What Are the Constraints to Inclusive Growth in Zambia?

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Abstract

Despite positive, relatively broad-based and stable growth record in recent years and immense untapped potential in agriculture, mining and services, Zambia’s poverty rates have not declined significantly and remain high. Income growth is limited by coordination failures such as poor access to domestic and international markets, inputs, extension services and information. High indirect costs – most of which attributable to infrastructure service-related inputs into production including energy, transport, telecom, water, but also insurance, marketing and professional service – undermine Zambia’s competitiveness, limit job creation and therefore serve as a major constraint to pro-poor growth. Continued real appreciation is another serious threat to the competitiveness of export-oriented and import-competing sectors and to job creation. For Zambia to stay competitive and sustain the growth momentum it will be critical to improve productivity – including the productivity of its labor force, and to lower indirect production costs related to basic services. Carefully crafted monetary and fiscal policies will also be critical in responding to the real appreciation pressures. Improving the quality and access to secondary and tertiary education is essential if the poor are to benefit from future growth of the non-farm economy. Weak governance and in particular poor government effectiveness and are factors behind the market coordination failures and the identified government failures, and are as such major obstacles to inclusive growth in Zambia.

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1 Introduction and Recent Developments

Zambia is a country which despite its mineral wealth and fertile soil is one of the poorest countries in the world. Its rank in the UN Human Development Index for 2007-08 is 165 out of 177 countries. Its per capita income is still much below the per capita income at independence in 1964 (Figure 1) and the poverty rate is as high as 64 percent. At independence the country’s income level was 75 percent above the African average and four times that of East Asia (Bigsten and Tengstam, 2007). Today the per capita income is below that of the African average and a quarter of what it is in East Asia.

After decades of declining standards of living, Zambia’s economy started growing and per capita incomes started rising in the late 1990s (Figure 1). The recent positive and stable growth record has been accompanied by productivity improvement (Figure 2), and presents a distinct break with the past of high growth volatility. Can this high growth record be sustained and made more inclusive? This study tries to identify the key constraints to inclusive and sustained, rapid growth in Zambia. An emphasis on increasing the opportunities for the poor to contribute and benefit from the growth process is critical given the fact that the majority of Zambian people are poor and/or vulnerable.

Figure 1: Zambia’s GDP per capita and annual growth, 1962-2006

Source: World Bank (DDP data).

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2 In 2006 per capita income in Zambia was $365 (constant 2000 $).
Before we start the analysis it is important to understand what was behind the change in productivity and growth that occurred around 1998 and the country-specific context of economic development in Zambia. The improved macroeconomic environment during the 1990s is often mentioned as a major factor behind the improvement in the business environment and has most probably had, with some time lag, a significant impact on growth. For example, inflation was over 180 percent in the early 1990s but has now returned to single digits (Figure 3) and the government budget deficit halved as a share of GDP between 2003 and 2006.

Another important factor that is often assumed to have influenced the latest positive economic developments was the sharp increase in the price of copper. This has certainly helped growth in Zambia but it is also important to notice that the increase in production started before the sharp increase in the international price of copper in 2005 (Figure 4).
Rapid growth between 1996 and 2006 was accompanied by rising domestic migration in response to the structural changes in the economy (Figure 5). There were strong rural-to-rural and urban-to-urban labor movements and much less pronounced increases in rural-to-urban migration. The later reflects perhaps the fact that Zambia already had a high level of urbanization (35 percent) given its development stage, and the excess of urban labor resulting from the privatization of mines. It is important to notice that urban to rural migration was also on the rise between 1996 and 2004. However, in all reported years since 1996 data suggest positive and rising net rural-to-urban migration. In the period 2004-06 migration flows seem to have stabilized with the exception of rural-urban flows.

Is the recent growth episode a one time event related to a rebound from the improvement in the macroeconomic environment, the increase in copper prices, and the structural
change accompanying reforms in the early to mid-1990s, or has Zambia embarked on a new, sustainable growth path? There are indications that recent growth is not only a sign of these external events, but an outcome of more fundamental changes in the economy that have led to new sources of growth. Zambia has managed to broaden its export base. In the period 1980-2004 the country nearly doubled the number of products exported (Figure 6) and halved its Herfindahl index\(^3\) breaking away from the group of least diversified economies in Sub-Saharan Africa (Figure 7). While in 1980 the five largest Zambian exports accounted for 96 percent of its exports, in 2004 they made up about 80 percent of exports (Figure 6).\(^4\)

**Figure 6:** Degree of export diversification, Zambia

![Figure 6: Degree of export diversification, Zambia](image)

*Source: World Bank, Export diversification data, PRMED.*

**Figure 7:** Non-oil Herfindahl Index for countries in SSA, 2004

![Figure 7: Non-oil Herfindahl Index for countries in SSA, 2004](image)

*Source: World Bank, Export diversification data, PRMED.*

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\(^3\) The Herfindahl index measures the degree of export diversification. The higher the Herfindahl index, the lower the degree of diversification.

\(^4\) Although the economy has grown rapidly and trade has expanded in absolute terms, it is declining in relative terms (see Figure 36).
Zambia has diversified by capitalizing on its advantage in land-intensive primary goods (Figure 8). Mining products still dominate merchandise exports, but while in the three decades after independence Zambia relied exclusively on exports of ores and metals, in the last 17 years agricultural exports, including non-traditional farm exports, started playing a much more prominent role. Zambia’s share of food and other farm products in total exports increased from 4 percent in 1980s to 20 percent in the early 2000s. Even small scale farmers have diversified – by 2002/03 one out of five grew cotton, 45 percent derived income from animal products and 17 percent from horticulture.

**Figure 8:** Composition of exports in Zambia

The decline in the export share of mining hides important trends in the mining sector which has diversified away from copper into other base metals and precious stones. In 1995 other base metals were fifth on the list of Zambia’s top 5 exports, and they accounted for less than 2 percent of total exports. By 2002 other base metals have moved to the second spot and represented 15 percent of Zambia’s merchandise exports. Precious stones, which were not on the top 5 list in 1998, represented nearly 4 percent of total exports.

In addition to mining, in the last ten years, growth was driven by strong expansions in services and construction, and to a lesser degree in manufacturing. The change in average growth rates from the period 1991-98 to 1998-06, was 4.4 percent in total of which 1.8 percentage point came from mining, 1.1 from services and 1.4 from construction, but only as little as 0.4 from manufacturing (Figure 9). Growth within services was mainly driven by growth in community and social services, real estate and business services, and wholesale and retail sales (Mattoo and Payton, 2007). These sectors are more often an

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5 The total gross value of agricultural output has risen by over 50 percent between mid-90s and 2001-2004. Cotton and tobacco has contributed to export-led growth. Cassava, sweet potatoes, cotton and groundnuts production have increased.
“employer of last resort” unlike service sectors such as tourism, transport and communication, and finance and insurance, which tend to reflect broader economic dynamism. Understanding the constraints to growth in these latter service sectors and the manufacturing sector is an important step toward understanding how to sustain growth in Zambia in the long run.

**Figure 9: Changes in Real growth rates (%)**

![Chart showing changes in real growth rates](chart)

*Source: World Bank (2007b)*

Robust increases in foreign direct investment inflows accompanied the boom in the mining sector. In 2005 FDI inflows increased by 166 percent, compared to just 2 percent in 2004. Investment pledges increased the most in manufacturing and mining, and decreased in agriculture, tourism and transport. Credit to the private sector increased significantly for almost all sectors indicating increased domestic private sector activity (Figure 10). The sectors with the strongest growth in private loans and advances were *agriculture, wholesale and retail trade, manufacturing* and *other sectors*. Loans to *other sectors* included personal loans (usually used for investment in a sector rather than consumption), loans to mining suppliers, law firms, audit firms, NGOs and development organizations, private hospitals, cleaning services, book publishers, and others.

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6 It has been estimated that US$1.4 billion were injected in the mining sector in the last 3 years.
Despite robust and increasingly broad-based growth in recent years, aggregate poverty rates in Zambia have declined only slightly and remain high. According to the household survey in 2006, 64 percent of the people in Zambia are still poor. Poverty rates remain highest in rural areas (80 percent) where two-thirds of Zambia’s population resides. This implies that the vast majority of the poor (72 percent) live in rural areas. Other measures of well-being paint a disturbing picture including increasing child malnutrition over the 1990s, high prevalence of HIV/AIDS, and lowest life expectancy in the world in 2007.

**Figure 11:** Poverty rates in rural and urban areas, 1991-2006

Source: Republic of Zambia (2006a), CSO, WDI, and Bank staff estimates
Looking separately at trends in rural and urban poverty rates, one sees a sharp decline in urban poverty between 2004 and 2006, and a slight increase in rural poverty during the same period (Figure 11). Understanding why urban poverty levels seem to have responded to the new economic opportunities but not rural poverty is crucial for understanding the constraints to shared growth.

**Figure 12:** Incidence of poverty by stratum

![Incidence of poverty by stratum](image)

*Source: CSO (forthcoming)*

*Note: Small, Medium and Large in the rural area refer to the scale of the farm, and Low, Medium and High costs in the urban area refer to the cost of the residential area.*

**Figure 13:** Percentage distribution of households that perceived a change in welfare during the recent year (2005-2006)

![Percentage distribution of households that perceived a change in welfare](image)

*Source: CSO (forthcoming)*

*Note: Small, Medium and Large in the rural area refer to the scale of the farm, and Low, Medium and High costs in the urban area refer to the cost of the residential area.*
Poverty rates are highest among small and medium-sized farmers and non-farm rural residents (Figure 12). When asked directly how they perceive their welfare change during the preceding year, households involved in large-scale farming were most likely to have felt an improvement, followed by urban households in high cost residential areas (Figure 13). The larger the size of the farm, or the higher the cost level in urban areas, the stronger was the perceived improvement in the household’s living standards. Finally, across all categories, the share of households reporting improved welfare was larger than the share of those reporting deterioration.

Growth in Zambia must accelerate in order to reduce poverty in a sizable way. Quantitative analysis by Bigsten and Shimeles (2007), who analyze the trade-off between growth and redistribution for poverty reduction in several African countries in the period 1981-2001, find that annual per capita growth in Zambia would need to be 4 percent in order to halve poverty between 2001 and 2015, assuming a constant Gini. Although many assumptions underlie this conclusion it indicates that growth needs to accelerate in Zambia even beyond the 3 percent average annual per capita growth recorded in the strong growth period 2001-2006.

This paper investigates the nature of the growth process in Zambia and the binding constraints to shared growth, i.e. inclusive growth in which the poor contribute and benefit from the growth process. In our analysis we employ a method inspired by the growth diagnostics approach of Hausmann, Rodrik and Velasco (2005) and the framework of the ‘Integrated Economic Analysis for Pro-Poor Growth’ (Sida, 2006). The method guides us in the process of identifying the most binding constraints to the poor’s income growth through productive employment, be it wage-employment or self-employment.

Our approach is distinct from the growth diagnostics exercises a la Hausmann, Rodrik and Velasco (2005) in that we look at both demand-side and supply-side conditions that prevent the poor from taking part in the growth process. On the supply side we focus on constraints that hamper employability and access to labor markets. On the demand side we consider obstacles to job creation and productivity improvements. We focus on the ability of the poor to participate in the growth process and not on redistributive measures for poverty reduction. This implies that our analysis needs to take a longer terms perspective than the growth diagnostic analyses a la Hausmann, Rodrik and Velasco (2005).7

We find that the main binding constraints to shared growth in Zambia are coordination failures. These include poor access to domestic and international markets, inputs, services and information. High indirect costs – most of which attributable to infrastructure service-related inputs into production including energy, transport, telecom, water, but also insurance, marketing and professional service – undermine Zambia’s competitiveness, limit job creation and productivity, and therefore are also major constraints to pro-poor growth. Continued real appreciation is another serious threat to

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7 It is not only about finding the constraint that ignite growth and poverty reduction, but the binding constraints that ignite sustained and inclusive growth.
the competitiveness of export-oriented and import-competing sectors and to job creation. Carefully crafted monetary and fiscal policies will be critical in responding to the real appreciation pressures. For Zambia to stay competitive and sustain the growth momentum it will be critical to improve productivity. Improving the quality and access to secondary and tertiary education and health services is essential if the poor are to benefit from future growth of the non-farm economy. Weak governance and in particular poor government effectiveness are factors behind the coordination failures observed in Zambia, and are as such major obstacles to inclusive growth.

The paper is structured as follows. Section 2 presents the analytic framework and data for shared growth diagnostics. Section 3 describes Zambia’s economic growth record and the economic situation of the poor, and applies the framework to the case of Zambia. Section 4 concludes with concluding remarks and caveats.

2 A Framework for Shared Growth Analytics

The economic agent in the shared growth diagnostics framework is the individual rather than the firm, since we assume that the main instrument for a sustainable and inclusive growth is productive employment. Employment growth generates new jobs and income for the poor - from wages in all types of firms, or from self employment, usually in micro firms - while productivity growth has the potential to lift the wages of those employed and the returns to the self-employed.

The ability of the poor to be productively employed depends on the one hand on their employability which in turn depends on their individual resources. An employability analysis would include analysis of (i) the existing stock of human capital, such as education and health; (ii) the ability of the poor to acquire skills and stay healthy; and (iii) access to labor markets where individuals can earn income by offering their skills. On the other hand, the ability of the poor to be productively employed depends on the opportunities for the poor to make full use of these resources as the economy evolves over time. The analysis therefore looks at ways to strengthen the productive resources and capacity of the poor on the labor supply side as well as ways to open up new opportunities for productive employment on the labor demand side.

If the main problem is lack of employment for the poor due to limited supply of certain types of labor skills, the constraints are related to the productive resources and capacity of the poor as individuals rather than the environment in which they can use these resources. This situation calls for an in-depth employability analysis that will shed light on the resources of the poor, e.g. the poor’s labor skills and the productivity attributes that they bring to a job. If the main problem is low labor productivity or lack of employment opportunities for the poor due to limited demand for labor, an analysis of the bottlenecks in the business environment is necessary.

We start by identifying the poor as productive actors who earn income either as self- or wage-employed, and further distinguish employment by sector, size of firm, rural/urban,
formal/informal, and other relevant characteristics. In the case of the self-employed, we undertake business environment analysis through the lenses of the small and micro enterprises of the poor (Figure 14). In the case of the wage employed, we undertake an employability analysis as well as a business environment analysis through the lenses of a representative firm, potentially employing the poor.8

**Figure 14: Shared Growth Analytics**

The business environment analysis follows, but is not limited to, the aggregate-type of growth diagnostics suggested by Hausmann, Rodrik and Velasco (2005) as presented in Figure 15.9 Investments and entrepreneurial activities are determined by the relationship between *private returns to economic activities and cost of finance*. Private returns are determined by social returns, which depend on factors such as geography, technology, infrastructure and human capital, and the private appropriability of these returns. Private appropriability reflects the extent to which social returns are translated into private returns and is negatively affected by government failures or market failures.

- **Government failures**, or bad policy and poor institutional environment, include macroeconomic risks such as financial, monetary and fiscal instability, and microeconomic risks, such as insecure property rights, corruption, inefficient tax collection systems, cumbersome regulations and business registration procedures.

- **Market failures** include limited information and coordination externalities affecting negatively the country’s ability to expand private sector development and adopt new technologies. These failures are acute when markets are fragmented either horizontally, e.g. due to geographical isolation, or vertically, e.g. inputs are limited locally in quality and quantity.

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8 Note that the analysis of labor skills as a potential constraint for the self-employed is captured in the business environment analysis where it is analyzed as a constraint to growth of the small firm.

In addition to the employability analysis, a key difference between the growth diagnostics framework proposed by Hausmann, Rodrik and Velasco (2005) and the shared growth analytics framework proposed in this paper is that instead of going through the diagnostic tree from the perspective of a representative firm or investor, the shared growth framework looks at the tree from the perspective of the poor as a productive actor – a worker and/or a self-employed.

To find out what this perspective on shared growth implies for a specific country, the results from an employment diagnostic analysis will be crucial. This analysis will be able to shed light on a number of important questions including the extent to which the poor are self-employed or wage employed; whether they live and work in the rural or urban area; in manufacturing, mining, agriculture or services; in formal or informal firms; in small, medium or large firms; exporters or non-exporters; foreign or domestic.

Another important question is to what extent the current employment status of the poor has a potential for future income growth from productivity improvements, or if moving out of poverty would mean finding another type of employment or employment in another sector. The business environment analysis should therefore be preceded by an analysis of external factors explaining the country’s growth and poverty reduction pattern, the overall productivity dynamics in the country, the major challenges and opportunities faced, and the possibilities for economic transformation and diversification.
The analysis of the constraints in the business environment that the poor face in their current employment should then be complemented with an analysis of the constraints in the sectors with opportunities for productive employment and constraints affecting their ability to gain employment in these sectors. Such an analysis will need to review constraints affecting labor mobility across sectors and regions, labor market constraints, access to education, finance and infrastructure.

Another key difference between the growth diagnostics framework of Hausmann, Rodrik and Velasco (2005) and this shared growth analytics framework is that we go beyond the aggregate level when analyzing the business environment and rely on industry and firm level data, as well as household level data. We do so because the aggregate picture typically hides important details at the industry level. Most importantly, however, our use of industry, firm and household level data is necessitated by our main objective to identify the incidence of growth across the income distribution and the bottlenecks to the productive employment of the poor.

While in the growth diagnostics approach the emphasis is on identifying the reforms needed to ignite growth in the short run that can hopefully create a “virtuous circle” of business activities, the shared growth approach takes a longer run perspective. This is necessary because our emphasis is on improving the productive capacity and creating conducive environment for employment of the poor, rather than on income redistribution as a means of poverty reduction. Due to this longer term perspective, there will be a more explicit focus on structural dynamics in the shared growth analytics framework than in the growth diagnostics framework. This is highly relevant in the poorest countries where a significant part of shared growth will come from reallocation of labor from low-productivity to high-productivity sectors. Our goal is to identify a bundle of binding constraints rather than the binding constraint, and then sequence these constraints to maximize inclusive growth in a country.

Finally, it is important to recognize the time lag between reforms and outcomes and the rapid changes of the economy due to external and internal factors. This implies that the analysis must identify future constraints to growth that may not be binding today, but that may need to be addressed today in order to ensure sustainable and shared long-run growth. In sum, shared growth analytics is about policies that should be implemented in the short run, for sustainable shared growth.

Summing up, the focus in shared growth analytics is on the poor and their constraints to productive self or wage employment, rather than the constraints to investment of a representative firm. This is why growth diagnostics is limited to an analysis of the main bottlenecks to private sector growth in general while shared growth analytics identifies the main bottlenecks to private-sector led growth taking into account the distributional aspects of different constraints and the employability of the labor force.
3  Shared Growth Analytics for Zambia

To understand why poverty rates in Zambia have remained high despite strong growth in the past decade this section starts by exploring the dynamics of different sectors and the extent to which the poor profit from the growing sectors or are dependent on stagnating sectors. We discuss the employment profile of the poor, and estimate labor productivity and job creation at the industry level.

A closer look at the sources of income of the rural, mostly self-employed, household heads, suggests that farmers only get 10 percent of their income from farm sales, and the majority of their farm output is for subsistence purposes. Few rural households have sufficient resources to hire poorer neighbors or provide them with loans. Rich rural households tend to rely more on wage employment and less on subsistence farming than poor rural households, but there are no wide differences in rural households’ wealth and education levels (Table 1). Rural inequality is very low and better-off households were also viewed as vulnerable and their future well-being less than certain.

Table 1: Mean Shares of Household Income by Source, by Income Quintile, Rural Areas

<table>
<thead>
<tr>
<th>Quintile of National Distribution</th>
<th>All</th>
<th>Poorest 20%</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td>12</td>
<td>11</td>
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<tr>
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<td>57</td>
<td>55</td>
<td>54</td>
<td>55</td>
<td>52</td>
</tr>
</tbody>
</table>

Source: World Bank (2007a)

Table 2: Mean Shares of Household Income by Source, by Income Quintile, Urban Areas

<table>
<thead>
<tr>
<th>Quintile of National Distribution</th>
<th>All</th>
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<td>7</td>
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<td>4</td>
<td>3</td>
</tr>
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</table>

Source: World Bank (2007a)
In urban areas, the poor reside in informal settlements which according to estimates host 50-80 percent of the urban population. The urban poor are typically self-employed, but they may also be unemployed or underemployed. The self-employed in urban centers are part of the large urban informal sector which in Zambia provided livelihood to 56 percent of the urban workers in 2002-03. They are employed in a variety of informal economic activities ranging from producing and selling building materials, to trading petty commodities, farming, and renting real estate. While the urban poor derive a much larger share of income from wages compared to the rural poor (Table 2), the urban poor rely much less on income from wages and have much fewer years of schooling than the urban rich (Table 8 in section 3.3.1). The urban poor are typically involved in several different activities, including the cultivation of undeveloped urban or peri-urban land to supplement their incomes and food intake.

In the last few years urban poverty declined, whereas rural poverty slightly increased. These trends are a result of an expansion in industrial and service activities, which have been drivers of growth in Zambia (Table 4), represented 86 percent of GDP in 2006 (Table 3), and took place mostly in urban centers.

Table 3: Shares in total value added in Zambia (percent)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
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<th>2002</th>
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<td>58.0</td>
<td>57.2</td>
<td>56.1</td>
<td>55.9</td>
<td>55.9</td>
<td>57.2</td>
</tr>
<tr>
<td>- Banking</td>
<td>8.7</td>
<td>8.4</td>
<td>8.3</td>
<td>8.1</td>
<td>7.9</td>
<td>7.7</td>
<td>7.5</td>
<td>8.1</td>
</tr>
<tr>
<td>- Utilities</td>
<td>3.1</td>
<td>3.3</td>
<td>3.0</td>
<td>2.9</td>
<td>2.7</td>
<td>2.7</td>
<td>2.8</td>
<td>2.9</td>
</tr>
<tr>
<td>- Other services</td>
<td>2.1</td>
<td>2.4</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.6</td>
<td>2.9</td>
<td>2.5</td>
</tr>
<tr>
<td>- Real estate</td>
<td>10.1</td>
<td>10.0</td>
<td>10.0</td>
<td>9.9</td>
<td>9.7</td>
<td>9.5</td>
<td>9.2</td>
<td>9.8</td>
</tr>
<tr>
<td>- Public administration</td>
<td>8.2</td>
<td>8.3</td>
<td>8.1</td>
<td>7.8</td>
<td>7.4</td>
<td>7.2</td>
<td>7.4</td>
<td>7.8</td>
</tr>
<tr>
<td>- Transport</td>
<td>6.7</td>
<td>6.6</td>
<td>6.4</td>
<td>6.4</td>
<td>6.4</td>
<td>6.6</td>
<td>7.5</td>
<td>6.7</td>
</tr>
<tr>
<td>- Trade</td>
<td>19.4</td>
<td>19.6</td>
<td>19.7</td>
<td>19.8</td>
<td>19.6</td>
<td>19.6</td>
<td>18.7</td>
<td>19.5</td>
</tr>
</tbody>
</table>

Source: World Bank, DDP.

---

10 Among individuals age 20 and over, 18 percent of those in the bottom quintile were unemployed according to CSO (2002-03).
Table 4: Industries’ contribution to real growth in Zambia (percent)

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4.5</td>
<td>4.5</td>
<td>5.8</td>
<td>6.1</td>
<td>5.8</td>
<td>6.7</td>
<td>5.6</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-0.5</td>
<td>-0.3</td>
<td>0.8</td>
<td>0.7</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Industry</td>
<td>2.0</td>
<td>2.8</td>
<td>2.5</td>
<td>3.2</td>
<td>2.3</td>
<td>2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>- Construction</td>
<td>0.6</td>
<td>1.0</td>
<td>1.4</td>
<td>1.5</td>
<td>1.6</td>
<td>1.3</td>
<td>1.2</td>
</tr>
<tr>
<td>- Mining</td>
<td>1.0</td>
<td>1.2</td>
<td>0.3</td>
<td>1.1</td>
<td>0.2</td>
<td>0.6</td>
<td>0.7</td>
</tr>
<tr>
<td>- Manufacturing</td>
<td>0.5</td>
<td>0.6</td>
<td>0.9</td>
<td>0.5</td>
<td>0.4</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Services</td>
<td>3.0</td>
<td>1.9</td>
<td>2.5</td>
<td>2.2</td>
<td>3.1</td>
<td>3.8</td>
<td>2.8</td>
</tr>
<tr>
<td>- Banking</td>
<td>0.0</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>- Utilities</td>
<td>0.4</td>
<td>-0.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.1</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>- Other services</td>
<td>0.5</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
<td>0.3</td>
</tr>
<tr>
<td>- Real estate</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>- Public administr.</td>
<td>0.5</td>
<td>0.1</td>
<td>0.1</td>
<td>0.0</td>
<td>0.3</td>
<td>0.6</td>
<td>0.3</td>
</tr>
<tr>
<td>- Transport</td>
<td>0.2</td>
<td>0.1</td>
<td>0.3</td>
<td>0.4</td>
<td>0.5</td>
<td>1.4</td>
<td>0.5</td>
</tr>
<tr>
<td>- Trade</td>
<td>1.0</td>
<td>1.0</td>
<td>1.2</td>
<td>1.0</td>
<td>1.2</td>
<td>0.4</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations based on data from World Bank, DDP.

Labor productivity in industry and services is also much higher than in agriculture (Figure 16). The huge gap between farm and non-farm labor productivity implies that Zambia, which has 70 percent of its labor force employed in agriculture (Figure 17), uses its labor extremely inefficiently.

Figure 16: Real value added per worker in Zambia

Source: Authors’ estimates based on data from Government of Zambia and World Bank.
Figure 17: Distribution of labor in Zambia by sector, 2004 (% of total labor force)

The growing sectors however created few job during the dynamic period 1998-2006 (Figure 18). A possible positive development is the decline in the number of jobs in the segment where the poorest are concentrated, i.e. small scale agriculture accompanied by an increase in the number of jobs in urban low cost and medium cost areas. However, in the period 2004-06 there has been a decline in the number of urban jobs in medium and high cost areas, and the number of jobs in large-scale agricultural firms remained negligible.

Figure 18: Number of people employed by stratum, 1996-2006.

Note: Small, Medium and Large in the rural area refer to the scale of the farm, and Low, Medium and High costs in the urban area refer to the cost of the residential area.

These trends suggest that in the past decade the path out of poverty was through migration to urban low cost and medium cost areas where the number of jobs increased and productivity was higher than in the rural economy. Would this be the path of out poverty in the future? What would it take to increase the speed of non-farm employment creation? What would it take to raise labor productivity?
The distribution of employment by industry (Figure 19) implies that even a sizable percentage increase in employment in the urban industries will result in relatively few urban jobs in the near term. Furthermore, the capital intensive nature of mining implies that increases in investment inflows to this sector will not generate the number of jobs required to lift a significant share of people from poverty, and may have adverse effects on competitiveness through real exchange rate appreciation effects. This suggests that Zambia needs to focus on lifting constraints to productivity and employment creation in sectors other than mining that will be the source of income for the majority of the Zambians.

Figure 19: Distribution of employed by industrial sector in the rural and urban areas (2004)

Agriculture is a sector of special interest as most people in Zambia, and especially the poor, are employed and derive their income from farming but the question is if the sector has potential for productivity improvements in the future, i.e. if it is a potential path out of poverty. This sector also has a dual structure representing on the one hand a small number of export-oriented commercial farmers that boast productivity levels similar to developed countries, and on the other hand, a large number of small-scale, subsistence farms that have productivity levels typical of Sub-Saharan Africa. There are also hybrid operations by medium-sized and emergent farms that produce for both commercial and subsistence purposes (Table 5).

Table 5: Structure of the farming sector

<table>
<thead>
<tr>
<th>No of farmers</th>
<th>Small scale</th>
<th>Emergent</th>
<th>Medium scale</th>
<th>Large scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hectares per holding</td>
<td>459,000</td>
<td>119,200</td>
<td>25,230</td>
<td>&gt;40</td>
</tr>
<tr>
<td>Crops grown</td>
<td>0.5-0.9</td>
<td>10-20</td>
<td>20-60</td>
<td>&gt;60</td>
</tr>
<tr>
<td>Production focus</td>
<td>Food crops</td>
<td>Food/cash crops</td>
<td>Food/cash crops</td>
<td>Cash crops</td>
</tr>
</tbody>
</table>

Opportunities for farm job creation in commercial agriculture exist in Zambia. A World Bank (2007c) study projects the employment and income implications of commercial agriculture expansion and estimates that expanding irrigated commercial agriculture have the potential to generate, for example, 2 full time jobs per hectare in coffee production, 0.5 in wheat/soya, 1 in fodder crops, 2 in local horticulture and as many as 25 in floriculture. Depending on the types of benefits the expected wage would be around $3.6-4.5 a day,\textsuperscript{11} which is much higher than the average return a day of $1.2 for a small-scale cotton farmer, $0.3 for a small-scale maize farmer without fertilizer subsidies, and $1.3 for small scale commercial maize farmers with 50% fertilizer subsidies. The wage differential reflects productivity differentials,\textsuperscript{12} and the potential to fill this gap and increase average agriculture labor productivity will be covered in the subsequent analysis.

Another dimension that is crucial to this analysis is economic geography. There are limited financial resources and capacity to make public investments and the ones that get done need to be targeted to areas where the net benefit to inclusive economic growth will be largest. Zambia’s population distribution is highly uneven with 65 percent living in areas with less than 150 persons per square kilometer. Adding a poverty perspective to this makes the trade-off in public investments even more difficult. The poverty maps on Figure 20 show the inverse relationship between the poverty headcount and the poverty density and help us distinguish three groups of poor: (i) urban poor; (ii) rural poor in serviceable areas, and (iii) rural poor in remote areas. This study focuses on the first two groups, while policies to increase mobility combined with some kind of social safety nets or subsidies (not analyzed in this study) need to be considered in remote areas.

\textbf{Figure 20: Poverty maps Zambia}

\begin{center}
\includegraphics[width=\textwidth]{poverty_maps.png}
\end{center}

\textit{Source: Simler (2007)}

\textsuperscript{11} These jobs would pay ZMK 11,000 a day, plus benefits, holidays and sometimes access to health clinics and schools. Commercially-oriented medium and small firms pay about ZMK 5,000-6,000 a day.

\textsuperscript{12} For example, the average yield of Zambian smallholder cotton growers is 0.8 tons per hectare and needs to expand with at least 2 tons per hectare to reach the same returns as wage workers in commercial cotton farms.
This analysis suggests that the main reasons for low income growth of the poor in Zambia are low returns to self employment – not least in agriculture, and limited growth of and/or access to wage employment. So what are the main factors limiting returns to labor and job creation in Zambia? Following the tree in Figure 14 we first turn to the question of employability.

3.1 Are employability and productive assets main constraints to productive employment?

This section examines the factors determining the qualitative supply of labor and whether these factors are a major constraint to income of the private household/individual. These factors including education and health determine the prospects of the poor to seize opportunities in the business environment in the longer term. The question of whether the supply of labor is a constraint to investment of firms is analyzed as part of the business environment analysis under social returns.

3.1.1 Education

Zambia has high primary school enrollment rates and literacy rates above the average for SSA and LICs (Table 7), but gross secondary school enrollment rates for the period 2002-04 were lower than the average for SSA and much lower than the average for LICs (Table 6). In 2004, only 24 percent of Zambians attended secondary school and only 18 percent completed the full 12 years of schooling. There is no major difference between the rural and urban areas in access to primary schools but in secondary school access the difference is apparent (Figure 21).

<table>
<thead>
<tr>
<th></th>
<th>Primary school enrollment, net (%)</th>
<th>Primary school enrollment, gross (%)</th>
<th>Secondary school enrollment, net (%)</th>
<th>Secondary school enrollment, gross (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zambia</td>
<td>80</td>
<td>99</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>Uganda</td>
<td></td>
<td>118</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Tanzania</td>
<td>91</td>
<td>106</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>89</td>
<td>105</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Namibia</td>
<td>74</td>
<td>101</td>
<td>37</td>
<td>58</td>
</tr>
<tr>
<td>Malawi</td>
<td>95</td>
<td>125</td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>Kenya</td>
<td>76</td>
<td>111</td>
<td>40</td>
<td>48</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td>118</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>90</td>
<td>116</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td></td>
<td>93</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Low income countries</td>
<td></td>
<td>80</td>
<td>104</td>
<td>45</td>
</tr>
<tr>
<td>OECD</td>
<td>96</td>
<td>102</td>
<td>92</td>
<td>101</td>
</tr>
</tbody>
</table>

Data are most recently available from 2002-2004 period

Source: World Bank (DDP data)
Table 7: Literacy rates: cross-country comparisons

<table>
<thead>
<tr>
<th>Country Name</th>
<th>1990</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zambia</td>
<td>65</td>
<td>68</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>54</td>
<td>59</td>
</tr>
<tr>
<td>Low income</td>
<td>51</td>
<td>61</td>
</tr>
<tr>
<td>Lower middle income</td>
<td>80</td>
<td>89</td>
</tr>
<tr>
<td>Middle income</td>
<td>82</td>
<td>90</td>
</tr>
<tr>
<td>Upper middle income</td>
<td>92</td>
<td>93</td>
</tr>
<tr>
<td>High income</td>
<td>98</td>
<td>99</td>
</tr>
</tbody>
</table>

Source: World Bank (DDP data)

Figure 21: Percentage of households with access to education facilities within five kilometers.

While worker skills are not perceived as a major obstacle to private sector growth in Zambia, education beyond the primary level is a major constraint to successful self-employment\(^{13}\) and employment in the formal sector for the poor. While there is no major difference in mean years of education between the rich and the poor household heads in the rural areas (Table 8), school attendance in urban centers is differentiated by consumption/income levels. In 2002/03 the household heads in the richest deciles had nearly twice the mean years of schooling than those of the household heads in the poorest deciles (Table 8).\(^{14}\) At all ages, children from households in the top quintiles are more likely to be in school than those in the poorest quintile. Because the poor typically start school later, the greatest difference is at young ages.

Table 8: Mean years of schooling of household head in 2002/03

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Poorest 20%</th>
<th>Richest 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>5.3</td>
<td>4.4</td>
<td>6.2</td>
</tr>
<tr>
<td>Urban</td>
<td>9.3</td>
<td>6.6</td>
<td>11.1</td>
</tr>
</tbody>
</table>

Source: World Bank (2007a)

---

\(^{13}\) Firm studies indicate that education of firm proprietor is most important for growth of small indigenous firms.

\(^{14}\) Tertiary education, which is essential for jobs in large companies and the public sector, reaches just a little over 2 percent of the population.
Finally, despite improvements in school infrastructure, and the introduction in 2002 of free education up to seventh grade, the quality of education remains poor and there is a dire lack of capacity to meet needs. Fees are still charged for education after grade seven and there are fewer slots in middle and high school.

### 3.1.2 Health

Health is another important dimension of employability and its poor status in Zambia is a constraint to productive employment for many poor. Estimates of the costs related to HIV/AIDS in Zambia are almost 1 percent in GDP growth per year according to Zambia CEM (World Bank, 2004b). The high prevalence of HIV/AIDS affects income growth negatively because it undermines the stock of available labor, its productivity and limits incentives for investments for future consumption (physical as well as human capital investments).

The HIV/AIDS epidemic is more devastating in Zambia than in many other SSA countries. In 2005 HIV infection rates in the working-age population stood at 17 percent in Zambia compared to the SSA average of 6 percent. The infection rate was much higher in urban areas where it affected 22 percent of the working-age population, but HIV/AIDS undermined the capacity to supply labor in rural areas as well.

Although access to health facilities has improved since 1998, it is still a problem limiting access to 12 percent of the rural household that reported to be more than 15 kilometers away from a health facility. Because of poor health care provision, many of the infected individuals without access to healthcare and medications are unable to continue working productively, if at all. The 2002-03 LCMS examined reasons for urban-rural migration, and found that most migration was in fact not in response to economic stress, instead many of them were people with HIV/AIDS who returned to their villages during their final months of life. Shortage of labor is mentioned by many as a problem dividing the self-sufficient and the food deficient and households with high dependency ratio, i.e. low labor supply per household member, are much more likely to be poor.

### Table 9: Access to Sanitation and Water

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Improved sanitation facilities, rural</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>31</td>
<td>39</td>
<td>46</td>
<td>52</td>
</tr>
<tr>
<td>SSA</td>
<td>24</td>
<td>24</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>South Africa</td>
<td>53</td>
<td>51</td>
<td>48</td>
<td>46</td>
</tr>
<tr>
<td><strong>Improved sanitation facilities, urban</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>63</td>
<td>62</td>
<td>60</td>
<td>59</td>
</tr>
<tr>
<td>SSA</td>
<td>52</td>
<td>53</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>South Africa</td>
<td>85</td>
<td>83</td>
<td>81</td>
<td>79</td>
</tr>
<tr>
<td><strong>Improved water source, rural</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>27</td>
<td>32</td>
<td>36</td>
<td>40</td>
</tr>
<tr>
<td>SSA</td>
<td>36</td>
<td>39</td>
<td>41</td>
<td>43</td>
</tr>
<tr>
<td>South Africa</td>
<td>69</td>
<td>69</td>
<td>71</td>
<td>73</td>
</tr>
<tr>
<td><strong>Improved water source, urban</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>86</td>
<td>88</td>
<td>89</td>
<td>90</td>
</tr>
<tr>
<td>SSA</td>
<td>82</td>
<td>81</td>
<td>81</td>
<td>80</td>
</tr>
<tr>
<td>South Africa</td>
<td>98</td>
<td>98</td>
<td>99</td>
<td>99</td>
</tr>
</tbody>
</table>

*Source: World Bank (DDP data)*
In conclusion, poor quality and low levels of secondary and higher education and high prevalence of HIV/AIDS undermine the ability of the poor in Zambia to seize economic opportunities. With this in mind focusing on both higher education and health (HIV/AIDS) as areas of priority is crucial from the perspective of the poor as individuals rather than a representative firm.\textsuperscript{15} We are now turning to the business environment analysis in Figure 14. We start with an evaluation of the cost of capital as a potential binding constraint to shared growth (Figure 15).

3.2 \textbf{Is the high cost of capital an obstacle to income growth?}

The Zambia Growth Diagnostic study (World Bank, 2007b) identified the high cost of capital and poor access to finance as binding constraints to growth in Zambia. According to Zambia’s Investment Climate Assessment (ICA) report (World Bank, 2004a),\textsuperscript{16} in 2003, the high cost of capital was perceived as the top-most constraint to business operations of Zambian firms.\textsuperscript{17} More than 80 percent of firms in Zambia thought that cost of financing is the most binding constraint to their operation compared to 60 percent in Uganda, and 73 percent in Kenya. Lack of capital to expand or start a business was perceived as the main reason for their poverty status by 30 percent of rural residents and 42 percent of urban residents in 2002/03 (World Bank, 2007a).

Recent data however suggest a more nuanced picture. In 2006, access to agricultural inputs and low wages, not high cost of capital, were cited by the largest share of poor people as reasons for poverty in rural and urban areas, respectively (Figure 22). Lack of capital/credit to extend or start a business was perceived as the main reason for poverty by 14 percent in rural areas and 19 percent in urban areas.

\textsuperscript{15} See section 3.3.5 where human capital is discussed from the perspective of the firm.

\textsuperscript{16} It is important to keep in mind that Zambia’s 2007 Investment Climate Survey data were collected in 2003 and many aspects of the business environment have changed since then. Moreover, over 70 percent of workforce is employed in the informal sector, and the ICA survey covers only formal companies. The large size of the informal sector indicates serious problems affecting the investment climate.

\textsuperscript{17} The high cost of capital and the limited access to finance were perceived as a major or severe obstacle to growth by 82 percent and 54 percent of business owners, respectively. The interest rate spread was 17 percent in 2005 which was substantially higher than in OECD (3 percent) and SSA (11 percent). Domestic credit to the private sector was only 7 percent of GDP 1999-2005, to be compared to 176 percent on average in OECD and 62 percent on average in SSA.
While risk premiums on lending to firms have been high by international standards (Figure 23), they are now approaching averages in other African countries and LICs. Moreover, on average the real cost of capital in Zambia has been below that of Uganda and other large, booming, copper exporting countries such as Mongolia, and very close to the real cost of capital in South Africa (Figure 24). If any, it is poor access to and high cost of capital on loans to small, domestic companies that has constrained the growth of the private sector.

**Figure 23:** Interest rate spreads (lending minus deposit rate)
According to Zambia’s ICA (World Bank, 2004a), in 2003, nearly 50 percent of larger firms (over 100 employees) had a loan, while only 19 percent of small firms (10-49 employees) had a loan. The cost of these loans to small firms was also more than 10 percentage points higher than those to large firms. Similar differentials existed between the cost of capital of exporters and non-exporters, as well as domestic and foreign companies. Informal firms, not represented in the survey, typically face even steeper constraints when it comes to cost and access to capital. These firms have to finance their operations largely from own funds. Poor access to capital for small formal firms gives informal companies little incentives to become formal.

The reason for the poor access to and high cost of finance for small and micro firms appears to be poor financial intermediation rather than low domestic savings or bad international finance. Domestic saving as a share of GDP climbed up from just 6 percent in the 1990s to 16.5 percent in 2000s (Table 10). In 2006 Zambia’s domestic saving as a share of GDP surpassed the corresponding average for SSA. Foreign direct investment and aid have been higher than the averages for SSA and LICs both in the 1990s and 2000s (Table 10). Financial intermediation is limited both by the small size of the banking sector, its volatility, and an inadequate supporting financial infrastructure (e.g. public registries).

At less than 5 percent, the percentage of people with a bank account is much lower than that in other African countries, suggesting that the depth of Zambia’s financial sector is very low (Figure 25). Furthermore, according FinScope data in 2005 two thirds of Zambians were not served by formal or informal financial institutions and only 5 percent of adults and 8 percent of business owners used microfinance (FinTrust, 2007).
Table 10: Investment and saving indicators

<table>
<thead>
<tr>
<th></th>
<th>1991-1999</th>
<th>2000-2005</th>
<th>Latest year*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross capital formation (% of GDP)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>13.7</td>
<td>23.8</td>
<td>25.8 (2006)</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>17.8</td>
<td>18.9</td>
<td>19.2 (2006)</td>
</tr>
<tr>
<td>Low income countries</td>
<td>21.4</td>
<td>25.0</td>
<td>28.8 (2005)</td>
</tr>
<tr>
<td>OECD</td>
<td>21.3</td>
<td>20.5</td>
<td>20.3 (2004)</td>
</tr>
<tr>
<td><strong>Gross capital formation (annual % growth)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>3.1</td>
<td>7.1</td>
<td>13.0 (2006)</td>
</tr>
<tr>
<td>Low income countries</td>
<td>5.6</td>
<td>8.4</td>
<td>15.9 (2005)</td>
</tr>
<tr>
<td>OECD</td>
<td>2.1</td>
<td>2.6</td>
<td>5.0 (2004)</td>
</tr>
<tr>
<td><strong>Aid (% of gross capital formation)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>193.4</td>
<td>72.8</td>
<td>50.3 (2005)</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>30.0</td>
<td>25.6</td>
<td>26.7 (2005)</td>
</tr>
<tr>
<td>Low income countries</td>
<td>16.2</td>
<td>10.5</td>
<td>9.9 (2005)</td>
</tr>
<tr>
<td>OECD</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td><strong>FDI, net inflows (% of gross capital formation)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>27.6</td>
<td>14.3</td>
<td>13.8 (2005)</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>8.4</td>
<td>16.1</td>
<td>13.9 (2005)</td>
</tr>
<tr>
<td>Low income countries</td>
<td>5.0</td>
<td>5.8</td>
<td>5.1 (2005)</td>
</tr>
<tr>
<td><strong>FDI, net inflows (% of GDP)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>4.0</td>
<td>3.3</td>
<td>3.6 (2005)</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>1.5</td>
<td>3.0</td>
<td>2.7 (2005)</td>
</tr>
<tr>
<td>Low income countries</td>
<td>1.1</td>
<td>1.4</td>
<td>1.5 (2005)</td>
</tr>
<tr>
<td>OECD</td>
<td>1.3</td>
<td>2.4</td>
<td>1.9 (2005)</td>
</tr>
<tr>
<td><strong>Gross domestic savings (% of GDP)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>6.0</td>
<td>16.5</td>
<td>18.1 (2005)</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>16.2</td>
<td>18.0</td>
<td>16.2 (2005)</td>
</tr>
<tr>
<td>Low income countries</td>
<td>18.6</td>
<td>22.5</td>
<td>25.1 (2005)</td>
</tr>
</tbody>
</table>

*Source: World Bank, DDP.*

*Note: Latest year shown in parenthesis.*
Another problem is lack of public registries or private bureaus with information on borrowers’ creditworthiness. Despite a good legal framework that protects the rights of borrowers and lenders, in practice Zambia’s recovery rate on bank loans is just 22 cents – higher than in LICs, but significantly lower than the rate in South Africa and HICs.

The problem of poor financial intermediation is especially severe in rural areas. Before liberalization there were government-run institutions providing agricultural credits, but in 1997 this ended and was combined with a period of prohibitively high interest rates. Informal borrowing is normally not an option as the rate can go up to several hundred percent annually.

However, there is evidence that financial intermediation has improved lately. The number of commercial bank branches has also grown rapidly in the period 2006-07 (Figure 26). Some microfinance institutions operated by NGOs and outgrower schemes (mainly in cotton, paprika and tobacco) have been successful in providing credit to farmers. The micro finance and outgrower credit channel however is still limited.
A question that needs to be posed before making a conclusion about the cost of or access to capital as a binding constraint to growth is why people did not use financial services. Among the top reasons for not having bank accounts were low and irregular income, rather than physical access or high fixed costs (Figure 27). This indicates that constraints to income growth rather than access to saving institutions are crucial for shared growth at present. A similar picture emerges when one looks at the reasons for not having micro credit.

**Figure 27: Reasons for not having a bank account**


**Figure 28: The reasons for not having a micro finance institution (MFI) loan**

Figure 28 shows that only 1 percent of business owners have micro credit loans. Of the ones without micro credit only 17 percent say they have access to credit but do not need it because they have own funds. The majority of business owners with no access to micro credit cannot afford it (63 percent) or are too poor (23 percent). However, a significant share of business owners is unaware of micro-credit opportunities (32 percent).

In summary, access to credit may still be a constraint for some groups of poor but it is difficult to make firm conclusions whether it is a binding constraint for shared growth. Signs of improvement can be found in both “objective” and perception data, indicating that the financial infrastructure seems to respond to new economic opportunities. Positive effects of access to credit are mainly seen when credits are combined with access to other types of inputs, and output markets, such as in outgrower schemes. This suggests the importance of coordination when supplying producers with key services. We continue with an evaluation of social returns as a potential reason for low returns to investment, which in turn limit shared growth (Figure 15).

3.3 Do low social returns imply low income growth?

3.3.1 Mining, agriculture and natural endowments

Relative to other Southern African countries (Table 11), Zambia is well endowed with natural resources, including arable land, favorable climate and pattern of rainfall over large sections of the country, ample water, forestry and mining resources (World Bank 2003). These endowments offer opportunities for income growth from a diverse set of economic activities including mining, agriculture, forestry, fisheries, tourism and hydro energy, but also food processing, and manufacturing related to Zambia’s endowments of mining, forestry and others.

<table>
<thead>
<tr>
<th></th>
<th>Annual Renewable Water Resources (km3), 2000</th>
<th>Forest Coverage (000 ha) 1995</th>
<th>Nationally Protected Areas (000 ha) 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zambia</td>
<td>80</td>
<td>31355</td>
<td>6366</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>14</td>
<td>8626</td>
<td>3071</td>
</tr>
<tr>
<td>Malawi</td>
<td>18</td>
<td>3213</td>
<td>1059</td>
</tr>
<tr>
<td>Mozambique</td>
<td>100</td>
<td>16834</td>
<td>4779</td>
</tr>
<tr>
<td>South Africa</td>
<td>45</td>
<td>7204</td>
<td>6619</td>
</tr>
<tr>
<td>Namibia</td>
<td>6</td>
<td>12374</td>
<td>10616</td>
</tr>
<tr>
<td>Tanzania</td>
<td>80</td>
<td>1224</td>
<td>13817</td>
</tr>
</tbody>
</table>

*Source: African Development Indicators (2000)*

Mining is Zambia’s main source of export revenues, and in the face of rising demand for natural resources from emerging Asia and elsewhere, will continue to be a key source of growth of export revenue. Dominated by copper, mining in recent years has diversified
into other metals and minerals. Possibilities remain open for Zambia to capitalize on its deposits of nickel, zinc, lead, coal, emeralds, gold, silver and uranium.

Another, natural resource that remains largely untapped is land. Only 10 percent of total land and 40 percent of arable land is currently cultivated. However, as shown in Figure 16, average returns to agriculture have remained low despite possibilities for output expansion through both land expansion and intensification of non-commercial farming. Government distortions have created misallocation of resources (Jayne et al. 2007) and raised indirect costs. Low productivity in rural areas is partly a result of many years of development neglect, when Zambia’s agriculture was mainly seen as a source of cheap foods sold in urban area. During the 90s major reforms were carried out within Zambia’s agriculture sector, including market determined prices, reduction of producer subsidies, and other measures. The nature of these reforms implied that mostly large scale firms and firms with market access benefited, while many small-scale farmers struggled to access markets, inputs and information. The government however continued to intervene in agricultural markets (see further in Section 3.4.3). The indirect costs to agriculture, which include direct taxes and indirect costs through macroeconomic and other distortions, have diminished substantially in most countries, except in Zambia (Figure 29). These costs created by the economic structure of Zambia are high compared to other African countries and have even increased since the beginning of the 80s.

**Figure 29: Indirect cost to agriculture**

![Indirect cost to agriculture](image)

*Source: World Bank (2008a)*

*Note: The nominal rate of assistance, the “net taxation”, takes into account distortions on both the output and input side. It adjusts for direct output subsidies, the difference in output price at the farm gate and at the borders, input subsidies, differences between domestic inputs and the international price, distortions in the market for foreign currency, and others.*

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18 Revenues form the copper mines were formerly used to finance government interventions in agricultural markets. These included guaranteed prices for maize and subsidized inputs and credits. The incomes of the rural households were further ensured by remittances from workers in, at that time, public employment in the mines. Hence, the agricultural sector was mainly encouraged through public and private transfers and there were few incentives to diversify due to the lack of investment in general productivity enhancing infrastructure.
The abundance of fertile land and the possibility to remove these efficiency limiting distortions, implies that there is a potential to expand farm output in Zambia. According to a World Bank study (2007c), discussed on page 20, Zambia’s commercial agricultural expansion will be mainly along the extensive margins as their yields are already comparable to those in developed countries. For medium and small scale farms however there will be opportunities to increase output both at the intensive and extensive margins.

Zambia has untapped social returns in hydro power and tourism. Based on statistical analysis, Mattoo and Payton (2007) find that tourist flows are much lower than expected, given Zambia’s natural endowments. The main reasons for the lower than expected tourist flows are the condition of road infrastructure and the cost of doing business as an indirect measure of the level of “tourism establishment” serving and accommodating tourists. Their estimates suggest that if the road infrastructure and the business climate were as in South Africa Zambia’s tourist flows would be 51 percent higher than existing levels.

3.3.2 Geography

Zambia is a landlocked country which makes it potentially harder to reach export markets and realize economies of scale, as well as access cheap imports. On the other hand, being landlocked may also serve as an import tax protecting domestic import-competing firms.

One concern posed by Zambia’s landlocked position is its ability to export bulky low-value products (e.g. some agricultural products). The extra cost of getting such products to the coast needs to be compensated by more efficient production compared to coastal countries. Indeed, increasingly more of Zambia’s agricultural products are exported by air – a shift that required a focus on high value and low weight and volume products, but also improved access to air transport. However, Zambia’s access to air transport is still well below the access level expected given its GDP per capita level (Figure 30). There is evidence that as some firms have suspended horticultural exports to Europe, the frequency of flights has decreased raising air-freight costs for remaining firms.

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19 The average GDP per capita in landlocked SSA countries was about half of the GDP per capita for the coastal SSA countries in 1999-2005, and Zambia’s GDP per capita was only 60 percent of the average of the landlocked countries during the same period. However, in terms of GDP per capita growth during the same period the order was reversed, implying that Zambia is catching up with other landlocked countries.
When it comes to regional trade, Zambia’s landlocked position has proved to be an advantage as Zambia borders eight other countries and is the beginning, destination or transit country for five of the 18 major transit corridors in Sub-Saharan Africa. Regional and international transit infrastructure costs are relatively low in Zambia. All five transit routes have unit road transport costs that are below the regional average. Low transport costs on the main transit corridors have facilitated regional trade and shifted Zambia’s exports to SADC and COMESA countries and away from the EU and the United States (World Bank, 2007b). However Zambian exporters face significantly higher obstacles to trade than exporters in other countries in terms of time to import and export goods (Figure 37).

### 3.3.3 Infrastructure

Zambia’s status as a landlocked country cannot be viewed as a major problem, but high domestic transport costs are a constraint to growth. The domestic transport cost for one ton per one kilometer was US$0.07 in Zambia, which was higher than in countries like South Africa (US$0.02), Malawi (US$0.065) and Ethiopia (US$0.04-0.06) (World Bank, 2007b). The high price of transport seems to derive from poor domestic road infrastructure outside of the main transit corridors, high fuel costs (Table 12) due to high taxes on diesel, and high cost of tires.\(^{20}\)

### Table 12: Comparative Price of Diesel Fuel (US$/liter)

<table>
<thead>
<tr>
<th></th>
<th>Zambia</th>
<th>RSA</th>
<th>Tanzania</th>
<th>Kenya</th>
<th>Zimbabwe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in Excise Tax</td>
<td>0.86</td>
<td>0.73</td>
<td>0.32</td>
<td>0.65</td>
<td>0.59</td>
</tr>
</tbody>
</table>

*Source: World Bank (2003)*

Poor quality and unevenly distributed domestic road network is a constraint to growth of rural economic activities, including commercial agriculture, new mining activities, tourism, among others. The domestic road quality has improved in recent years and the

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\(^{20}\) Diesel and tires contribute over 50 percent of the costs of transportation (World Bank 2003).
percentage of roads that are paved is higher in Zambia than the average for SSA. However, only a few districts in the Lusaka province have roads with fairly good quality. The railroad has not been an alternative so far but a recent privatization of Zambia Railways may change that in the future.

Poor market access is a constraint to the farmers’ ability to sell their output and their ability to access inputs needed for an efficient production as large parts of Zambia’s rural area are sparsely populated with long distances between villages and low road quality. World Bank (2007a) reports that in 2002/03 half of the rural households were more than 9 kilometers from the nearest food market, and over 25 kilometers from the nearest agricultural input markets for fertilizers and seeds. Poor market access has a negative effect on returns to farming. More remote households have less land under cultivation, lower returns per household member and lower returns to land. Alwang and Siegel (2003) show that net returns are roughly 10 percent lower for remote households.

Cotton production, a success of the post-reform period for smallholders, offers an example of the disadvantages faced by remote households. The possibility of taking on cotton outgrower schemes is only available to farmers who live in areas that are situated close to cotton ginners. Outgrower agents only operate in such areas because traveling over wider areas with low population density is not cost effective. As a result, cotton is not an option for smallholders in most parts of the country. Another example is the government fertilizer subsidy program that does not reach farmers in remote areas of the country (see further in section 3.4.3).

Inadequate infrastructure and poor quality and expensive basic services are perceived as a major constraint by business owners. Connectivity services are crucial for economic integration within the domestic economy and with the rest of the world. A recent study of 42 developing countries, based on Investment Climate Surveys, found that Zambian firms have the second-highest share of “indirect” costs, most of which are attributable to services-related inputs used in production – energy, transport, telecom, water, insurance, marketing, travel, independent professionals and accounting (Figure 31). In Zambia the share of indirect costs is on average 22 percent of gross value added, which is twice the share of labor costs. The study found that the high level of indirect costs attributable to the high prices of services is likely to have undermined the competitiveness of Zambian firms in export markets and therefore slowed down job creation. A specific example of high-cost connectivity services is the mobile phone business which sells services at much higher cost in Zambia compared to other countries (Figure 32).
While electricity costs are not high compared to countries within and outside the region (Table 13), there are big variations in quality of and access to electricity supply in different parts of the country. In some areas there is no supply of electricity while firms around Ndola and Kabwe suffer frequent power outages. Only about 20 percent of the country’s population has access to electricity. The problem is not limited supply of electricity. Zambia has installed capacity which is well in excess of current domestic demand and exports electricity within the region. The inconsistency between excess supply and poor access is due to the dominance of the mining industry in the energy sector. Such monopsony power has discouraged the expansion of electricity infrastructure to other productive sectors. Poor access to basic services is more acute for small firms which have to wait longer than large firms to gain access to electricity, water and phone connections.
Informal businesses are significantly more disadvantaged by the lack of affordable basic services as they lack resources to supply own water and generate own electricity. Much of the infrastructure in informal urban areas is outdated, poorly maintained and overcrowded. While access to markets and quality of housing are not constraints for urban residents, market infrastructure in informal settlements is inadequate.

It is also extremely expensive to build warehouses – an essential type of infrastructure in urban areas. The cost of obtaining the necessary licenses and permits for a warehouse construction is 1766 percent of per capita income compared to 1048 percent in SSA, 996 percent in LICs and 72 percent in developed countries.

An extension of the rural road network and other public utilities in rural and urban, informal settlement areas is a necessary complement to all other investments and reforms to foster shared growth in Zambia. However, these investments need to be managed carefully and positioned strategically to foster positive externalities for as many households and industries as possible (see further the discussion on coordination failures in Section 3.5).

### 3.3.4 Human capital

Zambia’s growth diagnostics study concluded that skilled labor is not a constraint to business growth. Worker skills and education are ranked 10th in a list of 17 obstacles to business operations in Zambia’s ICA conducted in 2003 (World Bank, 2004). This suggests that, for an average firm, there is no mismatch between skills demanded by companies and skills workers provide. Moreover, a decline in employment in medium-cost and high-cost urban areas in recent years signals limited demand for formal employment (Figure 18). Therefore, in the near term supply of different types of efficient labor is unlikely to constrain formal job creation.

Another way to analyze excess demand or excess supply of labor is to look at international migration patterns. Brain drain can have a huge negative effect on growth in a country with limited human capital and limited education infrastructure and resources. Overall migration rates are generally lower in Africa relative to the rest of the world, and Zambia’s rates are even low by African standards. Only 0.1 percent of those with primary school education migrated from Zambia in 2000, compared to regional averages of 0.3 percent in Southern Africa, 2.8 percent in Northern Africa and 0.5 percent in South-Central Asia. For those with secondary education the migration rate is 0.3 percent which is also very low compared to other developing countries. At the tertiary level the rate
increases to 10 percent but it is low compared to other countries and low given its low level of tertiary educated (Figure 33).

**Figure 33:** Skilled migration and human capital in Africa, 2000

![Figure 33](image_url)

**Source:** Mattoo and Payton (2007)

Hence, at the aggregate level there are few signs of major imbalances between demand and supply of skilled labor. However, this does not meant that there are no imbalances for specific skills, such as for managers, technical engineers, etc. Moreover, given the time lag of changes in the level, quality or focus of education and the actual supply of skills, there must be a strategy on how to meet potential skill constraints in the future.

We conclude that within social returns, infrastructure and basic services are binding constraints for growth as well as inclusive growth. The discussion on infrastructure as a constraint will be picked up also when discussing coordination failures in section 3.5. We now turn to private appropriability issues in search of government and market failures (Figure 15).

### 3.4 Are government failures a constraint to shared growth?

#### 3.4.1 Is the macroeconomic environment a major constraint to shared growth?

In 2003 macroeconomic instability ranked second in the list of business constraints published in the ICA (World Bank, 2004a), with 74 percent of the firms naming it as a major or severe obstacle to business operations in Zambia. The macroeconomic situation has improved substantially since 2003. Inflation fell down to single digits in 2006, and despite rising energy prices the terms of trade improved in the period 2003-2007 due to
rising commodity prices, especially prices of copper. The overall government budget deficit (including grants) fell as a share of GNP from 13.4% in 2003 to 7.6% in 2006.\(^{21}\)

The main macroeconomic concern surrounds the appreciation of the Kwacha. The path of the exchange rate is illustrated in Figure 34, and was fairly stable in the range 4400-4800 K/$ from 2002 to early 2005. Appreciation commenced in 2005 and there was a rapid rise in November 2005, taking the rate to 3600K/$. In May 2006 the rate fell below 3000K/$, and has since returned to around 3400K/$. The real exchange rate has also appreciated substantially since 2004. After staying relatively flat between 1998 and 2004, it has appreciated by 25% in 2004-05 and by 31% in 2005-06.

Several factors have contributed to the appreciation. These include debt relief,\(^{22}\) scaling up of aid, foreign direct investment flows into mining, strong export performance and tight monetary policy. Debt relief has reduced Zambia’s external debt from over $7 billion to less than $520 million which translates to annual foreign exchange savings of $50 million in 2007, $80 million in 2008, and peaking at around $130 million in 2010. Scaling up might double aid to Zambia over the next 10 years and result in aid-to-GDP ratio of 14 percent. The increase in copper revenues dwarfs debt relief and increases in aid, but it is unclear how much of this additional copper revenue that will be a net supply of foreign exchange to the Zambian domestic economy.

The kwacha appreciation may already have had severe impacts on some sectors. There have been some high profile factory closures, and the impact has been estimated by several industry sources. Recent data on agricultural exports show sharp reductions in exports of major commodities since 2005, likely linked to the appreciation of the kwacha.

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\(^{21}\) The share of government revenue in GDP has fallen slightly from 17.5% in 2005 to a projected 16.5% of GDP in 2006. These budgetary issues are partly due to the appreciation of the Kwacha, reducing the local currency value of customs duties and trade taxes, and also aid inflows.

\(^{22}\) Zambia passed HIPC completion in 2005.
Reduction in agricultural employment of this magnitude will translate directly into rising poverty rates as farm workers laid off from employment in large agricultural firms will lose their wage income and rely mainly on subsistence agriculture.

**Figure 35:** Agricultural exports 2000-2007

 Appreciation has fiscal effects which typically include a decline in external debt payments and in government expenditure on imported goods, assuming unchanged level of government imports, and on the revenue side a decline in external public sector grants and loans, and revenue from trade taxes assuming imports remain unchanged. Weeks (2008) estimates the total effect of the appreciation on import taxes, ODA, and debt service for Zambia to be -0.1 percentages of GDP in 2005, -1.7 in 2006, and -1.1 in 2007. It is difficult to come up with precise numbers for the fiscal effects of exchange rate changes, but they point to another reason to carefully manage the exchange rate and its effects.

Increased integration into the global economy is a priority for Zambia – a small economy for which the links to international markets allow it to realize economies of scale, access state-of-the-art technologies and improve the quality and variety of its exports. However, the real appreciation of the kwacha threatens the progress made in diversifying the export base and jumpstarting non-traditional exports. And although exports and imports have started to increase in absolute terms since the early 2000s, in relative terms they are still much below historical data from earlier decades. Indeed, the data suggest that Zambia has not been able to scale up its export operations sufficiently to reverse the negative trend. (Figure 36). An appreciated currency will make it more difficult for domestic enterprises to compete with cheap imports and domestic exporters to sell their products in international markets. For Zambia to stay competitive and sustain its growth momentum it will be critical to improve productivity – including the productivity of its labor force, and to lower indirect production costs related to basic services. However, carefully crafted monetary and fiscal policies responding to the real appreciation pressures will also be critical.
3.4.2 *Is the tax code a binding constraint to shared growth?*

Taxes, although on the high side, are not excessively high nor are they out of line compared to other countries (Figure 37). The tax base however is narrow and large firms, particularly in the financial service industry, face much higher tax rates than small and medium sized companies. A number of problems with the tax system are well documented: the high frequency of unexplained or unjustified changes in tax policy, corrupt practices, and a tax administration perceived as arbitrary and punitive.

The tax system has created disincentives for entering the formal sector and has disadvantaged small enterprises. The sales level for VAT registration for instance is very high. It stands at $40000 at a time when per capita income is just $375. This high level discourages even medium-sized firms from entering the formal sector. Specific taxes may also impede the growth of specific sectors. A 2004 study finds that VAT exempt status hurts farmers because their effective burden rises sharply without the ability to reclaim VAT on inputs. Another example is the 3 percent turnover tax levied on small agricultural producers, because its threshold of 20 percent profit rate is unrealistically high for small-scale farmers.

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The tax system is also problematic in the sense that it distorts competition between and/or within some sectors. The tourism sector is one example. This sector is seldom part of tax incentive schemes provided to many other non-traditional merchandise exports. Moreover, certain tourism service providers – such as Sun International, a foreign owned firm – have resources to negotiate special deals putting them in an advantageous position compared to small, domestically-owned firms.24

The direct fiscal impact of the recent boom in mining has been negligible because of the current tax exempt status of mining. This arrangement was a result of negotiations that took place under unfavorable circumstances when the sector was at the bottom of the crises. The government is currently renegotiating with the mining companies.

Zambia has one of the most open trade regimes in Africa with a rating of 2 (“open”) on the IMF’s restrictiveness index ranging from 0 to 10 (“most restrictive”) and according to the Africa Competitiveness Report, which measures openness based on levels of import and export restrictions, licensing requirements and exchange controls. Average tariff rates were also lower in Zambia than in other SSA countries. The simple average MFN tariff in Zambia is 13.4 percent with a coefficient of variation of 0.7, indicating modest dispersion of tariff rates.

Ad valorem tariffs comprise four bands: 0, 5, 15, and 25 percent (Table 14). Specific rates apply to a few items. The industries facing the highest duties are fishing and light manufacturing such as wood products, manufactured foods, beverages and tobacco, textiles and leather. High tariffs on agricultural and processed food raise the prices of food with adverse consequences for poverty alleviation. In addition, the tariff system shows strong escalation – higher tariff rates on goods as the degree of processing increases. This tends to increase the effective rate of protection on final good well above

24 See Mattoo and Payton (2007).
their nominal tariff rate, which in turn introduces strong bias against exports in these activities.

Table 14: Tariffs on key categories of goods, 2003 (percent)

<table>
<thead>
<tr>
<th>Tariff bands</th>
<th>Share of tariff lines</th>
<th>Share of imports</th>
<th>Share of customs revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials</td>
<td>0-5</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>Capital goods</td>
<td>0-5</td>
<td>14</td>
<td>24</td>
</tr>
<tr>
<td>Intermediate goods</td>
<td>15</td>
<td>33</td>
<td>26</td>
</tr>
<tr>
<td>Finished goods</td>
<td>25</td>
<td>32</td>
<td>21</td>
</tr>
</tbody>
</table>

Source: CSO, tariff data submitted to UNCTAD

Zambian exporters also have access to inputs at world prices through the duty drawback system which allows for rebates on tariffs paid on imports used in the production of exports. The main problems with the duty drawback system include the requirement of detailed and comprehensive input-output coefficients and the long time taken to get the rebates. There is also the concern that the system benefits mainly large export-oriented companies, and not small and medium-sized firms.

Although market access does not constrain Zambian exports, the preferences enjoyed by export-oriented firms will decrease as trading partners reduce their MFN tariffs as part of the Doha negotiations and offer similar preferences to other developing countries. It is therefore important for Zambia to focus on improving the non-tariff aspects of these arrangements (trade facilitation, rules of origin, aid for trade), strengthening behind the border policies (administrative and regulatory environment, macroeconomic policies), and removing supply-side constraints (physical and human infrastructure) to increase its competitive strength. It is also important for Zambia to actively participate in regional and global trade negotiations to ensure that its longer-term trade interests are adequately reflected in these agreements.

3.4.3 Are regulatory uncertainty, government interventions and other administrative procedures obstacles to shared growth?

Regulatory uncertainty is cited as the fourth most constraining factor in the general survey of business owners (World Bank, 2004a). Most firms (70 percent) think that officials’ interpretation of regulations affecting their businesses is inconsistent and unpredictable. The problem is especially acute in agriculture and is related to the contentious government’s Fertilizer Subsidy Program. The government has issued confusing and haphazard policies, repeatedly promising to withdraw from the fertilizer market but then re-entering the market under popular pressure and with an understandable desire to assist the rural poor.

25 The number of procedures for starting a business, dealing with licenses and permits, registering property, procedures for filing a lawsuit on payment disputes, as well as the costs of starting and closing a business and registering property are all below regional and LIC averages.
As discussed in previous sections (see page 20 and 33) the government has refrained from interfering in most sectors but is still creating significant distortions within agriculture. The current Fertilizer Subsidy Program has many problems and is one example of government failure. The government issues contracts for fertilizer purchases at the last minute and allows little time for successful bidders to import and deliver fertilizer. Because of this, importers are forced to use higher cost import routes, which has nearly doubled the price the government pays (Mwape, 2004). Moreover, the program is not well targeted and many recipients are not farmers (only 20 percent of small farmers use fertilizers) but traders, who resell fertilizers at large markups, to the well-connected and high-income groups located close to tarmac roads and district centers (World Bank, 2008a). Thus, the system opens the door to rent-seeking and corruption, distorts the market, depresses the supply of fertilizer on the commercial market, and crowds out private operators. The annual uncertainty about the timing and level of government purchases is particularly damaging.

According to World Bank (2008a), 5 percent of Zambia’s national budget goes to agriculture of which more than half is earmarked for the Fertilizer Subsidy Programs (37 percent) and maize marketing (15 percent). Only 3 percent of the agricultural budget goes to much needed irrigation and other rural infrastructure, and 11 percent to operating costs including agriculture extension and research.

Zambia fares poorly on another procedural item that hampers growth, especially shared growth. Firing cost are unusually high in Zambia, as measured by the weeks of wages employers are required to pay – 178 weeks in Zambia vs. 71 weeks in SSA, 65 weeks in LICs and 72 weeks in developed countries. This unusually high firing costs, coupled with high HIV/AIDS prevalence implies that the Zambian labor market is a lot less flexible than suggested by the rigidity of employment index, which measures difficulty of hiring and the rigidity of hours of employment. The regulation clearly discourages companies from hiring employees and creates disincentives for companies to move from the informal to the formal sector.

### 3.4.4 Land Rights

The land tenure system in Zambia is dual and the majority of land is held under customary land arrangements with limited transfer possibilities. Only 6 to 15 percent\(^{26}\) of total land allows for ownership rights and registration under the so called statutory tenure.\(^{27}\) The system governing the rights over this land is administered by the state under the English statutory law, and distributed in 99-year leases.

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26 Statistics vary by source.

27 While individuals can use land and pass it on to family members through inheritance, no exclusive rights can be claimed by individual users, nor can they sell or mortgage the land. There are no formal documents of land ownership or use, and no taxes paid on this land. Unlike customary lands which are administered by traditional leaders, statutory lands are administered by the central government, and are mortgageable and subject to taxation. They are concentrated in and near Zambia’s cities, along the railway line between Livingstone and the Congo border, in the mining areas of the Copperbelt, and in certain productive farming areas. These areas are the most valuable and productive land in Zambia.
Despite this dominance of customary land holding, the land system is not perceived as a binding constraint to shared growth in the short to medium term by most stakeholders in Zambia. First of all, land is abundant in Zambia. The area of available cropland per 1,000 people is more than twice that available in SSA and other parts of the world (Table 15). Only 40 percent of arable land is used suggesting economic potential that still is not fully exploited.

Access to land is not a binding constraint for small scale farming, as of today. Most smallholders who demand more land from their village chief do get land. Lack of land was mentioned by only 4 percent of the respondents to the survey on self-assessed reasons for poverty (see section 3.2). Despite the small plot sizes under cultivation in small scale farms (Table 5), a typical household does not have the capability of cultivating more land (Alwang and Siegel, 2003), suggesting there are other constraining factors to farm output and income growth. Jorgensen and Loudjeva (2005) also conclude that a land reform should not be a priority until complementary reforms have ensured improved road network, access to fertilizers at competitive prices, and functioning extension services.

The customary land tenure system does not appear to limit the use of land as collateral. In a survey by Smith (2001) the majority of those expressing a desire for formal land titles did so because they wanted to avoid dispossession (78 percent), protect fixed investments (55 percent), and ensure transfer to heirs (50 percent). Although multiple answers were permitted, only 7 percent of respondents indicated that they wanted titles in order to use land as collateral for credit.

However, from a longer perspective, the land tenure system in Zambia may be perceived as a binding constraint to growth due to the risk it creates for the future returns on investments. It may also become an obstacle to expansion of small firms into commercial agriculture and the formation of more efficient farms that realize economies of scale. Studies show that formal land titling has only been pursued by farmers already with links to commercial agriculture. Many argue that the real constraint is lack of “serviced and accessible land” implying that rural infrastructure services are the binding constraint to farm operations. There is also a backlog of land registration, which indicates that not lack of land but inefficiencies in the current administrative system is a bottleneck to the commercialization of Zambia’s agriculture.

### 3.4.5 Governance

Corruption penalizes disproportionately the poor in Zambia, according to surveys conducted in 2003 by the University of Zambia. Citizens in the lowest income deciles

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28 More than half of the respondents to the survey by Smith (2001) expressed desire for formal land titles because they wanted to protect fixed investments.

29 The current land tenure system may potentially lead to land concentration, and therefore increases in inequality, as those with easier access to formal land rights may overtake the more productive areas. However, others argue that a formal land titling system would lead to increased land concentration if the poor are forced to sell their land leaving them without productive assets.
have to pay bribes that represent a higher share of their income than their counterparts in the middle and high income brackets.

According to the World Bank’s governance indicators Zambia scores high on political stability, but only fair on voice and accountability, regulatory quality, and rule of law, while on control of corruption and government effectiveness Zambia scores very low (Figure 38). Countries like South Africa, Botswana, Malawi, Tanzania, Uganda and Rwanda are all ranked higher than Zambia in terms of control of corruption and only Malawi is worse than Zambia on government effectiveness.

Interestingly though, in a cross-country comparison looking at the correlation between these indicators and GDP per capita, Zambia has, given its GDP per capita level, a higher than estimated score on voice and accountability, rule of law, regulatory quality, and political stability, and close to its estimated score on control of corruption and government effectiveness.\(^{30}\) Moreover, the fact that government effectiveness has been improving since the late 90s along with improvements in the economic conditions, is a sign of effective reforms. These improvements must continue especially in terms of budget execution, transparency and accountability (World Bank, 2004b).

![Figure 38: World Bank Governance Indicators for Zambia](source: Kaufmann, et al (2007))

Despite improvements in recent years, many governance indicators are still low implying that it would be difficult to address effectively the binding constraints to inclusive. This is especially evident when studying the coordination failures in Zambia discussed in the next section on market failures. In this section we conclude that governance failures are indeed constraining inclusive growth.

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3.5 Are market failures reasons for low returns?

Firms need services in order to innovate, market their products successfully, and make a profit. These services link the supply chain between producers and consumers, and require simultaneous, large-scale investments in various sectors of the economy (Rodrik, 2004). These services include the provision of infrastructure and institutions linking the different steps in the production chain, access to markets, and basic services such as irrigation, electricity, water. Other services not previously mentioned include marketing, research and product quality information.

However, the incentive to establish these kinds of services is limited for an individual entrepreneur due to small market size in the case of private services, and due to non-exclusiveness in the case of public services. Hence, coordination externalities is not an umbrella concept for arguing that government should be involved in all aspects of economic life, but should be described as the failure of the market to respond to potential investors’ demands for a diverse set of services. This potential problem is especially common in sparsely populated countries such as Zambia, and implies that the government needs to focus their public investments on pockets of growth rather than country-wide investments, and may need to make initial investment in certain private services that would have been provided by the market if economic activity had reached a certain level.

Arnold et al. (2006) analyze the relationship between the performance of local service providers and the productivity of firms in downstream industries, using Investment Climate Surveys with panel data of 1,185 firms in 10 SSA countries. After controlling for systematic differences at the country, industry and firm level, the study for example predicts that Zambian firms would be 13 percent more productive if they enjoy the same access to telecommunications as South African firms, and 6 percent more productive in the case of access to banking services.

Rural areas are at a disadvantage to urban areas when it comes to very basic facilities for a functioning market (Figure 39). The limited resources of the government and the sparsely populated rural areas will make it impossible to substantially improve these basic services in all areas. However, a cluster strategy to provide basic service to multiple industries and create positive externalities is worth exploring. We present below some cases of coordination failures and specific industry cases where pockets of private sector growth have been achieved when supported by crucial services.
In agriculture, smallholder farmers lack access to and information on proper use of fertilizer, chemicals, irrigation, seed selection which leads to low yields per hectare and low productivity. Although higher than the yields in SSA, average cereal yields in Zambia are much lower compared to those in the rest of the world (Table 15). These yields are also lower than yields in the early 1980s. Food security remains an issue as the volatility in domestic cereal production is much higher than the average for SSA and the world. These outcomes are not surprising when one considers the use of irrigation and fertilizers in Zambia. The percent of irrigated cropland in Zambia in the period 1999-2001 was less than one percent, compared to nearly 4 percent in SSA and 18 percent in the rest of the world. In 1999, the average annual fertilizer use was not only below the use in SSA, but was nearly 10 times less than the use of fertilizers in the rest of the world.

**Table 15: Agricultural production and yields (the number on this table is not consecutive)**

<table>
<thead>
<tr>
<th></th>
<th>Zambia</th>
<th>SSA</th>
<th>World</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cereal, 1999-2001</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average crop yield (kg per hectare)</td>
<td>1437</td>
<td>1221</td>
<td>3096</td>
</tr>
<tr>
<td>Percentage change since 1979-81</td>
<td>-14%</td>
<td>9%</td>
<td>41%</td>
</tr>
<tr>
<td><strong>Agricultural land</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hectares of cropland per 1,000 population, 1999</td>
<td>518</td>
<td>274</td>
<td>251</td>
</tr>
<tr>
<td>Percent of cropland that is irrigated</td>
<td>0.9%</td>
<td>3.8%</td>
<td>18.3%</td>
</tr>
<tr>
<td><strong>Agricultural inputs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average annual fertilizer use, 1999 (kg per ha)</td>
<td>10</td>
<td>12</td>
<td>94</td>
</tr>
<tr>
<td><strong>Food security</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volatility in domestic cereal production, 1992-2001 (average percent variation from mean)</td>
<td>24.6%</td>
<td>6.5%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Net cereal imports and food aid as a percent of total Consumption, 1998-2000</td>
<td>17.7%</td>
<td>13.5%</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

*Source: World Resource Institute (http://earthtrends.wri.org)*

The market access problems due to poor road networks faced by farmers are augmented by the fact that only few intermediaries serve as channels between multiple smallholder farmers and/or delivery locations to food processing firms. As a result, agro-processing firms operate at low rates of capacity utilization. This makes achieving economies of scale difficult and is an obstacle to the expansion of the agro-processing industry. The
food processing industry in turn lacks access to information on modern food processing, packaging and labeling facilities. Modern food research, testing and product development facilities are absent or inadequate, limiting the ability of firms to expand exports, especially to developed country markets.

Bramilla and Porto (2006) collected farm level productivity data from several districts in Zambia, making it possible to show how maize and cotton productivity are negatively correlated with weak service performance as measured by the Investment Climate Surveys (Table 16). In the cotton sector, the firm productivity rank of Zambian districts is 90 percent correlated to the rank of availability of phone lines in the same district, 90 percent correlated to the rank of reliability of transport services, and 87 percent correlated to the rank of cost of finance. In the maize sector, the firm productivity rank of Zambian districts is 77 percent correlated to the rank of availability of phone lines, while the correlation to reliability of transport services and cost of finance could not be statistically confirmed.

Table 16: Spearman rank correlation between farm yields per hectare and services performance in Zambian districts

<table>
<thead>
<tr>
<th></th>
<th>Maize</th>
<th>Cotton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local availability of phone line (no. of days to get a new landline connection)</td>
<td>-0.77**</td>
<td>-0.90**</td>
</tr>
<tr>
<td>Local availability of reliable transport services (no. of days per year with transport failures)</td>
<td>-0.4</td>
<td>-0.90**</td>
</tr>
<tr>
<td>Local cost of finance (perceived difficulty of local firms)</td>
<td>-0.15</td>
<td>-0.87*</td>
</tr>
</tbody>
</table>


Note: The hypothesis of independence between the two rank orderings can be rejected at the 90 percent (*) or 95 percent (**) confidence levels.

The lack of middlemen and information is especially severe in sparsely populated, remote rural areas. Agricultural extension services provided by the government, NGOs, donor-funded projects or churches may fill that need to some extent. However, extension services provided by the government were more common before the reforms starting in 1991. The purpose of these were to help farmers in identifying markets, adopting new techniques, reducing fertilizer costs, reducing livestock diseases and others. In a study of Zambia it was found that households with access to extension services had higher productivity than those who did not (Balata and Porto, 2004). The small scale farmers, i.e. the poor were the ones most affected by the decline in extension services as the large scale farmers can absorb more easily the fixed cost of finding the knowledge or access alternative information channels.

The deterioration in extension services has encouraged some alternative methods of information transmission. One is the technical assistance combined with credits under outgrower schemes. Under these schemes an entrepreneur contracts a smallholder to produce a commercial crop later marketed by the entrepreneur. The entrepreneur provides
necessary technical assistance to reach the agreed production levels and guarantees a certain level of market outlet.

These schemes have been very successful and indicate that overcoming coordination failures may ignite growth in the agricultural sector. National production of cotton tripled from 2000 to 2003, and credit repayment improved from 65 percent to more than 90 percent, after introducing a refined outgrower arrangement (World Bank, 2008a). Currently about one-third of Zambia’s smallholders participate in some form of outgrower scheme arrangement, of which 85 percent are engaged in cotton production. Other crops produced by smallholders are tobacco, paprika/chili, honey, and to some extent sugar, coffee, and dairy products.

Zambia’s cotton sector offers another success story, documented in Ellis and Freeman (2005). Cotton production grew rapidly in the mid-1990s, but growth was interrupted by problems with credit recovery, as new entry into the sector encouraged increased side-selling by producers. The world’s largest cotton trader, Dunavant, which operated one of the two major cotton operations in Zambia, responded to this challenge by implementing the so-called ‘distributor’ system, whereby extension agents are transformed into self-employed contractors, who on-lend and provide extension support to producers. The ‘distributors’ are paid by the cotton companies on the basis of seed cotton volume delivered and the level of loan recovery achieved. Although the system is still in its infancy, yields have been gradually increasing in recent years, production has surpassed its mid-1990s peak, and credit recovery has improved substantially.

Examples of coordination externalities are abundant in manufacturing and services. In tourism, supply chains and distribution channels are dominated by international firms, who have access to global reservation systems. In addition, the consolidation of transport, hotels and tour operators makes it hard for small operators to compete (World Bank 2001). The coordination failure problems within the tourism sector are also confirmed through perception survey data for which businessmen were asked to identify if a certain potential problem was “one of the constraints” as well as if it was the “main constraint” (Figure 40).
The gemstone mining sector is another industry with untapped potential that offers an example of the obstacles posed by inadequate infrastructure and basic service provision. A precondition for investment in the gemstone sector is access to mining areas, which are usually remote. According to a World Bank survey the large gemstone firms cite lack of infrastructure as the main constraint to investment in this sector. Most important mines are 70 km from an all weather road, 51 km from electricity and up to 55 km from water. Of the 891 enterprises with licenses, only one company mines year round. Other firms work only half a year.

Lack of innovation, or the ability to identify profitable products for new investments is another form of market failure. Potential reasons for poor innovation could be information externalities, which may arise when information about economic opportunities has the potential to benefit many investors, but is costly to gather. As a result, no single potential investor gathers the necessary information. In Zambia and other developing countries, innovation is seen less as the actual “invention of new products”, but rather as the successful diversification of the economy including by imitating existing products and producing them at lower cost, developing new varieties, increasing the number of exports and the export destinations.

As mentioned earlier Zambia has successfully diversified its economy in the past 15 years (Figures 6, 7 and 8). The number of exports increased from 501 in 1998 to 704 in 2005. A large share of these exports – between 74 and 80 percent – was exported again the following year. The number of countries buying Zambian products expanded from 68 in 1997 to 105 in 1999, before falling down to 82 in 2003, and rising again to 95 in 2005.

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Non-traditional exports have increased, although they continue to make up only a small share of exports. Since the main non-traditional exports are farm products, scaling up of these activities is bound to have a positive effect on the income of the rural poor, and has already been identified as a government priority in the Zambian PRSP.

4 Conclusions

Despite positive, broad-based and stable growth record in recent years and immense untapped potential in agriculture, mining and services, Zambia’s poverty rates have not declined significantly and remain high. The main reason for limited income growth of the poor in Zambia are low returns to self employment – most notably in agriculture, and limited growth of and/or access to wage employment.

The main factors limiting returns to labor and job creation are market coordination failures such as poor access to domestic and international markets, inputs, extension services and information. High indirect costs – most of which attributable to infrastructure service-related inputs into production including energy, transport, telecom, water, but also insurance, marketing and professional service – undermine Zambia’s competitiveness, limit job creation and therefore serve as a major constraint to inclusive growth. Coordination failures are especially severe for the poor who cannot afford the fixed cost associated with finding alternative sources for inputs, marketing and other types of services. The creation of positive coordination externalities will demand a delicate cluster strategy given the limited public resources in this sparsely-populated, large, low-income country.

Continued real appreciation of the exchange rate is another serious threat to the competitiveness of export-oriented and import competing sectors and to job creation. For Zambia to stay competitive and sustain the growth momentum it will be critical to improve productivity – including the productivity of its labor force, and to lower indirect production costs related to basic services. Carefully crafted monetary and fiscal policies will be critical in responding to the real appreciation pressures. Improving the quality and access to secondary and tertiary education as well as continuing the fight against HIV/AIDS are essential if the poor are to benefit from future growth of the non-farm economy. Finally, weak governance, in particular poor government effectiveness, are factors behind the market coordination failures and are as such major obstacles to inclusive growth. Weak governance is also reflected in distortionary policies, especially within agriculture.

This work does not propose policies to deal with the binding constraints to inclusive growth. It is an initial step in the process of developing a strategy for relaxing the constraints. The policy design is a second step that requires an in-depth analysis of each constraint and an ex-ante analysis of the effects of policy reforms to remove this constraint.
References


Appendix
Growth accounting technique

We assume that aggregate output can be expressed as a function of physical and human capital:
\[ Y = AF(K, H) \]
where \( Y \) is gross domestic product in constant 2000 purchasing power parity (PPP) prices; \( A \) is an index of total factor productivity; \( K \) is gross domestic capital stock in constant 2000 PPP prices; \( H \) is human-capital-adjusted labor input, defined as:
\[ H = L D P e^{\phi S} \]
where \( L \) is population; \( D \) is share of population age 15-64; \( P \) is labor force participation rate; \( S \) is number of years of education per worker; \( \phi \) is a parameter that measures the returns to education.

We consider two types of production functions. The first one is a Cobb-Douglas production function with possibly non-constant returns to scale:
\[ F(K, H) = [K^\alpha x H^{1-\alpha}]^\gamma \]
where \( \alpha \) is a parameter between 0 and 1 that measures the relative importance of capital, and \( \gamma \) is a parameter that measures the extent of returns to scale. Reasonable values of \( \alpha \) range from 0.3 to 0.5. If \( \gamma = 1 \) (\( \gamma > 1 \) (\( \gamma < 1 \)) there are constant (increasing) (decreasing) returns to scale. Reasonable values of \( \gamma \) range from 0.8 to 1.2.

The second one is a constant-returns-to-scale constant elasticity of substitution production function:
\[ F(K, H) = [\alpha K^\rho + (1 - \alpha)H^{(1-\rho)}]^{(1/\rho)} \]
where \( \rho = (\sigma-1)/\sigma \) is the elasticity of substitution between \( K \) and \( H \). When \( \sigma = 1 \) this reduces to the Cobb-Douglas case above with \( \gamma = 1 \). Reasonable values of \( \sigma \) range from 0.8 to 1.2.

To estimate the level and growth rate of \( A \), we require data on \( Y, K, L, D, P, \) and \( S \). These are drawn from the following standard sources. Real GDP and gross domestic investment in constant 2000 U.S. dollars adjusted for differences in PPP come from World Bank’s World Development Indicators. Data on population, the share of population aged 15-64, and the labor force participation rate are computed based on data from the World Bank’s DDP. We assume that the labor force participation rate is an average of the labor force participation rates for females and males. Data on the stock of years of education are obtained from Barro and Lee (2000). Numbers for the other years were estimated assuming a constant annual growth rate in the human capital stock. The parameter \( \phi \), which measures the returns to education (i.e. the percentage increase in worker productivity due to an additional year of education) is assumed to be 10 percent.

Capital stocks are constructed using the perpetual inventory method in this worksheet. This requires information on the initial capital-output ratio in 1980, depreciation rates (\( \delta \)), and gross domestic investment in constant U.S. dollars adjusted for differences in PPP.

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(I). For most developing countries, reasonable values for the initial capital-output ratio range between 1 and 2, and for the depreciation rate are between 0.04 and 0.08. We use initial capital-output ratio of 1 and $\delta = 0.06$ in all calculations. The capital stock is calculated using the following formula:

$$K(t) = (1 - \delta) K(t - 1) + I(t).$$