, there is a “rent gradient”; that is, center-city land is much more expensive than land on the outskirts of a city. Asmara would probably be no different once bureaucratic obstacles to pricing of land are removed. Ease of exit from leases is just as important. If sub-optimal decisions are made regarding leasing of land, entrepreneurs should be able to sell their leases just as easily as they buy them. An active and efficient market for land is crucial to the growth of the private sector. Valuable capital resources should not be tied up in land indefinitely due to lack of a functioning marketplace.

The Regional Program on Enterprise Development (RPED) team is grateful to Sumana Dhar for extensive comments and overall guidance. Andrew Singer also provided very useful and thorough comments.

The RPED team would also like to thank the following people for facilitating this work and providing comments and suggestions: Dr. Woldai Futur, Economic Advisor to the President; Prof. Abraham Kidane, Economic Advisor; Dr. Giorgis Teklemikael, Minister of Trade and Industry; Amaha Kidane, Director General, Department of Industry, Ministry of Trade and Industry; Akberom Tedla, Secretary General, Eritrean National Chamber of Commerce; Taddese Beraki of the Eritrean National Chamber of Commerce; and Kiflemariam Zerom of Business Consulting Services.

The team is indebted to Country Director Makhtar Diop and to the Eritrea Resident Mission for their guidance—in particular, Emmanuel Ablo, Samuel Zerom, and Saba Tekle. In addition, RPED is grateful to the Integrated Framework Team and the Eritrea Country Team for their advice and for generous financial support.

Linda Cotton participated in the preparatory mission and led the pilot survey for this exercise. Jean Michel Marchat led the survey in Eritrea during April-May 2002 and was assisted by a team composed of Linda Cotton, Dr. Tesfay Haile (General Manager and Consultant, FABI Consulting & Trading, PLC), and John Paton, as well as several local enumerators hired by FABI Consulting. Manju Kedia Shah provided econometric analysis of cross-country data.

Hooman Dabidian provided analytical analysis. Also Vijaya Ramachandran task-managed the survey and the writing of report. Peter Miovic presented the report to the Government of Eritrea and made extensive revisions to the final document, based on consultations in Asmara.

Several World Bank colleagues provided useful advice and suggestions; the team thanks Ibrahim Elbadawi, Ian Bannon, Iain Christie, Michael Wong, William Steel, Melanie Marlett, Demba Ba, Uma Subramanian, and Axel Peuker. Jacki Edlund-Braun edited the final version of this report.

RPED is a member of the Africa Private Sector Group (AFTPS) of the World Bank and conducts private enterprise surveys in various countries in Sub-Saharan Africa. It is also a member of the Bank-wide Investment Climate Unit, which carries out private enterprise surveys all over the world. Additional information can be found on its web site: www.worldbank.org/rped

AFTPS	Africa Private Sector Group
AGOA	Africa Growth and Opportunity Act
DRP	National Demobilization and Reintegration Process
EU	European Union
FDI	Foreign Direct Investment
FIAS	Foreign Investment Advisory Service
GDP	Gross Domestic Product
GOE	Government of Eritrea
HAMSET	HIV, Malaria, Sexually Transmitted Diseases, and Tuberculosis in Eritrea
HIPC	Highly Indebted Poor Country
IBRD	International Bank for Reconstruction and Development
ICA	Investment Climate Assessment
IDP	Internally Displaced Person
IFC	International Finance Corporation
IMF	International Monetary Fund
IT	Information technology
MAP	Multi-Country HIV/AIDS Program for Africa
NICE	National Insurance Corporation of Eritrea
OLS	Ordinary Least Squares
PFDJ	People's Front for Democracy and Justice
RPED	Regional Program on Enterprise Development
SSA	Sub-Saharan Africa
ULC	Unit labor cost
UN	United Nations
USAID	United States Agency for International Development
WHO	World Health Organization

Introduction

The current Government of Eritrea (GOE) is committed to improving economic development and raising the living standards of the population. The private sector, with emphasis on the export sector, is seen as the engine of growth that will help jump start the small economy and eventually lead to long-term growth.

The recent efforts of the GOE to promote private sector–led growth are grounded in a tradition of entrepreneurial spirit that survived periods of relative inactivity. Industrial development in Eritrea began during the Italian colonial period (1890 to 1941), when a large number of firms were established in light manufacturing (food and beverages) and construction materials (cement, brick, and tiles). Ethiopian Emperor Haile Selassie annexed Eritrea in 1962, which started the war for independence and caused a decline in industrial production. Despite the nationalization of assets in the mid-1970s under the socialist Derg regime (1974 to 1991), Eritrea still accounted for 30 percent of Ethiopian industrial production and was one of the most industrialized areas in East Africa. It is clear today that some of the commercial and industrial skills endured these phases of relative idleness.

The three-decade-long battle for independence left farmland and infrastructure devastated by the early 1990s. An estimated 80 percent of the country's infrastructure had been destroyed, and the loss of military personnel and civilians has been estimated at 150,000 (Bruchhaus and Mahreteab 2000). Eritrea began the difficult task of reconstruction, and its provisional government decided in 1992 to demobilize 57,000 soldiers (60 percent of the total 95,000, one-third of whom were women). After a referendum, the country proclaimed independence on May 24, 1993.

Just a few years into the new nation's life, however, war resumed with Ethiopia in May 1998. Starting in 1997, tension began to mount between the two countries due to trade disputes, the level of charges in Eritrean ports, as well as the negative Ethiopian reaction to Eritrea's introduction of a new currency, the Nakfa, in place of the birr. After a series of skirmishes over the poorly demarcated southern border with Ethiopia, war broke out. A peace agreement signed in Algiers in June 2000 created a 25-km-wide demilitarized zone along the 1000-km-long border. Both sides have agreed to a border decision made by an independent Boundary Commission in The Hague in April 2002, and the physical demarcation is still in process.

Private Sector Development and Growth: Looking Ahead

The RPED survey discussed in this paper is designed to take a close look at the costs of doing business in Eritrea and to make cross-country comparisons of private sector competitiveness. This Investment Climate Assessment (ICA) is structured in the following manner: Chapter 2 begins the analysis with a discussion of productivity in the framework of other African countries. It then moves on to cover the various factor markets and ends with a broader look at the regulatory environment and constraints posed by the existing infrastructure. The third and final chapter draws conclusions from the survey and discusses their policy implications.[1]

Eritrea's small economy has a gross domestic product (GDP) estimated in 2002 at $US644 million. In 2001, industry as a whole accounted for 22.3 percent (only 7.8 percent of which was manufacturing), services for 59 percent (18 percent of which is "public administration"), and agriculture for 18.7 percent of Eritrea's GDP (Table 1.1). Out of a population estimated in 2002 to be 4.3 million, around 80 percent lives in rural areas and is dependent on agriculture. The data presented are very rough estimates and may not be reliable indicators of the true growth rates in the

Table 1.1. GDP by industrial origin, 1993-2001 (in millions of constant Nakfa, 1992=100)

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Agriculture	481.8	658.5	581.5	548.0	550.8	866.7	800.3	454.4	616.8
Crops and livestock	385.7	554.8	472.3	437.4	443.7	755.5	683.8	331.3	488.2
Staple crops	109.0	217.0	160.1	134.6	135.3	335.5	279.2	97.0	195.6
Cash crops	54.2	107.9	79.6	66.9	67.3	166.8	138.8	48.2	97.2
Livestock	222.5	229.9	232.6	235.9	241.1	253.2	265.8	186.1	195.4
Forestry and fishing	96.1	103.7	109.2	110.6	107.1	111.2	116.5	123.1	128.6
Forestry	92.6	95.3	98.0	100.8	103.7	106.7	109.8	113.0	116.3
Fishing	3.5	8.4	11.2	9.8	3.4	4.5	6.7	10.1	12.3
Industry	337.5	384.6	466.2	638.4	764.5	715.1	735.2	688.4	732.2
Mining and quarrying	4.0	4.0	4.0	4.1	8.8	6.8	6.1	3.0	3.0
Manufacturing	166.1	176.6	213.0	240.9	256.6	233.5	234.6	242.9	256.2
Handicrafts and small industry	28.1	32.7	38.1	50.2	93.0	85.0	88.4	91.5	96.5
Electricity and water	24.0	26.2	27.8	29.5	32.2	32.9	35.0	35.5	35.8
Building and construction	115.3	145.1	183.3	313.7	373.9	356.9	371.1	315.5	340.7
Services	1331.1	1659.3	1729.3	1845.7	1951.5	1813.1	1868.3	1856.1	1941.3
Distribution services	828.4	970.2	1074.4	1148.8	1222.7	1019.2	1029.4	967.6	1025.6
Trade, wholesale, and retail	567.8	641.4	717.8	763.9	808.9	648.9	655.4	589.8	625.2
Transport and communications	260.6	328.8	356.6	384.9	413.8	370.3	374.0	377.8	400.4
Other services	502.7	689.1	654.9	696.9	728.8	793.9	838.9	888.5	915.7
GDP at factor costs	2150.4	2702.4	2777.0	3032.1	3266.8	3394.9	3403.8	2998.9	3290.3
Indirect taxes less subsidies	144.2	130.0	125.2	137.4	155.8	133.0	146.7	123.6	135.6
GDP at market prices	2294.6	2832.4	2902.2	3169.5	3422.6	3527.9	3550.5	3122.5	3425.8

Source: International Monetary Fund.

various sectors, because a proper system of compiling national accounts has not yet been instituted in Eritrea.

From the outset, the GOE viewed the private sector as the key to economic growth and took steps to promote its growth. The new government began to operate the state-owned industrial sector inherited at independence on a commercial basis and progressively began to privatize it. By the end of 2001, it sold off 35 of 41 large public enterprises. It reformulated the investment code and established the Eritrean Investment Center. Between 1992 and 1997, the GOE approved 500 new companies, although it is not known how many of those actually materialized. The Business Licensing Office was designed to be a one-stop shop. The Chamber of Commerce and other vehicles were used to gather input from the business community. Industrial estates were established on the outskirts of Asmara, Dekamhare, and Dubarwa (with little infrastructure), and housing estates were started for investors including the diaspora.

The government has recognized economic diversification, especially export diversification, as a key requirement for achieving sustainable, broad-based growth in the new century. The loss of the Ethiopian market and the rising debt mean that increasing exports is more important now than ever. Considerable attention has been given to increasing comparative advantage in labor-intensive manufacturing for export because of the potential for dramatic growth based on experience in other developing countries. The government is concentrating on industries in which there is already a significant level of skills in the country and which require relatively low levels of capital such as garments, knitwear, and shoes. In addition, the government hopes to take advantage of the fact that the Cotonou Agreement gives Eritrea preferential access to the European Market and that the U.S. Africa Growth and Opportunity Act (AGOA) gives Eritrea duty-free access for garments and quota-free access for the next eight years.

Significant progress was made after independence regarding the liberalization of trade policy. The 1994 legal notice 18/1994 reduced the number of import tariffs to twelve. Capital goods, raw materials, and semi-processed goods have only a 2 percent tariff. Basic goods duties range from 3 to 20 percent, non-basic goods range from 25 to 40 percent, and luxury import duties go as high as 200 percent. In addition, customs procedures were simplified. In the mid-1990s, the government began major investments in infrastructure, roads, electricity, dams, and port operations to support the further development of exports. Nonetheless, after a peak in 1995, exports decreased and then collapsed in 1997 and 1998. In 1997, Ethiopia reacted negatively to the introduction of the Nakfa in place of the birr, and when the war began in 1998, trading ceased altogether. Exports to Ethiopia were 63 percent of total exports in goods in 1997. Neither was there much diversification in the type of goods exported. Exports of both goods and services saw a continual decline from 1997 to 1999, with recovery beginning in 2000 and 2001. Total merchandise exports increased from US$20.1 million in 1999 to US$36.7 million in 2000 but then declined to US$19.8 million in 2001.

Macroeconomic Stability

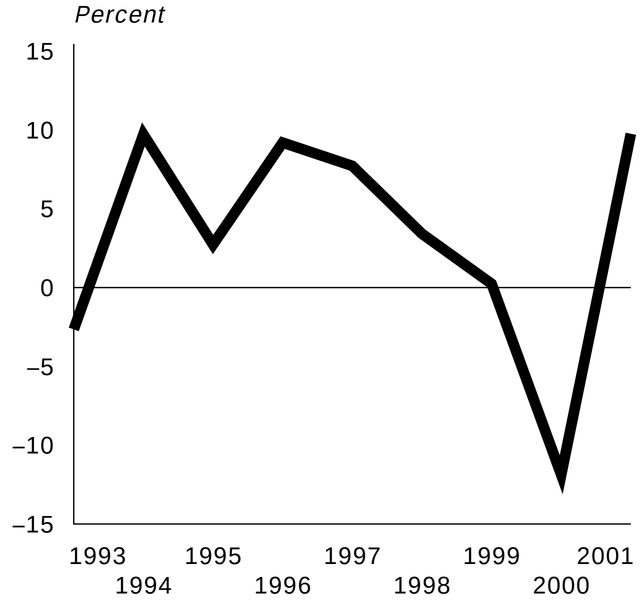
Firms require a stable macroeconomic environment to lower risk and facilitate long-term financial, employment, and investment decisions. After independence, the GOE was quite successful in stabilizing most major macroeconomic indicators. However, many of the gains in macroeconomic stability achieved during the early years of independence were reversed during the border war. Regaining this ground will take much longer than did the initial stabilization, partly due to a continued perceived military threat from Ethiopia and partly because Eritrea's room for maneuver is now much smaller than during the post-independence stabilization.

GDP Growth

GDP growth averaged 7.4 percent from independence in 1993 through 1997 (Figure 1.1). The border war disrupted this growth, which dropped to 0.3 percent in 1999 and became negative 11.9 percent in 2000. Growth resumed in 2001, led by recovery of agricultural production.

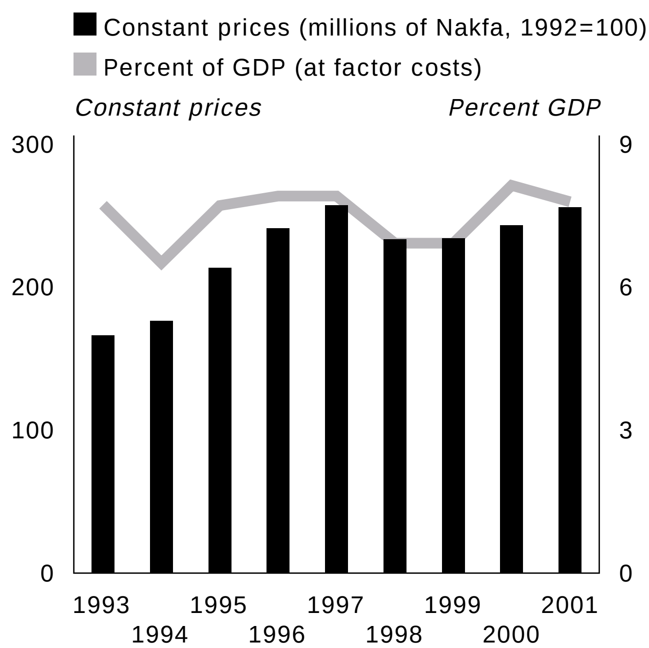
The manufacturing sector expanded by about 50 percent from 1993 to 1997, according to rough estimates compiled by the International Monetary Fund (Figure 1.2). Then the manufacturing sector was largely stagnant during the war years (1998–2000), and most likely a large percentage of that production was related to war efforts. The private sector has tended to concentrate on services, namely imports and distribution. Manufacturing sector growth has begun to pick up slightly in 2000 and 2001. Although the manufacturing sector constitutes a small percentage of GDP, the GOE emphasized developing it because it is central to the strategy of growth through exporting labor-intensive light manufacturing.

Figure 1.1. Real GDP growth (annual percentage)



Source: World Bank, World Development Indicators.

Figure 1.2. Manufacturing sector



Source: International Monetary Fund.

Inflation

Inflation, which was traditionally low in Eritrea (and previously in Ethiopia), was brought firmly into the single-digit range by 1996–1997 (Table 1.2). During the war years (1998–2000), inflation (end-year to end-year) averaged 15.5 percent, peaking at 26.8 percent in 2000. A large part of the increase during this period was due to food price inflation spurred on by the disruption of agricultural production, due to the Ethiopian invasion of the western lowlands in May 2000. The inflation rate then started to come down, falling to an annual rate of 7.7 percent by the end of 2001. While there are no firm numbers yet available for inflation during 2002, it would be surprising if it has not moved back into double-digit range, given the continued high defense expenditures, slow progress on demobilization, problems with financing with some of the donors, and problems on the border with Sudan.

Exchange Rate

In 1997, the dual exchange rate was unified, and the Bank of Eritrea was established. This was also the year that the new currency, the Nakfa, was introduced, on par with the birr. By early 1998, the exchange rate was stable, backed by reserves that reached nearly 5 months' of imports of goods and services, and 15 foreign exchange bureaus were trading foreign exchange.

During the war, the government kept the nominal exchange rate from depreciating in line with inflation and the real exchange rate appreciated. The parallel market for foreign currency began expanding. By 2000, foreign exchange was being rationed, pushing the black market rate to as much as twice the official rate. While this gap was significantly reduced for a while during 2001, the foreign exchange premium grew again during 2002 and was in the 60–70 percent range by October 2002 (although in an admittedly thin and volatile market). It is likely to be a harbinger of renewed inflationary pressures.

Table 1.2. Key economic indicators, 1993-2001

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Real GDP growth (%)	-2.5	9.8	2.8	9.2	7.7	3.9	0.3	-11.9	9.7
Inflation (%) change, end of year	9.6	6.8	11	3.4	7.7	9	10.6	26.8	7.7
Fiscal balance (incl. official grants) as % of GDP	-7.0	-13.3	-25.1	-20.6	-6.0	-39.9	-56.3	-47.8	-32.3
Exports of goods & services (US$ million)	93.3	143.3	171.4	200.2	203.3	110.4	65.7	97.5	147.3
Imports of goods & services (US$ million)	283.7	409.3	545.5	571.5	589	596.1	597.4	498.6	522.8
Current account balance (excl. transfers) as % of GDP	7.6	3.8	-10.2	-21.2	-5.7	-33.0	-40.1	-33.0	-29.7
Current account balance (incl. transfers) as % of GDP	26.4	20.8	3.5	-8.2	2.2	-24.8	-29.1	-16.7	-12.6
Reserves in months of imports of goods & services (end-year)	3.9	5.6	4.6	4.1	4.9	1.4	1.1	0.9	1.2
Gross national savings/GDP (%)	81.9	29.2	11.6	14.9	40.7	12.1	13.3	19.2	22.9

** GDP growth rates for 1993 and 1994 have been reported in various documents over the past few years. These figures, still unofficial, report GDP growth to have been 9.9 percent in 1993 and 25 percent in 1994. Resolution of the difference awaits the authorities' publication of the official estimates of GDP since independence. The current account balance estimates (excluding and including transfers) for the period 1993-96 are taken from the IMF staff report for the 1998 Article IV consultation.*

Source: World Bank, "Revitalizing Eritrea's Development Strategy," Washington, D.C., 2002, processed.

The current dual exchange rate regime implies that those firms with access to foreign currency at the official rate are in effect subsidized. Those without access are forced, if they can afford it, to obtain foreign currency on the parallel market to make new capital investment or purchase raw materials, spare parts, and so on. At times even this black market currency is unavailable in sufficient quantities.

Public and Private Investment

In addition to macroeconomic stability, the government strategy for growth requires a great deal of public and private resources. Public expenditures, foreign aid, and domestic and foreign investment (including that of the Eritrean diaspora) will be needed to foster the vigorous development of the private sector.

Government Budget

While the new GOE was largely able to institute fiscal discipline after the end of the thirty-year war, the budget was hit hard by the 1998–2000 border war. Between 1993 and 1997, the government was by and large able to pay for the demobilization and reintegration of soldiers, the resettlement of refugees, the support to families of killed and disabled soldiers, and the increase in the salaries of underpaid civil servants. Their ability to achieve this without plunging into debt was due in part to improving tax collection and increasing non-tax revenues. Non-tax revenues rose to nearly 23 percent of GDP in 1997, almost half of which came from charges for Massawa and Assab port services. On top of that, the GOE was able to reduce corporate income taxes, eliminate export taxes, and lower and reduce the dispersion of import tariffs.

When the border war began with Ethiopia in 1998, however, the port revenues dried up, public enterprises were no longer bringing in sufficient revenue, military expenditures expanded, and an income surtax was introduced to help cover these lost revenues. Public expenditure averaged 90 percent of GDP between 1998 and 2001, meaning that the state became the dominant actor in the economy. The budget deficit increased from 6 percent of GDP in early 1998 to 48 percent in 2000, mostly due to military expenditures, reconstruction, and humanitarian needs. The deficit was financed primarily with domestic banking resources. Domestic debt reached 128 percent of GDP by 2000. While the numbers for 2001 and 2002 are not yet known, renewed double-digit inflation and a large premium on foreign exchange in the parallel market in mid-2002 suggest that serious macroeconomic imbalances continue.

Debt

The country was debt free at independence and established a debt management unit within the finance ministry in 1997. The external debt rose to US$321 million by the end of 2000, surpassing 50 percent of GDP in that year.

Dependence on support from the diaspora has been shifting toward dependence on aid, as diaspora inflows declined somewhat over the past few years and aid receipts increased strongly. Private transfers averaged 45 percent of GDP from 1993 to 1997. Net donor support was 16 percent of GDP during the same period. By 2001, these ratios were essentially reversed. Private transfers declined to 27 percent, and donor support increased to 34 percent of GDP.

Debt in net present value terms in 2002 as a percent of exports of goods and services reached 311 percent (preliminary estimate), more than the Highly Indebted Poor Country (HIPC) eligibility criteria. However, the external debt was contracted on concessional terms, so the debt service to exports ratio is more reasonable, estimated at 23.5 percent and projected to fall thereafter. Increasing exports to levels sufficient to repay these debts will be extremely difficult to achieve.

Balance of Payments

Before the war the current account deficit (including official transfers) was more or less in balance, and domestic and foreign debt remained low. During the war, the current account deficit (including transfers) reached a high of 29.1 percent of GDP in 1999, which was subsequently brought down to 12.6 percent in 2001. Gross international reserves that covered five months of imports at the end of 1997 dwindled to less than one month of imports by 1999 and have remained in that range since.

Foreign Direct Investment

Foreign direct investment (FDI) has not taken off, despite a promising start in 1996. Between 1996 and 2000 FDI inflows have remained largely stagnant, staying between US$35 million and US$39 million. According to a recent World Bank document, several foreign companies had signed joint ventures in areas such as fisheries and agribusiness but backed out for various reasons (World Bank 2002a). The government's strategy includes trying specifically to attract the diaspora, but also FDI in general. A survey of foreign and diaspora investors is currently being carried out by Foreign Investment Advisory Service (FIAS) to identify the perceptions of various groups of potential investors about constraints to investment in Eritrea.

To a large extent these perceptions include the lack of confidence in a lasting peace, which will take some time to develop. In addition, despite the progress made in reforming the economy, business operations are still hampered by various obstacles. Anecdotal evidence suggests that decisions made on land, access to finance, and access to foreign exchange are based on opaque procedures influenced more by the government than by market forces.

As discussed further in chapter two, business regulations have seen some improvement but more is needed, especially to facilitate FDI. This will become clearer as more foreign investors attempt to enter the market. The absence of foreign investors means not only forgone capital investment, exports, and jobs, but also forgone knowledge and skills.

Foreign Aid

The World Bank is the major source of external funds for economic recovery, demobilization, and reintegration programs. The World Bank and the European Union (EU) are also the principal supporters of the government in its efforts to improve power generation/distribution and rural road rehabilitation. The rehabilitation of the ports of Massawa and Assab is also being undertaken with the backing of the World Bank. In addition, the World Bank is financing the government's Economic Recovery Program. Other significant economic assistance tends to focus on rural development and agriculture. Danish and Italian assistance is centered on agricultural development and education. The U.S. Agency for International Development (USAID) programs focus on the growth of rural enterprises to develop agricultural and related support enterprises, with emphasis on high value exports. The UN Food and Agriculture Organization assists the Ministry of Agriculture with weather forecasting, crop reporting, and food security impact assessments. Funds from the International Fund for Agricultural Development support irrigation systems.

Conclusion

The border war has been a major setback and has imposed tremendous costs in terms of lives, food security, and economic development. In the long run, however, there is hope that Eritrea can regain the momentum that was interrupted. The attitudes of self-reliance and determination that sustained the country during the war for independence are still present throughout Eritrean society. But expectations for dramatic increases in productivity and growth may need to be tempered with realistic and practical consideration of all of the challenges ahead, some resulting from conflict and others not related to war but equally difficult to overcome.

It is in this context that the GOE requested RPED to conduct a survey of the manufacturing sector as a whole. This work was done as part of a series of projects regarding trade and investment issues. Included in these efforts are the development of a "Crash Program on Exports" guided by Andrew Singer, an "Assessment of Policy and Performance in Eritrea's Services Sector" prepared by Carsten Fink, and an investment perceptions survey currently being carried out by the Foreign Investment Advisory Service of the International Finance Corporation and International Bank for Reconstruction and Development (IFC/IBRD).

Notes

1. The sampling design is one of a stratified random sample. The Ministry of Industry and Trade provided RPED with a list of officially registered companies with more than 10 employees in 2000, which accounts for about 65 percent of total employment in manufacturing. Clusters were then defined on the basis of location, size, and sector, and firms were sampled randomly from each. The sample actually surveyed has 79 firms, giving a

sampling rate of 35.2 percent. The sample frame and sample exhibit two prominent characteristics: the weight of the Asmara region is high, and firms with more than 100 workers in total employment are dominant. (For a more detailed description of the methodology, see Annex I.)

2. Investment Climate in an International Perspective 10

A. Firm-Level Productivity and Cross-Country Comparisons

At the core of any discussion of private sector viability is the issue of firm-level productivity. Using value-added per worker as an approximate measure for productivity, we compare Eritrean firms with firms from other parts of Sub-Saharan Africa. We begin our analysis by describing the capital-labor ratio for several African countries, including Eritrea, by size and by sector (Table 2.1).

Table 2.1 clearly shows that firms are Eritrea are more capital intensive than all other Sub-Saharan African countries, with capital accumulation in Eritrea almost double that of the next highest country, Cameroon. The median amount of capital per worker in Eritrea is just over $21,000; a very high amount given the size of the country and its private sector.

Ratio by size measures capital per worker in each size category, relative to the median for each country. Therefore, a ratio of 0.79 for microenterprises in Eritrea indicates that capital per worker is US$16,816 (or 0.79 x US$21,288). Large firms in Eritrea have a capital-labor ratio of 2.14, more than twice the amount of capital per worker as the median Eritrean firm. In all countries, the capital intensity increases with firm size, with large firms generally having more than double the amount of capital per worker as compared to medium and small firms. Across sectors, we see that the textile and furniture sectors tend to have below average

Table 2.1. Distribution of capital to labor ratio ($US)

	Cameroon	Côte d'Ivoire	Ghana	Kenya	Tanzania	Zambia	Zimbabwe	Eritrea
Median	11,496	5,469	946	4,511	4,065	4,417	4,382	21,288
Ratio by size								
Micro	8,771	2,319	279	1,669	1,852	2,309	1,183	16,818
Small	9,289	4,884	731	4,055	3,309	4,064	3,050	20,011
Medium	13,197	9,511	1,279	3,848	3,480	4,201	3,729	34,061
Large	24,785	8,964	1,401	5,427	3,671	4,554	4,001	45,556
Very large	15,956	8,340	1,893	4,782	7,431	4,987	5,241	–
Ratio by sector								
Food	13,301	9,565	1,907	4,534	4,191	4,174	4,846	26,610
Metal	13,450	5,114	1,650	2,643	3,032	3,905	4,965	25,971
Textile	8,220	2,237	805	2,314	2,638	3,419	3,138	16,179
Furniture	9,760	4,578	1,115	4,128	4,411	2,460	2,550	3,832

Note: In all instances, the mean was greater than the median, and due to the skewed distribution, the median is a more appropriate measure of central tendency.

Source: World Bank, RPED Eritrea, 2002.

capital intensity, while the food and metal sectors tend to have above average capital-labor ratios.

The extraordinarily high degree of capital intensity found in this sample of Eritrean enterprises is backed up by anecdotal evidence. One firm owner said that he had to rent additional space to store capital equipment that had previously been used to produce for the Ethiopian market. In addition to the problem of reduced demand, access to land had prevented him from building additional space. Some firms reported that they could easily add another shift if faced by higher demand, indicating that at present, there was plenty of idle capacity. In the leather tanning industry, some firm owners complained of lack of labor and lack of quality leather to export to Europe. Firms that ordered capital equipment in 1996–1997 might also have been forced to let some of this equipment sit idle in the years since, at least in part due to the war. One firm in our sample ordered equipment about four years ago; this equipment has been stored in a warehouse simply because the firm owner has not been able to secure access to the needed additional land.

Compounding these problems is the military mobilization of labor—about 12.5 percent of professionals in the sampled firms were recruited into the army in 2001. Many managers confirmed that they did not have enough employees, particularly skilled ones. Hence, a variety of reasons for the lack of expansion in the manufacturing sector

Table 2.2. Distribution of value-added per worker ($US)

	Cameroon	Côte d'Ivoire	Ghana	Kenya	Tanzania	Zambia	Zimbabwe	Eritrea
Median	9,656	1,122	1,304	3,337	1,862	2,962	3,999	1,786
Ratio by size								
Micro	4,838	272	767	1,595	1,460	1,780	2,175	1,857
Small	7,059	1,076	1,198	3,337	1,411	3,110	3,087	1,340
Medium	19,196	1,404	1,132	3,374	2,272	3,012	3,879	2,518
Large	19,418	2,087	2,476	4,655	2,080	4,123	3,999	1,804
Very large	17,226	2,025	3,463	2,830	3,754	4,668	4,919	na
Ratio by sector								
Food	14,088	1,652	2,628	5,349	3,441	3,415	7,182	2,697
Metal	8,922	1,361	1,438	1,929	1,940	4,404	3,815	3,233
Textile	6,363	376	1,008	1,832	1,030	1,973	3,119	1,072
Furniture	7,705	997	917	2,676	890	1,582	2,559	2,840

Note: In all instances, the mean was greater than the median, and due to the skewed distribution, the median is a more appropriate measure of central tendency. For Eritrea, other sectors were also included in the survey.

Source: World Bank, RPED Eritrea, 2002.

emerge from the evidence—lack of demand, low availability of labor, lack of access to land, and lack of quality inputs. The last three of these constraints could present serious obstacles to the expansion of supply should the firms be able to find markets for their products.

Value-added per worker in Eritrea, as described in Table 2.2, is comparable to that of other Sub-Saharan African countries. It is almost equal to that of workers in Tanzania and higher than that of workers in Ghana and Côte d'Ivoire. Across size classes, labor productivity is lowest for the small size class (10–49 employees) and highest for the medium size class (50–99 employees). It is interesting to note the difference between Eritrea and other countries in our sample. Micro-enterprises are much closer to the median in Eritrea than micro-enterprises in other countries. The productivity difference between small and large firms is much more significant in other countries than in Eritrea, where there is virtually no difference between micro and large firms. By sector, we see that sectors with high capital-labor ratios tend to have higher labor productivity.

Table 2.3 describes value-added per unit of capital, which is an approximate measure of the productivity of capital. Given the extremely high capital intensity in Eritrea, we would expect low returns to capital and hence very low capital

Table 2.3. Distribution of value-added to capital ratio

	Cameroon	Côte d'Ivoire	Ghana	Kenya	Tanzania	Zambia	Zimbabwe	Eritrea
Mean	0.89	2.45	1.41	0.81	0.66	0.64	0.88	0.14
Standard deviation	3.11	3.90	5.17	3.52	4.99	3.59	3.08	0.26
Ratio by size								
Micro	0.65	1.77	2.42	1.07	1.60	1.03	1.49	0.11
Small	1.11	2.36	1.28	0.70	0.31	0.54	0.84	0.12
Medium	0.87	2.32	0.95	0.84	0.40	0.47	0.70	0.29
Large	0.80	2.65	0.65	0.73	0.37	0.59	0.93	0.13
Very large	0.88	2.97	0.77	0.48	0.19	0.78	0.75	n.a.
Ratio by sector								
Food	0.85	2.01	1.47	0.91	0.60	0.66	0.91	0.19
Metal	0.99	3.09	1.11	0.83	0.67	0.68	0.62	0.09
Textile	0.78	1.67	1.99	0.86	0.53	0.47	1.01	0.59
Wood	0.85	2.76	1.01	0.75	0.72	0.70	0.98	0.85

Note: All values are in U.S. dollars. For Eritrea, other sectors were also included in the survey. The wood and furniture sector included only two furniture makers, with much higher value-added to capital ratios compared to others in the survey. The averages for the comparator countries are across three waves of data gathered in the 1990s. Due to small sample size and lack of observations on capital, figures for Côte d'Ivoire may be biased.

productivity, and this is exactly what we find. Capital productivity in Eritrea is by an order of magnitude lower than capital productivity in other countries. Across countries, capital productivity tends to fall as size of the enterprise increases. There seems to be no strong pattern in capital productivity when data are disaggregated by sector.

The main conclusion emerging from the data is that the extremely high capital-labor ratios and the resulting near-zero returns to capital are likely to be due to the severe shortage of labor in Eritrea. It remains to be seen whether other constraints on the supply or demand side will emerge once demobilization of the army relieves the labor constraint.

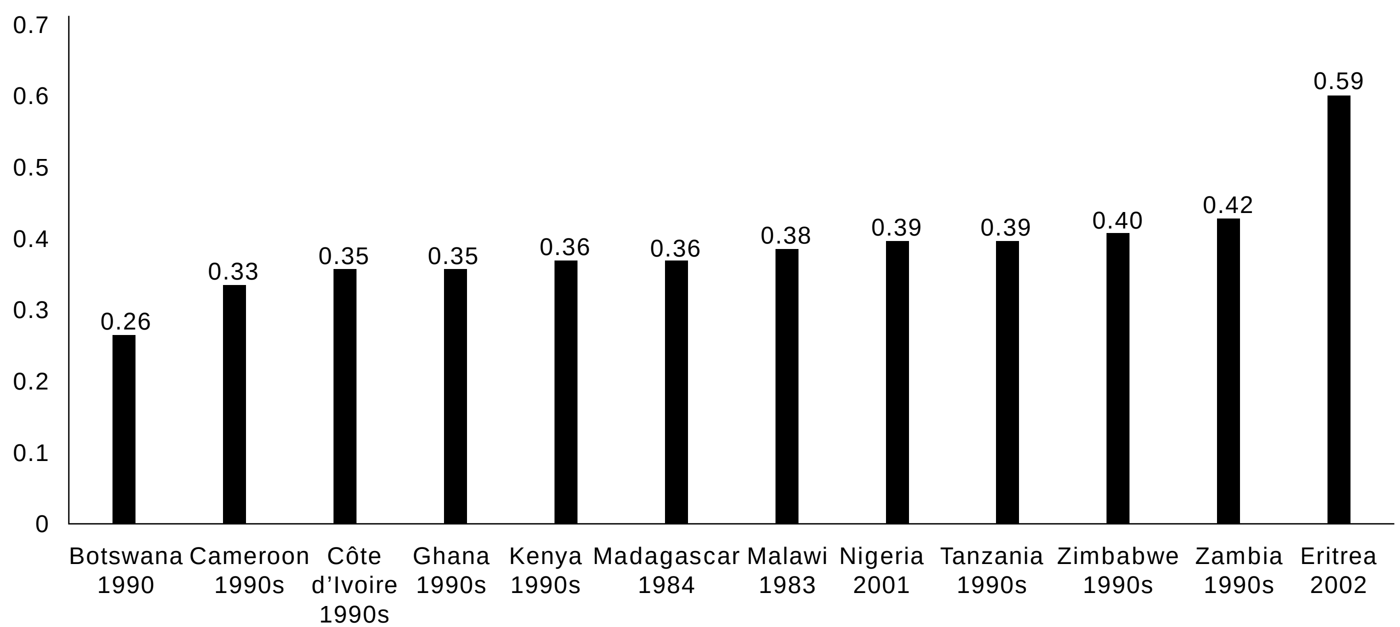
Unit Labor Costs in Eritrea

Finally, let us consider the unit cost of labor in Eritrea versus other countries in Sub-Saharan Africa. Unit labor cost measures the total cost per unit of output. When converted to a common currency, it enables international comparisons of competitiveness of labor. Unit labor cost in U.S. dollars is defined as:

$ULC = (w.L/Q).(1/e)$
where w is the manufacturing wage
L is the amount of labor employed
Q is a physical measure of output
e is the exchange rate defined as domestic currency per U.S. dollar

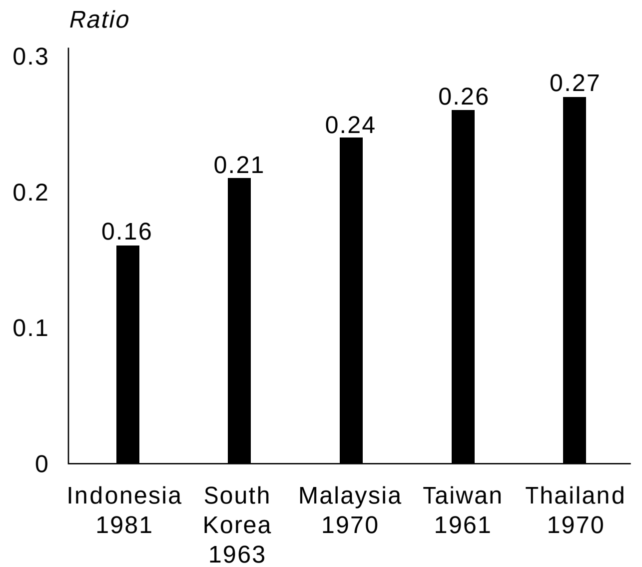
ULC can also be reformulated as a ratio of nominal wage (w) to labor productivity (Q/L). For a country to have a low (competitive) ULC, it has to do one of three things (or a combination thereof): (i) keep nominal wages low, (ii) keep its exchange rate competitive, and/or (iii) increase its labor productivity. Because it is very difficult to obtain comparable physical measures of output across different countries, we use an

Figure 2.1. Ratio of wages to value-added in Africa (approximating for unit labor costs)



Source: World Bank, RPED Eritrea, 2002.

Figure 2.2. Ratio of wages to value-added, Asia (Approximating for unit labor costs)



Source: Lindauer and Velenchik, 1994; and RPED Surveys, 1990s.

approximate measure of ULC, which is the ratio of wages to value-added at the firm level, averaged across the sample of firms (w.L/p.Q), where p is the deflator for physical value-added.

Figures 2.1 and 2.2 describe the ratio of wages to value-added for several countries in Asia and Sub-Saharan Africa, including Eritrea in 2002. It is clear that while Eritrea's unit labor cost (0.38) is within the range of Sub-Saharan Africa countries, it is much higher than that of several Asian countries during the period of their rapid economic growth. Daily wages, overtime, bonus, and other benefits for skilled production labor are about $2.63 per day, whereas unskilled workers receive about US$1.86 per day. Chapter three will go into further detail on the dynamics of the labor market.

By definition, unit labor costs are high in countries that have high wages and low labor productivity. Apart from overvalued exchange rates that have hampered Africa's competitiveness, the data on unit labor costs show that Africa has higher ratios of wage to labor productivity relative to Asia at roughly equivalent stages of development. When data from Africa for the 1980s are compared with Asian data from the 1960s and 1970s, it is clear that earnings in Africa are about two-thirds higher than was the case historically in Asia, and African productivity is about one-fourth lower.

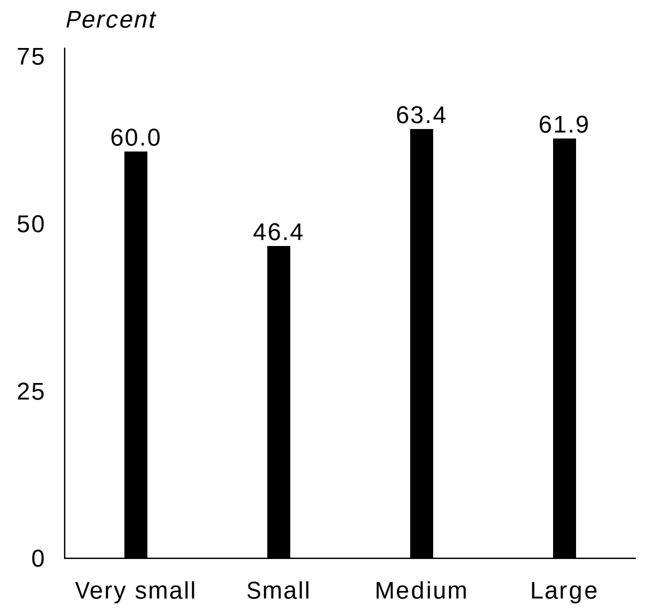
Disaggregation of the Eritrean data shows that the unit cost of labor is very high in certain size categories—very small firms have the highest unit labor cost (0.69), small and medium-sized firms have unit labor costs in the general range for Sub-Saharan Africa, and large firms have very high unit labor costs (0.55). When broken down by sector, textiles and garments and furniture have reasonable unit labor cost ratios (0.20 and 0.26, respectively), while other sectors have ratios between 0.60 and 0.77. Interestingly, government-owned firms have very high unit labor cost ratios of 0.60,whereas party-owned firms have a ratio of only 0.22, although the sample size of the People's Front for Democracy and Justice (PFDJ)-owned firms is small and hence may not be statistically representative. Foreign firms have a lower unit labor cost than domestic firms.

Several explanations have been offered for high unit labor costs in Africa, including the effect of non-market forces such as unionization and labor regulations that have resulted in high wages in the formal sector and the low labor-land ratio. Abundant supplies of cheap labor have tempered wage increases in Asia. In the Eritrean case, the labor scarcity that is supposed to be prevalent on the African continent is compounded by the extremely high numbers of people who have been mobilized into the army relative to the size of the Eritrean population.

Capacity Utilization

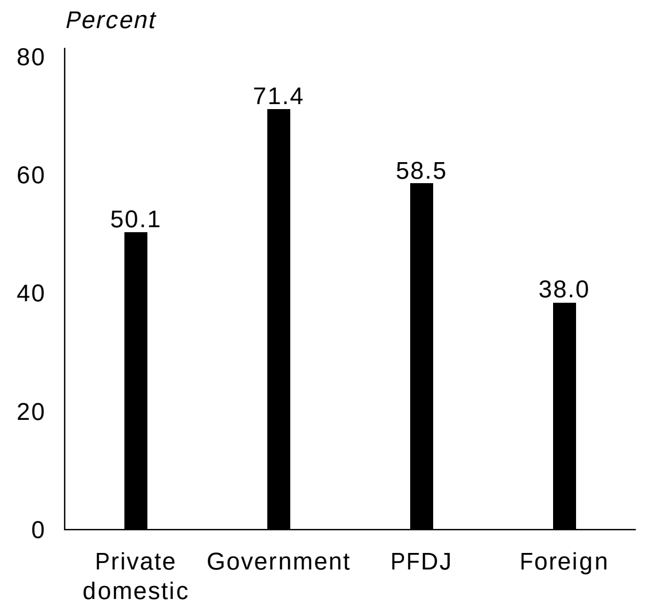
The average capacity utilization by firms changed only marginally between 1999 and 2001, averaging 53 percent for the overall sample. Examining across firm size and ownership categories, we find that capacity

Figure 2.3. Average capacity utilization by size (mean)



Source: World Bank, RPED Eritrea, 2002.

Figure 2.4. Average capacity utilization by ownership (mean)



Source: World Bank, RPED Eritrea, 2002.

utilization was lowest for firms in the small size category (10–49 employees) and not much different across other size classes (Figures 2.3 and 2.4). Across ownership categories, we see sharp differences in capacity utilization rates. Government-owned firms have the highest capacity utilization, while foreign firms have the lowest. The survey did not provide sufficient detail to ascertain the reasons for these differences (type of goods produced, access to capital, inputs, and so on).

Examining the obstacles to higher capacity utilization, we see that the most significant factor inhibiting firms is the lack of foreign exchange to purchase imports (Figure 2.5). The second highest-ranking obstacle was the lack of skilled labor, followed by equipment breakdowns and shortage of raw materials. Surprisingly, lack of demand had the lowest ranking overall, suggesting that obstacles to boosting capacity utilization came mainly from the supply side.

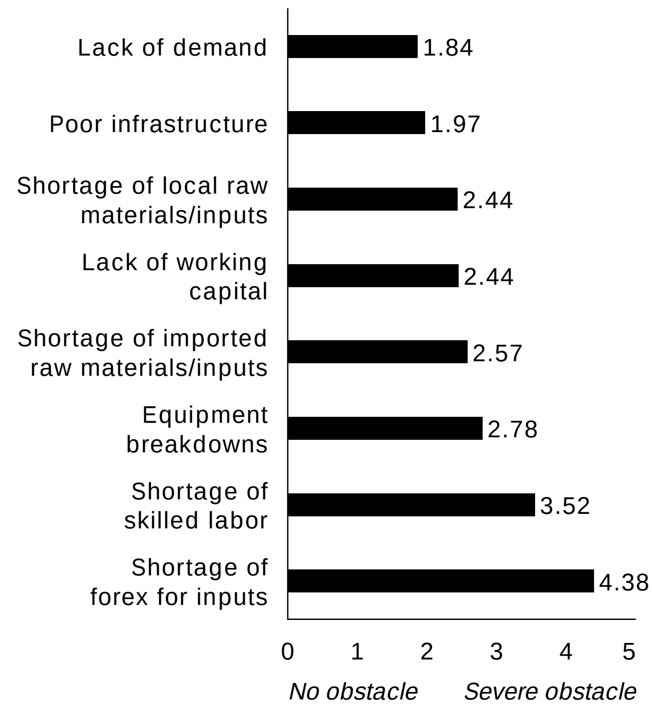
B. Factor Markets

Labor Market

The total Eritrean labor force consisted of an estimated 2.2 million persons in 2002, or about 50 percent of the total population. The manufacturing labor market is a tiny fraction of the overall labor market. According to the last estimate available, the manufacturing sector accounted for about 1.3 percent of the labor force in 1999 (World Bank 2001a).

The objective of this section is to provide some insight into the structure and characteristics of the Eritrean labor market, based on data gathered during the 2002 RPED survey. A large portion of this survey was devoted to the collection of labor data. The 79 surveyed enterprises provided information from internal records and from worker interviews (a sample of up to 10 employees was taken from each firm). In the first part of this chapter, we describe the salient features of employment in Eritrean manufacturing. In

Figure 2.5. Ranking of obstacles to capacity utilization



Source: World Bank, RPED Eritrea, 2002.

the second part, we provide information on the characteristics of the workforce. Finally, in the third part, we examine various aspects of earnings, changes in wages, and wage determination.

Structure of the Manufacturing Labor Market

Using detailed firm-level survey data we examine the patterns of employment within manufacturing and the changes in employment across various stratification variables for the 1999–2001 period. The data suggest that the distribution of employment is quite uneven across regions and sectors and that employment in manufacturing has been declining recently.

The sample does not differ from many developing countries in that permanent employment in manufacturing is concentrated in the textile, leather, and garments and food and beverage industries, two labor-intensive activities. These sectors account for 45 and 24 percent of the manufacturing employment in 2001, respectively (Figure 2.6).

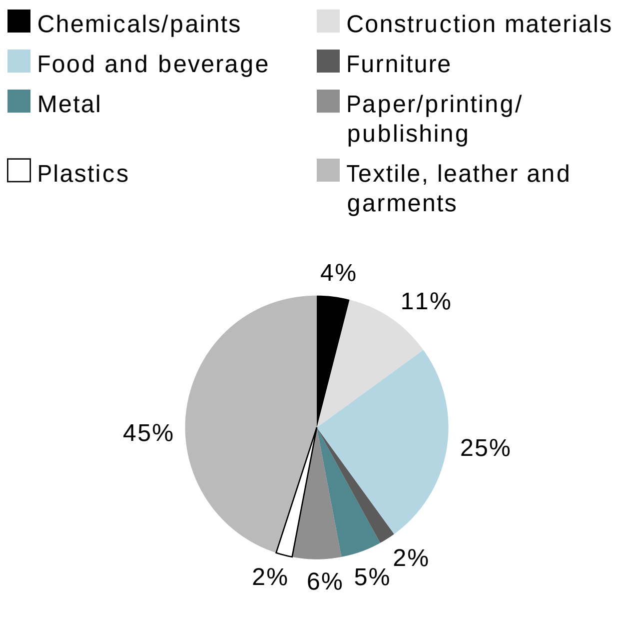
Very small firms account for only 0.8 percent of employment in the sample while large enterprises employ almost 74 percent of the workers (Annex III, Table A.3.5). This result is consistent with what was found in RPED surveys in other African countries. Finally, the importance of Asmara in terms of employment is obvious. About 83 percent of the firms were located in that area, and these firms account for about 87 percent of the employment in 2001.

Another feature of the distribution of employment is of special interest: the share of management and professionals (white-collar workers) in the average firm's workforce. It is often argued that a possible explanation for the comparatively high cost of labor in Africa is attributable to an excess of white-collar workers, which was measured at 20 to 30 percent in previous RPED surveys in Africa. Eritrea is quite different in this respect. In our sample, only about 11 percent of the workforce is composed of white-collar workers, about half the number found in other countries (Table A.3.1).

This is probably due to the scarcity of labor in Eritrea. A common complaint of firms was that many of their skilled employees had been enlisted in the army because of the war effort. The survey data we gathered confirm this complaint.

Overall, 2.58 percent of the employees of the surveyed firms were mobilized in 2001. While in absolute terms this number is small, a closer look at the mobilization rates by job position reveals important negative impacts on firm performance (Table 2.4). Mobilization rate of professionals (12.44 percent) is much larger than for any other position. When this is considered in conjunction with mobilization of managers (2.56 percent), it means that about 15 percent of the available white-collar workers were on military duty in 2001. In addition, mobilization seems to have followed a very rational pattern in

Figure 2.6. Structure of permanent employment (by sector, 2001)



Source: World Bank, RPED Eritrea, 2002.

which white-collar workers in sectors of potential interest for the military were recruited. Mobilization for white-collar workers was significant in chemicals and paints, construction materials, food and beverage, and textile, leather, and garments—all sectors requiring skills that can be applied to military purposes with little additional training.

An indirect confirmation of the impact of the mobilization on the structure of employment is provided by the exceptional importance of women in the Eritrean manufacturing sector. The average share of women in manufacturing in Sub-Saharan Africa was about 38.5 percent in the late 1990s (World Bank 2001a). In Eritrean manufacturing, women amount to 55.8 percent of the permanent employees, larger than the average, as well as larger than the rate found in other RPED surveys in Africa. For example, in Côte d'Ivoire in the mid-1990s, women account for 7.8 percent of the employed workers, and in Nigeria in 2001 they accounted for 9.5 percent. Such an unusually large share in Eritrea can be explained by the fact that in times of conflict, women tend to replace men sent to the front line.

The point here is not to discuss the military rationale of the removal of such a portion of the workforce but only to underline its detrimental impact on manufacturing. In effect, it deprives the sector of a large segment of its skilled labor and negatively affects the quality of overall management and performance.

Remuneration

The data presented below come from the main survey questionnaire as well as worker interviews. In total, 521 individual interviews of workers were conducted. At each firm, up to ten workers were interviewed with at least one worker from each major job position. The analysis focuses on the level and structure of remuneration and takes into account the components of cash remuneration including wages plus overtime pay, bonuses, and other benefits.

Wage Levels

According to firm accounting data for 2001, the structure of remuneration is such that wages account for about 84.5 percent of total cash earnings, overtime pay accounts for about 8 percent, and the various bonuses or benefits account for about 7.5 percent. Unlike what is found in many other African countries, overtime pay, bonuses, and other benefits are a small part of the total cash earnings for workers (about 15.5 percent). For example, in Nigeria, on the basis of 2000 wage data, these elements amounted to 35 percent of cash earnings.

Figure 2.7 shows the breakdown of average monthly cash earnings by job function, expressed in dollar terms (values in current Nakfa are reported in Annex III, Table A.3.5). Monthly cash earnings in April/May 2002 averaged \$71.50.[2] On average male workers earn about 67 percent more than female employees. This difference decreases at higher levels of skill and education, and at the management level

Table 2.4. Mobilization by job position in 2001 (percent)

Job position	Chemicals and paints	Construction Materials	Food and beverage	Furniture	Metal	Paper, printing, publishing	Plastics	Textile, leather and garments	Total
Management	0.00	17.39	2.22	0.00	0.00	0.00	0.00	0.00	2.56
Professionals	7.14	8.57	23.40	0.00	0.00	0.00	0.00	4.88	12.44
Skilled Production Workers	6.67	13.19	8.18	16.22	0.00	0.00	0.00	0.00	1.97
Unskilled Production Workers	0.00	8.75	3.63	0.00	0.00	0.00	13.79	0.34	2.72
Non Production Workers	2.94	5.83	1.66	0.00	0.00	0.00	0.00	0.00	1.50

Source: World Bank, RPED Eritrea, 2002.

the women are actually paid more than their male counterparts (however, this finding should be treated with caution given the limited number of female workers in this category).

Labor regulations have been made simpler since independence in Eritrea, there is no minimum wage in the private sector, and wage scales have been decompressed (World Bank 2002a). Eritrea is somewhat exceptional in this regard. Our survey results confirm this, showing that for 80 to 93 percent of the interviewed firms, hiring procedures and layoff procedures are not a problem. In addition, almost 90 percent of the firms report having no problems with regulations dealing with the hiring of temporary employees.

Recent Changes in Wages

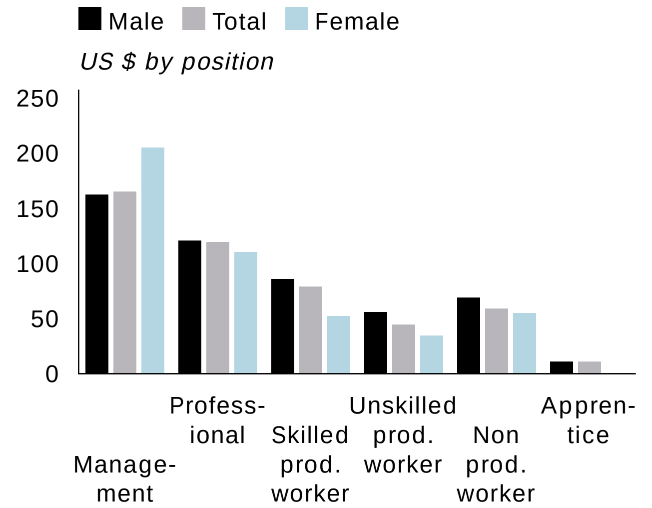
Our data on wages also suggest that labor is scarce and that this scarcity is driving up the cost of production. Between December 2001 and May 2002, earnings increased sharply over the sample by 17 percent (see Figures 2.8–2.10). The increase in earnings was particularly great for unskilled production workers (close to 22 percent) and also very high for skilled production workers (close to 18 percent). These are very significant wage changes, given that the period of change is only five months. There is no easily available index of prices, so it is hard to know whether the wages also rose in real terms. Anecdotal evidence, however, suggests that while prices have been rising, they are unlikely to have risen as much as wages in a five-month period.

In addition, while labor shortages are widespread, it seems that they are especially acute in metal and paper, printing, and publishing, where the increase in earnings is the highest of all the sectors. Interestingly, it seems that the smaller the firm, the larger the increase in earnings. The increase in earnings is also smaller for foreign-owned firms than for local ones. Among regions, Massawa area workers fared worst; their wages actually registered a decline.

Worker Surveys

Additional results from worker surveys support the following conclusions (results are detailed in Annex II):

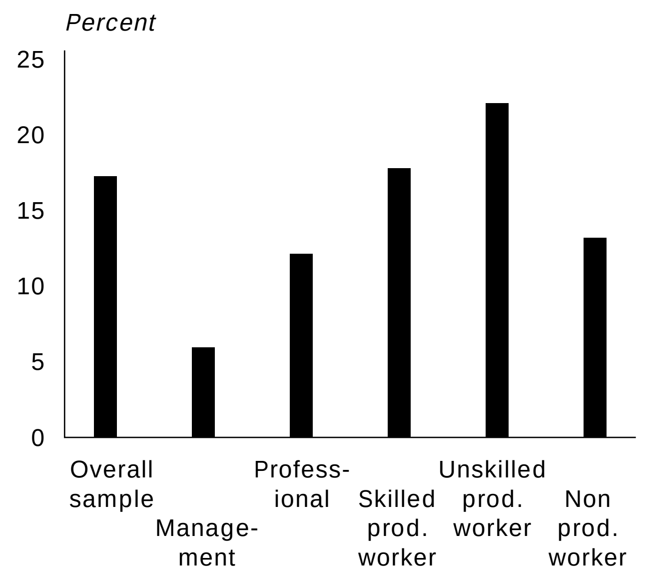
Figure 2.7. Monthly cash earnings



Note: Computed on the basis of the wages provided by workers in April/May 2002 and converted into U.S. dollars using the May 2002 official exchange rate of US$1 = 13.5 Nakfa.

Source: World Bank, RPED Eritrea, 2002.

Figure 2.8. Changes in the wage rate (Percentage change, end by position 2001 to May 2002)



Source: World Bank, RPED Eritrea, 2002.

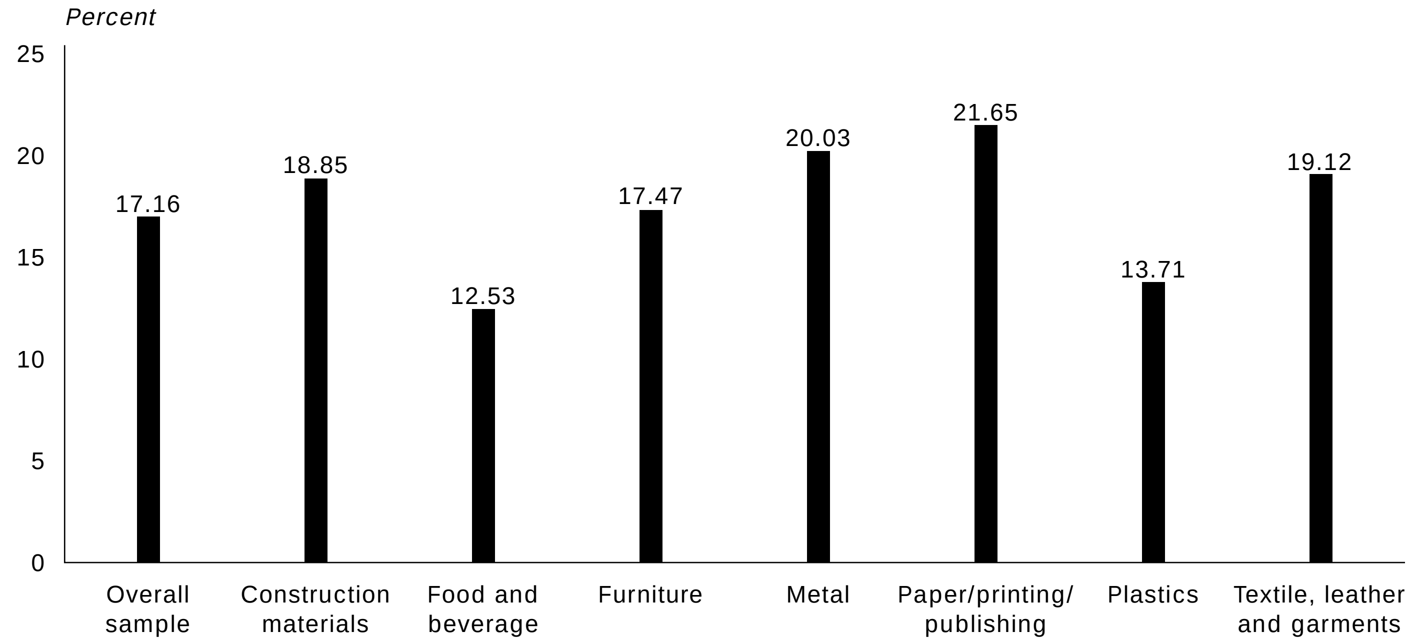
- *Education.* Despite higher gross enrollment rates since the war, the data we collected suggest that this strategy has not yet provided the manufacturing sector with the properly educated workforce it needs. There is a huge gap in training, because it was virtually nonexistent during the Derg regime (1974–1991).
- *HIV/AIDS.* The government, donors, and local groups are taking a great deal of initiative at an early stage in the spread of this disease, which is extremely encouraging. Nevertheless, there is still a stigma strongly associated with the disease, which is seriously inhibiting open discussion and behavioral change. Given the obvious implications for public health and the potential numerous economic impacts, this is quite disconcerting.
- *Wage determinants.* Regressions confirm that wages are in part determined by factors other than worker characteristics, which suggests that the labor market is not operating on an entirely competitive basis.

Conclusion

This section outlined the main characteristics of the manufacturing labor market in Eritrea, which is currently in a difficult situation. Manufacturing employment has been declining, while wages are probably rising in real terms, presumably reflecting the impact of military mobilization. The distribution of employment and wage changes remains uneven across regions and sectors. The manufacturing industry is dominated by the Asmara area, and the textile, leather, and garments and food and beverage sectors.

It seems that recent events have strongly affected the structure of this market. The mobilization process has substantially reduced the number of available white-collar workers and thus deprived firms of a valuable asset at a difficult time. It has also led to an unusually large proportion of women in manufacturing, which is typical of a wartime economy. The most critical issue at present regarding the labor market is

Figure 2.9. Changes in the wage rate (by sector)



Source: World Bank, RPED Eritrea, 2002

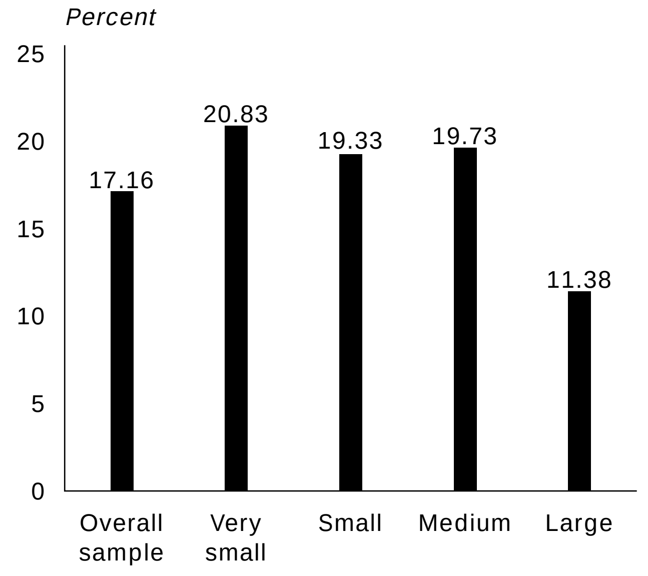
the labor shortage. This negatively impacts the current performance of firms. Rising real wages are a factor in the high cost and low competitiveness of Eritrean firms. They are also likely to reduce external competitiveness when they are not offset by currency depreciation or higher labor productivity. Thus, it seems that a step-up in the pace of the current demobilization program and the parallel establishment of appropriate re-training programs for former soldiers should remain at the top of the policy agenda.

A word of caution should be added here. While demobilization will undoubtedly increase the supply of labor, it may not completely solve the problem of labor shortage. Eritrea seems to have been continually depopulated during the thirty-year war for independence as well as the recent border war with Ethiopia. Skills of older workers have eroded, and younger workers have never had the opportunity to be trained. In addition, a large number of families receive remittances, easing the pressure to find employment in the formal private sector. The reintroduction of conscription for civilian purpose has, according to anecdotal accounts, encouraged some young men to go into hiding or even leave the country. Taken together, resolving the labor issue may be one of the government's greatest challenges, if it is to succeed in its strategy of growth and poverty reduction that relies on the use of supposedly abundant yet productive low-cost labor to compete in the global markets.

Finance and Investment

The performance of firms in any country is inextricably linked to the functioning of financial markets. A properly functioning financial sector is a prerequisite for the growth of enterprises and for overall economic development. Eritrea is well positioned in many ways compared to other countries in Sub-Saharan Africa. Until 2000, there was adequate liquidity in the financial sector and an overall lack of corruption in terms of financial

Figure 2.10. Changes in the wage rate (by size) (Percentage change, end 2001 to May 2002)



Source: World Bank, RPED Eritrea, 2002

allocation (World Bank 2001b). However, due to the transfer to the government of some old liabilities that the Central Bank of Eritrea had toward the Ethiopian banking system and the taking on of further government debt during 2001–2002, it is no longer clear how liquid the system still is and whether the supposed availability of credit within the banking sector translates into adequate access to low-cost credit and satisfaction of demand at the firm level.

Our survey results indicate that a large proportion of firms in the private sector do have access to the formal financial sector, primarily through the use of overdrafts. A significant number of small and medium firms have current loans. Compared to other Sub-Saharan African countries, private Eritrean firms are much more likely to use bank borrowing privileges. While firms complain about the stringent demand for collateral, their inability to collateralize land, and the high cost of interest payments, it is worth noting that these costs are much lower compared to those faced by enterprises in other African countries. However, most of the finance is clearly being used to meet working capital needs; investment is very low in Eritrea, even when compared to the rest of Africa. This is likely to have a negative impact on future economic growth. Government policies to promote investment and laws encouraging longer-term credit flow into the private sector are needed to put Eritrea on a higher growth trajectory.

Demand for Finance. Demand for finance from firms consists of two components: finance for meeting working capital requirements and finance for fixed investment in equipment, buildings, or land. For both these needs, and given the fungibility of capital, firms can either use internal cash flow or borrow from capital markets by using overdrafts or bank loans. In a perfectly functioning credit market, internal and external capital would act as perfect substitutes. In reality however, this rarely occurs due to market imperfections. The extent of market imperfection is determined by the differential access to external credit and cost of credit faced by firms.

In Eritrea, we see that firms' access to external credit—bank loans and overdrafts in particular—has declined in recent years (World Bank 2002a). Figure 2.11 below examines the use of overdrafts by firms in our sample. We see that fewer than half of very small firms have access to overdraft facilities, and 45 percent of large firms use this type of credit. When broken down by sector, there are two sectors (chemicals/paints and textiles and leather) in which over half the firms have access to overdraft facilities. Sharp differences exist across ownership types (Figure 2.12). We see that the largest users of overdraft facilities are domestic private firms. All other types of ownership, especially government owned and foreign firms, have access to internal financial resources not available to others, therefore having a limited demand for overdraft facilities. PFDJ firms have overdraft facilities but are least likely to use them.

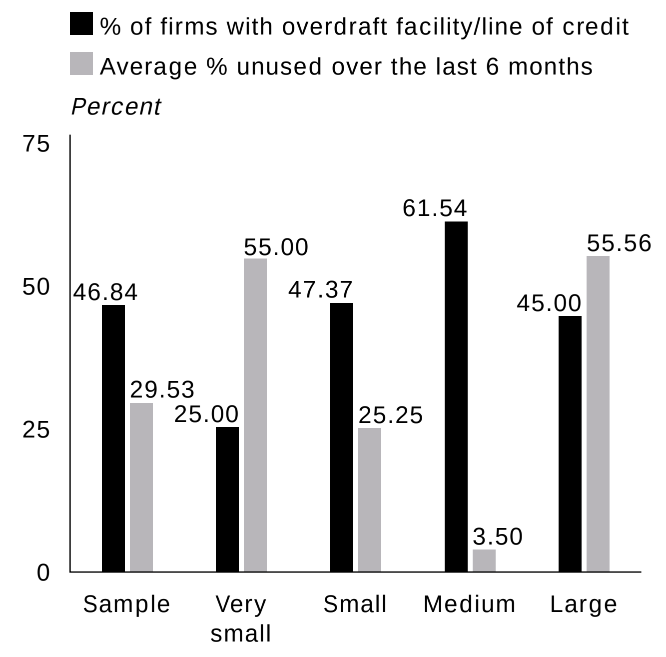
Access to loans also differs significantly across firm types. Figure 2.13 indicates whether or not firms currently have a loan, disaggregated by firm ownership. About 40 percent of domestic private firms do not have a loan; a majority of all other types of firms indicated that they do not currently have a loan. As to the reason, 100 percent of all firms (except domestic privately owned firms) indicated that they did not apply for a loan. Only 10 percent of domestic private firms indicated that they had applied for a loan and were turned down. Of the firms that did not have a loan and had not applied for a loan, 75 percent indicated that they did not need a loan, and 17 percent argued that interest rates are too high. The fact that 92 percent of government-owned firms and 67 percent of partly government-owned firms do not have loans is quite remarkable, leading one to question how these firms are financed.

That such a large number of firms overall did not apply for a loan may indicate powerful deterrence effects, such as the problem of accessing land to count as collateral. With two state- and one PFDJ-owned bank that do not truly compete with each other (interest rates are essentially fixed on the deposit side and capped at 12 percent on the lending side), there is real rigidity in the financial sector (World Bank 2002a). In addition to a need for further training of credit analysts, there are anecdotal reports of significant government interference on how final decisions on credit applications are made.

We further examine the characteristics of loans and overdrafts, focusing on the private domestic firms only. This group is most likely to be credit constrained and require formal sector borrowing. Figure 2.14 below presents the proportion of firms currently using bank loans and overdrafts and compares them to other Sub-Saharan African countries.

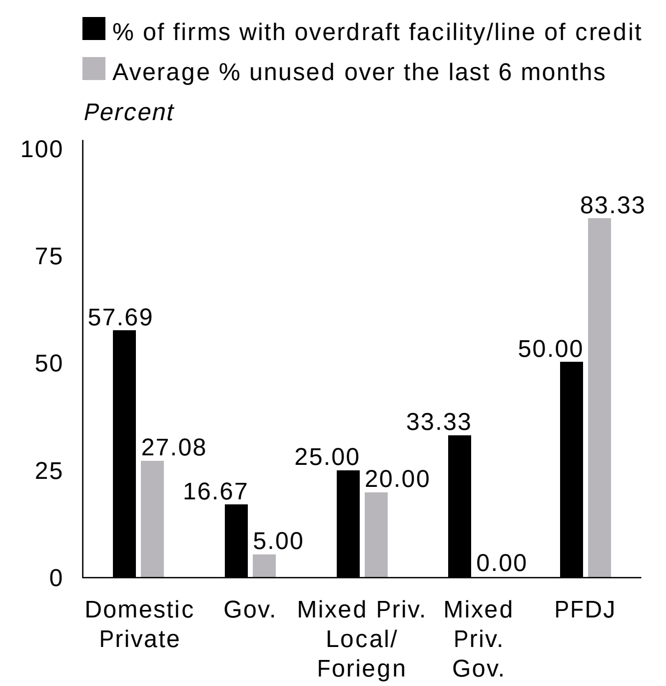
Given the tedious procedure required for obtaining a loan compared to the relatively easy applications for overdraft facilities, one would expect firms to maximize their use of overdrafts before

Figure 2.11. Overdraft facilities (by size)



Source: World Bank, RPED Eritrea, 2002.

Figure 2.12. Overdraft facilities (by ownership)



Source: World Bank, RPED Eritrea, 2002.

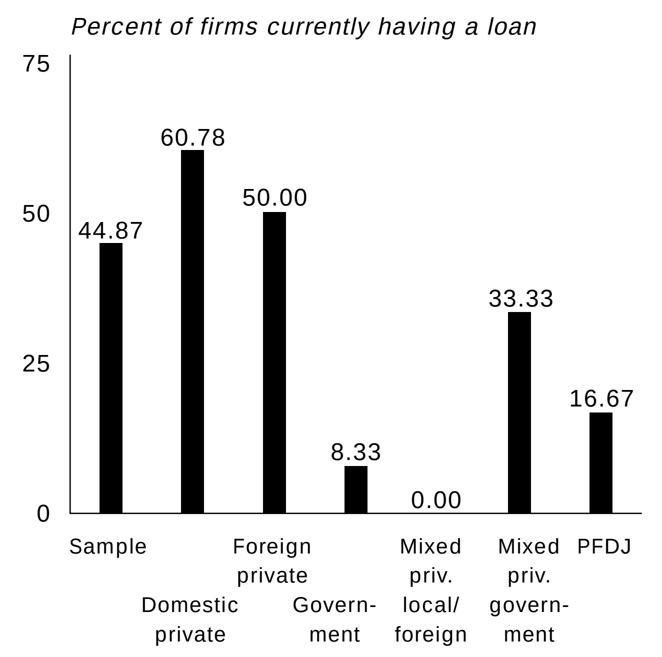
applying for loans. Overdrafts are likely substitutes for loans in this regard. However, if there is an overall credit constraint, then we would expect loans to complement overdrafts. The data show that the likelihood of having a loan increases with firm size and then falls for the largest firms. It also indicates that overdrafts and loans are substitutes for each other. A firm that has overdraft facilities is less likely to use loans as well.

The RPED survey also shows that almost three-quarters of new investment is financed by retained earnings or internal funds; the remaining amount is financed by local banks. There is virtually no access to foreign banks (no firms in our survey report having access to such loans). Collateral is required from almost all firms in the sample (Figure 2.15). The ratio of collateral is very high for domestic private firms (172 percent) and high for other firms as well. The most common collateral provided is buildings, followed by a combination of buildings and machinery, (Figure 2.16).

Figures 2.17 and 2.18 show average interest rates and average duration of loans. The main concern with these rates is the lack of variance; *interest-rates do not appear to take into account the varying degrees of risk represented by the firms in our sample.*

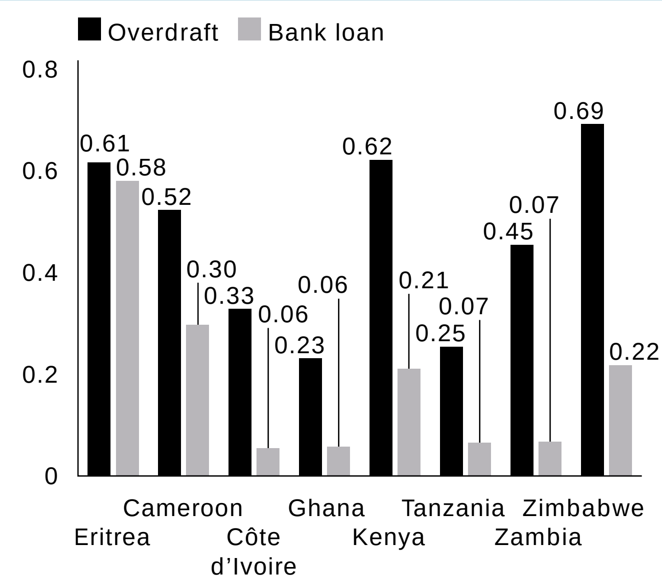
Rather, the rates are remarkably similar across sectors and firm types (which is the case for short-term liabilities as well). This reflects the broader problems of the financial sector—by using a 12 percent interest rate "ceiling" and paying depositors 5-6 percent, the financial sector has settled into lending at a risk-invariant rate of 9 percent while imposing substantial collateral requirements. In other words, collateral, rather than interest rates, is being used to ration finance. It may well be the case that the optimal scenario would include issuing T-bills at about 4-5 percent, paying depositors a lower rate, and lending to firms according to market criteria including risk. This may in fact lead to a substantial number of firms having access to money

Figure 2.13. Loans



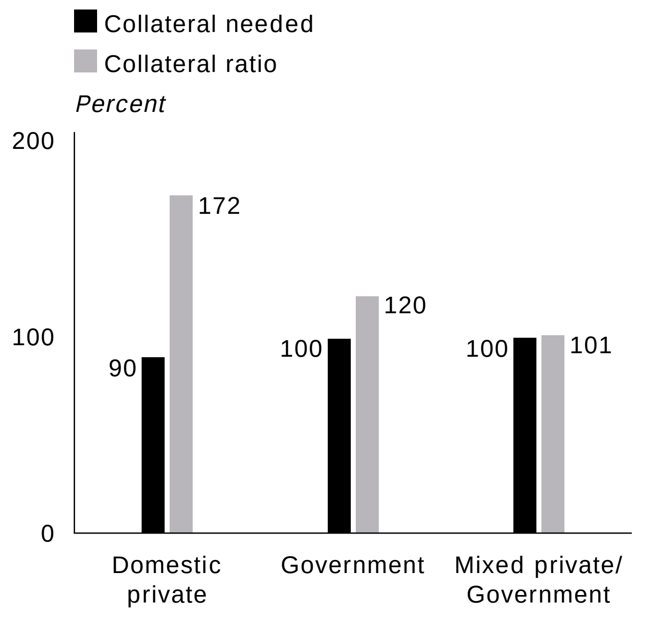
Source: World Bank, RPED Eritrea, 2002.

Figure 2.14. Use of formal and informal borrowing and lending (private domestic firms only)



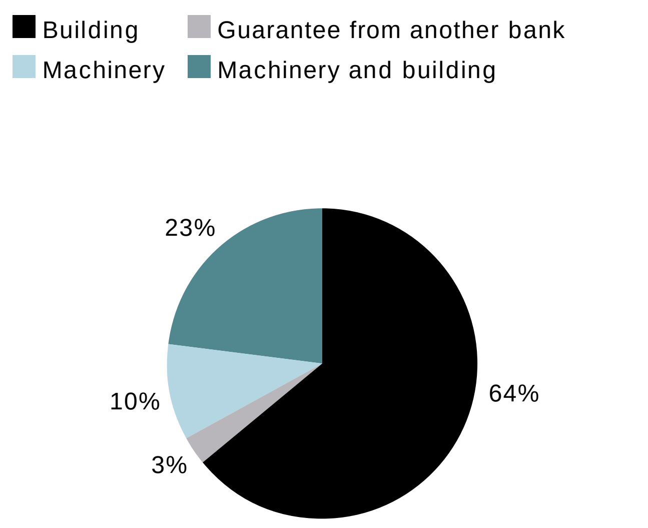
Sources: RPED Surveys; Mazumdar and Mazaheri, 2002.

Figure 2.15. Details on collateral required for the most recent loan



Source: World Bank, RPED Eritrea, 2002.

Figure 2.16. Types of collateral utilized, Collateral provided for the most recent loan



Source: World Bank, RPED Eritrea, 2002.

at a rate lower than 9 percent. However, this approach denies loans to high-risk, high-return opportunities that almost surely exist and, if taken, could be beneficial to the development of the Eritrean economy.

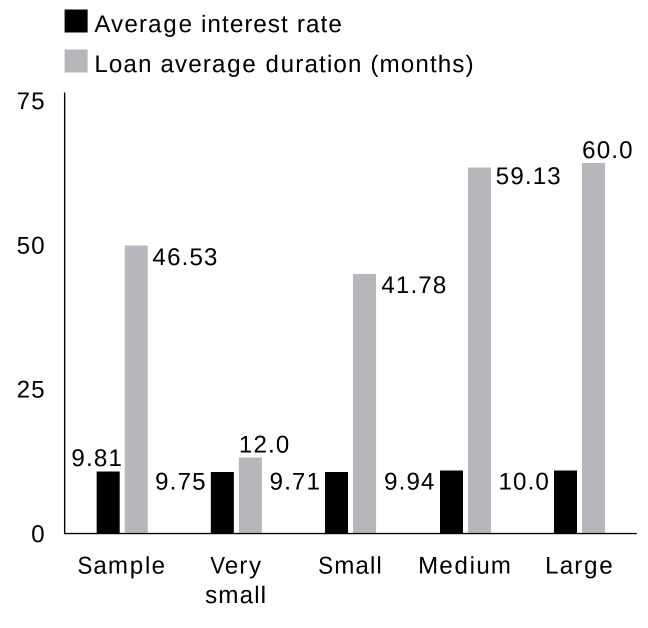
Other results from the RPED survey are interesting as well. Checks and domestic currency wires take an average of 1.4 days to clear, while foreign wire transfers take about 6.3 days (Table A.4.1). External accounting experts audit about 90 percent of firms. Close to 90 percent of firms reported that audited statements are necessary to obtain bank credit. Finally, domestic firms reported that about a third of debt was due within 90 days, another third was due within three to twelve months, and a final third was due in over a year's time. Foreign firms reported that about 50 percent of debt was due in 90 days; the rest was long-term debt (which is generally not accessible to domestic firms).

Investment Characteristics in International Comparison

Table 2.5 compares the fundamental investment characteristics of firms in Eritrea to other countries in Sub-Saharan Africa. We see that the percentage of firms in Eritrea that are currently investing is lower than in most countries in the comparator sample. Only Tanzania and Cameroon have a lower percentage of firms investing. The differences in the mean investment to capital ratio are more striking. We see that Eritrea has the lowest average investment ratio (0.02). Even for firms who do invest, the average investment rate is only 6 percent. In other countries such as Tanzania, while only 19 percent of firms in the sample invested, those firms made large investments, with a mean investment rate of 165 percent.

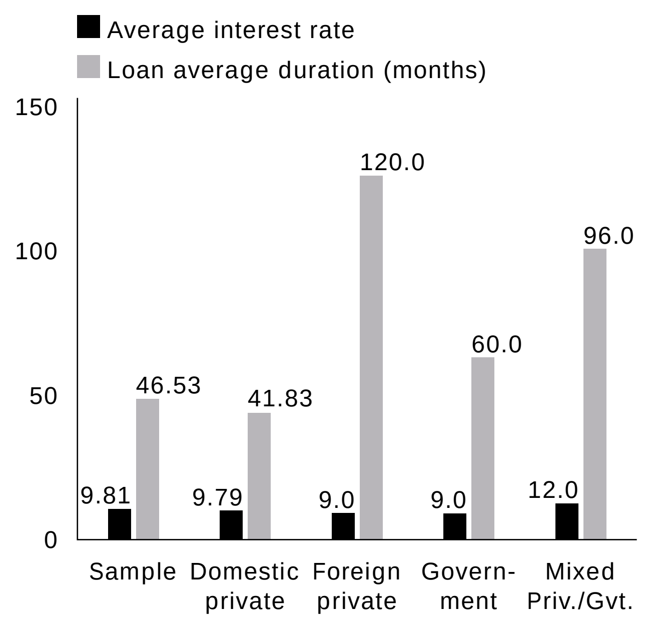
Comparing differences across size classes, we see that investment increases with firm size up to the medium size category and then drops for the largest size class. Of those investing, firms in the small size category have the highest investment rate (10

Figure 2.17. Average interest rates and duration of the most recent loan (by size)



Source: World Bank, RPED Eritrea, 2002.

Figure 2.18. Average interest rates and duration of the most recent loan (by ownership)



Source: World Bank, RPED Eritrea, 2002.

percent), compared to less than 3 percent for other size classes. Further investigation revealed that many of the firms that were not making investments in the larger size classes were those that were recently privatized and were heavily indebted.

Across ownership categories, we see that while government and PFDJ firms are most likely to invest, their investment rates are much lower than those in the private sector. Private firms that are investing are making proportionately bigger investments than other firms. This may indicate a gradual movement of resources away from the public sector.

Conclusion

There seems to be adequate liquidity in the financial sector and an overall absence of corruption in terms of financial allocation. Interest rates are remarkably similar across sector and firm types and therefore do not appear to take into account varying degrees of risk. This situation impedes the possibility of a substantial number of firms having access to finance at a rate lower than 9 percent. The flip side of this situation is that a number of high-risk, high-reward opportunities are most likely being lost. A related development is Eritrea's low investment rate compared to other African countries.

Access to Land

According to the Land Proclamation of 1994, the government owns all land in Eritrea. Eritreans are granted usufructuary rights. Domestic and international investors can obtain land leases, but the government retains final dispossession rights.

In Figure 2.20 (next section), numerous business environment factors were rated on a scale of 1 to 5, with one equaling "no problem" and 5 equaling "severe problem" for operations. Access to land ranked on average between a "minor" and a "moderate" problem. A closer examination of the answers indicates a bi-modal pattern, usually either "not a problem" or a "severe" problem (Figure 2.19).

Table 2.5. Investment characteristics: Eritrea vs. other SSA countries

	Cameroon	Côte d'Ivoire	Ghana	Kenya	Tanzania	Zambia	Zimbabwe	Eritrea
Percentage of firms investing	27%	42%	46%	39%	19%	33%	72%	32%
Investment /capital	0.06	0.08	0.07	0.04	0.03	0.03	0.07	0.02
Investment /capital (Investing firms only)	0.20	0.19	0.15	0.10	0.16	0.10	0.11	0.06

Note: Data for Eritrea are for 2000. Côte d'Ivoire data are for 1995. All other countries rates are for 1993.

Source: World Bank, RPED.

Table 2.6. Distribution of investment by firm characteristics

By firm size	Micro	Small	Med.	Large
% Investing	12.5%	35%	38%	29%
I/K	0.02	0.10	0.01	0.02

By ownership categories	Priv. Dom.	Govt.	PFDJ	Foreign
% Investing	28%	38%	50%	20%
I/K	0.10	0.02	0.01	0.01

Note: I/K is the investment to capital ratio.

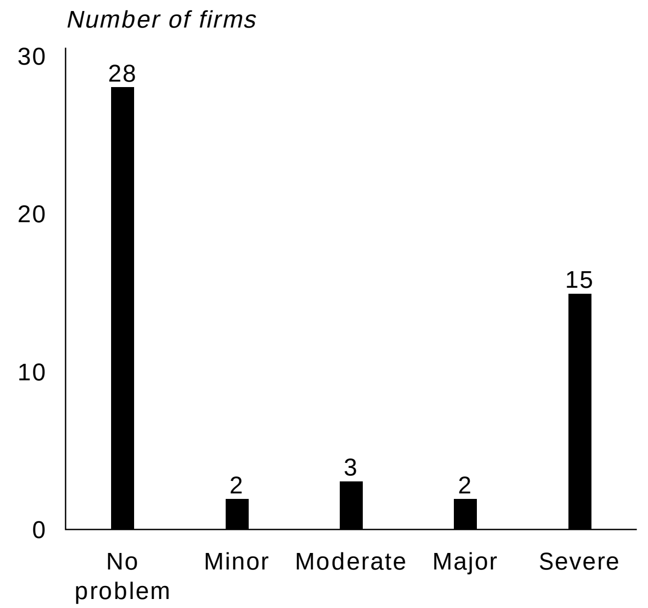
Source: World Bank, RPED Eritrea, 2002.

What could explain this bipolarity of responses? One possibility is that the results have been influenced by the fact that a majority of the 35 privatized firms in Eritrea were included in the sample study. These companies had unique privileges regarding access to land and other resources prior to their transfer from government ownership. Many other firms had a much harder time getting access to land. On average, firms that were able to obtain land within the last five years had to wait 316 days and had to pay about 127,185 N for processing. Nevertheless, these numbers should be interpreted with caution, since this question only applied to about 20 percent of the sample, and the answers were highly skewed by one or two firms (the median answer for time was 180 days and 500 N in costs). Anecdotal evidence shows that some enterprise owners and managers were frustrated with the lack of information on how their applications for land allocation were processed. Those who had applied had no idea how long it would take, what stage they were currently in, or even what all of the stages were. This may lead to another reason for some firms reporting that they had "no problem" obtaining land. Having seen from others how difficult it is to get land, they simply decided to make do with the land they already had. To such firms the application process would seem opaque and carried out in a discretionary manner.

C. Regulatory Constraints and Infrastructure

A number of improvements have been made in the business climate by the GOE since independence. These achievements give credence to their expressed commitment to encouraging the growth of the private

Figure 2.19. Access to land —severity of obstacle



Source: World Bank, RPED Eritrea, 2002

sector. Among other issues, progress has been made on privatization, reforming the investment code, and business license procedures. Nevertheless other factors are holding back efficient operation and growth of enterprises. During the RPED survey, owners and managers of manufacturing firms were asked both qualitative "ranking" questions and quantitative "cost" questions regarding infrastructure and government regulations.[3] This section covers general business regulations and infrastructure, in order of importance for the manufacturing firms in our sample. Next, the supply and quality of business services are examined. Finally, the firms' experiences with regulations specific to trade are presented.

The results of the qualitative ranking questions on business regulation and infrastructure are illustrated below and reveal the private sector's perception of areas for improvement as well as some of the positive aspects of the investment climate (Figure 2.20).

Macroeconomic Instability

The term *macroeconomic stability* was defined to interviewees as the stability of the inflation and exchange rate. The evidence shows that instability is perceived by the private sector as the largest factor dragging down performance. These findings roughly correspond to the reasons firm owners and operators gave for low capacity utilization (discussed in Section A). Respondents were asked specifically about the impact of the lack of foreign exchange on capacity utilization, and the majority (63 percent) classified it as "severe."

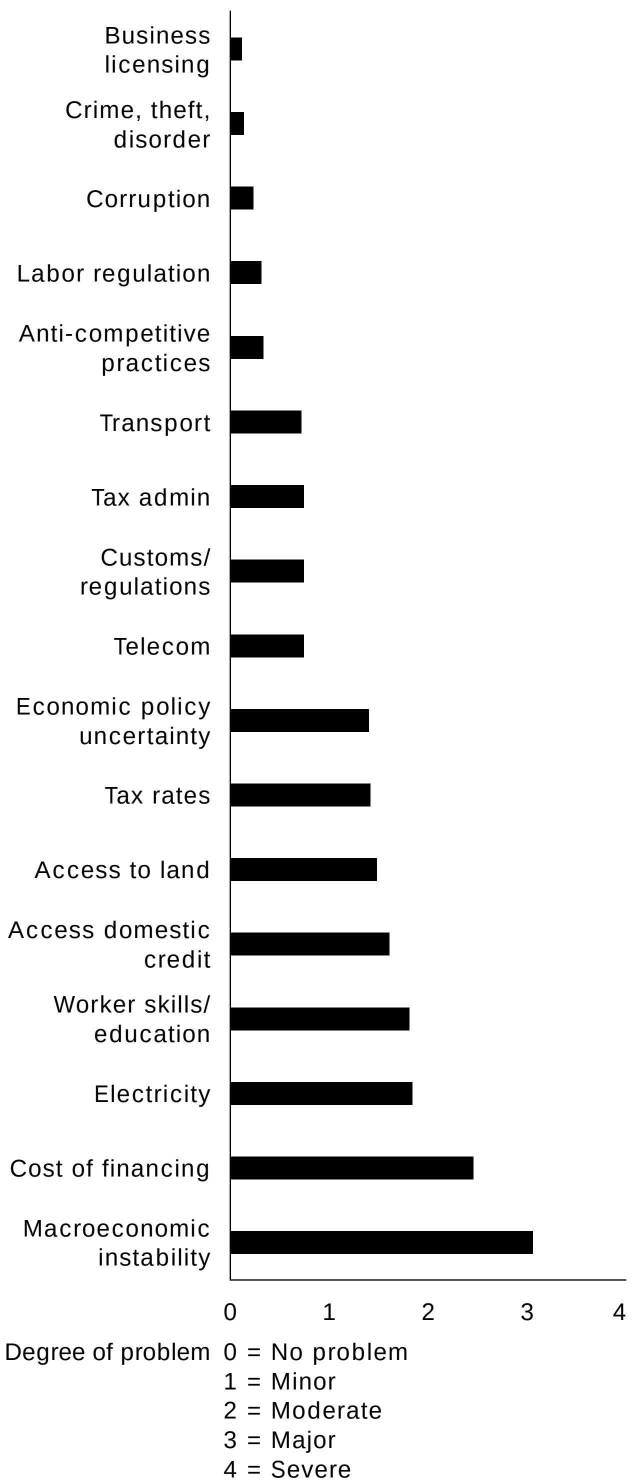
Firms seemed more optimistic about the future, however. Specific questions were asked regarding the firm owner/manager's expectations of macroeconomic indicators during the coming years. Those firms that answered seemed to be quite hopeful, but many hinged their answers on the understanding that nothing would disturb the current peace process between Ethiopia and Eritrea.

Inflation is expected to begin to come down to an average of 10.8 percent beginning in 2003 (these figures reflect the inflation rate in Asmara, rather than the lower national average). On average, these firms thought that the official exchange rate would continue rising, but slowly to 15.2 N/$ by the end of the year 2002 and to about 16 N/$ in 2003. These figures belie the fact, however, that large numbers of firms (on average 24 percent of the respondents) were so unsure of the future that they could not even estimate these figures. This type of uncertainty is extremely detrimental to the ability of firms to make decisions regarding production levels, financing, and investment.

Infrastructure

The war for independence had a devastating impact on infrastructure. Since independence the country had made considerable improvements in roads, power, water, and telecommunications. As a result, infrastructure as a whole ranked as only a "minor" constraint to capacity utilization in Eritrea (see

Figure 2.20. Business environment



Source: World Bank, RPED Eritrea, 2002.

Figure 2.5 earlier in this chapter). This is at variance with typical SSA countries where infrastructure usually ranks among the top three obstacles to expanding production—the other two being corruption and tax regulation/administration (Brunetti, Kisunko, and Weder 1997). Nevertheless, the survey does point to a few areas that could use some improvement, especially the reliability of electricity supply and telecommunications.

Electricity

Cost and access to electricity is particularly important for the manufacturing sector. Although the government has made good progress on power supply, with the opening of the new Hirghigo Power Plant in Massawa, there are anecdotal reports that outages due to testing of the plant and network have interfered with production. Some firm owners also informed the RPED team that whereas in the past, the national power company would notify them of upcoming tests, they rarely do so now. For enterprises producing certain continuous-process items such as plastic and soap, the unexpected cessation of power can lead to weeks without production while machines are cleaned. While 27 percent of the sample answered that electricity was not a problem, 18 percent considered it a "severe" problem and a further 11 and 15 percent, "major" and "moderate," respectively.

In addition, the average firm owner had to wait 99 days to obtain an electrical connection, although the distribution of answers was skewed by one answer and a more meaningful number is probably the median, 30 days. From conversations with the firm owners and managers, obtaining electricity seems particularly time consuming and bureaucratically difficult for higher capacity industrial connections.

According to sample firms, there was an average of nine electricity interruptions (median equals five days) a month during the year 2001. It is not surprising then that 43 percent of the sample firms own a generator from which they obtain an average of 22 percent of their electricity. In towns outside of

Asmara, a slightly higher percentage of firms (46 percent) have generators. As expected, the average estimated cost of supplying electricity with generators (2.00 Nakfa /KwH) is double than the average reported cost of electricity from the public grid (1.00 N/KwH, about 0.07 $US/KwH).[4] Thus, the uncertain supply of electricity imposes higher business costs, both to acquire a generator and to operate it when the public grid is not supplying electricity.

Water

On average most firms answered that water was not a problem at all. However, 48 percent of firms reported using a private well to obtain water for production, and firms reported an average of seven interruptions to the public water supply each month during 2001.

Telecommunications

The message obtained through the survey on telecommunications is mixed. Although in Figure 2.3 the majority of respondents reported no problems with telecommunications, the average (median) firm had to wait 65 days to obtain a mainline telephone connection. In addition, there was a reported average of seven interruptions to telephone service in these sample firms per month during 2001.

Labor Regulation and Business Licensing

Labor regulation and business licensing have been areas of activity during recent years for the government, and the progress clearly shows. As discussed in greater detail in Section A on productivity and Section B on the labor market, the Eritrean labor market has been significantly liberalized since independence. At independence, wages were not market-determined, firing was more difficult, and the civil service was inefficient, partly due to too many employees. Hiring practices and regulations on retrenchment in particular have improved. These adjustments, along with reorganization and refocusing of the civil service, helped the government to improve its performance. In addition, and as a result, retrenchment during the privatization process was less.

The perceptions of the manufacturing firms in our sample attest to these improvements as well. A majority (85 percent) of respondents stated that labor regulations were not a problem. When asked about specific types of labor regulations (hiring local or foreign workers, procedures and cost of retrenchment, limits on temporary hiring, and so on), the average answer was consistently that they were not obstacles. Although some firms complained about the burden of providing six months of pay when a worker is fired (18 percent of the sample said that “layoff procedures and cost of retrenchment” were a problem), most firms agreed that the labor regulations were not the problem and repeated that the major problem was the *lack* of workers.

Some firm managers/owners told RPED enumerators that they understood that businesses could apply in writing to retrieve essential skilled workers from the front, but that even large companies had not been successful in their attempts to do so. Even the Crash Program for Exports was not successful in getting back the key workers in the factories participating in the program. Consequently, smaller companies were discouraged from even trying. Some firms expressed the belief that exceptions to the rules were made for government-owned firms and ministries and more skilled workers were allowed to stay. Demobilization will obviously do the most to quickly increase the pool of labor, and skilled labor in particular. At that point, the labor regulations in place will be tested to a greater extent than they have been so far.

There is evidence that efforts to streamline the licensing of businesses have had some success as well. Generally, the private sector sees the license as a comprehensive instrument, which is reducing the amount of time required previously to obtain various licenses. For those firms established within the last five years, the average number of licenses required was indeed one. The average answer for the time it took to get a license was two days (for those firms that were established during the last two years). One should bear in mind, however, that the RPED approach only covers existing businesses that were by definition successful in overcoming these hurdles. Other assessments have pointed out that potential investors are still having business license applications turned down for arbitrary reasons (World Bank 2002a). However, overall, the average time spent by senior management on government regulations was 5 percent, much lower than RPED results in other Sub-Saharan countries.

Corruption and Crime

Not surprisingly, for anyone familiar with Eritrea, corruption and crime/theft/disorder are considered virtually nonexistent. The majority of respondents (84 percent) in this ranking exercise answered that corruption is not a problem. This was corroborated by other questions throughout the survey. One asked specifically about the "total value of gifts or bribes required" during inspection visits by government officials from the Health Ministry, Fire Inspector, or Labor and Social Security Ministry. The universal answer was zero. When asked in general what percentage of revenue is used for informal payments to "get things done," the answers averaged 0.2 percent. By comparison, in a global private sector survey conducted in 1997 by the World Bank, results for Sub-Saharan Africa showed that on average 50 percent of entrepreneurs were frequently asked for these types of payments (Brunetti, Kisunko, and Weder 1997).

The difficulty in assessing the presence of corruption lies in the fact that a more complete definition of corruption includes more than simply the payment of bribes. Preferential treatment given through discretionary power in the awarding of contracts or allocation of land or foreign exchange is also considered corruption and can have quite distortionary effects on the growth of the private sector. There are hearsay, but frequently heard, complaints that party-owned firms, being closely linked to the government, have occasionally used their "pull" to get things done.

With future economic growth, greater opportunities will likely emerge involving larger sums of money and the relatively more recognizable types of corruption problems (bribery) could increase. At the moment, however, the absence of bribery is a bright spot in the business outlook for Eritrea and gives it a comparative advantage vis-à-vis its potential competitors in much of Africa.

Business Services

While most firms thought domestic business services were available and affordable, the perceptions of their quality varied (Figure 2.21), with accounting and engineering/design services rated at the good end of the scale and information technology (IT) at the poor end.

Firm owners/managers describe IT consulting services as inadequate because when follow-up support after hardware installation is available (which is not always the case), it often does not fix the problems encountered by the firm.

A number of firms expressed the need for more competition in the provision of insurance to the state-owned National Insurance Corporation of Eritrea (NICE). There are no regulatory barriers to the entry of independent insurance agencies; indeed, one domestic company is reportedly preparing to begin operations in insurance, Augaro Financial Services. The war, however, has undoubtedly made Eritrea a less-than-desirable market at present for foreign investors in this sector, as has the restriction on advertising for foreign companies.

Trade Regulations

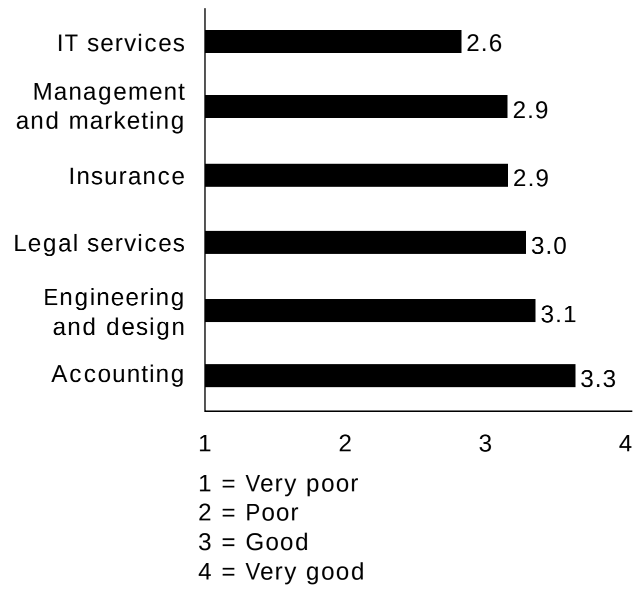
As discussed in Chapter 1, the Government of Eritrea has taken various measures to try to increase trade since independence. At first the value of merchandise exports increased from US$36.1 million in 1993 to US$95.3 million in 1996. But during this period Eritrea was not successful in diversifying manufacturing export destinations away from Ethiopia. With the onset of war with Ethiopia, Eritrea's exports collapsed, bottoming out at only $20 million in 2001.

Only 14 percent of the firms surveyed reported any exports. None of these are government- or PFDJ-owned firms. These firms are of all size classes and exported on average 77 percent of their sales. Not surprisingly, these firms are mostly in the food and beverage sector and the textile/leather/garments sector, two of the largest sectors within the sample (see discussion of the sample in Annex I).

Only a very small number of firms used the available trade incentives. Only three firms reported using the duty drawback scheme and the same number used the duty exemption on imported inputs. Only two establishments used the duty exemption for imported capital goods. It is not clear what the reason is behind the underutilization of these provisions. Perhaps the firms are not fully aware of what incentives are available to them or perhaps they feel the incentives are not worth the time and effort required to take advantage of them given the relatively low import tariffs. Duty drawback systems have not worked well in most developing countries. Duty exemption was used on a case-by-case basis for the firms participating in the Crash Program on Exports. There is now a duty exemption regulation drafted, but it has not yet been passed into law.

A majority of the sample firms, 71 percent of the sample, imports inputs directly, and 59 percent of the firms used a clearing agent for imports. Firms ranked "customs procedures" between "no problem" and a "minor" problem (Figure 2.20). Data on the length of time taken for imports to clear the customs suggest that there is some room for improvement. The average (mean) wait for imports last year (from the moment they arrive at the port to when they have cleared all customs procedures) is 12 days and the average longest wait was 23 days. For exports the figures are 4 days (average wait) and 4 days (average longest wait).

Figure 2.21. Business services: perceptions of quality



Source: World Bank, RPED Eritrea, 2002.

Some firms remarked that there has been a significant improvement over the last few years. Yet others said that so much of the dealings with the customs agency depended on "whom you know" and whether your company is "well known" by customs officials. On the basis of the data, however, the conclusion would have to be that import customs are not a binding constraint for most firms. But the cost of imports can be high because of the unavailability of foreign exchange at the official rate. Some companies pointed out that even when they can afford to buy foreign exchange at a higher rate on the parallel market, they lose money because the import invoice lists the official foreign exchange rate. This underestimates the cost of inputs, artificially raising profits and therefore taxes. One firm pointed out that they even had to pay a 2 percent bank fee on foreign exchange transactions to get goods out of customs, even though they had bought the currency on the black market.

Expectations of Firm Growth

Manufacturing company managers/owners are even more optimistic about their own growth potential than the economy's ability to recover. Generally, the percentage of sales growth expected for 2002 is 25 percent and for next year it is 44 percent. Firms plan to increase investment by 27 percent during both years. Imports for the same time periods are expected to increase by 30 percent and 34 percent, respectively. Not surprisingly, the most optimism was in the textile/leather/garments and food/beverage sectors. However, these estimates hinge on the expectation that peace with Ethiopia will continue, trade will resume, and demobilization will be completed soon.

Conclusion

What should be kept in mind is that the obstacles outlined in this and previous sections are not static. Simply because certain infrastructure services or regulations are currently viewed as sufficient does not mean this will remain the case. Once current obstacles are overcome to a reasonable extent, and the private sector begins to grow, there will be pressure on the other services and resources, which may then become the main obstacles to subsequent growth. For example, as noted in a World Bank study of the services sector in Eritrea, competition-promoting policies are still in their infancy but may well become a priority as markets develop, (World Bank 2002b). As the economy grows, there may also be greater opportunities for corruption and crime to emerge. As the demobilization program proceeds and more skilled labor is freed up, there could very well be more demand for investment and credit, which may or may not be accessible in adequate amounts. It is for these reasons that RPED surveys are generally repeated with an interval of three to five years, to track the shift in the main obstacles to the private sector.

Notes

2. These numbers are computed using the official exchange rate that prevailed in April/May 2002. The exchange rate on the parallel market may have been substantially different at the time.
3. Despite the limitations of qualitative ranking questions, especially concerning the ability to compare data across countries, the RPED survey considers them to be a useful gauge to contribute to policy priority discussions at a national level.
4. The cost for publicly supplied electricity is obtained by taking all charges (fixed costs and those dependent on consumption) on a typical monthly bill and dividing by KwH consumed. The privately supplied electricity cost is generally estimated by asking the value of the equipment, the number of operatives and their cost, the cost of servicing in terms of parts and labor, and the cost of fuel and the amount used per week.

A number of general and specific recommendations arise from the analysis and conclusions of this study, (Figure 3.1). The two key obstacles to resuming growth seem to be the lack of foreign exchange and the severe shortage of labor (Figure 2.5). As these obstacles are removed, another set of constraints will likely become binding. The survey suggests that the top four obstacles in this “second generation” are:

- Infrastructure constraints, such as unreliable electricity supply, poor telecommunications, and high costs for sea and air transport;
- Limited access to finance at a reasonable cost;
- Low levels of education and skills in labor force; and
- Limited access to land.

Foreign Exchange

In the first instance the lack of foreign exchange is mostly a macroeconomic issue. Above all, business people want a predictable environment, which means slow and predictable changes in exchange rates, interest rates, and rates of inflation. This can only come about from macroeconomic stabilization. Until that is achieved, inflation rates will continue to be high (double digit) and variable. That in turn will play havoc with exchange rates and interest rates. While stabilization in the current situation in Eritrea will probably result in a major devaluation of the official exchange rate, it will likely bring a number of benefits. Net earners or receivers of foreign exchange will be better off. Foreign aid will put greater resources in terms of Nakfa at the disposal of government. Receivers of remittances will be better off. Flow of remittances and foreign private investment is likely to rise as confidence returns. Supply of foreign exchange will no longer be much of a constraint on private businesses. Costs of imported inputs will increase but will now be correctly reflected on the firms’ balance sheets. To the extent that domestic production competes with imports, the higher cost of foreign exchange will give the enterprises additional protection. New export earners will emerge, further increasing the available foreign exchange and thus help stabilize both nominal and real exchange rates in the future.

Supply of Labor

The results of the survey analysis clearly indicate that the current overarching constraint is labor. The labor shortage affects firms’ ability to grow and become competitive, either in the regional or international marketplace. Due to the severe shortage of labor, firms are relatively less productive in Eritrea. The ratio of capital to labor is much higher than the optimal ratio, and wages have been rising. Unit labor costs, a rough indicator of competitiveness, show that Eritrean labor is expensive relative to labor in other parts of the world. When coupled with other constraints highlighted in the report, the labor shortage creates a severe drag on competitiveness in the private sector. It may well be the case that once labor is freed up and other key problems mentioned in this report are addressed, there will be a surge in productivity and exports of existing firms and a high demand for new investment. Immediate and effective demobilization is necessary if the private sector in Eritrea is to function normally. Demobilization will also make it easier to achieve macroeconomic stability.

Infrastructure

Power, telecommunications, and transport are not currently the most important binding constraints but may well become more problematic once labor is freed up and the private sector starts growing. The uncertain supply of power already imposes some extra costs on firms and may quickly emerge as a larger constraint once the labor situation improves. Telecommunication reforms need to be pushed vigorously to set the framework for a much expanded landline and wireless access to the world. Costs of sea and air transport are high and need to be brought in line with those of the neighboring countries.

Access to and Cost of Finance

At a general level, macroeconomic stabilization, by reducing the crowding out of private sector by the public sector, should increase the availability of loanable funds and decrease the average level of interest rates. At a specific level, financial allocation needs to take into account varying degrees of risk. Low-risk investment will then benefit from lower interest rates, and high-risk investment will at least get the opportunity to succeed (or fail). Banks need to restructure to achieve this as well as increase profitability. This should also lead to lower collateral requirements, at least in some cases. In addition, more training in credit assessment would facilitate this shift in operating procedure. If these adjustments are not made, finance could very well be an even larger obstacle for existing and potential firms once the labor supply is increased, especially where long-term investment is concerned.

Educated and Skilled Labor Force

The study found both direct and indirect evidence of the negative impact of low levels of education and skills of the Eritrean workers. At the direct level, employers complained that even when workers are available, they were not easily trainable because of a generally low level of education and experience in jobs that require skill. Indirect evidence comes from the fact that the unit labor costs (ULCs) are high when compared to successful exporters. A strong rise in productivity would reduce ULCs, because ULCs in domestic currency are just a ratio of nominal wages to labor productivity. But greater productivity is a function of better education and greater skills.

Access to Land

Our survey shows that some firms have serious problems with access to land; others report that they do not have a constraint. It is very clear that the administrative process for accessing land is problematic. Aggressive follow-up by the relevant authorities on existing applications for land is urgently needed; the government needs to sort out exactly what is holding things up from the point of view of administrative barriers. Using market mechanisms to price the leasing of land may make sense as well; one possibility is to auction off leases for land. In most market economies, there is a “rent gradient”; that is, center-city land is much more expensive than land on the outskirts of a city. Asmara would probably be no different once bureaucratic obstacles to pricing of land are removed. Ease of exit from leases is just as important. If sub-optimal decisions are made regarding leasing of land, entrepreneurs should be able to sell their leases just as easily as they buy them. An active and efficient market for land is crucial to the growth of the private sector. Valuable capital resources should not be tied up in land indefinitely due to lack of a functioning marketplace.

Table 3.1. Eritrea investment climate policy matrix

Constraints			Proposed solutions					Planned actions	
Constraint Category	*Specific Constraint*	*Degree of Importance*	*Recom-mended Solutions*	*Political Difficulty*	*Technical Difficulty*	*Period of Implemen-tation*	*Active WB Actions*	*Planned WB Action*	*Other Donor Action*
Macro-economic Instability	Foreign Exchange Rate Instability	Very High	Macro-economic stabilization	High	Low	Medium Term	CEM Dialogue	Continue Dialogue Continue to implement ERP	Dialogue
Labor Market	Shortage of Labor	Very High	Demobiliz-ation	Very High	High	Medium to Long Term	Economic Recovery Program (ERP)	Full imple-mentation of demobiliz-ation program	Multi-donor demobiliz-ation program
Labor Market	Education and Skills of Workers	High	• Training for demobilized solders • Increased general level of education	Low	Low	Medium Term	Demobiliz-ation program	Launch education project	
Infra-structure	Consistency of Supply of Electricity	Very High	Reform of the power sector	Low	Low	Short Term	ESW on education; planning/ preparation for education project	Launch of power project	Financing of power generation
Finance	Access to Finance	Very High	• Introduce private banks • Restructure Financial sector • Training in credit assessment	High	High	Short Term	Dialogue with government re: power project		
Land	Access to Land	High	• Identify administrative barriers • Establish market-based mechanism for leasing land	Very High	High	Long Term			

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In the early 1950s, when Eritrea was federated with Ethiopia, it had a relatively sophisticated urban and industrial infrastructure. However, this structure was downgraded by the initial reorientation of industrial development toward Ethiopia and the consequences of the various wars.

At present, the government is striving to achieve an economy led by the private sector. However, to date, the private sector has tended to concentrate on imports and distribution, receiving little investment and generating few exports. The manufacturing sector accounted for about 7.8 percent of GDP in1999, a level similar to the average share of manufacturing in GDP for low-income Sub-Saharan Africa countries (9.8 percent over the 1995–1999 period). Total employment in manufacturing is estimated at 25,000 workers in 2000 (EIU 2001).

Description of the Sample Frame

The sampling design strategy was—as usual in RPED surveys—one of a stratified random sample. The Ministry of Industry and Trade provided RPED with a list of 222 officially registered companies with more than 10 employees for 2000.[5] Fourteen firms were added to this list, on the basis of the information available in other registries (mainly the directory of the Chamber of Commerce and the listing of officially registered businesses). In addition, 12 firms were removed, leaving a final sample frame of 224 formal manufacturing firms.[6]

The sample frame was then stratified by location, sector, and size. Four regions were defined: “Asmara,” “Massawa,” “Keren,” and “Other.” Similarly, eight broad sectors were defined: “Chemicals, Paints and Pharmaceuticals,” “Food and Beverage,” “Metal,” “Paper/Printing and Publishing,” “Plastics,” “Textile, Leather, and Garments,” “Furniture,” and “Construction.” Finally, to compare Eritrea to other RPED datasets for various African countries, four standard size classes were used: “Very Small” (0–10 employees), “Small” (11–49 employees), “Medium” (50–99 employees), and “Large” (100 and more employees).

Table A.1.1 and Table A.1.2 show the breakdown of the sample frame among regions, sizes, and sectors. They also show employment figures. The importance of the Asmara region is immediately apparent. About 82.6 percent of the firms and 86.0 percent of the employment in the manufacturing sector are concentrated in this region. All sectors have firms in the Asmara region.

Not surprisingly, the Eritrean manufacturing sector has an uneven size distribution (Table A.1.2). While most enterprises are “small” (about 57 percent of the firms have between 10 and 49 employees), they only account for 18.3 percent of the employment. However, the 33 firms with more than 100 employees provide the bulk of the employment. As a whole, large firms account for 68 percent of total employment.

In short, the sample frame exhibits two prominent characteristics: the weight of the Asmara region and the dominance of firms with more than 100 workers in total employment. This sample frame accounts for about 65 percent of total employment in manufacturing.

Sample Derivation

Clusters were defined on the basis of location, size, and sector. This three-level stratification implied 48 clusters, each of Nh elementary units . Firms were randomly selected inside most of the clusters (nh firms for each cluster). For a small number of very small clusters, all firms were selected (Table A.1.3).

Due to the small size of the sample frame and the three levels of stratification, there was a risk of (i) missing key companies due to the small size of many clusters, and (ii) having a biased distribution of employment. With these concerns in mind, firms located in the “Other” regions were not sampled due to their marginal impact, both in terms of number of firms and employment. In addition, for the regions to

Table A.1.1. Sample frame (by region and sector)

		Asmara Area	Keren Area	Massawa Area	Other Areas	Total
Chemicals/Paints/ Pharmaceuticals	Number of firms	12	1			13
	Total employment	434	11			445
	Average nber of employees/firm	36.2	11.0			34.2
	Standard deviation nber of empl.	*(30.0)*	*na*			*(29.6)*
Construction Material	Number of firms	35	4	4	1	44
	Total employment	2,106	67	449	12	2,634
	Average nber of employees/firm	60.2	16.8	112.3	12.0	59.9
	Standard deviation nber of empl.	*(101.8)*	*(5.0)*	*(67.9)*	*na*	*(94.9)*
Food and Beverage	Number of firms	52	6	6	12	76
	Total employment	3,666	673	342	421	5,102
	Average nber of employees/firm	70.5	112.2	57.0	35.1	67.1
	Standard deviation nber of empl.	*(166.8)*	*(247.8)*	*(63.6)*	*(77.3)*	*(156.6)*
Furniture	Number of firms	20		2		22
	Total employment	589		223		812
	Average nber of employees/firm	29.5		111.5		36.9
	Standard deviation nber of empl.	*(20.1)*		*(98.3)*		*(37.5)*
Metal	Number of firms	16				16
	Total employment	829				829
	Average nber of employees/firm	51.8				51.8
	Standard deviation nber of empl.	*(51.3)*				*(51.3)*
Paper/Printing/ Publishing	Number of firms	10			1	11
	Total employment	483			15	498
	Average nber of employees/firm	48.3			15.0	45.3
	Standard deviation nber of empl.	*(72.1)*			*na*	*(69.1)*
Plastics	Number of firms	7				7
	Total employment	155				155
	Average nber of employees/firm	22.1				22.1
	Standard deviation nber of empl.	*(13.8)*				*(13.8)*
Textile, Leather and Garments	Number of firms	33		1	1	35
	Total employment	5,705		35	25	5,765
	Average nber of employees/firm	172.9		35.0	25.0	164.7
	Standard deviation nber of empl.	*(344.4)*		*na*	*na*	*(335.8)*
Total	Number of firms	185	11	13	15	224
	Total employment	13,967	751	1,049	473	16,240
	Average nber of employees/firm	75.5	68.3	80.7	31.5	72.5
	Standard deviation nber of empl.	*(182.0)*	*(182.4)*	*(67.7)*	*(69.0)*	*(171.7)*

Note: Based on an MoIT list of the 2001 industry survey which reports 2000 data.

Source: World Bank, RPED Eritrea, 2002.

Table A.1.2. Sample frame (by size and sector)

		Very Small (0-10)	Small (10-49)	Medium (50-99)	Large (100 and +)	Total
Chemicals/Paints/ Pharmaceuticals	Number of firms		10	2	1	13
	Total employment		201	141	103	445
	Average nber of employees/firm		20.1	70.5	103.0	34.2
	Standard deviation nber of empl.		*(9.8)*	*(16.3)*	*na*	*(29.6)*
Construction Material	Number of firms	5	26	7	6	44
	Total employment	50	568	513	1,503	2,634
	Average nber of employees/firm	10.0	21.8	73.3	250.5	59.9
	Standard deviation nber of empl.	*(0.0)*	*(12.3)*	*(17.8)*	*(149.6)*	*(94.9)*
Food and Beverage	Number of firms	22	39	5	10	76
	Total employment	220	879	335	3,668	5,102
	Average nber of employees/firm	10.0	22.5	67.0	366.8	67.1
	Standard deviation nber of empl.	*(0.0)*	*(12.5)*	*(13.5)*	*(295.2)*	*(156.6)*
Furniture	Number of firms	3	14	4	1	22
	Total employment	30	354	247	181	812
	Average nber of employees/firm	10.0	25.3	61.8	181.0	36.9
	Standard deviation nber of empl.	*(0.0)*	*(11.8)*	*(12.8)*	*na*	*(37.5)*
Metal	Number of firms	1	10	2	3	16
	Total employment	10	253	151	415	829
	Average nber of employees/firm	10.0	25.3	75.5	138.3	51.8
	Standard deviation nber of empl.	*na*	*(8.0)*	*(29.0)*	*(53.4)*	*(51.3)*
Paper/Printing/ Publishing	Number of firms	2	7	1	1	11
	Total employment	20	146	90	242	498
	Average nber of employees/firm	10.0	20.9	90.0	242.0	45.3
	Standard deviation nber of empl.	*(0.0)*	*(7.9)*	*na*	*na*	*(69.1)*
Plastics	Number of firms	2	5			7
	Total employment	20	135			155
	Average nber of employees/firm	10.0	27.0			22.1
	Standard deviation nber of empl.	*(0.0)*	*(13.5)*			*(13.8)*
Textile, Leather and Garments	Number of firms	3	17	4	11	35
	Total employment	30	432	253	5,050	5,765
	Average nber of employees/firm	10.0	25.4	63.3	459.1	164.7
	Standard deviation nber of empl.	*(0.0)*	*(9.2)*	*(4.6)*	*(493.6)*	*(335.8)*
Total	Number of firms	38	128	25	33	224
	Total employment	380	2,968	1,730	11,162	16,240
	Average nber of employees/firm	10.0	23.2	69.2	338.2	72.5
	Standard deviation nber of empl.	*(0.0)*	*(11.2)*	*(14.9)*	*(342.9)*	*(171.7)*

Note: Based on an MoIT list of the 2001 industry survey which reports 2000 data.

Source: World Bank, RPED Eritrea, 2002.

be surveyed, all of the “large” firms and most of the “medium”-sized firms were kept in the sample, as were the firms in the “Plastics” sector. The rest of the firms were sampled randomly from each of the remaining clusters. A theoretical sample of 98 firms was thus drawn with a sampling rate of 43.7 percent (Table A.1.3).

The sample effectively surveyed differs slightly from this theoretical sample but retains its major characteristics, as well as those of the sample frame: the importance of firms with more than 100 workers and the prominence of the Asmara region. The sample actually surveyed is 79 firms, giving a sampling rate of 35.2 percent. In the sample surveyed, firms with more than 100 workers account for 72 percent of the employment. Also, 83.5 percent of sample enterprises are located in the Asmara region. In addition, the Asmara region accounts for 83.6 percent of the employment in the sample (Table A.1.4 and Table A.1.5).

The difference between the theoretical sample and the sample that was actually surveyed came about because some firms refused to be interviewed and others had either closed or changed sectors. In total, about one-fifth of the firms listed in the theoretical sample were no longer relevant for the survey exercise. Some of these “missing” firms were replaced with “new” firms with the same characteristics.[7]

To confirm the validity of the surveyed sample, the different employment distributions of the sample frame and the surveyed sample were compared. The comparison of the employment distribution by size of firm, sector, and location is illustrated in the next three figures.

Figure A.1.1 shows the distribution of employment among the different size classes. Clearly, the distribution in the sample does not differ greatly from the distribution in the sample frame. “Large” and “medium” firms do have, however, a slightly larger share in the sample, while the opposite is true for “small” and “very small” enterprises.

The sample and sample frame distributions differ significantly for a few sectors (Figure A.1.2.). Two extreme cases are the “Food and Beverage” sector, whose share in employment is overestimated in the sample while the importance of the “Construction” sector is probably larger in reality.

In addition, as shown by Figure A.1.3, the sample reproduces the distribution of employment by region reasonably well.

The total sample includes 9,057 workers, which account for about 56 percent of the employment in the sample frame. Available statistics suggest that the employment represented in the sample is also about 36 percent of Eritrea’s total manufacturing employment in 2000. In short, the distribution of employment in the surveyed sample is probably quite correct with respect to the size of firms and their location; however, the “fit” is imperfect for the sectoral distribution. The sample surveyed takes into account the dominance of “large” firms and the importance of the Asmara region. Hence, this sample can be considered reasonably representative of the main characteristics of the manufacturing sector in Eritrea given available statistics.

Notes

5. This listing provided the name, address, activity, and number of employees of formal manufacturing firms existing in 2000 that had been interviewed during a survey in 2001.
6. Firms with activity not directly related to manufacturing or that had disappeared in the meantime were eliminated.
7. Replacements had to belong to the same sector of activity, to be of a similar size, and to operate in the same location.

Table A.1.3. Sample frame and theoretical sample

Cluster h	Location	Size Class	Sector	Employment	Sample Frame N_h	Sample n_h	Probability of Selection n_h/N_h	Weight N_h/N
1	Asmara Region	Very Small	Construction Material	50	5	0	0.0000	0.0000
2	Asmara Region	Very Small	Food and Beverage	130	13	1	0.0769	0.0045
3	Asmara Region	Very Small	Furniture	30	3	0	0.0000	0.0000
4	Asmara Region	Very Small	Metal	10	1	0	0.0000	0.0000
5	Asmara Region	Very Small	Paper/Printing/Publishing	20	2	2	1.0000	0.0089
6	Asmara Region	Very Small	Plastics	20	2	2	1.0000	0.0089
7	Asmara Region	Very Small	Textile, Leather and Garments	30	3	0	0.0000	0.0000
8	Asmara Region	Small	Chemicals/Paints/Pharmaceuticals	190	9	8	0.8889	0.0357
9	Asmara Region	Small	Construction Material	467	20	3	0.1500	0.0134
10	Asmara Region	Small	Food and Beverage	664	28	7	0.2500	0.0313
11	Asmara Region	Small	Furniture	312	13	5	0.3846	0.0223
12	Asmara Region	Small	Metal	253	10	1	0.1000	0.0045
13	Asmara Region	Small	Paper/Printing/Publishing	131	6	4	0.6667	0.0179
14	Asmara Region	Small	Plastics	135	5	5	1.0000	0.0223
15	Asmara Region	Small	Textile, Leather and Garments	372	15	8	0.5333	0.0357
16	Asmara Region	Medium	Chemicals/Paints/Pharmaceuticals	141	2	2	1.0000	0.0089
17	Asmara Region	Medium	Construction Material	415	6	3	0.5000	0.0134
18	Asmara Region	Medium	Food and Beverage	285	4	2	0.5000	0.0089
19	Asmara Region	Medium	Furniture	247	4	2	0.5000	0.0089
20	Asmara Region	Medium	Metal	151	2	1	0.5000	0.0045
21	Asmara Region	Medium	Paper/Printing/Publishing	90	1	0	0.0000	0.0000
22	Asmara Region	Medium	Textile, Leather and Garments	253	4	2	0.5000	0.0089
23	Asmara Region	Large	Chemicals/Paints/Pharmaceuticals	103	1	1	1.0000	0.0045
24	Asmara Region	Large	Construction Material	1174	4	4	1.0000	0.0179
25	Asmara Region	Large	Food and Beverage	2587	7	7	1.0000	0.0313
26	Asmara Region	Large	Metal	415	3	3	1.0000	0.0134
27	Asmara Region	Large	Paper/Printing/Publishing	242	1	1	1.0000	0.0045
28	Asmara Region	Large	Textile, Leather and Garments	5050	11	10	0.9091	0.0446
29	Keren Region	Very Small	Food and Beverage	30	3	2	0.6667	0.0089
30	Keren Region	Small	Chemicals/Paints/Pharmaceuticals	11	1	1	1.0000	0.0045
31	Keren Region	Small	Construction Material	67	4	2	0.5000	0.0089
32	Keren Region	Small	Food and Beverage	25	2	1	0.5000	0.0045
33	Keren Region	Large	Food and Beverage	618	1	1	1.0000	0.0045

continued…

Table A.1.3. Sample rrame and theoretical sample *(continued)*

Cluster *h*	Location	Size Class	Sector	Employment	Sample Frame N_h	Sample n_h	Probability of Selection n_h/N_h	Weight N_h/N
34	Massawa Region	Small	Construction Material	22	1	0	0.0000	0.0000
35	Massawa Region	Small	Food and Beverage	109	4	1	0.2500	0.0045
36	Massawa Region	Small	Furniture	42	1	0	0.0000	0.0000
37	Massawa Region	Small	Textile, Leather and Garments	35	1	1	1.0000	0.0045
38	Massawa Region	Medium	Construction Material	98	1	1	1.0000	0.0045
39	Massawa Region	Medium	Food and Beverage	50	1	0	0.0000	0.0000
40	Massawa Region	Large	Construction Material	329	2	2	1.0000	0.0089
41	Massawa Region	Large	Food and Beverage	183	1	1	1.0000	0.0045
42	Massawa Region	Large	Furniture	181	1	1	1.0000	0.0045
43	Other Regions	Very Small	Food and Beverage	60	6	0	0.0000	0.0000
44	Other Regions	Small	Construction Material	12	1	0	0.0000	0.0000
45	Other Regions	Small	Food and Beverage	81	5	0	0.0000	0.0000
46	Other Regions	Small	Paper/Printing/Publishing	15	1	0	0.0000	0.0000
47	Other Regions	Small	Textile, Leather and Garments	25	1	0	0.0000	0.0000
48	Other Regions	Large	Food and Beverage	280	1	0	0.0000	0.0000
				16, 240	224	98	0.4375	

Source: World Bank, RPED Eritrea, 2002.

Table A.1.4. Sample Structure (by sector and region)

		Asmara	Keren	Massawa	Total
Chemicals, Paints and Pharmaceuticals	Number of Firms	9	1		10
	Total Employment	251	8		259
Construction Materials	Number of Firms	6	2	1	9
	Total Employment	632	22	158	812
Food and Beverage	Number of Firms	11	3	5	19
	Total Employment	2,004	650	625	3,279
Furniture	Number of Firms	4			4
	Total Employment	171			171
Metal	Number of Firms	6			6
	Total Employment	420			420
Paper/Printing/Publishing	Number of Firms	7			7
	Total Employment	418			418
Plastics	Number of Firms	7			7
	Total Employment	187			187
Textile, Leather and Garments	Number of Firms	16		1	17
	Total Employment	3,488		23	3,511
Total Number of Firms		66	6	7	79
Total Employment		7,571	680	806	9,057

Table A.1.5. Sample Structure (by sector and size)

		Very Small	Small	Medium	Large	Total
Chemicals, Paints and Pharmaceuticals	Number of Firms	2	7	1		10
	Total Employment	16	157	86		259
Construction Materials	Number of Firms	1	3	3	2	9
	Total Employment	8	71	326	407	812
Food and Beverage	Number of Firms	2	7	3	7	19
	Total Employment	16	304	266	2,693	3,279
Furniture	Number of Firms	1	1	2		4
	Total Employment	15	24	132		171
Metal	Number of Firms		3	2	1	6
	Total Employment		109	164	147	420
Paper/Printing/ Publishing	Number of Firms	1	4	1	1	7
	Total Employment	7	102	90	219	418
Plastics	Number of Firms		7			7
	Total Employment		187			187
Textile, Leather and Garments	Number of Firms	1	9	2	5	17
	Total Employment	8	255	170	3,078	3,511
Total Number of Firms		8	41	14	16	79
Total Employment		70	1,209	1,234	6,544	9,057

Figure A.1.1. Employment Distribution (by size)

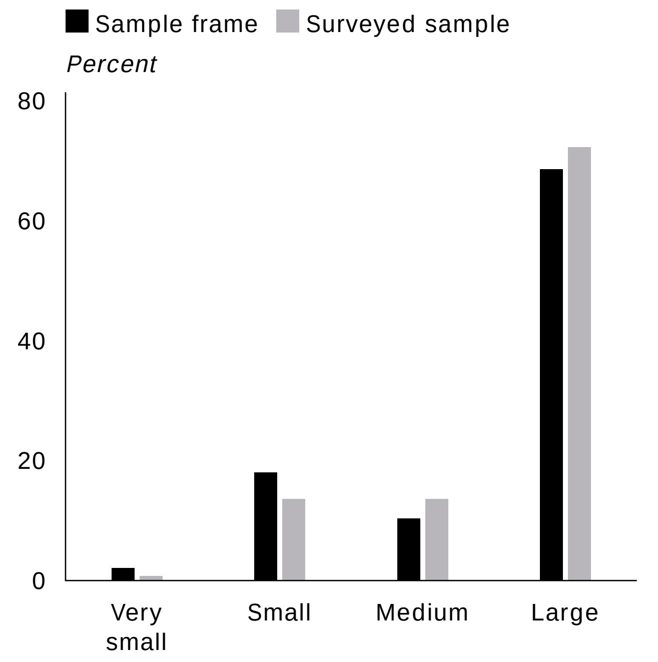


Figure A.1.3. Employment Distribution (by region)

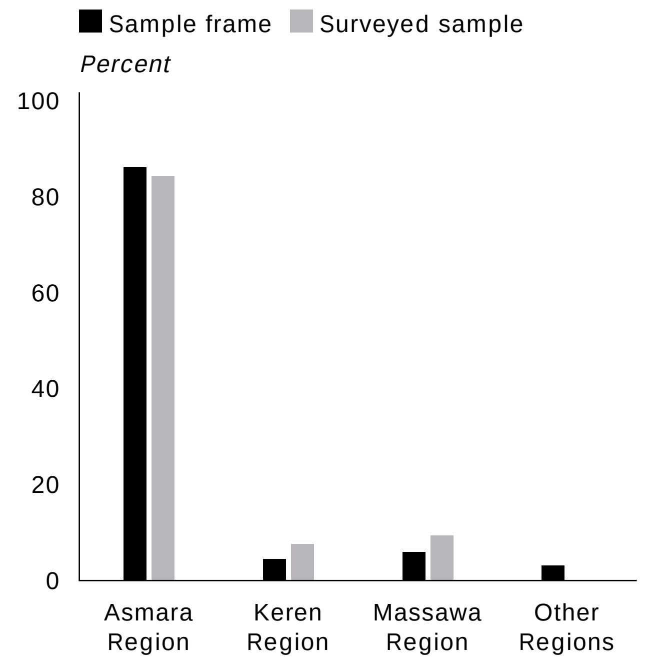
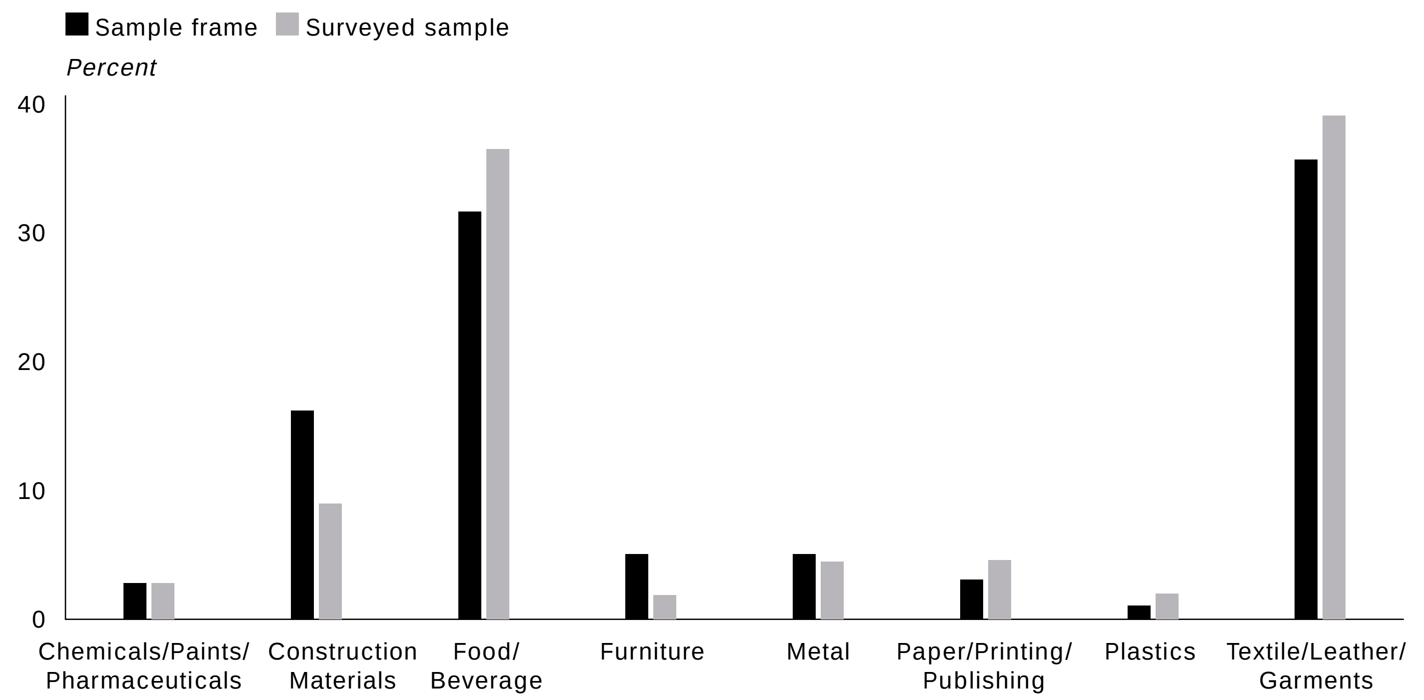


Figure A.1.2. Employment Distribution (by sector)



Worker Characteristics

The data from this section come from the worker interviews, a subsample of 521 employees from the manufacturing sector.

Age and Gender

Workers employed in Eritrean manufacturing tend to be middle-aged, on average 42 years old (Table A.3.4 in Annex III). Women are usually much younger than their male colleagues (34 and 47 years old, respectively). In the Eritrean context, this gap may be due to the recent conflict and the mobilization of qualified young men, thereby widening the gender-age gap. The younger workers tend to concentrate in very small firms, while older ones are found in large firms. In addition, most of the well-trained workers tend to be older because widespread worker training largely took place only during the Italian colonization and the rule of Emperor Haile Selassie. There is a huge gap in training from the period of the socialist Ethiopian Derg regime (1974–1991).

The mean tenure of the sample's workers (the period they have been employed at the firm) was about 10 years. Skilled production workers stayed the longest in their firms (almost 14 years). Experience in other firms is also significant. While employees have been unemployed for about 3 years on average in the past, they have either been self-employed or employed by another company for about 6 years. However, almost half of the workers currently in the private sector (48 percent) have previously been employed by the government. The duration of this involvement was significant, on average 18 years, and includes time spent in the army.

Education

The need for improvement in workforce qualifications and education is especially acute in Eritrea. The links between growth and education are well documented. The externalities generated by improved education levels (better adaptability, easier learning-by-doing) increase the stock of human capital and ultimately favor growth. By the end of the war for independence, female and male illiteracy rates were about 80–90 percent, mainly due to destruction of infrastructure and disruption of social services brought on by the war (World Bank 1996). Quite appropriately, education has been given a prominent role in Eritrea's development strategy (IMF 2001; World Bank 2002a). Despite higher gross enrollment rates since the war, the data we collected suggest that this strategy has not yet provided the manufacturing sector with the properly educated workforce it needs. This is understandable given that raising a population’s education level takes considerable time and the initial level of education was quite low.

Table A.2.1. Highest educational achievement of employees (percent)

	Male	Female	Total
University Degree	6.17	1.47	4.30
Tertiary Education	8.44	6.37	7.62
Secondary Non Vocational	32.14	41.18	35.74
Secondary Vocational	3.57	4.41	3.91
Junior Secondary	16.88	9.31	13.87
Primary	24.35	20.10	22.66
No Education	8.44	17.16	11.91

Source: World Bank, RPED Eritrea, 2002.

Conflict is the reason for interruptions in education for 35.7 percent of the interviewed workers. Data indicate that within the subsample, about 12 percent of the workers received no education and about 22 percent only reached primary education. Most of workers went to secondary non-vocational school (35.7 percent). The dominance of this type of secondary education in the workforce is very similar to what was found in many

Table A.2.2. Education of workers (percentage)

		University degree	Tertiary education	Secondary	Junior secondary	Primary	No education
Sector	Chemicals/Paints	3.39	6.78	32.20	15.25	25.42	16.95
	Construction Materials	3.33	6.67	36.67	11.67	23.33	18.33
	Food and Beverage	10.08	9.24	29.41	15.97	20.17	15.13
	Furniture	0.00	7.14	50.00	21.43	17.86	3.57
	Metal	8.00	18.00	34.00	14.00	22.00	4.00
	Paper/Printing/ Publishing	0.00	8.33	68.75	10.42	10.42	2.08
	Plastics	0.00	0.00	30.77	5.13	41.03	23.08
	Textile, Leather and Garments	1.83	4.59	46.79	14.68	23.85	8.26
Size	Very Small	0.00	0.00	2.17	19.57	21.74	6.52
	Small	2.12	5.51	39.41	13.98	24.15	14.83
	Medium	4.55	13.64	42.05	15.91	18.18	5.68
	Large	9.15	9.86	34.51	10.56	23.24	12.68
Ownership	Foreign	7.27	5.45	32.73	14.55	23.64	16.36
	Local	3.94	7.88	40.48	13.79	22.54	11.38

Source: World Bank, RPED Eritrea, 2002.

RPED surveys in Africa. Of noticeable importance is the fact that only 3.9 percent of the workers received secondary vocational training, a type of education that could provide manufacturing with some of the skilled workers it needs.

As confirmed by other studies (IMF 2001), there are still some significant differences in education levels between men and women in Eritrea. Overall, it seems that women have less access to higher education than men. Only 7.8 percent of the female workers interviewed had a university degree or tertiary education, while this was the case for 14.6 percent of the male workers we met. A similar conclusion can be drawn for female access to primary and junior secondary education.

The level of education of workers varies widely according to sector, size of firm, and whether or not the firm is locally owned (Table A.2.2). The largest proportion of workers with a university degree is found in sectors with significant technological requirements (that is, chemicals and paints, food and beverages, and construction materials). The overall level of education of the workforce is not very high, and it seems that very few workers have benefited from any training since they began working. Only 9.7 percent of the workers received any training from their former employers and only 9.2 percent of them benefited from training in their current jobs. Again, gender disparities remain strong. While 12.8 percent of the male workers received some training from their current employers, only 4.9 percent of the female workers had such opportunities.

Table A.2.3. Union membership

		% of firms whose employees belong a union	Unionization Rate (%)
Sample		58.2	91.4
Sizeclass	Very Small	12.5	98.0
	Small	50.0	93.1
	Medium	69.2	88.0
	Large	85.0	90.8
Sector	Chemicals/Paints	30.0	99.7
	Construction Materials	66.7	96.8
	Food and Beverage	57.9	92.4
	Furniture	50.0	91.0
	Metal	83.3	81.2
	Paper/Printing/Publishing	42.9	89.7
	Plastics	57.1	81.3
	Textile, Leather and Garments	70.6	93.7

Source: World Bank, RPED Eritrea, 2002.

Unions

At the beginning of 2002, according to the data, union membership was fairly high in Eritrea. On average, almost 58.2 percent of the firms report having workers that belong to a union (Table A.2.3). On average, when there is union membership in a firm, about 91.4 percent of the workers belong to it.

The percentage of firms that report having employees in a union increases, not unexpectedly, with their size. While only 12.5 percent of the very small firms report to have employees belonging to a union, 85 percent of large firms have unionized employees. For all firms, the unionization rate ranges between 88 and 98 percent. In terms of sectors, the distribution is uneven. At the upper level of the distribution is the metal sector, in which about 83 percent of the firms report to have workers belonging to a union. At the other extreme, only 30 percent of the firms in the chemicals and paints sector report having employees in a union.

Estimates of Earning Functions

Our data suggest that the issue of earnings differentials in Eritrea deserve greater attention. It is quite plausible that the traditional view of an integrated competitive labor market does not hold in this country. A way to clarify the origin of these differentials is to estimate a few wage equations. Some results are presented in Table A.2.4. In these equations the dependant variable is the log of the individual earnings (which includes wage, over-time pay, bonuses, and other benefits).[8]

The starting point is the estimation of a simple wage equation related to the individual characteristics of the workers. Related results are reported in equation (1) in Table A.2.4. It is assumed that employers are able to distinguish between workers' productivity, which depends on their level of education, origin, and experience, and set wages accordingly. Equation (2) differs from Equation (1) by the inclusion of sectoral dummies and firm-specific variables.[9]

Table A.2.4. The determinants of wages in the Eritrean manufacturing sector

	Equation(1)		Equation(2)	
Intercept	4.9091	★★★	4.7705	★★★
	(0.283)		*(0.275)*	
Workers Characteristics				
Education	0.0527	★★★	0.0515	★★★
(in years)	*(0.005)*		*(0.005)*	
War	-0.0211	ns	-0.0346	
(dummy, equal to 1 if impact on education)	*(0.042)*		*(0.041)*	
Experience with firm	0.0217	★★★	0.0259	★★★
(in years)	*(0.007)*		*(0.007)*	
Experience (squared)	-0.0002	ns	-0.0003	★★
(in years)	*(0.000)*		*(0.000)*	
Other professional experience	0.0117	★★★	0.0126	★★★
(in years)	*(0.002)*		*(0.002)*	
Gender	0.3151	★★★	0.2850	★★★
(dummy equal to 1 if male worker)	*(0.049)*		*(0.050)*	
Weekly hours worked	0.0182	★★★	0.0188	★★★
	(0.006)		*(0.006)*	
Trained	0.2551	★★★	0.1863	★★★
(dummy equal to 1 if any training after school)	*(0.061)*		*(0.058)*	
Sector dummies			Yes	
Firms Characteristics				
Age of the Firm			0.0018	★★
(in years)			*(0.001)*	
Foreign Ownership			0.0651	ns
(dummy equal to 1 if majority shareholder is foreign)			*(0.079)*	
PFDJ Ownership			0.3937	★★★
(dummy equal to 1if majority shareholder is PFDJ)			*(0.084)*	
Firm in Asmara			-0.1176	★★
(dummy equal to 1 if firm located in Asmara)			*(0.062)*	
N	513		513	
F-statistic	51.362		25.796	
R-squared	0.449		0.499	

Significance levels: ★★★1 %; ★★ 5 %; ★10 %; ns = non significant
Dependent Variable: Log of Earnings (Earnings= sum of individual wage, overtime pay and bonus on a monthly basis)

In both equations, the variables that account for human capital—the number of years of education, the years of experience with the same firm, the work experience outside the firm (in years)—have the expected influence and are statistically significant. For example, the higher the endowment of human capital in an individual worker, the higher his wage. The impact of training by firms is also positive and significant, whether in equation (1) or (2). This is also the case for the duration of work variable. This confirms that part of the remuneration is adjusted on the basis of how long the worker has been employed at the firm. The gender dummy is highly significant in both equations and confirms the wage disparities mentioned earlier. Interestingly, the result of the war dummy (a proxy based on whether or not a worker's studies were interrupted by the various wars) is not significant in both equations.

In equation (2), firm-level variables such as age of the firm and PFDJ ownership are relevant. Working at a PFDJ firm entails statistically significant higher earnings, consistent with our previous descriptive statistics. However, contrary to what is often found in other surveys, working at a foreign firm does not significantly affect the level of wages. Finally, geographical factors influence earnings; the Asmara dummy is also significant. These regressions suggest that wage levels are determined not just by worker characteristics but by other variables as well.

HIV/AIDS

Although malaria is currently the biggest killer in Eritrea (between 70 to 90 percent of deaths among all ages in 1997 and 1998), HIV is initiating its spread in the country. Unless a significant, well-planned, and focused intervention is maintained, there is no reason why the disease will not follow the pattern found in other countries.

The first case of AIDS in Eritrea was reported in 1988. As of late 2001, there are 6, 873 people diagnosed with the disease. An estimated 60,000 to 70,000 are said to currently be living with HIV infection. According to UNAIDS, as of late 2001, the prevalence rate of HIV/AIDS is 2.8 percent for the adult population (ages 15-49 years), 4.8 percent for mobilized troops, and 25.5 percent for female bar workers. While the infection rate is one of the lowest on the continent, population dynamics can cause a quick jump in this rate.

Demobilization, flows of refugees, and movements of internally displaced persons can work to spread the disease among the national population. The demobilization of 200,000 soldiers in Eritrea has begun and is scheduled to last for the next two years. Some 5,000 soldiers (3,600 of which are female) were discharged in June 2002, marking the end of the pilot phase of the National Demobilization and Reintegration Process (DRP). Normalization of border crossings with Ethiopia will also have an effect, given that Eritrea’s most important neighbor has an HIV/AIDS adult prevalence rate of 6.4 percent. The movement of over a million internally displaced persons (IDPs), as well as the repatriation of refugees from Sudan, could also increase the risk of spreading the disease. By the end of 2001, only about 45,000 IDPs were unable to return to their land because of landmines. An estimated 300,000 to 500,000 Eritrean refugees fled to Sudan during the thirty-year war (Bruchhaus and Mahreteab 2000). Sudan has an HIV/AIDS adult prevalence rate of an estimated 2.6 percent, although, like Eritrea, this is based on limited surveillance data.

In addition, changes in beliefs and behavior can influence the spread of the disease. Health sector professionals have stated that the increasing openness of the country to rest of the world, in both physical and psychological terms since the end of the Derg regime, has started a change in mores and attitudes, especially those of young people in urban areas.

While the impact of AIDS on public health is clear, the disease’s effect on economies is complex. On a macroeconomic level, the lack of good quality time-series data on the spread of AIDS in Eritrea in particular and in Africa in general hinders the ability to disaggregate it from other factors affecting economic growth. However, the potential impacts are numerous. Unlike most other fatal diseases, HIV infection occurs most often in people of working age, meaning (1) a reduction in income and savings, (2) additional costs are incurred for training and recruiting, (3) an increase in absenteeism for the people living with HIV/AIDS and those caring for them, (4) an increase in health spending in the public budget, to the detriment of other growth-enhancing areas such as infrastructure, (5) the resulting reduced productivity can lead to a reduction in the economy's attractiveness to foreign investors, and (6) a reduction in tax revenue, (Bloom et al. 2001).

Questions related to HIV/AIDS were asked in the public health section of the worker surveys. Five to ten workers of various types were surveyed at each firm for a total of 521 respondents. When asked "Do you know anyone who you believe died of AIDS?" the majority (62 percent) responded "No." Perhaps more interestingly, 37 percent responded, "Yes," a particularly high percentage, given the low prevalence rate of less than 3 percent in the country. However, 68 percent of workers had no idea (or were unwilling to divulge) what share of their co-workers they believe is currently HIV positive; 32 percent responded that they thought none of their co-workers currently had the disease.

It is quite encouraging that when asked "Do you take any particular precautions to avoid getting AIDS?" most workers (86 percent) answered "Yes." A demographic health survey undertaken in 1995 found that the proportion of people citing at least two acceptable ways to protect against HIV infection was high, 79 percent (UNAIDS/WHO 2000).

In June 2002, the government released data from the latest nationwide health survey conducted in 2001, showing that general awareness is high: 99 percent of respondents had heard of HIV/AIDS (4,753 people between 15 and 49 years old were surveyed). The study's findings were similar to previous UNAIDS data, with an adult prevalence rate of 3.0 percent, 4.6 percent in the army, and 22.8 percent among female bar workers. The high number of respondents who reported not believing that they were at risk (72 percent) is troubling. Even "at risk" populations, such as female bar workers and soldiers, felt they were not at risk (around 60 percent). This may be due to the high number of people who seem to take precautions. However, a number of more detailed investigations revealed, for example, that a woman can believe she is safe if she only has one sex partner, even if *that* partner has multiple partners, revealing a profound misunderstanding of how the disease is transmitted.

The Government of Eritrea is aware of the risks posed by the recent and imminent demographic shifts and is working to ensure that the HIV/AIDS rate is not increased. It is hoped that any increase can be avoided with the cooperation of the government and multilateral and bilateral donors. The GOE has launched a nationwide campaign against HIV/AIDS with the goals improving awareness and prevention as well as treatment for those 60,000–70,000 Eritreans already infected.

The GOE and the World Bank (as part of a $40 million project) financed a program to control HIV, Malaria, Sexually Transmitted Diseases, and Tuberculosis in Eritrea (HAMSET) beginning in 2000. The program's objectives are to coordinate and improve treatment of these communicable diseases that are often related. In connection with this project, a new national blood bank has been established in Asmara. At least 20 voluntary counseling and treatment centers have been established in hospitals around the country, and the first "free standing" HIV testing facility was recently opened in Asmara. Over 100 counselors have been trained. A pilot project has been started to provide antiretroviral drugs to antenatal clinics to prevent mother-to-child transmission of HIV (antiretroviral drugs are unavailable in Eritrea; those who can afford it buy them overseas).

In addition, the World Bank's Multi-Country HIV/AIDS Program for Africa (MAP) has offered a $40 million no-interest credit to Eritrea. The Bank approved MAP in September 2001, giving a dozen countries financial and technical support for the implementation of national HIV/AIDS strategies (Benin, Burkina Faso, Cameroon, Central African Republic, Eritrea, Ethiopia, Gambia, Ghana, Kenya Madagascar, Nigeria, Uganda). The support is directed to the government, communities, and civil society organizations. USAID, the Italian Cooperation, and UN agencies are also contributing to information dissemination activities in schools, via radio, television, and print media.

The fact that a great deal of initiative is being taken by the government, donors, and local groups at an early stage is extremely encouraging. Nevertheless, there is still a stigma strongly associated with the disease that inhibits open discussion and behavioral change.

Notes

8. Equations have been estimated using ordinary least squares (OLS). In addition, White's consistent *t* ratios are reported in the table in order to correct for heteroscedasticity in the data.
9. These sectoral dummies have not been reported in the table for ease of reading. Half of them are significant at the 10 percent level.

Employment Decline

We now examine the changes in manufacturing employment from 1999 to 2001. All the firms in the survey were operating during this period. The latest year a firm in the sample was created was 1998. Since there is no volatility (entry/exit) in the sample, an examination of employment changes in existing firms provides a good picture of changes in overall manufacturing employment. Not surprisingly, over the last three years, the average size of manufacturing firms has decreased (Table A.3.2). While on average 129.0 staff were employed by firms in 1999, this number was about 106.9 in 2001, representing a 17.1 percent decline. Domestic firms were strongly affected; their average size declined by 18.1 percent between 1999 and 2001. In terms of size, very small firms—which are mainly local enterprises—faced a decrease of 24.4 percent in their average size over the 1999–2001 period. Textile, leather, and garments and food and beverages were the two most strongly affected sectors. The average size of firms in those sectors declined by 28.5 and 17.3 percent, respectively. Note that these two sectors were among those that had the highest rates of white-collar mobilization. In addition, the loss of the Ethiopian export market probably has had a negative impact on the shrinking of manufacturing employment in Eritrea.

The burden of the decline in employment has not been borne equally by permanent and temporary workers (see Table A.3.3). Although the decline in permanent employees between 1999 and 2001 is significant (11.4 percent), the decline in temporary workers is much larger (19.5 percent). The reduction in temporary workers was especially important for very small and small firms, where 44.5 and 54.3 percent of the temporary workers were laid-off, respectively.

A crude way to analyze these earnings differentials is to examine the distribution of average cash earnings by sector, size, location, and ownership of the firms. According to Table A.3.4. Eritrea does not differ greatly from other African countries. In effect, intersectoral variation is high. Earnings are highest in the food and beverage and metal industries and are the lowest in the plastics sector. On average, cash earnings for workers increase with size and differ greatly depending on geographic location. Firms with foreign equity provide higher wages than their domestic counterparts. It seems that PFDJ-owned firms tend to provide much higher cash earnings than firms with other types of ownership ($104.40 a month versus a sample average of $71.50).

Table A.3.1. Percentage of white-collar workers (by sector and size, 2001)

		Very small	Small	Medium	Large	Total
Chemicals/Paints	Average percentage	11.8	16.9	8.9	na	15.1
	Standard Deviation	(0.98)	(7.91)	na	na	(7.14)
Construction Materials	Average percentage	0.0	7.7	na	9.3	7.7
	Standard Deviation	na	(6.82)	na	(10.16)	(8.50)
Food and Beverage	Average percentage	0.0	14.5	17.6	9.6	11.6
	Standard Deviation	(0.00)	(8.22)	(13.20)	(4.05)	(8.81)
Furniture	Average percentage	0.0	13.6	3.8	na	5.3
	Standard Deviation	na	na	(1.54)	na	(5.91)
Metal	Average percentage	na	17.3	8.4	7.4	11.2
	Standard Deviation	na	(6.25)	(4.13)	na	(6.09)
Paper/Printing/ Publishing	Average percentage	(20.00)	(19.20)	15.8	6.0	16.9
	Standard Deviation	na	(12.66)	na	na	(10.26)
Plastics	Average percentage	na	11.6	na	na	11.6
	Standard Deviation	na	(4.24)	na	na	(4.24)
Textile, Leather and Garments	Average percentage	11.1	10.5	8.0	1.4	7.6
	Standard Deviation	na	(6.06)	(7.49)	(0.19)	(6.28)
	Average percentage	6.8	13.5	11.1	7.2	10.8
	Standard Deviation	(7.83)	(7.55)	(8.95)	(6.35)	(7.96)

Source: World Bank, RPED Eritrea, 2002.

Table A.3.2. Average number of workers per firm (permanent and temporary workers, 1999-2001)

		1999	2000	2001
Ownership	Local	139.49	123.17	114.21
	Std	(254.21)	(217.93)	(215.17)
	Foreign	41.63	39.00	42.25
	Std	(36.30)	(23.87)	(30.83)
Sizeclass	Very Small	11.25	8.75	8.50
	Std	(5.39)	(2.55)	(2.20)
	Small	30.49	27.92	25.92
	Std	(21.38)	(18.26)	(9.89)
	Medium	84.67	79.77	71.85
	Std	(47.71)	(28.87)	(13.39)
	Large	375.30	344.45	323.00
	Std	(370.95)	(317.02)	(324.63)
Sector	Chemicals/Paints	25.50	25.90	27.20
	Std	(22.13)	(23.20)	(24.11)
	Construction Materials	103.00	90.22	92.78
	Std	(114.94)	(92.40)	(85.22)
	Food and Beverage	175.42	172.58	145.11
	Std	(204.14)	(204.96)	(173.40)
	Furniture	43.00	42.75	44.25
	Std	(31.49)	(27.21)	(31.28)
	Metal	65.83	70.00	64.00
	Std	(45.82)	(46.30)	(35.67)
	Paper/Printing/Publishing*	41.60	59.71	62.43
	Std	(40.96)	(75.27)	(81.29)
	Plastics	27.43	26.71	26.14
	Std	(11.90)	(11.56)	(12.23)
	Textile, Leather and Garments	279.80	206.53	200.12
	Std	(447.39)	(362.55)	(379.41)
Sample		129.05	114.65	106.92
	Std	(242.25)	(208.15)	(205.21)

** This average sectoral increase is highly biased by one firm that doubled its employment between 1999 and 2001. The sector should be considered an outlier rather than representative of a sectorwide improvement*

Source: World Bank, RPED Eritrea, 2002.

Table A.3.3. Changes in number of workers per firm (1999 to 2001)

	1999	2001	Change	% change
Number of Permanent Workers				
Very Small firms	72	58	-14	-19.44
Small	905	911	6	0.66
Medium	987	906	-81	-8.21
Large	6 117	5 285	-832	-13.60
Total	8 081	7 160	-921	-11.40
Number of Temporary workers				
Very Small firms	18	10	-8	-44.44
Small	162	74	-88	-54.32
Medium	29	28	-1	-3.45
Large	1 389	1 175	-214	-15.41
Total	1 598	1 287	-311	-19.46

Source: World Bank, RPED Eritrea, 2002.

Table A.3.4. Monthly cash earnings (by sector, size, location, and ownership)

			US$	Nakfa
Sector	Chemicals/Paints	Average Value	77.47	1,045.87
		Standard Deviation	(43.5)	(586.7)
	Construction Materials	Average Value	66.66	899.89
		Standard Deviation	(43.8)	(591.0)
	Food and Beverage	Average Value	81.95	1,106.31
		Standard Deviation	(57.4)	(774.5)
	Furniture	Average Value	72.62	980.36
		Standard Deviation	(28.6)	(385.9)
	Metal	Average Value	88.48	1,194.42
		Standard Deviation	(49.1)	(662.7)
	Paper/Printing/Publishing	Average Value	69.21	934.38
		Standard Deviation	(41.6)	(561.3)
	Plastics	Average Value	49.44	667.38
		Standard Deviation	(23.2)	(313.4)
	Textile, Leather and Garments	Average Value	59.90	808.71
		Standard Deviation	(38.3)	(517.6)
Size	Very Small	Average Value	60.21	812.89
		Standard Deviation	(41.5)	(560.6)
	Small	Average Value	61.92	835.96
		Standard Deviation	(41.3)	(557.2)
	Medium	Average Value	83.88	1,132.32
		Standard Deviation	(47.0)	(635.0)
	Large	Average Value	82.99	1,120.33
		Standard Deviation	(50.0)	(674.7)
Location	Asmara	Average Value	70.44	950.97
		Standard Deviation	(44.9)	(606.7)
	Keren	Average Value	60.50	816.79
		Standard Deviation	(49.8)	(672.7)
	Massawa	Average Value	89.24	1,204.78
		Standard Deviation	(50.4)	(680.7)
Ownership	Foreign	Average Value	77.47	1,045.87
		Standard Deviation	(58.5)	(789.2)
	Local	Average Value	70.84	956.41
		Standard Deviation	(44.4)	(600.0)

continued...

Table A.3.4. Monthly cash earnings (by sector, size, location, and ownership) *(continued)*

			US$	Nakfa
Detailed Ownership	Domestic Private	Average Value	63.55	857.88
		Standard Deviation	(40.2)	(543.1)
	Foreign Private	Average Value	97.06	1,310.28
		Standard Deviation	(77.3)	(1 044.1)
	Government	Average Value	82.8	1,118.2
		Standard Deviation	(44.8)	(604.7)
	Mixed Priv. Local/Foreign	Average Value	64.43	869.79
		Standard Deviation	(49.2)	(664.2)
	Mixed Priv./Gvt	Average Value	71.22	961.50
		Standard Deviation	(39.6)	(534.6)
	PFDJ	Average Value	104.37	1,409.05
		Standard Deviation	(54.9)	(740.8)

Note: Computed on the basis of the wages provided by workers in April/May 2002 and converted into U.S. dollars using the May 2002 official exchange rate of US$1 = 13.5 Nakfa.

Source: World Bank, RPED Eritrea, 2002.

Table A.3.5. Number of permanent full-time employees by sectors and sizeclass in 2001

	Very small	C.Pct	Small	C.Pct	Med.	C.Pct	Large	C.Pct	Total	C.Pct
Chemicals/Paints	17	(29.31)	161	(17.67)	90	(9.93)	-	(0.00)	268	(3.74)
R.Pct	(6.34)		(60.07)		(33.58)		(0.00)		(100.00)	
Construction Materials	8	(13.79)	67	(7.35)	-	(0.00)	681.00	(12.89)	756	(10.56)
R.Pct	(1.06)		(8.86)		(0.00)		(90.08)		(100.00)	
Food and Beverage	16	(27.59)	90	(9.88)	232	(25.61)	1 436.00	(27.17)	1 774	(24.78)
R.Pct	(0.90)		(5.07)		(13.08)		(80.95)		(100.00)	
Furniture	3	(5.17)	22	(2.41)	137	(15.12)	-	(0.00)	162	(2.26)
R.Pct	(1.85)		(13.58)		(84.57)		(0.00)		(100.00)	
Metal	-	(0.00)	54	(5.93)	194	(21.41)	121.00	(2.29)	369	(5.15)
R.Pct	(0.00)		(14.63)		(52.57)		(32.79)		(100.00)	
Paper/Printing/ Publishing	5	(8.62)	86	(9.44)	95	(10.49)	217.00	(4.11)	403	(5.63)
R.Pct	(1.24)		(21.34)		(23.57)		(53.85)		(100.00)	
Plastics	-	(0.00)	164	(18.00)	-	(0.00)	-	(0.00)	164	(2.29)
R.Pct	(0.00)		(100.00)		(0.00)		(0.00)		(100.00)	
Textile, Leather and Garments	9	(15.52)	267	(29.31)	158	(17.44)	2 830.00	(53.55)	3264	(45.59)
R.Pct	(0.28)		(8.18)		(4.84)		(86.70)		(100.00)	
Total	58	(100.00)	911	(100.00)	906	(100.00)	5 285	(100.00)	7 160	(100.00)
R.Pct	(0.81)		(12.72)		(12.65)		(73.81)		(100.00)	

Table A.3.6. Recent change in employment by sectors, 1999 to 2001

Permanent Workers	1999	2001	Change	% change	n
Chemicals/Paints	251	268	17	6.77	10
Construction Materials	854	756	-98	-11.48	9
Food and Beverage	2 024	1 774	-250	-12.35	19
Furniture	146	162	16	10.96	4
Metal	375	369	-6	-1.60	6
Paper/Printing/Publishing	188	403	215	114.36	7
Plastics	176	164	-12	-6.82	7
Textile, Leather and Garments	4 067	3 264	-803	-19.74	17
Total	8 081	7 160	-921	-11.40	
Temporary workers					
Chemicals/Paints	4	4	0	0.00	10
Construction Materials	73	79	6	8.22	9
Food and Beverage	1 309	983	-326	-24.90	19
Furniture	26	15	-11	-42.31	4
Metal	20	15	-5	-25.00	6
Paper/Printing/Publishing	20	34	14	70.00	7
Plastics	16	19	3	18.75	7
Textile, Leather and Garments	130	138	8	6.15	17
Total	1 598	1 287	-311	-19.46	

Table A.3.7. Average structure of employment in 2001 (C.pct)

		Very small	Small	Medium	Large	Total
Chemicals/Paints	Permanent workers	100.00	97.58	100.00	na	98.53
	Temporary workers	0.00	2.42	0.00	na	1.47
Construction Materials	Permanent workers	100.00	100.00	na	89.61	90.54
	Temporary workers	0.00	0.00	na	10.39	9.46
Food and Beverage	Permanent workers	100.00	84.11	96.67	59.98	64.35
	Temporary workers	0.00	15.89	3.33	40.02	35.65
Furniture	Permanent workers	23.08	100.00	96.48	na	91.53
	Temporary workers	76.92	0.00	3.52	na	8.47
Metal	Permanent workers	na	100.00	92.82	100.00	96.09
	Temporary workers	na	0.00	7.18	0.00	3.91
Paper/Printing/ Publishing	Permanent workers	100.00	84.31	100.00	92.34	92.22
	Temporary workers	0.00	15.69	0.00	7.66	7.78
Plastics	Permanent workers	na	89.62	na	na	89.62
	Temporary workers	na	10.38	na	na	10.38
Textile, Leather and Garments	Permanent workers	100.00	93.68	100.00	95.93	95.94
	Temporary workers	0.00	6.32	0.00	4.07	4.06
Total	Permanent workers	85.29	92.49	97.00	81.81	84.76
	Temporary workers	14.71	7.51	3.00	18.19	15.24

Table A.3.8. Average age of employees by sizeclass and gender (number of years)

	Very small	Small	Med.	Large	Total
Male	36.4	49.4	46.1	46.7	46.5
Female	29.0	34.1	32.6	36.3	34.2
Total	35.1	42.3	40.9	43.0	41.6

Table A.3.9. Monthly cash earnings of workers in Nakfa by job position in April/May 2002

		Male	Female	Total
Management	Average Value	2 186.15	2 775.00	2 237.36
	Standard Deviation	(763.0)	(1 025.3)	(778.3)
	Frequency	21	2	23
Professional	Average Value	1 636.96	1 496.91	1 596.42
	Standard Deviation	(781.8)	(645.9)	(739.2)
	Frequency	27	11	38
Skilled Production Worker	Average Value	1 174.47	717.03	1 069.26
	Standard Deviation	(518.9)	(365.8)	(523.9)
	Frequency	154	46	200
Unskilled Production Worker	Average Value	748.95	474.76	607.60
	Standard Deviation	(405.5)	(184.3)	(339.8)
	Frequency	78	83	161
Non Production Worker	Average Value	941.97	734.78	808.77
	Standard Deviation	(418.9)	(395.2)	(413.9)
	Frequency	35	63	98
Apprentice	Average Value	150.00	na	150.00
	Standard Deviation	na	na	na
	Frequency	1	na	1
Total	Average Value	1 147.19	686.32	965.85
	Standard Deviation	(646.0)	(462.2)	(622.4)
	Frequency	316	205	521

Note: Computed on the basis of the wages provided by interviewed workers in April/May 2002.

Table A.3.10. Monthly cash earnings of unskilled production workers (by sector, size, location and ownership in April/May 2002)

			US$	Nakfa
Sector	Chemicals/Paints	Average Value	53.05	716.15
		Standard Deviation	(33.5)	(452.0)
	Construction Materials	Average Value	45.66	616.44
		Standard Deviation	(25.5)	(344.1)
	Food and Beverage	Average Value	41.81	564.41
		Standard Deviation	(20.0)	(270.3)
	Furniture	Average Value	49.43	667.27
		Standard Deviation	(15.8)	(212.8)
	Metal	Average Value	66.28	894.82
		Standard Deviation	(45.9)	(619.3)
	Paper/Printing/Publishing	Average Value	49.00	661.54
		Standard Deviation	(28.8)	(388.5)
	Plastics	Average Value	43.62	588.91
		Standard Deviation	(16.2)	(219.1)
	Textile, Leather and Garments	Average Value	35.30	476.60
		Standard Deviation	(14.8)	(199.9)
Size	Very Small	Average Value	29.25	394.88
		Standard Deviation	(10.9)	(147.2)
	Small	Average Value	42.99	580.33
		Standard Deviation	(22.1)	(298.3)
	Medium	Average Value	54.42	734.69
		Standard Deviation	(24.9)	(335.9)
	Large	Average Value	50.07	675.89
		Standard Deviation	(32.6)	(439.6)
Location	Asmara	Average Value	46.92	633.39
		Standard Deviation	(26.7)	(360.1)
	Keren	Average Value	28.25	381.33
		Standard Deviation	(8.8)	(119.2)
	Massawa	Average Value	48.95	660.86
		Standard Deviation	(15.7)	(212.2)
Ownership	Foreign	Average Value	47.35	639.16
		Standard Deviation	(24.0)	(324.0)
	Local	Average Value	44.77	604.36
		Standard Deviation	(25.4)	(342.3)

continued…

Table A.3.10. Monthly cash earnings of unskilled production workers
(by sector, size, location and ownership in April/May 2002) *(continued)*

			US$	Nakfa
Detailed Ownership	Domestic Private	Average Value	42.96	579.91
		Standard Deviation	(22.7)	(306.9)
	Foreign Private	Average Value	63.85	862.00
		Standard Deviation	(30.9)	(416.8)
	Government	Average Value	43.4	585.3
		Standard Deviation	(26.4)	(355.8)
	Mixed Priv. Local/Foreign	Average Value	37.75	509.63
		Standard Deviation	(17.8)	(240.2)
	Mixed Priv./Gvt	Average Value	38.89	525.00
		Standard Deviation	(8.2)	(110.2)
	PFDJ	Average Value	77.89	1 051.50
		Standard Deviation	(41.4)	(558.9)

Note: Computed on the basis of the wages provided by interviewed workers in April/May 2002 and converted into U.S. dollars using the May 2002 official exchange rate of 1US $ = 13.5 Nakfa.

Table A.4.1. Details on the financial sector

A. Share (%) of Total Borrowing Denominated in Foreign Currency	
Sample	*2.86*
Domestic Private	0.00
Foreign Private	100.00
Government	0.00
Mixed Priv./Gvt	0.00
PFDJ	0.00

B. Clearing of Payments	Duration (Days)	Charge (% of Transaction)
a. Check	1.44	0.31
b. Domestic Currency Wire	1.43	0.76
c. Foreign Currency Wire	6.33	1.64

C. Review of Accounts by External Auditors (Pct. C)	
Sample	*89.74*
Very Small	50.00
Small	91.89
Medium	100.00
Large	95.00
	89.74

D. Audited Statements Necessary to Obtain Bank Credit (Pct.C)	
Sample	*86.67*
Very Small	71.43
Small	91.43
Medium	92.31
Large	80.00

E. Share of Outstanding Debt Due (Pct.C)	Foreign	Local
Within 90 days	50.00	31.18
Within 3 to 12 Months	0.00	36.01
More than a Year	50.00	28.69

Table A.5.1. Standard investment climate tables

Firm Size (%)	Sample
Small (<100 emps)	74.68
Large (100+ emps)	25.32

Market Orientation (%)	
Exporter (>= 10% sales)	90.91
Non-Exporter	9.09

Firm Ownership (%)	
Public Enterprise	12.66
Public Share Company	3.8
Private Share Company	53.16
Sole Proprietorship or Partnership	18.99
PFDJ-owned	7.59
Others	3.8

Firm Activity (%)	Sample
Chemicals/Paints	11.39
Construction Materials	11.39
Food and Beverage	22.78
Furniture	5.06
Garments	3.8
Metal	7.59
Non Metal	1.27
Paper/Printing/Publishing	8.86
Pharmaceuticals/Medical Products	1.27
Plastics	8.86
Textile and Leather	17.72

Firm Location (%)	
Asmara	83.54
Keren	7.59
Massawa	8.86

Table A.5.2. Competitors, suppliers and customers

		Eritrea	Pakistan	China	India	Morocco	Small	Large	Low capacity	High capacity
Average Number of Competitors	Domestic Private Firms	14.69	85.90	NA	NA	NA	9.49	29.50	8.69	30.71
	State-Owned Firms	0.29	0.70	NA	NA	NA	0.31	0.25	0.28	0.29
	Foreign-Owned Firms	0.14	2.90	NA	NA	NA	0.10	0.25	0.19	0.05
Average Number of Suppliers	Domestic Private Firms	NA	93.20	NA	NA	NA	NA	NA	NA	NA
	State-Owned Firms	NA	1.30	NA	NA	NA	NA	NA	NA	NA
	Foreign-Owned Firms	NA	7.90	NA	NA	NA	NA	NA	NA	NA
Average Number of Customers	Domestic Private Firms	NA	133.10	NA	NA	NA	NA	NA	NA	NA
	State-Owned Firms	NA	1.30	NA	NA	NA	NA	NA	NA	NA
	Foreign-Owned Firms	NA	14.30	NA	NA	NA	NA	NA	NA	NA

Table A.5.3. Respondents' Evaluation of General Constraints to operation,
% of firms evaluating constraint as "major" or "very severe"

	Eritrea	Pakistan	China	India	Morocco	Small	Large	Low capacity	High capacity
A.Telecommunications	13.92	9.20	23.5	NA	NA	15.25	10	11.11	23.81
B.Electricity	36.71	39.20	29.7	NA	NA	32.2	50	31.48	47.62
C.Transportation	17.95	10.00	19.1	NA	NA	18.64	15.79	18.87	19.05
D. Access to Land	21.52	20.40	14.7	NA	NA	25.42	10	22.22	23.81
E. Tax rates	29.11	45.60	36.8	NA	NA	33.9	15	27.78	33.33
F. Tax administration	15.19	46.10	26.7	NA	NA	15.25	15	12.96	23.81
G. Customs and Trade Regulations	8.97	24.60	19.3	NA	NA	10.34	5	9.26	10
H. Labor Regulations	5.06	15.00	20.7	NA	NA	3.39	10	1.85	9.52
I. Skills and Education of Available Workers	40.51	12.80	30.7	NA	NA	38.98	45	46.3	23.81
J. Business Licensing and Operating Permits	2.53	14.50	21.3	NA	NA	3.39	0	3.7	0
K.Access to Financing (e.g. collateral)	NA	37.60	22.8	NA	NA	NA	NA	NA	NA
L. Access to Domestic Credit	25.32	NA	NA	NA	NA	28.81	15	27.78	19.05
M.Access to Foreign Credit	21.79	NA	NA	NA	NA	22.03	21.05	18.52	25
N. Cost of Financing (e.g. interest rates)	36.71	42.60	21.8	NA	NA	38.98	30	37.04	33.33
O.Regulatory Policy Uncertainty	29.11	40.10	32.9	NA	NA	25.42	40	25.93	42.86
P.Macroeconomic Instability (inflation, exchange rate)	79.75	34.40	30.2	NA	NA	81.36	75	79.63	76.19
Q. Corruption	2.53	40.40	27.3	NA	NA	1.69	5	3.7	0
R.Crime, theft and disorder	1.27	21.50	20.0	NA	NA	1.69	0	1.85	0
S. Anti-competitive or informal practices	7.59	21.30	23.7	NA	NA	10.17	0	9.26	4.76
T. Legal system/conflict resolution	NA	NA	7.1	NA	NA	NA	NA	NA	NA

Table A.5.4. Infrastructure indicators

	Eritrea	Pakistan	China	India	Morocco	Small	Large	Low capacity	High capacity
Freq of power outages (times last yr)	105.44	14.50	NA	NA	15.9	91.42	144.00	105.65	123.00
% of production lost due to power outages	5.47	5.40	2.00	NA	NA	4.98	6.83	5.55	6.14
Have own generator (%)	43.04	41.80	16.20	68.94	16.73	38.98	55.00	46.30	38.10
Have own well (%)	48.10	43.80	15.60	50.77	29.14	47.46	50.00	46.30	52.38
% of production lost in shipment	0.36	na	1.20	NA	NA	0.47	0.03	0.43	0.26
No. of days to obtain a telephone connection	256.33	47.30	12.00	NA	NA	303.36	58.80	292.48	46.67
No. of days to obtain an electricity connection	98.68	46.80	19.00	NA	NA	125.13	19.30	92.26	135.00
No. of days to obtain a water connection	NA	NA	NA	NA	NA	NA	NA	NA	NA
Share of Exports/ GDP	NA	16.7	18.90	NA	NA	NA	NA	NA	NA

Table A.5.5. Sources of finance

	Eritrea	Pakistan	China	India	Morocco	Small	Large	Low capacity	High capacity
Share of working capital from:									
retained earnings	73.96	65.40	51.5	30.37	61.95	72.76	77.45	72.53	79.76
banks, other financial institutions	23.45	7.40	20.6	36.10	19.55	23.78	22.50	25.19	16.38
trade credit	0.26	4.60	4.1	NA	7.58	0.34	0.00	0.38	0.00
equity	0.01	12.70	0.6	13.04	2.56	0.00	0.05	0.02	0.00
informal sources	1.28	1.30	8.6	NA	NA	1.72	0.00	1.89	0.00
other	1.04	8.20	6.3	20.48	8.31	1.40	0.00	0.00	3.86
Financing of new investments from:									
retained earnings	63.08	55.60	NA	NA	NA	62.00	66.33	60.90	65.29
banks, other financial institutions	31.17	8.20	NA	NA	NA	37.22	13.00	31.79	31.18
trade credit	0.00	1.70	NA	NA	NA	0.00	0.00	0.00	0.00
equity	2.67	14.10	NA	NA	NA	0.00	10.67	2.56	3.53
informal sources	0.58	2.60	NA	NA	NA	0.78	0.00	0.90	0.00
other	2.50	11.00	NA	NA	NA	0.00	10.00	3.85	0.00

Table A.5.6. Credits, loans and liabilities

	Eritrea	Pakistan	China	India	Morocco	Small	Large	Low capacity	High capacity
Share with overdraft or line of credit	47.44	22.80	21.80	NA	77.38	48.28	45	47.17	47.62
Percent of credit that is currently unused	29.53	43.50	29.70	NA	25.46	21.16	55.56	35.40	19.60
Share with a loan from a bank or financial institution	44.87	19.50	45.80	NA	NA	50.00	30.00	47.17	38.10
For the most recent loan or overdraft:									
Share that require collateral	85.71	80.30	82.80	NA	NA	89.66	66.67	88.00	75.00
Average value of collateral required (as % of the loan)	168.06	70.90	86.80	NA	NA	174.11	130.25	179.60	149.88
Average interest rate on loan	9.81	14.80	5.40	NA	NA	9.78	10.00	9.80	9.79
Average duration of the loan (mns)	46.53	8.30	15.10	NA	NA	44.61	60.00	45.17	60.86
Share of your total borrowing denominated in foreign currency	2.86	0.50	7.70	9.49	3.89	3.45	0.00	0.00	12.50
Share of long-term liabilities (1 year or more) in total liabilities	29.50	7.10	9.40	28.69	8.96	33.81	17.50	33.19	18.11
Share of short-term liabilities in total liabilities	66.53	13.50	47.00	22.82	46.63	63.36	75.36	63.84	74.20
Share of equity earnings (or share capital) and retained in total liabilities	52.80	63.40	43.70	48.48	30.73	55.85	43.15	53.49	43.69

Table A.5.7. Financial sector — auditing, transaction costs, and property rights

	Eritrea	Pakistan	China	India	Morocco	Small	Large	Low capacity	High capacity
Share of firms whose financial statements are audited by outside auditors:	89.74	41.60	NA	NA	NA	87.93	95.00	88.68	90.48
Days to clear the following payments through your financial institution									
check (days)	1.44	1.90	4.5	NA	NA	1.43	1.47	1.46	1.33
a domestic currency wire (days)	1.43	2.40	4.8	NA	NA	1.45	1.40	1.94	0.80
a foreign currency wire (days)	6.33	3.20	3.0	NA	NA	7.67	5.00	7.00	3.00
Share of land that is:									
owned (%)	NA	87.90	44.00	NA	NA	NA	NA	NA	NA
leased or rented (%)	NA	11.60	22.20	NA	NA	NA	NA	NA	NA
Average length of lease/rental contract (mns)	NA	185	75.4	NA	NA	NA	NA	NA	NA
Share of buildings that are:									
owned (%)	NA	90.50	56.90	NA	NA	NA	NA	NA	NA
leased or rented (%)	NA	9.00	43.20	NA	NA	NA	NA	NA	NA
Average length of lease/rental contract (mns)	NA	91.5	53.2	NA	NA	NA	NA	NA	NA

Table A.5.8. Labor and training in international comparison and by firm characteristic

	Eritrea	Pakistan	China	India	Morocco	Small	Large	Low capacity	High capacity
Labor composition Share of workers that are permanent	91.13	86.60	85.30	NA	NA	93.49	84.19	93.78	88.10
Share of permanent workers that are female	41.35	3.10	42.50	NA	NA	39.27	47.50	41.37	44.92
Share of temporary workers that are female	29.46	NA	19.40	NA	NA	27.11	32.78	32.76	33.03
Share of permanent skilled workers that are foreign nationals	2.94	1.95	NA	NA	NA	3.38	1.74	2.66	1.79
Labor turnover									
New employees as share of total	14.92	8.30	NA	NA	NA	15.46	13.34	16.38	12.93
Employees that left as share of total	17.32	5.50	10.20	NA	NA	17.52		20.06	12.45
Average time to fill for skilled technician vacancy	NA	1.50	5.2	NA	NA	NA	16.74	NA	NA
Average time to fill production/ service worker vacancy	NA	1.30	13.9	NA	NA	NA	NA	NA	NA
Excess workforce due to regulatory restrictions	NA	3.60	16.70	NA	NA	NA	NA	NA	NA
Training and education									
Share of workforce with less than 6 years schooling	NA	59.30	1.10	NA	NA	NA	NA	NA	NA
Share of workforce with more than 12 years schooling	NA	9.50	3.00	NA	NA	NA	NA	NA	NA
Share of firms offering formal training	9.59	11.10	71.70	NA	NA	10.91	NA	8.16	14.29
Share of skilled workers receiving training	NA	36.00	47.70	NA	NA	NA	5.56	NA	NA
Labor Unrest									
Total days lost to labor disputes or civil unrest	NA	1.3	0.3	NA	NA	NA	NA	NA	NA

Table A.5.9. Regulatory burden and administrative delays by country

Dimension	Eritrea	Pakistan	China	India	Morocco	Small	Large	Low capacity	High capacity
Interpretations of regulations consistent, predictable (% disagreeing)	NA	64.8	14.10	NA	NA	NA	NA	NA	NA
% senior management's time spent dealing with regulations	4.96	10.10	11.80	NA	NA	3.45	9.66	7.23	4.43
% revenues typically paid to officials to "get things done"	1.55	2.00	1.40	NA	NA	2.05	0.11	5.26	0.29
% total firm revenues typically reported for tax purposes	84.20	NA	95.90	NA	NA	81.46	91.33	88.62	85.16
Total wait in days for business registration (days)	NA	NA	22.00	NA	NA	NA	NA	NA	NA
Inspections									
a) Total days spent in inspections or required meetings with officials (days)	6.32	41.10	29.10	10.7	NA	1.48	20.37	20.18	1.26
b) % of meetings/inspections by Local Authorities	NA	NA	NA	68.00	NA	NA	NA	NA	NA
c) Total cost of fines or seized goods (% Sales)	0.02	0.23	0.60	NA	NA	0.03	0.00	0.07	0.00
d) % of interactions in which informal payment requested	NA	NA	2.20	NA	NA	NA	NA	NA	NA
e) If yes, value? (% Sales)	NA	0.15	NA	NA	NA	NA	NA	NA	NA
Imports									
Avg. days to clear customs (days)	11.79	17.20	7.90	10.60	2.70	8.49	20.80	18.14	9.93
Longest delay to clear customs (days)	22.62	30.20	12.50	21.20	5.40	14.15	45.20	34.79	18.75
Exports									
Avg. days to clear customs (days)	3.20	9.60	5.40	5.00	1.70	3.46	2.75	1.00	3.43
Longest delay to clear customs (days)	3.90	17.10	8.00	9.20	2.70	2.17	6.50	1.00	4.22

Table A.5.10. Governance — uncertainty and corruption

	Eritrea	Pakistan	China	India	Morocco	Small	Large	Low capacity	High capacity
Uncertainty									
How consistent/predictable are government interpretations of regulations?	NA	14.3	30.0	NA	NA	NA	NA	NA	NA
Share of profits reinvested in the firm?	NA	NA	NA	NA	NA	NA	NA	NA	NA
Confidence in the judiciary	NA	4.1	2.4	NA	NA	NA	NA	NA	NA
Percent of payment disputes resolved in the courts	NA	30.2	5.3	NA	NA	NA	NA	NA	NA
Planning Horizon for Investments (months)	NA	NA	2.3	NA	NA	NA	NA	NA	NA
Corruption									
Percent of revenues that are needed for informal payments?	1.55	NA	1.4	NA	NA	2.05	0.11	0.29	5.26
% Saying Gift/Payment Required for:									
a) A mainline telephone connection	NA	NA	NA	NA	NA	NA	NA	NA	NA
b) An electrical connection	NA	NA	NA	NA	NA	NA	NA	NA	NA
c) A construction permit	NA	NA	NA	NA	NA	NA	NA	NA	NA
d) An import license	NA	NA	NA	NA	NA	NA	NA	NA	NA
e) Operating license	NA	NA	NA	NA	NA	NA	NA	NA	NA
% of Revenue Reported by Typical Establishment for Tax Purposes	84.20	NA	95.9	NA	NA	81.46	91.33	85.16	88.62