Africa's Lions

Bhorat, Haroon, Tarp, Finn

Published by Brookings Institution Press

Bhorat, Haroon and Finn Tarp.
Africa's Lions: Growth Traps and Opportunities for Six African Economies.
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Mozambique’s economy has experienced substantial change over the past twenty years. In the early 1990s, the country emerged from a devastating and prolonged conflict. Since then, aggregate economic growth has been sustained at high rates, making the country one of the top economic performers of the region. Other studies have noted that, while Mozambique’s growth until the mid-2000s largely reflected a process of post-war recovery, sustained growth since then is a testament to solid macroeconomic management, pursuit of a wide range of economic governance reforms, and substantial inflows of foreign aid and political stability. This is underscored by recent access to external commercial debt markets. In 2013, Mozambique made its debut $850 million U.S. dollar-denominated commercial bond issue with a coupon of 8.5 percent.

Below the surface of strong aggregate economic performance lie a number of ongoing concerns. Principal among these is evidence suggesting that the pace of poverty reduction may have weakened. Data collected
from household budget surveys suggest that, while poverty reduced significantly from 1996–2003, there is no clear evidence of significant reductions at a national level from 2003–09. Although this partly reflects temporary shocks, it is the absence of a convincing process of structural transformation of the economy that is more worrisome from a longer-term development perspective. Indeed, the majority of Mozambique’s (growing) workforce remains reliant on low-productivity agricultural activities, and the agricultural sector has shown few signs of transformation that might provide a basis for future growth and upgrading.

Positive or growth-enhancing structural transformation is characterized by a shift of workers out of lower productivity activities and into higher productivity and less vulnerable employment. Existing experience from a range of middle and high income countries indicate that such transformation often involves comparatively rapid growth of both employment and labor productivity in modern, industrial enterprises. In so doing, modern firms operate as an engine of growth for the entire economy. However, structural transformation of this sort is also typically accompanied by productivity growth in the agricultural sector; for example, as surplus or marginal labor is released. Concerns regarding the absence of structural transformation are not unique to Mozambique and this theme has been raised in many other countries in Sub-Saharan Africa (SSA).

Existing labor market decomposition analyses for SSA nations are useful in describing general trends both at regional and country-levels. However, in taking a cross-country perspective, they typically are unable to take advantage of the latest data and neglect important details in individual countries, such as divergent sectoral changes. As a result, careful analysis of developments within individual countries over time remains vital, and doing so with a focus on Mozambique constitutes the objective of the present study. Specifically, this chapter has three main aims. These are to: 1) provide an overview of recent economic developments in Mozambique at both the macroeconomic and microeconomic levels; 2) apply labor market decomposition tools to investigate the apparent disconnect between macroeconomic trends (GDP growth) and changes in household well-being (poverty reduction); and 3) consider relevant policy priorities to support a more pro-poor pattern of future growth.
The chapter contains three main sections. First, we elaborate on recent economic trends in Mozambique, provide a brief historical background, and compare trends across a range of macroeconomic and microeconomic indicators. As already hinted, such analysis raises concerns regarding the structure of growth and the extent to which growth is effectively promoting the well-being of the poorest. The second main section contains the analytical core of the chapter. It begins by describing the data and empirical methods used to decompose changes in Mozambique’s labor market. Due to the limitations of regular official data on employment, aggregate GDP data must be combined with irregular information on employment patterns taken from household surveys. With respect to the latter, we take advantage of preliminary data from a recent household survey. Thus, the derived data encompasses the period 1996–2014, which provides an extensive view of recent labor market changes to the present.

The labor market decomposition is elaborated next, focusing on the distinction between within-sector productivity growth and productivity growth driven by structural change in the labor market. The results clearly show that labor reallocation effects have played a relatively small role in Mozambique’s post-conflict productivity growth. Moreover, there is little evidence that sectors with relatively faster productivity growth are adding jobs at a faster rate than other sectors. In contrast, recent aggregate growth appears to have been driven by capital-intensive growth in the mining sector and by comparatively rapid growth of employment in services but, typically, in activities that are lower productivity than the sector average. Following this examination, the third main section looks ahead. We focus first on a set of inevitable demographic issues. These suggest that the supply of new entrants to the labor market is of a massive scale in the coming years, which underlines the need to boost the demand side of the labor market. We subsequently discuss the policy implications of the trends inherent in our labor market decomposition, taking into account, as well, our demographic projections. The final section provides our conclusions.
BACKGROUND

Mozambique lies in southeastern Africa, and borders South Africa in the south and Tanzania to the north. Similar to other countries in the region, Mozambique experienced a long period of colonial rule. Portuguese interests in the country began in the sixteenth century and were maintained over the course of the next two centuries through military posts, settlements, and trading companies. Expansion of Portuguese interests began in earnest in the nineteenth century, leading to the emergence of a settler economy based primarily on the production of cash crops (for example, cotton and tea). In addition, Mozambique’s major ports became important hubs for trade into other southern African nations, especially South Africa and Zimbabwe. Following the Second World War, and as global demand increased, the Mozambican economy grew rapidly and became a destination for foreign direct investment and large inflows of Portuguese migrants.

The 1960s saw the emergence of Mozambique’s national independence movement. Based in newly independent Tanzania, the Mozambique Liberation Front (Frente de Libertação de Moçambique, FRELIMO) began launching guerilla attacks into the north of Mozambique. With support from the local populace and facing a relatively weak Portuguese military presence, FRELIMO was able to gain effective control of substantial territory. Although FRELIMO had a relatively small number of active troops, their knowledge of the terrain and extensive use of land mines were effective in resisting significant Portuguese counter-insurgencies. According to one historian, white settlers in Mozambique began to feel “panic, demoralization, abandonment, and a sense of futility” as the conflict continued.6 Facing costly and unsuccessful overseas conflicts, as well as increasing international isolation, the Portuguese government in Lisbon was overthrown in 1974. This quickly led to a retreat from its African colonies, and Mozambique achieved independence in 1975.

The new Mozambican government faced huge challenges in the early independence period. Perhaps most critically, mutual mistrust between the white settlers and the (elite) Mozambican population led to a huge exodus of those with Portuguese heritage (passports) and destruction
of their business capital. As virtually all managerial and skilled positions throughout the economy had been dominated by these settlers, skills shortages were immediate and acute. Adding to this, the neighboring “white economies” of Rhodesia and South Africa viewed Mozambique’s independence as an existential threat. Consequently, they sought to destabilize their neighbor by funding and training a resistance movement, RENAMO (Resistência Nacional Moçambicana). Global economic instability further undermined initial economic progress and, with economic support from the Soviet Union to FRELIMO, the conflict widened during the 1980s.

Without exaggeration, the 1980s were miserable for most Mozambicans. No less than one million people lost their lives, the economy shrank severely, many rural areas became highly insecure, and a large share of the population was internally displaced. Food shortages affected thousands such that, by the early 1990s, Mozambique had one of the lowest levels of per capita caloric availability in the world. Data from the FAO’s food balance series shows a clear trend of decline in food availability per capita over the period 1975–92, even from an initially low base. A sharp upward break in the series from 1992 marked the end of hostilities, reflecting exhaustion on both sides and the end of significant external support to RENAMO, which coincided with the move to democracy in South Africa.\(^7\) The transition to peace was quick and largely successful. Supported by a large UN presence, active troops were demilitarized and some integrated into a single national army.

**Macroeconomic Trends**

The first multi-party elections were held in 1994, giving victory to FRELIMO, which has retained a parliamentary majority in all subsequent general elections, the most recent one held in 2014.\(^8\) Postwar economic restructuring and rebuilding began under the auspices of significant international donor support, including extensive World Bank and IMF programs, initiated in the 1980s.\(^9\) Figure 5-1 provides an indication of Mozambique’s economic turn-around over the past two decades. As previously described, ongoing conflict had wrecked the economy and Mozambique was among the poorest countries in the world as it
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FIGURE 5-1. Trends in Real GDP per Capita

![Graph showing trends in real GDP per capita and growth rate from 1980 to 2013.](image)

Source: Authors’ calculations using World Bank, WDI series.

embarked on the task of reconstruction. Using the World Bank’s World Development Indicators, figure 5-1 reports real GDP per capita (in 2005 U.S. dollars) and associated per capita growth rates from 1980 (the earliest observation) to 2013. This shows that average mean incomes doubled over the period, driven by sustained and stable real rates of growth equal to about 4.5 percent per person per year for 1993–2013 (or over 7 percent on aggregate).

Mozambique’s impressive rate of economic growth is substantiated by a range of other aggregate indicators. Robust positive trends are found with respect to control of inflation, reducing the current account deficit, and expanding government spending. These are not small achievements and compare highly favorably with trends in the rest of Sub-Saharan Africa. Indeed, most commentators agree that Mozambique’s macroeconomic management was competent and provided a critical foundation to growth performance until recently. Additionally, while foreign aid flows have been and continue to be significant, at more than 10 percent of GDP, Mozambique’s aid dependence has
fallen significantly over recent years. This is due to a combination of the mechanical impact of sustained GDP growth (rising more quickly than the value of aid), domestic revenue growth, and inflows of alternative sources of external finance, such as foreign direct investment and international capital investment. As noted in the introduction, Mozambique’s debut international bond launch in 2013 marked its place as a frontier investment destination.

The post-conflict period can be roughly divided into two main phases. The first, lasting from 1992 until the mid-2000s, was characterized by a focus on stabilization, reconstruction, and consolidation of a market-oriented economy. Government intervention in the economy was scaled-back through privatization of state enterprises and removal of price controls and other explicit distortions, in essence completing the work started in the 1980s. As early as 1997, the World Bank triumphantly noted that the proportion of GDP subject to price controls had been reduced from over 70 percent in 1986 to around 10 percent.\(^\text{12}\) Mozambique’s privatization program was extensive and rapid, prompting a chorus of criticism and concerns regarding political interference.\(^\text{13}\) Nonetheless, and despite the emergence of winners and losers from this process, robust rates of aggregate economic growth were sustained.

This period of consolidation was largely complete within about a decade. Echoing trends across the region, by the mid-2000s the natural resources sector had become an explicit focus of development. In the absence of sufficient domestic capital or expertise, the focus has been on attracting foreign investment to the sector. An early project of this sort was exploration of an inshore natural gas field. This was developed by the South African company SASOL, which also financed an 865-kilometer-long pipeline (completed in 2004) to take the gas for processing to South Africa. Large deposits of thermal and coking coal, abandoned after independence, became the next priority and prompted large investments by Vale (Brazil) and Riversdale (Australia), among others. More broadly, given attractive global commodity prices and political and economic stability in the country, Mozambique witnessed an explosion of interest in its minerals sector. Foreign Direct Investment (FDI) increased from a moderate level in the 1990s and early 2000s, growing to over 30 percent of GDP in the most recent period,
far outstripping aid inflows. This reflects investments in the coal sector, as well as exploration of offshore gas deposits.

It is worth noting that, since most resource projects remain in a start-up or preliminary phase, inflows of FDI have substantially supported acquisition of offices and equipment and on-site construction. As a result, the share of recent growth attributable to this resource boom is difficult to estimate and is likely to be reflected in other sectors, such as services and construction. According to official figures, depicted in figure 5-2, the relative contribution of aggregate economic sectors to GDP has remained broadly stable during the post-conflict period. While mining has increased in relative terms over the past few years, this is from a very low base. Today, as in 1996, the economy remains dominated by agriculture (27 percent) and private and public services (51 percent). The growth in manufacturing seen from 1998–2004 is largely explained by the establishment of the Moza aluminum smelter (phases one and two), operated by BHP Billiton under highly favorable tax arrangements.
Over the period 2005–14, manufacturing grew more slowly than other sectors and, thus, declined as a share of GDP from its high of 18 percent in 2004.

**Microeconomic Questions**

Mozambique’s aggregate economic track record since the early 1990s has been widely applauded. An outstanding question, however, is how and to what extent these trends have been reflected in improvements in well-being across the population. Here, something of a puzzle emerges. On the one hand, since the mid-1990s, there is good evidence of steady progress on a range of social indicators. Data from Demographic and Health Surveys (DHS) support this view and are summarized in table 5-1, panel (a). They show significant reductions in infant/child mortality, as well as clear gains in access to education, particularly among women and girls. Moreover, the table suggests that the pace of improvement appears to have quickened; that is, annual proportional changes are larger over the period 2003–11 than for 1997–2003. This is likely to reflect a number of factors, including continued improvements in service delivery (and access), as well as the cumulative effect of ongoing investments and spillovers through achievement of greater scale.

Positive trends in social indicators are also found in other survey data, as well as in administrative statistics on coverage of basic services. The same data sources also show broad increases in asset ownership and access to transport. From this perspective, there appears no immediate disconnect between the macro and micro trends. Deeper questions emerge, though, when we review the evidence on poverty reduction.

This is summarized in table 5-1 panel (b), using household budget survey data. The first row reports the official poverty estimates, which is the share of population considered poor according to their estimated level of consumption, calculated following a cost of basic needs approach. This shows a sharp reduction in poverty from 1997–2003, consistent with the narrative of post-war recovery, but no clear progress from 2003–09.

Admittedly, consumption poverty estimates are subject to both sample and non-sample measurement error; therefore, they cannot be taken as exact. Multidimensional poverty metrics, which are based on
more directly observable factors such as asset ownership and housing quality, provide complementary insights. These indicate that the share of households deprived in multiple dimensions has followed a slightly different pattern—slow progress in the immediate post-war period and more rapid reductions since then. Combining these insights, two main points emerge. First, the share of the population that is in some way deprived or poor remains large. According to the metrics in table 5-1, in 2008–09, less than 20 percent of the population in 2008 was found to be above both asset and consumption poverty thresholds. This underlines the need to keep in mind the severity of conditions Mozambique found itself in by the beginning of the 1990s. That is, what might appear to be a disconnect between welfare outcomes and aggregate growth is, in part, a reflection of the low base from which

| TABLE 5-1. Trends in Selected Microeconomic Indicators, Mozambique |
| Percent |
| No education | Male | 26.2 | 25.4 | 19.3 | −0.1 | −0.8 |
| | Female | 47.4 | 44.4 | 32.8 | −0.5 | −1.5 |
| Infant mortality | Boys | 153 | 127 | 75 | −4.3 | −6.5 |
| | Girls | 142 | 120 | 67 | −3.7 | −6.6 |
| Under 5 mortality | Boys | 225 | 181 | 113 | −7.3 | −8.5 |
| | Girls | 213 | 176 | 103 | −6.2 | −9.1 |
| Total fertility rate | Adults | 5.2 | 5.5 | 5.9 | 0.1 | 0.1 |

| Consumption poor | 69.4 | 54.1 | 54.7 | −2.6 | 0.1 |
| Asset poor | 73.8 | 73.6 | 66.7 | 0.0 | −1.2 |
| Asset and | 54.0 | 42.6 | 40.1 | −1.9 | −0.4 |
| consumption poor | Non-poor | 11.8 | 14.8 | 19.0 | 0.5 | 0.7 |

Source: Authors’ calculations using DHS and household budget surveys.
Notes: “No education” and budget survey (poverty) figures all refer to population shares; mortality figures are per 1,000 children; fertility rate is expected number of births per adult woman. Changes are calculated on a mean annual basis.
Mozambique has grown and the fact that processes of accumulation are necessarily cumulative and take time.

Even so, and second, whatever metric we use, the elasticity of improvements in welfare to aggregate economic growth appears relatively low. In the second period (2003–09), the share of households not in so-called asset poverty fell by around 1.2 percent per annum in absolute terms, or 9 percent over the period. This compares to average real GDP growth per capita of over 4 percent per year, or a cumulative gain of 30 percent over the six years. The implication is that the pattern of growth has not so far favored the poorest segments of society. Moreover, in-depth analysis of the household surveys suggests this concern applies particularly to rural areas that are more distant from the capital city, Maputo, which is located in the far south.

These points raise concerns regarding the structure or nature of growth in Mozambique, especially over recent years. To what extent are these concerns justified? On the one hand, the existing set of three budget surveys, which are now dated, represents a limited basis to make such claims. Thus, it would clearly overstep the evidence base to claim that Mozambique has taken a fundamentally wrong turn in its development path. The need for caution gains force from the argument that the weak consumption poverty performance in the period 2003–09 was significantly driven by a combination of climatic and external price (terms of trade) shocks in 2007–08. Since consumption is a relatively short-term concept and safety nets, including savings, are limited among the poor and vulnerable, it is not surprising that the scope for consumption smoothing is limited. Thus, we observe sharp (regional) variations in consumption over time. At the same time, these shocks have not persisted. So, in light of continued aggregate growth, it is reasonable to expect that new household survey data (in the field 2014–15) will reveal gains in poverty reduction since 2009.

Despite these reservations, complacency regarding the extent to which aggregate growth is mapping into welfare gains for Mozambique’s poorest is not warranted. An insight into recent developments comes from the Afrobarometer surveys of adults, conducted in Mozambique in 2002, 2008, and 2012. These surveys have collected information (among other things) on subjective perceptions of well-being, the
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**TABLE 5-2. Insights from Afrobarometer Surveys, by Region, Mozambique**

<table>
<thead>
<tr>
<th>Percent</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Fairly or very good living conditions now</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>23.2</td>
<td>27.2</td>
</tr>
<tr>
<td>Center</td>
<td>40.1</td>
<td>18.8</td>
</tr>
<tr>
<td>North</td>
<td>35.1</td>
<td>23.2</td>
</tr>
<tr>
<td>All</td>
<td>31.6</td>
<td>23.6</td>
</tr>
<tr>
<td>(b) Better or much better living conditions now versus 12 months ago</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>32.3</td>
<td>40.1</td>
</tr>
<tr>
<td>Center</td>
<td>38.3</td>
<td>39.9</td>
</tr>
<tr>
<td>North</td>
<td>34.4</td>
<td>47.8</td>
</tr>
<tr>
<td>All</td>
<td>34.8</td>
<td>42.1</td>
</tr>
<tr>
<td>(c) Often or always without a cash income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>25.5</td>
<td>28.0</td>
</tr>
<tr>
<td>Center</td>
<td>23.6</td>
<td>27.4</td>
</tr>
<tr>
<td>North</td>
<td>46.7</td>
<td>32.9</td>
</tr>
<tr>
<td>All</td>
<td>30.3</td>
<td>29.1</td>
</tr>
<tr>
<td>(d) Has a job that pays a cash income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>57.1</td>
<td>43.1</td>
</tr>
<tr>
<td>Center</td>
<td>51.8</td>
<td>36.7</td>
</tr>
<tr>
<td>North</td>
<td>30.1</td>
<td>21.9</td>
</tr>
<tr>
<td>All</td>
<td>48.9</td>
<td>34.8</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations using Afrobarometer surveys, Mozambique.

types of deprivations experienced by households, and access to employment. Summary statistics from these surveys are reported in table 5-2. These report the share of households, split by region and location, responding in specific ways to selected questions. Panels (a) and (b) refer to perceptions of own living conditions; panels (c) and (d) refer to access to some form of cash income. While the patterns are somewhat complex, there is no clear evidence of rapid or distinct improvements in either perceived living conditions or access to cash incomes over time. In rural areas, perceived conditions appear systematically lower.
in 2012 versus earlier periods. Also, the share of the adult population with
access to employment that provides a cash income has displayed no major
changes over time (2002–12) in either rural or urban areas on aggregate.
Perhaps the only systematic tendency is greater convergence between re-
gions in both perceptions and experiences. Nonetheless, it is notable that
considerably less than half of the adult population has access to a cash in-
come; and many households regularly struggle to find any cash.

The Afrobarometer findings rely on subjective perceptions and are
based on relatively small samples; for example, the proportions in
table 5-2 are based on between 104 and 760 observations. Nonetheless,
they point to substantial stability in the broad structure of economic
activities pursued by households across the economy. Despite changes
at the intensive margin, there is little to suggest there have been signifi-
cant transformations in how workers make a living; for example, the
same series of household budget surveys, as well as a one-off labor force
survey, show minimal changes to the aggregate structure of employ-
ment over the period 1997–2009 in Mozambique. In particular, the
vast majority of workers do not earn a stable wage income, even in urban
areas. There are also large and persistent differences in well-being be-
tween households whose income derives from different aggregate eco-
nomic sectors, with the largest gap being between formal sector urban
wage earners, who are predominantly found in service industries, and
the large share of households who are uniquely reliant on smallholder
agriculture. This is indicative of large productivity differentials between
sectors. Additionally, contrary to what one would expect if a dynamic
process of structural transformation were under way, there is no sign of
inter-sectoral productivity convergence. In line with the recent Af-
robarometer data, these concerns motivate a deeper investigation of re-
cent labor market trends. This issue is taken up below.

LABOR MARKET ANALYSIS

The aim of this section is to analyze labor market trends in Mozam-
bique over the post-conflict period. Before doing so, a remark on data
sources is necessary. As in other low-income countries, the majority of
work effort occurs in the informal sector in both rural and urban areas. This sector is not monitored on a regular basis, meaning that official labor force statistics derived from administrative data, such as business or taxation records, do not provide a complete picture of trends in the labor market. Rather, irregular micro-data surveys must be used for this purpose. As alluded already, three household budget surveys have been completed in Mozambique to date. These are the “Inquéritos aos Agregados Familiares” (IAFs) of 1996–97 and 2002–03; and the “Inquérito ao Orçamento Familiar” (IOF) undertaken in 2008–09. These surveys provide relatively detailed information about the labor market activities of each adult member of the household (for example, employment status, sector of activity, type of work performed). More recently, a new IOF went to the field and basic, preliminary data is available from this for the first quarter.\(^2^{1}\)

Given the value of undertaking an up-to-date analysis of labor market trends, we combine available employment data from the series of four household surveys and match it to the official aggregate sectoral GDP data, which is also available through 2014. This is the first attempt to use this latest data source in this way. Due to the preliminary nature of the 2014 IOF data, however, it is only possible to classify individual workers into one of four aggregate sectors.\(^2^{2}\) These are: 1) agriculture, which includes forestry and fisheries; 2) extractive industries (indústria de extração mineira), which also includes construction and utilities; 3) manufacturing (indústria transformadora); and 4) services, combining public administration, education, health, and a range of private commercial and financial activities. The rationale for combining utilities and construction with the extractive industries segment is that, in general, all these activities are intensive in capital. Moreover, and as discussed above, many of the new resource extraction projects are currently in a construction phase.

Matching the macro- and micro-data sources by aggregate sector provides a sector-specific time series on employment and output (value added). While the employment data is not observed annually, we make a simple linear interpolation between the survey years to fill the series. To deepen the analysis, it would have been useful to split the aggregate sectors into contributions from formal and informal activities.
However, this is problematic from the output side since the survey data only captures consumption at the household level, not income. Aside from a bespoke survey of the informal sector in 2005, as well as a survey of informal manufacturing firms in 2011, very little detail is available on informal sector enterprises in Mozambique (urban or rural). This reflects a more general problem of weak enterprise data, which suggests that the sectoral classification of GDP is likely to be rather crude. In turn, this justifies retaining a focus on very aggregate sectors.

### Methods

To analyze the employment and output series, we start by describing general trends. Here the focus is on average labor productivity, given simply by the ratio of output to employment:

$$P_{it} = \frac{Y_{it}}{L_{it}}$$

where $i$ indexes sectors; $t$ is time; $Y$ is value added at constant prices; and $L$ is the number of individuals identifying $i$ as their primary sector of economic activity. Absolute values of $P$ are not of particular interest. Rather, we report changes over time and compare labor productivity in each sector to the economy-wide average, denoted $\bar{P}_t$. This provides an initial view into the structure of recent growth, and is given by the ratio of output to employment shares:

$$\frac{P_{it}}{\bar{P}_t} = \frac{(Y_{it}/L_{it})}{(Y_t/L_t)} = \frac{(Y_i/Y_t)}{(L_i/L_t)}$$

Other descriptive statistics, such as a comparison of changes in labor shares to the level of labor productivity, have been used elsewhere and provide complementary insights. To go further, however, a more formal decomposition is warranted. This aims to identify the principal drivers of changes in aggregate labor productivity over time. These changes arise from different sources: differential trends in employment growth (within and between sectors), as well as output gains occurring through acquisition of capital (technology). Put differently, it is instructive to learn whether sectors with rapid productivity growth are also sectors that are significantly attracting new workers. Identifying the
drivers of changes in aggregate labor productivity indicates the extent to which aggregate GDP growth is associated with transformation in the underlying structure of the economy.

Following other studies, changes in aggregate labor productivity can be decomposed into three main components: within-sector productivity changes (the intra-effect); the contribution due to the reallocation of labor across sectors, holding productivity fixed (the Denison effect); and a dynamic structural reallocation effect given by the interaction between productivity growth and relative labor growth (the Baumol effect). 25 The second effect is positive when workers are moving from lower to higher productivity sectors, yielding a static gain. The third term is positive when those sectors experiencing employment growth are also experiencing positive productivity gains. Not only is the overall magnitude of these three effects of interest, we are also concerned to understand how different sectors contribute to each component. Thus, with four sectors and three effects (per period), there are twelve quantities of interest.

The three components can be calculated relatively easily from the output and employment time series. To do so, note that aggregate labor productivity is a weighted sum of sector-specific labor productivities: 26

\[
\bar{P}_t = \sum_{i \in I} \frac{Y_i}{L_i} = \sum_{i \in I} \frac{P_i L_i}{L_i} = \sum_{i \in I} P_i \omega_i^t
\]

Thus, the change in aggregate labor productivity between two periods \(t\) and \(t-1\) can be separated into the contributions from pure changes in productivity in each sector and changes in labor shares. That is, denoting the absolute productivity change in a given sector as: \(P_i - P_{i-1} = \Delta P_i\), we have:

\[
\Delta \bar{P}_t = \sum_{i \in I} \left( P_i \omega_i^t - P_{i-1} \omega_i^{t-1} \right) = \sum_{i \in I} \left( \Delta P_i \omega_i^{t-1} + P_i \Delta \omega_i^t \right)
\]

The above expression for the absolute change in labour productivity is reminiscent of the Oaxaca–Blinder decomposition technique. The first term on the RHS captures changes in labor productivity holding labor shares constant, which is the intra-effect. The second term captures changes in employment shares holding labor productivity fixed, which refers to labor reallocation effects.
This decomposition can be re-expressed as relative contributions to productivity growth. Dividing the previous expression by aggregate productivity at time $t-1$ gives:

$$
\bar{g}_t^p = \frac{\Delta P_t}{P_{t-1}} = \sum_{i \in I} \left( \frac{\Delta P_{it} \omega_{it-1} + P_{it} \Delta \omega_{it}}{P_{it-1}} \right) \frac{P_{it-1}}{P_{t-1}} - 1
$$

As required, the three terms on the RHS of the above productivity growth decomposition respectively denote the relative contributions to aggregate productivity growth of: within-sector productivity growth, static labor reallocation, and dynamic labor reallocation.

Results

Previously, we outlined a range of analytical tools that can be used to investigate how the structure of output and employment have coevolved over time. Applying these to the Mozambican series, figure 5-3 illustrates trends in sectoral employment shares. Combining these with sectoral shares of real output (figure 5-2), figure 5-4 indicates trends in the relative productivity of each sector versus economy-wide labor productivity ($\omega_{it}^p$). Stated in log terms, bars less than zero indicate sectors with below-average productivity. Also, a unit change on the $y$-axis is consistent with an approximate doubling of labor productivity relative to the mean.

The figures are informative. Consistent with earlier data, we find that the majority of Mozambicans continue to be employed in (small-holder) agriculture. As shown in figure 5-3, this sector accounts for more than two in every three workers. Nonetheless, the agricultural labor share appears to have fallen rapidly between the two most recent surveys, from 79 percent of workers in 2009 to 72 percent in 2014. While part of this difference may simply reflect the preliminary nature

Source: Authors’ calculations using Mozambican official statistics.

FIGURE 5-4. Sector-Specific and Aggregate Labor Productivity

Source: Authors’ calculations using Mozambican official statistics.
of the 2014 data, it is consistent with indications from agricultural survey data of a trend shift out of agriculture in certain areas, especially the south. This decline has been offset by a corresponding increase in the labor share of the services sector. The other aggregate sectors, mining and manufacturing, account for less than one in every twenty workers and show no material changes in their overall shares of employment.

Figure 5-2 indicates that, aside from a small increase in the output share accounted for by the mining sector and a small decline in the contribution from manufacturing over the most recent period, output shares have remained broadly constant over time. In turn, figure 5-4 indicates that productivity differences between sectors have diverged, particularly in the latest period (2009–14). This has been driven by two trends: a significant increase in labor productivity in the mining sector and a relative decline in labor productivity in both services and manufacturing. At the same time, agricultural labor productivity has remained low and stable (in relative terms) at around half of the economy-wide level of productivity. This does not mean that labor productivity in agriculture has been stagnant. Rather, it has roughly tracked aggregate productivity growth. Specifically, between 2009 and 2014, the latter grew by around 25 percent, or an average of around 4 percent per annum. For the same period, we estimate agricultural productivity grew by around 3.5 percent per annum. However, labor productivity in mining grew by an average of over 35 percent per annum during this period, increasing about fivefold.

Figure 5-5 plots the relative level of labor productivity against changes in labor shares for the four sectors for two periods: 1997–2005 and 2006–14. Of particular interest are sectors located in the positive quadrant, those that show relatively high labor productivity and increases in their share of employment. In transition and developing economies we typically see large differences in labor productivity between sectors. However, for those economies undergoing positive and dynamic structural transformation, we often see that it is higher productivity sectors that are able to attract more labor. The Mozambican data suggests the economy is in transition. Labor productivity in agriculture is lower than productivity in any other sector by a factor of at least two. Consequently, movement of workers out of agriculture and into other
sectors (or relatively faster employment growth in the latter) is consistent with a trend increase in economy-wide labor productivity. Even so, the figure gives rise to concerns. First, the only sector in the positive quadrant is the services sector. Moreover, labor productivity is falling in this sector, which suggests that new workers in this sector tend to operate on an informal basis and undertake more precarious activities relative to existing workers. Additionally, sectors experiencing the highest labor productivity growth, namely mining, are not creating new employment posts in line with the pace of new entrants to the economy. Not only is this a small sector in employment terms; it is getting smaller as the working population expands.

The previous discussion hints at results from the decomposition analysis. This is summarized in table 5-3, which reports mean absolute and relative contributions to average annual aggregate productivity growth by component (intra-sector productivity effects [intra], static
<table>
<thead>
<tr>
<th>Period</th>
<th>Sector</th>
<th>Absolute Intra</th>
<th>SRE</th>
<th>DRE</th>
<th>Total</th>
<th>Relative Intra</th>
<th>SRE</th>
<th>DRE</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997–2002</td>
<td>Agriculture</td>
<td>1.40</td>
<td>-0.29</td>
<td>-0.01</td>
<td>1.10</td>
<td>22.2</td>
<td>-4.5</td>
<td>-0.2</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td>Manufacturing</td>
<td>0.06</td>
<td>1.94</td>
<td>-0.01</td>
<td>2.00</td>
<td>1.0</td>
<td>30.8</td>
<td>-0.2</td>
<td>31.6</td>
</tr>
<tr>
<td></td>
<td>Mining</td>
<td>0.67</td>
<td>0.06</td>
<td>0.01</td>
<td>0.73</td>
<td>10.5</td>
<td>0.9</td>
<td>0.2</td>
<td>11.6</td>
</tr>
<tr>
<td></td>
<td>Services</td>
<td>2.15</td>
<td>0.32</td>
<td>0.01</td>
<td>2.48</td>
<td>34.0</td>
<td>5.1</td>
<td>0.2</td>
<td>39.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.28</td>
<td>2.04</td>
<td>0.00</td>
<td>6.32</td>
<td>67.7</td>
<td>32.2</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>2003–08</td>
<td>Agriculture</td>
<td>1.15</td>
<td>-0.08</td>
<td>0.00</td>
<td>1.06</td>
<td>27.6</td>
<td>-2.0</td>
<td>-0.1</td>
<td>25.5</td>
</tr>
<tr>
<td></td>
<td>Manufacturing</td>
<td>2.04</td>
<td>-1.44</td>
<td>-0.21</td>
<td>0.39</td>
<td>48.9</td>
<td>-34.5</td>
<td>-5.0</td>
<td>9.5</td>
</tr>
<tr>
<td></td>
<td>Mining</td>
<td>0.66</td>
<td>-0.07</td>
<td>-0.01</td>
<td>0.58</td>
<td>15.8</td>
<td>-1.7</td>
<td>-0.2</td>
<td>13.8</td>
</tr>
<tr>
<td></td>
<td>Services</td>
<td>0.19</td>
<td>1.94</td>
<td>0.00</td>
<td>2.13</td>
<td>4.5</td>
<td>46.6</td>
<td>0.1</td>
<td>51.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.04</td>
<td>0.35</td>
<td>-0.22</td>
<td>4.17</td>
<td>96.8</td>
<td>8.4</td>
<td>-5.2</td>
<td>100.0</td>
</tr>
<tr>
<td>2009–14</td>
<td>Agriculture</td>
<td>1.02</td>
<td>-0.44</td>
<td>-0.02</td>
<td>0.56</td>
<td>24.2</td>
<td>-10.5</td>
<td>-0.4</td>
<td>13.3</td>
</tr>
<tr>
<td></td>
<td>Manufacturing</td>
<td>-0.20</td>
<td>0.49</td>
<td>-0.08</td>
<td>0.20</td>
<td>-4.8</td>
<td>11.6</td>
<td>-1.9</td>
<td>4.8</td>
</tr>
<tr>
<td></td>
<td>Mining</td>
<td>2.97</td>
<td>-1.57</td>
<td>-0.69</td>
<td>0.71</td>
<td>70.5</td>
<td>-37.3</td>
<td>-16.4</td>
<td>16.8</td>
</tr>
<tr>
<td></td>
<td>Services</td>
<td>-0.39</td>
<td>3.16</td>
<td>-0.03</td>
<td>2.74</td>
<td>-9.2</td>
<td>75.0</td>
<td>-0.7</td>
<td>65.1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.40</td>
<td>1.64</td>
<td>-0.82</td>
<td>4.21</td>
<td>80.6</td>
<td>38.9</td>
<td>-19.5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Authors' calculations.

a. Intra = within-sector productivity effect; SRE and DRE are static and dynamic reallocation effects, respectively.
reallocation effects [SRE], and dynamic reallocation effects [DRE]), by sector and by period (1997–2002, 2003–08, 2009–14). For the absolute estimates, in each period the sum of the component-sector cells gives that period’s total aggregate productivity growth, or 100 percent in the case of the relative contributions. For instance, in the latest period aggregate productivity growth averaged 4.2 percent per year, composed primarily of the intra effect (81 percent). Labor reallocation (structural change) effects in the same period, given by the sum of SRE and DRE, contributed less than 20 percent of overall productivity growth.

Four key findings emerge. First, as already indicated, labor reallocation effects have played a relatively small role in Mozambique’s post-conflict productivity growth. Compared to later periods, reallocation made the largest relative contribution in the immediate reconstruction period (1997–2002), at around 32 percent. This underlines the thesis that the underlying drivers of Mozambique’s growth have shifted over time. Second, the same point is supported by evidence that the composition of these labor reallocation effects have altered. In particular, the dynamic component has turned negative, which reflects the finding that sectors with the fastest rates of growth in employment are also sectors with falling relative productivity, while those with the slowest rates of employment growth show increasing relative productivity. In the most recent period, this negative dynamic effect reduced the contribution of structural change to aggregate productivity growth by around 20 percent. It is important to keep in mind, however, that the static reallocation effect in the latest period (absent the negative dynamic effect) was reasonably large and positive. This means that sectors are adding jobs at quite different paces (either through new entrants or through job changes) relative to 2003–08; even so, the marginal worker added in the services sector is not as productive as existing workers.

Third, a related issue is that while the intra effect remains the predominant overall contributor to aggregate productivity growth compared to structural change, within-sector productivity growth—which also captures workers moving within the same sector from lower to higher productivity activities (for example, from smallholder to commercial farming)—is highly uneven. Of most concern is that in all sectors excluding mining, the sector-specific intra effects are smaller in magni-
tude in the latest period versus the two earlier periods. Put differently, absent the mining sector, inherent within-sector productivity growth appears to be weakening. Indeed, this growth has turned negative in services and manufacturing, meaning that workers are less productive in these sectors, on average, than before. This raises profound questions regarding the sustainability of Mozambique’s current rapid rates of aggregate economic growth, particularly given current slack in global commodity prices. Additionally, such trends corroborate earlier disquiet regarding the extent to which growth is translating into widespread improvements in well-being.

Fourth, the analysis suggests that aggregate productivity growth has become increasingly dependent on dynamics in the services sector. This is indicated by the “total” columns of table 5-3. These report the sum of the component effects for each sector and show that services accounted for two thirds of aggregate productivity growth in 2003–08, compared to 51 and 39 percent in the earlier two periods. The corollary of this insight is that the contribution of other sectors, including both agriculture and manufacturing, have declined over time. Indeed, the strong contribution of manufacturing witnessed in the first period was almost entirely dependent on the establishment of a single large firm (Mozal), attracted by a highly preferential taxation structure. Also, despite providing the majority of the population with a livelihood, agriculture contributed just 25 percent to aggregate productivity growth in 2003–08. Again, this endorses concerns regarding the extent to which growth in Mozambique is pro-poor.

**LOOKING AHEAD**

We have just analyzed past developments in the labor market to shed light on Mozambique’s recent growth experience. The results highlighted important changes in the structure of growth and raised concerns regarding both the sustainability and the poverty-reducing capacity of the current growth mode. The latter appears to be dominated by two main currents: first, rapid productivity growth in the mining sector, intensive in capital and contributing relatively few new jobs; and second, expansion
of the services sector, largely in lower productivity activities. Given that the vast majority of the workforce is engaged in low-productivity informal activities (for example, smallholder agriculture), a guiding assumption of this section is that the qualitative nature of growth will need to change to achieve rapid improvements in well-being across the population. Moreover, such changes are likely to be necessary to sustain high rates of growth *per se*.

**Challenges**

Future challenges need to be considered in light of demographic trends. Fertility rates remain high in Mozambique. This means it is inevitable that the working-age population will expand rapidly over the next generation. The UN’s baseline projections for the working-age population (ages 15–64), for the period 2010–50, predict that the total number of potential workers will rise from around 15 million in 2015 to 36 million in 2050. This represents a growth rate of about 3.6 percent per annum, meaning that, by 2025, more than 500,000 new workers will enter the labor market each year. Given the present structure of growth, this represents a significant challenge and raises the specter of conflicts over productive resources (for example, land) and even social unrest if levels of well-being do not improve.

At the same time, there is a potential demographic dividend. This comes from a relative reduction in the share of dependents (nonworkers) in the population. The current dependency ratio is over 45 percent, meaning there is approximately one dependent for every potential worker. According to the projections, this ratio is expected to decline to around 35 percent by 2050, thereby reducing the effective burden on workers and raising possibilities for greater productive investments in the economy. Furthermore, the quality of the working population is set to change as access to schooling continues to increase. To model this shift, we use secondary data that estimates the average years of schooling of fifteen- to nineteen-year-olds in multiple countries since the 1950s at five-year intervals. Using this data, we estimate the expected rate of growth in years of schooling conditional on its current level. This is necessary since years of schooling is bounded, meaning that as
one approaches a theoretical maximum of (around) fifteen years, growth rates must decline. We undertake these estimates at the 25th, 50th, and 75th percentiles of the distribution of cross-country human capital growth rates. These imply different paths for how the mean years of schooling of any given country will evolve, conditional on the starting level. The path at the 75th percentile would be consistent with the top 25 percent of all historically observed conditional growth rates (regardless of country or period).

We apply these estimates to the demographic projections for Mozambique. Specifically, we allow the mean years of schooling of the 15–19 age cohort, which are taken as (potential) new labor market entrants, to evolve according to either the 25th, 50th, or 75th percentile estimated growth paths. The latter is taken as a reasonable upper bound on what Mozambique might achieve, and the first a lower bound. We additionally assume that years of schooling remain fixed after the age of twenty. As a consequence, growth in the overall mean years of schooling, encompassing all members of the working-age population, is uniquely generated by new labor market entrants. Thus, the overall mean years of schooling will change only gradually over time. Starting values for 2010 are taken directly from observed mean years of schooling for each age group of five years (as per the projections) from the 2008–09 survey.

Table 5-4 reports aggregate results of our projections using the median (50th percentile) growth path. Figures 5-6 and 5-7 plot the same estimates, including the confidence interval (that is, 25th lower and 75th upper bounds), plus a disaggregation by gender. A first point to note is that years of schooling are presently low; only around one in four workers has completed primary education (seven or more years of schooling). This reflects the predominantly rural nature of the work force and historical legacies. At the median of the observed historical conditional cross-country human capital growth rate distribution, average years of schooling should double to 6.6 years by 2050. In turn, this implies that over 40 percent of the working-age population should have attained a basic level; under the upper bound scenario this share reaches around 50 percent by 2050. Assuming increased literacy and numeracy implies a greater capacity to adopt (and effectively use) modern technologies, this raises hope for greater innovations and transformations across sectors.

Total working-age population (millions)

Working-age population with primary education (millions, by gender)

Source: Authors’ calculations using UN baseline demographic projections and human capital growth estimates based on data from Barro and Lee (2013).

Note: Shaded regions represent confidence intervals defined as the 25th and 75th percentile conditional growth paths; solid lines are the projections at the median growth path (see text); all population figures are in millions.

TABLE 5-4. Decomposition of Contributions to Aggregate Productivity Growth, by Period, Mozambique

<table>
<thead>
<tr>
<th>Year</th>
<th>Working-age population</th>
<th>Median forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(in millions)</td>
<td>(in millions)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Completed primary</td>
</tr>
<tr>
<td>2010</td>
<td>Male</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>6.6</td>
</tr>
<tr>
<td>2030</td>
<td>Male</td>
<td>11.2</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>11.7</td>
</tr>
<tr>
<td>2050</td>
<td>Male</td>
<td>17.7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>18.1</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations using UN baseline demographic projections and human capital growth estimates based on data from Barro and Lee (2013).

a. Projected numbers. Human capital forecasts are projections at the median growth path.
Moreover, these developments portend the likely emergence of thicker and more qualified markets for labor (in both rural and urban areas), which may stimulate larger-scale investments. Even so, the flipside is that many workers will remain poorly educated. Transformation in the quality of the labor force will be slow and possibly uneven.

**Policy Priorities**

Looking forward, a key question is what kinds of government policies are most likely to alter the shape or pattern of growth toward a configuration that is more pro-poor. Here an important distinction is between macro-structural policies and microeconomic sectoral policies. The former can be best described as policies that affect economic incentives and behavior across large swathes of the population (people, firms, and sectors), without necessarily targeting specific markets or subgroups.\(^\text{31}\) Examples include public investments in infrastructure, general legal or...
tax reforms, as well as monetary and exchange rate policies. Micro-economic sectoral policies refer to more specific, targeted interventions that often seek to address market failures or efficiency losses in specific sectors. Examples include active labor market policies, such as employment subsidies, or investments in labor market information systems.

Without ruling out the role of microeconomic policies, there are good reasons to suggest that efforts should focus on deploying macro-structural policies to enhance the quality of growth. A main reason is simply the massive scale of the jobs challenge. The demographic projections already noted mean that Mozambique needs to run just to keep up. The number of projected new labor market entrants per year is larger than the absolute number of workers currently found in the formal sector (that is, who receive a regular wage). Consequently, it is difficult to see how targeted microeconomic policies, which naturally tend to be directed toward legally incorporated entities and/or the visible (formal) sector, can have an adequate footprint even if undertaken on a large-scale.

A second reason to focus on macro-structural policies is that state capacity is weak. Not only are there few examples of unambiguously effective microeconomic development interventions in present-day Mozambique; the government also plays a minimal role in most sectors, except as a major purchaser of goods and services. Thus, in the short-to medium-term, any kind of step change in the role and effectiveness of sector-specific microeconomic interventions is not realistic.

What can be done to raise the quality of growth? In keeping with previous studies, we recommend that very considerably increased priority must be given to raising productivity in the agricultural sector. Since the majority of households are reliant on agriculture and this sector shows significantly lower levels of labor productivity relative to other sectors, progress must be made in transforming agriculture to achieve significant poverty reduction. In this view, any broad-based interventions in agriculture are macro-structural in nature since they cut across the rural sector and feed into urban dynamics, for example, through living costs. Also, raising rural incomes will be important to moderate migration out of agriculture into urban informal activities.
We believe two main rural policy initiatives merit attention. The first is to draw in private sector expertise and creativity to raise rural incomes. Presently, modern private sector entities face few incentives to engage directly with rural producers. Among other things, this reflects poorly coordinated and integrated value chains, high transaction costs, and low market predictability (for example, due to climatic and other factors). Lessons can be learned from various Asian countries regarding how structural interventions in staple food markets played a crucial role in their development successes. This does not necessarily require large-scale public interventions in food markets. Rather, the creation of a clear and stable set of incentives for private buyers is needed, which in turn supports domestic price stability.\textsuperscript{33} Existing pockets of agricultural success in Mozambique point in this direction. For instance, contract farming schemes in tobacco, cotton, and cassava (used to produce beer) have been shown to boost incomes. There also has been success in establishing a more integrated value chain running from production of chicken feed (soya) by emergent commercial farmers to domestic chicken production.\textsuperscript{34}

A second and related macro-structural intervention is to focus a larger share of public investments on rural areas, with a key aim of fostering market linkages. A recent infrastructure diagnosis notes that: “Mozambique’s connectivity among urban and economic clusters is quite limited, lacking linkages that connect parallel corridors to each other. . . . Additionally, rural population accessibility to domestic markets . . . is an enormous challenge, and lags behind what is observed in the region.”\textsuperscript{35} Supporting this view, research shows that, relative to other countries, such as Vietnam, poor rural infrastructure in Mozambique contributes to much lower agricultural income multipliers.\textsuperscript{36} Ensuring a network of high-quality all-weather roads to connect all major towns in Mozambique, as well as an expansion of rural feeder roads, requires sustained political commitment over the long-term.

A third issue is policy distortions that limit demand for domestic labor. A first example of this is the real exchange rate. A recent analysis associated with the IMF suggests that the Metical was overvalued by between 26 and 41 percent in real effective terms, and this preceded a phase of significant devaluation of the South Africa Rand relative to
the Metical. While a strong Metical may be “good” for urban consumers in the south, who rely largely on food imports from South Africa, there are potentially damaging longer-term consequences for the rural sector and job creation in labor-intensive exports. Research into price competitiveness suggest that certain cash crops, cotton and soya, could be seriously affected by any further sustained appreciation of the currency. The point is that maintenance of a reasonable and stable level of external price competitiveness provides a broad-based incentive to exporting activities and use of domestic factors of production. Determined pursuit of such competitiveness is necessary given Mozambique’s current resource boom and high levels of external financial inflows.

Another distortion is minimum wage policies. National minimum wages are set for individual occupational sectors in Mozambique each year. Not only do these minimum wages differ by a large factor between sectors, it is clear they have increased much more rapidly than labor productivity growth. Stated in constant 2009 prices, average minimum wages have increased by a factor of nearly four since 1996; that is, from 28 to 138 U.S. dollars; and over the period 2009–14, they increased at an annual rate of over 10 percent. This compares to average aggregate labor productivity growth of below 5 percent.

These trends are problematic for a number of reasons. First, high minimum wages constitute a bias toward certain types of labor; namely, skilled urban workers. This bias also appears to be material since labor productivity in the majority of Mozambican manufacturing firms is well below that implied by the minimum wage. Second, as a national price, these minimum wages ignore the large regional differences in prices (as well as urban–rural differences). Significant spatial price disparities are found in Mozambique due to high transport costs, reflecting long distances between centers of production and consumption, and weakly competitive intermediaries. The extent to which minimum wage policies directly affect job creation (for example, in manufacturing) is hard to assess and merits additional research. Nonetheless, it is representative of a more general policy stance that tends to promote a structure of growth that has weak capacity to reduce absolute poverty. We recommend careful consideration of this and other policies and subsequent action in practice.
CONCLUSION

This chapter has reviewed recent macroeconomic and microeconomics development trends in Mozambique. The overall aim was to make sense of the apparent disconnect between rapid aggregate growth and weaker trends in poverty reduction. While part of this disconnect reflects temporary factors, such as a conjunction of price shocks and climate events in 2008–09, more worrisome is a lack of growth-enhancing structural change in the economy. This motivated a detailed decomposition of trends in labor productivity for the period 1996–2014. This represented the primary analytical contribution of the chapter and was able to take advantage of recent household data from 2014.

Four main findings emerged from the labor productivity decomposition. First, labor reallocation effects have made a relatively small contribution to productivity growth over this period. Moreover, when the full post-war period is split into phases of around six years, labor reallocation was found to have made the largest relative contribution, at around 32 percent, in the immediate reconstruction period (1997–2002). Second, the composition of labor reallocation effects has altered over time. More recently, dynamic structural reallocation effects have become negative, reflecting the point that sectors with the fastest rates of growth in employment (primarily, services) show falling levels of relative productivity. Third, within-sector productivity growth remains a predominant overall contributor to productivity growth, yet is highly uneven across sectors. We also found that, with the exception of mining, sector-specific intra productivity growth has been falling over time and even is negative in services and manufacturing. This implies that each worker is becoming less productive in these sectors than before, raising concerns regarding the sustainability of Mozambique’s current growth path. Fourth, aggregate productivity growth appears to be increasingly dependent on the services sector. Despite large investments in mining and related industries, and associated within-sector productivity growth, this has not translated into large aggregate labor productivity benefits due to the weak contribution (negative) of these new activities to employment.
The final section of the chapter reflected on what these findings mean for policy. We highlighted unavoidable demographic trends that suggest both forthcoming opportunities and also challenges, particularly concerning the sheer number of new workers that will enter the labor market and that average worker quality (years of schooling) will only evolve slowly. We suggested that macro-structural policies should be a primary though not exclusive focus of initiatives compared to sector- or firm-specific interventions. This reflects both the scale of the jobs challenge and weak state capacity to intervene at the microeconomic level. Three specific macro-structural interventions were recommended. The first is efforts to raise agricultural productivity, particularly by establishing larger and more stable incentives for the private sector to engage directly with rural smallholders. Second, investments in rural infrastructure and rural–urban connections will be critically important to exploit gains from trade and specialization. Third, we recommend efforts to minimize distortions that act against export-oriented and labor-intensive activities. Distortions that merit specific attention are external price competitiveness (via the exchange rate) and minimum wage policies.

We have argued that Mozambique’s economic development challenges remain significant. However, it is important to emphasize that substantial and laudable progress has been made in sustaining two decades of rapid growth and establishing a stable macroeconomic and political environment. Moreover, the challenges Mozambique faces reflect, in part, the cumulative impact of historical experiences, as well as global interest in SSA commodities. Nevertheless, Mozambique must push back against trends that favor a capital-intensive path of development. Instead, we believe greater priority must be given to finding a more labor-intensive, and thus pro-poor, growth path in which rural producers play a prominent role.

NOTES

1. See Jones (2006); Arndt and others (2007); Nucifora and da Silva (2011).

2. This chapter was written in 2015, before the emergence of information regarding a number of large, commercial government guaranteed external loans that had not been declared to the IMF. Together with falling commod-
ity prices, these events have cast doubt on the sustainability of Mozambique’s recent growth path and have led to significant economic and political turmoil, including substantial exchange rate depreciation since October 2015.


5. For example, see African Development Bank (2013).


7. For further details, consult Jones and Tarp (2012, 2015).

8. In line with local practice in Mozambique, “Frelimo” is now written in lower case to mark the distinction between the independence movement and the post-independence political party.

9. For additional details see Pitcher (2002); Arndt and others (2007).

10. See also Jones and Tarp (2015).


15. For a review of this evidence see Arndt and others (2015).

16. For elaboration, see Jones and Tarp (2012, 2013).


18. A further round was undertaken in 2005; however, the rural/urban structure of this survey was distinct and appears less comparable.


22. In part, this reflects changes in the occupational categories and codes used in the questionnaires. As a result, further work will be needed to make the 2014 data consistent with previous rounds when a final dataset is released.


24. For example, see African Development Bank (2013).

25. See Dumagan (2013); de Vries and others (2013).

26. Superscripts on the share terms denote the variables from which they are derived; that is, \( \omega_{it} = \frac{L_{it}}{L_t} \), \( \omega_{it}^P = \frac{P_{it}}{P_t} \), etc.

27. For a similar exercise, see African Development Bank (2013).

28. This data is taken from Barro and Lee (2013).

29. These estimates are based on quantile regressions where the dependent variable is the observed (annualized) growth rate in the mean years of schooling over a five-year period, and the explanatory variables are the initial level of schooling and population size. Coefficient estimates from these regressions are used to construct our growth paths.
30. The notion here is that Mozambique must sustain rates of growth in mean years of schooling according to these paths over a period of forty years. Since the growth paths are estimated from the full distribution of schooling year growth rates, the upper (lower) part of this distribution is populated by country-period observations that are often not sustained over long periods. Thus, our focus on the 25th–75th band is reasonable.

31. Macro-structural policies include certain elements of industrial policy, including infrastructure investments and exchange rate management, since these affect multiple sectors at once.

32. For an early view of this thesis, see Tarp and others (2002); also Jones and Tarp (2012, 2013).

33. See Timmer and Dawe (2007).

34. Hanlon and Smart (2014).

35. Dominguez-Torres and Briceño-Garmendia (2011, p. 8).

36. Arndt and others (2012b).

37. See Vitek (2009). Note that in 2015, Mozambique has experienced significant devaluation pressure.

38. Salinger and Ennis (2014).


REFERENCES


