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Investment Climate Assessment

Competing in the Global Economy: An Investment Climate Assessment for Uganda

World Bank: Linda Cotton, James Habyarimana, Chad Leechor, Jean Michel Marchat, John Paton, Vijaya Ramachandran, Manju Kedia Shah, Michael Wong

Uganda Manufacturers Association Consultancy & Information Services (UMACIS): William Kalema, Charles Ntale

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Uganda's economic growth since the late 1980s has resulted largely from restoring and rehabilitating the country's productive capacity. Going forward, growth will need to come increasingly from new investments or new activities. That will require more investment, more intensive acquisition of know-how, and more complex collaboration between local and foreign partners. It will also require a far greater role for private sector investment. While Uganda has benefited enormously from development assistance for almost two decades, foreign aid may decline in the next decade.

Indeed, Uganda must accelerate private sector investment and growth if it is to achieve the goals set out in its Poverty Eradication Action Plan. To reduce the poverty rate to 10 percent by 2017, GDP growth will have to exceed 7 percent a year, requiring an investment rate of 30 percent or more of GDP. Attaining these targets will be feasible only with reforms to promote private investment. This need is recognized in the pillars guiding the Poverty Eradication Action Plan, the first three of which have a bearing on the private sector:

- Creating a framework for sustainable economic growth and structural transformation.
- Ensuring good governance and security.
- Increasing the ability of the poor to raise their incomes.
- Improving the quality of life of the poor.

What are the prospects for the private sector in Uganda? To find out, this report assesses the performance and productivity of private firms in Uganda as well as the constraints imposed by the investment climate on their operation, investment, and growth. The assessment takes into account the perceptions of private firms and puts its findings into an international context. It also analyzes the policy implications of its findings and offers recommendations.

The assessment is based on a survey of registered enterprises in the Ugandan private sector conducted in November 2002–April 2003 by the World Bank's Regional Program on Enterprise Development (RPED) in collaboration with the Uganda Manufacturers Association Consultancy and Information Services (UMACIS). The survey covered 392 firms across four sectors (commercial agriculture, construction, manufacturing, and tourism) and three regions (central, northeast, and southwest). The questionnaire contained a range of questions on such issues as the production process, cost of inputs, access to finance, types and cost of labor used, and costs incurred in preventing or treating HIV/AIDS. A separate survey administered to up to 10 workers in each firm allowed a detailed analysis of the labor market.

The results of the survey are validated through comparison with other studies and surveys. The survey results are consistent, for example, with those reported in the World Bank's Doing Business database, which relies on expert assessments to provide international benchmarks for business regulation (World Bank 2003a). In addition, the findings are compared with those of a similar survey from 1998 to evaluate progress in the business environment and in the private sector's performance.

What are the findings of the investment climate assessment? The business environment creates obstacles for the private sector that are clearly slowing its growth, particularly by limiting productivity growth. But there is reason for optimism: the comparison of data from the 1998 and 2002/03 surveys shows that Uganda's business environment has improved—especially in aspects relating to regulation and infrastructure—and the positive changes are already affecting firms' performance. Investment rates have risen, exports are growing, and firms, especially the largest ones, are operating at higher efficiency. Nonetheless, Ugandan firms have a long way to go to compete with firms in other parts of the world. And

while the business climate in Uganda is improving, it remains much harsher than those in rapidly advancing countries like China. For Uganda to become competitive as a host country for exporters, it must both catch up with other countries' reforms and keep pace with their progress.

Performance and Productivity of Firms

Ugandan firms appear to have high-quality capital and significant excess capacity, suggesting a potential to improve their performance if problems in the business environment can be addressed.

To begin with, Uganda's capital stock is exceptionally young. More than 40 percent of its manufacturing firms have capital stock averaging less than 5 years old, and another 35 percent have capital stock averaging 5–10 years old. By contrast, in most other Sub-Saharan African countries a large share of the capital stock is more than 20 years old. The comparatively young age of Uganda's capital stock suggests that the technology is more recent, of better quality, and more productive.

Indeed, Uganda's capital stock is remarkably productive compared with that of other countries in East Africa. In a year's time every dollar of capital in Uganda generates twice as much in value added as a dollar of capital does in neighboring countries.

Still, Uganda has the lowest capital intensity among the sample of countries recently surveyed in the neighboring region. While Uganda has about $1,500 of capital per worker, this ratio is several times greater than in countries such as Kenya, Tanzania, and Zambia.

In sharp contrast to the relatively high productivity of capital in Uganda is the relatively low productivity of labor. In Ugandan manufacturing the median annual value added per worker ($1,085 in 2002) lies in the general range for East Africa but well below that in India ($3,432) and China ($4,397).

Even with lower labor productivity, Ugandan firms would still be able to compete if wages were low enough to compensate. A common measure for international wage comparisons is the monthly pay of unskilled production workers, the most homogeneous wage category. In Uganda these workers earn about $57 a month on average. This compares favorably with earnings in such countries as Nigeria and Kenya, where the range is $73–100 a month. Earnings in Uganda also compare favorably with those in India and China.

But while Uganda does well on this simple measure of labor cost, measuring the output of workers relative to their wages shows that the economy has a long way to go before becoming globally competitive. The median ratio of wages to value added (a proxy for unit labor cost) at the firm level in Uganda (0.39) is much higher than the ratio in East Asian countries when they were at roughly equivalent stages of development (0.16–0.35 in the 1960s and 1970s).

What drives the productivity and growth of firms in Uganda? To investigate this question, the assessment looks closely at differences in the characteristics of entrepreneurs and the firms they control. As is typical in Africa, most firms in Uganda (almost 70 percent) are entrepreneur owned—that is, owned and run by an individual or family. Indigenous Africans own most of these firms (75 percent), and entrepreneurs of Asian ethnicity most of the rest. But Asian entrepreneurs own most of the larger firms and therefore control a large share of the business assets in Uganda.

Results from regression analysis and estimation of a production function underscore the importance of access to education. The learning of entrepreneurs—whether through advanced education or work experience in a foreign firm—is among the most important factors in determining a firm's productivity and growth.

Compared with indigenous African entrepreneurs, ethnic Asian entrepreneurs have more education and much more experience on average before starting their firms. And they are more likely to obtain external loans for start-up. For these reasons Asian entrepreneurs' firms grow more rapidly. But access to

university education for indigenous entrepreneurs helps boost the growth of their firms. This result is robust across the countries surveyed in East Africa.

The Business Environment

Why do Ugandan firms still suffer low productivity and slow growth? One set of answers comes from the survey responses of owners and managers of manufacturing firms asked to evaluate constraints to investment and growth in Uganda's business environment. The responses indicate that financing obstacles are the greatest constraints—both the cost of finance (interest rates) and access to finance (collateral requirements). Burdensome tax rates also rank high, a common finding by firm surveys. Also considered a big constraint is unreliable electricity supply.

Around 60 percent of firms reported that the cost of finance is a major or severe constraint, and 45 percent reported the same for access to finance.[1] When the results are disaggregated by firm size class, it becomes clear that the cost of finance is a constraint felt across the board. Not surprisingly, however, access to finance becomes a less important constraint as firm size increases.

Unreliable electricity supply has real consequences. Manufacturing firms in Uganda estimated the share of production lost due to power outages and fluctuations at an average 6.3 percent. These losses are substantially larger than those in China (1.8 percent), though smaller than those in Kenya (9.3 percent).

Perceptions of the most important constraints vary among different types of firms. Exporters find some aspects of the economy significantly more problematic than nonexporters do, such as macroeconomic instability (inflation, exchange rates), corruption, monopolistic behavior of competitors, crime, and transport. Similarly, foreign-owned firms reported greater sensitivity than domestically owned firms to corruption, regulatory policy uncertainty, customs and trade regulations, and crime. Foreign-owned firms, which tend to face the most requests for informal payments to get things done, pay more in bribes than other types of firms—almost 4 percent of their revenue on average.

Large, exporting, and foreign firms find administrative and regulatory problems more of a nuisance than smaller and domestic firms. Their senior management spends more time on average dealing with regulations. Moreover, these firms spend more than twice as much time in inspections with government officials and lose almost 10 times as much money (as a share of sales) in fines or seized goods as a result of these inspections. Surprisingly, it also takes large and foreign companies longer to clear exports through customs.

Finance and Investment

Reform of the commercial banking sector has been an important pillar of the economic reform program that Uganda started in the early 1990s. But while the reform has strengthened the banking system, government borrowing from banks is crowding out the private sector.

Ugandan manufacturing firms rely substantially on internal resources. On average, they use internal funds to finance about 80 percent of their working capital needs and 71 percent of new investments. Bank credit is the next most important source of finance. Still, only 32 percent of firms in the Ugandan sample have bank credit (loans or overdrafts), compared with 80 percent of firms in Kenya. Commercial bank finance accounts for 7 percent of working capital needs and 13.5 percent of new investment needs.

What matters most in determining whether firms have access to finance? The possession of adequate collateral, the credibility of information produced by firms (for example, whether firms have their accounts audited by external agencies), and the size of firms. The age of firms also matters. Age is a particularly important factor in Uganda's manufacturing sector, which is dominated by young firms.

When firms do obtain external finance for investment, most must rely on short-term loans and overdrafts. Nearly 40 percent of the loans held by firms in the sample have a maturity of a year or less. Banks' apparent preference for short maturities may reflect a very risky environment or a culture of nonrepayment.

Overdraft facilities involve security requirements similar to those for bank loans. Some 60 percent of firms with overdraft facilities reported being required to post collateral. That overdraft facilities are backed by fixed assets suggests unusually risk-averse behavior by banks. One possible explanation is that overdrafts are typically used to finance medium-term expenditure. Anticipating this, banks require that firms post substantial security before extending overdraft facilities.

After bank finance, trade credit is the second most important source of external finance for working capital in Ugandan manufacturing, covering 5.3 percent of needs. Nearly 60 percent of firms in the sample reported purchasing inputs on credit, compared with nearly 85 percent of firms in Kenya. Whether firms can obtain trade credit depends in part on whether firms providing the credit have access to external finance. Where the older, larger firms that tend to provide trade credit do have access to external finance, this can mitigate lack of access to bank finance for smaller, younger firms.

The Labor Market

The high labor costs in Uganda relative to worker productivity point to a need to better understand the link between labor market dynamics and labor productivity, two factors that affect unit labor costs. The overall picture of the labor market in Uganda is relatively positive. The labor force is relatively well trained, comparing favorably with the labor force in other African countries for which recent survey data are available. It is second only to Nigeria's labor force in higher education and has the largest share of workers with vocational or technical training. Moreover, institutional rigidities—relating to labor contracts, unions, and regulations—seem to be relatively limited.

The health of the Ugandan labor force is a major concern, however. Health conditions in the country are poor, and up to 37 days of production per worker are lost annually because of health-related issues, with obvious implications for firm productivity. Improving the health status of the labor force as quickly as possible is therefore critical.

Despite the obvious health concerns, Ugandan firms appear to underestimate, ignore, or conceal the extent of the HIV/AIDS problem. The private sector needs to expand measures aimed at HIV/AIDS prevention, diagnosis, and awareness raising, targeting these measures to wage earners in lower income classes. Only about 37 percent of firms reported taking actions aimed at preventing and raising awareness of HIV, mostly advertising or counseling. Surprisingly, almost 60 percent of managers reported that HIV/AIDS has had little or no impact on their workforce. This response may reflect a simple lack of information, an inability to distinguish HIV/AIDS from other illnesses, or a drastic underestimation of the problem.

Employees have a much more acute perception of the HIV/AIDS problem. A large share across all sectors surveyed are willing to be tested for HIV and to pay for the tests as long as the testing is anonymous. These attitudes are a very favorable factor in fighting HIV/AIDS in the work environment, with clear externalities for labor productivity and for Ugandan society.

Wages appear to vary widely across subsectors and regions in Uganda, suggesting that the labor market may not be competitive or fully integrated. Indeed, the results of wage equations estimated with worker data indicate that a purely competitive model does not explain wage formation in Uganda. Increasing labor mobility through better infrastructure and improving access to education and vocational training in all regions would help reduce the wage differentials observed in the private sector.

In manufacturing workers' earnings appear to be only weakly linked to their performance, as shown by the small share of bonuses in their pay and the insignificance of hours worked in explaining the level of earnings. Since a higher level of effort does not translate into a noticeable increase in earnings, employees have little incentive to work harder. To increase incentive, earnings should be clearly linked to performance.

Policy Recommendations

The findings of the investment climate assessment confirm those from recent consultations with the private sector, underscoring the need for Uganda to consolidate and build on core reforms of the past decade if is to transform itself into a competitive economy. Uganda needs to maintain a stable macroeconomic framework, establish a low-cost business environment, strengthen the financial sector, privatize and reform key utilities, and raise firm productivity by boosting capacity utilization and the efficiency of the labor and financial markets.

Now that Uganda has achieved sustained periods of macroeconomic stability, the challenge is to demonstrate to investors that its macroeconomic framework is sustainable over the long haul, capable of withstanding not only regional insecurity but also political transition. The government must keep its administrative budget low, reinforcing the image of a lean, professional civil service capable of performing without increasing donor funding. The Ministry of Finance, Planning, and Economic Development, in collaboration with the Ministry of Public Service, needs to work on modernizing the civil service, which should be capable of delivering the services the private sector needs to compete successfully.

In addition, the Ministry of Finance needs to develop spending ceilings for key categories in the budget. Persistent pressure to expand military spending and the creation of more public institutions and district administrations pose the key challenges to macroeconomic stability. Several strategies could be pursued to reduce the fiscal deficit: increasing transparency and participation in the setting of sectoral budget ceilings, improving budget monitoring systems, minimizing unbudgeted supplementary expenditures that lead to spending cuts for other departments, increasing budget efficiency so as to allow the government to achieve development goals even while reducing or maintaining spending levels, and encouraging stakeholders in the development process to assist local governments in decentralizing social services, budget processes, and financial management.

The public sector has largely withdrawn from ownership and management of purely private operations, but the private sector has not yet exploited investment opportunities in the provision of social and infrastructure services. By pursuing a policy of divesting and contracting out services, the government could reduce the public administration budget while also leveraging private investment. The Ministry of Public Service, in cooperation with the privatization unit, needs to continue identifying and divesting services that can be contracted out to the private sector. And the private sector needs to take a more active role in seeking out investment opportunities and encouraging policy reforms that would allow greater investment.

The survey data detail the substantial regulatory burden with which the private sector must cope. This regulatory burden, and the associated high costs for the private sector, result from inadequate regulatory capacity, an unclear regulatory framework, and inconsistent interpretation of policies and regulations. To ease the burden, the government needs to accelerate regulatory and institutional reforms aimed at improving and modernizing the business operating environment. It also needs to ensure that these reforms—which include drafting new business laws and reforming such key institutions as the Uganda Revenue Authority and the Business Registrar—are

implemented consistently. Beyond strengthening the regulatory framework, it will be critical to improve the attitude and work habits of the civil service, particularly at the local government level, where the capacity and commitment to address regulatory and institutional reform issues are in short supply.

To tackle corruption, the government should build on existing anticorruption policies, such as the requirement that public officials declare their wealth. Other recommended measures include adopting additional anticorruption legislation, reforming public sector pay, providing adequate resources to anticorruption agencies, ensuring proper follow-up of findings issued by commissions of inquiry, combating a culture of impunity, strengthening accountability at all levels of government, and addressing corruption at lower levels of government. In addition, further efforts need to be made in increasing transparency in fiscal policy and public procurement, such as in budget execution and reporting, and in limiting the use of supplementary appropriations by the executive branch. Arrears need to be properly assessed, and contingent liabilities monitored and controlled. And public procurement systems need to be improved. Since corruption is partly rooted in the political system, the private sector has a key role to play as a monitor and advocate, demanding minimum standards and assisting entrepreneurs in challenging abuses of institutions, systems, and regulations.

To establish a competitive investment environment, the government needs to develop a transparent incentive structure and updated legal framework for investment. Key priorities are to accelerate the commercial legal reforms started in 1999 and update the investment code. In addition, such institutions as the Uganda Investment Authority, Export Promotion Board, and Tourism Board need to have their roles clarified and be set on a long-term, sustainable path. The government has proposed merging these institutions, but this has not yet been done, making it difficult to proceed with any capacity building program. The Uganda Development Bank, now a major source of distortion in the formal incentive structure, needs to be transformed into an institution that allows broad development of the financial market and provides the financial coverage financial institutions need to reach high-risk clients.

To improve tax administration, the Ministry of Finance, Planning, and Economic Development needs to ensure that tax laws are in effect that are clear, unambiguous, and consistent with the investment code. It also needs to ensure that tax policy is predictable and consistent. The government needs to devise strategies for widening the tax base by generating more revenue from small businesses and the informal sector. For the Uganda Revenue Authority an urgent priority is to transform itself into an efficient institution with a reputation for integrity, an institution that enforces tax laws while remaining cognizant of its role in creating an enabling environment for the private sector. The agency also needs to focus on running the value added tax refund system efficiently for the private sector while reducing fraud.

To ensure the development of a sound financial market, the government needs to develop additional reform policies to support financial service providers and improve their ability to respond to the needs of the private sector. While competition in the financial market has improved, this has not yet led to a substantial decline in intermediation costs and thus interest rates or to an increase in lending to the private sector. High interest rates on government treasury bills are having a crowding out effect on lending to the private sector. Moreover, the high-cost business environment results in high administrative costs for loans. And firms have limited access to long-term loans.

To help improve access to long-term financing, the government needs to focus on such key areas as pensions, insurance, and capital market development. It also needs to increase funding for commercial

courts, to enable them to function more efficiently. At the same time the government needs to provide incentives for better compliance with accounting standards by the private sector. Establishing a credit registry would give firms greater incentive to provide high-quality information on their operations and finances. Both the government and the private sector could play an active role in addressing privacy concerns related to such a registry.

To help boost firms' productivity and capacity utilization, the government needs to support private sector–led skills development and technology transfer initiatives. There are many ways to do this, including providing tax credits to firms that engage in worker training or adopt new technology. The government could also support worker training and apprenticeship programs that are designed and implemented by the private sector to meet its needs. Support should be targeted to micro, small, and medium-size enterprises, since these make up more than 90 percent of Ugandan firms.

The government should also look for ways to encourage entrepreneurship and improve access to business education. Access to university education may be particularly important in offsetting the advantages of inherited ownership and family-based business knowledge. It may be worthwhile for both the government and donors to revisit their priorities in this area.

To help improve the health of workers, the government should consider using existing HIV/AIDS awareness programs to increase knowledge on how to control the disease. Enterprises should be encouraged to take a more active role in controlling the spread of HIV/AIDS—for example, by forming partnerships between business associations and voluntary counseling and testing programs.

To address key constraints in the utilities sector, the government should strengthen the regulatory framework to facilitate private investment and complete the restructuring of the sector—under way for several years—as a matter of urgency. In addition, the government needs to ensure that the three new companies that have assumed the functions of electricity generation, transmission, and distribution are fully operational and attracting adequate private participation. In the water and sanitation sector the responsible ministry needs to fast-track the reforms aimed at increasing investment and expanding service, also under way for years. In the transport sector the government could accelerate the railway privatization and improve the road network, at least the major economic routes. The Civil Aviation Authority needs to focus on regulation and on encouraging private investment to improve the efficiency and effectiveness of air transport services. As suggested in the government's strategy for structural transformation, several measures need to be taken immediately, including restructuring unsustainable debts in the utilities sector, providing entry points for private participation, and creating a multi-utility regulatory agency.

The government needs to continue its work in trade reform, lowering overall tariffs, promoting efficient resource allocation, and keeping excise taxes and other forms of nontariff protection to a minimum. While Uganda's effective rates of protection are relatively low overall, nontariff trade barriers remain high. In particular, ad hoc excise taxes are creating distortions in the economy, as indicated by the wide range of effective rates of protection. The present structure of protection biases sectoral incentives, undermining efficient development of the manufacturing sector.

Uganda is discussing new tariff rates with its partners in the East African Community. This is also the right time to change other elements of the trade policy regime. To improve allocative efficiency, as well as simplify tariff administration and reduce incentives for fraud, the government should consider reducing the number of tariff rates from the three now in use to two or, in the long term, even to one. Decreasing the use of ad hoc excise taxes would increase transparency,

lessen distortions, and help further reduce protection. The private sector could play an important role in ensuring that as many distortions as possible are removed.

Notes:

1. The finding of poor access to credit is corroborated by the World Bank's Doing Business database, which reports a very low index of information availability for Uganda (World Bank 2003). Similarly, studies conducted by the Bank of Uganda show that, apart from a few large establishments, firms in Uganda lack the creditworthiness and collateral to ensure access to external finance (see, for example, Kasekende and Opondo 2003).

UGANDA'S INVESTMENT CLIMATE AT-A-GLANCE

	Uganda		China		India	
Indicator	**1995[a]**	**2002[a]**	**1995[a]**	**2000[a]**	**1995[a]**	**2000[a]**
Macroeconomic environment						
Gross national income per capita (PPP U.S. dollars)[b]	1,000	1,320	2,650	3,940	1,860	2,390
Population (midyear, millions)	19	23	1,205	1,261	929	1,016
Average annual growth of GDP (percent)[c]	7.0	6.1	12.1	8.2	5.2	6.1
Openness (imports + exports as a percentage of GDP)	32.6	39.8	45.7	47.1	25.7	28.2
Private investment (percentage of GDP)	10.2	15.0	15.8	16.7	16.9	16.6
Public investment (percentage of GDP)	5.4	7.0	18.9	19.2	7.7	7.1
Net inflows of foreign direct investment (percentage of GDP)	2.1	2.5	5.1	3.9	0.6	0.5
Microeconomic environment						
Inputs						
Average education of manufacturing workers (years)	—	5	—	10	—	10
Excess labor force -Redundant workers as a share of total (percent)	—	–7.7	—	—	—	17.3
Share of inputs below quality standards (percent)	—	6.1	—	—	—	—
Stock of inputs (days of production)	—	27.9	—	—	—	28
Research and development spending (percentage of sales)	—	—	—	2	—	—
Governance						
Informal payments (percentage of revenue)	—	2.44	—	—	—	—
Share of firms lacking confidence in judiciary (percent)	—	70	—	—	—	—
Average annual visits by government officials	—	13.4	—	—	—	10.5
Share of senior managers' time spent with government officials (percent)	—	0.4	—	9.2	—	16.0
Infrastructure						
Share of firms with own generator (percent)	—	35	—	16	—	69
Longest wait to clear imports in previous year (days)	—	11.2	—	8	—	11
Telephone lines in largest city (per 1,000 people)	—	37	—	294	—	131
Personal computers (per 1,000 people)	—	3	—	12	—	3
Paved roads as a share of total (percent)	—	67	—	88	—	56
Finance						
Cost of capital (lending rate, percent)	—	16.7	—	5.85	—	12.29
Share of credit from financial institutions (for investment, percent)	—	11.6	—	25	—	36

(Table continued on next page)

UGANDA'S INVESTMENT CLIMATE AT-A-GLANCE—continued

	Uganda		China		India	
Indicator	**1995[a]**	**2002[a]**	**1995[a]**	**2000[a]**	**1995[a]**	**2000[a]**
Credit to private sector (stock, percentage of GDP)	—	7	—	125	—	25
Entry and operation						
Cost of labor (median ratio of average wage to average value added)	—	0.39	—	0.23	—	0.21

— Not available.
a. Data are for the year specified or the most recent year available.
b. PPP U.S. dollars are adjusted for purchasing power parity.
c. The data shown for 1995 refer to 1991–95; those shown for 2000 (or, in Uganda's case, for 2002) refer to 1996–2000.
Source: World Bank, World Development Indicators database; Investment Climate surveys, Uganda, 2002/03, China 2000 and India, 1999.

Uganda's Poverty Reduction Strategy, the Poverty Eradication Action Plan, sets a goal of reducing the country's poverty rate to 10 percent by 2017. To achieve that goal, Uganda will need to accelerate GDP growth to more than 7 percent a year on average and boost its investment rate to 30 percent or more of GDP. Given Uganda's impressive track record, these requirements appear to be within reach. But closer analysis suggests that the agenda is more challenging than it seems.

Since the late 1980s economic recovery in Uganda has come primarily from aid-financed rehabilitation and reconstruction of the country's productive capacity. During that period the country has received large development assistance flows relative to the size of its economy. But foreign aid is expected to decline, and growth will therefore need to come from new investments or new activities. That will require a deeper commitment of capital, more intensive acquisition of know-how, and more complex collaboration between local and foreign partners.

Particularly important for attaining the poverty goal is the role of private investment. With severe limits on domestic resource mobilization and significant social spending commitments, government investment is not expected to increase much above the present level of about 6 percent of GDP. As a result, private investment will need to increase from the level in recent years of about 10 percent of GDP to an average of more than 24 percent over the time horizon of the Poverty Eradication Action Plan (ending in 2017). Such a high rate of investment is common in some developing countries, such as those in East Asia. But it is rare in Africa and in Uganda. To make it a reality, investors at home and abroad will need to gain confidence in the economic future of Uganda.

Today the private sector in Uganda is a large collection of small and medium-size firms and a very few large firms, mostly in food processing and finance. According to the Bank of Uganda, about 800,000 small and medium-size enterprises are operating in the country today, with annual sales averaging less than $30,000. Like such enterprises elsewhere in the region, most of these firms face severe managerial and financing constraints in scaling up their operation and investment. Identifying these impediments as well as strategies for overcoming them is a key objective of this report. Large firms, particularly new entrants in banking, power, and telecommunications, may be in a position to grow rapidly, but their collective size is not enough to sustain the robust economic growth envisioned by the government. New investments in new businesses, including those by foreign investors, will need to play a key role.

Foreign direct investment has become an increasingly important part of the Ugandan economy. In the 1970s and 1980s there was substantial capital flight out of the country. In the early 1990s capital outflows ceased, but capital inflows amounted to little more than a trickle. Foreign investor sentiment gradually improved, however, and foreign direct investment steadily rose. Since 1998 foreign direct investment has exceeded $200 million a year, accounting for more than 20 percent of domestic capital formation. But investment inflows remain far below what is needed to achieve the poverty goal. Meeting the growth and investment targets under the Poverty Eradication Action Plan would have required foreign direct investment of $800 million in 2000, but even though inflows peaked in that year, they amounted to only $254 million.

Investor Perceptions

Investor perceptions are generally measured by sovereign credit or country risk ratings issued by such internationally recognized agencies as Euromoney, Institutional Investor, Moody's, and Standard & Poor's. The rating methodologies have well-known biases (especially against African countries), and not all investors rely on these rating services. But the ratings

do have an impact on investor decisions and thus on capital flows.

The surge of foreign direct investment in Uganda in the 1990s corresponded to a major upgrade in the country's risk rating. In 1992 Institutional Investor, for example, gave Uganda a credit rating of 5 on a scale of 0–100, ranking it lowest among the 25 African countries rated. But by 2000 Institutional Investor's rating of Uganda had soared to 23—still low on a global basis but among the top ratings in Africa. Since then, however, there has been no further improvement. In fact, in 2002 Institutional Investor downgraded Uganda's rating to 20 (table 1.1). Inflows of foreign direct investment have shown a corresponding decline.

Given Uganda's need to attract significantly more foreign direct investment, the recent decline in its rating is a cause for concern. The key to improving investor perceptions is to improve the conditions that influence them. Much of the text in the following chapters deals with those conditions, drawing on a recent, detailed firm-level survey, and the last chapter suggests policies for improving them. But even for countries with the best policies, perceptions change slowly. Moreover, they can be influenced by regional events well beyond a country's control.

Globally, the competition for foreign direct investment is intense. Africa has been able to increase the inflows of foreign direct investment in the past decade, but the volume is still very small on a per capita basis and compared with those in other regions. In 1998, for example, Sub-Saharan Africa received about $4.4 billion of foreign direct investment, a substantial increase from the less than $800 million in 1990 but only a small share of the $180 billion going to all developing countries that year. The region received about $7 per capita, compared with the developing country average of $33. In Uganda today, annual foreign direct investment amounts to about $11 per capita—considerably higher than the regional average but still with significant upside potential.

To attract more foreign investment, Uganda needs to establish itself as a safe haven for investors in Africa, as Botswana and Mauritius have done. It also needs to provide global investors with a compelling

Table 1.1 Country Credit Ratings and Rankings, Selected African Countries, 2002

			Credit rating	
Regional ranking	**Country**	**Global ranking**	**Value**	**One-year change**
1	Botswana	39	59.0	2.3
9	Ghana	98	25.7	0.3
10	Kenya	103	22.9	1.2
12	Tanzania	107	21.3	0.7
14	Uganda	111	20.0	–1.4
17	Mozambique	116	19.1	0.1
30	Burundi	143	11.3	0.8
35	Congo, Dem. Rep. of	149	8.7	1.2
	Average	114	21.6	1.2

Note: The table includes only a sample of the Sub-Saharan African countries rated. Ratings range from 0 to 100, with 100 being the highest rating possible.
Source: Institutional Investor, September 2002, p. 170.

reason to bypass South Asia or East Asia, for example, and come to Africa instead. Uganda faces both regional and global competition. But the first step is to reverse the recent setback. Unless the country effectively addresses the causes of the backsliding, the rising trend in capital inflows over the past decade may come to an end, with grave implications for private investment, growth, and, ultimately, the country's ability to meet its poverty goal under the Poverty Eradication Action Plan.

Policy Initiatives

Uganda, despite its many disadvantages, has outperformed most countries in Sub-Saharan Africa in attracting foreign capital, with per capita inflows of foreign direct investment almost twice the average for the region. According to the United Nations Conference on Trade and Development (UNCTAD) and the International Chamber of Commerce, Uganda ranks among the 10 African countries making the most progress in upgrading their business environment in 2000–03. The key to Uganda's performance has been its ability to design and implement good economic policies—an ability that has eluded most of its competitors in the region. These policies are reflected in a record of strong and sustained economic growth (box 1.1). This track record has brought the government dividends in credibility, which in turn inspires confidence among investors.

Going forward, Uganda will need to rely increasingly on its credibility and good policies to win investors' confidence. Unlike China or South Africa, for example, Uganda must overcome disadvantages of market size and logistics. It must deliver attractive returns on investments despite the high costs inherent in its location and its economy. Moreover, after more than a decade of reforms and impressive achievements, the agenda remaining for Uganda will become increasingly difficult.

Past Accomplishments

Uganda launched major reforms in the late 1980s. The government began by liberalizing the trade regime, removing quantitative restrictions and eliminating onerous export taxes. In 1990 it ended the allocation of foreign exchange, moved to market determination of the exchange rate, and made big improvements in fiscal discipline. In the early 1990s the government liberalized the coffee industry, disengaging from the marketing, transport, and financing of coffee exports. Finally, Uganda initiated a program of restitution and incentives for returning Asians, who provided capital as well as managerial and entrepreneurial skills during the early economic reconstruction. These measures played a key part in turning around the Ugandan economy after two decades of precipitous decline.

Although many of its competitors in the region have yet to make these fundamental reforms, Uganda was just getting started. During the 1990s it shifted its reform agenda toward promoting growth, tackling increasingly difficult challenges. Between 1992 and 1995 Uganda returned confiscated property to its rightful owners, mostly Ugandans of Asian origin. It liberalized the investment code by eliminating preferential treatment of domestic investors and making investment approvals virtually automatic. By 1999 the government had successfully privatized about two-thirds of the 150 public enterprises, primarily through sales of corporate control to strategic investors, both domestic and foreign.

Even so, not all the planned reforms were successfully implemented. And some reforms led to new problems. Many large public enterprises and agencies remained engaged in the delivery of commercial services, particularly in utilities and infrastructure. The effort to privatize these entities met with resistance and technical complexity. Budgetary exigencies led to a big increase in the taxation of imports, and revenue from this source has since accounted for more than half the resources that the government has mobilized

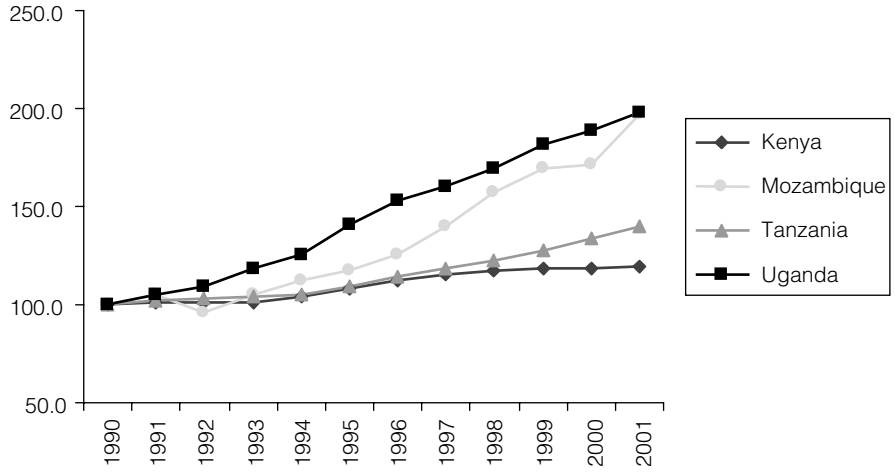
Box 1.1 Uganda's Economic Track Record

Uganda has turned in an exemplary economic performance for almost two decades. Starting from a low point in 1986, after 15 years of mismanagement and devastation, the country has produced a record of recovery and growth seldom seen in Africa. Between 1990 and 2001 Uganda outperformed neighboring Kenya and Tanzania by a significant margin, and even Mozambique lagged behind for most of the decade (see figure). Uganda's real GDP grew by about 8 percent a year over this period, while inflation decelerated sharply to single-digit levels.

During this period of strong economic growth Uganda also made much progress on social and security fronts. In 1997 the government adopted a major poverty reduction initiative involving substantial increases in budgetary allocations for health and education. Soon thereafter Uganda achieved universal enrollment in primary education, the first country in Sub-Saharan Africa to do so. Meanwhile, the country made efforts to contain the spillover of conflicts in neighboring countries (the Democratic Republic of Congo, Rwanda, and Sudan) as well as the threat of domestic unrest in the north. This track record was not lost on the donor community. Uganda became the first country to qualify for debt relief under the Heavily Indebted Poor Countries (HIPC) initiative.

Real Per Capita Income, Selected East African Countries, 1990–2001

Index (1990 = 100)



Source: World Bank data.

domestically. A heavy reliance on import taxes inhibits trade and, like export taxes, handicaps exporters.[1]

Ongoing Efforts

As the new millennium dawned, the largest and strategically most important public enterprises continued to burden the economy. Most provided poor quality and unreliability in such crucial services as water, power, transport, and telecommunications. As a result, private firms needed to provide for costly alternative or backup services, such as power generators. The extra costs were passed from firm to firm and from sector to sector, creating economywide inefficiency that eroded the competitiveness of local pro-

duction and undermined Uganda's attractiveness as a host for foreign direct investment. Some of these public enterprises dominated the most promising businesses, including tourism, agribusiness, and financial services, making it difficult for more efficient, dynamic firms to succeed or even to enter these sectors. But the government did not give up on its reform and privatization efforts.

Indeed, some of the Ugandan government's recent advances in restructuring the economy have been exceptionally impressive by regional standards. In telecommunications the government achieved dramatic growth in access to services and big improvements in quality in just two years by relying on private participation and competitive markets. The government launched the reform in 1996, restructuring the public enterprise responsible for telephone and postal services into three new entities: telecommunications, the post office, and the post office bank. More important, it opened the telecommunications sector to competition and private participation, awarding two operating licenses to private service providers. By 1998 the number of telephone lines in Uganda had almost doubled, rising from fewer than 50,000 to 96,000, with most of the gains coming from mobile service.

The power sector, often considered the most serious bottleneck in the economy, was the next target for restructuring. In 2001, after securing enabling legislation for liberalization, the government established an electricity regulatory authority and divided the Uganda Electricity Board into three separate companies responsible for generation, transmission, and distribution, respectively. The restructuring strategy called for privatizing power generation and distribution while retaining transmission in the public sector. In August 2002 the government awarded the concession for power generation on a competitive basis to Eskom Enterprises, an established industry leader based in South Africa. And in July 2003 the government reached the final stage of negotiation on the concession for power distribution with an international consortium consisting of CDC Globeleq and Eskom Enterprises, the sole bidder in a competitive tender. Meanwhile, a number of independent power producers indicated to the government that their prospective investments in power generation would be contingent on the privatization of distribution.

The progress in restructuring the telecommunications and power sectors should boost investor confidence in Uganda. Many countries across the continent have targeted these economically sensitive industries for reform, but few have succeeded. Many good intentions have been derailed by the technical complexity, the resistance of vested interests, and the apprehension of consumers. By regional standards, Uganda carried out these reforms fairly quickly (in about two years in each case), largely ending the drain on government resources.

The analysis in the following chapters provides a strategy for private sector development in Uganda that builds on these past accomplishments. Using the pillars of the Poverty Eradication Action Plan as a guide, the analysis highlights key constraints and policy solutions for the government and the private sector.

Notes

1. One interesting study argues that managers' international orientation is inadequate: their attitude toward exporting is either ambivalent or negative (Bankunda 2004). Through econometric estimation, the study shows that managers' attitude toward exports is a significant determinant of firms' exports.

What are the key drivers of growth and productivity in the Ugandan private sector? This question serves as the motivation for this chapter, which analyzes the growth and productivity of Ugandan firms of different sizes and ownership types using survey data on manufacturing firms. A good understanding of what determines the competitiveness of Ugandan firms is crucial to meeting the goals of the Poverty Eradication Action Plan. Growth in the private sector is essential for fueling overall economic growth. And policies to promote growth will bring high returns if they are targeted to the factors most important in determining the performance of private firms.

The data come from a survey of registered enterprises in the Ugandan private sector undertaken in November 2002–April 2003 by the World Bank's Regional Program on Enterprise Development (RPED) in collaboration with the Uganda Manufacturers Association Consultancy and Information Services (UMACIS). This survey covered 392 firms across four sectors (commercial agriculture, construction, manufacturing, and tourism) and three regions (central, northeast, and southwest). (For a detailed description of the sample, see appendix 1.) The survey allows an assessment of the business environment in Uganda as well as a comparison of the performance of its private sector with that in several other countries for which recent survey data are available.

How do firms in Uganda compare with those in other Sub-Saharan African countries and elsewhere? How do they differ across size classes? How do entrepreneurs differ within Uganda and across countries? And what characteristics of firms and entrepreneurs matter most in determining the performance of firms? The chapter investigates these issues by comparing the firm-level data from Uganda with data from several Sub-Saharan African countries (Kenya, Mozambique, Nigeria, Tanzania, and Zambia) and, where possible, China and India. It also examines differences in characteristics between ethnic African and ethnic Asian entrepreneurs and the firms they own in Uganda to see how these differences affect the performance of these firms. Entrepreneurs from ethnic minorities play a substantial role in Sub-Saharan African economies, especially in manufacturing. They are sometimes credited with providing valuable skills and stimulating growth in manufacturing. But they also are often accused of exploiting local resources through unfair advantages based on networks and personal characteristics.

The results show that, on average, Ugandan firms have lower labor productivity than firms in other Sub-Saharan African countries—and much lower labor productivity than those in China and India. But this is partly offset by their capital productivity, which is higher than that in the other countries in Africa.

What factor is most important in determining the performance of firms in Uganda? The human capital of entrepreneurs, as reflected in education, previous experience in other firms, and experience in exporting. Government policy directed toward augmenting these learning channels would help improve the competitiveness of private firms in Uganda.

Characteristics of Enterprises and Entrepreneurs

Almost 70 percent of firms in the Ugandan sample are entrepreneur owned (that is, owned by an individual or family), a slightly smaller share than in Kenya and Mozambique but a much larger share than in Nigeria (table 2.1). Most private firms in Uganda (around 83 percent) were established by entrepreneurs rather than purchased or inherited. This is again similar to what is found in other African countries recently surveyed, except Mozambique, where most firms were state owned until being purchased by individuals through the government's privatization initiative in the 1990s. Unlike in the other countries, in Uganda a significant share of firms (23 percent) are organized as sole proprietorships. These firms are mainly small

Table 2.1 Characteristics of Private Manufacturing Firms, Selected Sub-Saharan African Countries
(percent)

	Uganda	Kenya	Mozambique	Nigeria
Share of firms owned by entrepreneurs	69.3	74.3	72.4	44.9
Firms by form of acquisition				
Established	82.9	81.1	43.7	86.5
Bought	14.4	16.9	43.3	3.1
Inherited	1.0	1.2	9.3	7.3
Firms by legal status				
Sole proprietorship	23.0	5.2	—	—
Partnership	8.3	2.0	—	—
Limited liability	63.0	88.5	—	—
Firms by source of start-up finance				
Own savings	85.4	65.1	78.5	79.8
Informal loans	8.1	8.6	6.0	1.9
Bank loans	6.6	20.4	9.2	10.7
Firms by ethnicity of entrepreneur				
African	75.1	14.1	—	—
Asian	20.6	72.8	—	—
European	2.9	10.5	—	—

— Not available.
Note: Percentages do not add to 100 because of the category other (not shown).
Source: World Bank, RPED investment climate surveys, Nigeria, 2001, Mozambique, 2002, Uganda, 2002/03, Kenya, 2003.

ones that may lack knowledge of the formal registration process required to become limited liability companies.

The data show that obtaining financing to start a business in Uganda is difficult. Some 85 percent of firms were started with the savings of entrepreneurs. This large share—larger than in the other Sub-Saharan countries—probably reflects the poor development of the financial sector and the credit constraints facing firms (for more on this issue, see the section on firms' access to finance in chapter 4). Around 75 percent of firms in Uganda are owned by indigenous Africans, and most of the rest by Asian entrepreneurs. But Asian entrepreneurs own most of the larger firms and thus control a large share of business assets in Uganda.

Human Capital Endowments of Entrepreneurs

A comparison of human capital in Uganda and other countries reveals interesting differences (table 2.2). Most entrepreneurs in Uganda (almost 90 percent) have at least a secondary education; 40 percent have a university degree. Although the share with a university degree is smaller than that in Kenya and Nigeria, it is larger than that in Mozambique. In comparison, almost all entrepreneurs in China and India have a university degree.

Table 2.2 Education and Experience of Manufacturing Entrepreneurs, Selected Developing Countries

	Uganda	Kenya	Mozambique	Nigeria	China	India
Entrepreneurs by highest level of education achieved (percent)						
None	3.4	0.0	0.0	3.1	0.0	0.4
Primary	8.1	4.0	17.8	5.21	0.1	0.6
Secondary	19.8	23.2	44.1	10.8	15.2	9.8
Vocational	29.2	13.4	23.5	—	—	—
University	39.6	59.4	14.7	70.8	84.7	89.2
Average years of experience	5.0	5.4	—	—	10.4	9.95
Share of entrepreneurs with experience in foreign firm (percent)	21.6	22.9	—	—	—	—

— Not available.
Source: World Bank, RPED investment climate surveys, Nigeria, 2001, Mozambique, 2002, Uganda, 2002/03, Kenya, 2003; and Investment Climate Unit firm surveys, China 2000 and India 1999.

Within Uganda there are differences between ethnic groups. On average, Asian entrepreneurs have more education and much more experience before starting their firms than African entrepreneurs do (table 2.3). In addition, a much larger share of Asian entrepreneurs have experience in a foreign firm before starting their own enterprise. And they are more likely than their African counterparts to buy a firm and to obtain external loans for start-up. For all these reasons Asian entrepreneurs start at a larger scale and their firms grow faster. On average, African-owned firms start with 14 employees and end up with 31 employees after almost 10 years, while Asian firms start with 39 employees and grow to 104 employees after a little more than 10 years. These results are robust across a wide range of countries surveyed in Sub-Saharan Africa.

Characteristics Determining Firm Growth

The mobility of manufacturing firms between start-up and the present is greater with size. Medium-size firms (50–99 employees) are much more mobile than smaller firms: more than half of those starting out in this size class were able to grow to 100 or more employees between start-up and the present (table 2.4). By contrast, 60 percent of small firms (10–49 employees) remained in the same size class. This lack of mobility may be a result of constraints facing small firms, such as lack of access to finance, skilled labor, and new technology.

What drives the growth of manufacturing firms in Uganda? This question is addressed by first examining whether initial firm size and firm age matter in determining firm growth. Then different attributes of entrepreneurs are introduced into the equation, to see how such factors as human capital, sources of finance at start-up, and the nature of a firm's acquisition affect the rate of firm growth.

The results, similar to those found elsewhere in Sub-Saharan Africa, show that human capital plays an important part in determining the rate at which firms grow. Firms whose owner-managers have secondary or university degrees grow significantly faster than those whose owner-managers have only a primary education (table 2.5). Firms able to obtain formal loans at start-up are not likely to grow faster, but they do start bigger.

Table 2.3 Characteristics of Manufacturing Entrepreneurs and Their Firms by Ethnicity, Uganda

	African	Asian
Entrepreneurs by highest level of education achieved (percent)		
None	4.4	0.0
Primary	11.5	0.0
Secondary	62.4	33.3
University	21.6	66.7
Entrepreneurs' prior experience		
Average years of experience	3.8	8.1
Share who worked in foreign firm (percent)	15.9	47.9
Share who established own firm (percent)	87.9	75.0
Share of entrepreneurs obtaining start-up finance (percent)		
Informal loans	6.4	9.6
Formal loans	7.0	17.3
Firm characteristics		
Firm size at start-up (employees)	14	39
Average firm age (years)	9.7	10.1
Current firm size (employees)	31	104
Average annual growth (percent)	0.19	0.21

Source: World Bank, RPED investment climate survey, Uganda, 2002/03.

Table 2.4 Mobility of Manufacturing Firms across Size Classes, Uganda
(percent)

Firms by size class (employees) at start-up	Firms by size class (employees) in 2002/03			
	Micro (<10)	Small (10–49)	Medium-size (50–99)	Large (100+)
Micro (<10)	31.6	56.6	7.4	4.4
Small (10–49)	5.8	60.5	17.4	16.3
Medium-size (50–99)	0.0	26.3	21.1	52.6
Large (100+)	0.0	7.1	0.0	92.9

Note: Firms are classified by their size at start-up. Of the 14 firms starting in the largest size class (100+ employees), only one downsized between start-up and the time of the survey.
Source: World Bank, RPED investment climate survey, Uganda, 2002/03.

Table 2.5 Determinants of Growth of Manufacturing Firms, Uganda

Variable	Model 1	Model 2
Constant	0.51*	0.58*
	(0.03)	(0.08)
Log of employment	–0.05*	–0.08*
	(0.01)	(0.01)
Log of age	–0.11*	–0.11*
	(0.01)	(0.02)
Food	0.01	0.04
	(0.02)	(0.03)
Textiles and garments	0.002	0.02
	(0.05)	(0.04)
Wood and furniture	–0.03	0.03
	(0.03)	(0.06)
Metals	0.004	0.01
	(0.03)	(0.05)
Secondary education		0.07***
		(0.04)
University education		0.11*
		(0.04)
Log of experience		0.01
		(0.01)
Loan at start-up		0.03
		(0.04)
African		–0.06***
		(0.03)
Informal loan		–0.06
		(0.05)
Owner established		–0.07**
		(0.04)

** Significant at the 1 percent level.*
*** Significant at the 5 percent level.*
**** Significant at the 10 percent level.*
Notes: Dependent variable is rate of change in employment. Figures in parentheses are standard errors.
Source: Authors' calculations based on data from World Bank, RPED investment climate survey, Uganda, 2002/03

Indigenous African entrepreneurs have less education and experience than their Asian and European counterparts, and their firms grow significantly more slowly. And when entrepreneurs establish their own firms, more likely for African than for Asian entrepreneurs, the firms tend to grow more slowly. On the whole, Asian firms enjoy the benefits of inherited ownership and experience. But access to university education for indigenous entrepreneurs may help offset these advantages. Thus it may be worthwhile for both the government and donors to revisit their priorities in this area.[1]

Characteristics and Productivity of Capital

Uganda has both low capacity utilization and high marginal productivity of capital. Low capacity utilization can indicate demand constraints or lack of availability of inputs on the supply side. For Uganda, a small market with low purchasing power is the most likely reason for the low capacity utilization. But the country's capital stock is of relatively high quality, so Ugandan firms will probably be able to meet increases in demand with greater efficiency than their neighbors.

Age of Capital Stock

Uganda's capital stock is exceptionally young. More than 40 percent of its manufacturing firms have capital stock averaging less than 5 years old, and another 35 percent have capital stock averaging 5–10 years old (table 2.6). This contrasts sharply with the rest of Sub-Saharan Africa: in most countries in the region a large share of the capital stock is more than 20 years old. Preliminary estimates for Kenya indicate that half the sampled manufacturing firms have capital stock averaging 11–20 years old.

Uganda's young capital stock is due to two main factors, the higher rates of investment in the 1990s and the large inflows of foreign exchange that led to capital accumulation in the postwar period. The relatively young age of its capital stock may well indicate that the technology is more recent and of better quality—

Table 2.6 Manufacturing Firms by Average Age of Equipment, Uganda
(percent)

	Age of equipment (years)			
	<5	5–10	11–20	>20
Full sample	42.3	35.0	14.9	7.7
	(42.0)	(40.2)	(31.7)	(24.0)
Firm size class (employees)				
Micro (<10)	60.3	26.3	9.6	3.8
Small (10–49)	40.6	35.9	16.3	7.2
Medium-size (50–99)	30.7	46.2	20.6	2.5
Large (100+)	37.5	34.1	12.5	15.9
Subsector				
Food	45.8	35.3	10.2	8.8
Textiles and Garments	19.8	41.8	21.3	17.1
Wood and Furniture	61.2	21.5	12.2	5.2
Metals	44.8	44.0	9.0	2.3

Note: Figures in parentheses are standard deviations.
Source: World Bank, RPED investment climate survey, Uganda, 2002/03.

and thus more productive. If other constraints to the private sector (such as the poor business environment) are addressed, it is quite likely that firms could better utilize their capital and achieve faster growth.

Capacity Utilization

Firms may have a young capital stock, but how efficiently they use it depends on factors driven by product demand or bottlenecks in raw material supply. How efficiently is Ugandan capital used? A comparison with other African countries shows that capacity utilization in Uganda is about average (table 2.7). Ugandan firms use close to 60 percent of their capacity, and the dispersion across firm size classes is about 15 percent, within the typical range for African countries. Large firms in Uganda use a greater share of their capacity than smaller ones, presumably because they have better-quality capital equipment, larger market shares, and better access to labor and other inputs. There is also dispersion across manufacturing subsectors, with food and metal firms having the highest capacity utilization.

Capital Intensity

Uganda has the lowest capital intensity in the sample (table 2.8). It has only about $1,500 of capital per worker; in sharp contrast, this ratio is several times as large in recently surveyed neighboring countries. Large firms in Uganda have the most capital per worker, more than four times the median for the sample. Micro firms have only slightly more than half the median. Not surprisingly, exporters (firms exporting 10 percent or more of their annual sales) have substantially more capital per worker (a median of $3,277) than nonexporters ($1,408), and foreign-owned firms substantially more ($3,930) than domestically owned firms ($1,408).

Interestingly, the largest firms in Uganda have higher capital intensity than firms of a similar size in India, but lower capital intensity than the largest firms

Table 2.7 Capacity Utilization in Manufacturing, Selected Sub-Saharan African Countries
(percent)

	Cameroon	Côte d'Ivoire	Ghana	Kenya	Tanzania	Zambia	Uganda
Full sample	46.9 (28.5)	70.7 (25.3)	54.3 (27.4)	63.3 (28.2)	51.1 (27.2)	48.4 (30.3)	58.4 (22.6)
Firm size class (employees)							
Micro (<10)	40.5	66.6	52.5	56.3	58.8	50.4	50.6
Small (10–49)	44.3	68.4	55.7	65.6	48.5	50.2	58.1
Medium-size (50–99)	47.0	67.9	48.4	67.3	38.8	42.9	60.8
Large (100+)	60.6	78.5	59.6	69.3	42.3	46.4	65.0
Subsector							
Food	50.7	70.8	57.4	67.3	46.2	50.1	58.8
Textiles and Garments	38.0	67.9	51.1	59.9	47.3	43.4	54.4
Wood and Furniture	55.0	68.8	52.3	67.1	55.2	53.4	55.7
Metals	41.3	77.3	57.0	59.5	53.0	47.7	61.2

Note: Figures in parentheses are standard deviations.
Source: World Bank, RPED investment climate surveys, Ghana, 1994, Cameroon, 1995, Côte d'Ivoire, 1996, Uganda, 2002/03, Kenya, 2003, Tanzania, 2003, Zambia, 2003.

Table 2.8 Median Ratio of Capital to Labor in Manufacturing, Selected Developing Countries
(U.S. dollars per worker)

Firm size class (employees)	Tanzania	Uganda	Kenya	Zambia	India	China
Micro (<10)	1,040	845	—	—	1,859	—
Small (10–49)	7,433	1,408	7,436	15,578	2,000	5,434
Medium-size (50–99)	7,493	2,453	16,816	18,175	2,962	6,070
Large (100+)	19,279	6,667	11,420	8,178	4,158	8,525
All firm size classes	7,757	1,464	11,496	12,161	2,380	7,654

— Not available.
Note: The sample for Kenya included only 3 firms with fewer than 10 employees, and that for China only 10 firms.
Source: World Bank, RPED investment climate surveys, Uganda, 2002/03, Kenya, 2003, Tanzania, 2003, Zambia, 2003; and Investment Climate Unit firm surveys, China 2000 and India 1999.

in Sub-Saharan Africa. The largest firms in the region appear to be substituting capital for labor, perhaps because of labor laws or a lack of skilled labor.

Productivity of Capital

Uganda has remarkably high capital productivity compared with that in other Sub-Saharan African countries. In Uganda, despite capacity utilization of

Table 2.9 Median Ratio of Annual Value Added to Capital in Manufacturing, Selected Developing Countries

Firm size class (employees)	Tanzania	Uganda	Kenya	Zambia	India	China
Micro (<10)	1.33	0.80	—	—	0.80	0.13
Small (10–49)	0.37	0.67	0.30	0.16	1.11	0.59
Medium-size (50–99)	0.61	0.43	0.46	0.24	1.48	0.67
Large (100+)	0.26	0.89	0.34	0.35	1.16	0.47
All firm size classes	0.43	0.70	0.35	0.23	1.10	0.51

— Not available.
Source: World Bank, RPED investment climate surveys, Uganda, 2002/03, Kenya, 2003, Tanzania, 2003, Zambia, 2003; and Investment Climate Unit firm surveys, China 2000 and India 1999.

only 60 percent, every dollar of capital generates twice as much in value added in a year's time as a dollar of capital does in neighboring countries.

Productivity and Cost of Labor

In sharp contrast to the relatively high productivity of capital in Uganda is the relatively low productivity of labor. A simple comparison of labor productivity suggests that Ugandan labor cannot compete with labor in other parts of the world. But if lower wages offset the lower productivity, Ugandan firms would still be able to compete with those elsewhere. How does Uganda compare in this area? Relatively high unit labor costs suggest that it has a long way to go before it can compete globally.

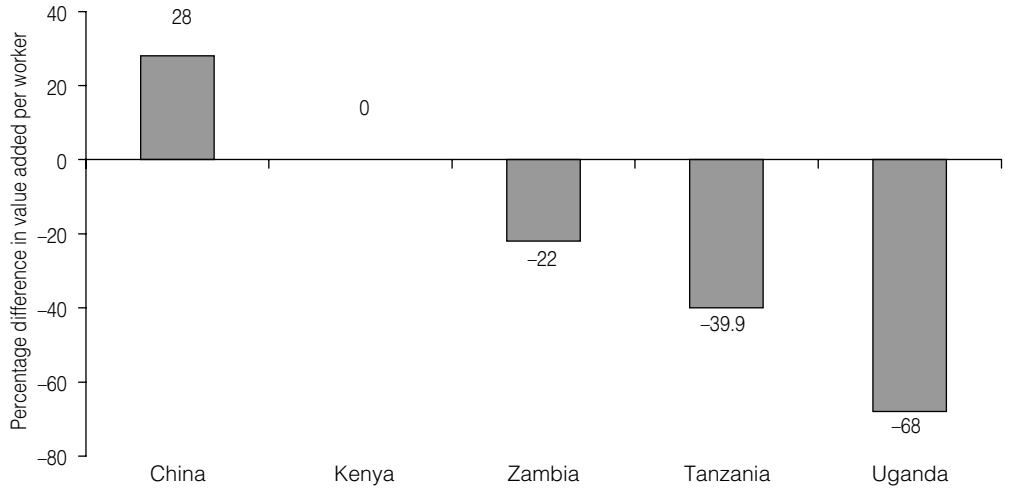
Labor Productivity

The gap in labor productivity between Ugandan firms and firms in other countries is substantial. Value added per worker in Uganda is 68 percent lower than that in India and 96 percent lower than that in China (figure 2.1). Even the gap between Uganda and its neighbors is fairly substantial. In Tanzanian firms labor productivity is 28 percent higher than in Ugandan firms, and in Kenyan firms it is just as high as in Indian firms. An alternative presentation of the data shows that all the countries in East Africa have far to go to catch up with China in labor productivity (figure 2.2).

Within Uganda the productivity of labor varies widely among firms of different sizes. Microenterprises are the least productive, with value added per worker only 50 percent that of the median for the sample (table 2.10). Small firms are at 80 percent of the median. Indeed, micro and small enterprises in Uganda are much less productive even than their African counterparts, perhaps reflecting the large disparities in education levels across firm size classes (see appendix table A2.10). Firms with 50 or more workers show labor productivity above the median. In large firms labor productivity is three times the median for the sample—comparable to levels for large firms in other African countries and similar to those for medium-size firms in India.

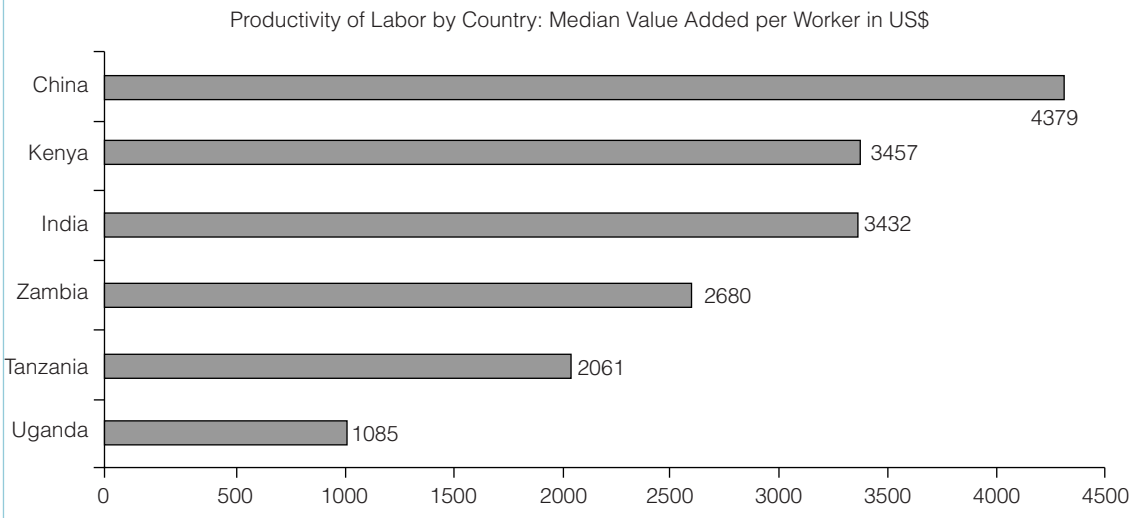
Labor productivity in Uganda also varies between other groups of firms. Exporters have significantly higher value added per worker ($2,901) than nonexporters ($1,117). And foreign firms produce much more per worker ($2,747) than domestic firms ($1,182).

Figure 2.1 Labor Productivity in Manufacturing Relative to That in India, Selected Developing Countries



Note: The base case is labor productivity in India in 2002–03. Data are based on nominal exchange rates.
Source: World Bank, Investment Climate surveys, Uganda 2002/03, Kenya, 2003, Tanzania, 2003, Zambia, 2003, China 2000.

Figure 2.2 Median Annual Value Added per Worker in Manufacturing, Selected Developing Countries



Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Kenya, 2003, Tanzania, 2003, Zambia,. 2003, China 2000 and India 1999.

Table 2.10 Median Annual Value Added per Worker in Manufacturing by Firm Size Class, Selected Developing Countries
(U.S. dollars)

Firm size class (employees)	Tanzania	Uganda	Kenya	Zambia	India	China
Micro (<10)	989	578	—	—	3,147	1,920
Small (10–49)	1,526	897	2,439	2,668	2,931	4,595
Medium-size (50–99)	3,288	1,379	4,127	3,836	3,228	4,797
Large (100+)	3,499	3,338	4,138	2,439	5,321	4,193
All firm size classes	2,061	1,085	3,457	2,680	3,432	4,397

— Not available.
Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Kenya, 2003, Tanzania, 2003, Zambia, 2003, China 2000 and India 1999.

Unit Labor Costs

Uganda's competitiveness is inextricably linked to its labor cost. Two indicators of labor cost are crucial: the wages paid to workers, and the output of these workers relative to their wages.

Let's look first at wage levels. In Uganda unskilled production workers in manufacturing earn about $57 a month on average—less than comparable workers in the Philippines, Kenya, Nigeria, and Thailand but more than in India, where unskilled workers earn about $45 a month. In China, where wages have risen rapidly in the past decade, unskilled production workers earn about $85 a month on average.

Now let's look at the total cost of labor per unit of output—or the unit labor cost. When the unit labor cost is converted to a common currency, it allows international comparisons of the competitiveness of labor. The 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, and e is the exchange rate defined as domestic currency units per U.S. dollar. The unit labor cost can also be approximated by the ratio of the nominal wage (w) to labor productivity (Q/L). For a country to have a low (competitive) unit labor cost, it must keep nominal wages low, keep its exchange rate competitive, or increase its labor productivity—or do a combination of these things.

Because physical measures of output comparable across countries are difficult to obtain, an approximate measure of unit labor cost is used here—the ratio of wages to value added at the firm level, averaged across the sample of firms (wL/pQ), where p is the deflator for physical value added. Based on this measure, the unit labor cost in Uganda is comparable to that in several countries in Sub-Saharan Africa but higher than that in India and China (table 2.11).

By definition, the unit labor cost is higher in countries that have higher wages or lower labor productivity (or both). While overvalued exchange rates have hampered Africa's competitiveness, data show that high unit labor costs have also played a part. Countries in Sub-Saharan Africa, including Uganda, have higher unit labor costs today than East Asian economies had at roughly equivalent stages of development (table 2.12). Earnings in Africa today are about two-thirds higher than they were in East Asia in the 1960s and 1970s, while productivity in Africa is about one-fourth lower.

Table 2.11 Unit Labor Costs in Manufacturing, Selected Developing Countries
(median ratio of wages to value added)

Firm size class (employees)	Tanzania	Uganda	Kenya	Zambia	India	China
Micro (<10)	0.45	0.33	—	—	0.29	—
Small (10–49)	0.56	0.41	0.38	0.41	0.30	0.38
Medium-size (50–99)	0.42	0.41	0.41	0.47	0.25	0.34
Large (100+)	0.25	0.35	0.34	0.39	0.24	0.29
All firm size classes	0.39	0.39	0.36	0.41	0.27	0.32

— Not available.
Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Kenya, 2003, Tanzania, 2003, Zambia, 2003, China 2000 and India 1999.

Disaggregating the data for Uganda by firm size class shows that the unit labor cost is highest for small and medium-size firms, and lowest for micro and large firms. But large firms in Uganda have much higher unit labor costs than those in Tanzania, India, and China. Indeed, large firms in Uganda lag farther behind their counterparts in China than do medium-size firms (in percentage terms).

The unit labor cost also ranges widely across manufacturing subsectors: it is lowest for the textile and garment industry, and highest for the wood and furniture subsector. The unit labor cost for exporters (0.24) is less than half that for nonexporters (0.55).

Table 2.12 Historical Unit Labor Costs, Selected East Asian Economies

Economy	Year	Median ratio of wages to value added
Indonesia	1981	0.21
Korea, Rep. of	1963	0.26
Malaysia	1970	0.27
Singapore	1963	0.35
Taiwan (China)	1961	0.16
Thailand	1970	0.24

Source: Lindauer and Velenchik 1994.

Foreign firms have lower unit labor costs than domestic firms. And firms owned by nonindigenous entrepreneurs have lower unit labor costs than those owned by indigenous entrepreneurs.[2]

Total Factor Productivity and Technical Efficiency

The measures of partial factor productivity in the preceding sections provide some insight into firm performance in Uganda. But considered in isolation, they provide a misleading indication of overall productivity. As shown, labor productivity is very low in Uganda compared with other countries, while capital productivity is high. This section investigates the net impact of labor and capital on a firm's value added by looking at total factor productivity.

Determinants of Total Factor Productivity

Total factor productivity is first examined by estimating a Cobb-Douglas production function using the standard ordinary least squares technique. A log-linear specification is used, with the log of value added as the dependent variable. The results of these regressions are in table 2.13. The first model exam-

Table 2.13 Determinants of Firm Productivity in Manufacturing, Uganda: Ordinary Least Squares Regression Results

Variable	Model 1	Model 2
Constant	3.02***	3.31***
	(0.55)	(0.52)
Log of capital	0.35***	0.33***
	(0.06)	(0.05)
Log of labor	0.78***	0.71***
	(0.11)	(0.10)
Capacity utilization	0.02***	0.01***
	(0.004)	(0.003)
Food	0.11	0.11
	(0.23)	(0.23)
Textiles and garments	0.27	0.02
	(0.38)	(0.34)
Wood and furniture	–0.48	–0.40
	(0.28)	(0.26)
Metals	–0.10	–0.04
	(0.37)	(0.33)
Secondary education		0.49*
		(0.27)
University education		0.58*
		(0.32)
Years worked in foreign country		0.06***
		(0.02)
Exporting		0.001
		(0.004)
Adjusted R^2	0.77	0.81

** Significant at the 10 percent level.*
*** Significant at the 5 percent level.*
**** Significant at the 1 percent level.*
Note: The dependent variable is the log of value added. Figures in parentheses are standard errors.
Source: Authors' calculations based on data from World Bank, Investment Climate survey, Uganda, 2002/03.

ines the basic production function specification and controls for subsectors. The coefficients of labor and capital are positive and significant, as expected, and so is the coefficient of capacity utilization. The coefficients of labor and capital are close to 1 (1.03), indicating constant returns to scale in Ugandan manufacturing.

The second model augments the production function by adding some characteristics of firms and entrepreneurs. The results show that the education of entrepreneurs and managers is significant in determining a firm's value added. Firms whose manager has a university education outperform all others, while those whose manager has a secondary education are significantly more productive than those whose manager has a primary education or none.[3] A manager's years of experience at a foreign firm are also significant in determining the productivity of a firm. This result shows the importance of general training received by employees at foreign enterprises; this training helps entrepreneurs start and manage more productive firms. But being an exporter in Uganda does not seem to matter in determining firm performance.[4]

Performance of Firms Relative to the Efficiency Frontier

In addition to the traditional approach to estimating productivity, the stochastic frontier approach is used to shed light on which types of firms in Uganda perform better than others. This approach relaxes the assumptions of a traditional production function by attributing a technical inefficiency component to the error term rather than assuming it to be purely random. This technique is best suited for countries with noisy data, like those in Sub-Saharan Africa. The frontier itself is random, determined by the "best practice" firm in the country. There is a dispersion of firms below the frontier based on their technical inefficiency.

A preliminary stochastic frontier is estimated for Uganda, including only subsector controls along with capital, labor, and capacity utilization. Individual firm efficiencies are calculated from the total factor productivity frontier. The results show that the average technical efficiency in Uganda is 0.51, indicating that, on average, firms are only 50 percent as efficient as the best practice firm (table 2.14). Low average efficiency is typically associated with uncompetitive, segmented markets. In competitive economies

Table 2.14 Results of Stochastic Frontier Estimations

Variable	Coefficient
Intercept	1.36* (0.72)
Log of capital	0.34*** (0.046)
Log of labor	0.79*** (0.094)
Capacity utilization	0.021*** (0.005)
Food	0.34 (0.23)
Textiles and garments	0.18 (0.39)
Wood and furniture	–0.38 (0.28)
Metals	0.17 (0.35)
Average technical efficiency	0.51

** Significant at the 10 percent level.*
*** Significant at the 5 percent level.*
**** Significant at the 1 percent level.*
Note: Figures in parentheses are standard errors.
Source: Authors' calculations based on data from World Bank, Investment Climate survey, Uganda, 2002/03.

firms' average efficiency tends to be close to 0.75 or 0.80.

When average efficiency is estimated for firms grouped by different characteristics, no significant differences emerge across size classes (table 2.15). Nor is there a significant difference between foreign-owned and domestic firms. Whether a firm exports does matter, however: exporters are more efficient than nonexporters.

But the most important factor in explaining differences in firm efficiency is education. Firms whose manager has a university degree are 13 percent more efficient than firms whose manager has only a primary education. Similarly, firms started by an entrepreneur who had previously worked in a foreign firm are more efficient than those started by an entrepreneur without such experience.

Overall, the frontier results are similar to the production function results: learning channels are the most significant driver of firm performance. Learning—whether through export experience, work in a foreign firm, or advanced education—helps boost firm performance. Government policies that help develop these learning channels will thus foster private sector growth in Uganda.

Table 2.15 Average Efficiency of Manufacturing Firms Grouped by Various Characteristics, Uganda

Characteristic	Average efficiency
Firm size class (employees)	
Micro (<10)	0.50
Small (10–49)	0.52
Medium-size (50–99)	0.48
Large (100+)	0.54
Market orientation	
Exporter	0.56
Nonexporter	0.51
Ownership	
Foreign	0.53
Domestic	0.51
Entrepreneurs' highest level of education achieved	
Primary	0.47
Secondary	0.51
Technical	0.53
University	0.60
Entrepreneurs' prior experience	
Foreign firm experience	0.56
No foreign firm experience	0.51

Source: Authors' calculations based on data from World Bank, Investment Climate survey, Uganda, 2002/03.

Notes

1. Entrepreneurs with high ability are likely to choose and achieve a higher level of schooling while at the same time managing their firms better. This might create an upward bias in the estimates of the effect of schooling.
2. Worker earnings data show that foreign firms do not exploit Ugandan workers, however; in fact, they often pay higher wages. The lower unit labor costs result from higher productivity, presumably due to higher-quality capital equipment and workers.
3. University education may be correlated with greater ability, and the coefficient on this variable may consequently be biased upward.
4. The percentage of foreign ownership was also tested as an explanatory variable. It was not significant. In addition, several investment climate variables were included in the production function to evaluate their impact on productivity. These specifications also were not significant. Several factors probably account for this: the sample of firms includes relatively little variance; firms compensate for the poor investment climate (for example, electricity users facing high power costs purchase generators) and select activities that minimize its adverse impact (for example, avoiding continuous process manufacturing); and the characteristics of the investment climate may well be embodied in (and correlated with) the attributes of labor and capital.

Uganda's continued growth over the past decade has ranked the country among the success stories in economic development. But the government's ambition is to achieve investment, export, and economic growth performance similar to that of the East Asian "tigers" before their financial crisis of the late 1990s. To inform its development strategy, it seeks to understand what factors continue to constrain investment and growth in the private sector.

This chapter draws on data from the 2002/03 firm-level survey as well as other sources to identify the most important constraints in the investment climate. On the whole, the available evidence supports the finding that Uganda has a difficult investment climate, with significant improvements needed to allow the private sector to flourish. Yet a comparison of the 2002/03 survey data with results from a similar survey in 1998 provides hopeful news: Uganda's business environment has improved, and the gains are already having positive effects on firms, particularly the larger ones. Large firms (with 100 or more employees) are more likely to invest and export today than they were in 1998. They are also operating at higher levels of efficiency. Continued improvements in the business environment, particularly a better electricity supply and lower interest rates, would further boost efficiency, enabling Ugandan firms exposed to international competition to compete with their foreign counterparts.

The analysis of the investment climate begins with a ranking of constraints in the business environment as perceived by private manufacturing firms in Uganda. The manufacturing sector's perceptions of the investment climate are not meant to be a definitive tool for setting priorities. But these subjective rankings of the importance of different factors in the business environment can make a useful contribution to the discourse. And quantitative data, such as the number of electricity outages or the amount paid in bribes, can add significant weight to arguments about which factors are most critical. While perceptions of constraints are shown for other countries as well as Uganda, qualitative rankings are difficult to compare across countries, given probable differences in firms' experience and expectations.

Perceived Constraints in the Business Environment

Manufacturing firms in Uganda largely consider financing and tax obstacles the greatest constraints to their operation and growth (table 3.1). Finance ranks high among hindrances in the business environment, whether it is the cost of finance (high interest rates) or access to finance (difficult collateral requirements). Some 45 percent of firms reported that access to finance is a major or severe constraint.

The top constraints perceived by foreign firms (those with 10 percent or more foreign ownership) diverge from those perceived by domestic firms. Foreign firms identify corruption as their second biggest constraint after macroeconomic instability and feel more constrained by regulatory policy uncertainty, customs and trade regulations, and crime than do domestic firms. Similarly, exporters (firms exporting 10 percent or more of their annual sales) and nonexporters have differing perceptions of macroeconomic instability (inflation, exchange rates), corruption, monopolistic behavior of competitors, crime, and transport.[1] Both foreign-owned firms and exporters reported being less constrained by lack of access to finance than domestic firms. But on almost half the issues in table 3.1, foreign-owned firms and exporting firms reported being significantly more adversely affected than their counterparts.

When the qualitative rankings are disaggregated by firm size class, it becomes clear that the cost of finance is a constraint felt across the board (table 3.2). Not surprisingly, access to finance becomes less restrictive as firm size increases, while the effects of corruption are felt more. Microenterprises perceive corruption as a less important constraint—standably, since their low profiles

Table 3.1 Manufacturing Firms' Evaluation of General Constraints to Operation, Uganda
(percentage of respondents evaluating constraint as major or very severe)

Constraint	Full sample	Foreign firms	Domestic firms	Exporters	Non-Exporters
Cost of finance (interest rates)	60.3	54.1	62.0	62.5	60.2
Tax rates	48.3	43.3	49.6	48.9	48.4
Macroeconomic instability	45.4	**57.6**	**41.3**	**64.3**	**41.7**
Access to finance (collateral requirements)	45.0	**36.5**	**47.7**	37.2	46.6
Electricity	44.5	48.5	43.1	52.4	42.9
Corruption	38.2	**55.0**	**33.3**	**56.4**	**35.0**
Tax administration	36.1	42.2	34.5	42.9	35.1
Anticompetitive or informal practices	31.1	34.4	30.2	**41.5**	**29.4**
Skills and education of available workers	30.8	25.4	32.0	36.6	30.0
Regulatory policy uncertainty	27.6	**38.1**	**23.7**	**42.9**	**24.6**
Customs and trade regulations	27.4	**38.1**	**23.2**	33.3	26.3
Crime, theft, and disorder	26.9	**37.3**	**23.5**	**36.4**	**25.3**
Transport	22.9	28.8	20.9	**36.4**	**20.2**
Access to land	17.4	24.6	15.6	17.1	17.4
Labor regulations	10.8	12.3	10.4	14.6	10.1
Business licensing and operating permits	10.1	13.4	9.2	8.9	10.4
Telecommunications	5.2	6.2	4.9	7.0	4.5

Note: Results showing differences of more than 10 percentage points between foreign and domestic firms, or between exporters and nonexporters, are highlighted.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

and small revenues mean that they are less likely to be targets. There is convergence among size classes on the perception that telecommunications, licensing, labor regulations, and access to land limit firm growth less than the other factors.

An international comparison shows that issues of concern in Uganda—cost of finance, tax rates, macroeconomic instability, and tax administration—are also issues of concern in its East African neighbors (table 3.3). Interestingly, a much smaller share of firms in China perceive these issues as important constraints.

Uncertainty

Unpredictability in the decisions made by government bodies, such as the judiciary or regulatory agencies, can create an unstable business environment. How do Ugandan firms rate such issues? Large firms seem to have more confidence in the judiciary than small firms, making greater use of the courts in settling payment disputes (table 3.4). Small, domestic, and nonexporting firms are more likely than large, foreign, and exporting firms to perceive inconsistency in the interpretation of regulations.

Firms' perceptions of predictability in the decisions by outside bodies shape their assessments of certainty in the economy in general. Thus another way to evaluate these issues is to look at firms' perceptions of their ability to make investments profitable, as reflected in the share of profits they reinvest. In Uganda this share varies little among different types of firms, averaging around 42 percent. Of course, this apparent similarity may reflect differences in the factors de-

Table 3.2 Manufacturing Firms' Evaluation of General Constraints to Operation by Size Class, Uganda
(percentage of respondents evaluating constraint as major or very severe)

Constraint	All firm size classes	Micro (<10 employees)	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)
Cost of finance (interest rates)	**60.3**	**61.5**	**59.6**	**60.0**	**59.4**
Tax rates	**48.3**	**53.3**	**47.6**	33.3	**47.2**
Macroeconomic instability	**45.4**	35.7	**49.6**	**48.0**	**57.1**
Access to finance (collateral requirements)	**45.0**	**51.9**	**43.3**	30.8	40.6
Electricity	**44.5**	**45.7**	36.3	**69.2**	**51.4**
Corruption	38.2	24.8	**46.3**	**56.5**	38.7
Tax administration	36.1	**52.3**	30.3	**48.0**	37.1
Anticompetitive or informal practices	31.1	22.1	32.8	43.5	**41.7**
Skills and education of available workers	30.8	32.1	27.2	41.7	32.4
Regulatory policy uncertainty	27.6	25.6	24.8	37.5	34.3
Customs and trade regulations	27.4	27.4	26.3	24.0	33.3
Crime, theft, and disorder	26.9	22.9	26.8	38.5	30.6
Transport	22.9	20.2	18.1	48.0	30.6
Access to land	17.4	14.8	20.2	13.0	19.2
Labor regulations	10.8	14.3	5.6	12.0	17.1
Business licensing and operating permits	10.1	11.1	8.7	15.4	8.3
Telecommunications	5.2	4.7	3.3	12.0	8.3

Note: The top five complaints in each category of firms are highlighted.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

termining how much a company reinvests, such as the working capital or credit available.

Corruption

Corruption was highlighted as a serious problem in Uganda in a survey of manufacturing firms conducted by the World Bank in 1998. It continues to be an important source of concern. A participant in the April 2003 Consultative Group meeting of donors in Kampala highlighted the need for major reform:

> *Notwithstanding the Government's many laudable policy and technical achievements, there is a widely held perception in Ugandan society that corruption is pervasive, institutionalized and on the increase. In addition, Uganda continues to rank among the most corrupt countries in international indices. The Second National Integrity Survey . . . carried with it a clear message: large-scale corruption and embezzlement at the top, which is carried out with impunity, has worked to encourage the proliferation of administrative corruption at the grassroots. (Consultative Group Meeting 2003)*

The Consultative Group urged the passing of anticorruption legislation, public sector pay reform, adequate resources for anticorruption agencies, proper follow-up on the findings of commissions of inquiry, and actions to combat a culture of impunity, strengthen accountability at all levels, and address corruption at lower levels of government.

Table 3.3 Manufacturing Firms' Evaluation of General Constraints to Operation, Selected Developing Countries
(percentage of respondents evaluating constraint as major or very severe)

Constraint	Uganda	Kenya	Zambia	Tanzania	China	Turkey
Cost of finance (interest rates)	60.3	73.3	82.1	56.2	21.6	28.2
Tax rates	48.3	68.2	57.5	72.1	34.1	38.1
Macroeconomic instability	45.4	51.3	73.9	42.0	26.0	53.7
Electricity	44.5	48.1	39.6	57.6	28.1	17.3
Corruption	38.2	73.8	44.6	50.0	22.4	23.7
Tax administration	36.1	50.9	27.5	54.7	23.7	33.1
Anticompetitive or informal practices	31.1	65.3	38.7	23.9	17.6	22.7
Skills and education of available workers	30.8	27.6	35.8	24.6	26.7	12.8
Regulatory policy uncertainty	27.6	51.5	57.0	30.8	28.0	53.8
Customs and trade regulations	27.4	39.9	32.4	30.8	21.1	8.9
Transport	22.9	37.4	30.4	22.5	19.4	8.4
Access to land	17.4	24.6	17.4	24.3	16.3	6.0
Labor regulations	10.8	22.5	16.9	11.9	19.4	8.7
Telecommunications	5.2	44.1	32.9	11.6	16.5	10.9

Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Kenya, 2003, Tanzania, 2003, Zambia, 2003, China 2000, Turkey, 2002.

Table 3.4 Manufacturing Firms' Perceptions of Uncertainty in the Business Environment, Uganda
(percent)

Indicator	Full sample	Large firms (100+ employees)	Small firms (<100 employees	Foreign firms	Domestic firms	Exporters	Non-exporters
Share of firms disagreeing that interpretations of regulations are consistent and predictable	40.0	33.3	41.0	36.4	41.0	31.1	41.4
Share of profits reinvested in firm	41.9	42.7	41.8	45.5	41.1	39.9	42.0
Share of firms disagreeing that they have confidence in the judiciary	69.9	61.1	71.1	71.2	69.8	70.5	70.0
Share of payment disputes settled by third parties or resolved in court	50.0	53.3	48.7	43.5	53.6	57.1	48.7

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

A related concern is transparency in fiscal policy and public procurement. The International Monetary Fund (IMF), in its 2003 Report on the Observance of Standards and Codes in Uganda (2003b), argued that while fiscal transparency had improved since the 1999 report, many recommendations in the earlier report had yet to be implemented. The IMF emphasized the need for transparency in budget execution and reporting and strongly recommended limiting the use of supplementary appropriations by the executive branch. It also called for properly assessing arrears and monitoring and controlling contingent liabilities. In addition, the Organisation for Economic Co-operation and Development recently argued for strengthening accountability and institutional capacity in public procurement (OECD 2003).

Uganda has made efforts to reduce corruption, but progress has been slow. Corruption remains pervasive throughout the government and can cost firms a great deal in time and money. The survey data confirm the widely held view that corruption is a serious problem. Not surprisingly, foreign-owned and exporting firms seem to be the biggest targets of government officials requesting bribes. Foreign-owned firms reported forfeiting the largest share of revenue—almost 4 percent—for "informal payments" to get things done (table 3.5).

Obtaining an electricity connection is the service most likely to require a bribe, followed by getting a telephone connection. Large companies seem to bear the largest burden; almost a third reported having to pay a bribe to acquire a telephone connection.

Infrastructure Performance

The quality of infrastructure plays a crucial part in firm productivity. The manufacturing firms surveyed in Uganda reported about 39 power outages in the previous year on average, though large firms reported considerably more, at 54 (table 3.6). Firms estimated the resulting production losses in the 4–7 percent

Table 3.5 Indicators of Corruption as Reported by Manufacturing Firms, Uganda
(percent)

Indicator	Full sample	Large firms (100+ employees)	Small firms (<100 employees	Foreign firms	Domestic firms	Exporters	Non-exporters
Informal payments required as a share of revenues	2.4	1.1	2.6	3.9	1.9	3.0	2.3
Share of firms reporting requirement for gift or payment							
For a mainline telephone connection	18.3	28.6	16.4	18.4	18.5	18.2	17.6
For an electricity connection	21.5	21.4	21.5	18.2	22.3	24.0	21.2
For a construction permit	12.3	20.0	11.1	10.0	13.2	5.6	14.8
For an import license	3.6	0.0	4.3	5.3	2.8	0.0	4.5
For a trading license	4.2	3.4	4.3	3.8	4.3	2.7	4.5
Share of revenue typically reported for tax purposes	76.7	87.3	75.2	81.3	75.3	86.1	74.7

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table 3.6 Infrastructure Performance as Reported by Manufacturing Firms, Uganda

Indicator	Full sample	Large firms (100+ employees)	Small firms (<100 employees	Foreign firms	Domestic firms	Exporters	Non-exporters
Frequency of power outages (times in previous year)	38.6	54.2	36.5	40.3	38.0	38.3	37.7
Share of production lost due to power outages (percent)	6.3	4.5	6.5	7.4	5.9	3.7	6.7
Share of firms with own generator (percent)	35.3	69.4	30.7	67.7	26.0	53.3	31.9
Share of firms that have built own well (percent)	13.0	30.6	10.6	27.9	8.7	24.4	10.6
Days to obtain a telephone connection	33.2	23.1	35.1	17.7	39.3	35.1	32.8
Days to obtain an electricity connection	38.3	39.1	38.3	46.8	36.2	48.7	36.6

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

range. Slightly more than a third of all firms own generators, while about two-thirds of large and foreign firms do.

Despite complying with demands for informal payments, firms face long delays in obtaining connections for telephone service (33 days on average) and electricity (38 days). Large and foreign firms are able to obtain telephone connections faster than others, however. But exporting firms wait longer than others for an electricity connection. This result is particularly troublesome, since exporters are more sensitive to electricity constraints and since the growth of the Ugandan economy depends on the growth of exports.

International comparisons show that while Uganda may do better than Kenya on some indicators of infrastructure performance, it falls far short of the performance in China (table 3.7). Ugandan firms need wait only about a fourth as many days as Kenyan firms to obtain a telephone connection, for example. But while Ugandan firms lose an average 6.3 percent of production because of power outages, Chinese firms lose only 1.8 percent. The share of firms owning generators in China is only about half that in Uganda. And Chinese firms must wait less than half as many days as Ugandan firms to obtain telephone and electricity connections.

The Ugandan government has undertaken efforts to improve the electricity supply. But the proposed $550 million Bujagali hydropower project, intended to extend electricity to rural areas and export energy to neighboring countries, was halted in 2002 because of investigations of corrupt dealings with the U.S. company AES (Financial Times 2002). According to the Economist Intelligence Unit, several new investors are being sought and alternative deals, perhaps less expensive, are being considered (EIU 2004). Meanwhile, privatization of the state-owned electricity distribution and transmission companies has stalled recently and investor interest is lower than desired. It seems that the goal of increasing access to electricity to10 percent of the rural population (from one percent) by 2010 will be difficult to meet.

Regulatory Burden

The private sector in Uganda must cope with a substantial regulatory burden (table 3.8). Large enterprises and foreign-owned companies find administrative and regulatory problems a greater nuisance than

Table 3.7 Infrastructure Performance as Reported by Manufacturing Firms, Selected Developing Countries

Indicator	Uganda	Kenya	Tanzania	Zambia	China	India
Frequency of power outages (times in previous year)	38.6	33.1	67.2[a]	37.2[a]	—	—
Share of production lost due to power outages (percent)	6.3	9.3	9.2	4.5	2.0	—
Share of firms with own generator (percent)	35.3	70.0	55.0	38.2	16.2	68.9
Share of firms that have built own well (percent)	13.0	33.5	34.7	59.9	15.6[b]	50.8[b]
Days to obtain a telephone connection	33.2	123.7	23.1	132.5	12.0	—
Days to obtain an electricity connection	38.3	65.6	23.1	120.7	19.0	—

— Not available.
a. Frequency of power outages and surges.
b. Percentage of firms that own a well.
Source: World Bank, Investment Climate survey, Uganda, 2002/03, Kenya, 2003, Tanzania, 2003, Zambia, 2003, China 2000,Turkey, 2002.

small and domestic firms. The same can be said of exporting businesses, since most are also foreign firms. The senior management of large, foreign, and exporting firms spends slightly more time on average dealing with regulations than does the management of small or domestic enterprises. These firms also spend more than twice as much time in inspections and meetings with government officials and lose almost 10 times as much money (as a share of sales) in fines or seized goods as a result of these inspections. Surprisingly, it also takes large and foreign companies longer to clear exports through customs. Not surprisingly, firms exporting 10 percent or more of their sales wait less time than firms exporting less for exported goods to clear customs.[2]

The main regulatory obstacles for small and domestic enterprises tend to differ from those for large and foreign firms. A larger share of these businesses perceive regulations as being inconsistently or unpredictably applied, and not in their favor. Interestingly, small and domestic firms also face a much larger share of inspections by local authorities—almost three times as large—as do large or foreign firms.

Other results are consistent with the findings of the firm survey. An administrative and regulatory cost survey by the International Finance Corporation's Foreign Investment Advisory Service found that about a third of respondents were generally dissatisfied with the quality of regulation (FIAS 2003). Roughly 62 percent were dissatisfied with the bureaucracy. The most problematic areas of regulation identified by firms were taxation administration, customs, and access to land. Some agencies are addressing concerns by introducing new procedures, but they are doing so before the changes are reflected in laws and regulations. The result is varying interpretation by officials, confusion in the business community, and concern that the procedures could be summarily changed.

Backing the perceptions of Uganda-based investors are the views of international rating sources such as the Wall Street Journal–Heritage Foundation Index of Economic Freedom, which provide an important gauge of how well Uganda is doing compared with other developing countries. Uganda scores poorly in ratings by international agencies for reasons highlighted in this report—bribes, high fees, complicated licensing procedures, regulations that burden businesses, and significant barriers to opening a business. Reinforcing these perceptions are an outdated

Table 3.8 Regulatory Burden and Administrative Delays as Reported by Manufacturing Firms, Uganda

Indicator	Full sample	Large firms (100+ employees)	Small firms (<100 employees	Foreign firms	Domestic firms	Exporters	Non-exporters
Regulation (percent)							
Share of firms disagreeing that interpretations of regulations are consistent and predictable	40.0	33.3	41.0	36.4	41.0	31.1	41.4
Share of senior management's time spent dealing with regulations	0.4	0.07	0.04	0.06	0.04	0.05	0.04
Share of revenues typically paid to officials to get things done	2.4	1.1	2.6	3.9	1.9	3.0	2.3
Share of firm revenues typically reported for tax purposes	76.7	87.3	75.2	81.3	75.3	86.1	74.7
Inspections							
Days last year spent in inspections or required meetings with officials	13.4	25.6	11.8	26.0	9.7	18.2	12.6
Share of meetings or inspections by local authorities (percent)	19.4	7.6	21.4	8.9	23.0	16.3	20.1
Cost of fines or seized goods (percentage of sales)	0.1	0.3	0.0	0.2	0.0	0.2	0.0
Share of interactions in which informal payment requested (percent)	6.7	9.4	6.3	6.8	6.7	7.3	6.6
Value of informal payments (percentage of sales)	0.3	0.6	0.3	0.4	0.3	0.4	0.3
Import delays (days)							
Average wait to clear customs	5.8	5.5	5.9	5.6	6.1	5.3	6.0
Longest wait to clear customs	11.2	10.1	11.5	12.5	9.8	10.9	11.3
Export delays (days)							
Average wait to clear customs	3.5	4.2	3.2	3.5	3.6	3.3	3.7
Longest wait to clear customs	6.0	6.3	5.9	6.5	4.8	5.8	6.2

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

investment code describing incentives that no longer exist, budget declarations on incentive packages that are not implemented, and nontransparent incentives for selected investments.

Other evidence comes from the World Bank's Doing Business database, which shows that the cost of starting a business in Uganda is relatively high (World Bank 2003a). Entrepreneurs in Uganda can expect to undertake 17 different steps to set up a business, a process that takes 36 days on average and involves a cost equal to 135 percent of gross national income per capita.

Effective Protection of Manufacturing

Another element of the business environment is the extent of protection of Ugandan manufacturing firms from foreign competition. The survey data show that while the tariff regime in Uganda is quite liberal, important distortions remain in nontariff protection. These distortions have implications for economic efficiency and need to be addressed. An analysis suggests that Uganda needs to persevere in removing ad hoc excise taxes. It also needs to move its dialogue with the East African Community forward with a view to minimizing distortions.

In the 1990s Ugandan authorities, viewing foreign trade as a major engine of economic growth, undertook reforms aimed at fostering trade (see chapter 1 and appendix 3). In addition, Uganda has promoted trade relations with other developing countries through regional integration agreements. In (East Africa a proposed customs union would entail a common external tariff. A World Bank study (2003) suggests that the common tariff that has been agreed on implies a decline in tariff rates for Kenya and Tanzania and an increase for Uganda.[3]

As part of the trade reforms, Uganda has drastically reduced tariff protection over the past decade (see appendix table A3.1). For manufactured goods it lowered average tariffs from 17.8 percent in 1994 to 10.6 percent in 2002. The average tariff for all imports is now around 9 percent. In 2002 average tariffs in Uganda were well below those in other Sub-Saharan African countries.

Thus on the basis of the tariff schedule Uganda's trade policy regime seems fairly liberal. But tariffs are not the only policy tools affecting the domestic price of tradable goods. Some nontariff, ad valorem restrictions are still in effect, including an import license regime, a withholding tax, and an excise tax. These taxes, especially the excise tax, are nonneutral in their effects on the economy:

- The nontariff protection increases nominal protection well beyond what is suggested by tariffs.
- The additional trade taxes increase the dispersion in nominal protection compared with the tariff-induced dispersion. Although excise taxes cover only 8.6 percent of all tariff lines, their coverage varies greatly at the category level.
- The nontariff protection allows authorities to protect specific sectors while still complying with international trade rules and demonstrating a reduction in tariff protection.

All this translates into a structure of effective protection that is uneven and much higher than the tariff levels might suggest. The estimated rate of effective protection varies widely across manufacturing subsectors, ranging from roughly 28 percent in the wood subsector to almost 80 percent in the textile and leather products subsector (see appendix table A3.5). The dispersion of effective rates of protection is also large within subsectors. These patterns suggest that the structure of protection is nonneutral in its impact. Indeed, firm-level measures of nominal protection show that raw materials tend to be less protected than final products, that differences exist between domestic and foreign firms, and that distortions in protection levels are significant.

So the picture of manufacturing protection in Uganda is mixed. Tariff protection has declined, but the true level of protection remains quite high and distortions persist. Most of the protection is due to the use of excise taxes. An important consequence of the structure of protection is to bias sectoral incentives, which is detrimental to the efficient development of the manufacturing sector. (See appendix 3 for a detailed discussion of the protection of manufacturing in Uganda.)

How Has the Business Environment Changed?

In 1998 the World Bank conducted a survey of Ugandan manufacturing firms quite similar the one undertaken in 2002/03, allowing a comparison over time of firms' perceptions of constraints to their investment, operation, and growth. How has the business environment changed, and what has been the impact on investment and growth?

Overall, the business environment has improved since 1998, especially in aspects relating to regulation and infrastructure. The improvements have benefited firms' performance: investment rates have risen, exports are growing, and firms, especially the largest ones, are operating more efficiently. Nonetheless, as this chapter has shown, the business climate in Uganda remains much harsher than those in rapidly advancing countries like China.

The samples for the two World Bank surveys are roughly comparable in the size distribution of firms, although the 1998 sample contains slightly fewer small firms and proportionally more large enterprises (table 3.9). But the average size of firms is almost identical: in 1998 the sampled firms had 123 employees on average, while in 2002/03 they had 130 on average. The vast majority of firms in both samples were selected from the Kampala-Entebbe area in the central region. In 1998 firms were slightly oversampled from the northeast region: 25 percent were in the Jinja and Mbale-Tororo areas, compared with 12.5 percent in 2002/03. The sectors represented in the two samples differ somewhat, limiting comparability to some extent.

Table 3.9 Samples in 1998 and 2002/03 Surveys by Size and Location of Firms, Uganda
(percent)

	1998	2002/03
Firm size class (employees)		
Micro (<10)	17.7	18.0
Small (10–49)	39.9	51.0
Medium-size (50–99)	13.6	11.3
Large (100+)	28.8	19.7
Location		
Central region	64.0	75.0
Northeast region	25.0	12.5
Southwest region	11.0	12.5

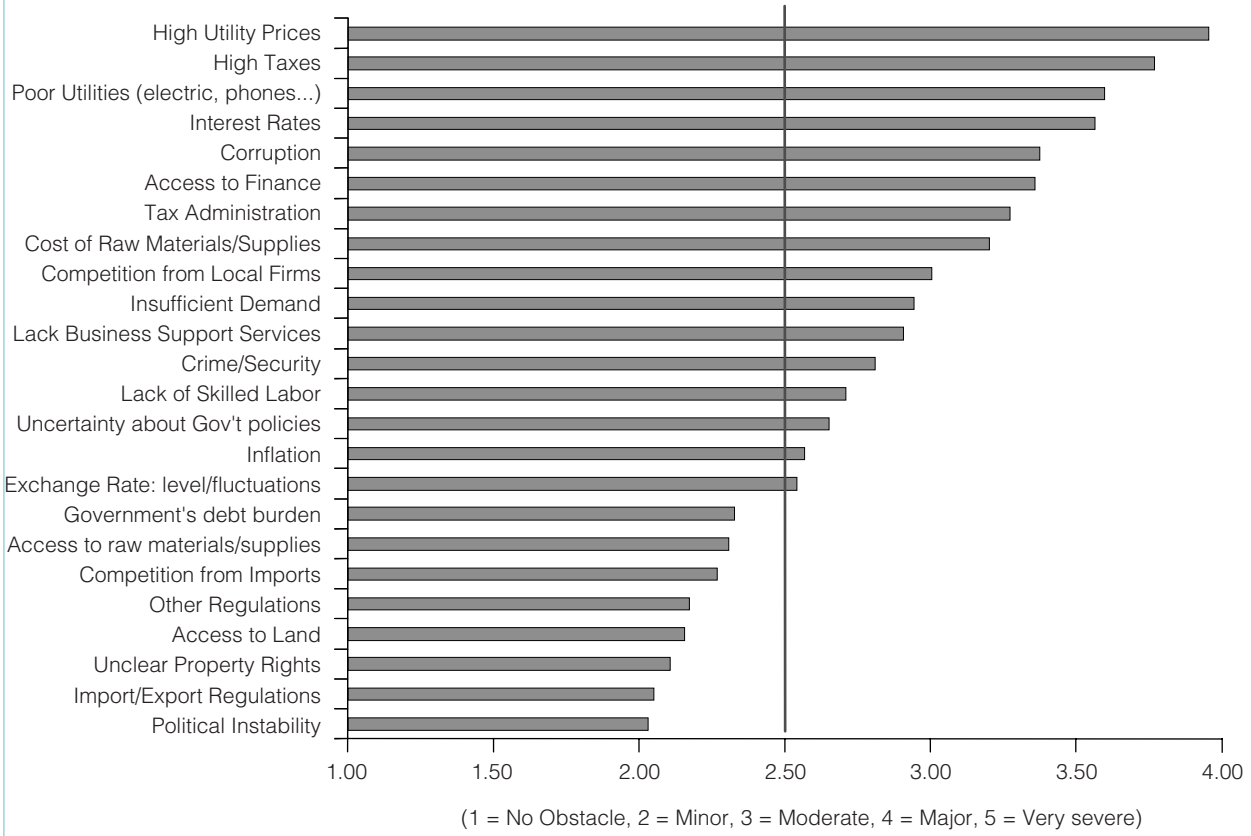
Source: World Bank, RPED survey, Uganda, 1998, and Investment Climate survey 2002/03.

Constraints in the Business Environment

In 1998, as in 2002/03, Ugandan firms were asked to rank key constraints to their operation and growth. Ranking highest among their concerns were the price and quality of utility services (such as water, telephone, and electricity services), high taxes, and interest rates (figure 3.1). Government corruption, access to finance, tax administration, and the cost of raw materials and supplies formed a second tier of constraints. Rounding out the group of at least moderate constraints were local competition, lack of demand, lack of business support services, crime and security, lack of skilled labor, uncertainty about government policies, inflation, and exchange rate issues.

A comparison of the results from 1998 and 2002/03 shows that constraints generally lessened during the period. Firms still perceive problems with

Figure 3.1 Ranking of Constraints Perceived by Manufacturiung Firms, Uganda, 1998



Note: Constraints were rated on a scale of 1 (no obstacle) to 5 (very severe)
Source: World Bank, RPED survey, Uganda, 1998.

high tax rates and the cost of finance, but the average score has fallen somewhat for such factors as corruption, access to finance, and tax administration. A majority of firms no longer consider access to land, business licensing, and telecommunications to be problems.

Questions about infrastructure differed between the two surveys, so not all responses are directly comparable. But some conclusions are nonetheless clear. Although power supply has improved over the years, its reliability and adequacy remain the leading infrastructure constraint for Ugandan enterprises. Current deregulation efforts should improve electricity supply significantly in the coming years, doing much to improve firm-level productivity. Telecommunications services in Uganda have already improved significantly in recent years, especially with the introduction of mobile phones.

Infrastructure

While the survey data show tremendous improvements in the quality of electricity service and the use of mobile telephony, firms were more likely to report water and fixed line telephone services as major or severe constraints to operation in 2002/03 than in 1998. And while there have been improvements in the public provision of waste disposal services, slightly more firms considered the quality of these services to be a major or severe constraint in 2002/03 than in 1998.

Electricity. Manufacturing firms saw big improvements in the number of days of production lost because of power outages between 1998 and 2002/03 (figure 3.2). While firms found themselves without power for 84 days on average in 1998, they reported 39 outages in 2002/03. The share of firms owning generators consequently fell, from 41 percent in 1998 to 35.3 percent in 2002/03.

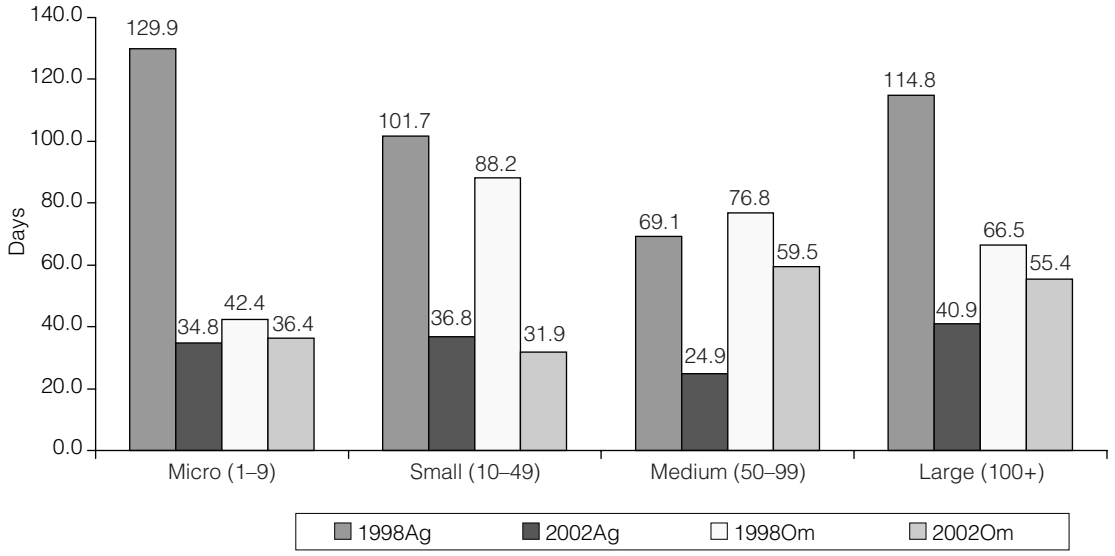
Particularly dramatic were the improvements for micro firms in agro-industry. While in 1998 such firms reported a staggering average of 130 days of production lost to electricity outages, in 2002/03 they reported a loss of just 35 days. While the improvements were greatest for agro-industry, there were also perceptible gains for other manufacturing subsectors, particularly among small firms.

The share of firms reporting electricity as a major or severe problem declined sharply. Agro-industry firms reported the largest improvements. While 78 percent of these firms cited electricity as a major or severe problem in 1998, only 22 percent did in 2002/03. Again, the gains were biggest for micro firms in agro-industry: among these firms the share dropped from 88 percent to only 22 percent. In other manufacturing the share declined from 56 percent to 34 percent.

Electricity connection times have also improved. While firms had to wait 12 weeks on average for an electricity connection in 1998, they had to wait only 38 days in 2002/03. All these improvements suggest that recent policy initiatives to boost the quality of electricity service have been successful.

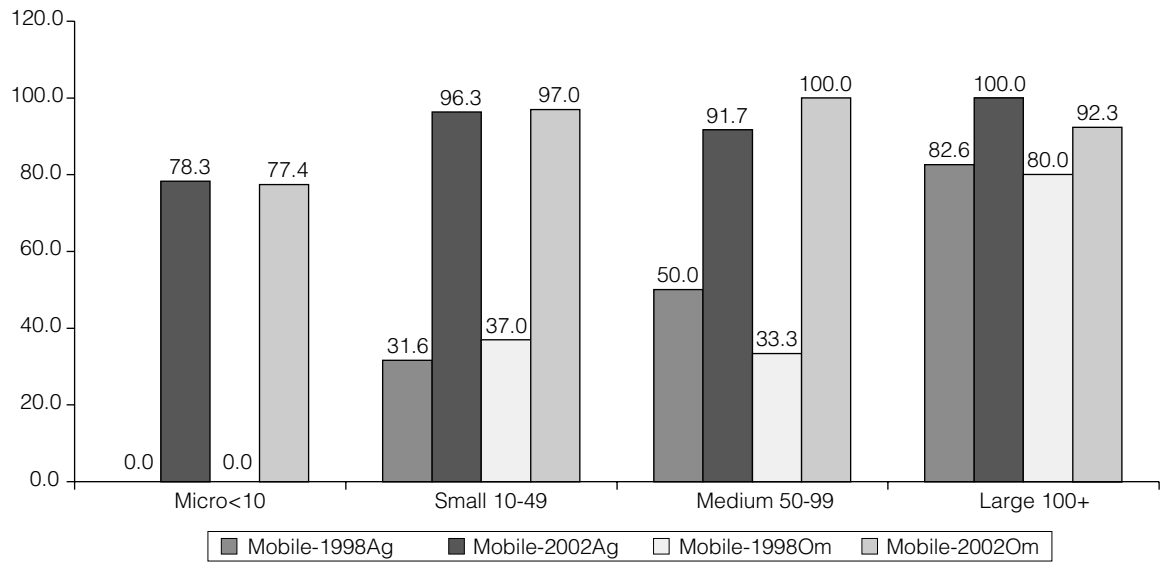
Telecommunications. Cellular phone service in Uganda has grown tremendously since the first cellular operating license was issued in 1997. The share of firms reporting use of mobile phones rose from 41 percent in agro-industry and 50 percent in other manufacturing in 1998 to 93 percent in each sector in 2002/03. The largest increases in mobile phone use occurred among micro and small firms (figure 3.3). In 1998 no microenterprises reported using mobile

Figure 3.2 Average Number of Days Lost Due to Power Outage by Firm Size Class, Uganda



Source: World Bank, RPED survey, Uganda, 1998, and Investment Climate survey 2002/03.

Figure 3.3 Share of Firms Using Mobile Phones for Business by Firm Size, Uganda



Source: World Bank, RPED survey, Uganda, 1998, and Investment Climate survey 2002/03.

phones, but in 2002/03 nearly three-quarters did. Among large firms almost 100 percent reported using mobile phones in 2002/03.

While mobile telephony appears to have brought significant benefits to enterprises, fixed line telephony remains a constraint to firm operation. One indicator is the wait to obtain a telephone connection. For manufacturing firms as a group, the average wait fell from 11 weeks in 1998 to 33 days in 2002/03. Because of substitute mobile phone service, however, most firms do not consider this wait an important constraint.

A larger share of firms in agro-industry reported problems with fixed line telephony as major or severe. Less than 5 percent of firms reported major or severe problems with cellular phone service, underlining the difference in the quality of service by fixed line phone providers.

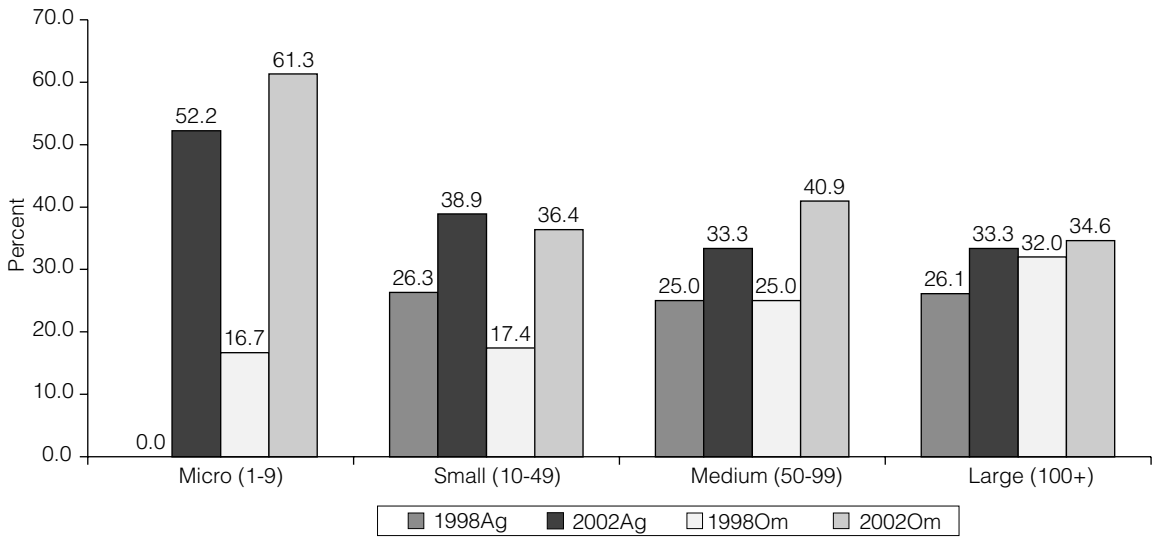
The quality differences between fixed line and mobile service are a particular concern, since fixed line telephony is likely to be cheaper in a small economy such as Uganda. Moreover, recent policy initiatives to establish Uganda as a potential supplier of information technology and call center services will be constrained by the quality of fixed line telephony suggested by the survey data.

Water. One measure of the quality of water service is the number of days in the previous year firms report having an inadequate water supply. This measure improved between 1998 and 2002/03, falling from an average 31 days to 6.1 days. The median number of days with insufficient water also fell, from four days to zero.

Nonetheless, more firms reported water service as a major or severe constraint to doing business in 2002/03 than in 1998 (figure 3.4). This result suggests that while water service has become more reliable, more needs to be done to improve its quality.

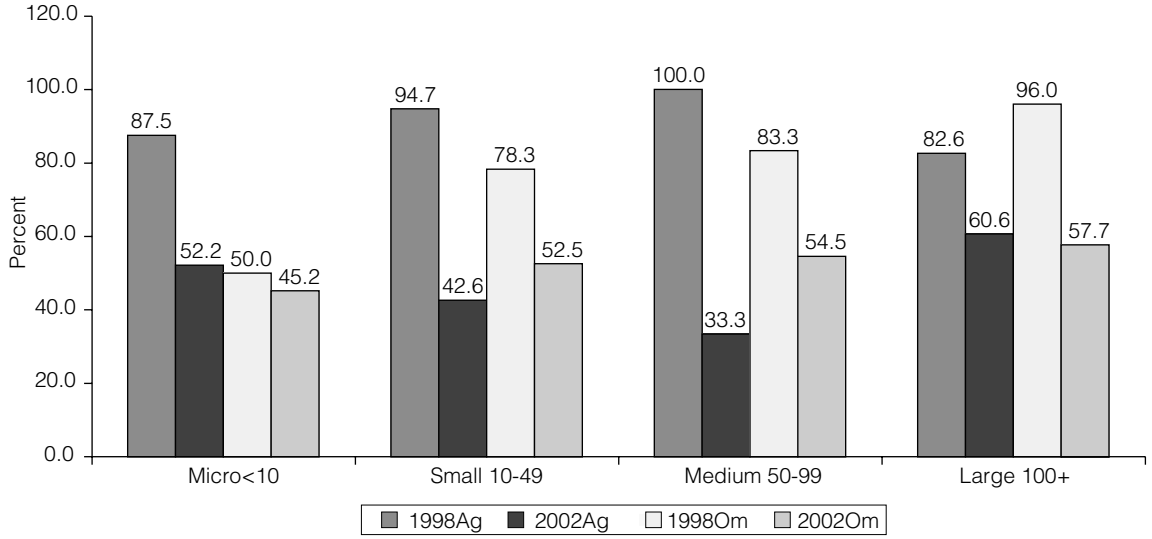
Waste Disposal. The share of firms providing their own waste disposal service gives a good indication of the quality of the service available. This share fell in each size class and sector between 1998 and 2002/03 (figure 3.5). Firms in agro-industry

Figure 3.4 Share of Firms Reporting Water Services as Major or Severe Problem by Firm Size, Uganda



Source: World Bank, RPED survey, Uganda, 1998, and Investment Climate survey 2002/03.

Figure 3.5 Share of Firms Doing Own Waste Disposal by Firm Size, Uganda



Source: World Bank, RPED survey, Uganda, 1998, and Investment Climate survey 2002/03.

experienced the largest improvement, with the share providing their own waste disposal falling from more than 85 percent in 1998 to less than 50 percent in 2002/03. That this sector should be most affected is unsurprising, since it is more sensitive than others to poor waste disposal.

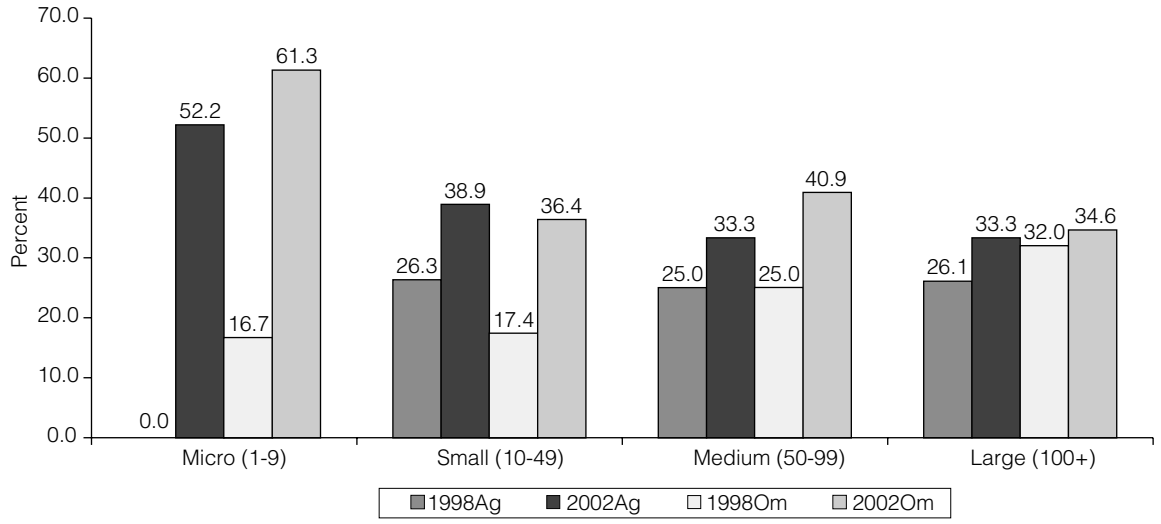
Despite the improvements, firms remain dissatisfied with the quality of the waste disposal service available. The share of firms reporting major or severe problems with waste disposal service rose slightly between 1998 and 2002/03, suggesting that while the quantity of service has increased, the quality still falls short of firms' expectations (figure 3.6).

Taxes, Regulation, and Administrative Corruption

Ugandan firms identified high taxes as the second biggest constraint to doing business in 2002/03, just as they had in 1998. But firms throughout the world dislike taxes, and even in relatively low-tax OECD countries like the United States firms perceive taxes as the leading constraint.

By contrast, the regulatory burden imposed on Ugandan firms appears to have lessened significantly. There are several ways to measure this burden, but among the most important is how much time entrepreneurs and senior managers must spend in dealing with regulation—time taken away from running their firm's core business. The 1998 survey found that senior managers devoted 14 percent of their time to regulatory compliance (such activities as filling out paperwork and ensuring compliance with regulations relating to waste disposal, product standards, worker benefits, environmental safety, occupational safety, and the like). This average was heavily influenced by a few firms (9 percent of respondents) whose managers reported spending more than 40 percent of their time on regulatory compliance. For the other firms the average was 10 percent. By 2002/03 the average had fallen sharply to 4 percent. The managers

Figure 3.6 Share of Firms Reporting Waste Disposal as Major or Severe Problem by Firm Size, Uganda



Source: World Bank, RPED survey, Uganda, 1998, and Investment Climate survey 2002/03.

of larger firms reported spending more of their time dealing with regulations (7 percent) than those of small firms (3 percent).

Survey data suggest that corruption also may have lessened. The 1994 RPED manufacturing firm survey that asked firms how often corruption occurred among firms in their line of work, 40 percent acknowledged occasional bribery and 28 percent reported that bribery occurred often or always, while 31 percent reported no bribery. In the 2002/03 survey 20 percent of firms reported paying some bribes. This share differs significantly across size classes: while only 12 percent of small firms reported paying bribes, 28 percent of larger firms did. In both 1998 and 2002/03 firms reported most often paying bribes to speed bureaucratic processes (such as license and customs approvals); to obtain government services (such as electricity or telephone); to reduce taxes, fees, or fines; or to be considered for or to win government contracts.

Access to Finance

In 2002/03, as in 1998, the top financial concern of Ugandan firms was the cost of bank finance. Access to finance is also a large problem, and microenterprises consider it one of the top five constraints along with interest rates. In Uganda interest rates have fallen since 1998, but firms surveyed in 2002/03 still complained that the cost of finance is high.

Firm Performance

The comparison of the 1998 and 2002/03 survey data shows that Uganda has seen an improvement in its business environment.[4] Much remains to be done: firms in Uganda still face a much more difficult business environment than do firms in East Asia. But the positive changes between 1998 and 2002/03 are already affecting firms' performance, as reflected in their investment patterns, exports, growth rates, and unit labor costs.

Investment. More firms in Uganda reported making recent investments in 2002/03 than in 1998. In 1998 about 55 percent of firms reported making any investment in the previous three years, while in 2002/03, 63 percent did. Moreover, the average ratio of investment to capital stock rose from 13.3 percent in 1998 to 15.6 percent in 2002/03.

In the smallest size classes almost 50 percent of firms reported making recent investments in 2002/03. The largest firms were the most likely to invest, however (table 3.10). For the smaller firms the ratio of investment to capital stock remained much the same between 1998 and 2002/03. But for large firms this ratio jumped from 0.13 to 0.25, showing that these firms have been making bigger investments. This growth in investment is corroborated by capital vintage: as noted elsewhere in this report, Ugandan firms have the youngest capital stock in Sub-Saharan Africa.

Table 3.10 Investment Rates of Manufacturing Firms, Uganda

	Share of firms investing in previous three years (percent)		Ratio of investment to capital stock	
Firm size class (employees)	**1998**	**2002/03**	**1998**	**2002/03**
Micro (<10)	44.2	44.4	0.18	0.16
Small (10–49)	49.5	50.9	0.14	0.14
Medium-size (50–99)	57.6	55.8	0.08	0.13
Large (100+)	62.9	67.8	0.13	0.25

Source: World Bank, RPED survey, Uganda, 1998, and RPED investment climate survey 2002/03.

Exports. The share of firms exporting remained almost the same over the period, at 14 percent. The share of total manufacturing output exported was also similar, at around 10 percent. But differences emerge across firm size classes. Larger firms reported exporting a significantly larger share of their output in 2002/03 (47.5 percent) than in 1998 (31.4 percent). This change indicates the growing competitiveness and efficiency of large firms in Uganda compared with their international counterparts. Smaller firms, operating in segmented local markets, are more shielded from international competition and cater mostly to local customers.

Employment Growth. Both surveys asked firms about their current employment and their employment in the previous three years. While the intervals are relatively short, the data can be used to observe the growth of existing firms in each period. For the full sample the growth rates are quite close, with permanent full-time employment growing at 5 percent in the first period and 4 percent in the second (table 3.11). The picture is also similar across size classes, except for the largest firms. These firms grew faster in 1995–97 than in 2000–02. But the standard deviation is much smaller for the later period, indicating greater stability in employment in 2000–02.

Data for casual employees are missing for 2000, so total employment cannot be compared. But a quick comparison of casual employees as a share of the total reveals a surprising fact: in both periods the average share is 29 percent, a large share compared with that in other countries. This share is even larger for medium-size and large firms and does not differ significantly between the two periods. The incentive to hire casual workers is usually their lower cost. In countries like Uganda, where the HIV/AIDS crisis is severe, hiring casual workers might be a way for firms to avoid high health benefit costs (for a more detailed discussion of this issue, see chapter 4).

Unit Labor Costs. Unit labor costs increased between 1998 and 2002/03 (table 3.12). But the difference is greatest for the smallest firms, where the ratio of wages to value added rose dramatically.[5] For the largest firms unit labor costs declined sharply, becoming increasingly competitive with those of firms in China and India.

Table 3.11 Average Growth in Permanent Full-Time Employment in Manufacturing Firms over Three-Year Intervals, Uganda

Firm size class (employees)	1995–97	2000–02
Micro (<10)	0.00	–0.01
	(0.23)	(0.19)
Small (10–49)	0.04	0.04
	(0.22)	(0.19)
Medium-size (50–99)	0.09	0.12
	(0.19)	(0.25)
Large (100+)	0.12	0.04
	(0.26)	(0.16)
All firm size classes	0.05	0.04
	(0.24)	(0.20)

Note: Figures in parentheses are standard deviations.
Source: World Bank, RPED survey, Uganda, 1998, and RPED investment climate survey 2002/03.

Table 3.12 Unit Labor Costs in Manufacturing, Uganda
(average ratio of wages to value added)

Firm size class (employees)	1998	2000–03
Micro (<10)	0.39	0.69
Small (10–49)	0.40	0.57
Medium-size (50–99)	0.51	0.59
Large (100+)	0.48	0.30
All firm size classes	0.43	0.56

Source: World Bank, RPED survey, Uganda, 1998, and RPED investment climate survey 2002/03.

Notes

1. There is some overlap between the categories of firms, which may explain some of the similar responses. Among exporting firms, 56.8 percent are foreign owned and 43.2 percent are domestic.
2. Border crossings in landlocked Uganda are also slow. Exports take 15.4 days on average, and up to 24.2 days, to cross the border. While few comparative data are available, these delays probably also impose a burden on firms trying to export their goods.
3. While the World Bank study (2003) predicts that the tariff changes will lead to a revenue loss for Uganda, it also suggests that this loss can be offset by revamping the customs administration to increase efficiency and reduce leakage.
4. This section draws on a note by Andrew Stone summarizing the key results from the 1998 survey (Stone, 1998).
5. This result should be interpreted with caution, since it may be driven by differences in the samples between the two periods, differences in data collection, or even differences in accounting practices between small and large firms.

Factor Markets as they are discussed in this chapter refer to financial and labor factor markets. Constraints to the efficient functioning of these markets impose hardships on firms including those related to legal, regulatory or institutional impediments.

The Financial Market

Firms rely on a range of sources to finance working capital and new investment needs. In a world of perfect capital markets the source of finance would be irrelevant to firms' financing decisions. But since markets are imperfect, chiefly because of information asymmetries, the cost of finance differs across sources.

This section looks at what determines the cost and availability of the two most important sources of external finance for manufacturing firms in Uganda: bank finance and trade credit. These determinants can be divided into two broad categories: supply and demand. On the supply side are such macroeconomic factors as overall financial depth, macroeconomic stability, fiscal discipline, the capacity to manage shocks, and the effectiveness of the legal system. Factors on the demand side include the quality of feasible projects, the ability to produce credible information relevant to the lending decision, and ownership of collateral. Policy interventions to improve the operation of the financial sector will require closely examining all these. But here the focus is on demand-side policy recommendations.

In assessments of the Ugandan financial sector by the World Bank (1999) and the International Monetary Fund (2003a), the major policy recommendations focus on boosting savings mobilization, increasing access of the rural poor to financial services, expanding the availability of term finance, as well as improving the implementation following activities: the pension system, the insurance sector, the enforcement of financial contracts and supervision, the operations of deposit-taking institutions, the performance of insurance and contractual savings institutions, money management by the Bank of Uganda, clearance processes for checks, and the provision of support for capital market development.

The following section examines the survey results on the sample firms' access to bank finance, their use of trade credit, and the costs, correlates, and requirements for each of these sources of external finance points. The recommendations that emerge from this analysis is very much in keeping with those of the earlier assessments of the Ugandan financial sector. Together, the ICA firm survey results and past assessments of the Ugandan financial sector point to the recognition that much progress has been made but a great deal remains to be done. Most important, the government needs to address the risks posed by small banks, implement anti–money laundering legislation and a credible monitoring system to enforce it, phase out direct government involvement in microfinance, and continue to improve banking supervision.

Sources of Finance

The 2002/03 survey data for manufacturing firms in Uganda show that their demand for external financing is determined by the extent to which they can meet their working capital and investment needs through internal resources (retained earnings) and by the cost of external financing. Internally generated funds are the cheapest source of funding for any firm, and Ugandan firms show a clear preference for relying on internal resources. On average, firms in the sample rely on retained earnings to finance about 80 percent of their working capital needs and 71 percent of their new investment needs (table 4.1).

After internal funds, banks are the most important source of finance for manufacturing firms in Uganda. Firms use commercial bank financing to meet 7 percent of their working capital needs and 13.5 percent

Table 4.1 Sources of Finance for Manufacturing Firms' Working Capital and Investment Needs, Uganda
(percent)

Source of finance	Working Capital	Investment[b]
Retained earnings	79.95	71.06
Local commercial banks	5.65	11.64
Foreign-owned commercial banks	1.32	1.83
Leasing arrangements	0.09	2.36
Development finance[a]	1.45	2.20
Trade credit	5.31	0.48
Credit cards	0.00	0.00
Equity, sale of stock	1.81	1.95
Family and friends	1.35	2.02
Informal sources	0.36	1.46
Other	2.71	4.51
Total	100.00	100.00

a. Includes all financing from the Uganda Development Bank and East African Development Bank and donor resources managed by the Bank of Uganda's Development Finance Department.
b. The sample used to calculate the figure for new investment includes only firms with positive investments in 2002. These firms represent just over half of all surveyed firms (52 percent).
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

of their new investment needs. Trade credit is the second most important external source of working capital finance, accounting for 5.3 percent. Leasing finance, development finance, sale of stock, and borrowing from family and friends each finance about 2 percent of new investments.

Developments in the Banking Sector

Reform of the commercial banking sector has been an important pillar of the economic reform program that Uganda started in the early 1990s. The financial sector reform has focused on lifting interest rate ceilings, liberalizing the foreign exchange market, and introducing higher capital requirements for financial institutions. New operating licenses were issued, with the expectation that they would encourage competition in the banking sector and eventually lead to lower borrowing costs and broader savings mobilization. By 1995 the number of private domestic banks in operation had more than doubled from prereform levels. In addition, the government privatized the largest commercial bank in 2002 after an initial attempt in 1997.[1]

Uganda suffered its first banking crisis in the post reform era in 1998–99. Four banks, three domestic and one foreign, were closed between September 1998 and May 1999 as a result of imprudent banking practices. In addition, a bank and a nonbank financial institution were closed in 2002. Earlier, a small bank had been closed in 1993, followed by the restructuring of two banks in 1995.

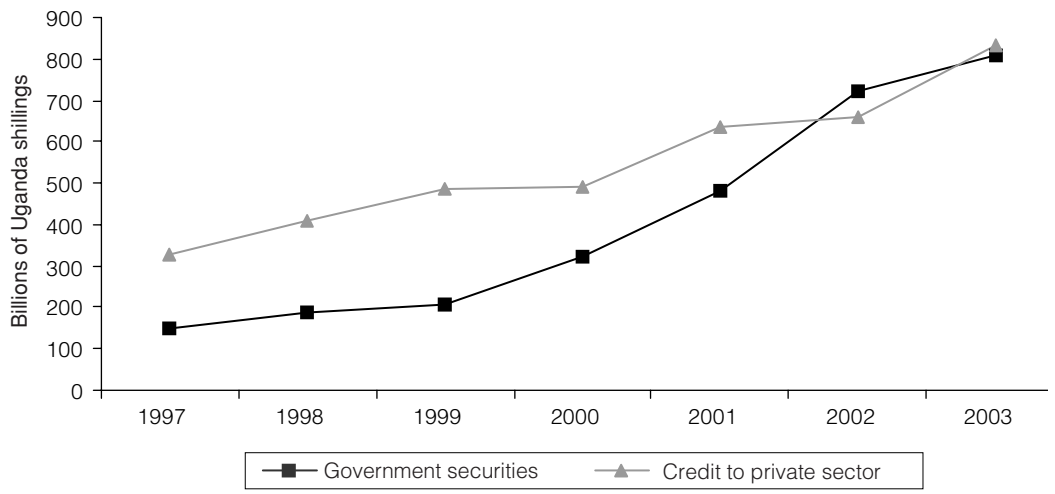
The closure of weak banks strengthened the banking system. But the costs of the banking crisis, along with those of defense and macroeconomic management, have had clear implications for lending activity in the postcrisis period. Government borrowing from commercial banks has overtaken private sector borrowing—a classic example of government borrowing crowding out the private sector (figure 4.1).

With commercial banks the predominant source of external finance, the shift in their asset portfolio away from credit to the private sector is likely to have significant implications for the performance of firms. Businesses that are riskier or less profitable are likely to be crowded out of the market for external finance, and small and medium-size firms will be affected most.

Access to Bank Finance

Only a third of the sample firms have access to bank finance—that is, have either a currently active loan or

Figure 4.1 Commercial Bank Activity, Uganda, 1997–2003



Source: Bank of Uganda 2003.

access to overdraft facilities (table 4.2). The size of firms is strongly associated with bank financing. The share of firms reporting access to bank finance steadily increases with size: while only 7.4 percent of microenterprises have access to bank finance, 73 percent of large firms do.

Foreign-owned firms (those with 50 percent or more equity owned by non-Ugandan nationals or entities) are more likely than domestically owned firms to have access to bank finance. Around 64 percent of these firms have access to bank finance, compared with only 24 percent of domestically owned firms. One reason for the difference may be size: foreign-owned firms tend to be larger than domestically owned ones.[2] But it is impossible to determine whether the disparity in access to finance captures differences beyond size. Foreign ownership may bring with it a culture of keeping accurate accounting information that facilitates access to bank finance.

The credibility of information produced by firms is strongly associated with access to bank finance. Among the firms that have their accounts audited by external agencies (about 59 percent of those surveyed), 47 percent have access to bank finance. By contrast, among firms that do not produce externally audited accounts, only 11 percent have access to bank finance.

The age of firms also matters. Older firms are more likely than younger ones to obtain bank finance. This finding is evidence of the importance of relationships in credit markets characterized by information asymmetries, costly monitoring, and weak enforcement of property rights. Longer relationships with a bank allow firms to use their track record to obtain finance.

Determinants of Access to Bank Finance

To determine the importance of each of the correlates of access to bank finance, a probit model is run, controlling for firm size and performance, firm age, use of external auditors, foreign ownership, and subsector and firm location. Since current firm size and performance are likely to be endogenous to access to finance, start-up size and firm growth in 2000–01 are used as instruments.

The multivariate regression results show that firm age, foreign ownership, and firm assets are all positively associated with access to bank finance

Table 4.2 Share of Manufacturing Firms with Access to Bank Finance, Uganda

Firm characteristic	Percent
Full sample	32.3
Firm size class (employees)	
Micro (<10)	7.4
Small (10–49)	22.2
Medium-size (50–99)	47.1
Large (100+)	72.9
Ownership[a]	
Domestic	24.1
Foreign	63.5
Accounts externally audited	
Yes	47.0
No	11.0
Decade in which established	
<1960	52.9
1960s	66.7
1970s	36.4
1980s	40.0
1990s	28.4
2000s	21.1

a. A firm is considered foreign owned if 30 percent or more of its equity is owned by non-Ugandan nationals or entities
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

(table 4.3).[3] The strong correlation between firm assets and use of external auditors and start-up size makes it difficult to identify the independent effect of the capacity to produce reliable accounts. But firms' use of external auditors is strongly and positively correlated with access to bank finance when the log of assets is dropped in specifications 4 and 5. In specification 6 the log of assets is replaced with a dummy variable that takes the value 1 if the owner is a non-indigenous Ugandan or if the firm is a business group affiliate or is a corporation. While the results are not conclusive about the channels through which firm assets and use of external auditors operate, they highlight the importance of the ownership of plant and buildings and the production of credible accounts in determining access to finance.

Bank Finance Instruments and Collateral Requirements

Loans and overdraft facilities are the predominant forms of bank debt. Loans typically finance the acquisition of new plants and machinery, while overdraft facilities finance short-term liquidity requirements, enabling firms to meet short-term obligations when cash flows are temporarily low.

Most loans held by firms in the sample are of short duration, confirming the widely held view in the private sector that there is a paucity of long-term financing instruments. More than 93 percent of the loans are backed by collateral. The average collateral to loan ratio is 116 percent (the median is 100 percent). Large firms and foreign firms post significantly less collateral per shilling borrowed than smaller firms and domestic firms. On average, 75 percent of the collateral takes the form of immovable property (land, buildings, or both). This confirms the finding that the ownership of valuable fixed assets is an important determinant of access to bank finance. Such collateral requirements generally limit access to bank finance for small and medium-size enterprises.

The overdraft facilities held by firms in the sample involve a similar set of security requirements. Some 60 percent of firms with overdraft facilities were required to post collateral, mainly land, buildings, and other fixed property. That overdraft facilities are backed by fixed assets suggests unusually risk-averse behavior by banks or thin markets for finished manufactured goods. One possible explanation, suggested by the substitutability between overdrafts and loans, is that overdrafts are typically used to finance medium-term expenditure. Anticipating this, banks require that firms post substantial security before extending overdraft facilities. The average and median number of days that firms with overdrafts reached the limits provides

Table 4.3 Determinants of Access to Bank Finance for Manufacturing Firms, Uganda

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Log of start-up size	–0.032	–0.023	–0.021	0.039	0.031	–0.013
	(0.025)	(0.026)	(0.026)	(0.024)	(0.025)	(0.056)
Log of assets	0.101	0.100	0.097			0.079
	(0.018)***	(0.018)***	(0.018)***			(0.088)
Firm uses external auditors	0.088	0.077	0.085	0.280	0.267	0.018
	(0.090)	(0.092)	(0.092)	(0.071)***	(0.073)***	(0.204)
Foreign owned	0.002	0.002	0.002	0.002	0.002	0.001
	(0.001)**	(0.001)**	(0.001)**	(0.001)**	(0.001)*	(0.001)
Employment growth, 2000–01	0.014	0.014	0.012	0.040	0.046	0.003
	(0.095)	(0.098)	(0.096)	(0.095)	(0.094)	(0.078)
Firm age	0.012	0.011	0.011	0.018	0.018	0.009
	(0.005)**	(0.005)*	(0.005)**	(0.006)***	(0.006)***	(0.004)**
Firm age squared	–0.000	–0.000	–0.000	–0.000	–0.000	–0.000
	(0.000)**	(0.000)**	(0.000)**	(0.000)***	(0.000)***	(0.000)***
Uganda	–0.323	–0.316	–0.326	–0.395	–0.373	–0.279
	(0.067)***	(0.069)***	(0.070)***	(0.072)***	(0.075)***	(0.137)**
Chemicals		0.110	0.091	0.087	0.085	0.045
		(0.098)	(0.098)	(0.101)	(0.103)	(0.088)
Metals&construction materials		0.089	0.080	0.075	0.066	0.026
		(0.080)	(0.081)	(0.079)	(0.080)	(0.054)
Furniture/wood		0.118	0.117	–0.010	–0.002	0.042
		(0.101)	(0.102)	(0.101)	(0.103)	(0.078)
Textiles/publishing		0.161	0.152	0.107	0.127	0.078
		(0.086)*	(0.086)*	(0.087)	(0.087)	(0.074)
Firm located outside capital			0.090	0.106	0.118	0.036
			(0.067)	(0.063)*	(0.063)*	(0.064)
Nonindigenous owner				0.027	0.082	
				(0.073)	(0.078)	
Firm not owned by individual or family					0.202	
					(0.107)*	
Business group affiliate					0.021	
					(0.070)	
Observations	398	398	398	391	388	366
Log likelihood	–180.47	–178.36	–177.46	–189.09	–186.39	
Pseudo R^2	0.35	0.35	0.36	0.30	0.31	
R^2						0.42

** Significant at the 10 percent level.*
*** Significant at the 5 percent level.*
**** Significant at the 1 percent level.*
Note: The dependent variable is access to bank finance (0/1). Reported coefficients are marginal effects for probit specifications 1–5; specification 6 is a two-stage least squares estimation with the log of assets instrumented by nonindigenous owner, firm not owned by an individual or family, and business group affiliation. Figures in parentheses are robust standard errors.
Source: Authors' calculations based on data from World Bank, Investment Climate survey, Uganda, 2002/03.

further evidence of the intensive use of overdrafts (table 4.4). Larger firms and foreign-owned firms appear to use overdraft facilities more intensively than others.

Cost of Finance

Ugandan firms face high costs of borrowing from banks. Firms reported paying an average of nearly 20 percent in real terms for every shilling borrowed in the previous three years (figure 4.2). Interest rates on overdrafts and loans are high across all categories of firms (table 4.5). With the real costs of borrowing so high, it is unsurprising that trade finance accounts for the largest share of credit to the private sector.[4]

Figure 4.2 shows the trend in borrowing rates over the last five years. As the figure illustrates, borrowers have been paying an average of nearly 20 percent in real terms for every shilling borrowed in the last three years. Table 4.5 shows interest rates across firm size and firm ownership; rates of interest on overdrafts and loans are high across all types of firms. With such high real costs of borrowing it is not surprising that trade finance accounts for the largest share of credit to the private sector.[5]

Uganda's monetary policy plays a part in the high cost of borrowing for the private sector. The public deficit in Uganda is financed by donor inflows, and foreign exchange is converted to Uganda shillings to finance government expenditures. That expands the money supply, necessitating the mopping up of excess liquidity. The government has two instruments at its disposal for doing so—the sale of treasury bills and the sale of foreign exchange. With donor inflows being a significant proportion of the money supply (M2), interventions by the Bank of Uganda in the treasury bill and foreign exchange markets are substantial. The Bank of Uganda appears to alternate between the two instruments; consequently there are times when interest rates are high and the value of the shilling is relatively low, and times when the opposite is true. During the survey period interventions in the treasury bill market were high and the private sector thus faced high interest rates. Lowering the cost of finance would require that the government reduce the public deficit and thus its need to sterilize inflows of foreign exchange.

Table 4.4 Days in Previous Year on Which Manufacturing Firms with Overdrafts Reached Limit, Uganda

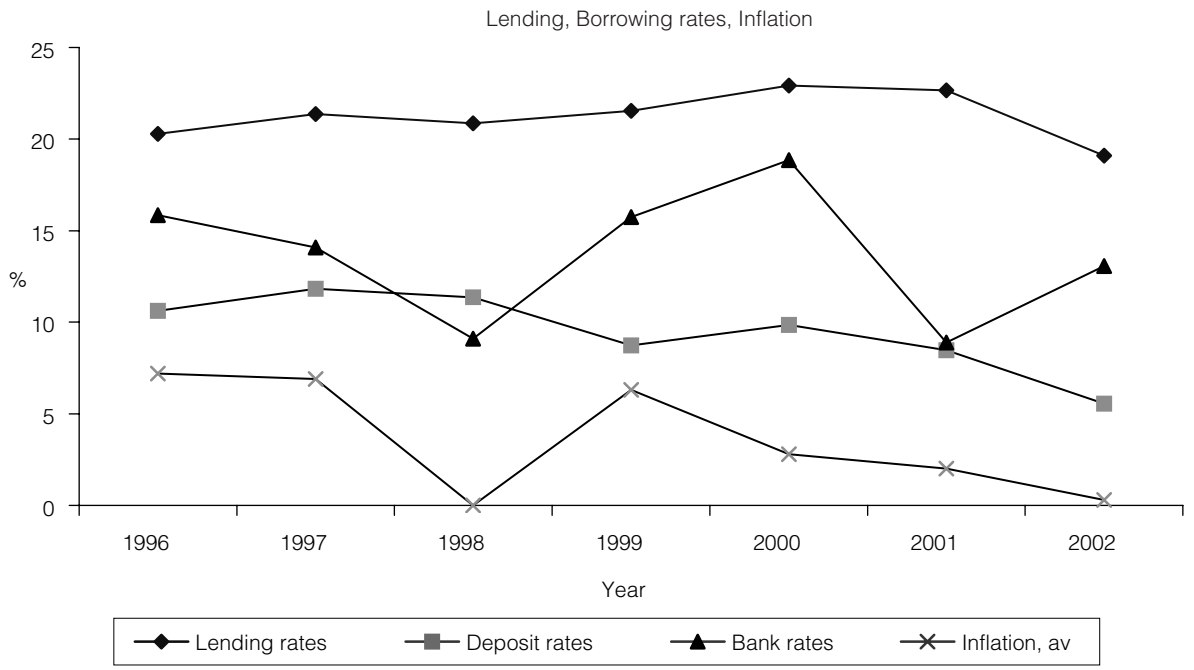
Firm characteristic	Average	Median
Full sample	131.37	90.00
Firm size class (employees)		
Small (10–49)	112.85	90.00
Medium-size (50–99)	62.60	8.50
Large (100+)	169.74	150.00
Ownership		
Domestic	100.12	45.00
Foreign	166.93	150.00

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Are Firms Credit Constrained?

The findings on the access to and cost of finance suggest that Ugandan manufacturing firms might be credit constrained. To find out if this is so, firms were asked whether they would like to borrow more at the current interest rate. While this is the standard definition of being credit constrained, it does not include firms whose applications for credit have been rejected or firms that self-select out of the credit market. Under a broader definition a firm is also said to be credit constrained if it has not applied for a loan because of inadequate collateral, a cumbersome application process, or an expectation that its application will fail, or if it has applied for a loan and been rejected. Whether a firm is credit constrained under this

Figure 4.2 Lending, Borrowing Rates and Inflation



Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table 4.5 Annual Interest Rate Charged Manufacturing Firms on Overdraft Facilities and Loans, Uganda
(percent)

Firm characteristic	Overdrafts	Loans
Full sample	17.3	16.7
Firm size class (employees)		
Micro (<10)	16.0	21.8
Small (10–49)	18.3	16.8
Medium-size (50–99)	19.6	17.3
Large (100+)	16.0	15.9
Ownership		
Domestic	18.4	18.7
Foreign	16.1	14.0
Decade in which established		
<1960	15.3	18.2
1960s	19.7	18.9
1970s	23.5	24.0
1980s	16.0	14.7
1990s	17.6	17.0
2000s	17.4	13.4

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

definition is of course self-reported. Firms whose loan applications are turned down because their projects are bad are not actually credit constrained but would be included under this definition.

Some 30 percent of the firms with bank loans or overdraft facilities reported that they would like to borrow more. Among the firms that had never applied for a bank loan, 31 percent had not done so because they believed they would not get the loan or found the process too cumbersome. Slightly more than a quarter of the firms in the sample reported being credit constrained (table 4.6). The share was highest among micro firms: 41 percent of these firms reported failing to get bank debt at the prevailing interest rate, compared with 19 percent of large firms.

Table 4.6 Share of Manufacturing Firms Reporting Being Credit Constrained, Uganda

Firm characteristic	Percent
Full sample	26.3
Firm size class (employees)	
Micro (<10)	40.7
Small (10–49)	26.8
Medium-size (50–99)	14.7
Large (100+)	18.6
Ownership	
Domestic	28.7
Foreign	17.5
Decade in which established	
<1960	17.6
1960s	33.3
1970s	27.3
1980s	20.0
1990s	28.4
2000s	26.3

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Trade Credit

Trade credit is an important source of working capital finance. By making it possible to purchase inputs on credit, it allows firms to continue to operate even when their cash flows are low. The volume of trade credit in an economy depends on supply and demand factors. In Uganda manufacturing firms face a number of factors likely to increase the demand for trade credit. For importing and exporting firms the country's landlocked position creates transport-related risks. The supply of trade credit depends on three important factors:

- Access to finance (for firms that supply trade credit).
- Flows of information between contracting parties.
- Quality of the legal system.

Information flows influence a firm's willingness to extend credit. Repeated interactions, whether through the extension of credit or other transactions, enable a firm to acquire information about the reliability of its contracting partner. Information suggesting that the partner has a high probability of survival is likely to increase the supply of trade credit. The concentration of sectors is likely to affect the frequency of interaction and therefore the amount of information transmitted to potential contracting parties.

Where the quality of the legal system is high, the supply of trade credit is also likely to be high. Where the legal system is efficient, and the cost of legal adjudication therefore low, firms will have a greater willingness to extend credit.

Nearly 60 percent of the firms in the sample reported purchasing inputs on credit, with 85 percent of large firms but only about 50 percent of small and micro firms doing so (table 4.7). Similarly, while 84 percent of foreign-owned firms reported purchasing inputs on credit, only 53 percent of domestic firms did. Older firms use trade credit more intensively than

Table 4.7 Share of Manufacturing Firms Purchasing Inputs on Credit, Uganda

Firm characteristic	Percent
Full sample	59.4
Firm size class (employees)	
Micro (<10)	45.3
Small (10–49)	51.6
Medium-size (50–99)	73.5
Large (100+)	84.7
Ownership	
Domestic	53.0
Foreign	84.1
Decade in which established	
<1960	82.4
1960s	83.3
1970s	45.5
1980s	55.6
1990s	56.6
2000s	63.2

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

younger firms, confirming the role of relationships and reputation in the provision of external finance.

Firms accepting trade credit reported using it to purchase slightly more than half their inputs (figure 4.3). Large firms receive more trade credit than small ones, and foreign firms more than domestic ones. This implies that the volume of trade credit taken does not compensate for lack of access to bank finance, but instead enhances any inequality in access to external finance.

The firms in the sample reported making an average of nearly a third of their sales on credit (figure 4.4). The firms most likely to have access to external finance are also those most likely to provide trade credit. This suggests that the provision of trade credit to some extent mitigates the lack of access to bank finance among smaller, younger firms.

A Comparison with Kenya

As the Ugandan private sector debates the merits of joining the East African Union, one important concern it has voiced is the competitive edge of the Kenyan manufacturing sector. Do Kenyan firms have better access to finance than their Ugandan counterparts? This section looks at that question with the aim of contributing to policy to address any differences where possible.

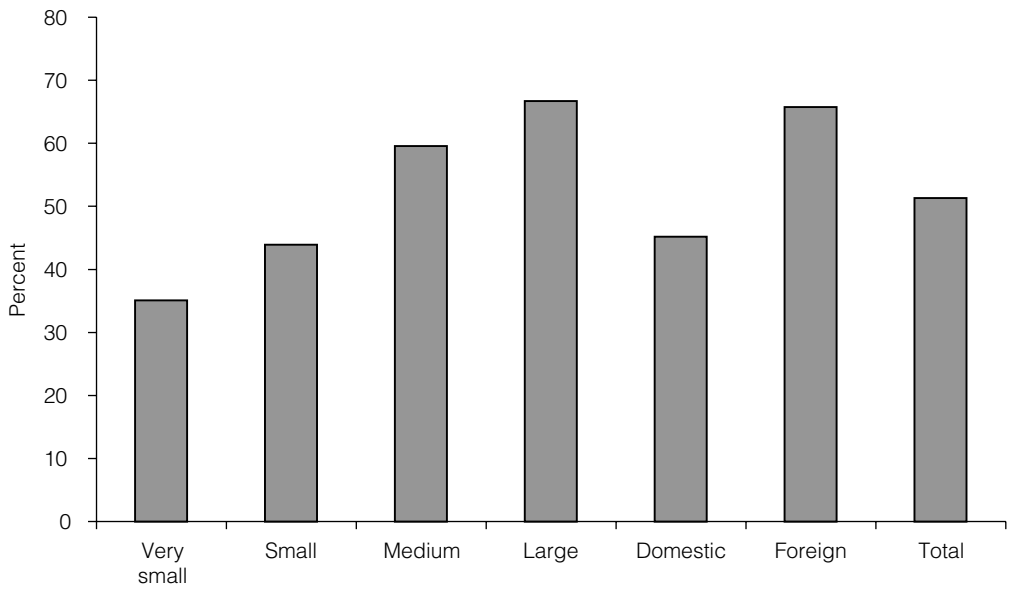
A comparison of the share of firms with external finance and those with bank loans in Kenya and Uganda suggest that the Ugandan banking sector rations credit more intensively, forcing firms to rely on both loans and overdraft facilities? (figure 4.5). Also, banks' preference for short maturities may reflect a very risky environment or concerns about nonpayment

There are no significant differences in collateral requirements between Kenya and Uganda, however (figure 4.6). Nor are there significant differences across categories of firms within each country. The low collateral requirements reported by microenterprises reflect noncommercial financing through development banks.

But a comparison of the share of firms reporting being credit constrained points to the comparative disadvantage that manufacturing firms in Uganda face in obtaining finance. Across virtually all categories of firms, a smaller share of manufacturing firms reported being credit constrained in Kenya than in Uganda (figure 4.7).

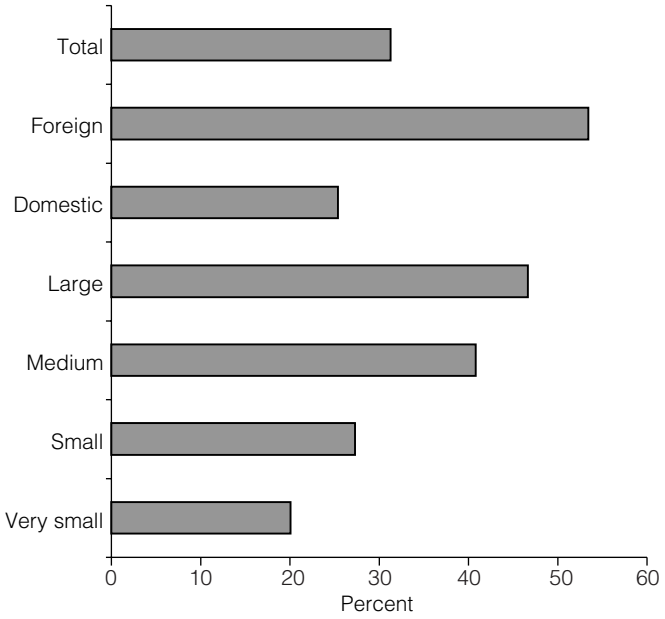
Taken together, the data show a lower level of financial intermediation in Uganda than in its neighbor. On average, Kenyan manufacturing firms rely on internal resources to finance less than half their investment and working capital needs. They are able to obtain commercial bank finance for 25 percent of those needs. Moreover, Kenyan firms use trade credit much more intensively than Ugandan firms, relying on it to fund 15 percent of their working capital needs. A comparison of the share of firms using trade credit sug-

Figure 4.3 Share of Inputs Purchased on Credit by Manufacturing Firms with Trade Credit, by Size Class and Type of Ownership, Uganda



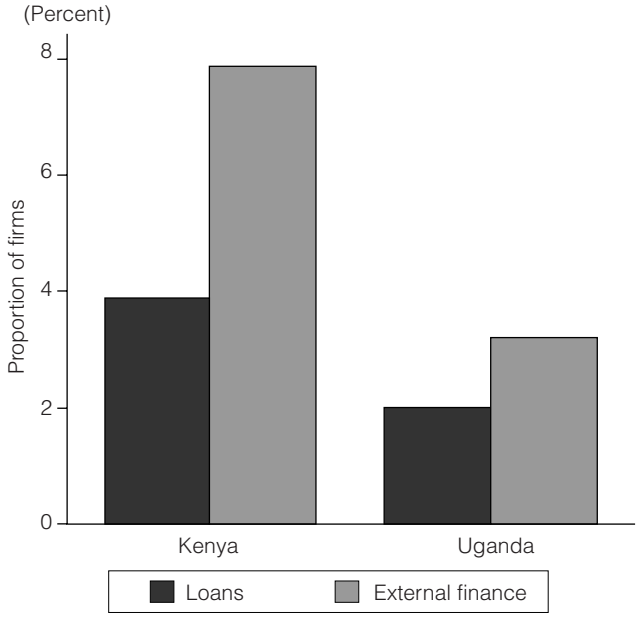
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Figure 4.4 Share of Sales Made on Credit by Manufacturing Firms, by Size Class and Type of Ownership, Uganda



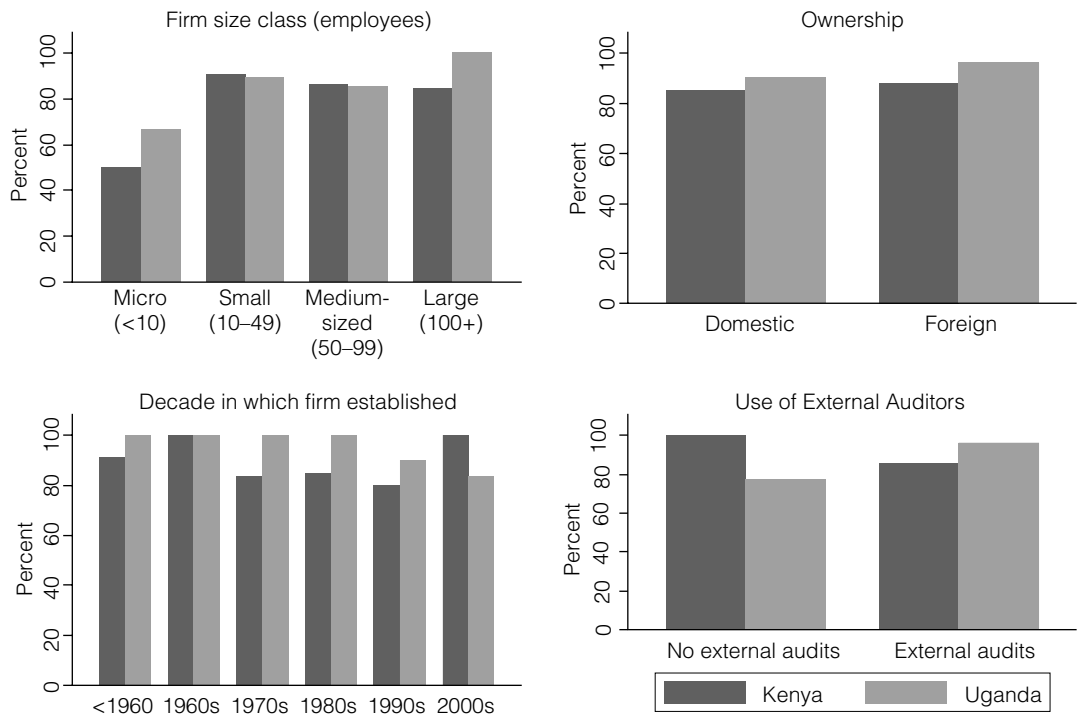
Source: World Bank, RPED survey, Uganda, 1998, and Investment Climate survey 2002/03.

Figure 4.5 Share of Manufacturing Firms with Bank Loans and with External Finance, Kenya and Uganda



Source: World Bank, RPED investment climate survey, Uganda, 2002/03 and Kenya, 2003.

Figure 4.6 Share of Loans to Manufacturing Firms Requiring Collateral, Kenya and Uganda



Source: World Bank, RPED investment climate survey, Uganda (2002/03), Kenya (2003).

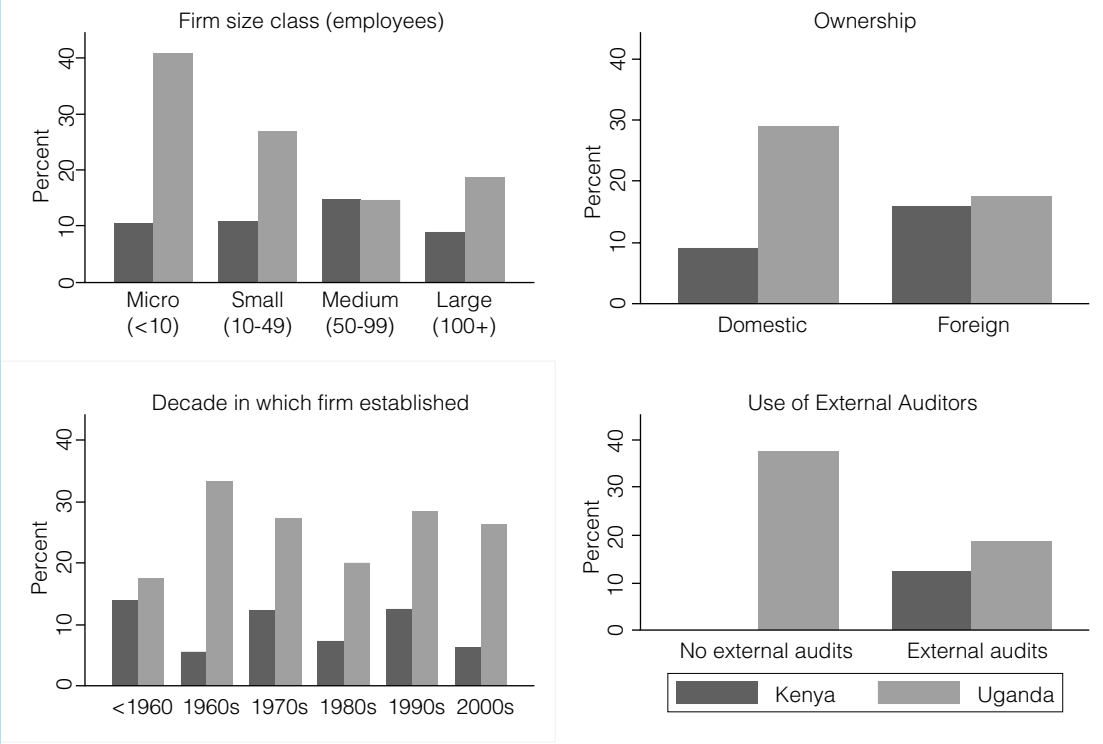
gests another glaring source of comparative disadvantage—nearly 85 percent of manufacturing firms in Kenya purchase inputs on credit (figure 4.8).

Policy Issues

This analysis of firms' access to bank finance, their use of trade credit, and the costs, correlates, and requirements for each of these sources of external finance points to recommendations very much in keeping with those of the earlier assessments of the Ugandan financial sector:

- The capacity of firms to produce credible accounts (or other information relevant to lending decisions) needs to be improved. And small and medium-size firms need access to credible and affordable auditing services to improve their access to external finance. This should be a central focus of business development services providing support to small and medium-sized firms.
- Establishing a credit registry should cement firms' incentives to maintain reliable records and reduce the transaction costs associated with lending to them.
- Improving laws relating to foreclosure might increase access to finance for firms whose asset holdings are small and of uncertain value. In addition, providing the commercial courts with sufficient resources to operate effectively should increase the availability of both bank finance and trade credit for the private sector.

Figure 4.7 Share of Manufacturing Firms Reporting Being Credit Constrained, Kenya and Uganda



Source: World Bank, RPED investment climate surveys, Uganda (2002/03), Kenya (2003).

- Reducing public deficits would help reduce inflows of foreign exchange and the need to sterilize those inflows through the sale of treasury bills. That in turn would reduce the cost of finance for the private sector.

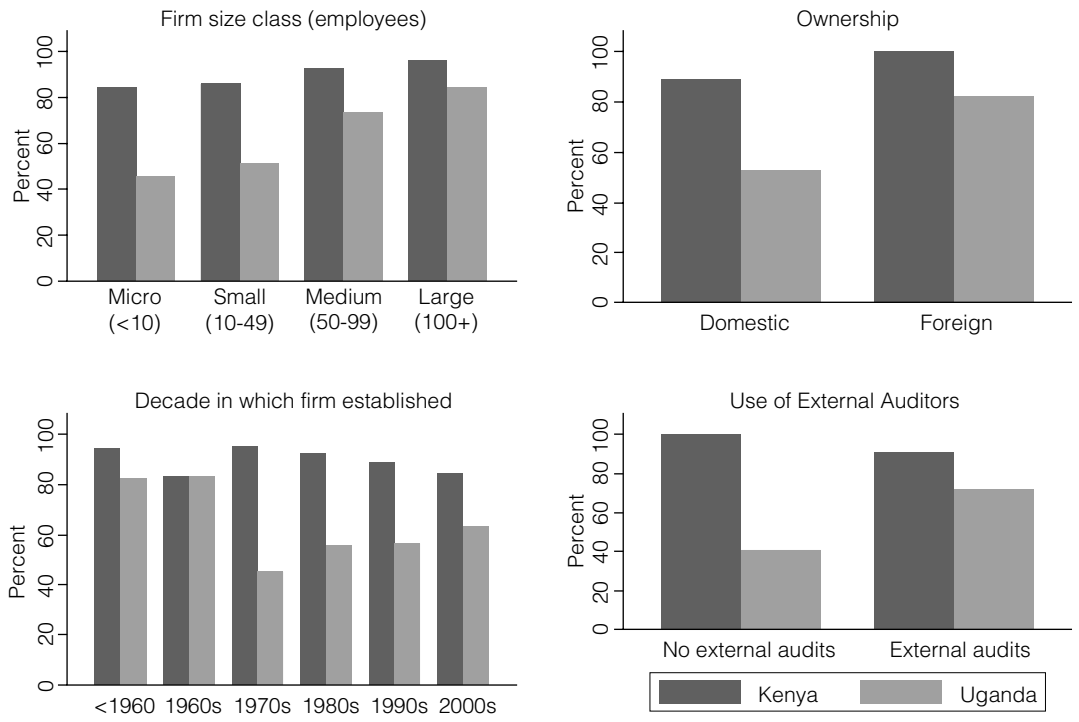
The Labor Market

A well-functioning labor market is critical both for boosting macroeconomic performance in Uganda and for achieving sustainable improvements in the living standards of the poor. With this in mind, a large section of the firm survey in Uganda was devoted to collecting worker data. A sample of up to 10 workers in each firm were interviewed, to obtain information on wages, occupation, union status, education, tenure, layoff experience, and demographics. (See appendix 2 for a detailed discussion of the Ugandan labor market.)

The overall picture of the labor market in Uganda is relatively positive, health issues aside. The labor force is relatively well trained, and wage levels are relatively competitive. But when labor productivity is taken into account, the picture becomes bleaker. The median annual value added per manufacturing worker in Uganda is low: $1,085 in 2002, compared with $3,432 in India and $4,397 in China in around the same period. The low labor productivity prevents Uganda from taking advantage of its relatively low wages.

As seen in chapter 2, labor costs in Uganda are high relative to worker productivity. Thus there is a need to better understand the link between labor market outcomes and labor productivity, two factors that affect unit labor costs. This section focuses on three

Figure 4.8 Share of Manufacturing Firms Using Trade Credit, Kenya and Uganda



Source: World Bank, RPED investment climate surveys, Uganda (2002/03), Kenya (2003).

key areas—the health status of workers, the determinants of wage levels, and the relative importance of institutional rigidities in the labor market. Its findings suggest that the health of the labor force and the relatively weak link between wages and the performance of workers need to be addressed to improve the competitiveness of Ugandan labor. Increasing labor mobility and eliminating wage differentials for the same types of jobs across regions and sectors might also help.

Health Status

The health status of Uganda's labor force has important consequences for worker productivity. Uganda faces big challenges in health. Its health indicators are among the lowest in the world. Life expectancy at birth, for example, was only 42.1 years in 1999.[6] Moreover, Uganda has been severely affected by the HIV/AIDS pandemic, now the leading cause of death among adults, followed by tuberculosis and malaria (EIU 2002). Public policies have succeeded in slowing the annual growth in HIV infections, a rate that had reached 6.3 percent in 1996. But the growth rate in 1998–99 was still around 3.1 percent (UBOS 2001). Studies assessing the impact of HIV/AIDS on economic productivity in Africa have estimated it to be in the neighborhood of 1 percent of GDP (Sachs and Bloom 1998). Given this situation, it is particularly important to investigate the responses of firms and employees to HIV/AIDS.

Illness and Workdays Lost

While no comparative data across Africa are available on illness and workdays lost, the survey data on these indicators for Uganda suggest that the health status of its labor force needs to be addressed. Across all sectors surveyed, about 24.7 percent of workers reported having been ill within the previous 30 days. This share ranged from 17.4 percent in construction to 21.2 percent in tourism, 23.2 percent in commercial agriculture, and 25.6 percent in manufacturing. Illness led to an average loss of 3.2 workdays over a 30-day period across all sectors. In case of illness a majority of workers said that they would obtain treatment from health care providers (55.2 percent), and in a large share of these cases the worker's own household would bear the expense (43.4 percent).

In manufacturing, where about a quarter of the workforce reported having been ill within the previous 30 days, illness led to an average loss of about 3.1 workdays over the 30-day period—or about 15 percent of available workdays (table 4.8). Under the assumption of a constant rate of illness over a year, that translates into 37.2 days of production lost per worker on average. Based on the total factor productivity estimation described in chapter 2, a 15 percent loss of labor translates into a production loss of 11 percent.

The share of workers who reported having been ill in the previous 30 days grows with the size of the firm. But the number of workdays lost tends to decline as the size of the firm increases. This suggests that larger firms take appropriate steps to ensure that their workers receive proper treatment or that employees of larger firms, which usually pay higher wages, are able to pay for better treatment.

Treatment Sources and Payment Methods

Most workers in manufacturing (almost 57 percent) rely on private health care providers to obtain treatment (table 4.9). Managers and professionals rely more heavily on private health care (more than 60 percent), while production workers use a mix of private health care and public facilities. These choices are probably linked to the level of earnings for each category of employee. Firms' own health care facilities and those of nongovernmental organizations (NGOs) do not appear to be workers' first choice; only 12.5 percent and 0.8 percent of employees seek treatment in these facilities. This probably reflects limited availability of such facilities and uncertainty about the quality of the treatment they provide.

When it comes to paying for health care services, most workers reported that the costs are borne by their household (44.4 percent) or directly reimbursed by their employer (31.5 percent). The share of workers who can depend on reimbursements from their employer varies by rank. Unskilled workers tend to rely heavily on their own funds, with 49.9 percent reporting that their household bears the cost of treatment. Only 19.3 percent of these workers reported being reimbursed by their employer, compared with 43.4 percent of professionals.

Awareness of HIV/AIDS

About 37 percent of the firms surveyed reported undertaking actions aimed at preventing and raising awareness of HIV (table 4.10). Firms in commercial agriculture and tourism lead the effort. Firms in construction and manufacturing are less active: only 26 percent of construction and 32 percent of manufacturing firms undertake preventive activities. When firms do undertake activities to address HIV/AIDS, they limit their efforts mostly to advertising (77.4 percent) and counseling (42.5 percent).

Surprisingly, almost 60 percent of managers reported that HIV/AIDS has had little or no impact on their workforce. This response may reflect ignorance, an inability to distinguish HIV/AIDS from other illnesses, or a drastic underestimation of the problem.

By contrast, employees have a much more acute perception of the HIV/AIDS issue, perhaps as a result of the public campaign of recent years. Between 80 percent and 93 percent of the sample of workers know

Table 4.8 Illness and Workdays Lost in Previous 30 Days as Reported by Manufacturing Workers, Uganda

Firm size class (employees)	Share of workers reporting being ill (percent)	Average Workdays missed because of illness
Micro (<10)	23.31	4.28
Small (10–49)	24.75	3.69
Medium-size (50–99)	25.50	2.96
Large (100+)	28.19	1.80
All firm size classes	25.59	3.07

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table 4.9 Health Facilities and Payment Arrangements for Treatment Used by Manufacturing Workers in Different Job Categories, Uganda
(percent)

	Management	Professionals	Skilled production workers	Unskilled production workers	Non-production workers	All job categories
Preferred source of treatment						
Health care facilities of firm	11.50	20.93	15.48	8.31	12.88	12.56
Private health providers	67.26	62.02	49.23	55.50	52.36	56.94
Public facilities	19.76	14.73	34.37	33.74	33.48	28.82
Facilities of NGOs or charities	0.59	0.78	0.31	1.96	0.00	0.84
Other	0.88	1.55	0.62	0.49	1.29	0.84
Payment arrangements used for treatment						
No significant expenses						
Received free or low-cost treatment	17.99	9.30	7.43	20.54	9.40	14.16
High expenses						
Reimbursed by employer	37.17	43.41	31.58	19.32	37.61	31.45
Reimbursed by insurance company	4.42	4.65	1.55	0.98	2.14	2.44
Covered by financial support from friends and family	2.65	6.20	12.07	8.31	5.13	7.11
Borne by household	37.46	35.66	47.37	49.88	45.73	44.42
Other	0.29	0.78	0.00	0.98	0.00	0.42

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table 4.10 Firms and HIV/AIDS in Selected Sectors, Uganda

	Share of firms (percent)
Firms undertaking preventive activities by sector	
Commercial agriculture	57.78
Construction	26.32
Manufacturing	32.00
Tourism	67.86
Full sample	37.24
Activity undertaken by active firms	
Prevention messages	77.40
Free condom distribution	28.70
Counseling	42.50
Anonymous HIV testing	4.70
Financial support of infected dependents	8.20
Perceived impact of HIV/AIDS on workforce	
High absenteeism among infected workers	15.10
High absenteeism among workers needing to care for infected family members or friends	15.40
High staff turnover	6.70
No effect	59.00

Note: Data are for the commercial agriculture, construction, manufacturing, and tourism sectors.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

where to be tested. Moreover, the level of awareness tends to increase with employees' position in their firm (figure 4.9). Overall, employees rank HIV/AIDS as a significant concern (giving it an average ranking of 4.07 on a scale of 1 to 5, with 5 being the highest; see appendix table A2.12).

Another indication of employees' perception of the importance of the issue is that 72 percent of workers are ready to pay to be tested at their firm, as long as the tests are anonymous and voluntary (see appendix table A2.12). On average, employees would be willing to pay about 5,914 USh ($3.40) to be tested. The willingness to pay differs across job categories and is correlated with income. Managers are ready to pay more (9,353 USh, or $5.30) than unskilled workers (3,235 USh, or $1.80).

Remuneration and Determinants of Wages

Wage levels are a critical determinant of unit labor costs. As shown in chapter 2, unit labor costs in Ugandan manufacturing are high, and a better understanding of what drives manufacturing wages is needed to understand why this is so. This section analyzes the determinants of wage rates in manufacturing using data from the survey of workers. While the survey covered four sectors, the vast majority of the 1,803 workers interviewed were in manufacturing (1,436), while only 160 were in tourism, 138 in commercial agriculture, and 69 in construction.

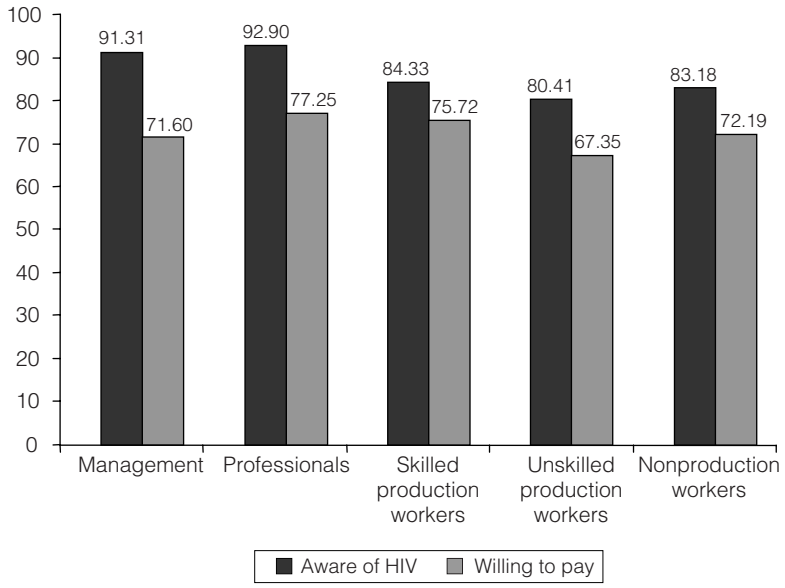
Wage Levels across Sectors

About 1,522 of the workers surveyed provided usable, detailed data on their earnings, including their base wage, allowances, and bonuses. Monthly earnings average about $197 over the sample of workers (table 4.11). But earnings differ significantly across sectors, ranging from $135 a month in commercial agriculture to $892 in construction. In addition, managers' salaries in construction are much higher than those in the other sectors, reflecting the greater scarcity of skills and higher level of technical knowledge in this sector. Indeed, the earnings for almost all job categories are highest in construction (interviews of construction workers were limited in number, however). Manufacturing ranks second, with average monthly earnings of $180.

Wage Levels in Manufacturing

In manufacturing, wages account for about 88 percent of cash earnings on average, cash allowances for about 10 percent, and performance bonuses for

Figure 4.9 Share of Employees Aware of HIV and Willing to Pay for Testing in Selected Sectors by Job Category, Uganda
(percent)



Note: Data are for the commercial agriculture, construction, manufacturing, and tourism sectors.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

about 1.3 percent. Bonuses account for a relatively small part of earnings compared with the share in some other African countries; they were around 6 percent of cash earnings in Nigeria in 2000 and about 7.5 percent in Eritrea in 2001.

Wages are usually paid monthly. This is the case for almost 81 percent of workers in the sample and 72 percent of production workers (see appendix table A2.13). Interestingly, a significant share of production workers (about 15.5 percent) are paid by the piece, which allows firms to link workers' pay to their productivity.

Male workers earn about 24 percent more than female workers on average, suggesting a possibility of gender discrimination in the labor market (table 4.12). In addition, there is substantial dispersion of earnings within job categories, as shown by the large standard deviations. Earnings also vary sharply across job categories. Unskilled production workers earn much less than the sample mean, about $57.50 a month compared with the average of $180.40.

Manufacturing earnings also vary a great deal across subsectors. Earnings are highest in the paper, printing, and publishing industry and the metals subsector, and lowest in the furniture subsector (see appendix table A2.14). Cash earnings tend to increase with firm size and differ greatly depending on geographic location. Firms in the central region pay much higher wages than those in other regions.

Particularly useful is to examine the pattern of earnings for unskilled production workers, the most homogeneous wage category and thus fairly comparable across firms and countries. The wage level of unskilled production workers also serves as a barometer for foreign firms deciding whether to invest in a country. In Uganda unskilled production workers earn about $57 a month on average, similar to levels in

Table 4.11 Monthly Cash Earnings in Selected Sectors by Job Category, Uganda
(U.S. dollars)

Job category	Item	Commercial agriculture	Construction	Manufacturing	Tourism	Full sample
Management	Average earnings	143.61	2,982.81	409.49	347.35	464.68
		(148.6)	(5,006.8)	(751.8)	(391.5)	(1,168.9)
	Observations	24	10	289	13	336
Professionals	Average earnings	85.71	419.14	286.54	474.99	300.41
		(121.2)	(144.3)	(330.1)	(881.8)	(384.1)
	Observations	5	8	117	10	140
Skilled workers	Average earnings	183.41	230.32	125.52	144.27	132.56
		(120.9)	(118.1)	(146.2)	(83.1)	(143.9)
	Observations	12	14	303	13	342
Unskilled workers	Average earnings	119.58	137.67	57.48	80.18	65.62
		(321.3)	(142.1)	(58.4)	(59.2)	(120.3)
	Observations	46	3	360	16	425
Others	Average earnings	231.43	193.93	102.91	69.38	101.63
		(157.6)	(165.6)	(111.9)	(53.1)	(109.4)
	Observations	2	8	229	40	279
All job categories	Average earnings	135.28	892.33	180.40	165.21	196.96
		(249.3)	(2,597.7)	(402.6)	(347.1)	(591.2)
	Observations	89	43	1,298	92	1,522

Note: Computed on the basis of the earnings reported by workers in early 2003 and converted into U.S. dollars using the official exchange rate of $1 = 1,750 USh. Figures in parentheses are standard deviations.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

such countries as Nigeria or Kenya, where the range is $73–100 a month. Earnings in Uganda are lower than those in India and China. But as the discussion of unit labor costs in chapter 2 shows, when the productivity of workers is taken into account, Uganda is not competitive with the fast-growing economies of Asia.

Determinants of Manufacturing Wages

The apparently large variation in manufacturing wages across subsectors and regions suggests that the labor market may not be competitive or fully integrated. To understand the wage differentials, wage equations were estimated with worker data, with the log of individual earnings as the dependent variable. The results are shown in table 4.13.

The starting point is a basic wage equation related to the individual characteristics of workers (Mincer 1974). This first equation assumes that employers are able to discern differences in productivity among workers depending on their education, gender, and experience and compensate them accordingly. The second equation differs from the first in its inclusion of sector and subsector dummy variables and firm-specific variables. (For ease of reading, these dummy variables are not shown in the table.)

In both specifications the variables relating to human capital—years of education, years of experi-

Table 4.12 Monthly Cash Earnings in Manufacturing by Job Category, Uganda
(U.S. dollars)

Job category	Item	Male employees	Female employees	All employees
Management	Average earnings	403.23	472.79	409.49
		(764.6)	(617.0)	(751.8)
	Observations	263	26	289
Professionals	Average earnings	292.03	269.90	286.54
		(343.8)	(289.5)	(330.1)
	Observations	88	29	117
Skilled production workers	Average earnings	128.71	94.24	125.52
		(151.7)	(65.4)	(146.2)
	Observations	275	28	303
Unskilled production workers	Average earnings	54.51	72.04	57.48
		(50.3)	(87.2)	(58.4)
	Observations	299	61	360
Nonproduction workers	Average earnings	105.27	100.16	102.91
		(134.1)	(79.4)	(111.9)
	Observations	123	106	229
All job categories	Average earnings	187.40	151.08	180.40
		(429.3)	(260.9)	(402.6)
	Observations	1,048	250	1,298

Note: Computed on the basis of the earnings reported by workers in early 2003 and converted into U.S. dollars using the official exchange rate of $1 = 1,750 USh. Figures in parentheses are standard deviations.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

ence with the firm, other work experience—all have a positive and statistically significant effect on wages. Thus the greater a worker's endowment of human capital, the higher his or her wages are. Formal training also has a positive and significant effect. The variable "weekly hours worked" is significant in the first but not the second equation. This result suggests that earnings in manufacturing are weakly correlated with performance. One possible explanation is that bonuses are such a small share of manufacturing earnings in Uganda.

The gender dummy variable is insignificant in the first equation but highly significant in the augmented equation with firm-specific effects. This suggests that gender discrimination becomes an issue only when workers are employed by firms in the central region or firms with foreign ownership.

Subsector dummy variables are mostly significant. In addition, in the second equation some firm-level variables are significant. Working for firms located in the central region or with foreign ownership translates into higher earnings. The age of the firm is insignificant, however, suggesting that if firms benefit from any reputational effects, they do not pass the benefits on to workers.

The results suggest that wages are not competitively determined in Uganda. If the labor market were competitive, none of the firm-specific variables and

Table 4.13 Estimates of Wage Determinants in Manufacturing, Uganda

Variable	(1)	(2)
Intercept	2.813***	2.633***
	(21.07)	(11.69)
Worker characteristics		
Education in years	0.082***	0.076***
	(11.10)	(11.40)
Experience with firm in years	0.045***	0.053***
	(3.77)	(4.58)
Experience in years squared	–0.001***	–0.001***
	(–2.68)	(–3.52)
Other professional experience in years	0.049***	0.042***
	(7.28)	(6.73)
Gender dummy variable (1 if male, 0 otherwise)	0.024	0.127**
	(0.38)	(2.11)
Weekly hours worked	0.005***	0.002
	(3.77)	(1.55)
Training dummy variable (1 if postschool training, 0 otherwise)	0.384***	0.351***
	(5.59)	(5.55)
Subsector dummy variables	No	Yes[a]
Firm characteristics		
Age in years		0.000
		(–0.27)
Central region dummy variable (1 if in central region, 0 otherwise)		0.455***
		(8.28)
Foreign ownership dummy variable (1 if 50 percent or more of capital is foreign)		0.344***
		(0.03)
Observations	1,232	1,232
F-statistic	65.594	42.544
R^2	0.273	0.387

*** Significant at the 5 percent level.*
**** Significant at the 1 percent level.*
Note: Dependent variable is the log of individual earnings. Equations have been estimated using ordinary least squares. Figures in parentheses are White's consistent t-ratios, used to correct for heteroskedasticity in the data.
a. Partially significant.
Source: Authors' calculations based on data from World Bank, Investment Climate survey, Uganda, 2002/03.

subsector dummy variables would be significant in explaining earnings. Increasing labor mobility through better infrastructure and expanding access to education and vocational training in all regions would presumably help to remove the distortions in the labor market and reduce the wage differentials observed in the private sector.

Institutional Rigidities

Beyond the distribution of firms and workers, three other factors may affect the structure of the labor market: the type of labor contracts in use, the role of labor unions, and the constraints imposed by labor regulations. This section examines the role of institutional rigidities in determining wage and employment levels.

Labor Contracts

Most workers in the sample—about 59.5 percent—hold permanent full-time jobs (table 4.14). Permanent employment is especially prevalent in tourism (80 percent of workers) and commercial agriculture (76 percent). By contrast, permanent employment is much less developed in manufacturing (56 percent of workers) and construction (34 percent). Thus firms in these two sectors have some flexibility in employment levels.

Manufacturing firms in Uganda rely more on temporary (casual and part-time) labor contracts than do firms in other recent manufacturing surveys by the Regional Program on Enterprise Development (RPED).[7] But a few subsectors are exceptions (table 4.15). In the wood subsector, for example, 71 percent of workers are permanent employees, and in the construction materials industry 67 percent are. Also noteworthy is the inverse relationship between the size of firms and the share of permanent employees. In microenterprises about 64 percent of workers are permanent, while in large firms around 55 percent are.

Table 4.14 Employment Structure in Selected Sectors by Firm Size Class, Uganda
(percent)

Sector and employment category	Micro (<10 employees)	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)	All firm size classes
Commercial agriculture					
Permanent full time	76.19	44.30	3.33	78.87	76.38
Casual full time	9.52	13.16	0.00	9.11	9.14
Part time	14.29	42.53	96.67	12.02	14.49
Construction					
Permanent full time	100.00	66.67	16.67	31.04	33.97
Casual full time	0.00	3.70	83.33	61.04	56.39
Part time	0.00	29.63	0.00	7.92	9.64
Manufacturing					
Permanent full time	63.82	62.04	56.81	55.42	56.10
Casual full time	25.66	31.46	31.16	26.41	27.10
Part time	10.53	6.51	12.03	18.17	16.80
Tourism					
Permanent full time	83.33	85.87	85.61	76.27	79.53
Casual full time	13.33	9.78	13.16	16.94	15.34
Part time	3.33	4.35	1.23	6.79	5.13
Full sample					
Permanent full time	67.19	61.70	58.74	59.35	59.54
Casual full time	22.57	26.82	27.35	24.68	24.97
Part time	10.24	11.49	13.90	15.97	15.48

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Labor Unions

The survey data suggest that union membership is low in Uganda. Only around 10 percent of firms reported having employees who belong to a union, one of the smallest shares found in RPED surveys (table 4.16). In firms where there is union membership, about 45 percent of employees on average belong to a national union. As a result of the low membership levels, unions have a negligible impact on wage and employment levels.

Moreover, few days are lost to strikes. Firms reported losing less than half a day of production on average to strikes in the previous year?. The larger the firm, however, the larger the number of days lost.

Further confirming the low profile of unions, only 6.5 percent of firms reported that union-negotiated wages affect nonunion workers. By contrast, preliminary estimates for Kenya in 2002 indicate that in 56 percent of firms nonunion workers share union-negotiated wages and benefits.

Labor Regulations

The regulatory framework seems to have little impact on the labor market in Uganda. Asked to rate

Table 4.15 Employment Structure in Manufacturing by Firm Size Class, Uganda
(percent)

Subsector and employment category	Micro (<10 employees)	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)	All firm size classes
Agro-industry					
Permanent full time	66.67	54.32	56.30	59.32	59.00
Casual full time	30.89	38.54	34.56	14.71	16.72
Part time	2.44	7.14	9.14	25.97	24.28
Chemicals and paints					
Permanent full time	100.00	54.61	62.57	52.30	54.58
Casual full time	0.00	30.50	37.43	42.34	39.73
Part time	0.00	14.89	0.00	5.35	5.69
Construction materials					
Permanent full time	50.00	53.06	55.97	75.20	67.27
Casual full time	0.00	38.65	30.59	24.80	28.47
Part time	50.00	8.30	13.45	0.00	4.26
Furniture					
Permanent full time	53.23	69.02	43.58	18.37	49.27
Casual full time	27.42	25.85	0.56	81.63	35.59
Part time	19.35	5.12	55.87	0.00	15.14
Metals					
Permanent full time	100.00	71.10	0.00	40.51	41.35
Casual full time	0.00	25.10	100.00	57.10	56.23
Part time	0.00	3.80	0.00	2.39	2.42
Paper, printing, and publishing					
Permanent full time	92.86	72.22	59.51	56.20	60.58
Casual full time	7.14	24.65	29.75	31.14	29.27
Part time	0.00	3.13	10.74	12.66	10.16
Plastics					
Permanent full time	—	62.07	69.23	25.00	50.53
Casual full time	—	37.93	30.77	40.00	37.01
Part time	—	0.00	0.00	35.00	12.46
Textiles and leather products					
Permanent full time	16.67	83.41	100.00	57.89	65.78
Casual full time	83.33	13.82	0.00	35.25	28.71
Part time	0.00	2.76	0.00	6.86	5.51
Wood					
Permanent full time	33.33	81.18	76.74	66.67	70.89
Casual full time	0.00	0.00	23.26	33.33	25.32
Part time	66.67	18.82	0.00	0.00	3.80
Full sample					
Permanent full time	63.82	62.04	56.81	55.42	56.10
Casual full time	25.66	31.46	31.16	26.41	27.10
Part time	10.53	6.51	12.03	18.17	16.80

— Not available.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table 4.16 Union Membership and Days of Production Lost to Strikes in Selected Sectors, Uganda

	Commercial agriculture	Construction	Manufacturing	Tourism	Full sample
Union membership					
Share of firms with employees belonging to a union (percent)	11.11	0.00	10.00	12.00	9.8
Share of employees belonging to a national union (percent)[a]	43.75	0.00	44.12	58.33	45.2
Days of production lost to strikes in previous year by firm size class (employees)					
Micro (<10)	0.0	0.0	0.0	0.5	0.1
Small (10–49)	0.0	0.0	0.5	0.0	0.4
Medium-size (50–99)	0.0	0.0	0.1	0.3	0.1
Large (100+)	0.3	0.1	1.4	0.0	1.0
All firm size classes	0.1	0.1	0.5	0.2	0.4

a. Data refer only to firms in which any employees belong to a union.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

constraints relating to labor regulations on a scale of 0 (no problem) to 4 (high obstacle), firms gave responses suggesting that such regulations impose a minimal burden (table 4.17). Only 5 percent of firms reported experiencing significant problems with layoff procedures and the cost of retrenchment.[8]

Policy Issues

This brief review of some of the main characteristics of Uganda's labor market points to some issues that need to be addressed to improve the competitiveness of its labor:

- The health of the labor force is a major concern. Health conditions in the country are poor, and up to 37 days of production per worker are lost annually because of health-related issues, with adverse consequences for firm productivity. Improving the health of workers is therefore critical.
- A specific area of action should be HIV/AIDS. The survey data show that firms tend to underestimate, ignore, or conceal the extent of the HIV/AIDS problem. Even though the Ugandan government has taken steps to combat HIV/AIDS, the private sector remains relatively uninformed. Yet a large share of employees across all sectors surveyed are willing to be tested and to pay for the tests as long as testing is anonymous. These attitudes are a very favorable factor in the fight against HIV/AIDS in the work environment, with obvious externalities for labor productivity and for Ugandan society.
- A continued focus on education and professional training remains vital for the long term.
- Workers' earnings in manufacturing appear to be only weakly linked to their performance, as

Table 4.17 Firms' Evaluation of Labor Regulations as Constraints in Selected Sectors, Uganda

Constraint	Average rating[a]	Share of firms citing as a significant constraint[b] (percent)
Hiring procedures for local workers	0.1	2.81
Hiring procedures for foreign workers	0.1	4.59
Layoff procedures and cost of retrenchment	0.3	5.10
Limits on temporary hiring	0.1	3.06
Dealing with the Inspectorate of Labor	0.3	3.92

Note: Data are for the commercial agriculture, construction, manufacturing, and tourism sectors.
a. Ratings are on a scale of 0 (no problem) to 4 (high obstacle).
b. Refers to ratings in the 3–4 range on the scale of 0–4.
Source: World Bank, RPED investment climate survey, Uganda, 2002/03.

shown by the small share of bonuses in their pay and the insignificance of hours worked in explaining the level of earnings. Thus workers have little incentive to increase their level of effort. To increase incentives, earnings should be clearly linked to performance.

- Institutional rigidities do not appear to be severe. Ugandan firms are able to hire workers on flexible contracts and have few problems with unions.

Notes

1. The initial sale of this bank in 1997 to a Malaysian firm was invalidated when the firm transferred ownership to a consortium of Ugandan investors well ahead of the stipulated schedule.
2. Nearly 80 percent of domestically controlled firms have fewer than 50 employees, compared with only 30 percent of foreign-controlled firms.
3. The quadratic relationship between age and access to bank finance is maximized at age 50. But more than 95 percent of the firms in the sample are less than 50 years old.
4. Another reason for the large share of trade finance is the lower uncertainty about the value of collateral posted by the trading enterprises.
5. Lower uncertainty in the value of collateral posted by the trading enterprises is another reason for the larger share of private sector credit.
6. Data are from the World Bank's World Development Indicators database.
7. In Nigeria, for example, about 89 percent of manufacturing workers had permanent full-time labor contracts in 2001, and in Eritrea about 85 percent did in 2002. But in Kenya only about 58 percent of manufacturing workers had permanent labor contracts in 2002–03.
8. Other data, however, suggest that some institutional rigidities prevail. Most notably, the World Bank's Doing Business database indicates that Ugandan firms have greater difficulty in laying off workers than do firms in other countries in the region or in OECD countries (World Bank 2003).

The findings of the investment climate assessment confirm those from recent consultations with the private sector in Uganda. These findings include a relatively high-cost business environment, low investor confidence (particularly with respect to the macroeconomic situation), low productivity, and low capacity utilization. Although core reforms in the past decade have improved the investment climate, Uganda needs to consolidate and build on those reforms if it is to transform itself into a competitive economy. The country needs to maintain a stable macroeconomic framework, establish a low-cost business environment, strengthen the financial sector, privatize and reform key utilities, and raise firm productivity by boosting capacity utilization and the efficiency of the labor and financial markets.

Maintaining Macroeconomic Stability

Macroeconomic instability is among the most important constraints identified by Ugandan firms—and the most important one in the view of foreign-owned companies and exporters. That investor perceptions are so negative is interesting, since Uganda has sustained high GDP growth, low inflation, and low exchange rate volatility for the past 10 years or more. These perceptions suggest that investors are no longer comparing Uganda's economic performance today with that of the past decade, but instead focusing on recent indicators of the economy's performance, which point to an overall slowdown. Declining economic growth, rising public spending (especially for public services), inconsistent tax policies, and poor tax administration are the key concerns for investors. Continued high military spending may also be shaping investors' expectations about inflation and macroeconomic stability.

Recommendations. Now that Uganda has achieved sustained periods of macroeconomic stability, the challenge is to demonstrate to investors that its macroeconomic framework is sustainable over the long haul. Uganda's economic and political institutions must be capable of withstanding not only regional insecurity but also political transition. The government must keep its administrative budget low, reinforcing the image of a lean, professional civil service capable of performing without increasing donor funding. The Ministry of Finance, Planning, and Economic Development, in collaboration with the Ministry of Public Service, needs to work on modernizing the civil service, which should be capable of delivering the services the private sector needs to compete successfully. Persistent pressure to increase military spending and the creation of more public institutions and district administrations pose the key challenges to macroeconomic stability. The growing budget deficit and continued decline in the exchange rate, reflecting the persistent trade imbalance, undermine confidence in the sustainability of growth. Private firms surveyed for this report share these concerns.

As discussed in the World Bank's Public Expenditure Review of Uganda in 2003, several strategies could be pursued to reduce the fiscal deficit: increasing transparency and participation in the setting of sectoral budget ceilings, improving budget monitoring systems, minimizing unbudgeted supplementary expenditures that lead to spending cuts for other departments, increasing budget efficiency so as to allow the government to achieve development goals even while reducing or maintaining spending levels, and encouraging stakeholders in the development process to assist local governments in decentralizing social services, budget processes, and financial management (World Bank, 2003b).

Encouraging Private Provision of Social and Infrastructure Services

The government's policies and actions are consistent with an overall policy of establishing the private (rather than the public) sector as the provider of jobs and incomes. But the provision of large-scale funding by the international community, with its emphasis on social spending, has helped put the public sector back into the driver's seat in investment and has also led to the crowding out of lending to the private sector. While the public sector has largely withdrawn from ownership and management of purely private operations, the private sector's interest in investing in the provision of social and infrastructure services has not been fully exploited.

Recommendations. The government needs to pursue a policy of divesting and contracting out services—a policy that would help reduce the public administration budget while also leveraging private investment. The Ministry of Public Service, in cooperation with the privatization unit, needs to continue identifying and divesting services that can be contracted out to the private sector. And sector ministries need to establish an appropriate legal and regulatory framework for private investment or public-private partnerships in the provision of social services. The private sector, though already a major provider of services, needs to evaluate the potential of private, for-profit operations and be more vocal about expanding its role.

Establishing a Low-Cost Operating Environment

The survey data underscore the substantial regulatory burden with which the private sector in Uganda must cope. As noted in chapter 3, senior managers of manufacturing firms spend substantial time—more than 13 days a year on average—dealing with government officials. This regulatory burden, and the associated high costs for the private sector, are a result of inadequate regulatory capacity, an unclear regulatory framework, and inconsistent interpretation of policies and regulations. Forty percent of the manufacturing firms surveyed complained that regulations are not interpreted consistently. In addition, nearly 40 percent of the firms rated corruption as a major obstacle to doing business.

Recommendations. The government needs to accelerate regulatory and institutional reforms aimed at improving and modernizing the business operating environment. It also needs to ensure that these reforms—which include drafting new business laws and reforming such key institutions as the Uganda Revenue Authority and the Business Registrar—are implemented consistently. The Ministry of Justice has identified 44 key laws that have a significant impact on the commercial legal system. These laws, which are only partially updated, need to be reviewed, processed, and implemented. The Ministry of Justice is also responsible for implementing the act governing the Business Registrar (the Business Registrar's Act), which still lacks the ministry's approval. While the Business Registrar is clearly in need of capacity building, such efforts will be effective only if this act is fully approved and implemented. Beyond strengthening the regulatory framework, it will be critical to improve the attitude and work habits of the civil service, particularly at the local government level, where capacity is more limited.

Recently Uganda has introduced laws allowing local governments to collect fees, prompting local officials to develop a series of fees for the private sector. Local administrations, applying these fees at their discretion, have singled out larger investors for higher fees, regardless of exemptions granted under the investment code. To help reduce the cost of doing business in Uganda, regulatory agencies need to adopt a

new role of enhancing the quality of services and expanding outreach.

In addition, the government should build on existing anticorruption policies, such as the requirement that public officials declare their wealth. Other measures to address corruption could include adopting additional anticorruption legislation, reforming public sector pay, providing adequate resources to anticorruption agencies, ensuring proper follow-up of findings issued by commissions of inquiry, combating a culture of impunity, strengthening accountability at all levels of government, and addressing corruption in lower levels of government. Further efforts need to be made in increasing transparency in fiscal policy and public procurement, such as in budget execution and reporting, and in limiting the use of supplementary appropriations by the executive branch. Arrears need to be properly assessed, and contingent liabilities monitored and controlled. And public procurement systems need to be improved. Since corruption is partly rooted in the political system, the private sector has a key role to play as a monitor and advocate, demanding minimum standards and assisting entrepreneurs in challenging abuses of institutions, systems, and regulations.

Establishing a Competitive Investment Environment

Uganda competes with other locations around the world for private investment. Meanwhile, countries in Africa, Asia, and Europe are continuously improving their investment environment with the aim of attracting domestic and foreign investment. Among the features that tend to draw international investors are export processing zones and related investment incentives.

To help attract investment to Uganda, the government has decided to set up an export processing zone, acknowledging the need for industrial land outside Kampala that is well planned, environmentally sound, and adequately serviced. In addition, there are a number of proposals to establish industrial zones near Kampala and Entebbe, such as the 980-hectare Kampala Industrial and Business Park at Namanve. While there has been long-standing interest in establishing an export processing zone in Uganda, implementation has been delayed by a lack of consensus on the development model, despite the Special Economic Zones Bill drafted in 2002. This draft bill is being revised to take into account the needs and views of prospective investors.

Recommendations. The government needs to establish a competitive investment environment that is based on a transparent incentive structure and updated legal framework for investment. Key priorities are to accelerate the commercial legal reforms started in 1999 and update the investment code. In addition, such institutions as the Uganda Investment Authority, Export Promotion Board, and Tourism Board need to have their roles clarified and be set on a long-term, sustainable path. The government has proposed merging these institutions, but this has not yet been done, making it difficult to proceed with any capacity building program. The Uganda Development Bank, now a major source of distortion in the formal incentive structure, needs to be transformed into an institution that allows broad development of the financial market. And the export processing zone needs to be made fully operational to attract high-quality investment.

Improving Tax Administration

Investors in Uganda consider the level of taxation the second biggest constraint to doing business and also rank tax administration high among the burdens they face. The most common complaint is that the income tax law is inconsistently interpreted even within the Uganda Revenue Authority, leading to contradictory rulings, unpredictable value added tax refunds, and

corporate tax bills that are inconsistent with the guidelines. Adding to the problem, the staff of the Uganda Revenue Authority have limited technical skills, and appealing tax rulings before the Tax Administration Tribunal is time consuming and ineffective.

Recommendations. The Ministry of Finance, Planning, and Economic Development needs to ensure that tax laws are in effect that are clear, unambiguous, and consistent with the investment code. It also needs to ensure that tax policy is predictable, keeping to a minimum new tax measures that depart from the policy. While most entrepreneurs recognize the need for a sustainable revenue base, they believe that tax revenue is generated from a very small part of the private sector—larger firms in the formal sector. Thus the government needs to devise strategies for widening the tax base by generating more revenue from small businesses and perhaps even the informal sector. In addition, the Uganda Revenue Authority needs to transform itself into an efficient institution with a reputation for integrity, an institution that enforces tax laws while remaining cognizant of the need to foster a productive private sector. The agency also needs to focus on running the value added tax refund system efficiently for the private sector while reducing fraud.

Ensuring Sound Financial Market Development

Firms in the survey ranked the cost of finance and access to finance among the top five constraints to their operation and growth. The government has completed key reforms in the financial sector, transforming it from a vulnerable system with collapsing banks to a relatively sound one able to compensate for banking losses without government intervention. Competition in the financial market has improved, with commercial banks showing more interest in small business lending and trade finance. But the greater competition still has not led to a substantial decline in intermediation costs and thus interest rates or to an increase in lending to the private sector. High interest rates on treasury bills are having a crowding out effect on lending to the private sector. The high-cost business environment results in high administrative costs for loans. And firms have limited access to long-term loans. Compared with firms in Kenya, those in Uganda have less access to financial products across the board.

Recommendations. The government needs to develop additional reform policies to support financial service providers and improve their ability to respond to the needs of the private sector. The reforms need to focus on such key areas as pensions, insurance, and capital market development, to improve firms' access to long-term finance. Options to reform the pension system also need to be considered. Also important is greater funding for commercial courts, which would enable these courts to function more efficiently and thus increase lenders' willingness to extend credit. At the same time the government needs to provide incentives for better compliance with accounting standards by the private sector. Establishing a credit registry would give firms greater incentive to provide high-quality information on their operations and finances. Legislation to address related privacy concerns would also need to be finalized.

Raising Firm Productivity

The productivity of labor and the efficiency of wage determination both warrant attention from policymakers. Labor markets function inefficiently in part because of the low labor skills and low labor mobility. The poor labor mobility may be due to difficulties workers have in demonstrating informally learned skills to potential employers in different regions and to

the close relationship between labor and land, which is often owned informally and without title.

As the survey data show, Ugandan manufacturing firms use close to 60 percent of their capacity, and the value added per worker is just over $1,000 a year, in the same range as in other small Sub-Saharan African economies. But Ugandan firms compare poorly in productivity with firms in countries outside Africa, such as China and India. In addition, small firms in Uganda have lower capacity utilization and productivity than large firms. Support aimed at increasing firm productivity should be focused especially on micro, small, and medium-size enterprises, since these make up more than 90 percent of Ugandan firms and their growth is crucial to the creation of a broad-based private sector and thus to long-term economic development.

A critical factor in firm productivity is the health of workers. Firms lose up to 37 days of production per worker annually because of health-related issues. Moreover, firms appear to underestimate, ignore, or conceal the extent of the HIV/AIDS problem.

Recommendations. The Ugandan government needs to support private sector–led skills development and technology transfer initiatives aimed at increasing productivity and capacity utilization. There are many ways to do this, including providing tax credits to firms that engage in worker training or adopt new technology. The government could also support worker training and apprenticeship programs designed and implemented by the private sector to meet its needs.

The government should look for ways to encourage entrepreneurship and improve access to business education. For indigenous entrepreneurs, education is among the most important factors in determining firm performance. Access to university education may be particularly important in offsetting the advantages of inherited ownership and family-based business knowledge. It may be worthwhile for both the government and donors to revisit their priorities in this area.

To help improve the health of workers, the government and the private sector should consider using existing HIV/AIDS awareness programs to increase knowledge on how to control the disease. Enterprises should be encouraged to take a more active role in controlling the spread of HIV/AIDS—for example, by forming partnerships between business associations and voluntary counseling and testing programs.

Increasing the Efficiency of Services

According to the survey results, difficulties in access to electricity and to land are major constraints for Ugandan businesses. Limited and unreliable electricity supply hampers the operation of businesses. Transport costs are also a key constraint to doing business in Uganda. Survey respondents did not mention this constraint often, however, largely because many businesses have taken steps to overcome it by developing in-house transport services.

Recommendations. The government's restructuring of the utilities sector, under way for several years, needs to be completed as a matter of urgency to address critical constraints to doing business. Also recommended is that the government strengthen the regulatory framework, to facilitate private investment in the utilities sector.

The government restructured the Uganda Electricity Board in March 2001 and transferred the generation, transmission, and distribution functions to three separate companies. The government needs to ensure that these companies are fully operational and are attracting adequate private participation. Other work is also under way in the utilities sector and in infrastructure. The ministry responsible for water and sanitation is developing a strategy for private participation based on appropriate regulation. The reforms,

which have been under way for years, need to be fast-tracked to allow further investment and expansion of service. In air transport some infrastructure has been improved, but many issues still need to be addressed to ensure adequate services meeting the needs of the private sector. The Civil Aviation Authority needs to focus on regulation and on encouraging private investment to improve the efficiency and effectiveness of air transport services. As suggested in the government's strategy for structural transformation, presented at the Consultative Group meeting of donors in Kampala in April 2003, several measures need to be taken immediately, including restructuring unsustainable debts in the utilities sector, providing entry points for private participation, and creating a multi-utility regulatory agency.

Addressing Distortions in Trade

On the basis of the tariff schedule, Uganda's trade policy regime appears to be fairly liberal. But tariffs are not the only tool used to protect domestic producers. Several nontariff ad valorem restrictions are still in force, and the true level of protection is thus much higher than the tariff schedule suggests. As the wide range of effective rates of protection show, distortions persist. The biggest source of the distortions is the excise tax, used indiscriminately and showing dispersion across tariff lines. While the excise tax provides needed revenue for financing public spending, the government needs to be careful about distorting incentives in manufacturing.

Recommendations. Uganda is now discussing new tariff rates with its partners in the East African Community. It is also the right time to change other elements of the trade policy regime:

- To improve allocative efficiency, as well as simplify tariff administration and reduce incentives for fraud, the government should consider decreasing the number of tariff rates from the three now in use to two or, in the long term, even to one.
- The selective use of the excise tax for such products as tobacco and alcoholic beverages is probably justified, but there is little rationale for using the tax for other products. Ending its indiscriminate use would increase transparency, lessen distortions, and help further reduce protection.
- The government needs to continue its work in trade reform, lowering overall tariffs, promoting efficient resource allocation, and keeping excise taxes and other forms of nontariff protection to a minimum.

The Role of the World Bank

The World Bank is supporting many of the recommendations described above. In addition, on the basis of the results of the investment climate assessment, the Bank is proposing a $57 million International Development Association credit to help promote private sector development. Key components of the project include the following:

- A matching grants program to address low productivity through a $13 million loan for skills development and in-house training.
- A range of business development services to help improve financial management and audits and lower the risk of lending to the private sector.
- Infrastructure provision through the development of an export processing zone outside Kampala and a proper institutional and regulatory framework to support infrastructure services.
- Mobilization of private participation in infrastructure through a $1 million loan for the provision of technical assistance and assistance in building a regulatory framework.

- Provision of technical assistance to support institutional development aimed at increasing the availability of term finance and other products suitable for micro, small, and medium-size firms.

Funding will also go to capacity building grants to facilitate a sustainable dialogue between the World Bank and the private sector on the key constraints identified in this assessment. These grants, to be provided on the basis of clear and transparent criteria, will develop the capacity of Private Sector Foundation Uganda and other business associations as well as the dialogue conducted by the Investors Round Table. Implementation of this World Bank project will be closely coordinated with other donor activities in Uganda.

Annex 5.1 Policy Suggestions for Improving the Investment Climate in Uganda

Policy objective	Policy issues	Observations	Policy suggestions
Maintaining macro-economic stability	Declining economic growth, rising public spending (especially for public services), inconsistent tax policies, and poor tax administration are key investor concerns.	Macroeconomic instability is the third most important constraint identified by Ugandan investors—and the most important one identified by foreign-owned companies and exporters.	• Maintain a low administrative budget. • Have the Ministry of Finance, Planning, and Economic Development and the Ministry of Public Service modernize the civil service. • Implement recommendations made in the 2003 Public Expenditure Review, including improving the process for setting sectoral budget ceilings, improving budget monitoring systems, and decentralizing certain services.
Encouraging private provi-sion of social and infrastructure services	Private sector investment is being crowded out.	There is a need to promote private investment in the provision of social and infrastructure services by pursuing a policy of divesting and contracting out services.	• Have the Ministry of Public Service and the privatization unit continue identifying and divesting services that can be contracted out to the private sector. • Have the sector ministries establish an appropriate legal and regulatory framework for private investment or public-private partnerships.
Establishing a low-cost operating environment	The private sector must cope with corruption and a sub-stantial regulatory burden.	Uganda has a high-cost business environment as a result of inadequate regulatory capacity, an unclear regulatory framework, and inconsistent interpretation of policies and regulations. Nearly 40 percent of manufacturing firms rated corruption as a major obstacle to doing business.	• Complete the review and implementation of 44 commercial laws identified as key by the Ministry of Justice. • Complete the approval and implementation of the Business Registrar's Act. • Inculcate in the civil service, particularly at the local government level, an attitude of valuing and serving the private sector. • Build on existing anticorruption policies by increasing the transparency of public procurement, limiting the use of supplementary appropriations by the executive branch, and monitoring contingent liabilities.

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Annex 5.1 Policy Suggestions for Improving the Investment Climate in Uganda (continued)

Policy objective	Policy issues	Observations	Policy suggestions
Establishing a competitive investment environment	In competing with other locations around the world for private investment, Uganda is handicapped by the poor ratings of its investment climate.	The government needs to establish an attractive investment environment based on a transparent incentive structure and updated legal framework for investment.	• Update the investment code. • Clarify the roles of such institutions as the Uganda Investment Authority, Export Promotion Board, and Tourism Board and set them on a long-term, sustainable path. • Transform the Uganda Development Bank into an institution that allows broad development of the financial market. • Fully implement the proposed export processing zone with assistance from the World Bank.
Improving tax administration	The income tax law is inconsistently interpreted even within the Uganda Revenue Authority, leading to contradictory rulings, unpredictable value added tax refunds, and corporate tax bills that are inconsistent with the guidelines. Moreover, the staff of the Uganda Revenue Authority have limited technical skills, and appealing tax rulings before the Tax Administration Tribunal is time consuming and ineffective.	Investors in Uganda consider the level of taxation the second biggest constraint to doing business and also rank tax administration high.	• Have the Ministry of Finance, Planning, and Economic Development ensure that tax laws are clear, unambiguous, and consistent with the investment code. • Keep to a minimum new tax measures that are inconsistent with previous policies. • Widen the tax base by generating more revenue from smaller businesses and perhaps the informal sector. • Transform the Uganda Revenue Authority into an efficient institution with a reputation for integrity, an institution that both enforces tax laws and creates an enabling environment for the private sector. • Have the Uganda Revenue Authority focus on running the value added tax refund system efficiently while reducing fraud.
Ensuring sound financial market development	High interest rates on treasury bills are having a crowding out effect on lending to the private sector, the high-cost business environment results in high administrative costs for loans, and access to long-term loans is limited.	Key financial sector reforms have led to a relatively sound banking system, but the improvements have not yet resulted in a substantial decline in costs, reduction in interest rates, or increase in lending to the private sector.	• Focus on such key areas as pensions, insurance, and capital market development. • Increase funding for commercial courts to enable them to function more efficiently. • Create incentives to encourage better compliance with accounting

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Annex 5.1 Policy Suggestions for Improving the Investment Climate in Uganda (continued)

Policy objective	Policy issues	Observations	Policy suggestions
			standards by firms and thus reduce information asymmetries in lending—such as by establishing a credit bureau.
Raising firm productivity	Ugandan firms have poor productivity compared with firms in countries outside Africa, such as China and India, and their capacity utilization is low.	The labor force has low skill levels and poor health, and informal (untitled) land ownership may restrict labor mobility.	• Support private sector–led skills development and technology transfer initiatives. • Target support to micro, small, and medium-size enterprises. • Formalize worker training and apprenticeship programs. • Encourage entrepreneurship and improve access to business education. • Use existing HIV/AIDS awareness programs to increase the knowledge on how to control the disease. • Encourage enterprises to take a more active role in controlling the spread of HIV/AIDS. • Encourage partnerships between business associations and voluntary counseling and testing programs. • Create property rights that are legally recognized and tradable.
Increasing the efficiency of services	The provision of utility and transport services is limited and unreliable.	Electricity is a particularly limiting factor, with the limited and unreliable supply hampering the operation of businesses. Many businesses have taken steps to overcome the transport constraint, however, by developing in-house transport services.	• Restructure unsustainable debts in the utilities sector, provide entry points for private participation, and create a multi-utility regulatory agency. • Establish industrial parks that are easily accessible, provide adequate utility services, and meet environmental standards. • Ensure that the restructured electricity companies are fully operational and attracting adequate private participation. • Have the ministry responsible for water and sanitation fast-track regulatory reforms to facilitate private participation in the sector.

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Annex 5.1 Policy Suggestions for Improving the Investment Climate in Uganda (continued)

Policy objective	Policy issues	Observations	Policy suggestions
			• Accelerate the railway privatization and improve the road network (at least the major economic routes). • Have the Civil Aviation Authority focus on regulation and on encouraging private participation.
Addressing distortions in trade	Nontariff trade barriers remain high.	Excise taxes are creating distortions in the economy.	• Continue the work in trade reform, lowering overall tariffs, promoting efficient resource allocation, and keeping excise taxes and other forms of nontariff protection to a minimum.

The sample of Ugandan firms was designed as a stratified random sample on the basis of recent census data from the Uganda Bureau of Statistics.

Devising the Sample Frame

The sample frame of the survey was devised in three steps. First, a list containing 4,698 officially registered companies with 10 or more employees was obtained from the Uganda Bureau of Statistics, which compiled the list during a nationwide census in 2001/02. The list includes all activities in the formal sector, which had a total of 182,687 permanent employees. It also provides the name, address, sector, International Standard Industrial Classification (ISIC) code, and number of employees for every formal manufacturing firm existing in 2001/02.

Second, only firms in four sectors—commercial agriculture, construction, manufacturing, and tourism—were retained from this list. This selection of sectors defined the universe of formal sector firms to be considered for the survey. This new list contained 1,485 firms employing 81,566 workers.

Third, the sample frame was further refined by removing a few enterprises in relatively inaccessible areas in northern Uganda. The final sample frame included 1,439 enterprises employing 80,589 people, or 96.9 percent of firms and 98.8 percent of employment in the formal sector (table A1.1).

For sampling purposes, the sample frame was stratified by location, manufacturing subsector, and size. To adequately reflect the geographic distribution of firms, three regions were defined on the basis of existing districts: the central region, which includes the Kampala district; the northeast region; and the southwest region. Similarly, to obtain the correct distribution of activity in manufacturing, nine broad subsectors were defined using the ISIC: agro-industry; chemicals and paints; construction materials; furniture; metals; paper, printing, and publishing; plastics; textiles and leather products; and wood. Finally, to allow comparisons with data sets compiled for other African countries by the Regional Program on Enterprise Development (RPED), three standard size classes were used: small (10–49 employees), medium-size (50–99), and large (100 or more). Clusters were then defined on the basis of the location, size, and sector

Table A1.1 Universe and Sample Frame

	Universe		Sample frame	
Sector	**Firms**	**Employment**	**Firms**	**Employment**
Manufacturing	797	52,628	751	51,651
Percentage of universe			94.2	98.1
Construction	95	6,653	95	6,653
Percentage of universe			100.0	100.0
Tourism	479	10,453	479	10,453
Percentage of universe			100.0	100.0
Commercial agriculture	114	11,832	114	11,832
Percentage of universe			100.0	100.0
Total	1,485	81,566	1,439	80,589

Source: Uganda Bureau of Statistics census of firms, 2001/02.

of firms. This three-level stratification defined 82 clusters, including 56 in manufacturing alone.

The size distribution of firms in the sample frame is uneven (table A1.2). Although small enterprises make up most of the firms in the sample frame (about 82 percent of the firms employ between 10 and 49 workers), they account for only 25.2 percent of the employment. The sample frame's 146 large firms (with 100 or more employees) provide most of the employment (66.4 percent). This characteristic is shared across all sectors except tourism, where small firms make up about 94 percent of the total but provide about 69.5 percent of employment. The tourism industry in Uganda is thus made up largely of small firms.

The importance of the central region is immediately apparent (table A1.3). This region accounts for about 64.6 percent of the firms and 62.4 percent of the employment. It dominates in all sectors except commercial agriculture, located mainly in the southwest.

Table A1.2 Sample Frame by Firm Size Class, Sector, and Subsector

Sector and subsector	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)	Total
Manufacturing				
Agro-industry				
Firms	227	22	51	300
Employment	4,017	1,403	29,716	35,136
Chemicals and paints				
Firms	27	7	4	38
Employment	562	445	797	1,804
Construction materials				
Firms	45	4	3	52
Employment	721	306	743	1,770
Furniture				
Firms	118	3	1	122
Employment	1,708	175	135	2,018
Metals				
Firms	67	10	8	85
Employment	1,128	670	1,494	3,292
Paper, printing, and publishing				
Firms	42	2	4	48
Employment	917	150	1,026	2,093
Plastics				
Firms	13	6	2	21
Employment	261	367	330	958
Textiles and leather products				
Firms	44	5	10	59
Employment	844	299	2,647	3,790
Wood				
Firms	23	2	1	26
Employment	444	108	238	790
All subsectors				
Firms	606	61	84	751
Employment	10,602	3,923	37,126	51,651

(Table continues on next page)

Table A1.2 Sample Frame by Firm Size Class, Sector, and Subsector (continued)

Sector and subsector	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)	Total
Tourism				
Hotels				
Firms	436	16	11	463
Employment	7,050	1,073	1,995	10,118
Transport				
Firms	14	2	0	16
Employment	217	118	0	335
All subsectors				
Firms	450	18	11	479
Employment	7,267	1,191	1,995	10,453
Construction				
Building completion				
Firms	6	0	0	6
Employment	145	0	0	145
Building installation				
Firms	8	0	0	8
Employment	117	0	0	117
Complete construction				
Firms	53	14	14	81
Employment	1,017	909	4,465	6,391
All subsectors				
Firms	67	14	14	95
Employment	1,279	909	4,465	6,653
Commercial agriculture				
Cereals				
Firms	8	0	2	10
Employment	200	0	255	455
Crops, animal husbandry				
Firms	40	0	0	40
Employment	605	0	0	605
Vegetables, nursery products				
Firms	4	1	17	22
Employment	75	60	3,857	3,992
Other animal farming				
Firms	8	0	0	8
Employment	133	0	0	133
Fruits, nuts, beverages				
Firms	7	9	18	34
Employment	174	692	5,781	6,647
All subsectors				
Firms	67	10	37	114
Employment	1,187	752	9,893	11,832
Full sample frame				
Firms	1,190	103	146	1,439
Employment	20,335	6,775	53,479	80,589

Source: Uganda Bureau of Statistics census of firms, 2001/02.

Table A1.3 Sample Frame by Sector and Region
(percent)

Region	Manufacturing	Commercial agriculture	Tourism	Construction	Full sample frame
Firms					
Central	72.0	34.9	69.0	85.3	64.6
Northeast	12.9	2.6	15.7	8.0	15.3
Southwest	15.0	62.5	15.2	6.6	20.1
Employment					
Central	64.4	34.9	69.0	85.3	62.4
Northeast	4.6	2.6	15.7	8.0	6.0
Southwest	31.0	62.5	15.2	6.6	31.5

Source: Uganda Bureau of Statistics census of firms, 2001/02.

Selecting the Sample

Following the stratification of the sample frame, firms were selected randomly in each cluster. A total sample of 410 firms was drawn, with an overall sampling rate of 28.5 percent.

The surveyed sample differs slightly from the drawn sample because of some replacement sampling, but it retains the key characteristics: the importance of firms with 100 or more employees and the prominence of the central region (table A1.4). The surveyed sample includes 392 firms (a sampling rate of 27.2 percent). Firms with 100 or more workers account for about 86 percent of the employment in the sample, and the central region accounts for 66 percent of the enterprises and about 66.5 percent of the employment.

The difference between the theoretical and the surveyed sample is explained by several factors: some firms refused to be interviewed, several firms changed size class (the survey was undertaken about a year after the completion of the census), and some firms either did not exist or had changed their activity. Some of these "missing" firms were replaced with firms with similar or identical characteristics. These replacements from the sample frame were required to be similar in size and to operate in the same sector and the same region.

The manufacturing subsample is the largest component of the overall sample. It includes 300 firms, or about 40 percent of the existing manufacturing firms in the sample frame, and accounts for about 75 percent of the manufacturing employment. This subsample reflects the dominance of the central region and large firms (tables A1.5 and A1.6). But it differs slightly from the sample frame in its structure. In the subsample 68 percent of firms are in the central region (compared with 72 percent in the frame) and 19.7 percent of firms have 100 or more employees (compared with 10.6 percent in the frame).

In short, the overall distribution of employment in the surveyed sample is correct with respect to the location of firms, but the "fit" is imperfect for the size distribution because it overstates the importance of firms with 100 or more employees compared with the frame. Nonetheless, the surveyed sample takes into account the dominance of large firms and the importance of the central region. And although the sampling rate is only about 27 percent, it still accounts for about 67 percent of officially recorded employment.

Table A1.4 Surveyed Sample by Firm Size Class, Sector, and Region

Sector and region	Micro (<10 employees)	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)	Total
Manufacturing					
Central					
Firms	35	98	25	46	204
Employment	199	2,152	1,678	24,060	28,089
Northeast					
Firms	5	30	3	7	45
Employment	26	607	208	1,503	2,344
Southwest					
Firms	14	25	6	6	51
Employment	79	423	434	7,819	8,755
All regions					
Firms	54	153	34	59	300
Employment	304	3,182	2,320	33,382	39,188
Tourism					
Central					
Firms	2	7	6	7	22
Employment	12	142	465	1,458	2,077
Northeast					
Firms	1	0	1	0	2
Employment	9	0	55	0	64
Southwest					
Firms	1	2	1	0	4
Employment	9	42	50	0	101
All regions					
Firms	4	9	8	7	28
Employment	30	184	570	1,458	2,242
Construction					
Central					
Firms	2	7	0	7	16
Employment	5	227	0	2,777	3,009
Southwest					
Firms	0	2	1	0	3
Employment	0	43	60	0	103
All regions					
Firms	2	9	1	7	19
Employment	5	270	60	2,777	3,112

(Table continues on next page)

Table A1.4 Surveyed Sample by Firm Size Class, Sector, and Region (continued)

Sector and region	Micro (<10 employees)	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)	Total
Commercial agriculture					
Central					
Firms	1	8	0	8	17
Employment	6	173	0	2,931	3,110
Northeast					
Firms	1	0	0	1	2
Employment	5	0	0	765	770
Southwest					
Firms	5	10	2	9	26
Employment	31	222	150	5,796	6,199
All regions					
Firms	7	18	2	18	45
Employment	42	395	150	9,492	10,079
Full sample					
Firms	67	189	45	91	392
Employment	381	4,031	3,100	47,109	54,621

Source: Uganda Bureau of Statistics census of firms, 2001/02.

Table A1.5 Manufacturing Sample by Firm Size Class and Subsector

Subsector	Micro (<10 employees)	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)	Total
Agro-industry					
Firms	23	54	12	33	122
Employment	123	1,204	897	21,821	24,045
Average employees/firm	5.3	22.3	74.8	661.2	197.1
	(2.2)	(9.7)	(12.3)	(1,219.6)	(688.7)
Chemicals and paints					
Firms	2	8	3	5	18
Employment	10	141	171	803	1,125
Average employees/firm	5.0	17.6	57.0	160.6	62.5
	(1.4)	(7.9)	(5.0)	(80.7)	(75.7)
Construction materials					
Firms	3	24	7	6	40
Employment	6	458	461	1,492	2,417
Average employees/firm	2.0	19.1	65.9	248.7	60.4
	(1.7)	(8.9)	(14.8)	(158.7)	(100.4)
Furniture					
Firms	19	24	3	1	47
Employment	124	410	179	245	958
Average employees/firm	6.5	17.1	59.7	245.0	20.4
	(1.3)	(9.4)	(7.6)		(36.5)
Metals					
Firms	3	12	1	5	21
Employment	18	263	70	7,102	7,453
Average employees/firm	6.0	21.9	70.0	1,420.4	354.9
	(1.0)	(7.8)		(2,839.8)	(1,409.1)
Paper, printing, and publishing					
Firms	2	12	5	4	23
Employment	14	288	326	790	1,418
Average employees/firm	7.0	24.0	65.2	197.5	61.7
	(2.8)	(12.2)	(9.7)	(122.9)	(81.0)
Plastics					
Firms	0	5	1	1	7
Employment	0	116	65	100	281
Average employees/firm	n.a.	23.2	65.0	100.0	40.1
		(13.7)			(32.6)
Textiles and leather products					
Firms	1	10	1	3	15
Employment	6	217	65	729	1,017
Average employees/firm	6.0	21.7	65.0	243.0	67.8
		(12.2)		(27.9)	(92.6)
Wood					
Firms	1	4	1	1	7
Employment	3	85	86	300	474
Average employees/firm	3.0	21.3	86.0	300.0	67.7
		(10.3)			(106.0)
Full sample					
Firms	54	153	34	59	300
Employment	304	3,182	2,320	33,382	39,188
Average employees/firm	5.6	20.8	68.2	565.8	130.6
	(2.0)	(9.9)	(12.4)	(1,222.5)	(580.3)

n.a. Not applicable.

Note: Figures in parentheses are standard deviations.

Source: World Bank, Investment Climate survey, Uganda, 2002/03; authors' calculations.

Table A1.6 Manufacturing Sample by Region and Subsector

Subsector	Central region	Northeast region	Southwest region	Total
Agro-industry				
Firms	82	19	21	122
Employment	14,727	1,493	7,825	24,045
Average employees/firm	179.6	78.6	372.6	197.1
	(578.2)	(103.2)	(1,207.9)	(688.7)
Chemicals and paints				
Firms	16	1	1	18
Employment	984	10	131	1,125
Average employees/firm	61.5	10.0	131.0	62.5
	(77.5)			(75.7)
Construction materials				
Firms	21	10	9	40
Employment	1,722	240	455	2,417
Average employees/firm	82.0	24.0	50.6	60.4
	(129.7)	(13.8)	(62.1)	(100.4)
Furniture				
Firms	29	7	11	47
Employment	711	101	146	958
Average employees/firm	24.5	14.4	13.3	20.4
	(44.7)	(9.3)	(18.5)	(36.5)
Metals				
Firms	16	3	2	21
Employment	7,300	131	22	7,453
Average employees/firm	456.3	43.7	11.0	354.9
	(1,612.8)	(49.0)	(5.7)	(1,409.1)
Paper, printing, and publishing				
Firms	21	0	2	23
Employment	1,395	0	23	1,418
Average employees/firm	66.4	n.a.	11.5	61.7
	(83.3)		(3.5)	(81.0)
Plastics				
Firms	7	0	0	7
Employment	281	0	0	281
Average employees/firm	40.1	n.a.	n.a.	40.1
	(32.6)			(32.6)
Textiles and leather products				
Firms	8	4	3	15
Employment	626	359	32	1,017
Average employees/firm	78.3	89.8	10.7	67.8
	(93.4)	(124.3)	(4.2)	(92.6)
Wood				
Firms	4	1	2	7
Employment	343	10	121	474
Average employees/firm	85.8	10.0	60.5	67.7
	(143.1)		(36.1)	(106.0)
Full sample				
Firms	204	45	51	300
Employment	28,089	2,344	8,755	39,188
Average employees/firm	137.7	52.1	171.7	130.6
	(584.5)	(80.6)	(783.3)	(580.3)

n.a. Not applicable.

Note: Figures in parentheses are standard deviations.

Source: World Bank, Investment Climate survey, Uganda, 2002/03; authors' calculations.

The Ugandan society is overwhelmingly rural. Only 11 percent of Ugandans live in urban areas, and 40 percent of these live in Kampala (EIU 2002). The Ugandan labor force consisted of roughly 10.9 million people in 1999, or about 49.1 percent of the total population (World Bank 2001). Kampala is the country's main economic and industrial center, and this area and its immediate surroundings account for about two-thirds of firms. The formal labor market is therefore only a small fraction of the total. Using both the detailed firm-level data from the 2002/03 Regional Program on Enterprise Development (RPED) survey and the data from the Uganda Bureau of Statistics firm census in 2001/02, this appendix examines recent patterns of and changes in employment. The data suggest that the distribution of employment remains uneven across regions and sectors. In addition, while overall employment increased slightly between 1998 and 2002, employment in manufacturing declined.

The formal labor market employs almost 183,000 people in different sectors of activity (table A2.1).[1] Manufacturing, the largest sector, accounts for about 28.8 percent of employment, followed by education (15.1 percent) and business services (14.4 percent). All other sectors each employ less than 10 percent of workers. Women account for almost a third of total employment, but this share varies greatly across sectors. While women account for only 15.7 percent of employment in transport, they account for 61.5 percent in the health sector, where female employment is more traditional.

Table A2.1 Structure of Formal Employment, Uganda, 2001/02

Sector	Firms	Employment	Share of total employment (percent)	Female employment as a share of total (percent)
Manufacturing	797	52,628	28.81	20.1
Education	1,214	27,590	15.10	47.1
Business services	491	26,236	14.36	20.1
Trade	951	18,092	9.90	21.5
Commercial agriculture	114	11,832	6.48	53.0
Tourism (hotels, tour operators)	479	10,453	5.72	47.9
Construction	95	6,653	3.64	8.2
Health	154	6,481	3.55	61.5
Communications	17	5,338	2.92	72.0
Finance	100	4,527	2.48	43.8
Transport	105	4,337	2.37	15.7
Utilities	14	3,424	1.87	17.7
Other agriculture	85	1,698	0.93	48.0
Personal services	33	988	0.54	24.1
Mining	13	814	0.45	16.3
Insurance	18	799	0.44	57.6
Nongovernmental organizations	18	797	0.44	26.7
Total	4,698	182,687	100.00	31.0

Source: Uganda Bureau of Statistics census of firms, 2001/02.

Structure of Employment in Selected Sectors

Agro-industry dominates manufacturing employment in Uganda, accounting for about 67 percent of the total. The share of other subsectors ranges between 1.5 percent and 7.5 percent (table A2.2). Some 72 percent of manufacturing firms are located in central Uganda (including the Kampala district) and account for about 63 percent of manufacturing employment (figure A2.1). Small firms (employing 10–49 workers) are substantial in number, but account for only about 21 percent of manufacturing employment. By contrast, the 85 large enterprises (100 or more workers), though only 10.6 percent of all manufacturing firms, account for 70.7 percent of employment.

Manufacturing firms in Uganda have a geographic and size concentration similar to that in the rest of Africa. But the extent of the dominance of agro-industry is unusual. The largest subsectors in other countries surveyed typically account for up to 40–45 percent of manufacturing employment.

As in manufacturing, the distribution of employment by firm size class is almost linear in other sectors, such as construction and commercial agriculture: the larger the firm, the larger the share of sector employment. In construction, for example, census data suggest that the many small firms employ 19 percent of the workers in the sector, while the few large ones employ 67 percent.

Although employment patterns by firm size class are similar in construction and commercial agriculture, the geographic distribution of employment differs. Firms in construction are overwhelmingly located in central Uganda, which accounts for 85.3 percent of employment in this sector. But most firms in commercial agriculture are in the southwest, which accounts for about 62.5 percent of employment in that sector.

Employment in tourism is also highly concentrated geographically, with the central region accounting for 69 percent of employment in the sector. But unlike other sectors, tourism is dominated by small firms, which account for about 93 percent of the sector's enterprises and about 69 percent of its employment.

Overall, employment in these four sectors exhibits the usual concentration patterns with two exceptions: the subsectoral concentration in manufacturing is unusually large, and the employment pattern by firm size class in tourism differs from the usual linear pattern.

Another interesting feature of the distribution of employment in the sample is the average share of management and professionals (white-collar workers) in firms' workforces. It is often argued that the comparatively high cost of labor in Africa may be attributable to an excess of white-collar workers. RPED manufacturing surveys in Africa in the 1990s measured the share of white-collar workers at 20–30 percent.

Uganda is a bit of an outlier: white-collar workers account for 34.3 percent of the employees in the entire sample (table A2.3). But this large share encompasses wide variation among sectors. The smallest shares are in tourism (15.7 percent) and commercial agriculture (18.8 percent). The shares are much larger in construction (31.8 percent) and manufacturing (38.1 percent). Indeed, the share in manufacturing is the largest in the RPED manufacturing surveys (Nigeria has the next largest share, with 37.1 percent in 2001). But as in other African countries, the share of white-collar workers in manufacturing tends to decrease as the size of the firm increases.

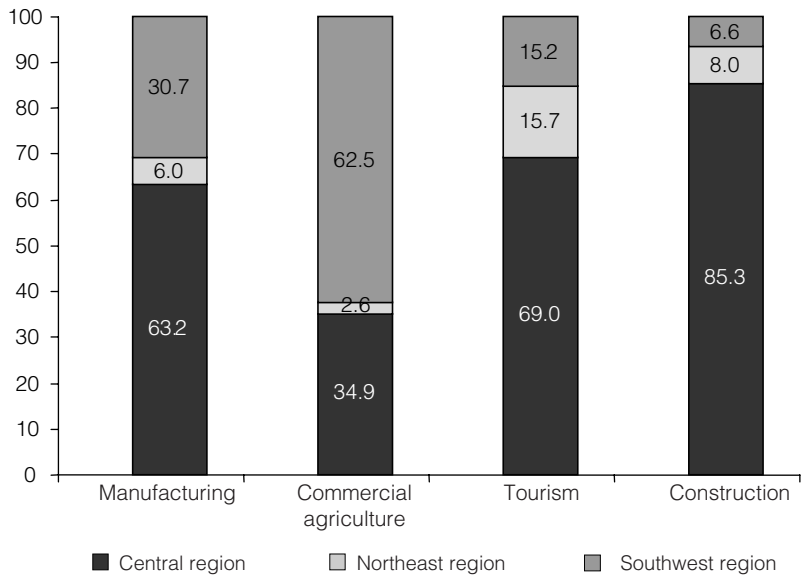
The share of white-collar workers also varies among manufacturing subsectors—ranging from 25.5 percent in the textile and leather products subsector to 49.5 percent in the furniture subsector. There are several competing explanations for this pattern, including structural differences and variations in production technologies among subsectors. In addition, white-collar workers are a kind of overhead cost that can be spread over the greater number of employees in larger firms.

Table A2.2 Employment in Selected Sectors by Firm Size Class and Subsector, Uganda, 2001/02

Sector and subsector	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)	Total
Manufacturing				
Agro-industry	4,223	1,521	29,716	35,460
Chemicals and paints	562	445	797	1,804
Construction materials	736	369	743	1,848
Furniture	1,902	175	135	2,212
Metals	1,249	730	1,494	3,473
Paper, printing, and publishing	927	150	1,026	2,103
Plastics	261	367	330	958
Textiles and leather products	914	299	2,767	3,980
Wood	444	108	238	790
Total	11,218	4,164	37,246	52,628
Tourism				
Hotels	7,050	1,073	1,995	10,118
Transport	217	118	0	335
Total	7,267	1,191	1,995	10,453
Construction				
Building completion	145	0	0	145
Building installation	117	0	0	117
Complete construction	1,017	909	4,465	6,391
Total	1,279	909	4,465	6,653
Commercial agriculture				
Cereals	200	0	255	455
Crops, animal husbandry	605	0	0	605
Vegetables, nursery products	75	60	3,857	3,992
Other animal farming	133	0	0	133
Fruits, nuts, beverages	174	692	5,781	6,647
Total	1,187	752	9,893	11,832
All sectors	20,951	7,016	53,599	81,566

Source: Uganda Bureau of Statistics census of firms, 2001/02.

Figure A2.1 Geographic Distribution of Employment by Sector, Uganda, 2001/02
(percent)



Source: Uganda Bureau of Statistics census of firms, 2001/02.

Change in Employment, 1998–2002

Employment data for 1998, 2000, and 2002 are available only for firms that existed throughout the entire period and thus exclude firms entering or exiting during this time. In the overall sample permanent employment grew from 30,104 in 1998 to 31,056 in 2002 for firms that existed over the entire period (table A2.4). But as performance varied among sectors, a significant reallocation of labor occurred. While permanent employment boomed in commercial agriculture (increasing by 23.4 percent in 1998–2000 and by 19.1 percent in 2000–02) and grew significantly in construction and tourism in 1998–2002, it declined in manufacturing.

In manufacturing as a whole permanent employment declined by 8.6 percent in 1998–2002. Firms in agro-industry and metals were hit hardest, with declines in permanent employment of 13.3 percent and 25.3 percent. By contrast, other subsectors experienced moderate or even large growth in permanent employment. (The 100 percent increase in employment in the wood subsector in 1998–2002 should be viewed with caution, since the sample includes only seven firms in this subsector.) Small and medium-size firms saw permanent employment increase, while micro and large firms experienced significant declines.

Worker Characteristics

Labor productivity depends largely on the characteristics of workers, such as their age, education level, and years of experience. The firm-level survey data suggest that the Ugandan labor force is fairly experienced and reasonably well educated but faces health issues (including HIV/AIDS) that will need to be

Table A2.3 White-Collar Workers as a Share of Permanent Employment in Selected Sectors by Firm Size Class, Uganda
(percent)

Sector and subsector	Micro (<10 employees)	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)	All firm size classes
Commercial agriculture	35.0	25.4	100.0	5.6	18.8
Construction	80.0	20.6	30.0	38.9	31.8
Manufacturing	59.2	37.2	29.4	26.3	38.1
Agro-industry	51.0	41.3	38.8	28.2	39.2
Chemicals and paints	33.3	54.3	19.7	13.1	34.8
Construction materials	100.0	38.6	23.5	15.1	36.9
Furniture	68.1	35.6	49.2	35.6	49.5
Metals	34.8	33.7	—	32.2	33.5
Paper, printing, and publishing	22.5	31.7	16.8	35.6	28.3
Plastics	—	34.0	11.1	32.0	30.4
Textiles and leather products	100.0	18.8	23.3	22.9	25.5
Wood	100.0	30.2	13.6	—	39.1
Tourism	22.2	13.1	18.6	13.0	15.7
Full sample	56.6	34.5	29.0	21.9	34.3

— Not available.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

addressed to improve productivity. (For data on employees and HIV in all sectors, see table A2.12 at the end of this appendix.) This section draws on data from interviews in early 2003 of a subsample of 1,803 employees, mainly in manufacturing but also in commercial agriculture, construction, and tourism.[2]

Origin

Most of the labor force in manufacturing comes from two regions in Uganda—central (36.4 percent) and eastern (20.9 percent; table A2.5). Workers originating from the central region account for about 34–40 percent of total employment in the firms surveyed. This is hardly surprising, because most formal enterprises are also located in this region. This suggests that internal migration to find employment is not widespread; workers tend to find work close to home. Within each region, the majority of workers in manufacturing also originate from that region (table A2.6). For manufacturing firms in the central region 52.4 percent of workers originate from that region. For firms in the northeast region, the share is about 70 percent, and for those in the southwest region, it rises to 84 percent. The smaller share of manufacturing workers with local origins in the central region suggests that

(continued on page 108)

Table A2.4 Change in Permanent Employment in Selected Sectors, Uganda, 1998–2002

Sector, subsector, and firm size class	Permanent employment 1998	Change 1998–2000		Permanent employment 2000	Change 2000–02		Permanent employment 2002	Change 1998–2002	
		Total	Percent		Total	Percent		Total	Percent
Commercial agriculture	5,232	1,224	23.39	6,456	1,235	19.13	7,691	2,459	47.00
Construction	911	97	10.65	1,008	29	2.88	1,037	126	13.83
Manufacturing	22,861	1,096	4.79	23,957	–3,069	–12.81	20,888	–1,973	–8.63
Subsector									
Agro-industry	15,717	1,144	7.28	16,861	–3,238	–19.20	13,623	–2,094	–13.32
Chemicals and paints	386	98	25.39	484	100	20.66	584	198	51.30
Construction materials	1,152	117	10.16	1,269	284	22.38	1,553	401	34.81
Furniture	304	36	11.84	340	47	13.82	387	83	27.30
Metals	4,046	–520	–12.86	3,526	–505	–14.32	3,021	–1,025	–25.34
Paper, printing, and publishing	696	74	10.63	770	44	5.71	814	118	16.95
Plastics	103	–1	–0.97	102	16	15.69	118	15	14.56
Textiles and leather products	289	40	13.84	329	123	37.39	452	163	56.40
Wood	168	108	64.29	276	60	21.74	336	168	100.00
Firm size class (employees)									
Micro (<10)	129	–11	–8.53	118	–12	–10.17	106	–23	–17.83
Small (10–49)	1,282	136	10.58	1,418	99	6.98	1,517	235	18.30
Medium-size (50–99)	734	355	48.37	1,089	136	12.49	1,225	491	66.89
Large (100+)	20,716	616	2.97	21,332	–3,292	–15.43	18,040	–2,676	–12.92
Tourism	1,100	384	34.91	1,484	–44	–2.96	1,440	340	30.91
Total	30,104	2,801	9.30	32,905	–1,849	–5.62	31,056	952	3.16

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table A2.5 Employees in All Sectors by Job Category and Geographic Origin, Uganda
(percent)

Geographic origin	Management	Professionals	Skilled production workers	Unskilled production workers	Non-production workers	All job categories
Northern Uganda	4.67	5.33	9.11	4.49	11.21	6.81
Eastern Uganda	15.42	12.43	27.08	19.39	27.41	20.87
Western Uganda	17.52	18.93	14.06	17.35	17.76	16.91
Southwestern Uganda	6.78	7.69	10.68	16.94	8.41	10.77
Central Uganda	35.75	36.69	34.38	40.00	33.96	36.38
Europe	1.87	2.37	0.78	0.41	0.31	1.00
Asia	10.98	14.20	1.56	1.22	0.31	4.69
Other East Africa	3.04	1.18	1.04	0.00	0.62	1.17
Other Africa	2.34	1.18	1.30	0.20	0.00	1.00
Other	1.64	0.00	0.00	0.00	0.00	0.39

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

internal migration, when it occurs, is directed mainly toward that region.

Age

Workers in the firm sample are on average about 32.5 years old (table A2.7). Workers in tourism tend to be the youngest (about 29.6 years), and those in construction the oldest (37.3 years). Women in the sample are slightly younger than their male colleagues (about 30 years old, compared with 33 years for men). The labor force in manufacturing (with an average age of 32.5 years) is slightly younger than that in Kenya (36 years). Not surprisingly, the oldest employees in manufacturing are managers (with an average age of 37.8 years), while most staff in other positions are younger (figure A2.2). Thus age and employment rank appear to be correlated in the Ugandan sample, similar to the findings of other RPED manufacturing surveys in Africa.

Younger workers tend to be concentrated in micro firms, and older ones in larger firms (see table A2.7). Moreover, there is an almost perfect linear relationship between the age of workers and the size class of firms. Small firms appear to serve as an entry point for newcomers who cannot obtain jobs in larger firms with more stringent skill requirements.

Tenure

The tenure of workers (the length of time they have been employed at their firm) averages about 5.2 years across all sectors (table A2.8). Average tenure is longest in construction (7.7 years) and shortest in tourism (3.7 years). Female workers have a shorter average tenure (4.7 years) than their male colleagues (5.3 years).

In manufacturing the average tenure is about 5.2 years. Managers stayed with their firm the longest (7 years), and unskilled workers the shortest time (4.3 years). Firms in the plastics and wood subsectors tend to keep their employees longer than do those in other subsectors, with average tenures of 7.2 and 6.3 years. Prior experience in other manufacturing firms is also significant. Employees had an average of about 3.9 years' experience in self-employment or employment at another company before joining their present firm.

Table A2.6 Manufacturing Employees by Job Category, Firm Location, and Geographic Origin, Uganda
(percent)

Firm location	Employee's Geographic origin	Management	Professionals	Skilled production workers	Unskilled production workers	Non-production workers	All job categories
Central region	Northern Uganda	0.86	2.70	8.53	3.73	13.50	5.64
	Eastern Uganda	9.91	9.01	23.22	17.43	24.54	17.12
	Western Uganda	10.34	18.02	9.95	8.71	14.11	11.38
	Southwestern Uganda	1.29	8.11	6.16	4.15	1.23	3.86
	Central Uganda	52.59	42.34	47.87	65.56	45.40	52.40
	Europe	1.72	1.80	0.95	0.41	0.61	1.04
	Asia	14.22	16.22	1.42	0.00	0.00	5.64
	Other East Africa	4.74	0.90	0.95	0.00	0.61	1.57
	Other Africa	2.59	0.90	0.95	0.00	0.00	0.94
	Other	1.72	0.00	0.00	0.00	0.00	0.42
Northeast region	Northern Uganda	5.26	11.11	10.94	8.06	21.21	10.22
	Eastern Uganda	57.89	33.33	60.94	70.97	51.52	60.44
	Western Uganda	5.26	11.11	1.56	1.61	6.06	3.56
	Southwestern Uganda	0.00	0.00	3.13	0.00	3.03	1.33
	Central Uganda	17.54	33.33	18.75	19.35	18.18	19.11
	Asia	12.28	11.11	3.13	0.00	0.00	4.44
	Other Africa	1.75	0.00	1.56	0.00	0.00	0.89
Southwest region	Northern Uganda	6.00	0.00	2.04	4.72	2.56	3.95
	Eastern Uganda	6.00	11.11	4.08	1.89	5.13	3.95
	Western Uganda	38.00	33.33	42.86	45.28	46.15	43.08
	Southwestern Uganda	40.00	33.33	44.90	40.57	41.03	41.11
	Central Uganda	6.00	11.11	0.00	6.60	5.13	5.14
	Europe	0.00	0.00	2.04	0.00	0.00	0.40
	Asia	2.00	11.11	2.04	0.00	0.00	1.19
	Other East Africa	0.00	0.00	2.04	0.00	0.00	0.40
	Other Africa	0.00	0.00	0.00	0.94	0.00	0.40
	Other	2.00	0.00	0.00	0.00	0.00	0.40

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table A2.7 Average Age of Employees in Selected Sectors by Firm Size Class and Gender, Uganda
(years)

Sector and gender	Micro (<10 employees)	Small (10–49 employees)	Medium-size (50–99 employees)	Large (100+ employees)	All firm size classes
Commercial agriculture					
Male	37.6	36.8	31.3	33.1	34.7
Female	30.0	27.7	28.0	33.1	30.8
All employees	35.9	34.6	30.9	33.1	33.8
Construction					
Male	42.0	37.5	—	39.3	38.5
Female	—	32.1	—	34.7	33.6
All employees	42.0	36.4	—	38.1	37.3
Manufacturing					
Male	29.3	31.8	34.5	36.5	33.0
Female	28.3	29.6	30.6	31.3	30.3
All employees	29.2	31.4	33.5	35.3	32.5
Tourism					
Male	34.5	29.9	32.0	32.6	31.9
Female	26.5	25.7	24.2	28.2	26.0
All employees	31.5	28.2	29.1	31.0	29.6
Full sample	30.1	31.6	32.5	34.8	32.5

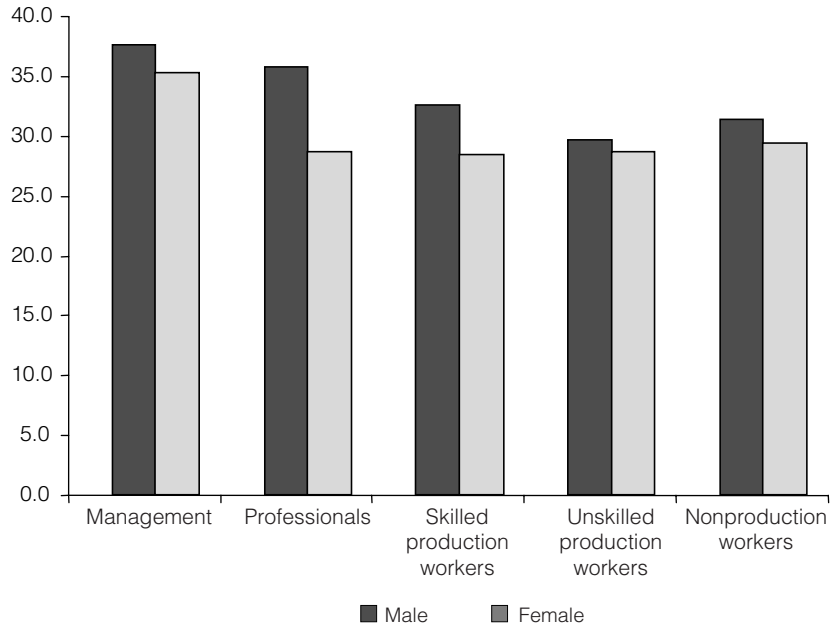
— Not available.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table A2.8 Employees' Experience in Selected Sectors by Gender, Uganda
(years)

	Tenure			Prior experience		
Sector	Male	Female	All employees	Male	Female	All employees
Commercial agriculture	5.5	5.4	5.5	5.4	1.2	4.5
Construction	7.8	7.6	7.7	5.6	2.5	4.9
Manufacturing	5.3	4.9	5.2	4.1	2.6	3.9
Tourism	4.2	2.8	3.7	4.1	1.8	3.3
Full sample	5.3	4.7	5.2	4.3	2.3	3.9

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Figure A2.2 Average Age of Manufacturing Employees by Gender and Job Category, Uganda
(years)



Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Education and Training

The links between economic growth and education level are well understood. The externalities generated by education (greater adaptability, easier learning-by-doing) increase the stock of human capital, resulting in higher productivity and growth. At independence Uganda had one of the best education systems in Sub-Saharan Africa. Because of neglect during the Amin era and subsequent economic difficulties, many parts of the system are now in poor condition. Nonetheless, education is still highly valued, and standards have not slipped as badly as might be expected (EIU 2002). In general, the government's policy is to shift funds from secondary and tertiary to primary education. The authorities have also emphasized the need to achieve gender equality. The survey data reflect these trends.

Overall, the Ugandan labor force is fairly well educated. Across all sectors only 3.8 percent of the workers interviewed reported having no education (table A2.9). For about 19 percent of the workers the highest level achieved is primary education, and for 31 percent, secondary education. The predominance of secondary education in the labor force is similar to that in other Sub-Saharan African countries surveyed. About 16 percent of the workers have completed university education. While gender differences exist, they are smaller than those in other Sub-Saharan African countries surveyed?. Interestingly, many more female workers have completed vocational or technical training (34.4 percent) than male workers have (28.6 percent).

The education level of workers in Uganda varies widely across sectors and firm size classes. The construction industry employs the most educated workers. Almost 45 percent of the workers in this sector have a university or professional degree (table A2.10). For other sectors this share is between 14.8 percent and 16.1 percent.

Table A2.9 Employees in Selected Sectors by Gender and Highest Level of Education Achieved, Uganda
(percent)

Education level achieved	Male	Female	All employees
None	3.72	4.10	3.80
Primary	20.80	12.02	19.01
Secondary	29.44	38.25	31.25
Technical or vocational	28.60	34.43	29.79
Bachelor's degree	11.88	7.92	11.07
Master's degree or higher	3.44	1.91	3.13
Professional	2.11	1.37	1.96

Note: Data are for the commercial agriculture, construction, manufacturing, and tourism sectors.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table A2.10 Employees in Selected Sectors by Highest Level of Education Achieved, Uganda
(percent)

Sector, subsector, and firm size class	None	Primary	Secondary	Technical or vocational	Bachelor's degree	Master's degree or higher	Professional
Commercial agriculture	8.70	24.64	31.88	18.84	12.32	2.17	1.45
Construction	0.00	2.90	17.39	34.78	23.19	18.84	2.90
Manufacturing	3.85	20.32	31.46	29.57	10.30	2.59	1.89
Subsector							
Agro-industry	5.06	23.95	29.34	25.13	11.80	2.53	2.19
Chemicals and paints	1.14	14.77	34.09	27.27	14.77	5.68	2.27
Construction materials	3.94	16.75	29.06	37.44	7.88	2.46	2.46
Furniture	3.68	29.47	37.89	25.26	1.58	0.53	1.58
Metals	8.16	18.37	35.71	27.55	7.14	2.04	1.02
Paper, printing, and publishing	0.00	7.89	28.07	41.23	16.67	3.51	2.63
Plastics	3.85	3.85	30.77	46.15	3.85	11.54	0.00
Textiles and leather products	0.00	8.43	34.94	32.53	21.69	2.41	0.00
Wood	0.00	31.25	31.25	37.50	0.00	0.00	0.00
Firm size class (employees)							
Micro (<10)	10.13	29.75	36.08	18.35	5.06	0.00	0.63
Small (10–49)	3.18	24.89	34.44	28.51	7.38	1.45	0.14
Medium-size (50–99)	4.95	16.83	30.20	31.68	9.90	3.47	2.97
Large (100+)	1.86	9.84	24.73	35.11	18.09	5.32	5.05
Tourism	0.65	9.03	34.84	39.35	11.61	1.94	2.58

Source: World Bank, Investment Climate survey, Uganda, 2002/03..

While 14.8 percent of workers in manufacturing have a higher education, this share differs widely among subsectors. The largest shares of workers with a university or professional degree are found in subsectors with significant technological or educational requirements: textiles and leather products (24.1 percent), chemicals and paints (22.7 percent), and paper, printing, and publishing (22.8 percent). Workers with secondary education account for 28–38 percent of the labor force in manufacturing subsectors.

Not surprisingly, those in manufacturing with university or professional degrees tend to work for large firms. University graduates, postgraduates, and professionally trained workers make up about 28.5 percent of the workforce of large firms, but only 6–16 percent of the workforce in other size classes.

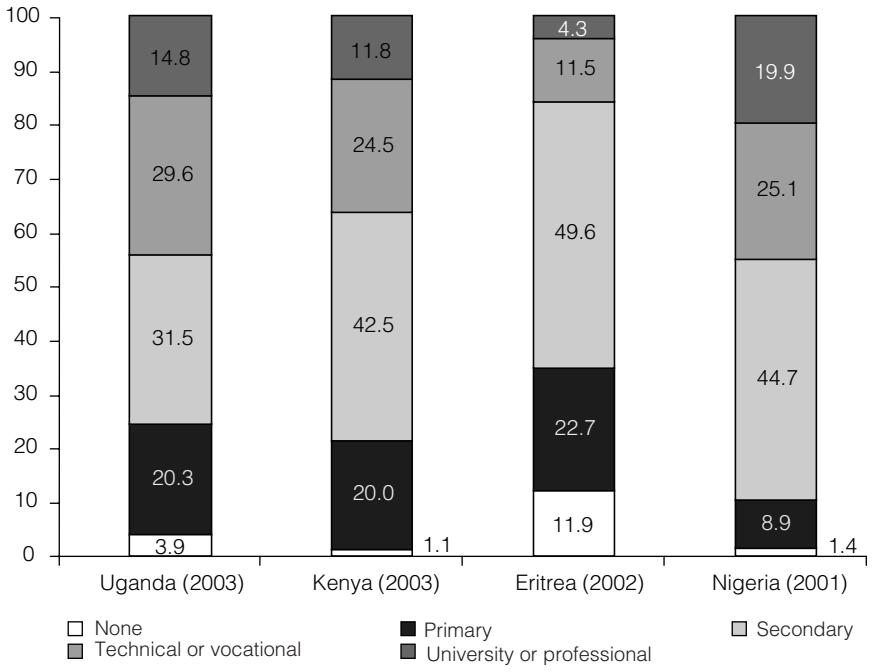
Uganda compares quite favorably with other African countries for which recent survey data are available (figure A2.3). It is second only to Nigeria in higher education and has the largest share of employees with vocational or technical training.

Estimates of Earnings Functions

Data on workers' earnings in Uganda show differences across regions and subsectors. To identify the causes of these earnings differentials, a few wage equations were estimated, with the log of individual earnings as the dependent variable. The results are shown in table A2.11.

Two pairs of equations were estimated, both for all four sectors surveyed (commercial agriculture,

Figure A2.3 Manufacturing Employees by Highest Level of Education Achieved, Selected African Countries
(percent)



Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Eritrea (2002), Kenya (2003), and Nigeria (2001).

Table A2.11 Estimates of Wage Determinants in Selected Sectors, Uganda

	All sectors[a]		Manufacturing	
Variable	**(1)**	**(2)**	**(3)**	**(4)**
Intercept	2.663***	3.228***	2.813***	2.633***
	(20.11)	(16.29)	(21.07)	(11.69)
Worker characteristics				
Education in years	0.090***	0.083***	0.082***	0.076***
	(12.26)	(12.38)	(11.10)	(11.40)
Experience with firm in years	0.034**	0.038***	0.045***	0.053***
	(2.40)	(3.02)	(3.77)	(4.58)
Experience in years squared	0.000	–0.001	–0.001***	–0.001***
	(–0.47)	(–1.07)	(–2.68)	(–3.52)
Other professional experience in years	0.045***	0.041***	0.049***	0.042***
	(7.06)	(7.12)	(7.28)	(6.73)
Gender dummy variable	0.085	0.122**	0.024	0.127**
(1 if male, 0 otherwise)	(1.41)	(2.11)	(0.38)	(2.11)
Weekly hours worked	0.006***	0.004***	0.005***	0.002
	(4.65)	(3.23)	(3.77)	(1.55)
Training dummy variable	0.371***	0.367***	0.384***	0.351***
(1 if postschool training, 0 otherwise)	(5.91)	(6.13)	(5.59)	(5.55)
Sector or subsector dummy variables	No	Yes***	No	Yes[b]
Firm characteristics				
Age in years		0.001		0.000
		(0.55)		(–0.27)
Central region dummy variable		0.420***		0.455***
(1 if in central region, 0 otherwise)		(7.65)		(8.28)
Foreign ownership dummy variable		0.350***		0.344***
(1 if 50 percent or more of capital is foreign)		(6.41)		(6.09)
Observations	1,442	1,442	1,232	1,232
F-statistic	75.680	58.583	65.594	42.544
R^2	0.270	0.348	0.273	0.387

*** Significant at the 5 percent level.*

**** Significant at the 1 percent level.*

Note: Dependent variable is the log of individual earnings. Equations have been estimated using ordinary least squares. Figures in parentheses are White's consistent t*-ratios, used to correct for heteroskedasticity in the data.*

a. Data are for the commercial agriculture, construction, manufacturing, and tourism sectors.

b. Partially significant.

Source: Authors' calculations based on data from World Bank, Investment Climate survey, Uganda, 2002/03.

construction, manufacturing, and tourism) and for manufacturing alone. The first pair (shown as 1 and 3 in the table), basic wage equations related to the individual characteristics of workers (Mincer 1974), assume that employers are able to discern differences in productivity among workers depending on their education level, gender, and experience. The second pair of equations (2 and 4) differ from the first in their inclusion of sector or subsector dummy variables and firm-specific variables (for ease of reading, the dummy variables are not reported in the table). Equation 2, estimated over the entire sample of workers, includes sector dummy variables referring to the four sectors surveyed, while equation 4, estimated only for the subsample of workers employed in manufacturing, includes subsector dummy variables referring to subsectors such as agro-industry, chemicals and paints, and so on.

In both samples of workers, whether for the basic wage equation or the augmented variant with firm-specific effects, the variables relating to human capital—years of education, years of experience with the firm, other work experience—all have the expected positive effect and are statistically significant. Thus the greater a worker's endowment of human capital, the higher his or her wages are. Formal training also has a positive and significant effect. The variable "weekly hours worked" is significant except in equation 4, suggesting that earnings have less correlation with hours worked in manufacturing than in other sectors. One possible explanation is that for Ugandan manufacturing workers, the share of bonuses in earnings is among the smallest found in RPED industry surveys in Sub-Saharan Africa.

In both samples the gender dummy variable is highly significant only in the augmented equations with firm-specific effects. This result suggests that gender discrimination becomes an issue only for workers employed by firms in the central region or by non-Ugandan firms.

In both samples sector or subsector dummy variables are often significant, as are some firm-specific variables. Working for firms located in the central region or for firms with foreign ownership entails higher earnings in both samples. The age of the firm is insignificant in both samples, however, suggesting that if firms benefit from any reputational effects, they do not pass the benefits on to workers.

The results suggest that a purely competitive model is not relevant for explaining the process of wage formation in Uganda, whether in the full sample of workers or in the manufacturing sample. In a purely competitive model of wage formation none of the firm-specific and sector dummy variables would be significant.

Notes

1. The formal labor market, as defined here, does not include employment with the central administration. The data are for firms with 10 or more employees.
2. The interviews covered 1,436 workers in manufacturing, 160 in tourism, 138 in commercial agriculture, and 69 in construction. Because of the small number of interviews in sectors other than manufacturing, results for these sectors are only indicative.

Additional Tables on the Labor Market

Table A2.12 Employees and HIV in Selected Sectors, Uganda

Job category	Rating of HIV/AIDS as a concern (1 = lowest, 5 = highest)	Share knowing where to be tested (percent)	Share willing to pay to be tested at their firm if testing is voluntary and anonymous (percent)	Amount employees would be willing to pay to be tested at their firm (Uganda shillings)	
				Average	Maximum
Management	4.04	91.31	71.60	9,353.04	100,000.00
Professionals	4.28	92.90	77.25	8,359.52	100,000.00
Skilled production workers	4.23	84.33	75.72	4,516.96	50,000.00
Unskilled production workers	3.90	80.41	67.35	3,235.42	50,000.00
Nonproduction workers	4.08	83.18	72.19	5,567.26	100,000.00
All job categories	4.07	85.52	72.00	5,913.15	100,000.00

Note: Data are for the commercial agriculture, construction, manufacturing, and tourism sectors.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table A2.13 Manufacturing Employees by Method of Payment, Uganda
(percent)

	Hourly	Daily	Weekly	Monthly	By the piece
Job category					
Management	0.31	4.04	1.55	88.20	5.90
Professionals	0.00	0.79	0.79	96.85	1.57
Skilled production workers	0.00	3.42	4.66	82.61	9.32
Unskilled production workers	0.24	11.98	3.91	63.57	20.29
Nonproduction workers	0.00	3.40	5.53	89.36	1.70
All job categories	0.14	5.80	3.53	80.78	9.75
Production workers (skilled and unskilled)					
Subsector					
Agro-industry	0.35	7.96	3.81	79.58	8.30
Chemicals and paints	0.00	5.13	7.69	82.05	5.13
Construction materials	0.00	1.10	3.30	82.42	13.19
Furniture	0.00	8.59	4.69	55.47	31.25
Metals	0.00	22.22	9.52	41.27	26.98
Paper, printing, and publishing	0.00	1.92	0.00	98.08	0.00
Plastics	0.00	0.00	8.33	91.67	0.00
Textiles and leather products	0.00	22.22	2.78	58.33	16.67
Wood	0.00	0.00	0.00	42.86	57.14
Firm size class (employees)					
Micro (<10)	0.00	14.71	0.00	62.75	22.55
Small (10–49)	0.00	10.43	4.01	62.30	23.26
Medium-size (50–99)	0.00	5.26	5.26	89.47	0.00
Large (100+)	0.63	0.63	6.88	90.00	1.88
All production workers	0.14	8.21	4.24	71.96	15.46

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table A2.14 Monthly Earnings of Unskilled Production Workers in Manufacturing, Uganda

	U.S. dollars	Uganda shillings
Subsector		
Agro-industry		
Average value	48.71	85,250.03
	(55.5)	(97,104.9)
Observations	140	140
Chemicals and paints		
Average value	89.74	157,053.62
	(68.1)	(119,230.4)
Observations	23	23
Construction materials		
Average value	57.91	101,343.05
	(54.3)	(95,002.8)
Observations	39	39
Furniture		
Average value	36.29	63,510.05
	(26.9)	(47,150.8)
Observations	73	73
Metals		
Average value	90.53	158,431.37
	(82.0)	(143,556.3)
Observations	34	34
Paper, printing, and publishing		
Average value	109.25	191,188.41
	(75.3)	(131,724.8)
Observations	23	23
Plastics		
Average value	66.12	115,714.29
	(28.0)	(49,078.7)
Observations	7	7
Textiles and leather products		
Average value	38.80	67,892.16
	(18.5)	(32,310.2)
Observations	17	17
Wood		
Average value	47.14	82,500.00
	(13.5)	(23,629.1)
Observations	4	4

	U.S. dollars	Uganda shillings
Firm size class (employees)		
Micro (<10)		
Average value	55.76	97,578.70
	(69.9)	(122,305.9)
Observations	72	72
Small (10–49)		
Average value	49.47	86,567.01
	(40.8)	(71,431.2)
Observations	182	182
Medium-size (50–99)		
Average value	55.52	97,168.40
	(29.6)	(51,832.8)
Observations	48	48
Large (100+)		
Average value	86.39	151,190.88
	(91.3)	(159,715.0)
Observations	58	58
Firm location		
Central region		
Average value	67.03	117,308.13
	(66.4)	(116,219.8)
Observations	222	222
Northeast region		
Average value	46.93	82,133.33
	(60.2)	(105,393.3)
Observations	45	45
Southwest region		
Average value	39.79	69,630.24
	(19.9)	(34,747.8)
Observations	93	93
All unskilled production workers		
Average value	57.48	100,594.49
	(58.4)	(102,223.2)
Observations	360	360

Note: Computed on the basis of the earnings reported by workers in early 2003 and converted into U.S. dollars using the official exchange rate of $1 = 1,750 USh. Figures in parentheses are standard deviations.
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

The succession of extreme events in Uganda since its independence in 1962 has been detrimental to the development of its manufacturing sector, which remains small. At the end of the 1990s manufacturing accounted for about 8.7 percent of GDP in Uganda, compared with an average of about 12 percent in other low- and middle-income countries in Sub-Saharan Africa (World Bank 2001). In 1994–99 formal manufacturing provided about 5.4 percent of export earnings and employed about 50,000 people, around 0.5 percent of the available labor force (World Bank 2001; WTO 2001).

The ability to trade competitively is crucial to Uganda's economic development, as is implementing an appropriate set of policies to promote competitiveness (Bonaglia and Fukasaku 2002). This appendix analyzes the level of protection granted to the Ugandan manufacturing sector based on the firm-level data collected in the 2002/03 survey by the World Bank's Regional Program on Enterprise Development (RPED).

Overview of Trade Policy Reforms

During the period following independence, Uganda's export earnings came mainly from agricultural commodities. In the 1970s, as in many other African countries, trade policy in Uganda was characterized by heavy taxation of exports and significant quantitative restrictions on imports (Collier 1997).

Coffee was among the few exports that survived the economic mismanagement of the 1970s because coffee production requires few inputs and coffee could be largely smuggled abroad (Henstridge 1996). As a result, coffee exports accounted for about 94 percent of merchandise export revenue in 1982 (EIU 2002).[1] This dominance of coffee helps explain why Uganda's trade policies in the 1970s and early 1980s were heavily influenced by conditions in the world coffee market (Morrissey and Rudaheranwa 1998).

Moreover, coffee export earnings influenced the exchange rate and the administered coffee producer prices. The dominance of coffee in export earnings and government revenue explains the persistent overvaluation of the exchange rate, which was fixed until the mid-1980s. In addition, tight foreign exchange allocation procedures discouraged alternative international activities (Morrissey and Rudaheranwa 1998).

Faced with a dramatic economic situation, the government launched a comprehensive economic recovery program in 1987 with support from the World Bank, the International Monetary Fund, and other donors. The focus of the recovery program shifted in the early 1990s from economic growth and macroeconomic stabilization to structural reforms. Several measures were taken to foster international trade, which had come to be viewed as the major engine of economic growth.

Among the most important measures was to liberalize the foreign exchange market, which had become a major impediment to growth. The government made rapid progress in deregulating this market. Initially the exchange rate policy involved repeated devaluation and rationing of the available foreign exchange under various mechanisms. But by 1993–94 the exchange rate was determined entirely by the market and exporters were no longer forced to surrender their export receipts.

In addition, the government has pursued a persistent policy of trade liberalization since 1987:

- In 1991 the government removed most nontariff barriers.
- The government has gradually alleviated the bureaucracy surrounding imports, though there remains room for improvement (Collier 1997). The RPED survey data show that in 2003 customs clearance for manufacturers still took an average of 5.8 days and as long as 11.2 days
- The government shifted the structure of trade taxes from export taxation to import taxation. It abolished the coffee tax (or stabilization tax),

which once provided a large part of government revenues, in 1996. Needing to maintain and even increase revenues, it then shifted the burden of taxation toward imports.[2] Import taxes thus became the main instrument of trade policy, but their rates gradually declined as import liberalization proceeded. The first round of liberalization occurred in 1992, with ad valorem rates ranging from 10 percent to 60 percent. This range was reduced to 10–50 percent in 1994. In 1996 the highest tariff was 30 percent, and in 2002–03 it was 15 percent. The simple average for the manufacturing sector was 8.2 percent in 2001–02. The maximum rate of 15 percent applies mostly to imports of manufactured tobacco, clothing, furniture (except metal), and plastic products.

Uganda has also promoted trade relations with other developing countries through regional integration, such as through the Common Market of Eastern and Southern Africa (COMESA) and the East African Community. Tariff rates on imports from COMESA countries, notably Kenya and Tanzania, were 0, 4, and 6 percent in 2001/02.

Structure of Nominal Protection

The dramatic changes in Uganda's trade policy regime in the past decade and a half call for an assessment of the present situation. This section analyzes the structure of nominal protection based on the existing duty scheme and a subsample of 228 manufacturing firms from the 2002/03 RPED survey.[3] It first estimates the overall level of nominal protection and compares it with that in other countries. Because this analysis is based on official schedules and does not take into account the fact that firms have multiple outputs and inputs, often subject to different duties, it is also necessary to compute firm-level indexes of nominal protection.

Tariff and Nontariff Nominal Protection

Tariff protection in Uganda has been drastically reduced over time (table A3.1). Agriculture faced the largest reduction in tariff protection, with the average tariff decreasing from 21.7 percent in 1994 to 12.32 percent in 2002. Manufacturing also had a big decline in protection, with tariffs decreasing from 17.8 percent in 1994 to 10.6 percent in 2002.

Table A3.1 Applied Tariffs by Major Commodity Group, Uganda, Selected Years, 1994–2002
(percent)

	1994		2000		2002	
Commodity group	**Simple average**	**Weighted average**	**Simple average**	**Weighted average**	**Simple average**	**Weighted average**
Agricultural, forestry, and fishery products	21.70	17.25	12.34	2.49	12.32	2.81
Mineral commodities	11.48	9.25	7.69	6.41	7.65	7.16
Manufactured commodities	17.80	18.48	10.85	8.11	10.62	8.16
Other commodities	15.61	29.78	10.18	14.95	10.66	14.33

Source: UNCTAD, TRAINS database and Standard Industrial Classification (SIC) system.

With the strong emphasis on trade liberalization, including the elimination of all quantitative restrictions, tariffs have become the main trade policy instrument in Uganda. By 2001–02 tariff protection in Uganda was based primarily on three ad valorem rates—0, 7, and 15 percent—applied on the CIF (cost, insurance, and freight) value of imports. The average most-favored-nation tariff was around 9 percent. About 16.1 percent of tariff lines were duty free, and 83.9 percent dutiable.[4] There were no recorded international or national tariff peaks (WTO 2003).[5]

Comparisons of tariff data with two country groups confirm that Uganda made deep reductions.[6] In 2002 tariff protection in Uganda was lower than the average rates applied in both least developed countries and Sub-Saharan African countries, whatever the sector, including manufacturing (table A3.2; figure A3.1). Indeed, tariff protection in Uganda was closer to that in industrial countries, and for agricultural goods it was even lower.

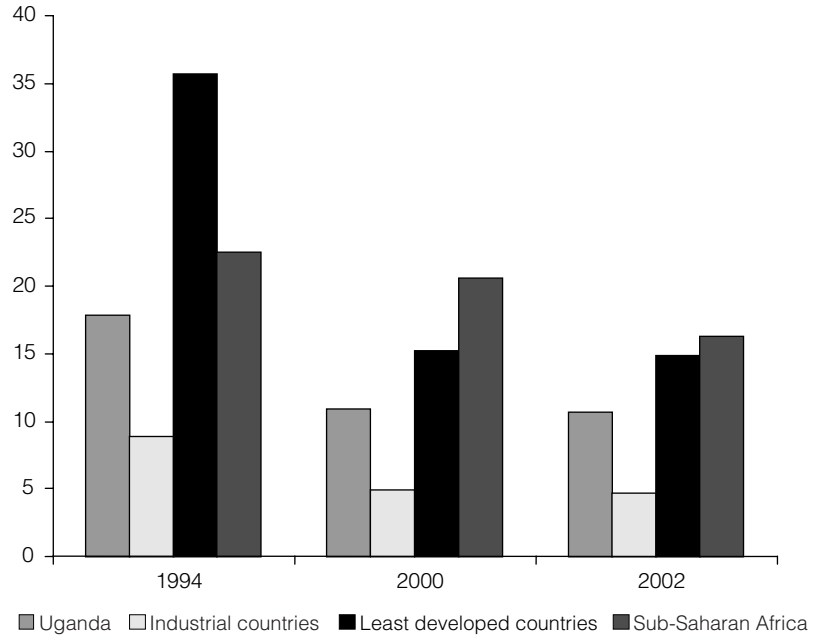
On the basis of the tariff schedule, Uganda's trade policy regime now seems fairly liberal. But

Table A3.2 Weighted Average Tariffs by Major Commodity Group, Uganda and Selected Country Groups, Selected Years, 1994–2002
(percent)

Country or country group and commodity group	1994	2000	2002
Uganda			
Agricultural, forestry, and fishery products	17.25	2.49	2.81
Mineral commodities	9.25	6.41	7.16
Manufactured commodities	18.48	8.11	8.16
Other commodities	29.78	14.95	14.33
Industrial countries			
Agricultural, forestry, and fishery products	5.57	3.52	3.62
Mineral commodities	0.33	1.36	0.01
Manufactured commodities	8.05	5.38	4.86
Other commodities	0.34	0.08	0.10
Least developed countries			
Agricultural, forestry, and fishery products	35.40	8.25	7.10
Mineral commodities	51.65	15.91	15.40
Manufactured commodities	69.81	20.03	17.74
Other commodities	44.12	15.79	14.96
Sub-Saharan Africa			
Agricultural, forestry, and fishery products	7.79	14.70	6.58
Mineral commodities	15.92	20.96	8.42
Manufactured commodities	15.59	18.10	14.22
Other commodities	27.14	22.39	18.00

Source: UNCTAD, TRAINS database and Standard Industrial Classification (SIC) system.

Figure A3.1 Simple Average Tariffs for Manufactured Commodities, Uganda and Selected Country Groups, Selected Years, 1994–2002
(percent)



Source: UNCTAD, TRAINS database and Standard Industrial Classification (SIC) system.

tariffs are not the only policy tool affecting the domestic price of tradable goods in Uganda. Some nontariff restrictions are still in force, mainly for moral, health, security, or similar reasons (WTO 2001). These restrictions, all computed on an ad valorem basis, include an import license commission of 2 percent and a withholding tax of 4 percent collected on all imports (though the withholding tax has been waived on all imported raw materials; WTO 201). Internal taxes include an excise tax and a value added tax. An excise duty in the 10–15 percent range is levied on many goods, imported or locally produced.[7] And a value added tax of 17 percent applies to most imported or domestically produced goods, with the important exception of unprocessed agricultural products (WTO 2001).

Because of the multiple taxes affecting the domestic price of imports, restricting the analysis to tariffs could be misleading. A proper picture of nominal protection in Uganda can be obtained by using nominal protection coefficients, which allow an analysis of the pattern and level of protection, based on the latest available official data. The nominal protection coefficient is usually defined as the ratio of the appropriately adjusted domestic price to a comparable world price. When a protection regime is based entirely on ad valorem duties and there are no quantitative restrictions, as is the case now in Uganda, nominal protection coefficients equal one plus the duty rate. As defined here, this duty rate includes the tariff rate, the import license commission, the withholding tax, and the excise tax.[8]

The nontariff protections increase nominal protection. Although the average most-favored-nation tariff is around 9 percent, the average nominal protection coefficient equals 1.1521, the equivalent of a 15.21 percent duty. By definition, the maximum tariff is 15 percent, but the maximum nominal protection coefficient is now 1.481 (for tobacco products), the equivalent of a 48.1 percent tariff. The impact is nonnegligible, but the overall level of protection, with a few exceptions, remains within reasonable limits.

More important, the excise tax increases the dispersion of nominal protection coefficients relative to the tariff-induced dispersion.[9] Although excise taxes cover only 8.65 percent of all tariff lines, their coverage varies greatly at the category level. For some products, such as those in the milling industry (category 11), excise taxes cover only 3.4 percent of the lines, while for others, such as meat products (category 2) or beverages (category 22), they cover all tariff lines. In addition, because there is some variation in the excise tax rate, the overall variability is increased. The tariff-induced standard deviation in nominal protection coefficients is 0.039, but when excise taxes are taken into account, the standard deviation is 0.057.

Thus despite the use of just three tariff rates and a large decline in tariff protection, some products still face significant dispersion at the two-digit level (table A3.3). This probably leads to inefficiencies in the allocation of resources across sectors.[10] Such products as ships (position 89), electrical machinery and equipment (position 85), vehicles (position 87), and mineral fuels (position 27) face the largest internal distortions. In addition, some of the products shown in table A3.3 are inputs or raw materials for manufacturing. Changes in duties on inputs are usually difficult to cope with. This may provide an incentive for some firms to try to reduce import taxes by misidentifying goods while keeping them within the same two-digit classification.

Nominal Protection at the Firm Level in Manufacturing

Most manufacturing enterprises in Uganda produce a variety of goods and use a range of raw materials that do not always fit into a single tariff category. Thus assessing the true level of nominal protection granted to a firm requires computing a weighted average nominal protection coefficient at the firm level, with the weight being the share of each product or raw material in the company's total sales or purchases. This is done here for 228 manufacturing firms using 2001/02 data relating to he firms' five most important outputs and five most important raw materials as reported in the RPED survey (table A3.4).

In 2001/02, firms in the metals industry had the lowest nominal protection (a weighted average nominal protection coefficient of 1.141), and those in the wood, plastics, and textile and leather products subsectors the highest (1.243, 1.212, and 1.207). Most firms in the last three subsectors produce combinations of goods that face maximum import tariffs of 15 percent and are often subject to excise taxes. Firms in the chemical and paint industry and plastics subsector seem to face the lowest protection on inputs (1.095 and 1.088). The dispersion in weighted nominal protection coefficients remains significant for both outputs and inputs. It is equal to roughly a third of the mean value of the nominal protection coefficients.

Foreign firms have a slightly lower weighted average nominal protection coefficient on inputs than do domestic firms—while domestic firms have a slightly lower coefficient on outputs. Only in the construction materials subsector do locally owned firms have a higher nominal protection coefficient on outputs than their foreign counterparts. The dispersion of weighted nominal protection coefficients on outputs is higher for foreign-owned firms. For inputs there is no clear relationship with firm ownership.

These differences may be explained in part by the bargaining power of a few local firms able to obtain

Table A3.3 Characteristics of the Most Distorted Nominal Protection Coefficients by Product Category, Uganda, 2002

		Tariff				Unweighted nominal protection coefficient		
Harmonized system code	**Product category**	**Simple average (percent)**	**Weighted average (percent)**	**Standard deviation**	**Maximum (percent)**	**Average value**	**Standard deviation**	**Maximum value**
24	Tobacco and manufactured tobacco substitutes	15.00	15.00	0.00	15.00	1.40	12.60	1.48
89	Ships, boats, and floating structures	0.00	0.00	0.00	0.00	1.09	6.59	1.23
85	Electrical machinery, equipment, and parts; sound recording equipment	7.60	6.41	6.15	15.00	1.14	6.31	1.23
87	Vehicles, railway and tramway rolling stock, parts, and accessories	9.38	10.46	5.80	15.00	1.16	6.01	1.23
27	Mineral fuels, oils, and their distillation products	8.40	7.26	5.50	15.00	1.15	5.59	1.23
10	Cereals	8.63	4.32	4.85	15.00	1.15	5.40	1.23
21	Miscellaneous edible preparations	7.00	7.00	0.00	7.00	1.17	5.17	1.23
54	Man-made filaments	11.12	7.16	4.00	15.00	1.18	5.09	1.23
17	Sugars and sugar confectionery	11.00	14.53	4.00	15.00	1.18	4.99	1.23
15	Animal and vegetable fats and oils and their products	10.48	11.87	3.97	15.00	1.17	4.68	1.23
90	Optical, photographic, cinematographic, measuring, checking, and precision instruments	2.53	1.51	4.65	15.00	1.09	4.66	1.21
22	Beverages, spirits, and vinegar	15.00	15.00	0.00	15.00	1.34	4.56	1.36
05	Products of animal origin,	12.71	0.49	4.39	15.00	1.19	4.52	1.21
34	Soap, organic surface-active agents, washing preparations	11.33	11.38	3.99	15.00	1.18	4.48	1.23
11	Milling industry products; malt; starches; inulin; wheat	12.00	11.63	4.32	15.00	1.18	4.46	1.23
52	Cotton	11.70	13.57	3.94	15.00	1.18	4.43	1.23
70	Glass and glassware	12.38	10.28	4.37	15.00	1.18	4.40	1.21
76	Aluminum and articles of aluminum	8.61	6.94	4.02	15.00	1.15	4.39	1.23
37	Photographic or cinematographic goods	13.69	10.38	3.85	15.00	1.19	4.30	1.21
94	Furniture; bedding, mattresses, and similar articles	13.64	10.63	4.14	15.00	1.20	4.26	1.23
44	Wood and articles of wood; wood charcoal	13.11	12.74	3.40	15.00	1.20	4.21	1.23
33	Essential oils and resinoids; perfumes, cosmetics, and toiletries	13.69	8.99	3.41	15.00	1.22	4.17	1.23
83	Miscellaneous articles of base metal	10.78	12.50	3.99	15.00	1.18	4.13	1.23
96	Miscellaneous manufactured articles	11.08	10.96	4.00	15.00	1.17	4.04	1.21

Source: UNCTAD, TRAINS database.

Table A3.4 Firm-Level Nominal Protection Coefficients for Outputs and Raw Materials in Manufacturing, Uganda, 2001/02

	Weighted average coefficient		Standard deviation		Maximum coefficient		Minimum coefficient		
Subsector	**Outputs**	**Raw materials**	**Outputs**	**Raw materials**	**Outputs**	**Raw materials**	**Outputs**	**Raw materials**	**Observations**
Full sample									
Agro-industry	1.199	1.146	0.071	0.065	1.643	1.270	1.031	1.020	90
Chemicals and paints	1.190	1.095	0.076	0.014	1.310	1.120	1.060	1.078	11
Construction materials	1.194	1.126	0.044	0.055	1.267	1.271	1.080	1.084	32
Furniture	1.217	1.227	0.029	0.044	1.310	1.273	1.169	1.103	39
Metals	1.141	1.119	0.063	0.046	1.308	1.193	1.035	1.014	17
Paper, printing, and publishing	1.180	1.111	0.051	0.032	1.297	1.170	1.105	1.089	16
Plastics	1.212	1.088	0.074	0.048	1.310	1.158	1.130	1.008	6
Textiles and leather products	1.207	1.167	0.040	0.076	1.305	1.270	1.130	1.072	12
Wood	1.243	1.168	0.076	0.104	1.310	1.261	1.127	1.020	5
All subsectors	1.197	1.150	0.061	0.068	1.643	1.273	1.031	1.008	228
Foreign-owned firms									
Agro-industry	1.221	1.127	0.115	0.078	1.643	1.270	1.113	1.020	20
Chemicals and paints	1.195	1.096	0.067	0.016	1.289	1.120	1.130	1.080	5
Construction materials	1.170	1.137	0.043	0.038	1.222	1.182	1.130	1.090	6
Furniture	1.229	1.230	0.027	0.057	1.249	1.270	1.210	1.190	2
Metals	1.165	1.070	0.137	0.052	1.308	1.116	1.036	1.014	3
Paper, printing, and publishing	1.223	1.111	0.054	0.039	1.297	1.170	1.166	1.090	4
Plastics	1.240	1.086	0.096	0.075	1.310	1.158	1.130	1.008	3
Textiles and leather products	1.210	1.114	0.000	0.034	1.210	1.138	1.210	1.090	2
All subsectors	1.209	1.121	0.092	0.066	1.643	1.270	1.036	1.008	45
Domestically owned firms									
Agro-industry	1.193	1.151	0.051	0.060	1.310	1.270	1.031	1.020	70
Chemicals and paints	1.186	1.095	0.089	0.013	1.310	1.117	1.060	1.078	6
Construction materials	1.199	1.124	0.043	0.059	1.267	1.271	1.080	1.084	26
Furniture	1.216	1.226	0.030	0.044	1.310	1.273	1.169	1.103	37
Metals	1.136	1.130	0.043	0.040	1.206	1.193	1.035	1.087	14
Paper, printing, and publishing	1.166	1.111	0.043	0.031	1.224	1.170	1.105	1.089	12
Plastics	1.183	1.090	0.046	0.000	1.210	1.091	1.130	1.090	3
Textiles and leather products	1.206	1.177	0.044	0.079	1.305	1.270	1.130	1.072	10
Wood	1.243	1.168	0.076	0.104	1.310	1.261	1.127	1.020	5
All subsectors	1.194	1.157	0.051	0.067	1.310	1.273	1.031	1.020	183

Note: Data refer to firms' five most important outputs and five most important raw materials.

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

better protection or exemptions from the state. Where foreign-owned firms have lower nominal protection on inputs or higher protection on outputs, this can be seen as compensation granted for the extra costs (such as deficient infrastructure, high transport costs, and low labor skills and productivity) and perceived high risks of operating in Uganda. In the early 1990s, as many authors have noted, investors perceived Uganda as the riskiest country in Africa—and Africa as the riskiest region. Despite the dramatic improvements in the economic situation, investors still perceive Uganda as a risky country (see table 1.1 in chapter 1).

Effective Protection of Manufacturing

The data in the previous section suggest that the overall structure of nominal protection in Uganda is appropriate but that some deficiencies remain, mainly in the allocative efficiency of the duty structure (given some significant dispersion) and the eventual tax advantages granted to specific firms.[11] But nominal protection has an impact not only on the value of a firm's output but also on the cost of its inputs, and thus affects the value added generated by enterprises.

This effect is usually captured by the effective rate of protection, which, in a partial equilibrium setting, measures the proportional change in an industry's value added attributable to the tariff structure and relative to a free trade benchmark that is usually proxied using world prices or prices from a freer but otherwise comparable competitor country. The effective rate of protection depends not only on the tariffs on a firm's final product but also on tariffs on inputs and input coefficients in production. Effective rates of protection at the sectoral level and the ranking of sectors by these values synthesize the impact of the overall structure of protection and indicate the directions in which investors might shift resources. The firm-level effective rate of protection is defined as

$$ERP_k = \left(\left(VA_k^D - VA_k^W \right) \Big/ VA_k^W \right)$$

for a firm k where VA_k^D is the value added at domestic prices or the tariff-distorted value added and VA_k^W is the value added expressed in world prices or simulated for the same sector in the absence of trade restrictions.

Thus the effective rate of protection indicates the extent to which the value added changes as a consequence of the entire tariff structure under the assumption that there are few or no nontariff barriers that may cause further distortions. Other things being equal, the higher the nominal tariffs on output, the higher the effective rate of protection is—and the higher the tariffs on inputs, the lower it is.

Effective rates of protection estimated on the basis of a restricted subsample of 71 firms for which the required output and input data are available at the subsectoral level show wide variation across subsectors, just as for nominal protection coefficients. The estimated rate of effective protection ranges from roughly 28 percent in the wood subsector to almost 80 percent in the textile and leather products subsector (table A3.5). This wide variation suggests that the structure of protection is not neutral in its impact across subsectors.

Effective protection also varies widely within subsectors, as shown by the standard deviation and other statistics. In the textile and leather products industry, for example, the effective rate of protection ranges from a low 24 percent to a very high 168.6 percent. Part of the reason for this wide disparity may be the fact that in the least developed countries firms within the same subsector tend to use very different production technologies (and, as a result, the technical coefficients vary widely from firm to firm). The dispersion in weighted nominal protection coefficients, largely

Table A3.5 Firm-Level Effective Rates of Protection in Manufacturing by Subsector, Uganda, 2001/02
(percent)

Subsector	Average	Maximum	Minimum	Standard deviation
Agro-industry	47.70	178.42	1.05	0.40
Chemicals and paints	75.50	137.48	13.53	0.88
Construction materials	46.37	105.61	3.05	0.29
Furniture	67.12	173.32	-0.89	0.50
Metals	52.91	111.12	15.91	0.37
Paper, printing, and publishing	33.19	53.87	14.07	0.20
Plastics	30.78	34.20	27.37	0.05
Textiles and leather products	79.69	168.62	24.03	0.66
Wood	27.97	27.97	27.97	
All subsectors	52.26			0.42

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table A3.6 Firm-Level Effective Rates of Protection in Manufacturing by Type of Ownership and Subsector, Uganda, 2001/02
(percent)

Type of ownership and subsector	Average	Maximum	Minimum	Standard deviation
Foreign				
Agro-industry	46.21	96.23	18.06	0.29
Chemicals and paints	13.53	13.53	13.53	
Construction materials	50.28	74.58	25.99	0.34
Textiles and leather products	168.62	168.62	168.62	
All subsectors	56.00			0.48
Domestic				
Agro-industry	48.05	178.42	1.05	0.43
Chemicals and paints	137.48	137.48	137.48	
Construction materials	45.50	105.61	3.05	0.29
Furniture	67.12	173.32	–0.89	0.50
Metals	52.91	111.12	15.91	0.37
Paper, printing, and publishing	33.19	53.87	14.07	0.20
Plastics	30.78	34.20	27.37	0.05
Textiles and leather products	57.46	132.48	24.03	0.51
Wood	27.97	27.97	27.97	
All subsectors	51.65			0.41

Source: World Bank, Investment Climate survey, Uganda, 2002/03.

induced by the use of excise taxes, probably also explains a significant share of the variability within subsectors.

Just as for nominal protection, the effective protection granted to firms is marginally higher for foreign than for local firms (largely because of the high effective protection in the textile and leather products industry) and there is wide dispersion (table A3.6).

Notes

1. After the collapse of the International Coffee Organization's export quota agreement in 1989, however, the share of export earnings from coffee fell sharply, to 53 percent in 1993. Since then the share has fluctuated largely in line with world prices, averaging about 56 percent in 1994–2000.
2. Although the rationale at the sectoral level for removing or reducing the coffee export tax was strong, it is unclear whether the general equilibrium effects of this measure were properly assessed at the time (Collier 1997). Removing export taxes and replacing them with import taxes was often equivalent to taxing exports (the Lerner Equivalence Theorem). That is, taxing imports was another way to tax exports.
3. Firms with missing or incomplete data were removed from the computations.
4. The share of duty-free tariff lines is the number of harmonized schedule subheadings for which all tariff line duties are equal to zero, divided by the total number of subheadings. The share of dutiable tariff lines is the number of harmonized schedule subheadings for which not all tariff line duties are equal to zero, divided by the total number of subheadings.
5. An *international peak* is defined as the number of harmonized schedule six-digit duties higher than 15 percent, divided by the total number of harmonized schedule subheadings. A *national peak* is defined as the number of harmonized schedule six-digit duties at least three times the country's overall simple average, divided by the total number of harmonized schedule subheadings.
6. International comparisons are restricted to tariffs because not all countries report data on quantitative restrictions, nontariff barriers, and other nontariff protection to international trade bodies.
7. Higher excise duties are levied on cigarettes (130 percent), alcoholic beverages (70 percent), and soft drinks (15 percent). Only oil products under the 27.10 harmonized schedule heading are subject to a non–ad valorem excise duty, ranging from 200 to 580 USh per liter. The ad valorem equivalents have been computed using the UNCTAD methodology (Stawowy 2001).
8. The nominal protection coefficient equals $[P^D_{jk}/P^w_{jk}]$ for a firm k producing a good j, with P^D_{jk} being the domestic price and P^w_{jk} the relevant world price. When quantitative restrictions or other nontariff trade barriers are in use, the domestic price results from various other factors (such as the institutional framework, the degree of competition in domestic industry, and the supply-demand balance generated by regulatory policy). In this case a tariff-based nominal protection coefficient does not fully capture the extent of distortions. The nominal protection coefficient is then better proxied by computing the ratio of the ex-factory price to the CIF (cost, insurance, and freight) import price.

   In Uganda a good approximation is to assume that the dominant distortion is induced by ad valorem duties, since all quantitative restrictions and various other non tariff barriers have been. In this case the total duty (t_j) is the sum of the relevant tariff rate, the import license commission, the withholding tax, and the excise tax. The domestic price is then $P^D_{jk} = (1 + t_j)\, P^w_{jk}$, which simplifies the nominal protection coefficient to $(1 + t_j)$.
9. The import license commission and the withholding tax have a fixed rate and apply equally to all

products. Thus they affect only the level of nominal protection, not its dispersion.

10. Although tobacco products appear in table A3.3, they are not considered in the subsequent discussion because their high level of taxation is appropriate for health policy reasons.

11. This concern is also expressed by the International Monetary Fund (2002a), which underlines the limits of the selective approach to incentives that discriminates among firms and favors rent seeking and eventually corruption.

Table A4.1 Structure of Manufacturing Sample for Uganda Investment Climate Survey
(percent)

	Share of sample		Share of sample
Firm size		**Firm activity**	
Small (<100 employees)	12.00	Agro-industry	40.67
Large (100+ employees)	88.00	Chemicals and paints	6.00
		Construction materials	13.33
Market orientation		Furniture	15.67
Exporter[a]	12.00	Metals	7.00
Nonexporter	88.00	Paper, printing, and publishing	7.67
		Plastics	2.33
Firm ownership		Textiles and leather products	5.00
Publicly listed company	1.33	Wood	2.33
Publicly held limited company	2.67		
Privately held limited company	60.00		
Partnership	8.33	**Firm location**	
Sole proprietorship	23.00	Central region	68.00
Cooperative	2.00	Northeast region	15.00
Other	2.67	Southwest region	17.00

a. Exports 10 percent or more of sales
Source: World Bank, Investment Climate survey, Uganda, 2002/03.

Table A4.2 Manufacturing Firms' Competitors, Suppliers, and Customers in International Comparison

							Uganda, by Firm Type			
	Uganda	Eritrea	Pakistan	China	India	Morocco	Small[a]	Large	Low capacity[b]	High capacity
Average number of competitors										
Domestic private firms	30.65	14.69	85.90	—	—	—	33.17	12.37	34.57	15.16
State-owned firms	0.14	0.29	0.70	—	—	—	0.16	0.03	0.15	0.16
Foreign-owned firms	9.87	0.14	2.90	—	—	—	10.83	2.91	7.72	19.82
Average number of suppliers										
Domestic private firms	15.89	—	93.20	—	—	—	15.92	15.68	15.74	17.65
State-owned firms	0.05	—	1.30	—	—	—	0.02	0.24	0.04	0.09
Foreign-owned firms	1.13	—	7.90	—	—	—	0.97	2.38	0.95	1.89
Average number of customers										
Domestic private firms	87.37	—	133.10	—	—	—	73.09	190.33	91.81	80.17
State-owned firms	1.14	—	1.30	—	—	—	1.19	0.73	0.85	2.05
Foreign-owned firms	4.37	—	14.30	—	—	—	2.83	15.70	4.34	5.25

— Not available.
a. Small = below 100 employees, Large = larger than 100 employees.
b. Low Capacity = below 75 percent capacity, High = higher than 75 percent capacity and above
Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Eritrea, Pakistan, 2002, China, 2000, India, 1999, Morocco, 2000.

Table A4.3 Manufacturing Firms' Evaluation of General Constraints to Operation in International Comparison
(percentage of respondents evaluating constraint as major or very severe)

							Uganda, by Firm Type			
Constraint	**Uganda**	**Eritrea**	**Pakistan**	**China**	**India**	**Morocco**	**Small[a]**	**Large**	**Low capacity[b]**	**High capacity**
Telecommunications	5.19	13.92	9.2	23.5	—	—	4.7	8.3	6.2	4.6
Electricity	44.48	36.71	39.2	29.7	—	—	43.5	51.4	18.8	44.9
Transport	22.9	17.95	10	19.1	—	—	21.8	30.6	19.7	30.6
Access to land	17.39	21.52	20.4	14.7	—	—	17.2	19.2	44.4	17.3
Tax rates	48.31	29.11	45.6	36.8	—	—	48.5	47.2	9.9	49.5
Tax administration	36.11	15.19	46.1	26.7	—	—	35.9	37.1	37.1	38.7
Customs and trade regulations	27.44	8.97	24.6	19.3	—	—	26.4	33.3	21.4	28.9
Labor regulations	10.81	5.06	15	20.7	—	—	9.8	17.1	24.1	10.1
Skills and education of available workers	30.82	40.51	12.8	30.7	—	—	30.6	32.4	25.0	33.2
Business licensing and operating permits	10.1	2.53	14.5	21.3	—	—	10.3	8.3	18.2	9.6
Access to finance (collateral requirements)	45.04	—	37.6	22.8	—	—	45.6	40.6	9.6	43.0
Cost of finance (interest rates)	60.3	36.71	42.6	21.8	—	—	60.4	59.4	29.8	61.3
Regulatory policy uncertainty	27.56	29.11	40.1	32.9	—	—	26.5	34.3	42.7	29.4
Macroeconomic instability (inflation, exchange rate)	45.42	79.75	34.4	30.2	—	—	43.7	57.1	51.3	48.7
Corruption	38.21	2.53	40.4	27.3	—	—	38.2	38.7	28.2	43.3
Crime, theft, and disorder	26.85	1.27	21.5	20	—	—	26.3	30.6	27.5	25.0
Anticompetitive or informal practices	31.11	7.59	21.3	23.7	—	—	29.5	41.7	58.6	31.9

— Not available.
a. Small = below 100 employees, Large = larger than 100 employees.
b. Low Capacity = below 75 percent capacity, High = higher than 75 percent capacity and above
Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Eritrea, Pakistan, 2002, China, 2000, India, 1999, Morocco, 2000.

Table A4.4 Infrastructure Performance as Reported by Manufacturing Firms in Uganda, in International Comparison and by Firm Characteristic

Indicator	Uganda	Eritrea	Pakistan	China	India	Morocco	Small[a]	Large	Low capacity[b]	High capacity
Frequency of power outages (times in previous year)	38.59	105.44	14.50	—	—	15.90	36.49	54.20	36.29	38.81
Share of production lost due to power outages (percent)	6.25	5.47	5.40	2.00	—	—	6.52	4.54	4.49	6.65
Share of firms with own generator (percent)	35.33	43.04	41.80	16.20	68.94	16.73	30.68	69.44	38.98	33.63
Share of firms with own well (percent)	13.00[s]	48.10	43.80	15.60	50.77	29.14	10.61	30.56	20.34	11.06
Share of production lost in shipment (percent)	—	0.36	—	1.20	—	—	—	—	—	—
Days to obtain a telephone connection	33.16	256.33	47.30	12.00	—	—	35.07	23.14	45.86	27.94
Days to obtain an electricity connection	38.33	98.68	46.80	19.00	—	—	38.33	39.14	23.18	37.15

— Not available.

s. Share of firms that have built own well.

a. Small = below 100 employees, Large = larger than 100 employees.

b. Low Capacity = below 75 percent capacity, High = higher than 75 percent capacity and above

Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Eritrea, Pakistan, 2002, China, 2000, India, 1999, Morocco, 2000.

Table A4.5 Sources of Finance for Manufacturing Firms in Uganda, in International Comparison and by Firm Characteristic
(percent)

	Uganda	Eritrea	Pakistan	China[a]	India[a]	Morocco[a]	Small[b]	Large	Low capacity[c]	High capacity
Sources for working capital										
Retained earnings	79.95	73.96	65.40	51.5	30.37	61.95	82.49	61.36	82.21	76.25
Banks and other financial institutions	5.65	23.45	7.40	20.6	36.10	19.55	13.36	4.59	4.83	6.69
Trade credit	5.30	0.26	4.60	4.1	—	7.58	4.90	8.22	5.48	4.11
Equity	1.80	0.01	12.70	0.6	13.04	2.56	2.05	0.00	1.94	1.69
Informal sources	0.35	1.28	1.30	8.6	—	—	0.38	0.13	0.01	0.08
Other	2.71	1.04	8.20	6.3	20.48	8.31	2.47	4.47	1.99	4.40
Sources for new investments										
Retained earnings	71.05	63.08	55.60	—	—	—	74.44	50.48	72.27	65.86
Banks and other financial institutions	11.64	31.17	8.20	—	—	—	8.91	28.20	11.10	12.47
Trade credit	0.47	0.00	1.70	—	—	—	0.27	1.72	0.16	0.71
Equity	1.95	2.67	14.10	—	—	—	2.27	0.00	2.70	0.00
Informal sources	1.46	0.58	2.60	—	—	—	1.47	1.37	0.81	0.86
Other	4.51	2.50	11.00	—	—	—	4.14	6.72	2.83	9.67

— Not available.
a. Data refer to shares of total capital (working capital and new investment).
b. Small = below 100 employees, Large = larger than 100 employees.
c. Low Capacity = below 75 percent capacity, High = higher than 75 percent capacity and above
Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Eritrea, Pakistan, 2002, China, 2000, India, 1999, Morocco, 2000.

Table A4.6 Manufacturing Firms' Credit, Loans, and Liabilities in Uganda, in International Comparison and by Firm Characteristic
(percent, except where otherwise specified)

Indicator	Uganda	Eritrea	Pakistan	China	India	Morocco	Small[b]	Large	Low capacity[c]	High capacity
Share of firms with overdraft or line of credit	22.66	47.44	22.80	21.80	—	77.38	19.31	47.22	19.46	30.50
Share of credit currently unused	—	29.53	43.50	29.70	—	25.46	—	—	—	—
Share of firms with a loan from a bank or other financial institution	20.00	44.87	19.50	45.80	—	—	16.66	44.44	17.25	30.50
For the most recent loan or overdraft										
Share requiring collateral	92.00[a]	85.71	80.30	82.80	—	—	92.50	83.30	93.02	92.30
Average value of collateral required as a share of loan	116.04	168.06	70.90	86.80	—	—	116.12	115.76	121.39	117.52
Average interest rate	16.70	9.81	14.80	5.40	—	—	16.89	16.20	16.88	15.99
Average duration (months)	43.80	46.53	8.30	15.10	—	—	39.00	55.92	39.84	47.16
Share of total borrowing denominated in foreign currency	8.70	2.86	0.50	7.70	9.49	3.89	6.21	25.91	6.64	17.18
Long-term (one year or more) liabilities as a share of total liabilities	—	29.50	7.10	9.40	28.69	8.96	—	—	—	—
Short-term liabilities as a share of total liabilities	—	66.53	13.50	47.00	22.82	46.63	—	—	—	—
Equity earnings (or share capital) and retained earnings as a share of total liabilities	—	52.80	63.40	43.70	48.48	30.73	—	—	—	—

— Not available.
a. Refers only to the most recent loan.
b. Small = below 100 employees, Large = larger than 100 employees.
c. Low Capacity = below 75 percent capacity, High = higher than 75 percent capacity and above
Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Eritrea, Pakistan, 2002, China, 2000, India, 1999, Morocco, 2000.

Table A4.7 Financial Sector and Property Rights Indicators as Reported by Manufacturing Firms in Uganda, in International Comparison and by Firm Characteristic

Indicator	Uganda	Eritrea	Pakistan	China	India	Morocco	Small[a]	Large	Low capacity[b]	High capacity
Financial sector										
Share of firms whose financial statements are audited by outside auditors (percent)	59.00	89.74	41.60	—	—	—	54.90	88.80	56.63	70.68
Clearance time through firms' financial institution (days)										
For a check	—	1.44	1.90	4.50	—	—	1.43	1.47	1.46	1.33
For a domestic currency wire	—	1.43	2.40	4.80	—	—	1.45	1.40	1.94	0.80
For a foreign currency wire	—	6.33	3.20	3.00	—	—	7.67	5.00	7.00	3.00
Property rights										
Land										
Share owned (percent)	62.69	—	87.90	44.00	—	—	62.64	63.05	64.19	66.66
Share leased or rented (percent)	34.30	—	11.60	22.20	—	—	33.94	36.94	32.11	42.45
Average length of lease or rental contract (years)	24.34	—	1.25	6.28	—	—	18.41	55.33	17.21	1.00
Buildings										
Share owned (percent)	73.06	—	90.50	56.90	—	—	70.95	88.75	73.84	71.79
Share leased or rented (percent)	26.51	—	9.00	43.20	—	—	28.61	11.25	25.93	26.95
Average length of lease or rental contract (years)	2.29	—	7.63	4.43	—	—	2.25	3.03	2.08	3.73

— Not available.

a. Small = below 100 employees, Large = larger than 100 employees.

b. Low Capacity = below 75 percent capacity, High = higher than 75 percent capacity and above

Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Eritrea, Pakistan, 2002, China, 2000, India, 1999, Morocco, 2000.

Table A4.8 Labor and Training in Manufacturing in Uganda, in International Comparison and by Firm Characteristic
(percent, except where otherwise specified)

Indicator	Uganda	Eritrea	Pakistan	China	India	Morocco	Small[a]	Large	Low capacity[b]	High capacity
Labor composition										
Share of workers who are permanent	56.09	91.13	86.60	85.30	—	—	56.15	56.02	56.10	56.27
Share of permanent workers who are female	13.29	41.35	3.10	42.50	—	—	7.75	54.54	11.21	22.01
Share of temporary workers who are female	29.46	29.46	—	19.40	—	—	27.11	32.78	32.76	33.03
Share of permanent skilled workers who are foreign nationals	2.94	2.94	1.95	—	—	—	3.38	1.74	2.66	1.79
Labor turnover										
New employees in previous year as a share of total	4.40	14.92	8.30	—	—	—	5.75	2.47	3.99	4.20
Employees who left in previous year as a share of total	1.60	17.32	5.50	10.20	—	—	1.50	1.70	1.92	1.26
Average time to fill a skilled technician vacancy (weeks)	—	—	1.50	5.20	—	—	—	—	—	—
Average time to fill a production or service worker vacancy (weeks)	—	—	1.30	13.90	—	—	—	—	—	—
Excess workforce due to regulatory restrictions (as a share of total workforce?)	—	—	3.60	16.70	—	—	—	—	—	—
Training and education				0.00						
Share of workforce with less than 6 years' schooling	12.76	—	59.30	1.10	—	—	17.21	6.08	7.31	21.39
Share of workforce with more than 12 years' schooling	8.48	—	9.50	3.00	—	—	8.23	8.87	9.74	6.10
Share of firms offering formal training	29.66	9.59	11.10	71.70	—	—	78.65	21.34	74.69	25.30
Share of skilled workers receiving training	3.04	—	36.00	47.70	—	—	2.52	3.76	4.11	1.31
Labor unrest										
Days lost in previous year to labor disputes or civil unrest	0.52	—	1.30	0.30	—	—	0.42	1.25	0.61	0.29

— Not available.
a. Small = below 100 employees, Large = larger than 100 employees.
b. Low Capacity = below 75 percent capacity, High = higher than 75 percent capacity and above
Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Eritrea, Pakistan, 2002, China, 2000, India, 1999, Morocco, 2000.

Table A4.9 Regulatory Burden and Administrative Delays as Reported by Manufacturing Firms in Uganda, in International Comparison and by Firm Characteristic

Indicator	Uganda	Eritrea	Pakistan	China	India	Morocco	Small[a]	Large	Low capacity[b]	High capacity
Regulation										
Share of firms disagreeing that interpretations of regulations are consistent and predictable (percent)	40.00	—	64.80	14.10	—	—	40.96	33.33	40.09	35.59
Share of senior management's time spent dealing with regulations (percent)	0.4	4.96	10.10	11.80	—	—	0.04	0.07	0.04	0.06
Share of revenues typically paid to officials to get things done (percent)	2.44	1.55	2.00	1.40	—	—	2.64	1.10	2.91	1.19
Share of firm revenues typically reported for tax purposes (percent)	76.71	84.20	—	95.90	—	—	75.17	87.29	75.70	79.13
Length of wait for business registration (days)	—	—	—	22.00	—	—	—	—	—	—
Inspections										
Days in previous year spent in inspections or required meetings with officials	13.43	6.32	41.10	29.10	10.70	—	11.76	25.56	11.52	19.91
Share of meetings or inspections by local authorities (percent)	19.40	—	—	—	68.00	—	21.36	7.63	21.04	13.56
Cost of fines or seized goods (percentage of sales)	0.05	0.02	0.23	0.60	—	—	0.02	0.27	0.06	0.00
Share of interactions in which informal payment requested (percent)	6.69	—	—	2.20	—	—	6.31	9.38	5.61	11.76
Value of informal payments (percentage of sales)	0.32	—	0.15	—	—	—	0.27	0.57	0.35	0.25
Import delays (days)										
Average wait to clear customs	5.79	11.79	17.20	7.90	10.60	2.70	5.88	5.53	5.23	6.88
Longest wait to clear customs	11.15	22.62	30.20	12.50	21.20	5.40	11.53	10.06	10.48	11.59
Export delays (days)										
Average wait to clear customs	3.53	3.20	9.60	5.40	5.00	1.70	3.22	4.18	3.32	3.00
Longest wait to clear customs	6.03	3.90	17.10	8.00	9.20	2.70	5.91	6.30	6.21	3.75

— Not available.

a. Small = below 100 employees, Large = larger than 100 employees.

b. Low Capacity = below 75 percent capacity, High = higher than 75 percent capacity and above

Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Eritrea, Pakistan, 2002, China, 2000, India, 1999, Morocco, 2000.

Table A4.10 Indicators of Uncertainty and Corruption as Reported by Manufacturing Firms in Uganda, in International Comparison and by Firm Characteristic
(percent, except where otherwise specified)

Indicator	Uganda	Eritrea	Pakistan	China	India	Morocco	Small[a]	Large	Low capacity[b]	High capacity
Uncertainty										
Share of firms disagreeing that interpretations of regulations are consistent and predictable	40.00	—	64.80	14.10	—	—	40.96	33.33	40.09	35.59
Share of profits reinvested in firm	41.87	—	—	—	—	—	41.76	42.71	39.31	46.83
Share of firms disagreeing that they have confidence in the judiciary	69.86	—	4.10	2.40	—	—	71.14	61.11	75.36	56.90
Share of payment disputes settled by third parties or resolved in court	50.00	—	30.20	5.30	—	—	48.65	53.33	44.12	64.29
Planning horizon for investments (months)	—	—	—	2.30	—	—	—	—	—	—
Corruption										
Informal payments required as a share of revenues	2.44	1.55	—	1.40	—	—	2.64	1.10	2.91	1.19
Share of firms reporting requirement for gift or payment										
For a mainline telephone connection	18.32	—	—	—	—	—	16.36	28.57	16.16	23.08
For an electricity connection	21.47	—	—	—	—	—	21.48	21.43	22.95	19.44
For a construction permit	12.33	—	—	—	—	—	11.11	20.00	8.93	25.00
For an import license	3.64	—	—	—	—	—	4.26	0.00	4.76	0.00
For a trading license	4.21	—	—	—	—	—	4.31	3.45	3.52	7.69
Share of revenue typically reported for tax purposes	76.71	84.20	—	95.9	—	—	75.17	87.29	75.70	79.13

— Not available.
a. Small = below 100 employees, Large = larger than 100 employees.
b. Low Capacity = below 75 percent capacity, High = higher than 75 percent capacity and above
Source: World Bank, Investment Climate surveys, Uganda, 2002/03, Eritrea, Pakistan, 2002, China, 2000, India, 1999, Morocco, 2000.

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