

South Africa Economic Update



Private Investment for Jobs



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South Africa Economic Update

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Focus on Private Investment for
Job Creation



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Foreword

The South Africa Economic Update is a World Bank biannual publication that offers the country's economic outlook against the global economic prospects. The Update also provides evidence-based analysis on an aspect of the South African economy that is intended to enhance ongoing policy debates to foster the country's goals to increase growth, reduce poverty, lessen inequality, and make a dent in the stubbornly high unemployment rate. These goals are in line with the World Bank's twin goals to help end poverty by 2030 and promote shared prosperity.

In this ninth edition, the focus of the South Africa Economic Update is on private investment for job creation. The pace of job creation has been too slow in the past decade to meet South Africa's national development goal to create some 600,000 new jobs every year, to bring down the unemployment rate to 6 percent by 2030, from 33.8 percent in 2015. This Update analyzes the central role that private investment plays in the government's effort to accelerate the promotion of industrial development given the shortcomings of South Africa's commodity-driven growth model. The report examines whether this emphasis has yielded the desired outcomes, ultimately to drive labor demand and consequently increase job creation.

The report assesses the effectiveness, cost, and impact of investment tax incentives granted to the various economic sectors on additional investment, and on job creation. The report suggests that reorienting incentives toward the industrial sector would create additional jobs at no additional fiscal cost, an important point

in a context of shrinking fiscal space, where South Africa has had three consecutive years of negative per capita economic growth. The report argues that investment tax incentives have been shown to limit job destruction in the industrial sector, despite the industrial contraction that the country has experienced since the establishment of democracy in 1994.

As with previous editions of the South Africa Economic Update, it is our hope that this report does not prescribe a way forward, but rather adds to the body of ongoing work that will help policy makers and other stakeholders in their efforts to find sustainable solutions to the highly complex challenges in improving the economy and bettering the lives of South Africans. Through its various financial and advisory instruments, the World Bank Group stands ready to contribute to these endeavors. The next edition of the South Africa Economic Update will focus on innovation.



Paul Nomba Um
World Bank Country Director
for South Africa

List of Abbreviations

ABSA	Barclays Africa Group Limited
CGE	Computable General Equilibrium
CIT	Corporate Income Tax
DTI	Department of Trade and Industry
EBIT	Earnings Before Interest and Taxes
EM	Emerging Market
EMDES	Emerging Markets and Developing Economies
ETI	Employment Tax Incentive
FDI	Foreign Direct Investment
FEZ	Food Empowerment Zone
GDP	Gross Domestic Product
IDC	Industrial Development Corporation
IDZ	Industrial Development Zone
IT	Information Technology
ITI	Investment Tax Incentive
MPC	Monetary Policy Committee
MTBPS	Medium-Term Budget Policy Statement
METR	Marginal Effective Tax Rate
NAFTA	North American Free Trade Area
NDP	National Development Plan
NEER	Nominal Effective Exchange Rate
NIPF	National Industrial Policy Framework
OECD	Organisation for Economic Co-Operation and Development
OPEC	Organization of the Petroleum Exporting Countries
PBO	Parliamentary Budget Office
PIT	Personal Income Tax
PPP	Purchasing Power Parity
PMI	Purchasing Managers Index
Q/Q	Quarter-on-Quarter
Q1	First Quarter
QLFS	Quarterly Labor Force Survey
REER	Real Effective Exchange Rate
S&P	Standard and Poor's
SAAR	Seasonally Adjusted Annualized Rate
SADC	Southern African Development Community
SARB	South African Reserve Bank
SARS	South African Revenue Service
SBC	Small Business Corporation
SEZ	Special Economic Zone
StatsSA	Statistics South Africa
SUB-IG	Sub-Investment Grade
UCC	User Cost of Capital
Y/Y	Year-on-Year
ZAR	South African Rand

Executive Summary

Global economic growth remained moderate at 2.3 percent in 2016. High-income economies experienced an underlying weak growth momentum (1.6 percent) and low inflation, although the U.S. Federal Reserve's decision to raise interest rates in December 2016 signaled that the U.S. economy is picking up steam. Among emerging markets and developing economies (EMDEs), commodity exporters were still grappling with low commodity prices, while gross domestic product (GDP) growth was broadly stable among importers. Although initially supported in the first part of 2016 by a significant acceleration in foreign capital inflows, GDP growth (at 3.4 percent in 2016) in EMDEs suffered in the second part of the year from a reversal of such capital inflows in anticipation of tighter U.S. monetary policy. Meanwhile, commodity prices recovered slightly from their low levels of January 2016.

Overall, a modest global economic recovery is expected in 2017 and 2018–19, with growth at 2.7 and 2.9 percent, respectively. Pulled by the U.S. economy, high-income economies' growth is foreseen at 1.8 percent in 2017–19, and that of EMDEs at 4.2 percent in 2017, 4.6 percent in 2018, and 4.7 percent in 2019. Risks nonetheless remain on the downside, and emerging markets with preexisting vulnerabilities as a result of external imbalances, large financing needs, and unsustainable debt dynamics would likely be the most affected by financial market disruptions.

In this depressed environment, South Africa's GDP growth is estimated to have decelerated to 0.4 percent in 2016, down from

1.3 percent in 2015. This slowdown was felt across all regions in South Africa, Gauteng included, and marks the third consecutive year of negative per capita growth and stagnating poverty. In retrospect, the decline in commodity prices since 2012 may have cost at least 4 percentage points of GDP. In 2016, GDP growth was modestly driven by the financial, business, and real estate sectors, although this major engine of South African growth has also been slowing. Notably, South Africa has avoided a much-feared downgrade to sub-investment grade by an international credit rating agency in 2016—which could have reduced GDP per South African by about ZAR 1,000 by end-2017—by staying the fiscal consolidation course. Yet South Africa is not out of the woods yet for 2017, with two agencies now rating South Africa one notch above sub-investment grade with negative outlook.

However, 2016 may mark the trough of South Africa's business cycle. A modest recovery is now foreseen for 2017 and 2018, driven by (modestly) rising commodity prices, easing inflationary pressures (as the rand stabilizes and the effects of drought on food prices dissipate) and a pickup in credit stimulating household consumption demand. By contrast, the continuation of the needed fiscal consolidation efforts (mainly through additional tax revenue) should not offer any significant stimulus to GDP growth.

As in 2016, private investment will be the main variable influencing GDP growth. On the one hand, should investment remain weak, this would further undermine growth prospects, raise again the likelihood of a

rating downgrade, and perpetuate a vicious circle of low growth–low investment. On the other hand, accelerated investment could benefit from a still weak and more stable rand, improving electricity capacity, and less fractious labor relations, to boost exports and growth and stabilize the capital account. Accelerating investment will require providing a predictable business environment, not least through greater policy certainty.

Private investment not only matters for growth, but also for job creation. In 2016, the unemployment rate reached a 13-year high, especially for youth and the unskilled. Such stubbornly high unemployment constitutes the major hurdle for South Africa to overcome, to meet its national development goals of eliminating poverty and reducing inequality: each job created in South Africa lifts about one person out of poverty.

In retrospect, the growth model pursued since democracy has not generated enough jobs, even during the peak of the commodity cycle. Cognizant of the shortcomings of South Africa's commodity-driven growth model, the authorities have accelerated efforts to promote industrial development in the past decade, through a suite of industrial policy instruments, including tax incentives, public procurement requirements, provision of infrastructure in support of specific sectors, lending to and equity participation in strategic sectors, and competition and trade policies. Such a policy orientation builds on the expectation that it could generate several positive outcomes, including higher wages for workers, larger employment and growth multipliers, increased domestic competition and access to the larger world demand, and more stable growth underpinned by a less volatile capital account. Through appropriate investments, industrial development can seek to expand production in sectors where comparative advantage already exists, or alternatively develop new comparative advantages through technological upgrading.

However, in recent years, the authorities' efforts to promote industrial development were not matched with a significant reallocation of private capital toward industrial sectors, or with higher industrial employment. In the agriculture, mining, and manufacturing sectors, investments resulted in replacing jobs with machines, as the technological upgrading

was not accompanied by a sufficient expansion of productive capacity. Only the service sector combined capital deepening with job creation. But the jobs that were created in services were among those offering the lowest wages.

The trends in capital allocation across sectors were not only bad for job creation. They were equally bad for GDP growth, generating significant losses in aggregate capital productivity. Indeed, since 2008, there has been a significant deterioration in the South African economy's capacity to direct private investment toward sectors with growing economic potential, manufacturing sectors in particular. Although the delayed reactions of concentrated industries to changing opportunities, and the long time needed by large infrastructure projects to start generating returns may explain this negative trend, the analysis of the current investment tax incentive framework suggests that the trend may have also strongly contributed to the misallocation of capital. Compared with industrial sectors, lower marginal tax rates for the mining and construction sectors make private investment in these sectors equally or more remunerative despite much lower growth and job creation returns for the economy at large.

Nonetheless, by reducing the tax burden of firms, investment tax incentives have encouraged additional investment in agriculture, construction, manufacturing, trade, and other services. Overall, the additional investment generated by tax incentives exceeds the government's foregone revenue from distributing the tax incentives. Furthermore, the existence of large employment multipliers brings the fiscal cost of job creation to a fraction of total labor costs, especially in the manufacturing sector.

Investment tax incentives have thus contained job destruction in industrial sectors, and explanations for industrial contraction since democracy must be found elsewhere, possibly among insufficient skills and infrastructure, policy uncertainty, a volatile rand, and complicated labor relations.

Moving forward, reorienting incentives from mining toward industrial sectors would create additional jobs at no additional fiscal cost, the more so as industrial sectors would benefit in the medium term from the new business opportunities from the depreciation of the rand, declining commodity prices, and

the coming online of large additional power generation capacity. Over the longer term, efforts to raise workers' skills and professional experience, and to foster spatial economic integration will be crucial to maintain this momentum. These efforts will include continued evaluation of education programs and youth employment initiatives; support to pilot initiatives in the domains of professional training and job postings at the local level; and improved urban and regional planning, including special economic zones.

CHAPTER I

Recent Economic Developments

Weaker trade and investment, and increasing policy uncertainty kept global growth low in 2016

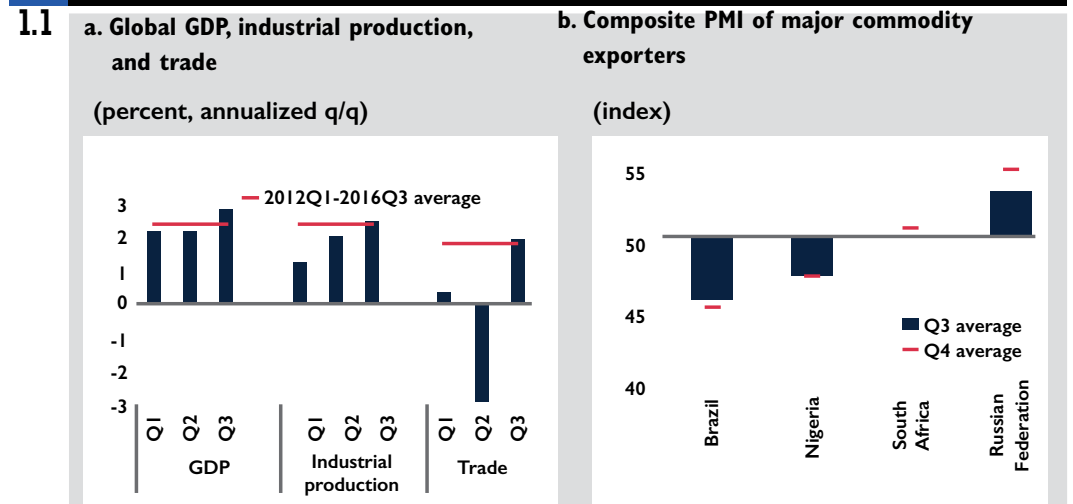
Global Economic Developments

Global growth slowed notably in 2016, reflecting weak growth in high-income economies

Global growth is estimated to have slowed from 2.7 percent in 2015 to 2.3 percent in 2016—its weakest performance since the global financial crisis. Stagnant global trade, subdued investment, and heightened policy uncertainty depressed global economic activity. After a weak first half, global growth gathered momentum in the third quarter (Q3) of 2016, supported by improving conditions in global

manufacturing, as industrial production and trade growth returned to trend (Figure 1.1). The global manufacturing Purchasing Managers Index (PMI) increased further in October and November, continuing to improve in Q4. After contracting in Q2, global goods trade recovered in Q3, helped by stronger import demand from high-income economies and emerging market and developing economies (EMDEs). However, the number of protectionist measures implemented by G20 economies continued to rise, and trade policy uncertainty increased.

Figure 1.1 Global activity indicators



Source: World Bank.
Note: PMI = Purchasing Managers Index; Q = quarter. PMI >50 is expansion.

High-income economies continued to struggle with subdued growth and low inflation in a context of increased uncertainty about policy direction. Growth in advanced economies slowed from 2.1 percent in 2015 to an estimated 1.6 percent in 2016. Growth in the United States weakened notably, from 2.6 percent in 2015 to an estimated 1.6 percent in 2016. Activity in the United States picked up in Q3, supported by a rebound in exports, a positive contribution from inventories, and diminished drag from private investment. The labor market strengthened, with the unemployment rate dropping to 4.6 percent in November. Amid tighter labor market conditions, actual and expected inflation rose. The U.S. Federal Reserve increased policy rates by 25 basis points in December, and signaled that further rate hikes were likely in 2017.

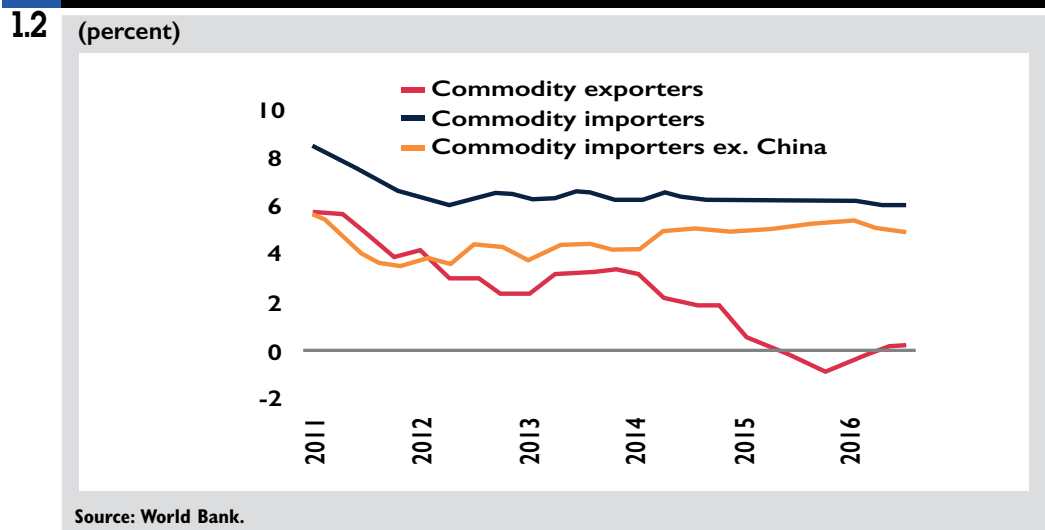
Growth in the Euro Area slowed as well, from 2.0 percent in 2015 to 1.6 percent in 2016, as domestic demand and exports remained weak. However, in November, the composite PMI reached its highest level in 2016, and economic sentiment continued to improve gradually. Headline inflation ticked up to 0.6 percent (y/y, year-on-year), while core inflation remained at 0.8 percent, and market-based, long-term inflation expectations stayed appreciably below the European Central Bank's target. At its December meeting, the European Central Bank kept interest rates unchanged. It extended its bond-buying program until the end of 2017, but monthly asset purchases will be reduced from 80 billion to 60 billion starting in April 2017.

Developments were mixed in other high-income economies. Growth in Japan remained subdued in 2016, estimated at 1.0 percent, compared with 1.2 percent in 2015. Investment and exports were generally weak, while private consumption showed some signs of improvement. Growth in the United Kingdom was more resilient than expected. Inflation in November rose to its highest level since April 2014, reflecting the substantial depreciation of the pound sterling since June. The government announced additional spending for infrastructure in November's Autumn Statement. The U.K. High Court's ruling that the government should seek parliamentary approval before triggering Article 50 to start Brexit negotiations could potentially delay the process.

EMDEs grew by 3.4 percent in 2016, broadly the same pace as in 2015 (3.5 percent). Commodity exporters continued to expand at a markedly slower pace than commodity importers (Figure 1.2), although there was notable heterogeneity within each group. Growth in commodity exporters is estimated at 0.3 percent in 2016. Gross domestic product (GDP) in Brazil, the largest commodity-exporting EMDE, contracted 3.3 percent quarter-to-quarter (q/q) at a seasonally adjusted and annualized rate (saar) in Q3, the seventh consecutive quarter of negative growth, led by a large decline in exports and investment. In October, the central bank cut interest rates for the first time in four years. In the Russian Federation, GDP contracted 0.4 percent (y/y) in Q3—a modest improvement from the contraction of 0.6 percent in Q2.

Among emerging markets, commodity importers outperformed commodity exporters

Figure 1.2 Real GDP Growth in commodity exporters and importers



Rising U.S. interest rates put pressure on bond yields globally

Meanwhile, commodity importers are estimated to have expanded by 5.6 percent in 2016, reflecting resilient domestic demand, low commodity prices, and accommodative macroeconomic policies. In India, growth continued to be strong in Q3, at 7.3 percent (y/y), but the unexpected demonetization initiative will likely restrict consumption and activity. Momentum in Eastern Europe and Central Asia slowed in Q3, with growth rates falling in Poland and Romania, likely reflecting a continued slowdown of investment. GDP in Turkey contracted 1.8 percent (y/y), the first decline since 2009, policy uncertainty and the coup in July weighed on confidence.

Growth in China slowed slightly to 6.7 percent in 2016, as the economy continues to rebalance from industry to services. In November, the official manufacturing PMI increased to 51.7—the highest reading since July 2014—while exports and imports rebounded. Industrial production, retail sales, and investment growth stayed broadly stable. Credit growth remained robust despite tighter regulation, and continues to outpace nominal GDP growth. Foreign reserves declined for the fifth straight month in November, showing the biggest monthly decline since January.

Global financing conditions tightened and capital flows to EMDEs slowed following the U.S. elections

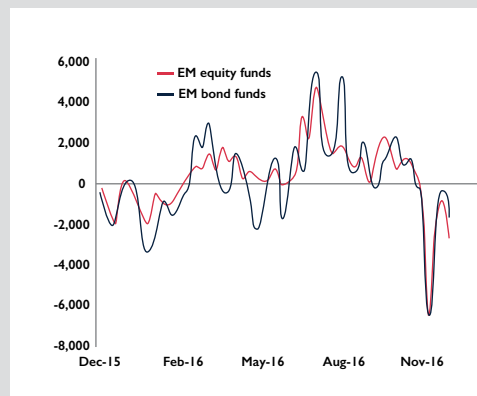
Since reaching historical lows in August, global bond yields have risen, initially driven by more supportive economic data and prospects of global reflation. The U.S. election was followed by a 62 basis-point jump in U.S. 10-year Treasury yields, on prospects of higher inflation and U.S. interest rate levels over the medium term. Rising long-term interest rates in the U.S. have put upward pressure on bond yields in other high-income economies and EMDEs, while contributing to a significant appreciation of the U.S. dollar.

The U.S. election results were followed by a moderate sell-off in emerging market equities, pairing gains made earlier in the year. EMDE currencies dropped collectively by around 2 percent, with markedly more pronounced declines in the Turkish lira, Mexican peso, Argentine peso, Malaysian ringgit, and Brazilian real. There were large outflows from EMDE exchange-traded funds in the immediate aftermath of the U.S. elections, but they have generally moderated since then (Figure 1.3, panel a). Higher bond yields, concerns about more restrictive trade policies, and higher policy risk premiums have all contributed to shifting sentiment. In October, EMDE Eurobond sales reached their highest monthly level since April 2014, but the momentum slowed sharply in November.

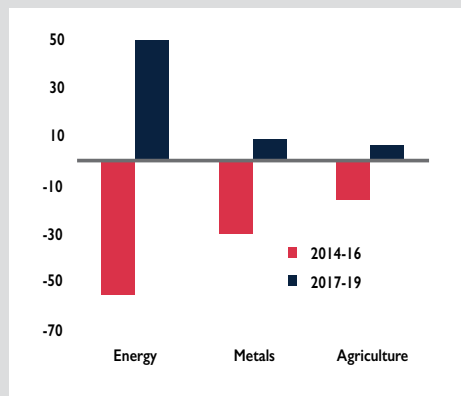
Figure 1.3 Global financial flows and commodity prices

1.3

a. Net flows into emerging market funds (US\$, million)



b. Change in Commodity prices (percent)



Sources: JP Morgan; World Bank.
Note: EM = emerging market.

Foreign direct investment (FDI) flows to EMDEs remained subdued throughout 2016, with significant differences across commodity importers and exporters. Among commodity exporters, persistently low commodity prices have reduced the attractiveness of investment in mining and exploration. FDI growth is now well below long-term averages in commodity-importing and commodity-exporting regions. Subdued FDI flows to commodity exporters add to external financing needs at a time when fiscal and current account positions are under pressure. FDI flows to large commodity importers were generally resilient in 2016.

Commodity prices recovered

Commodity prices stabilized during 2016, and are expected to gradually recover in 2017–19 (Figure 1.3, panel b). Crude oil prices recovered from a low of US\$30 per barrel at the start of 2016, but are still half their pre-2014 levels. Crude oil prices are projected to rise to US\$55 per barrel in 2017, from an annual average of US\$43 per barrel in 2016. At its November 30 meeting, the Organization of the Petroleum Exporting Countries (OPEC) announced a cut of 1.2 million barrels a day (the first cut in eight years), higher than the 0.5 million to 1 million barrels a day envisaged two months earlier. The cuts were reaffirmed at a subsequent meeting between OPEC members and various non-OPEC oil producers on December 9. OPEC's crude output, which averaged 33.5 million barrels a day during 2016 Q3, is expected to fall to 32.5 million barrels a day, if countries adhere to the agreed cuts. Meanwhile, prices of metals and energy commodities are settling in line with fundamentals. Metal and mineral prices are projected to rise by 4.1 percent y/y in 2017, reflecting supply tightness for some metals and mine closures. Agriculture prices are projected to remain broadly stable in 2017. Supplies for most commodities are adequate. The likelihood of supply disruptions due to La Niña has diminished.

Global growth is projected to recover moderately in 2017–19, but risks remain on the downside

Global growth is expected to rise to 2.7 percent in 2017, and to 2.9 percent in 2018–19, mainly reflecting a recovery in EMDEs. Growth in high-income economies is projected

to recover marginally to an average pace of 1.8 percent in 2017–19, reflecting strengthening of activity in the U.S.. Growth in EMDEs is projected to accelerate to 4.2 percent in 2017, and to an average of 4.7 percent in 2018–19, as gradual recovery in commodity prices helps boost activity in commodity-exporting EMDEs, and growth in commodity-importing EMDEs remains solid.

Downside risks to global growth include rising policy uncertainty, particularly in the U.S. and Europe; financial market disruptions; and growth disappointments in major economies. In contrast, fiscal stimulus in major economies—particularly the U.S.—represents an important upside risk. In EMDEs, large investment gaps amid limited fiscal resources remain important challenges.

Developments in South Africa's Real Sector

South African growth continued to slow in 2016

In 2015, the South African economy grew by 1.3 percent, less than half what it registered after its rebound from the global financial crisis, reaching a high of 3.3 percent in 2011. The growth rate in 2015 was also a mere quarter of the five-year average of 4.7 percent before the financial crisis (2003–07). By contrast, while the impacts of the crisis continued to linger across the world, global growth in 2015 was back at almost two-thirds of its pre-crisis average, led by high-income economies, which were at three-quarters; emerging markets and Sub-Saharan African economies were at over half. This means that South Africa's economy has been struggling to return to past performance, finding it particularly difficult to gather steam in a weak global economy, compounded by domestic challenges.

One of the global impacts that have affected South Africa particularly hard was the end of the commodity super cycle, aggravating headwinds that continued to linger from the global financial crisis of 2008. Yet it would be wrong to blame low growth on commodities alone. Electricity shortages have also kept growth low during that period, as did disruptions to production from the South Africa's fractious labor relations. Domestic politics have increasingly been on investors' minds, holding back investments that are needed to restructure the economy

Commodity prices
are expected
to recover,
supporting growth
in commodity
exporters

in response to the commodity downturn (see Chapter 2). This was true in 2015 and arguably intensified in 2016. South Africa is not alone in this. Some members of the BRICS group—which includes Brazil, Russia, India, China, and South Africa—share similar experiences: commodity prices, structural constraints, and politics have also adversely impacted Brazil and Russia, arguably worse than South Africa, both seeing GDP contract in 2015, without recovering in 2016.

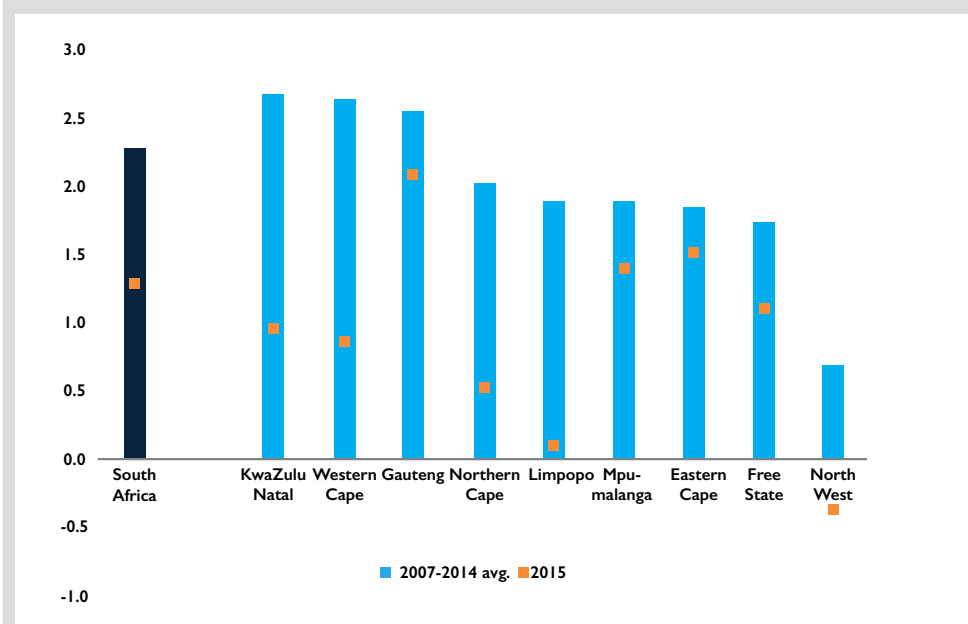
Of South Africa's nine provinces, Gauteng province—accounting for over a third of the country's total gross value added—

contributed 0.7 percentage points to national growth. Although it is still South Africa's powerhouse, and much like in most other provinces, Gauteng province saw its growth slowing in 2015, compared with the 2007–14 average (Figure 1.4). A similar trend is seen in South Africa's eight other provinces, with KwaZulu-Natal and Western Cape (the two fastest growing provinces in 2007–14) experiencing a significant decline in growth in 2015. Because of their large share in total GDP (66.7 percent), 79 percent of growth in 2015 was accounted for by Gauteng, KwaZulu-Natal, and Western Cape.

South African growth slowed due to both external and domestic headwinds

Figure 1.4 Regional GDP growth in South Africa

1.4 (annual GDP growth, %)



Sources: StatsSA; World Bank staff calculations.

At the national level, growth in South Africa in 2015 was driven largely by rebound effects, not least from extensive industrial action in the first half of 2014, as well as frequent periods of load-shedding. The year ended with the abrupt and opaque dismissal of well-respected Minister of Finance Nene, which shocked markets, sending the rand and investor confidence to new lows. This event was expected to take a toll on fixed investment, which plummeted by -10.0 percent q/q saar in Q1 2016, the sharpest decline since the global financial crisis. On a y/y basis, gross fixed investment contracted from 2015 Q4 through 2016 Q3, by -3.0 percent on average, see Figure 1.5.

Private consumption has been weak in 2016, growing at 0.9 percent y/y in the first three quarters. Household spending has been constrained by weak labor market developments, including rising unemployment and a significant weakening in real wage growth from 2015 levels. Private sector credit extension in 2016 slowed considerably, with its remaining driver being corporate credit; meanwhile, credit to households contracted by an average rate of -3.7 percent y/y in real terms between January and October 2016, a further deterioration of the -0.7 percent y/y in the same period the previous year. Yet, although coming down, household indebtedness remained elevated, at 75.1 percent of disposable income

in 2016 Q2. Household wealth has also come under pressure as property markets have softened: the ABSA House Price Index fell by -2.6 percent in real terms between January and October 2016. Combined, these factors help explain the weak household consumption in 2016. That said, the dynamics have improved over the year, as inflationary pressures have been easing, undermining household purchasing power increasingly less. On a q/q saar basis, private consumption accelerated from -1.7 percent in 2016 Q1, to 1.4 and 2.6 percent in Q2 and Q3, respectively.

Public consumption grew at 2.1 percent in 2016 Q1, but decelerated to 1.5 and 1.1 percent y/y, respectively, over the following two quarters, as the government continued on its fiscal consolidation path. Overall, final consumption expenditure grew by an average of 1.1 percent y/y in the first three quarters of 2016, which, although a low rate, was the fastest growing expenditure category in the year, adding 0.8 percentage points to overall GDP growth.

Exports performed well in the first half of 2016, growing at 0.7 percent y/y in 2016 Q1, accelerating markedly to 2.8 percent in Q2, supported by a large positive production shock to manganese and iron ore. Automotives, tourism, as well as vegetables and prepared food and beverages also contributed to export growth in the first half of 2016. Yet the positive

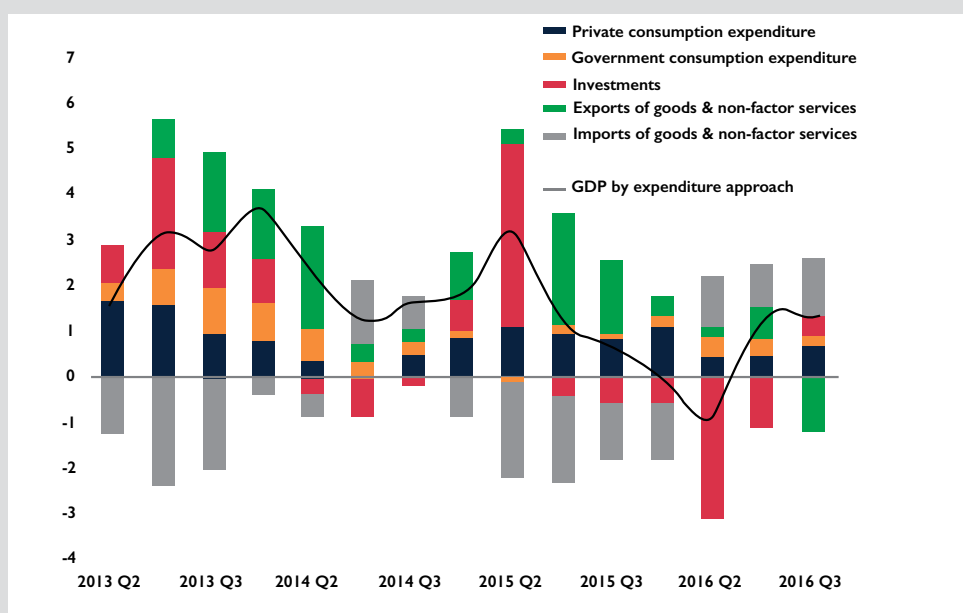
momentum could not be sustained in Q3, with export growth contracting by -3.9 percent y/y, largely due to weak performance in exports of precious metals and transport equipment. Overall, exports shaved 0.1 percentage point off GDP growth in the first three quarters of 2016.

Low domestic demand—and a weak rand by historical standards—translated into a decline in imports, which fell by -3.3 percent y/y in the first three quarters of the year, the first three-quarter decline since the global financial crisis. Overall, absorption (consumption and investment) plus exports contributed negatively to GDP growth, shaving 0.5 percentage point off headline growth in the first three quarters of 2016, while the strong contraction of imports added 1.1 percentage points in a strict accounting sense. A more meaningful interpretation is that, to some extent, growth in 2016 was driven by a rebalancing from imports to consuming domestically produced products, which chimes with the change of relative foreign and domestic prices induced by the rand's depreciation (more on this in Chapter 2). Nonetheless, growth in 2016 was low—a fact that comes out even more starkly when measuring GDP per head, which points to a third year of falling GDP per capita growth, making South Africans poorer compared with previous years.

Consumption has been driving growth in 2016, while investment fell

Figure 1.5 GDP growth (demand side)

1.5 (contribution to year-on-year growth, %)



Source: StatsSA.

Low domestic demand resulted in falling imports

On the production side, some positive results are emerging from agriculture, where a drought associated with the global climate phenomenon El Niño (Box 1.2) shaved 0.2 percentage point off 2015 growth and turned South Africa into a net food importer, with agricultural imports increasing (in nominal terms) by 9.7 percent y/y in 2015 and 29.4

percent y/y in the first three quarters of 2016. Although agriculture continued to decline in the first three quarters of 2016 y/y (Table 1.1), it did so at a slowing rate, and the sector is about to turn around again—not least supported by strong precipitation in late 2016. Nonetheless, although it is expected to rebound, agricultural output has fallen back

Table GDP growth (supply side)

1.1 (contribution to year-on-year growth, %)

Quarter	Agriculture, forestry, and fishing	Mining and quarrying	Manufacturing	Electricity and water	Construction	Trade, catering, and accommodation	Transport and communications	Finance, real estate, and business services	General government services	Personal services	Net indirect taxes	GDP
2013 Q1	6.0	4.1	-0.1	-2.8	4.4	1.9	2.5	1.7	3.2	1.9	1.3	2.0
2013 Q2	7.9	-1.4	2.6	-0.1	5.4	2.0	2.4	2.4	3.0	1.9	2.7	2.4
2013 Q3	-1.6	3.4	-0.3	0.4	5.1	1.7	3.1	2.5	2.6	2.2	1.4	2.0
2013 Q4	0.2	10.0	1.1	-0.1	3.4	1.8	3.0	3.7	2.8	2.8	1.4	2.9
2014 Q1	-0.6	-1.1	1.9	0.0	4.0	1.9	2.5	2.5	2.8	2.0	0.7	1.8
2014 Q2	7.8	-0.7	-1.3	-2.2	3.4	0.9	3.1	2.3	3.1	1.6	-0.1	1.5
2014 Q3	13.0	-2.4	-0.2	-2.5	3.3	1.6	2.9	2.5	2.8	1.7	0.7	1.7
2014 Q4	5.3	-1.4	0.2	-0.2	3.7	1.1	3.7	2.2	2.0	1.4	1.6	1.5
2015 Q1	11.7	6.8	0.2	2.1	2.4	1.5	2.5	2.7	1.4	1.1	4.0	2.5
2015 Q2	-6.7	5.2	-1.8	-0.4	2.3	1.1	1.6	3.2	0.7	1.4	1.6	1.2
2015 Q3	-18.7	1.5	1.5	-2.7	1.9	1.2	1.1	3.2	0.4	1.1	0.6	0.8
2015 Q4	-5.0	-0.5	-1.2	-2.9	1.6	1.7	0.5	2.4	0.3	0.7	0.1	0.5
2016 Q1	-2.9	-8.8	-0.9	-4.5	2.5	1.2	-0.6	2.3	1.8	0.9	-2.0	-0.1
2016 Q2	-12.0	-3.4	3.6	-2.6	0.3	1.8	0.1	2.2	1.7	1.0	-0.1	0.7
2016 Q3	-3.6	-0.1	-0.4	-1.8	1.4	0.5	0.1	1.8	1.7	1.4	0.6	0.7

Source: StatsSA.

to 2012 levels, and regaining lost production potential will take time. El Niño also adversely affected the electricity and water sectors, as water restrictions were put in place due to reservoirs running at critically low levels.

Mining and manufacturing, which have been identified by the government through the National Development Plan and Industrial Policy Action Plans (at least in the case of manufacturing) as strategic drivers of growth and job creation (see Chapter 2), have been moving sideways (Figure 1.6). Jointly, the sectors account for about one-fifth of GDP, although their share has been falling, as the sectors have been outperformed by services—

finance, real estate, and business services in particular. Mining continued to restructure in response to the end of the commodity super cycle. The sector shaved 0.3 percentage point (y/y) off headline GDP growth. Yet this was largely due to an unusually strong performance in the first half of 2015, as the sector rebounded from extensive industrial action. On a q/q basis, the sector made headway toward potential production in Q2 and Q3 of 2016. Manufacturing added positively to GDP, 0.1 percentage point y/y, for the first time since 2013 due to strong performance in Q2, largely driven by the petroleum and automotive sectors. Yet, in spite of some positive (although

still mixed) signals from the mining and manufacturing sectors, manufacturing is likely to remain outperformed by the service sector.

The financial, real estate and business services sectors have been South Africa's drivers of growth for a while. They account for just over a fifth of GDP, extending their share as South Africa continues on its path of structural transformation (see Chapter 2). At 2.1 percent y/y growth in the first quarters of 2016, the sectors maintained their role as South Africa's engine of growth—but the engine has been slowing from previous levels, not least due to a weak domestic economy, including slowing consumer credit and a weakening real estate market. This slowing was amplified by the weaker performance of companies listed at the Johannesburg Stock Exchange, which was also a reflection of weak global growth, given the international reach

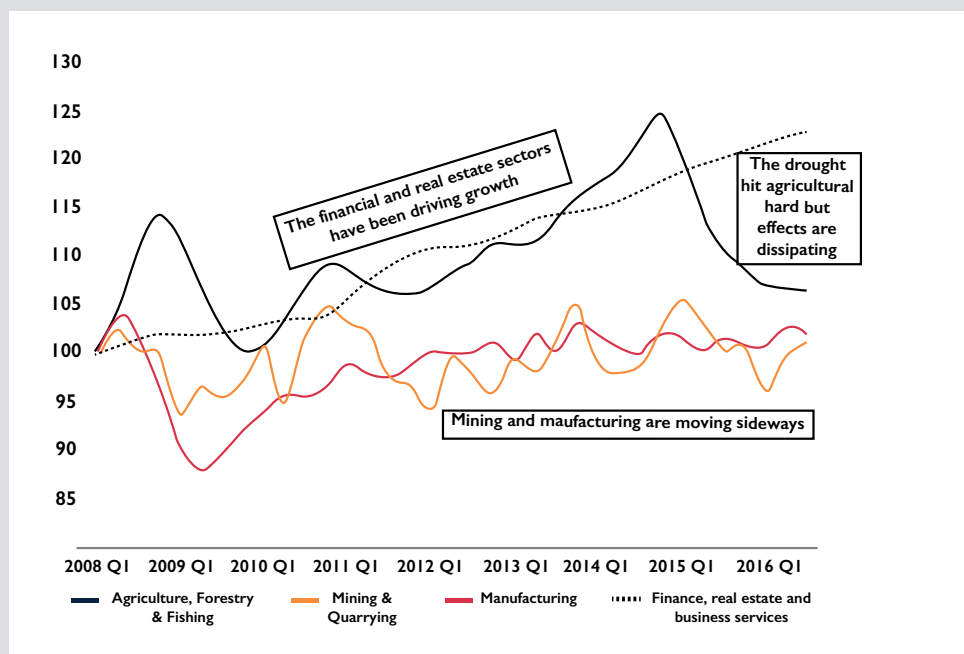
of many of the companies. The Top 40 index closed the year 4.1 percent below the level at which it opened in January 2016.

Other growing sectors in the service industry include construction, not least as a consequence of continued additions to South Africa's electricity supply, including by independent power producers. The construction sector grew by 1.4 percent y/y in the first three quarters of 2016. Trade, catering, and accommodation also experienced growth, of 1.1 percent y/y, at least partly supported by a buoyant tourism sector. Public services grew by an average 1.7 percent, driven by an increase in spending on goods and services and also employment—where the payment of temporary electoral staff for the municipal elections in August 2016 contributed to the increase in government service growth.

Services have been carrying growth in 2016, although Finance, the engine of growth, has been slowing

Figure 1.6 Finance, insurance, and real estate have been driving growth

1.6 (index, 2008 Q1 = 100)



Source: StatsSA; World Bank staff calculations.

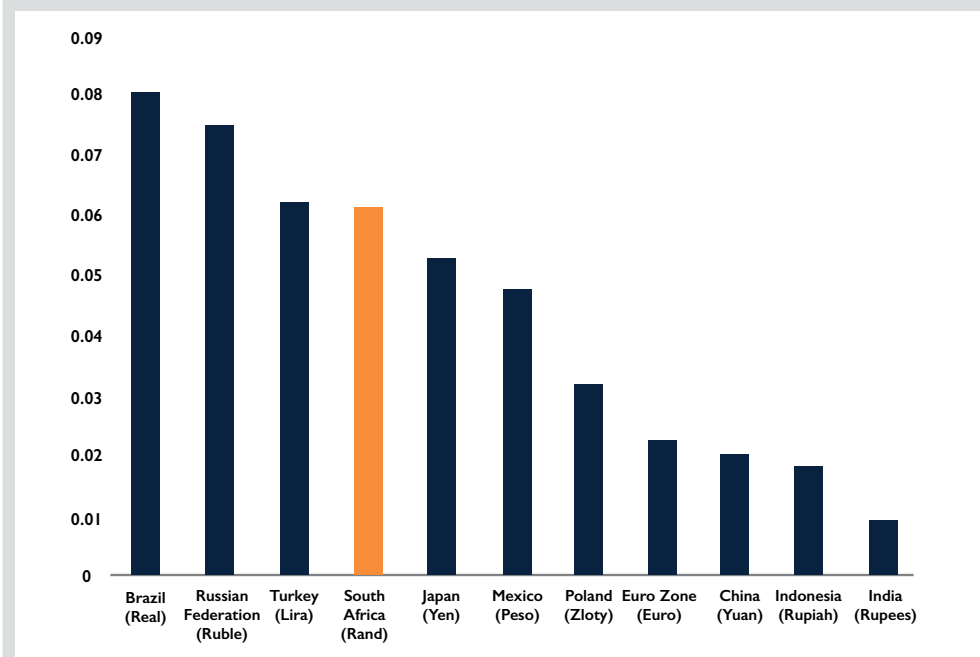
Uncertainty on investors' minds

Investment is urgently needed to propel South African growth in the medium to longer term, and help the country meet its aspirations enshrined in the National Development Plan. The volatility of the rand is a major concern of foreign investors—and South African exporters and importers—and has been so for a while. For example, 91 percent of European

investors who were surveyed in the second half of 2014 identified the volatility of the rand as a major constraint to doing business in South Africa. In 2016, the rand continued to be one of the most volatile currencies in emerging markets (Figure 1.7). A recent study by the International Monetary Fund suggests that the volatility of the rand is mostly driven by commodity price shocks (which affect the

Figure Exchange rate volatility in 2016

1.7 (standard deviation of daily exchange rate, normalized)



Sources: Haver Analytics; World Bank staff calculations.

12

Greater Policy
certainty is key
to encourage
investment

profitability of many South African companies and thus financial flows), global market volatility (shifting global financial flows to riskier or less risky assets), as well as, notably, domestic policy uncertainty.¹

Indeed, investors also fret about politics, ranging from concerns around state capture, investigated by the Public Protector, to uncertainty around certain pieces of legislation. Mining investment hinges on the passing and modalities of the Mineral and Petroleum Resources Development Act, as well as a new Mining Charter; agricultural investment depends on the details of land reform and the settlement of restitution claims on land. Although a trade spat with the U.S. around imports of certain agricultural products, especially poultry, was settled earlier in the year, it continues to simmer, raising concerns over South African duty-free access to the U.S. market under the African Growth and Opportunity Act. A tightening of visa regulations for tourists for certain countries has been relaxed, stimulating tourism inflows again. The government undertook road shows in 2016, aiming to unlock foreign investment that has been held back, largely due to political uncertainty.

There have also been some noteworthy

positive developments, giving investors cause for optimism. On the political front, South African institutions proved their resilience and maturity yet again in 2016, not least in the smooth holding of municipal elections, which saw opposition parties take over several major cities in August. On the economic front, unreliable electricity supply, which has been making load-shedding a South African regularity since 2007, is being addressed and showing results: 2016 did not experience major periods of load-shedding, partly because of suppressed demand in a weak economy, but also due to new capacity coming online (including one unit of Eskom's coal-fired Medupi power plant—with the next one expected in March 2017—and several independent power producers, many of them producing renewable energy) (see also Chapter 2).

Moreover, the year 2016 witnessed relatively few strikes. A wage agreement in the automotive sector was struck in August, unaccompanied by industrial action for the first time in seven years. Other than weak corporate profitability, which renders pay increases less realistic, the reduction in the number of strikes is illustrative of the government's efforts to improve labor relations. Further efforts, such as rules around

secret strike ballots and improvements in labor mediation systems, if implemented, could make significant contributions to mending South Africa's fractious labor relations. The introduction of a national minimum wage has become more likely, and is suggested to be set at ZAR 3,500 per month. South African policy makers are treading a careful line, endeavoring to ensure that the minimum wage makes a meaningful difference for low-wage earners while minimizing the impact on employment (for example, by providing exemptions to agriculture and domestic work and phasing in the minimum wage over a period of time).

On balance, investor confidence remains at low levels, although early 2016 witnessed a modest increase in optimism. The Bureau of Economic Research Business Confidence Index edged up 10 points from a six-year low of 32 in 2016 Q1, to a more positive reading of 42 in Q3, a level last seen in 2014. Optimism remains more cautious in manufacturing, however, chiming with the mixed performance of the sector over the year. While the global PMI was trending (modestly) above the 50 mark, cautiously pointing toward expansion (see Figure 1.1), in South Africa the seasonally adjusted PMI only registered readings above 50 in March through July, pointing to a more persistent sense of pessimism in

manufacturing.

Labor Market Developments

The specter of unemployment continues to haunt workers

Unemployment is notoriously high in South Africa. In 2016 Q3, the unemployment rate edged up by 1.6 percentage points compared with Q3 the previous year, touching 27.1 percent, the highest recorded level in 13 years.² On the one hand, this Q3 development reflects an increase in labor force participation, which signals that more South Africans are willing to work. Yet, according to the Quarterly Labor Force Survey (QLFS), only 5,000 additional jobs were created in net terms over the year leading up to 2016 Q3, while the number of unemployed South Africans increased by 455,000, which includes net job losses and new labor market entrants who do not find jobs.

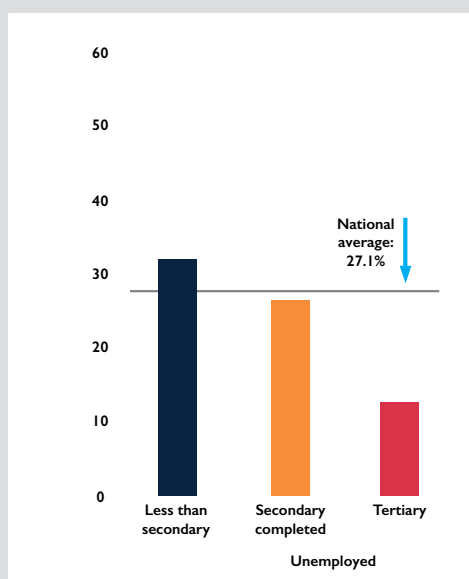
The unemployment rate of youths aged 15–24 years was 54.2 percent in 2016 Q3, up 4.3 percentage points from the first half of 2015. Just over a quarter of this age group participates in the labor market, with others continuing in the education system. The youth unemployment rate underscores the importance of acquiring skills to be employed in one of Africa's most technologically advanced

Unemployment reached a 13-year high

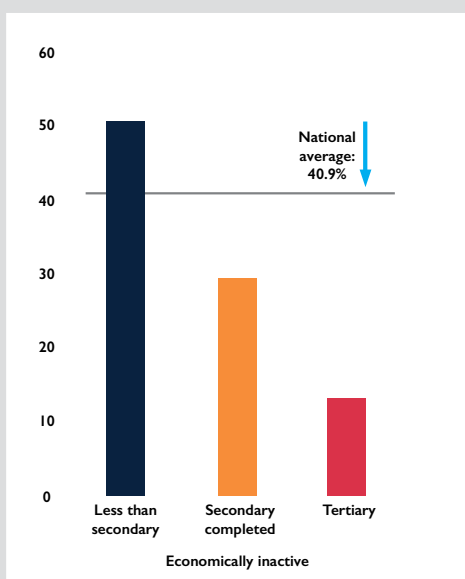
Figure 1.8 Unemployment and economic inactivity

1.8 (percent of labor force or working age population, by education, 2016, Q3)

a. Unemployed



b. Economically inactive



Sources: StatsSA; World Bank staff calculations.

economies. Unemployment is highest among those who do not hold a high school diploma, at 31.6 percent (Figure 1.8), nearly 5 percentage points higher than the national average. For those with tertiary education, the unemployment rate is 13.2 percent. Although

this is still high by most standards—and a likely reason for the continued student protests in 2016—it is less than half the national average. Box 1.1 discusses the challenges faced by the education sector in raising the skills of job seekers.

Education holds the key to reducing unemployment and poverty

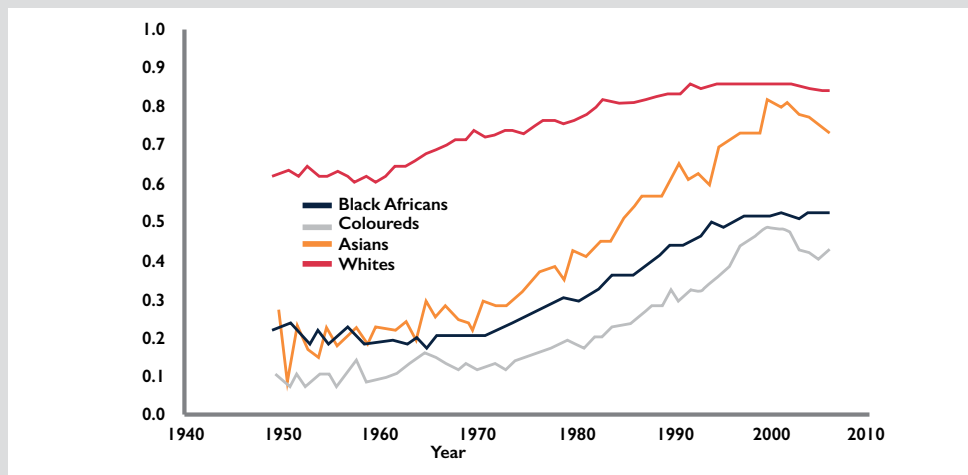
Box 1.1 Education and labor market developments in South Africa

1.1

South Africa’s education and training system faces multiple challenges in ensuring that all children have the knowledge, skills, and attributes they need to be successful workers and citizens. Key challenges include the low—and by international standards—and inequitable learning levels of children. Only 24 percent of grade 5 children can answer correctly the following question: Pam has ZAR 40. She spends ZAR 28. How much money does she have left?

There are high repetition and drop-out rates in secondary schooling. The proportion of Black Africans who obtain a matric qualification (high school diploma) has been stagnant at approximately 52 percent since 1994, while pass rates for Coloureds have been falling since 2000, see Box 1.1 figure 1; in both cases, there is a wide and persistent gap vis-à-vis the white population. Those who do not complete secondary education are finding it more difficult to obtain work: between 2008 and 2015, there were significantly fewer jobs for those in this category. In contrast, new jobs increasingly went to those with secondary or tertiary education.

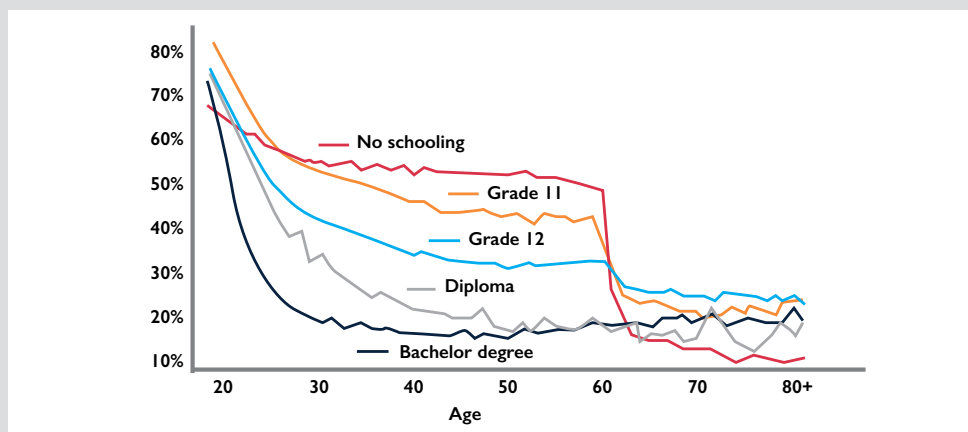
Box 1.1 figure 1: Inequalities are still persistent in groups obtaining a matric qualification (proportion)



Source: National Department of Basic Education, based on StatsSA General Household Survey, 2002–14.

Low participation and high unemployment rates among workers with low education attainment translate into a life-long poverty trap: of the population with no schooling attainment, over 50 percent has no income, see Box 1.1 figure 2.

Box 1.1 figure 2: Relationship between schooling and income status at different ages (no income)



Source: National Department of Basic Education, based on StatsSA General Household Survey, 2002–14.

1.1

Tackling these challenges requires making the following priority investments.

First, it requires a focus on ensuring fluency in reading and mathematics by grade 3, which is part of the government's plans. Rigorous evaluations have demonstrated the importance of teaching at the competency level students have (rather than focusing on teaching the grade level material). Successful models should be tried and evaluated in South Africa.

Second, through secondary education, the focus should be on a general set of foundational skills and aptitudes. This focus will help to provide what is required by most employers, and these skills and aptitudes will give young people greater resilience in the labor market, since specialized technical and vocational skills fade much more quickly during periods of unemployment or labor market inactivity. (Sadly, recent experience suggests that many young South Africans will not be able to find work immediately after completing education and training.)

Third, workplace experience is the best place to learn about the working world and acquire new skills that are relevant to today's job market. Work experience opportunities for young people, before they leave education and training, and for the long-term unemployed, is important. These opportunities should be made available to all students, not just those in vocational education and training programs.

Fourth, as South Africa continues to meet its commitment to minimum standards in its education infrastructure, it will have to take into account the overall reduction in the size of the student cohorts and the highly mobile student population (with many students living with extended family members to attend a particular school). Adjusting the school network will be a long-term and complex process. It will have to balance local decision making to meet local dynamics and enable a more rapid response, improving efficiency but informed by the full costs of school consolidation (capital and recurrent spending, transportation, and so forth) and measures of the impact on the learning and engagement of students in academic and nonacademic areas.

The skills shortage is mirrored by the 2016 Talent Shortage Survey,³ as the number of South African employers surveyed who had difficulty filling positions increased 3 percentage points since 2015 (and 26 percentage points since 2014), to 34 percent. Among the most difficult skills to find are those in skilled trades and management and executive positions. This finding reflects the need for more talented individuals, as the main reasons for having difficulties filling positions include lack of experience (27 percent), lack of hard skills (26 percent), and lack of available applicants (9 percent). At the other end, lower-income South Africans—those who tend to be less skilled—more often than not have to resort to bribes to obtain jobs. A recent survey by the Ethics Institute shows that obtaining a job is the second most important reason for bribery in South Africa, whereby those who earn less than ZAR 100,000 a year are 17 percent more likely to pay a bribe for a job than those in high-income groups are.⁴

The need for skills is also reflected in the professions that experienced the highest job growth. According to the QLFS, 10.3 percent more professionals were hired on average in the first three quarters of 2016 over the same period the previous year. Professions associated with lower skills, such as clerks and elementary and domestic workers, saw employment decline. Blue collar jobs, such as plant and machine operators, also saw employment decline, by -3.8 percent, one of

the largest declines in 2016, behind skilled agriculture. Indeed, manufacturing is a sector that is saturated with respect to employment: just under 19 percent of capacity was underutilized in the sector in the first half of 2016 (a 1 percentage point improvement over the same period the previous year). Of that underutilization, skilled labor only accounted for 1 percent and semiskilled and unskilled labor even less than that, 0.2 percent.

High-skill services thus created the most jobs. According to the QLFS, finance and related services added 7.6 percent y/y to their employee base in 2016 Q3, equivalent to more than 163,000 jobs, followed by more modest increases in construction (2.1 percent y/y, or 31,000 jobs) and transport (1.9 percent y/y, or 17,000 jobs). Most other sectors shedded jobs, led by manufacturing (91,000 jobs lost)—the backbone of South Africa's industrial economy—and followed by community and social services (83,000 jobs lost), agriculture (16,000 jobs lost), and mining (8,000 jobs lost). Thus, the increase in the financial sector only modestly offset job losses in other sectors, explaining the low rate of net employment growth. The fall in agricultural employment, a consequence of lingering drought effects, spells bad news especially for poorer households.

Despite the comparably strong performance of the finance, real estate, and business service sector in 2016, its wage growth has been moderate compared with

several other sectors that experienced a more mixed performance, according to the QLFS. Wages per worker in the sector grew by 5.5 percent y/y in nominal terms, lower than in mining (10.4 percent), community and social services (6.8 percent), and manufacturing (5.8 percent). Overall, wages per worker in nonagricultural sectors grew by 5.9 percent y/y in the first three quarters, below the rate of inflation. This resulted in real wage growth

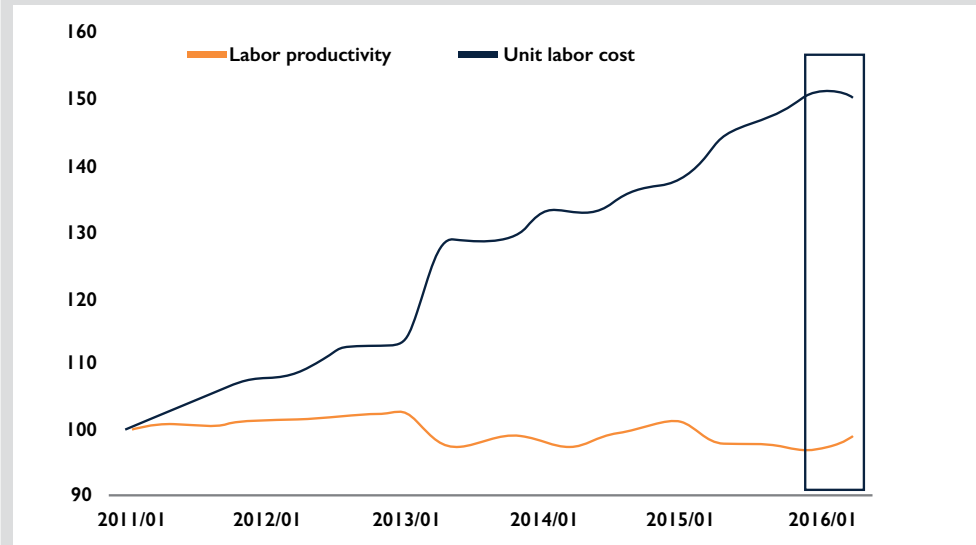
of -0.5 percent, putting pressure on working households' budgets.

At the same time, however, there appear to have been redundancies in sectors that were relatively inefficient, as productivity growth in the nonagricultural sectors increased in early 2016, for the first time since 2014, meaning that South Africa managed to produce more output per employed person (Figure 1.9).

The manufacturing sector has been

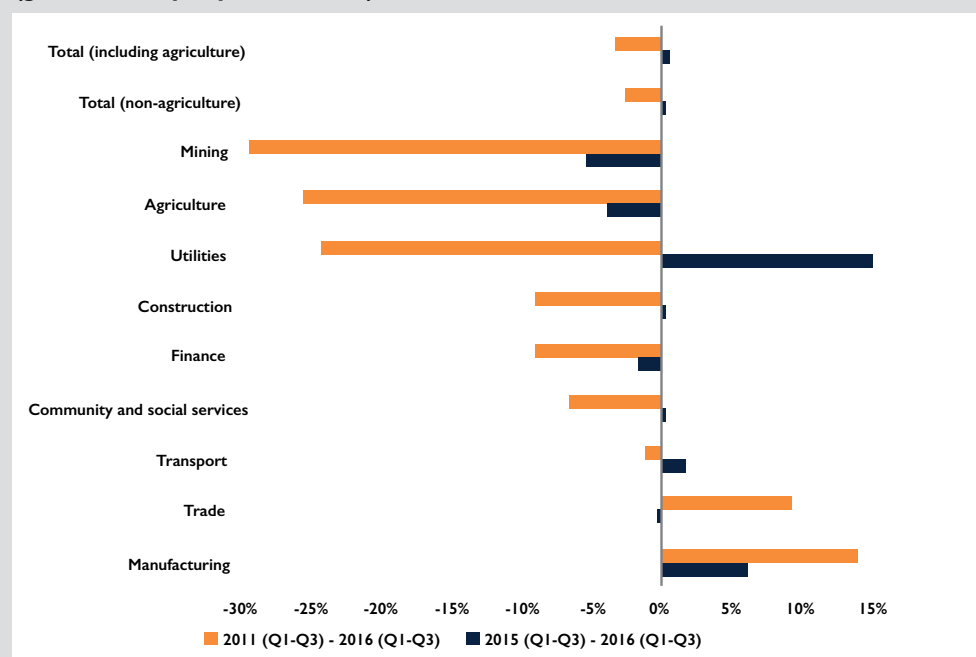
As productivity increases, falling unit labor costs make hiring more attractive

Figure 1.9 Labor productivity and unit labor costs
(index, 2011 Q1 = 100, seasonally adjusted)



Source: South African Reserve Bank.

Figure 1.10 Labor productivity growth
(growth in output per worker, %)



Sources: StatsSA; World Bank staff calculations.

restructuring, improving its labor productivity compared with 2011 and 2015 (Figure 1.10). The growth in productivity in 2016 Q2, combined with more modest wage growth compared with previous years, also lowered unit labor costs (in q/q and seasonally adjusted terms), the first such reduction since 2014 and the strongest since 2007. Harnessing such gains in competitiveness will be important to raise job prospects and improve livelihoods for more unemployed South Africans, and to bring down the high unemployment rate of 27.1 percent in 2016 Q3—or 36.3 percent when including the discouraged, in other words, those who have given up looking for work.

Inflation and Monetary Policy

Inflation remains above target but is easing, reducing pressure on policy rates

Core inflation hovered between 5.4 and 5.7 percent during 2016. Inflation in the

Consumer Price Index—which includes core inflation as well as food, and nonalcoholic beverages, petrol, and energy—was pushed over the South African Reserve Bank’s (SARB) upper target of 6 percent, especially because of food prices, which soared in 2016 (Figure 1.11). One reason was the 2015 drought, whose effects lasted well into 2016. Food prices increased by an average 10.6 percent between January and November 2016, more than twice the average of the same period the previous year. Food inflation peaked at 12 percent in October. These developments hit the poor particularly hard, given that food accounts for the largest part of their consumption basket.

The drought was a consequence of shifts in global weather patterns attributed to the El Niño phenomenon. While El Niño hit Southern African agriculture hard (Box 1.2), Latin American farmers experienced a bumper harvest, helping meet South Africa’s import needs (traditionally, South Africa is a net food exporter to the subregion).

The poor were particularly affected by high food inflation

Box
1.2

Macroeconomic and poverty impacts of El Niño on Southern African Development Community countries

Using the LINKAGE global computable general equilibrium (CGE) model, World Bank (2016c) estimates the short-term macroeconomic and poverty impacts of El Niño—related droughts. Absent sufficient information on projected hydroelectricity production, cattle destocking, and the impact of the drought on other crops, World Bank (2016c) concentrates on the short-term impact of reduced maize production (an 18 percent decline in 2015/16 at the regional level, from a situation of self-sufficiency in 2014/15). Except for Madagascar, maize constitutes Southern African households’ main staple, and it is believed that the impact on maize production constitutes the largest channel through which El Niño affects households’ welfare. Impacts are measured through the comparison of a business as usual (“baseline”) scenario with a scenario that assumes reduced total factor productivity in the maize sector to reproduce anticipated countries’ maize production in 2015/16. Through modeling the supply and demand sides at the country level, and trade relationships among Southern African Development Community (SADC) countries and with the rest of the world, the CGE is employed to capture orders of magnitude of El Niño impacts on prices, household incomes, and demand. Combined with household surveys, these estimates are also used to compute poverty impacts.

The simulation results suggest that, at the regional SADC level, gross domestic product (GDP) growth decelerated by 0.1 percent in 2016 because of droughts, and by 0.05 percent in South Africa, the largest economy in SADC. Given the relatively high importance of maize in GDP, the growth impact of El Niño was felt to be much larger in Malawi (-2.2 percent); Tanzania (-1.4 percent); and Zimbabwe, Lesotho, and Swaziland (-0.6 percent). Given the assumed low elasticity of households’ maize demand to income, the simulations suggest that households reduced their demand for other goods and services to satisfy their maize consumption. This resulted in a surge in maize prices in 2016 that the CGE model anticipated in the range of 15–45 percent for the SADC countries.^a In turn, countries such as Botswana, Lesotho, Namibia, and Swaziland, which traditionally rely to a large extent on imports of maize from other SADC countries (Zimbabwe, South Africa, and Malawi), were hard hit on the consumption side. The combination of these effects is measured by the induced cost of maintaining pre-crisis real household consumption levels at post-crisis prices and GDP levels (compensating variations).^b

Poor households were particularly hit by price shocks, as they devote larger shares of consumption to maize (consistent with income elasticities lower than unity). The simulation results suggest that the real per capita consumption of the bottom 40 percent of households residing in SADC countries declined by 1.7 percent, against only 0.1 percent for the population as a whole (box 1.2 table 1). The negative impact was particularly pronounced in Malawi (-11.8 percent), Tanzania (-7.5 percent), Lesotho (-6.2 percent), Swaziland (-4.7 percent), and Zimbabwe (-3.5 percent). It was only -0.5 percent in South Africa.

Sadly, the countries that were most affected by El Niño are also those in the SADC region facing the tightest fiscal and external situations. Although foreign assistance is needed to address the effects of the current crisis, there is a need to integrate short- and longer-term mitigation solutions. Mitigation solutions can be grouped into three categories, responding to three complementary objectives: available financial resources, continued food supply, and protection of the poorest segments

Box
1.2**Macroeconomic and poverty impacts of El Niño on Southern African Development Community countries (continued)**

of population. SADC countries could usefully (i) adopt countercyclical fiscal policies, (ii) rely on ex ante contingent financial instruments, (iii) develop regional risk-sharing mechanisms, (iv) reduce regional barriers to agricultural trade, (v) encourage market-based storage solutions, (vi) introduce physical and financial hedging mechanisms in food procurement, (vii) develop targeted and swiftly scalable safety nets, and (viii) facilitate the introduction of micro-level insurance programs.

Box 1.2 table 1: Macroeconomic and social impacts of reduced maize production in 2016

	Compensating variation (% of GDP 2016)	Variation in real private consumption (% deviation w.r.t Baseline 2016) Bottom 40%
Botswana	0.14%	-2.45%
Lesotho	0.54%	-6.18%
Madagascar	-0.11%	0.56%
Malawi	1.90%	-11.78%
Mauritius	-0.02%	0.10%
Mozambique	-0.27%	1.53%
Namibia	0.08%	-1.03%
Seychelles	-0.14%	0.76%
South Africa	0.03%	-0.52%
Swaziland	0.54%	-4.73%
Tanzania	1.43%	-7.48%
Zambia	-0.13%	1.61%
Zimbabwe	0.72%	-3.54%
Southern Africa Development Community	0.07%	-1.66%

Source: World Bank (2016f).

Facing the current crisis, several SADC countries have approached the World Bank for short- and longer-term solutions. Demands have ranged from post-crisis needs assessments and budget support, to advice on risk mitigation options and agriculture insurance programs. Initial responses from the World Bank have concentrated on (i) portfolio screening to identify opportunities to support national emergency plans, (ii) development of emergency response financial operations, and (iii) analytical overviews of potential longer-term disaster risk management instruments that could meet SADC countries' specific needs.

a. Between March 2015 and March 2016, nominal retail prices of white maize recorded the following variations: Zimbabwe: +20 percent; Zambia: +41 percent; Tanzania: +64 percent; Swaziland: +54 percent; South Africa: +98 percent; Mozambique: +121 percent; Malawi: +152 percent; and Lesotho: +33 percent. However, changes in food prices observed on markets cannot necessarily be fully attributed to lower food supplies. Indeed, since 2015, SADC countries have seen their overall macroeconomic situation deteriorate under the influence of two main factors: the decline in commodity prices, and the reversal in capital flows due to rising global uncertainty. As a result, GDP growth in SADC decelerated from 3.8 percent in 2013 and 3.0 percent in 2014, to 2.3 percent in 2015, and is projected at 2 percent in 2016. Reversal in capital flows and lower export receipts led to sharp currency depreciation in several SADC countries, pressures on the balance of payments, and accelerated inflation from exchange rate pass-through.

b. For the sake of simplicity and to focus on the supply-side effects in SADC, these simulations do not factor in the decline in the world price of maize recorded in recent years, from US\$178 per ton in November 2014 to US\$152 in November 2016 (World Bank 2016b). Thus, it is likely that the simulations marginally overestimate the welfare costs of El Niño.

In U.S. dollar terms, food grain prices fell by 9.9 percent in 2016, but the significant depreciation against the dollar sent the rand value of food imports soaring. In addition, falling U.S. dollar-denominated food prices triggered increases in agricultural import tariffs for wheat in May, which further increased food prices for consumers. The main staple foods, such as bread and cereals, accordingly experienced the highest inflation, peaking at 17.2 percent in November 2016. Inflation affected households in different ways, given their spending patterns. The poorest

20 percent of urban residents experienced average inflation of 7.3 percent, while the richest 20 percent experienced inflation that was 1.2 percentage points lower. Although the exchange rate had a large effect on the price of food, fuel, a major South African import, did not drive inflation significantly, as the decline in U.S. dollar-denominated fuel prices was partly offset by the weaker rand.

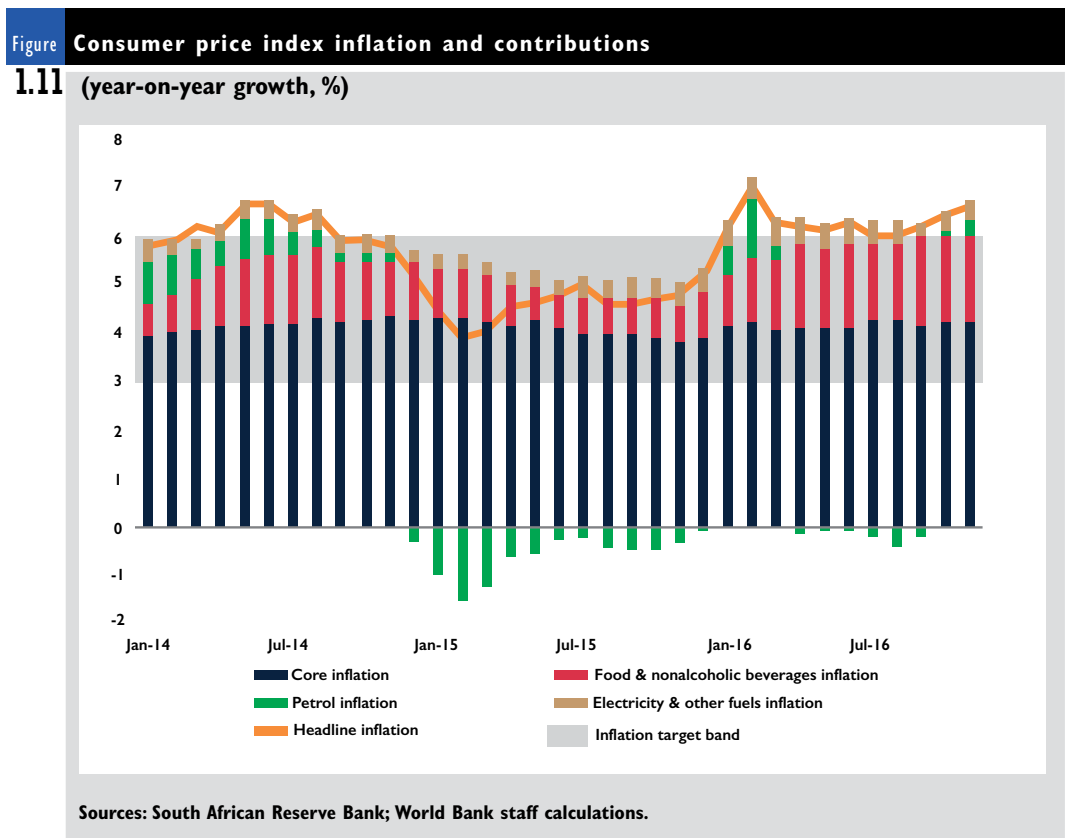
Inflation outside its upper target preoccupied the SARB through much of 2016, resulting in cumulative rate hikes of 75 basis points in January and March. The SARB

maintained its tightening bias in subsequent meetings of the Monetary Policy Committee (MPC). The food price trajectory was a major concern, but the SARB also showed concern over many downside risks (such as the Brexit), keeping MPC members cautious. Yet inflation surprised on the downside over the year, partly due to the rand strengthening more than expected through early 2016, lowering predictions for the peak of food prices through the first half of the year. Although inflation crept above the SARB’s 6 percent upper target again in September and through November, this breach was considered

temporary. Inflation expectations for 2017 have come down from an annual 6.2 percent, which was held early in the first half of 2016, to 6 percent—thus moving into the SARB’s inflation bound. Accordingly, the MPC did not decide to implement further rate hikes.

A fall in expected inflation raises expected real interest rates. The real repo rate in 2016 Q3 stood at 0.8 percent (7 percent nominal) and the prime lending rate at 4.3 percent (10.5 percent nominal). Although this makes rate hikes less likely, a higher real interest rate (now due to disinflation) further deters the investment that South Africa urgently needs.

Inflation was met with rising policy rates



Fiscal Developments

Fiscal policy continues to consolidate

In the 2016 budget and the October Medium-Term Budget Policy Statement (MTBPS), the government remains committed to gradual fiscal consolidation. Given lower growth projections, the MTBPS proposed to increase the consolidation effort. Although the 2016 budget originally foresaw an additional fiscal effort of ZAR 25 billion (60 percent of which from revenue) for 2017/18, the MTBPS adds another ZAR 23 billion (56 percent from revenue). For 2018/19, the fiscal

effort is increased by another ZAR 16 billion (100 percent from expenditure). On the expenditure side, the wage bill will see further cuts (Table 1.2), of 0.4 and 0.7 percent below what was foreseen in the budget for 2017/18 and 2018/19, respectively. This would help stabilize the public wage bill, as a percentage of GDP and of government expenditure. Reducing government positions and limiting promotions thus counters pressures from a three-year wage agreement the government entered into with public sector unions in 2015, which had put the wage bill on an unsustainable path.

Given persistent under-execution, lower levels of government are also hit hard by expenditure restraint. For 2017/18, allocations remain almost constant in real terms, and only pick up modestly in 2018/19, and more strongly (growing at 10.4 percent in nominal terms) in 2019/20. Compared with the original budget allocations, in 2017/18 lower levels of government experience cuts of 1.3 percent, and even higher, at 3.8 percent in 2018/19.

With respect to spending areas, debt service costs continue to be one of the fastest growing budget items going forward, growing

above 10 percent in 2017/18 and 2018/19. This is a significant upward revision from the budget, given that debt will increase faster than expected. Yet the fastest growing spending category is now tertiary education, giving in, to an extent, to demands by the #FeesMustFall student movement. The budget already foresaw an increase in tertiary education spending of more than 11 percent for 2017/18, and further allocations were made for 2018/19 and 2019/20. These allocations at least partly come at the expense of spending on basic education (which is arguably more pro-poor), where allocations have been cut.

Within a tightening budget, the MTBPS increased allocations for universities. Raising additional revenue will be key to stay the course of fiscal consolidation

	2016 MTBPS w/y change				2016 MTBPS % deviation from 2016			
	2016/17	2017/18	2018/19	2019/20	2015/16	2016/17	2017/18	2018/19
Current payments	9.4	7.5	7.5	7.4	-0.9	-0.2	-0.2	-0.3
Compensation of employees	8.9	6.7	6.8	7.3	-0.8	-0.3	-0.4	-0.7
Goods and services	7.2	7.4	6.8	7.3	-1.5	-0.1	-1.0	-0.9
Interest and rent on land	14.2	10.5	10.4	9.1	0.0	0.1	1.2	1.5
of which: debt-service costs	14.7	10.8	10.5	9.1	-0.2	0.0	1.1	1.3
Transfer and subsidies	6.5	8.2	6.5	7.2	-1.4	-1.2	-0.1	-1.8
Provinces and municipalities	4.6	6.4	7.6	10.4	-0.5	0.0	-1.3	-3.8
Departmental agencies and accounts	-4.7	8.2	6.3	4.6	-1.6	-2.6	-1.2	-1.1
Higher education institutions	11.0	22.9	5.8	13.5	-0.1	3.9	13.0	12.7
Foreign governments and international organisations	3.3	-8.6	6.5	26.2	1.8	1.3	-12.5	-13.4
Public corporations and private enterprises	0.3	11.3	7.6	-5.0	-8.1	-9.1	-7.3	-11.2
Non-profit institutions	7.0	3.8	4.5	5.6	-0.8	2.0	2.9	3.6
Households	9.1	7.4	6.2	6.8	-1.1	-1.5	-0.4	-0.7
Payments for capital assets	-1.4	3.2	4.6	7.9	4.8	0.7	-1.1	-1.1
Buildings and other capital assets	-2.9	1.6	5.0	6.4	6.5	-1.0	-3.1	-2.8
Machinery and equipment	4.2	9.2	3.5	13.0	-1.2	7.4	5.9	4.8
Payments for financial assets	-79.6	-16.2	-2.2	5.6	2.0	17.8	0.0	0.0
Total	5.7	7.3	6.9	7.4	-0.6	-0.4	-0.3	-0.8
Contingency reserve								
Consolidated expenditure	5.7	7.8	7.2	8.0	-6.0	-0.8	-0.5	-1.1

Sources: National Treasury; World Bank staff calculations.

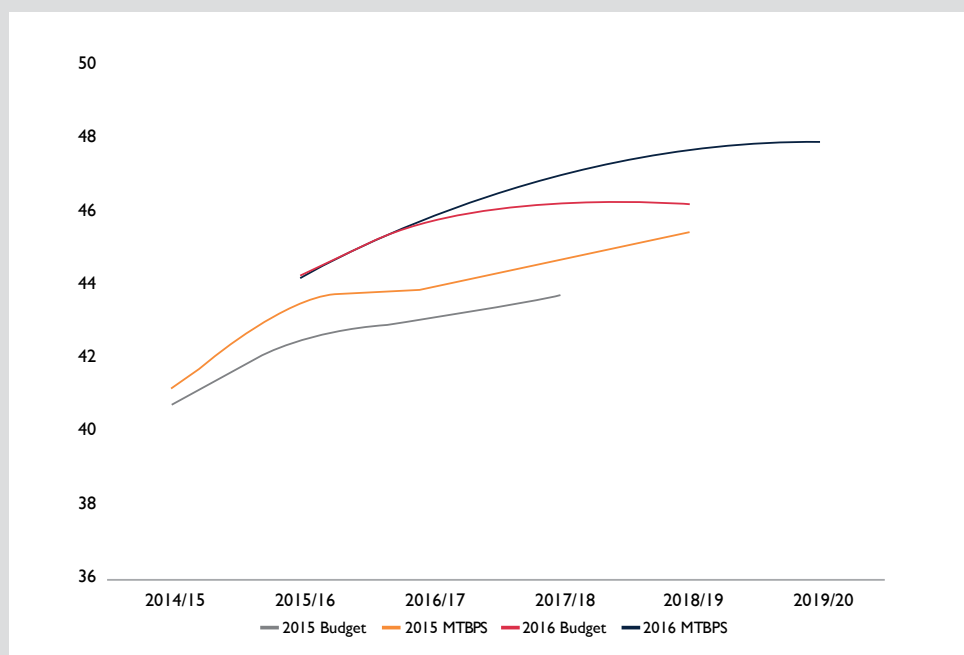
On the revenue front, the MTBPS proposes to raise another ZAR 13 billion in 2017/18, in addition to the ZAR 15 billion proposed in the 2016 budget (and an additional ZAR 15 billion in 2018/19). However, neither the budget nor the MTBPS identifies what specific measures will yield this additional revenue. About ZAR 5 billion can be expected from a partial tax amnesty (the Voluntary Disclosure Programme), yet this would only account for about 12 percent of the ZAR 43 billion that needs to be raised. Likely measures are limited fiscal drag for personal income tax, further excise taxes, increases in the fuel levy, and

potentially an increase in the value-added tax.

Overall, expenditure is expected to remain stable as a percentage of GDP between 2016/17 and 2019/20, while revenue is expected to increase from 29.7 to 30.4 percent of GDP over the same period. Revenue is thus doing the heavy lifting to reduce the budget deficit, which is now projected to fall from 3.7 percent of GDP in 2015/16, to 3.4 percent in 2016/17, to 2.7 percent in 2018/19, and 2.5 percent in 2019/20, roughly maintaining the consolidation path foreseen in the 2016 budget. Yet, given the increase in expected interest payments, the budget balance in the

Figure 1.12 Trajectory of net public debt across budgets and MTBPSs

1.12 (percent)



Sources: National Treasury; World Bank staff calculations.
 Note: MTBPS = Medium-Term Budget Policy Statement.

South Africa
 defended its
 investment grade
 credit rating

MTBPS deteriorated markedly compared with the budget, by 0.2 percentage point of GDP in 2016/17, and 0.3 percentage point of GDP in 2017/18 and 2018/19. This deterioration shifts the debt stabilization into the future. Debt stabilization will now occur two years later than foreseen in the budget (in 2019), and is 1.9 percentage points of GDP higher than envisioned in the budget (Figure 1.12).

South African foreign currency-denominated debt was reaffirmed in December, with a rating one notch above “junk” by Standard and Poor’s (S&P) and Fitch in June. However, an analysis conducted by World Bank and SARB economists suggested that one downgrade had already been priced in, at least partly. In December,

the two rating agencies affirmed the rating yet again, although Fitch joined S&P in putting South African on a negative rating outlook. The same analysis suggests that the first rating downgrade to “junk” carries particular weight for borrowing costs, while the second downgrade adds to it (Box 1.3). The two rating agencies seeing South Africa at BBB- with a negative outlook means that the possibility of a downgrade will continue to occupy South African policy makers and investors alike in 2017. Yet, the fact that South Africa managed to avert a downgrade to “junk” in 2016 speaks to the fine balancing act the National Treasury has been delivering, through the budget and the MTBPS.

Box 1.3 The threat of a rating downgrade to “junk”

22

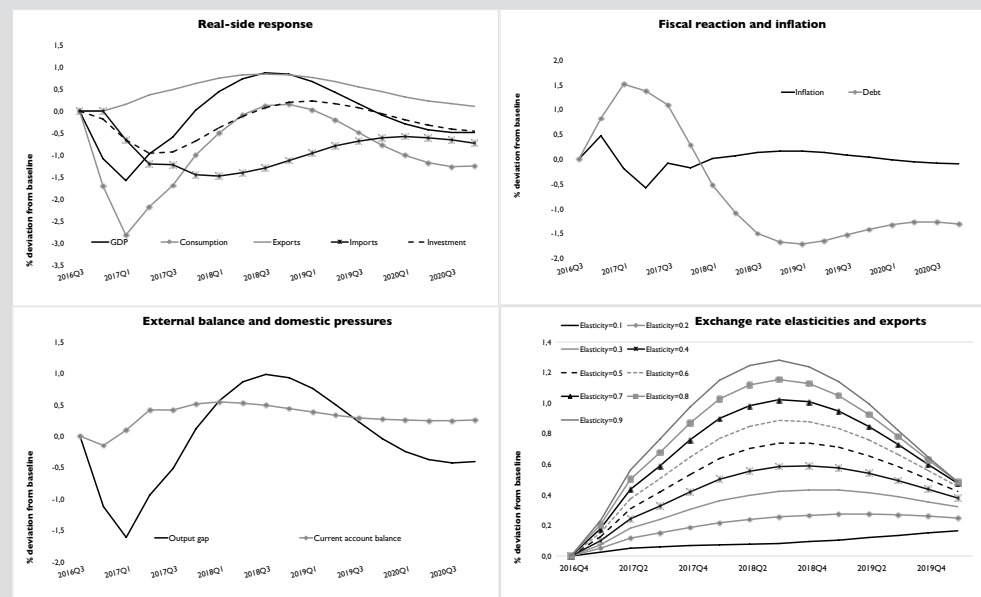
A rating downgrade would have raised borrowing costs and reduced growth further

South Africa has come a long way since the advent of democracy in 1994. The democratic government embarked on impressive efforts to make the economy inclusive, considerably expanding social spending and extending public services to those who had been underserved under apartheid. The government managed to balance its new spending priorities with fiscal prudence—a remarkable achievement rewarded by two of the world’s major credit rating agencies, Standard and Poor’s (S&P) and Fitch, with the highly prized BBB- rating in 2000, judging South African debt to be of investment grade. By 2005, South Africa’s rating had improved to BBB+. A decade on, the trend had reversed, as growth had slowed and public debt increased markedly since the global financial crisis, bringing South Africa back to its BBB- rating by S&P and Fitch, to which S&P added a negative outlook in December 2015, with Fitch following suit in December 2016.

South Africans and investors were closely watching the reviews of rating agencies in 2016, and the markets partly priced in at least one downgrade to sub-investment grade (sub-IG). To understand what the potential impact of South Africa losing its investment-grade credit rating might be, a team of World Bank and SARB economists looked at the history of past downgrades in 20 countries and estimated the impact on short-term borrowing costs. The study employs annual data and only looks at short-term Treasury bills (where risk premia are more pronounced among longer-term debt instruments), and there are still relatively few cases to study (most of them derive from the post-financial crisis period). Yet, given these important caveats, the findings suggest that a downgrade to sub-IG by one major rating agency increased Treasury bill yields by 138 basis points on average in the sample under study. When a second rater followed suit with such a downgrade, Treasury bill rates increased by another 56 basis points (although this effect is not statistically significant). Since the markets already partly priced in a downgrade for South Africa in 2016, the impact would have been less, estimated at about 60 basis points.

What would this downgrade mean for the economy? The World Bank modeled the impact of a risk premium shock that increases the Treasury bill rate by 60 basis points in December 2016 (the time of the S&P and Fitch decisions) on the South African economy. This shock represents uncertainty and capital flight. The uncertainty shock materially affects investment (Bloom 2009) and consumption decisions through higher cost of capital and an endogenous interest rate response. The flight of capital causes the nominal exchange rate to depreciate by 6 percent initially, which tapers back to its baseline as the economy rebalances. The more competitive currency will improve trade, assuming the historical empirical estimates of the exchange rate and trade hold. The trade response does not offset the fall in investment and consumption. However, the pass-through to inflation would have been significant (the maximum impact on inflation occurs approximately two quarters after the shock). The response of gross domestic product (GDP) factors is a reaction of the SARB to higher inflation. The impact on GDP would have been most pronounced within two quarters of the shock (Box 1.3 figure 1), shaving a cumulative 1 percent off real GDP by end- 2017. This would translate into foregone nominal income of about ZAR 1,000 on average per South African. The shock only dissipates three years after the shock, despite being temporary. The model assumes that the authorities will react to the higher debt and ratings downgrade by reducing future expenditures, in an attempt to stabilize the debt. This implies that public debt increases initially due to the shock, but ends up being lower after adjustments to expenditure. GDP could still be lower if the exchange rate elasticity to exports is lower.

Box 1.3 figure 1: Shock simulations



Sources: Hanusch et al. 2016a; Hanusch et al. 2016b; World Bank staff estimates.

External Sector

The rand recovered from historical weakness and the current account deficit narrowed

Following the end of the commodity super cycle, the rand plummeted by 35 percent (in trade-weighted inflation-adjusted terms) from its peak in December 2010, to its low in January 2016, following the commotion around the dismissal of Finance Minister Nene. The rand has since been recovering. Against the U.S. dollar, the rand registered its strongest readings in August and November 2016, at 13.2 rands to the dollar. Several reasons explain the overall strengthening. One reason is the increase in commodity prices for major South African exports, such as metals, and in particular iron ore (Figure 1.3).

Although still only a third of the high witnessed in 2011, the increase in commodity prices represents a significant turnaround of the falling prices that were still experienced in 2015. In addition, the U.S. dollar has proven weaker than had been expected by many, as labor market data in the U.S. did not prove sufficiently supportive for the Federal Reserve Bank to raise interest rates before December 14, 2016. This situation kept inflation differentials favorable for South Africa, and indeed other emerging markets, for longer than initially expected. Around October 2016, the rand was also supported by a large forex transaction, which had been widely anticipated by the markets, when A-B InBev acquired SABMiller for US\$100 billion (~ZAR 1.4 trillion, equivalent to nearly a third of South Africa's GDP and prior to the merger the third largest company, by market capitalization, listed on the Johannesburg Stock Exchange), creating the world's largest beer company.⁵

According to the Organisation for Economic Co-operation and Development (OECD), the rand-U.S. dollar exchange rate that would establish purchasing power parity was 5.6 in 2015, a long distance from recent average spot rates. Although not the only one, political uncertainty is one important reason for a weak exchange rate, keeping foreign capital at bay and providing incentives for locals to hold their assets abroad. South Africa's international investment position strengthened significantly between 2013 and 2016, swinging from deficit into surplus in the third quarter of 2015, and reaching a

high of ZAR 639 billion by December 2015, as investors were surprised by the dismissal of the Finance Minister. The international investment position strengthened in rand and dollar terms. By June 2016, South Africa was still a net creditor to the world, with ZAR 6.2 trillion held abroad, against ZAR 5.7 trillion in liabilities held by nonresidents.

South African assets held abroad could be a valuable source for much needed investment at home, should investor sentiment continue to improve—including with a view toward political stability. The latest political uncertainty shock to the rand occurred in October, when Finance Minister Gordhan was summoned to court for what many investors perceived as politically motivated corruption charges. Accordingly, within minutes of the announcement of the summons by the National Prosecuting Authority, the rand depreciated by 3 percent. The charges have been lifted since then.

With respect to the current account, there is a clear relationship between the depreciation of the rand against the currencies of South Africa's major trading partners and the trade balance (Figure 1.13). As the commodity super cycle abated, falling commodity prices weakened the rand, raising the cost of imports and resulting in a deteriorating trade balance. A sustained depreciation typically reduces demand for imports and strengthens exports due to the change in domestic prices relative to world prices. Indeed, as the rand depreciated (in nominal and real terms), the trade balance became less negative in 2015 and improved further in 2016, largely on the back of falling import volumes. Exports have been more sluggish in their response, although the spike in 2016 Q2—to a large extent driven by the positive production shock to manganese and iron ore—resulted in a trade surplus of a magnitude not observed since 2011. Thus, although the trade balance has been improving as would be expected from a sustained depreciation, exports have yet to pull through stronger, especially in sectors where the change in South Africa's terms of trade has enhanced their comparative advantage (see Chapter 2). Notably, this observation is not limited to merchandise exports: service exports too have gained competitive position from the rand's depreciation, yet the services balance has yet to improve markedly.

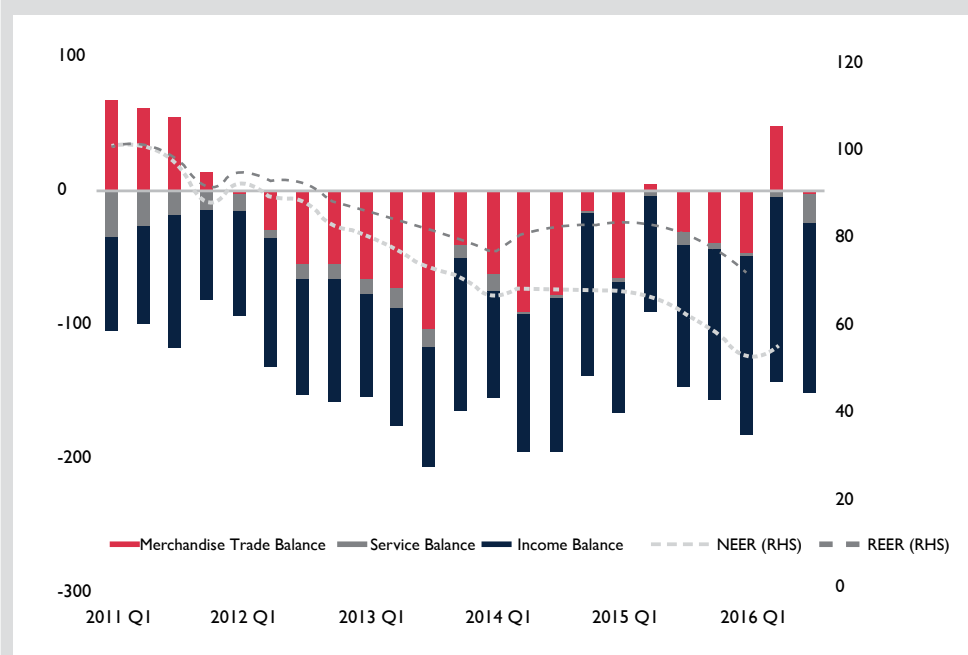
The rand strengthened over the course of 2016 but remains weak historically

Overall, South Africa's current account deficit remained wide in 2016, at a seasonally adjusted 5.3 percent of GDP in Q1, 2.9 percent in Q2, and 4.1 percent in Q3. The reason is mainly the negative income balance, which has historically been large in South Africa and remains the main reason for the overall deficit on the current account. The current account deficit is ultimately a reflection of South Africa's integration in the global financial system, with

foreign investors buying South African bonds⁶ and equities—generating interest receipts and dividend payments that are repatriated. FDI also results in the repatriation of profits. On average, outflows of such income flows exceed what South African investors bring back home by a large margin, resulting in large deficits, which were a seasonally adjusted ZAR -128.8 billion in 2016 Q3.

Figure 1.13 Main components of the current account and trade weighted exchange rates

1.13 (current account components in seasonally adjusted billion rand; REER and NEER indexes, 2011 Q1 = 100)



Sources: Haver Analytics; World Bank staff.

Note: NEER = nominal effective exchange rate; REER = real effective exchange rate.

The trade balance improved, but a negative income balance kept the current account in deficit

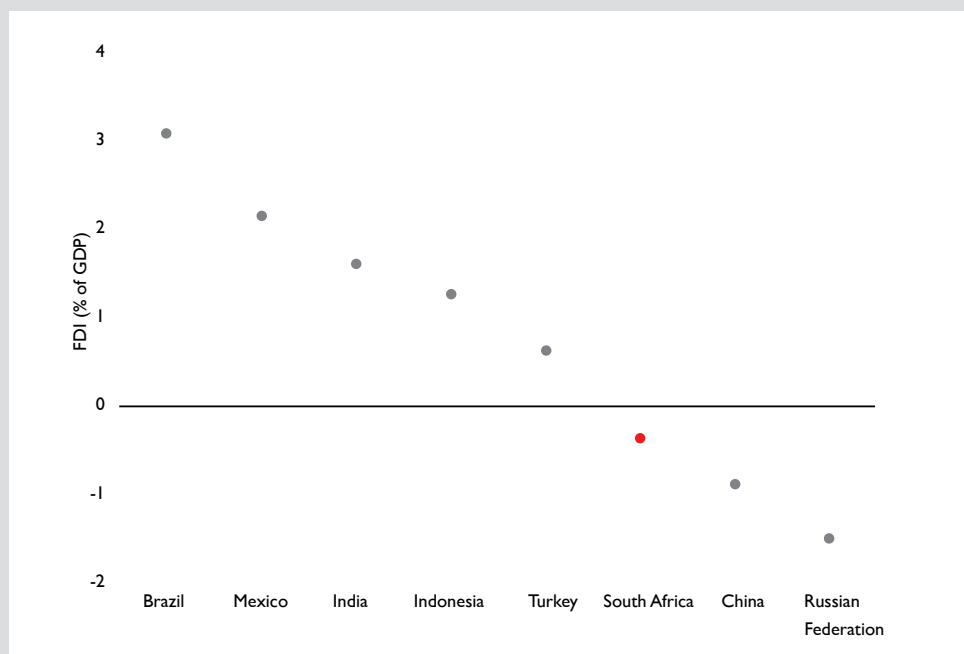
The financial account—financing the current account deficit—continued to be supported especially by portfolio investment in the first three quarters of 2016, driven by large net outflows in the first quarter, carrying over a trend from 2015. South Africa is one of the few emerging markets that experienced a net outflow in 2016 (Figure 1.14). Net FDI flows turned positive in Q2 and Q3 in 2016, although inflows fell 28 percent y/y—yet outflows fell faster, by 69 percent y/y. Thus, the improvement in net FDI flows generally means that the expansion of South African firms abroad is slowing—likely as a consequence of weak global demand and tougher conditions for South African investors at home—while less FDI is coming to South Africa at the same time. It therefore remains important for policy makers to stimulate FDI

inflows, which are less volatile than portfolio flows, stimulate economic growth, and can result in the transfer of critical technology that can help South Africa innovate and create jobs (Chapter 2).

Unrecorded transactions, also listed under the financial account, continued to be large, at ZAR 35.5 billion in 2016 Q1 and 15.9 billion in Q3, exceeding the total balance on the financial account by a significant margin. These transactions are potentially volatile (and potentially illicit) flows, and a vulnerability that the authorities are in the process of addressing. Overall, the balance of payments was in surplus' in the first three quarters of 2016, increasing the country's international reserves from US\$45.8 billion in December 2015 to US\$47.8 billion by October 2016.

Figure 1.14 Net foreign direct investment to selected countries

(percent of GDP, first half of 2016)



Sources: Haver Analytics; World Bank staff.
* Only 2016 Q1 data were available at the date of publication.

Encouraging foreign investment, especially FDI, would support growth

Outlook

The business cycle may have hit its trough and growth is expected to improve modestly

The World Bank's growth estimate for 2016 has been revised down to 0.4 percent (from 0.8 percent in the last Update); growth for 2017 and 2018 is projected to be 1.1 and 1.8 percent, respectively (Table 1.3). This estimate is consistent with the economic momentum in leading and coincident indicators, which suggests that South Africa may have reached the trough of the business cycle in 2016 (Figure 1.15). Risks continue to derive largely from global growth, carrying particular weight for a small economy like South Africa, with high dependence on commodity prices. Domestic risks include natural shocks from climate change (such as the 2015 drought) but also domestic shocks, most notably on the political front.

Private consumption is driving part of this modest recovery, as inflationary pressures are easing and the credit cycle is expected to emerge from the doldrums—potentially supported by looser monetary policy as inflation falls back within the SARB's inflation target band. Little support is expected from fiscal policy, as the government continues on its fiscal consolidation path, keeping one eye on the credit rating agencies in 2017 especially.

Although export growth was somewhat disappointing in 2016, it is expected to pick up steam as the economy—albeit slowly—continues making headway in restructuring and seizing opportunities from the change in the terms of trade: commodity prices and the rand are only expected to recover slowly over the next years. As the economy picks up, imports will rebound too, with consumers increasing their appetite for foreign products and firms importing intermediate and capital goods to take advantage of new opportunities.

Growth will still be insufficient to make a marked dent to poverty

Table 1.3 Baseline annual growth forecast

1.3 (percent)

Indicator	2013	2014	2015	2016 e	2017 f	2018 f
Real GDP growth, at constant market prices	2.3	1.6	1.3	0.4	1.1	1.8
Private consumption	2.0	0.7	1.7	1.3	2.1	2.1
Government consumption	3.8	1.8	0.2	1.6	0.8	1.2
Gross fixed capital investment	7.0	1.5	2.5	-5.9	-2.8	-1.6
Exports, goods and services	3.6	3.3	4.1	1.0	3.7	4.1
Imports, goods and services	5.0	-0.5	5.3	-3.6	2.0	2.1
Prices: inflation	5.4	6.4	4.6	6.3	6.0	5.8
Current account balance (percent of GDP)	-5.9	-5.3	-4.3	-3.9	-3.4	-3.5
Fiscal balance (percent of GDP) ^a	-3.7	-3.6	-3.7	-3.5	-3.2	-2.8
Gross Debt (percent of GDP) ^a	45.9	46.8	49.4	51.4	52.5	53.0
Primary balance (percent of GDP) ^a	-0.7	-0.4	-0.4	0.0	0.5	1.0
Poverty rate (\$1.9/day 2011 PPP terms) ^{b,c,d}	15.7	15.6	15.7	15.9	16.0	15.9
Poverty rate (\$3.1/day 2011 PPP terms) ^{b,c,d}	33.6	33.6	33.6	34.1	34.1	33.9

Sources: World Bank, Macroeconomics and Fiscal Management Global Practice, and Poverty Global Practice.

Note: e = estimate; f = forecast; GDP = gross domestic product; PPP = purchasing power parity.

a. Fiscal year.

b. Calculations based on 2010-Income Expenditure Survey.

c. Projection using neutral distribution (2010) with pass-through = 0.87 based on GDP per capita in constant PPP.

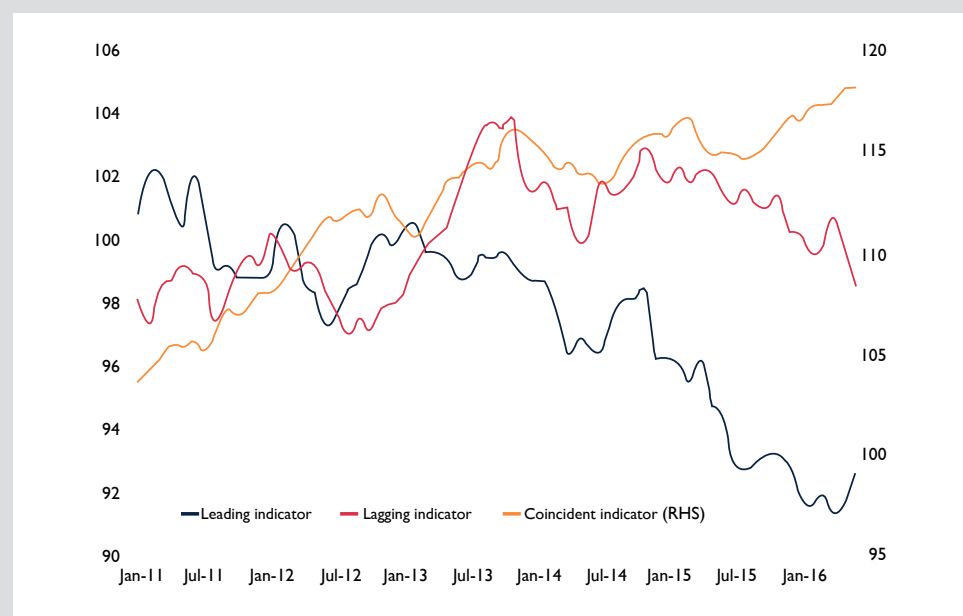
d. Projections are from 2013 to 2018.

Fixed investment is expected to continue falling, although at a decelerating pace. Fixed investment is one area where policy can prove the analysts wrong and decisively turn around the South African economy. Providing an environment conducive for domestic and foreign investors, by accelerating the implementation of the National Development Plan with strong coordination across the

implementing partners, improving the execution of key public investment projects, strengthening cities as South African powerhouses—in spite of the change in government—and strengthening political certainty are all areas that can raise gross fixed investment. This will be crucial to raise the growth potential of the South African economy and generate sustainable jobs.

Figure 1.15 South African Reserve Bank business cycle indicators

1.15 (2010 = 100)



Source: South African Reserve Bank.

Given the growth projections, little progress is expected in reducing poverty and inequality. Since the majority of the extreme poor depend on social grants for their income, the growth of these transfers has the largest effect on the pace of extreme poverty alleviation. Employing micro-simulations that model the impact of growth on household consumption, poverty is expected to remain roughly constant between 2016 and 2018. Inequality, by contrast, is expected to increase by 1.3 percent between 2010/11 and 2017/18, largely due to the impact of the widening gap between those with and without jobs. This situation makes it all the more important

for policy to address South Africa's growth constraints decisively, especially as relatively little support can be expected from the global economy. This strategy will involve transformative interventions, including removing bottlenecks in infrastructure, and improving education and industrial policy (Chapter 2). Yet it is important to bear in mind the power of localized and smaller interventions, which can make a large impact on the ground for poor South Africans. An example of such initiatives, piloting farming on rooftops in central Johannesburg to revive urban farming, is featured in Box 1.4.

Box

14

Ideas in poverty reduction: Farming from rooftops in Johannesburg's central business district

Cathy Nkambule, age 56, is one of four owners of a flourishing rooftop vegetable garden atop a skyscraper in the inner city of Johannesburg. The garden has 26 tunnels covering bunches of spinach that are harvested daily and sold to a market within walking distance. This is the site of an urban farm run by one of the many cooperatives supported by the Johannesburg Municipal Government as part of an innovative urban agriculture program targeting households living in extreme poverty.

"This (garden) has made a huge difference in my life. I never imagined that I would have a steady income let alone my own business. I now have a reason to wake up and to work hard at my own thing. I even have surplus to help others who are less fortunate," she says.

Ms. Nkambule is one of beneficiaries of the Johannesburg Municipal Government's Food Resilience Program, which is aimed at tackling extreme poverty through urban agriculture. The program seeks to reduce the number of food insecure families by 20 percent, ensure that no one goes to bed hungry, create sustainable markets for subsistence and emerging farmers, and create decent jobs and disposable income. On the one hand, the program aims to reduce food insecurity by enabling beneficiaries to eat what they produce; on the other hand, the program promotes the emergence of farmers who are able to generate income and create jobs. The program was developed in response to a 2011 study by the University of Johannesburg, which showed that 42 percent of the city's 4.5 million people go without at least one meal between three and 10 days in a month, with food accounting for up to 60 percent of the expenditures of the poor.

The program's objective is to wean beneficiaries from extreme poverty, to a level where they attain food security, create jobs, and generate their own income through a three-stage, staggered approach. Initially, the indigent families are given food parcels. At this stage, they receive training to enable them to transition to the next stage, in which they establish homestead, communal, or rooftop food gardens for which the municipality provides infrastructure support in the form of land, farming implements, electricity, water, seeds, training, and links to markets. The most successful farmers graduate into any of the municipality's four Food Empowerment Zones (FEZs), which constitutes the third stage. FEZs leverage the municipal-owned large commercial farms and create opportunities for intensive farming by these emerging farmers. Eikenhoff, which is situated in the southern part of Johannesburg, is the biggest FEZ, spanning 270 hectares. It has cost a total investment of around ZAR 12 million since 2012. It benefits at least 160 families directly who are engaged in planting vegetables and livestock farming, including pig raising and poultry production. The other three FEZs have a collective 54 hectares and benefit at least 59 families, costing the municipality a total of about ZAR 10.8 million. Food gardens and FEZs are supported by seven agri-resource centers and satellites across the city, which provide advisory services, including registration of cooperatives. Ultimately, the goal of the Food Resilience Program is to enable beneficiaries to become self-sustainable emerging farmers, with government support expected to reduce as the beneficiaries graduate through the three stages. The program is important in a context where urban farming historically has been repressed, particularly in the townships, and in an environment in which the population of commercial farmers is aging, posing a threat to national food security. In 2010, approximately 3.5 percent of South African urban households were involved in some form of urban agriculture.

This innovative program leverages the strengths of multiple partners, including the provincial government, nongovernmental organizations, universities, and the private sector. In Alexandra, one of the city's poorest communities east of Johannesburg, a communal food garden owned by a group of seven cooperatives of local women has partnered with a commercial farmer. The private sector partner serves as an incubator, helping the group to navigate the agriculture produce value chain from planting to branding, packaging, and marketing the produce. The Alexandra project also sources produce from the Johannesburg fresh produce market to resell to hawkers in the community, to create a steady supply that would help stabilize prices. The aim is to create a fresh produce market within Alexandra through the development of a network

Innovative local initiatives continue to play an important role, improving the lives of the poor

Box
14**Ideas in poverty reduction: Farming from rooftops in Johannesburg's central business district**

of micro farms, which would reduce transport costs to markets.

Overall the Food Resilience Program has reduced poverty and food insecurity through creating urban subsistence farmers who are able to contribute to sustained food production at the household level. In addition, some of the farmers have become entrepreneurs who create jobs and generate income. To date, 107,466 indigent households have benefited directly from the program. At least 240 emerging farmers have been linked to markets. More than a 1,000 people have been trained in farming techniques. The program's ability to attract multiple stakeholders will be key to its sustainability.



CHAPTER 2

Private Investment for Job Creation

Industrial policy is a key instrument to meet South Africa's job creation objectives, through the promotion of private investment in strategic sectors

Introduction

Job creation has been among the most fundamental objectives of the South African authorities since democracy. Labor is the main income source of most South African citizens, and raising labor remuneration for the poorest segments of society is the most effective instrument to reduce poverty and inequality. Per World Bank staff calculations, each job created in South Africa lifts about one person out of poverty (Box 2.1).

In 2011, the National Development Plan (NDP) foresaw the need to create 11 million new jobs between 2012 and 2030, to bring down the unemployment rate to 6 percent and reap the potential economic benefits provided by the ongoing demographic transition.⁷ This goal means creating about 600,000 new jobs every year.

Nonetheless, the pace of job creation in the past decade has been too slow to meet this target, and there is growing evidence that it lost steam in recent years with the end of the commodity super cycle. Between 2005 and 2015, the private sector created about 265,000 jobs on average every year (mostly in the service sector), and the public sector created about 50,000 jobs. These numbers are clearly insufficient to meet NDP's objectives, and decelerating growth since 2014 combined with tighter fiscal space (Chapter 1) further complicates things. Since democracy, most job creation took place during the commodity super cycle, and its recent termination calls for alternative sources of growth.

Cognizant of the shortcomings of South

Africa's commodity-driven growth model, the authorities have accelerated efforts to promote industrial development in the past decade. Such a policy orientation builds on the expectation that industrial development could potentially generate several positive outcomes, including higher wages for workers (resulting from labor productivity due to technology investments); larger employment and growth multipliers through forward and backward linkages with other sectors; increased domestic competition through greater exposure to highly competitive world markets; increased reliance on the larger world demand, as the potential for stimulating higher domestic demand through debt financing is being progressively exhausted for households and government; and more stable growth, as underpinned by stable global demand for manufactured goods and a less volatile capital account. Through appropriate investments, industrial development can seek to expand production in sectors where comparative advantage already exists, or alternatively develop new comparative advantages through technological upgrading.

South Africa's industrial policy acknowledges the central role that private investment should play to promote industrial development, and the fact that private sector investment decisions ultimately drive labor demand and thus job creation.⁸ The policy thus foresees the government's role as regulating private investment decisions (through industrial policy instruments of various nature), while providing public goods (infrastructure, such as power generation in recent years) and

The contraction of industrial sectors since democracy calls for an assessment of the effectiveness and efficiency of industrial policies

correcting market and coordination failures (special economic zones for instance) that the private sector cannot handle. Beyond support to private investment in key sectors for job creation, the national authorities also see the need to boost the acquisition and provision of the skills needed by the private sector (see Box 1.1 on South Africa's efforts to reform the education sector); to raise youth exposure to jobs and professional experience, to facilitate their insertion into labor markets (through employment tax incentives (ETIs) for instance); to combat racial discrimination through affirmative action (through the Broad-Based Black Economic Empowerment program notably); and to facilitate the matching of labor supply and demand through better spatial integration in coordination with local authorities.

However, the authorities' efforts to promote industrial development in recent years were not matched with a significant reallocation of private capital toward industrial sectors, or with higher industrial employment. Such a contrast between policy ambitions and outcomes calls for an assessment of the effectiveness and efficiency of industrial policies on private investment and job creation, and better identification of other factors that may have generated such disappointing outcomes below NDP targets.

This Chapter discusses the role played by private investment for job creation since democracy. The Chapter highlights recent trends in job creation and the role played by private investment; explores the determinants of private investment allocation across economic sectors; and assesses the effectiveness, cost, and impact of investment tax incentives (ITIs) granted to the various economic sectors on additional investment and job creation.

A few important messages emerge from the discussion:

- Job creation since 1994 has taken place almost exclusively in the service sector, at a pace much too slow to curb unemployment and poverty significantly.
- Investments have resulted in replacing jobs with machinery in the agriculture, mining, and manufacturing sectors, as technological upgrading has not been accompanied by a sufficient expansion

of productive capacities: only the service sector combined capital deepening with job creation.

- Such trends in capital allocation across sectors have not only been bad for job creation. They have been equally bad for GDP growth, generating significant losses in aggregate capital productivity. Indeed, since 2008, there has been a significant deterioration in the South African economy's capacity to direct private investment toward sectors with growing economic potential—the manufacturing sector in particular.
- Although the delayed reactions of concentrated industries to changing opportunities, and the long time needed by large infrastructure projects to start generating returns may explain this negative trend, the analysis of the current ITI framework suggests that it may have also strongly contributed to such misallocation of capital. Compared with the industrial sector, lower marginal tax rates for the mining and construction sectors make private investment in these sectors equally remunerative despite much lower growth and job creation returns for the economy at large.
- Notwithstanding, by reducing firms' tax burden compared with general provisions, ITIs have encouraged additional investment in agriculture, construction, manufacturing, trade, and other services. Overall, additional investment generated by tax incentives exceeds the government's foregone revenue from distributing tax incentives. Furthermore, the existence of large employment multipliers brings the fiscal cost of job creation to a small fraction of total labor costs, in the manufacturing sector in particular. And ITIs compare favorably with ETIs, from the fiscal and quality of jobs created perspectives.
- ITIs have thus contained job destruction in the industrial sector, and explanations for industrial contraction since democracy and more recently must be found elsewhere, possibly among insufficient skills and infrastructure, policy uncertainty, a

volatile rand, and complicated labor relations.

- Moving forward, reorienting incentives toward the industrial sector would create additional jobs at no additional fiscal cost, the more so as the industrial sector shall benefit in the

medium term from the new business opportunities from the depreciation of the rand, decline of commodity prices, and the coming online of large additional power generation capacity.

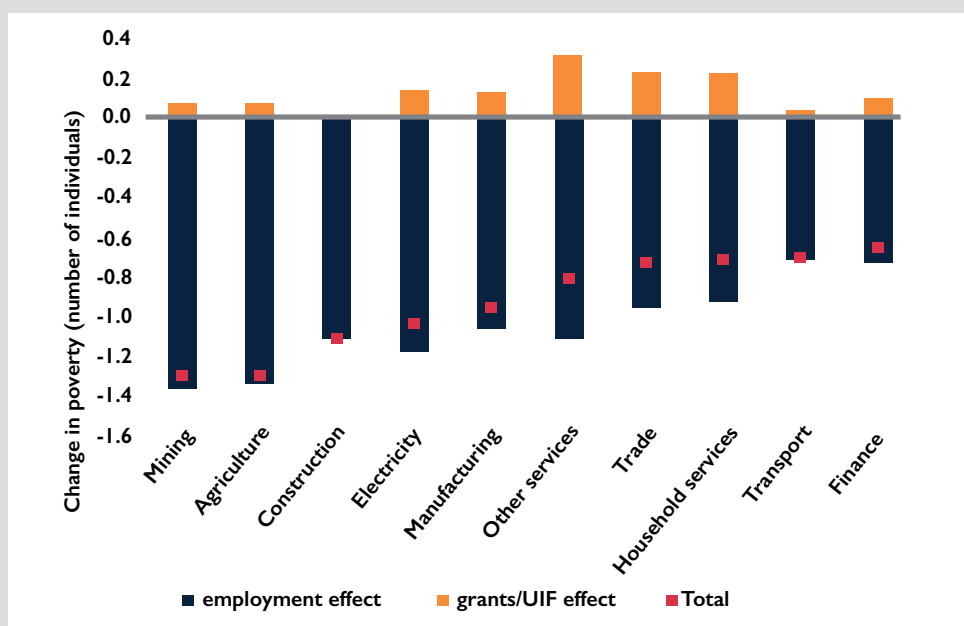
Relying on the Income and Expenditure Survey conducted in 2010, the World Bank estimates that the proportion of the South African population living below the international poverty lines of purchasing power parity (PPP) \$1.9 and PPP\$3.1 stood at 15.7 and 33.6 percent, respectively, in 2015 (World Bank 2016d). Admittedly, job creation is expected to be among the main factors to reduce poverty, by potentially boosting the incomes of the large group of unemployed poor.

Using statistical matching techniques applied to the National Income Dynamics Study data for 2015, we estimate the impacts of job creation in different economic sectors on poverty. The method identifies unemployed individuals whose characteristics (education, age, gender, and so forth) are closest to those of individuals employed in a given sector, and assumes that these individuals would be the direct beneficiaries of job creation in the said sector, having the greatest likelihood of becoming employed. In turn, we estimate the net income impact for these individuals of getting a job in the said sector, estimating the wage they would now receive (using Mincer regressions), deducting unemployment benefits, and estimating their new eligibility for children's grants, given their new labor income.

Box 2.1 figure 1 reports the number of people (including members of the households from which the unemployed would become employed) that would be lifted out of poverty as a result of creating one job in a given sector. Creating one additional job in mining or agriculture lifts about 1.3 people from poverty. Increasing employment in construction and manufacturing also has a significant impact—the effect in these sectors is almost one to one. Employment in trade, financial services, and community services has a smaller impact—only seven in 10 people employed are elevated from poverty. Employment in financial intermediation is already geared toward a relatively better off and educated population; therefore, the impact of employment in this sector on poverty is lower than in other sectors. In some sectors, such as private household employees, the impact on poverty is relatively small, as the wages in those sectors are low and the impact of the loss of transfers on poverty is significant.

Box 2.1 figure 1: Changes in poverty due to job creation

(number of individuals)



Source: World Bank staff calculations.
Note: UIF = Unemployment Insurance Fund.

Job creation strongly
reduces poverty

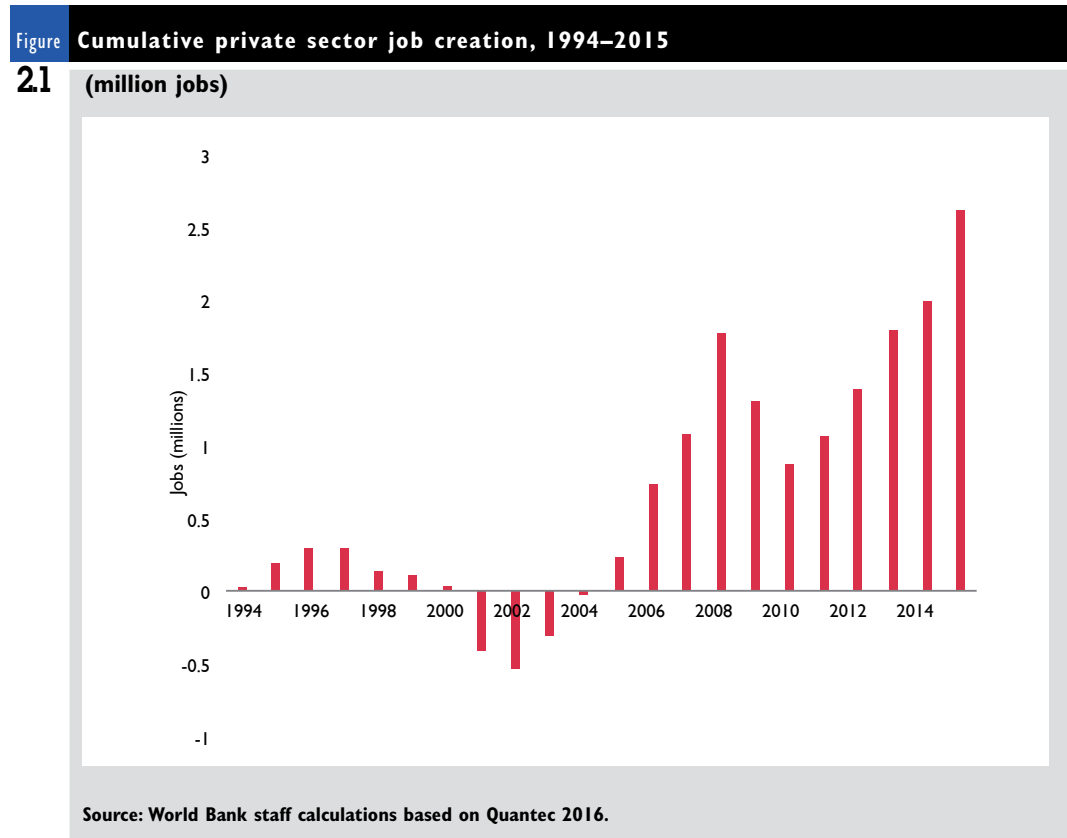
Job Creation and Investment since 1994

Net job creation has accelerated significantly since 2006, but has been insufficient to accommodate the growing labor supply

Between 1993 and 2015, South Africa’s private sector created 2.65 million formal and informal jobs in net terms, see Figure 2.1. Meanwhile, government services created

an additional 470,000 jobs.⁹ From 1994 to 2004, net job creation in the private sector was cumulatively almost nil, as periods of net job creation were offset by periods of net job destruction. From 2005, the pace of job creation steadily accelerated, and was only reversed in 2009–10 as the economy adjusted to the consequences of the global financial crisis. Since 2010, 1.76 million jobs were created in the private sector (and another 0.2

Job creation accelerated since 2004 but was insufficient to absorb the growing pool of people seeking work



million in government services).

Although job creation accelerated in the past decade, it was nonetheless insufficient to absorb the growing pool of people seeking work. Lack of comparability in labor surveys over time prevents strict monitoring and reporting of unemployment rates since 1994.¹⁰

But the fact that by 2015 the unemployment rate (narrow definition) stood at 24.5 percent of the active population suggests that job creation in the preceding years was largely insufficient to absorb the growing labor supply. The problem is even larger when discouraged workers are considered as well, bringing the unemployment rate (expanded definition) to 33.8 percent of the active population by the end 2015.¹¹

Between 2011 and 2015, an average of 589,000 workers entered the labor force every year. Of these, on average, only 424,000 (72 percent) found employment, while 165,000 (28 percent) became unemployed (narrow definition). Meanwhile, the number of discouraged workers grew by 20,000 every year. Of the total employed, 22.1 percent were skilled, 47.5 percent semi-skilled, and 30.4 percent low-skilled; these proportions have remained relatively stable since 2008. Of the total unemployed, 4.2 percent were skilled, 23.2 percent semi-skilled, and 17.3 percent low-skilled, and for 55.3 percent the skill set is unknown, but probably the vast majority are among the unskilled.

Jobs were primarily created in services, and mainly lost in agriculture, mining, and manufacturing

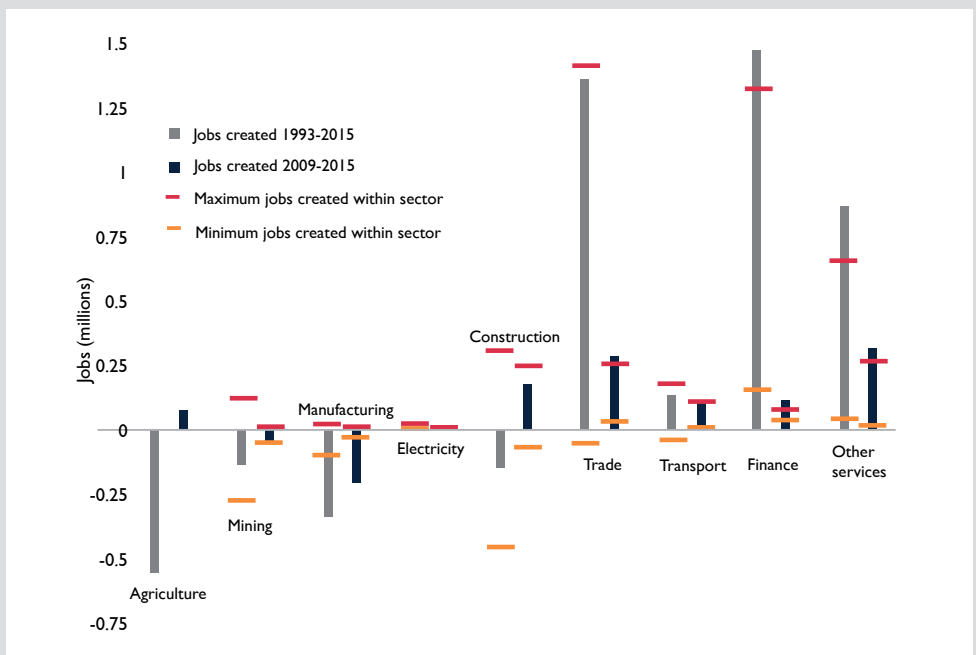
Since democracy, the agriculture, mining, and manufacturing sectors have lost jobs. This observation holds for the entire period from 1994 to 2015, and since 2008; it is also valid for subsectors, as reflected in Figure 2.2, which reports extrema of job creation/destruction per subsectors.¹² In contrast, except for construction over 1994–2008, all service sectors created jobs over the two periods, and actually created almost all jobs since 1994. Trade/accommodation, finance/business, and private social services

created altogether about 4.3 million formal and informal jobs over 1994–2015. As further discussed in this Chapter, while not entailing the same multiplier magnitudes (for employment and GDP through backward and forward linkages), the service sector cannot be seen as just “consumption” sectors benefiting from investment and productivity growth from tradable sectors. For example, while 8.6 percent of South Africa’s nonmineral output was exported in 2012, private services alone exported 3.9 percent of output. Likewise, private services represented 20 percent of nonmineral exports in 2012, and business services alone 8 percent.

Figure 2.2 Job creation by sector, 1994–2015

22

(million jobs)



Source: World Bank staff calculations based on Quantec 2016.

Over time, the South African economy has become more capital intensive

The number of private sector jobs grew on average by 0.9 percent annually between 1994 and 2015, and the private capital stock (summing up past investment minus depreciation; source: Quantec 2016) grew by 2.2 percent over the same period. Thus, the economy became more capital intensive, and the aggregate capital-labor ratio rose by 25 percent (Figure 2.3). Nonetheless, while the vast majority (35 of the 46) of sectors became more capital intensive,¹³ the increase

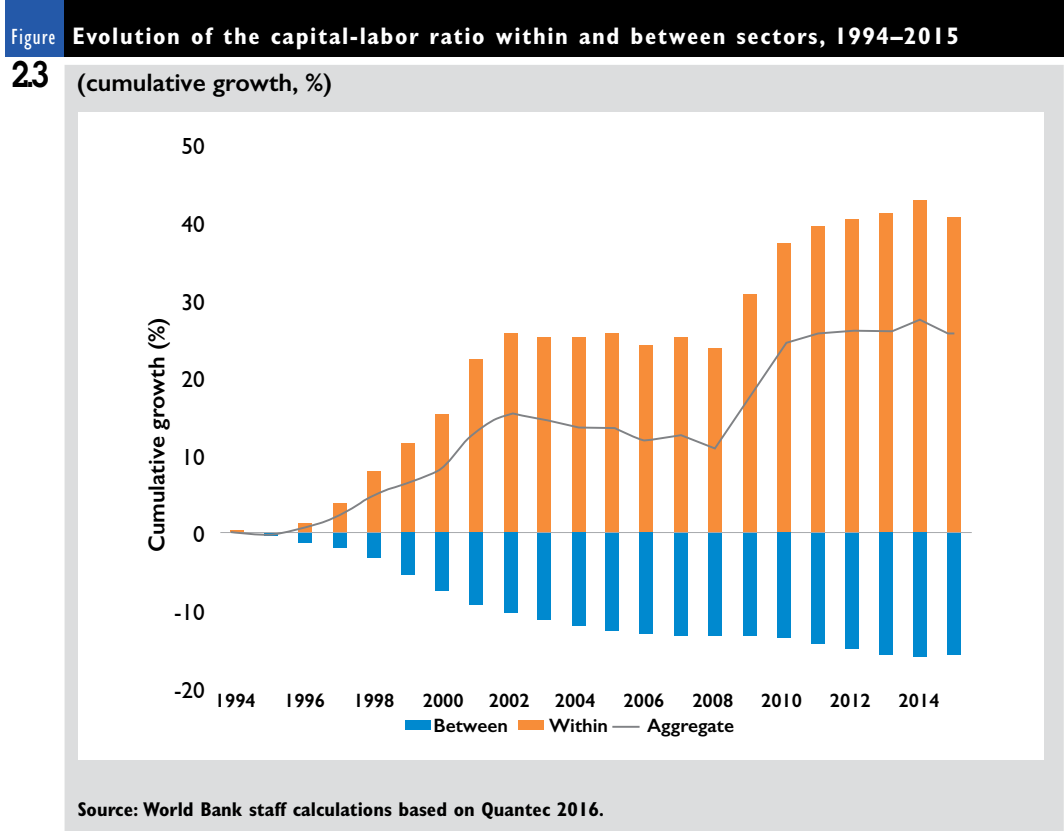
in aggregate capital intensity was partially offset through a composition effect, with faster investment in labor intensive sectors. Between 1994 and 2015, the share of other services’ capital in total capital grew from 1 to 4 percent (Figure 2.6), and this increase alone explains most of the composition effect. Other services—comprising medical services, nonmedical services, and other producer subsectors—accounted for 18 percent of private sector jobs in 2015. Other producers, estimated to be mostly constituted of informal jobs, accounted for 15 percent of private

Since democracy almost all job creation took place in services. Agriculture, mining and manufacturing shed jobs

sector jobs in 2015, and was the second least remunerative for workers of all sectors after agriculture. This pattern of overall capital deepening combined with job reallocation to services is not uncommon, as observed in most African countries since 1990 (McMillan

and Rodrik 2011). The pattern underlines the slow structural transformation of the South African economy, characterized by the increased concentration of workers in low-productivity jobs.

Production became more capital-intensive over time



The impact of investment on job creation in the various sector clusters is shown in Figure 2.4. The blue bars report the number of jobs that would have been created or lost in each cluster, given the observed investment levels, had the sector’s technology (capital-labor ratio) stayed unchanged since 1993. In contrast, the orange bars report the variation in jobs resulting from a change in technology, keeping capital stock unchanged at the 1993 level. The red dots in the Figure 2.4 indicate the number of jobs created or lost over the period, and are equal to the sum of the blue and orange bars.

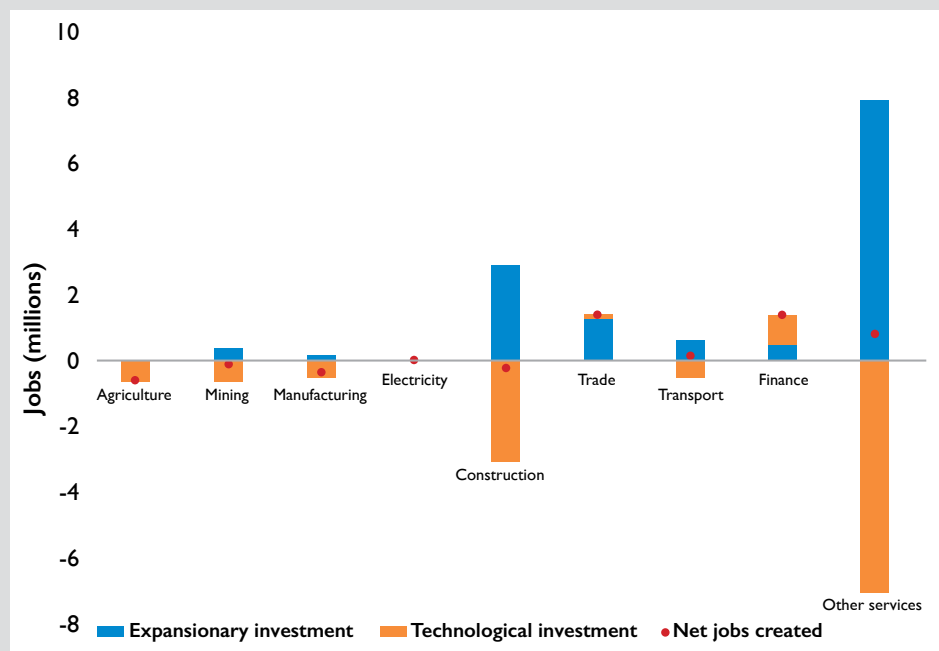
As shown in Figure 2.4, the trade, catering, and accommodation services (wholesale and retail trade in particular) and the financial

intermediation, insurance, real estate, and business services (business services in particular) clusters combined increased investment with a declining capital-labor ratio, thereby leading to massive job creation. All the other clusters recorded increased capital intensity. In the cases of other services; electricity, gas, and water; and transport, storage, and communications, the overall increase in capital stock was large enough to entail net job creation. In the cases of agriculture, fishing, and forestry; mining and quarrying; manufacturing; and construction, increased capital intensity was not matched by sufficient expansion in the overall capacity to create jobs. In these sectors, capital progressively replaced jobs.

Figure 24 Contribution of expansionary and technology investment to job creation, 1994–2015

24

(million jobs)



Source: World Bank staff calculations based on Quantec 2016.

Capital progressively replaced jobs in agriculture, mining, manufacturing and construction

Allocation of Private Capital across Sectors

The determinants of private investment allocation across sectors need to be understood to influence them through industrial policy. As further discussed in this Chapter, the South African authorities consider that private investment allocation across sectors should be influenced by a set of industrial policy instruments—tax incentives, notably—with a view to correct market failures and generate positive externalities (especially through sustainable job creation). Through their impact on profitability, tax incentives are expected to make private investment more attractive in the sectors to be favored.

The effective allocation of private capital across sectors is theoretically determined by country- and sector-specific considerations. Country-specific considerations include the macroeconomic and doing business environment, which influences overall financing costs in all sectors, expected demand for goods and services produced in the country, relative prices vis-à-vis the rest of the world, provision of public goods, and the degree of stability needed to make informed investment decisions. And because

new capital is likely to be more mobile across sectors than already installed capital,¹⁴ it would be expected that periods of high investment levels (and corresponding rapid growth in capital stocks) would coincide with more rapid capital reallocation across sectors. Thus, the macroeconomic and doing business environment may impact the speed at which capital is reallocated across sectors to match changes in relative profitability.

South Africa has recorded significant restructuring since 2008, as evidenced by the sustained reallocation of private capital across sectors

It is not clear, however, that general macroeconomic conditions have strongly influenced the pace of capital reallocation across sectors in South Africa since democracy. Figure 2.5 plots the annual growth in total capital stock against the pace of reallocation of capital across sectors in the same year.¹⁵ Three distinct periods can be observed: a first period (1994–2002) during which capital is reallocated across sectors despite slow capital accumulation; a second period (2002–08) of rapid capital accumulation contrasted with lower capital reallocation; and a third period (2009–15) during which capital reallocation

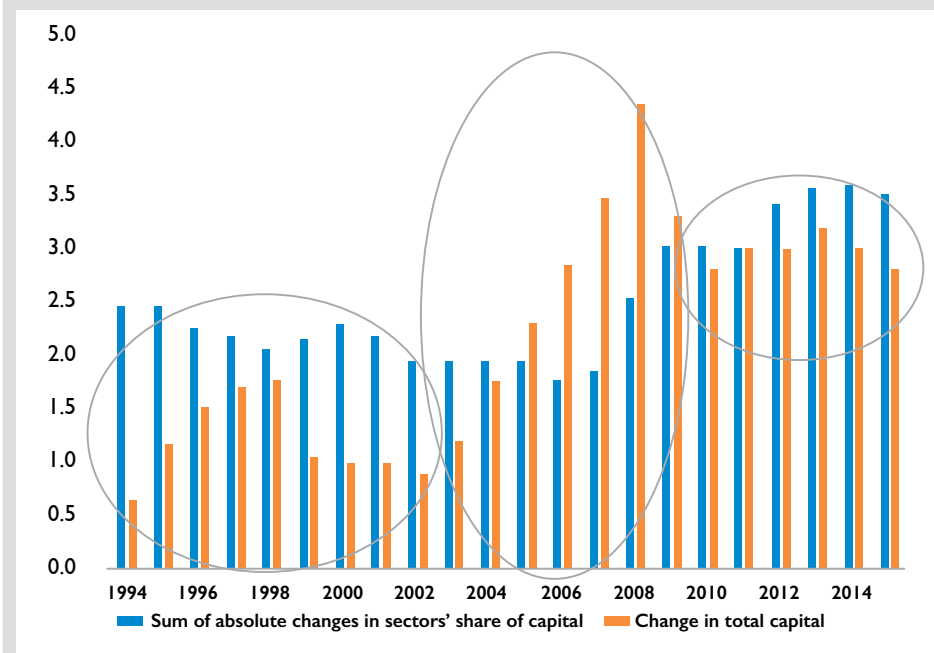
records unprecedented levels since democracy despite slower capital accumulation than before the global financial crisis. The factors that influenced capital accumulation and reallocation during the first period include dramatic changes in trade policy (tariff protection, international and regional commitments, and so forth). Influential factors during the second period include the “financialization” of the economy, which

resulted in clear shifts in capital allocation (for example, portfolio investments¹⁶ versus real economy investments), as well as by the commodity super cycle, which also led to sector shifts. Influential factors during the third period include the greater involvement of public utilities in infrastructure investment (energy and transport in particular; see Figure 2.6).¹⁷

The restructuring of the South African economy accelerated since 2008

Figure 25 Capital stock growth and reallocation across sectors, 1994–2015

25 (percent)



Source: World Bank staff calculations based on Quantec 2016.

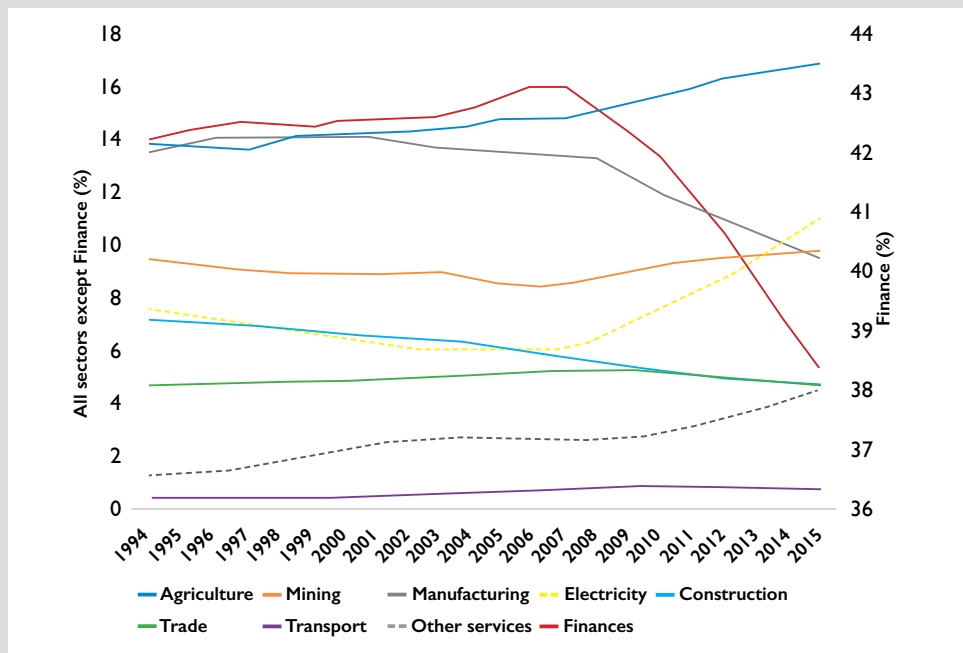
In the past decade, investments moved away from the manufacturing sector

From a sector perspective, the accelerated reallocation of capital across sectors observed since 2009 is reflected in the significant relative decline in investment in manufacturing, contrasting with a symmetric increase in investment in electricity and water. Over the longer 1994–2015 period, transport and other services saw their shares in total capital stock grow steadily, while the opposite can be observed for agriculture. Finance (including the financial sector and business

services), by far the largest destination of private investment, is more difficult to analyze from a productive capacity and employment perspective, as reflected in the very deep and diverse intermediation activities of South Africa’s financial markets. South Africa’s markets finance gross fixed capital formation in South Africa and elsewhere, as well as private and public consumption. Although the share of the financial sector has declined steadily since 1994, the share of business services grew until 2008 before dropping sharply.

Figure Sector shares in total capital stock, 1994–2015

26 (shares)



Source: World Bank staff calculations based on Quantec 2016.

Since 2008, investments in manufacturing decelerated, and accelerated in the electricity sector

Economic gains from capital reallocation have slowed since 2008; declining investment in the manufacturing sector largely contributed to this poor outcome

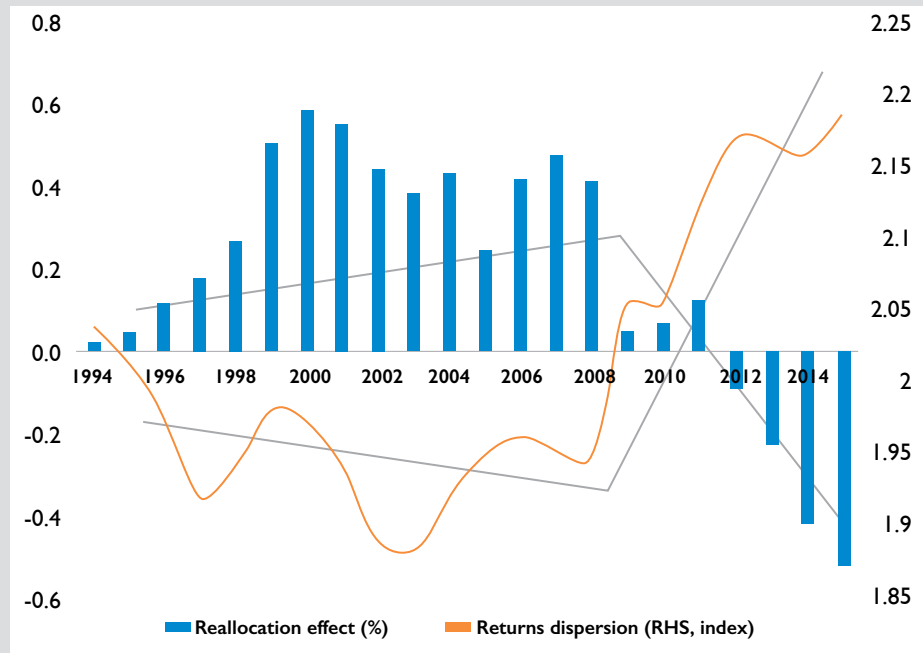
The impact of tax incentives depends to a large extent on the ability of financial markets to move capital to the sectors where it is most profitable. Such allocative efficiency can be quantified in different ways. First, under the assumption of diminishing returns to capital accumulation, the allocative efficiency of financial markets can be measured by the dispersion in sector rates of return. A significant difference in the rates of return should prompt capital to be reallocated toward the most profitable sectors until the marginal rates of return are equalized across sectors. Figure 2.7 plots the dispersion of average sector rates of return over 1994–2015.¹⁸ Although dispersion decreased overall until 2008, reflecting improvements in capital allocation, after 2008, it strongly deteriorated.

The evolution in the allocative efficiency of the capital market since 1994 is confirmed by a second metric, which measures the contribution of capital reallocation to aggregate capital productivity growth. Following Syrquin (1986), aggregate capital productivity growth¹⁹

can be decomposed between (i) the sum of sectoral capital productivity growth and (ii) the reallocation of capital toward the sectors that exhibit the highest capital productivity growth. This computation suggests that capital reallocation gains were significant in 1994–2008, generating on average 0.2 percentage point of annual GDP growth.²⁰ However, such gains decelerated starting in 2008, and turned negative in 2012, suggesting reversed reallocation of capital toward sectors with lower productivity growth. Indeed, sectors such as mining, electricity, transport, finance, and other services saw their share in total capital grow, while experiencing at the same time a decline in capital productivity. Agriculture, manufacturing, construction, and trade experienced inverse trends. Declining investment in the manufacturing sector largely contributed to these overall losses due to reallocation.

Figure 27 Economic gains of capital reallocation across sectors, 1994–2015

27 (% and index)



Source: World Bank staff calculations based on Quantec 2016.

38

Since 2008, the economy recorded losses in capital allocation and increased dispersion in profit rates

Firm-level data analysis over 2006–12 suggests that investment response to changes in profitability differs widely across sectors

With a view to measure the impact of tax incentives on investment, World Bank (2016f) econometrically estimates the response of investment to changes in the return to capital at the firm level. The analysis relies on tax-related and accounting data (source: South African Revenue Service (SARS)) for all corporations that filed tax returns for 2006–12, for a total of more than one million observations from more than 250,000 firms (among which 63,000 firms have observations for all seven years). The specification that was empirically tested assumes that firms are cost minimizers and output price takers, and therefore that demand for factors (including capital) and output are simultaneously determined through the equalization of factors’ marginal returns with costs. The specification also assumes that firms progressively reach their optimal demand for factors, through an error correction model. Finally, firm-specific and time-specific fixed effects are introduced to control for differences in productivity levels and time shocks affecting all firms at

the same time (such as macroeconomic and sectoral shocks). Thus, over the long run, capital demand k from firm i in period t (as measured by the value of the firm’s assets)²¹ would depend negatively on the relative cost of capital with respect to the output price (the user cost of capital, ucc), positively on output (measured by sales, s), and time and firm specific effects, as expressed in the equation below. The detailed computation of the user cost of capital, which combines the price of investment goods (including financial costs) and taxes (including tax incentives), is further discussed in the next section.

$$k_{it} = \alpha - \sigma ucc_{it} + \mu s_{it} + \alpha_t + \alpha_i + \epsilon_{it}$$

Regressions are run for different subsets of the entire data set: large and small business corporations, together and by sector of activity, and for the period 2006–12. Table 2.1 reports the estimated long-term responses of demand for capital to changes in the user cost of capital (UCC), expressed as elasticities. For instance, a 10 percent increase in the user UCC for large business corporations is associated with a 2.8 percent decline in the demand for capital.

	Large business corporations		Small business corporations
Total	-0.28 **	Total	-0.43 **
Agriculture	-0.30 **	Agriculture	-0.30 **
Mining	-0.36	Mining	-0.15
Manufacturing	-0.30 **	Manufacturing	-0.21
Electricity	-0.09	Electricity	-0.43
Construction	-0.49 **	Electricity	-0.64 **
Trade	-0.36 **	Trade	-0.16
Transport	0.13	Transport	-0.24
Finance ^a	-0.36	Finance ^a	-0.63 **
Other services	-0.28 **	Other services	-0.48 **

Source: World Bank 2016f.

** indicates statistical significance at the 95% confidence level.

a. Includes only real estate and business services, excluding financial and insurance services.

Investment response
to change in
profitability differs
across sectors

The results suggest that, overall, large and small business corporations' demand for capital responds positively to profitability (or equivalently, negatively to increased UCC). Nonetheless, this overall response conceals large differences across sectors. Among large business corporations, the responses of mining, utilities, transport, and real estate cannot be considered statistically different from zero. Among small business corporations, the responses of the mining, manufacturing, utilities, trade, and transport sectors to changes in the cost of capital cannot be considered statistically significant. This does not necessarily mean that corporations in these sectors do not respond to profit considerations, but rather that there exist too large differences between corporations within said sectors to consider that a common pattern can be established.

Several explanations can be tentatively advanced to explain such differences across sectors. Among large business corporations, the presence of dominant noncompetitive positions (the result of regulatory barriers to entry and/or economies of scale)²² could lead to firms that have market power to influence output prices, and therefore the firms are not

responsive to the average sector output price. Market segmentation (for instance, spatial segmentation) for small firms operating in small markets could also be a candidate for explaining such differences. Structural differences in technology among firms in the same sector could also explain the large variance in the estimated responses, as these de facto measure the technological substitution elasticities between the various factors of production. Firms adopting rigid technological choices through long-term investment decisions (say, firms in mining, transport, and utilities) may not be reactive to short-term variations in the cost of capital. Finally, the long time needed by large infrastructure projects to start generating returns may also explain this negative trend. The energy sector is a case in point: investments regularly cumulated since 2008 (Figure 2.6) only resulted in a significant increase in power generation capacity since 2015.²³

These differences may in turn contribute to explaining short-term variations in capital allocative efficiency,²⁴ as well as the impact of tax incentives on investment, as discussed in the next section.

Costs and Potential Benefits of Investment Tax Incentives

Since 2007, South Africa has accelerated policy efforts to promote industrial development through various policy instruments

In the past decade, South Africa's policy efforts to promote industrial development accelerated, mirroring the resurgence of industrial policies observed in many middle-income countries, and driven in part by the successful experience of East Asia's manufacturing-driven structural transformation.²⁵ The National Industrial Policy Framework (NIPF), which was adopted in 2007, identifies microeconomic constraints to growth and employment, and provides the overarching coordinating framework for the development of 13 strategic programs in the following domains (PBO 2016): sector strategies, industrial financing, trade policy, skills, competition, public procurement, upgrading, innovation, infrastructure, small enterprises, and empowerment. The framework has since been implemented through a series of annual Industrial Policy Action Plans.

The objectives of the NIPF comprise the diversification of the economy away from excessive reliance on traditional commodities and non-tradable services, industrialization and movement toward a knowledge economy, higher employment creation through labor-intensive industrial development, greater economic participation of historically disadvantaged people and marginalized regions, and regional integration and industrial development of the African continent. Policy-induced reallocation of factors (private investment in particular) is justified on the grounds of market and coordination failures to allocate

resources in support of these objectives, and the existence of positive externalities for the society from higher employment and balanced spatial development, which markets cannot, by definition, internalize in their decision making. Building on past failures, the NPIF acknowledges the need to eschew picking winners to promote horizontal policies that build on potential comparative advantages.²⁶

From a practical perspective, several industrial policy tools have been deployed in South Africa in support of these objectives and principles, at the national and local levels. (Box 2.2 provides a discussion of the spatial dimension of South Africa's new industrial policy.) Such tools have taken the form of tax incentives to various economic sectors, public procurement differentiation, provision of infrastructure in support of specific sectors, lending to and equity participation in strategic sectors (through the Industrial Development Corporation (IDC)), competition policy (to reduce induced markups and input costs for strategic sectors), and softer "persuasive initiatives to secure greater private sector support for local manufacturing" (DTI 2016). Although it is difficult to assess comprehensively (given the multiplicity of interventions and the absence of a counterfactual), PBO (2016) reports that ZAR 476.5 billion (at 2015 constant prices) was cumulatively devoted to national industrial development programs and initiatives between 1994 and 2014 (excluding IDC financing²⁷ and the impacts of procurement and competition policies). From this total, 71 percent took the form of tax incentives ("tax expenditures"), and the remainder was devoted to the provision of public services in support of industrial sectors, spatial development, export promotion, small business, transformation, and skills and development.

40

Since 2007, policy efforts accelerated to promote industrial development, through the deployment of tax incentives in particular

Box
2.2

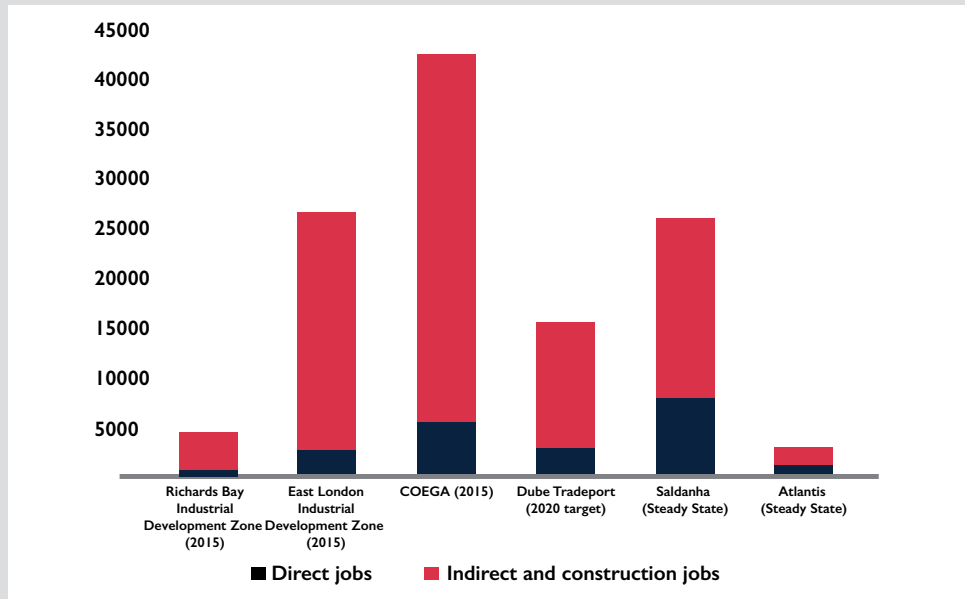
Promises and challenges of spatialized industrial policies

South Africa's industrial policies have a strong spatial dimension. First, they retain the objectives of balanced spatial development, and the greater participation of marginalized regions, especially in the mainstream of the industrial economy. Second, the provinces and cities have a direct mandate and responsibility in the implementation of various aspects of such policies, most notably the special economic zones (SEZs).

The SEZ Act was gazetted in 2014. Under the framework of the act, the South African authorities envisage the development of 15 SEZs across the country, supported by various tax incentives (reduced corporate rates, capital allowances, and employment subsidies) and direct infrastructure financing from the central government (through the dedicated SEZ fund). (As of November 2016, seven locations had been designated.) International evidence suggests that SEZs can be responsible

for substantial job creation if they can generate employment spillovers (indirect job creation outside the SEZ) through backward supply chain linkages that arise from the newly established investments. In line with international evidence, projections for South Africa's SEZs suggest that indirect jobs vastly outnumber the direct jobs created in the zones, see Box 2.2 figure 1. Indirect jobs include construction jobs, but over the medium term, supply chain linkages will be the critical channel if SEZs are to deliver on their promise as large-scale job creators.

Box 2.2 figure 1: Jobs created by special economic zones (number of jobs)



Sources: World Bank staff calculations from DTI SEZ Bulletin July 2015; various IDZ/SEZ reports.
Note: IDZ = industrial development zone; SEZ = special economic zone.

Making this happen thus requires strong policy coordination provision between the government, provinces, and cities, with a view to maximize the integration potential of SEZs in local economies. Nowadays, this level of coordination constitutes a challenge in South Africa, in the absence of clear guidelines and overlapping responsibilities in the provision of complementary infrastructure and services to the SEZs, licensing and regulation of investment in the SEZs, and sharing of financial risks across public partners related to SEZ management.^a Neither the SEZ Act nor its regulations make any reference to cities, urban areas, or metropolitan areas, and as such there exist no provisions that support or preclude a formal relationship between the SEZs and the municipalities where they are located. Thus, the lack of clear guidelines is reflected in the different fortunes of coordination observed in different zones. For example, development of the SEZ at Dube Tradeport was initially hampered by the project's location being beyond the "edge" defined in the eThekweni municipality's spatial development plan. More recently, examples of successful planning collaboration in Cape Town and Ekurhuleni highlight the importance of coordinating efforts to facilitate access to land (in alignment with province and city spatial development plans), streamlining regulatory approval processes, improving transport access for workers, and supporting training and skills development. Coordination also needs to address explicitly the burden sharing of the financial risks and contingent liabilities that may eventually arise and fall disproportionately on local governments in the long run. These risks and responsibilities stem from local government responsibility, which often assigns license holders to manage the SEZs (which may become financially unsustainable for various reasons), and from the capital investments linked to SEZs that municipalities will need to sustain in the medium term after initial funding from the national government has disappeared.²⁸

Locating SEZs with a view to foster balanced development could also undermine the possibility to meet other industrial development objectives, such as job creation in particular. Indeed, locating SEZs in metropolitan areas, where most growth and job creation will likely continue to occur, provides the best chance of unlocking the agglomeration forces that will make SEZs economically successful and better integrated in local economies. These agglomeration forces may arise in three broad areas. First, a larger market allows for a more efficient sharing of indivisible facilities (such as infrastructure), risks, and the gains from variety and specialization. For instance, a larger cluster of firms will make it easier to construct a dedicated facility or, for specialized input providers, to pay a fixed cost and enter the (larger) local market. Second, a larger market allows for better matching between employers and employees, buyers and suppliers, partners in joint projects, or entrepreneurs and financiers. Third, a larger market can facilitate learning about new technologies, market evolutions, or

The ability of Special Economic Zones to create job depends on their integration in the local economic fabric

new forms of organization. Direct interactions between economic agents in a cluster can therefore facilitate the creation, diffusion, and accumulation of knowledge.

Hence, although there are indisputable gains to be had from more equitable geographical distribution of economic activity, there is also clear evidence that increasing urbanization has strong, positive externalities through deeper and more extensive forward and backward linkages. In this context, the approach to spatial industrial policy in general, and to SEZs in particular, may benefit from being more attentive to exploiting the potential of urban agglomerations to deliver the large-scale job creation that is urgently needed in South Africa. This may be all the more critical in a constrained fiscal environment (see Chapter 1), where the spread of public investment may seriously dilute its impact.

- a. Likewise, South Africa's three-tier system of investment promotion—national, regional, and city—is cumbersome, uncoordinated, and potentially confusing for incoming investors, who are often unclear about entry points and which agencies to contact for what services and information. World Bank (2015a) also underlines the significant variation in local implementation of national regulations.
- b. The SEZ fund is designed to finance basic infrastructure development costs for 3 to 5 years.

It is difficult to ascertain whether investments would not have been made without the incentive

Assessing the impact of industrial policies remains challenging, given attribution issues and the multiplicity of instruments and objectives

Assessing the impacts of these various initiatives on their stated objectives nonetheless remains a daunting methodological challenge. This is because, first, multiple objectives are simultaneously sought, and second, the beneficiaries can benefit at the same time from various initiatives, whose performance can also be influenced by various other factors. Attributing the causality of an outcome to a specific initiative is thus complicated. And last but not least, assessment is challenging because the counterfactual situation of not providing support cannot be observed: as stressed by PBO (2016), it is critical, but inherently challenging, to ensure that the support results in an increase in investment, exports, research, or employment (depending on the objective) and is not redundant. That is, support should not be provided under circumstances wherein the firm would have undertaken investment, exports, research, or employment regardless of whether support was provided. Indeed, redundancy risks have been found to be widespread in many developing countries. In 14 surveys conducted in 14 countries, redundancy rates exceeded 70 percent in 10 of them (James 2014).²⁸

To clarify some of these methodological issues, the Davis Tax Committee invited the World Bank to conduct research on the effectiveness and efficiency of ITIs granted to South African firms. The exercise led to the production of two reports (World Bank 2015b; 2016f). The first report measures the extent and dispersion of investment taxes across

sectors; the second estimates the impact of investment taxes (as one component of firms' user UCC) on firms' investment behaviors and, from there, deducts the impact of tax incentives on additional investment and employment and related fiscal costs. Thus, the approach followed cannot be strictly considered as one comprehensively assessing industrial policy, first because it does not consider all industrial policy instrument tools (such as nontax instruments), and second because it considers some tax instruments that may not necessarily be justified on industrial policy grounds (such as tax provisions specific to the mining sector).

Tax provisions introduce large differences in post-tax returns to investments across sectors, and may have contributed to the capital allocation losses observed since 2008

To measure the impact of tax incentives on investment, World Bank (2015b) uses the concept and metric of marginal effective tax rates (METRs). In a nutshell, METRs measure the difference in investment rates of return before and after taxes are paid by the firms. The larger the METR, the lower the economic incentive to invest in a given sector. METR computations consider several tax instruments, some of which are applied to the use of various investment assets,²⁹ and some of which are sector specific. Table 2.2 reports the principal tax parameters used in the METR computations in 2014. Noteworthy is the fact that de jure (rather than de facto) tax parameters are considered in the METR computations, ignoring the reality and impact of tax administration efficiency, tax evasion, and the informal economy.

Tax parameters used in marginal effective tax rate computations

Type of tax	Rates	Remarks
Income taxes		
Corporate income tax	28%	
Corporate income tax for gold	$34 - (170/x) \%$	$x\%$ = taxable income from gold mining/total revenue (turnover) from gold mining.
Personal income tax	Taxed at progressive rates from 18% to 40% in 2014	Income was eligible for a primary rebate of ZAR 12,080 on the tax calculated in 2014.
Treatment of interest income	Taxed at the rates for PIT	Eligible for an interest exemption of ZAR 23,800.
Treatment of dividend income	15%	Withheld on distribution.
Treatment of capital gains	Only 33.3% of the capital gains is included in the taxable income and calculated at the marginal PIT tax rate	
Indirect taxes		
Value-added tax	14%	
Property tax (immovable property)	Various rates	0.15% for farming to 1.7% for commercial and business property.
Customs duty	Various rates	Sectors such as manufacturing receive rebates on customs duty.
Other taxes		
Mining royalty (unrefined ores)	$0.5 + \{EBIT / (\text{gross sales} \times 9)\} \times 100$	
Mining royalty (refined ores)	$0.5 + \{EBIT / (\text{gross sales} \times 12.5)\} \times 100$	
Electricity levy	35 cents/kwh	For generation of electricity from polluting sources. Taken as 1% of the turnover.
Sector-specific tax allowances		
Manufacturing	Depreciation of plant and machinery of 40%, 20%, 20%, 20%	Additional depreciation benefits for investments in preferred sectors and IDZs.
	Additional investment allowance of 100%, 75%, 55%, or 35%, depending on whether the investment is in the IDZ or a preferred sector	This allowance is over and above those who qualify for the accelerated 40%, 20%, 20%, 20% depreciation schedule.
Agriculture	Depreciation of plant and machinery of 50%, 30%, 20%	
Mining	100% depreciation of plant and machinery	
	Employee housing allowed to be depreciated at 10% straight line as compared with 5% straight line for other sectors	
Small business corporations	100% depreciation of plant and machinery used in manufacturing	
	Depreciation of plant and machinery of 50%, 30%, 20% for nonmanufacturing activities	

Source: World Bank 2015b.

Note: EBIT = earnings before interest and taxes; IDZ = industrial development zone; PIT = personal income tax.

METRs show significant variation across sectors and asset types (Table 2.3). This variation reflects the differences in tax rates across some sectors as well, and the accelerated depreciation allowances. The accelerated depreciation allowances generate a “tax advantage” that depends on how the tax rate of depreciation compares with the actual rate of economic depreciation for different asset classes (for example, the depreciation of buildings is far slower than that for heavy machinery), as well as the actual asset mix of a

given sector. Thus, even when the depreciation allowances for separate asset classes are the same in different sectors, the fact that sectors use different mixes of assets causes the METRs to vary. Lastly, the METR for inventory is the result of the first in, first out accounting for inventory in South Africa, whereby the assets that are bought first are treated as sold first. This means that any changes in the value of inventory due to inflation results in higher taxation and higher METRs.

METRs measure the difference in the investment rate of return before and after taxes are paid

Table 23 Marginal effective tax rate, by sector and class of investment assets (percent)

METR for investment in asset	Manufacturing	Mining	Agriculture	Construction	Tourism	Services*	Transport	Electricity
Land	11.4	15.1	11.4	11.4	11.4	11.4	11.4	12.3
Residential buildings	5.8	-3.3	3.5	3.5	3.5	3.5	3.5	7.0
Non-residential buildings	23.8	28.1	12.3	9.5	3.5	3.5	3.5	7.0
Construction works, roads, and parking areas	18.8	20.9	49.9	47.2	18.8	18.8	18.8	22.4
Land improvements	11.4	-17.6	-24.6	-24.6	-24.6	11.4	11.4	12.3
Network equipment	13.6	31.8	25.6	25.6	25.6	25.6	21.0	33.2
Computers and other IT equipment	8.6	23.7	37.6	18.2	37.6	37.6	37.6	45.7
Motor vehicles and other transport equipment	9.2	24.6	29.1	11.0	19.4	19.4	10.2	29.7
Plant, machinery, and other office equipment	-3.1	-30.5	6.3	3.7	2.2	10.1	8.3	-7.9
Capital work in progress	-5.9	-30.3	35.8	29.3	34.1	34.9	30.9	37.4
Other property, plant, and equipment	-5.9	-17.0	35.8	29.3	34.1	34.9	30.9	37.4
Computer software	11.9	29.7	11.9	11.9	11.9	11.9	11.9	25.2
Inventory	35.5	30.8	35.5	35.5	35.5	35.5	35.5	36.4
Overall METR	19.6	-1.2	17.0	19.5	6.1	14.0	18.8	23.0

Source: World Bank 2015b.

Note: IT = information technology; METR = marginal effective tax rate.

* Includes only real estate and business services, excluding financial and insurance services.

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The mining and tourism sectors enjoy very large tax advantages compared with other sectors

Although all sectors enjoy an METR below the corporate income tax (CIT) rate of 28 percent, manufacturing stands out as the second most taxed sector after electricity.³⁰ This ranking is primarily driven by the high weight of inventory (40 percent) in the asset structure of the manufacturing sector, as well as the comparatively high rate of inflation in South Africa (5.9 percent when computed in September 2014; 6.1 percent in September 2016).³¹ In the manufacturing sector, small and medium enterprises enjoy a negative METR of -4.7 percent, benefiting from a 100 percent capital allowance (as does the mining sector).

By contrast, the tourism and mining sectors exhibit the lowest METRs, reflecting for tourism the negligible weight of inventory and the high weight of buildings in its asset structure. As for mining, and notwithstanding important variations between minerals,³² the low METR is mainly driven by the provision that mining companies can immediately and fully write off their capital investment in the year it is incurred. The CIT formula for gold also contributes to the low METR.³³

Thus, to generate a post-tax rate of return of 10 percent on investment, a pre-tax rate of return of 8.8 percent is needed in mining, against a pre-tax rate of return of 29.6 percent

in the manufacturing sector. These differences are further exacerbated when the actual debt-to-assets ratios are used to compute the METR (World Bank 2015b).

Therefore, although strictly speaking it is difficult to attribute the recent capital allocation losses (Figure 2.7) to these tax provisions, given the absence of a common investment response to profitability indicator across mining companies (Table 2.1), such tax provisions are nonetheless very plausible candidates. At the extreme, the negative METR in the mining sector means that companies are encouraged to invest in projects that provide hardly any economic returns, just to lower their tax burden.

Nevertheless, capital allowances have generated additional investment and jobs in a few selected sectors

All in all, the wide variation in METRs across sectors stems principally from differences in capital depreciation allowances. Considering such differences by asset type and sector, World

Bank (2016f) computes firms' UCC for 2006–12 using SARS data.³⁴ The UCC combines, for each asset, the price of the asset, price of the output of the sector, cost of financial capital, capital allowance rate, present value of capital allowances, and corporate tax rate. Thus, estimating the impact of a change in the UCC of firms' investment decision, as described in the previous section, allows assessing the impact (or benefit) and cost of tax incentives. By controlling for the factors that explain permanent differences across firms and over the years, such analysis allows addressing the risk of erroneously attributing investment outcomes to policy interventions.

Table 2.4 shows the average changes in percent in the UCCs for the sectors as a result of the various tax incentives compared with regular tax treatment. There are about 290,000 firms and 86 percent of them are small business corporations (SBCs). For the purpose of the analysis, the SBCs are grouped together and the results for large businesses are shown by sector.

Using firm level data allows for a granular assessment of the impact of tax incentives

Table 24 Changes in the user cost of capital as a result of investment tax incentives, by sector (percent)

Sector	2006	2007	2008	2009	2010	2011	2012
Large businesses							
Agriculture	-4.7	-5.0	-4.8	-4.6	-4.4	-4.3	-4.2
Construction	-3.9	-4.0	-4.0	-3.8	-3.6	-3.5	-3.5
Manufacturing	-4.5	-4.9	-4.9	-4.5	-4.2	-4.0	-4.0
Mining	-5.7	-6.5	-6.4	-5.4	-4.1	-4.4	-3.9
Finance	-3.3	-3.3	-3.4	-3.2	-3.2	-3.2	-3.2
Services	-3.6	-4.0	-3.8	-3.6	-3.4	-3.3	-3.3
Trade	-3.6	-3.8	-3.7	-3.5	-3.3	-3.2	-3.1
Transport	-3.7	-3.8	-4.0	-3.7	-3.3	-3.2	-3.1
Electricity	-3.5	-3.6	-3.5	-3.5	-3.2	-3.2	-3.2
Small business corporations	-1.0	-1.3	-1.4	-1.3	-1.2	-1.1	-0.9

Source: World Bank 2016f.

The biggest percentage reduction in the UCC for 2006–12 is in the mining sector, with an average reduction in the UCC of -5.2 percent, followed by agriculture (reduction of 4.6 percent) and manufacturing (reduction of 4.4 percent). The reduction in the UCC

is modest for the SBCs. This is because the impact of the tax incentives on SBCs has two counteracting effects. Although the higher depreciation allowances are beneficial to the firm, the tax impact of the depreciation allowances is higher when the tax rate is

higher, because the resulting deduction is higher. However, SBCs benefit from a lower tax rate and hence the net effect on the firm is ambiguous.

The estimated elasticities of the investment to the UCC (Table 2.1) and changes in the UCC (Table 2.4) allow measuring the impact of capital allowances on additional investment and job creation (Table 2.5). It is assumed that, in a partial equilibrium setting,³⁵ the

reduced cost of capital from capital allowances would allow firms to expand their production to satisfy an unchanged demand in value for their goods and services. Large business corporations are distinguished by sector, and SBCs are aggregated together, given their relatively smaller size. Sectors with estimated elasticities not significantly different from zero are assumed not to respond to capital allowances.

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Although tax incentives significantly reduce the cost of investing in mining, there is little evidence that they systematically encourage investment

Table 25 Additional capital and labor demand due to investment tax incentives, by sector (percent)

Sector	2006	2007	2008	2009	2010	2011	2012
	Additional capital demand						
Agriculture	4.1	4.4	4.2	4.0	3.8	3.7	3.6
Mining							
Manufacturing	2.5	2.7	2.7	2.5	2.3	2.2	2.2
Electricity							
Construction	3.1	3.2	3.2	3.0	2.9	2.8	2.8
Trade	2.8	3.0	2.9	2.7	2.6	2.5	2.4
Transport							
Finance							
Services	1.5	1.7	1.6	1.5	1.4	1.4	1.4
Small business corporations	0.7	0.9	1.0	0.9	0.9	0.8	0.4
	Additional labor demand						
Agriculture	2.0	2.1	2.0	1.9	1.8	1.8	1.7
Mining							
Manufacturing	1.1	1.2	1.2	1.1	1.0	0.9	0.9
Electricity							
Construction	1.1	1.2	1.2	1.1	1.0	1.0	1.0
Trade	1.5	1.5	1.5	1.4	1.3	1.3	1.2
Transport							
Finance							
Services	0.5	0.6	0.5	0.5	0.5	0.5	0.5
Small business corporations	0.3	0.4	0.4	0.4	0.3	0.3	0.2

Source: World Bank staff calculations.

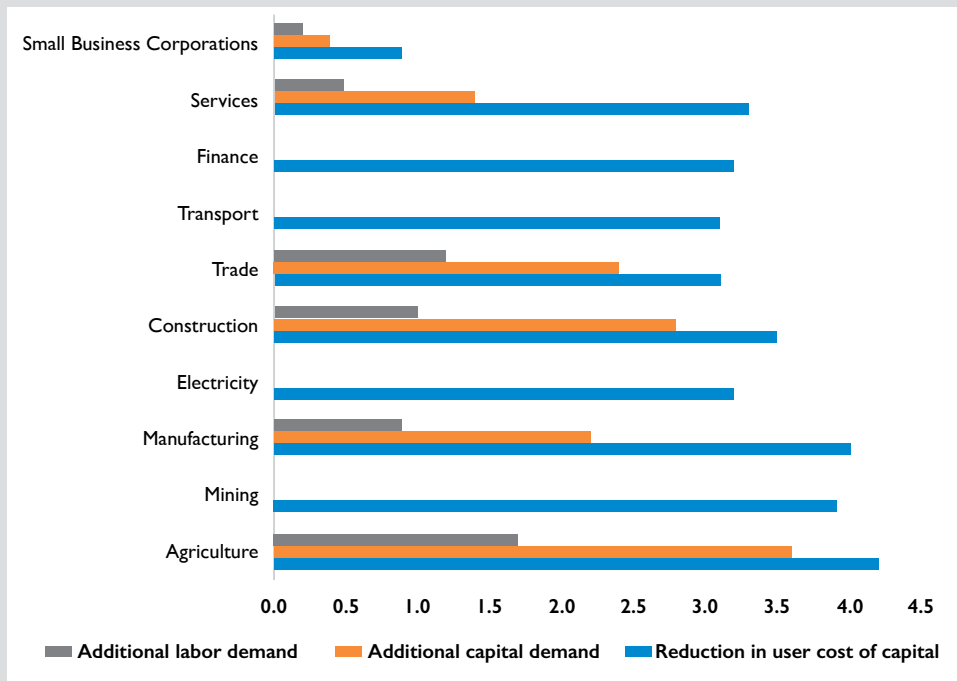
The results suggest that capital allowances increased capital stocks up to 4.4 percent in agriculture, against a maximum of 1.0 percent for SBCs, the latter enjoying smaller changes in UCC, and 0 percent for sectors in which capital demand does not significantly respond to changes in user costs. Sectors with initially higher capital-output ratios tend to benefit more from reduced UCCs, given the larger impact on their overall cost structure. All in all, tax incentives are estimated to have generated an increase in investment of ZAR 4.5 billion

in 2012, up from ZAR 2.8 billion in 2006. This increase compares with estimated foregone revenue of ZAR 3.9 billion in 2012,³⁶ up from ZAR 3.0 billion in 2006.³⁷ Thus, foregone revenue was more than offset by additional investment, and one can consider that capital allowances create some additionality, even if, to reduce their overall fiscal cost, the capital allowances could be better targeted to responsive sectors.

The impact on additional demand for jobs stems from two opposite factors: a reduction

Figure 2.8 Impact of investment tax incentives on investment and job creation, 2012

28 (percent)



Source: World Bank staff calculations.

Tax incentives encouraged significant investment in agriculture, construction, trade, manufacturing and services, also resulting in higher labor demand in these sectors

in labor demand due to increased capital intensity (as the price of capital declines in relation to the price of labor assumed unchanged), and an increase in labor demand due to increased production. The impact is particularly pronounced in the agriculture and trade sectors (ranging between 1.7 and 2.0 percent and 1.2 and 1.5 percent, respectively, against only 0.2 to 0.4 percent in SBCs in 2012), see Figure 2.8. All in all, tax incentives are estimated to have directly created 20,883 additional jobs.

Thus, this counterfactual analysis suggests that absent ITIs, the contraction of economic activity and job destruction in the manufacturing sector would have been larger. Explanations for industrial contraction since democracy and more recently shall be found elsewhere, possibly among insufficient skills and infrastructure, policy uncertainty, a volatile rand, and complicated labor relations. As discussed in Box 2.3, the commodity super cycle may also have diverted private investment from manufacturing toward the mining sector, and the end of the super cycle could generate an inverse reallocation.

Better targeting of capital allowances across sectors would allow generating the same amount of additional investment at a much lower fiscal cost

From this calculation, it could be inferred that the fiscal cost of creating an additional job through the capital allowance was on average in 2012 close to ZAR 188,377 per year (ZAR 3.934 billion divided by 20,883). Comparing this estimate with the average gross labor remuneration per worker in 2012 of ZAR 107,509 unfavorably suggests that directly creating one job through capital allowances would exceed the cost of fully subsidizing the cost of remunerating a worker. Nonetheless, this seemingly excessive cost stems to a large extent from the fact that allowances granted to some sectors do not generate any additional investment or jobs. Indeed, only retaining allowances granted to sectors creating additional jobs would bring the average cost to ZAR 89,026, as more than half of the allowances go to other sectors (Table 2.6).

Reorienting tax incentives to responsive sectors such as agriculture, manufacturing, construction, trade and other services would increase their effectiveness and cost-efficiency

Table 26 Impact and cost of investment tax incentives on the creation of jobs, 2012 (jobs and rands)

Sector	Direct job creation (jobs)	Foregone revenue (ZAR millions)	Cost of direct job creation (ZAR)	Average remuneration (ZAR)	Cost of direct and indirect job creation (ZAR)
Agriculture	2,041	124	60,497	26,427	41,658
Mining	-	279	-	192,999	-
Manufacturing	5,192	376	72,388	165,616	15,079
Electricity	-	617	-	432,400	-
Construction	1,961	69	35,194	58,998	18,284
Trade	2,012	78	38,924	53,306	29,501
Transport	-	1,038	-	126,759	-
Finance	-	141	-	116,815	-
Services	5,566	157	28,153	133,850	18,443
Small business corporations	4,111	1,056	256,802	107,509 ^a	-
Total	20,883	3,934	188,377	107,509	-

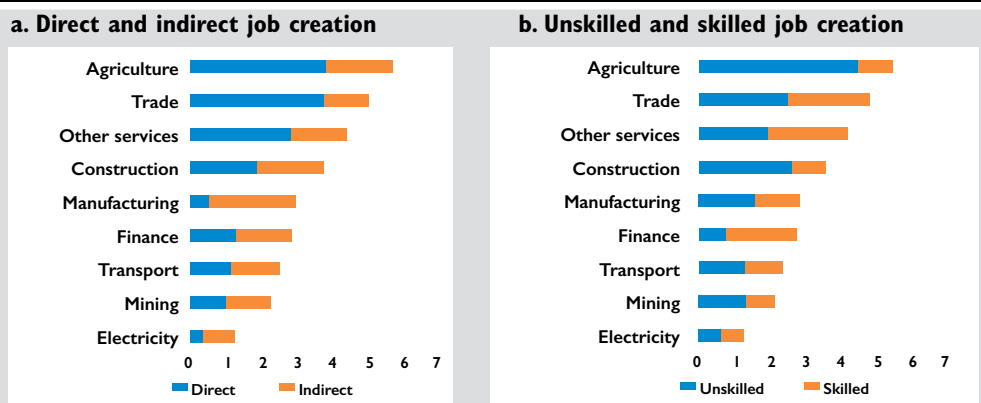
Source: World Bank staff calculations.
 a. Average national labor remuneration in the absence of sufficient information on small business corporations.

Indirect job creation strongly reduces the unit fiscal cost of creating a job through capital allowances

Furthermore, these cost estimates do not account for indirect job creation through multiplier effects. Following Tregenna (2016), we compute import-adjusted employment multipliers,³⁸ using the social accounting matrix for 2012 computed by Chitiga-Mabugu (2016), at the sector disaggregation level used in World Bank (2016f). Although the estimates of the fiscal cost to create a job cannot be strictly compared with employment multipliers (as the former only consider large businesses), it is nonetheless reassuring to see that the five sectors for which a significant effect of tax incentives can be observed are also those with the largest employment multipliers:

agriculture, trade, services, construction, and manufacturing. Among these sectors, manufacturing has by far the largest indirect job creation component. For every job that is directly created in manufacturing, another 3.8 jobs are indirectly created, bringing down the fiscal cost of creating a job by 4.8, from ZAR 72,388 to ZAR 15,079. Accounting for indirect job creation also brings the fiscal cost of creating an additional job down to ZAR 18,284 for construction, ZAR 18,443 for services, ZAR 29,501 for trade, and ZAR 41,658 for agriculture. Among these five sectors, support to services would create the largest proportion (53 percent) of skilled workers, followed by trade (46 percent), manufacturing (41 percent), construction (25 percent), and agriculture (18 percent), see Figure 2.9.

Figure 29 Employment multipliers, 2012



Source: World Bank staff calculations based on Chitiga-Mabugu 2016.

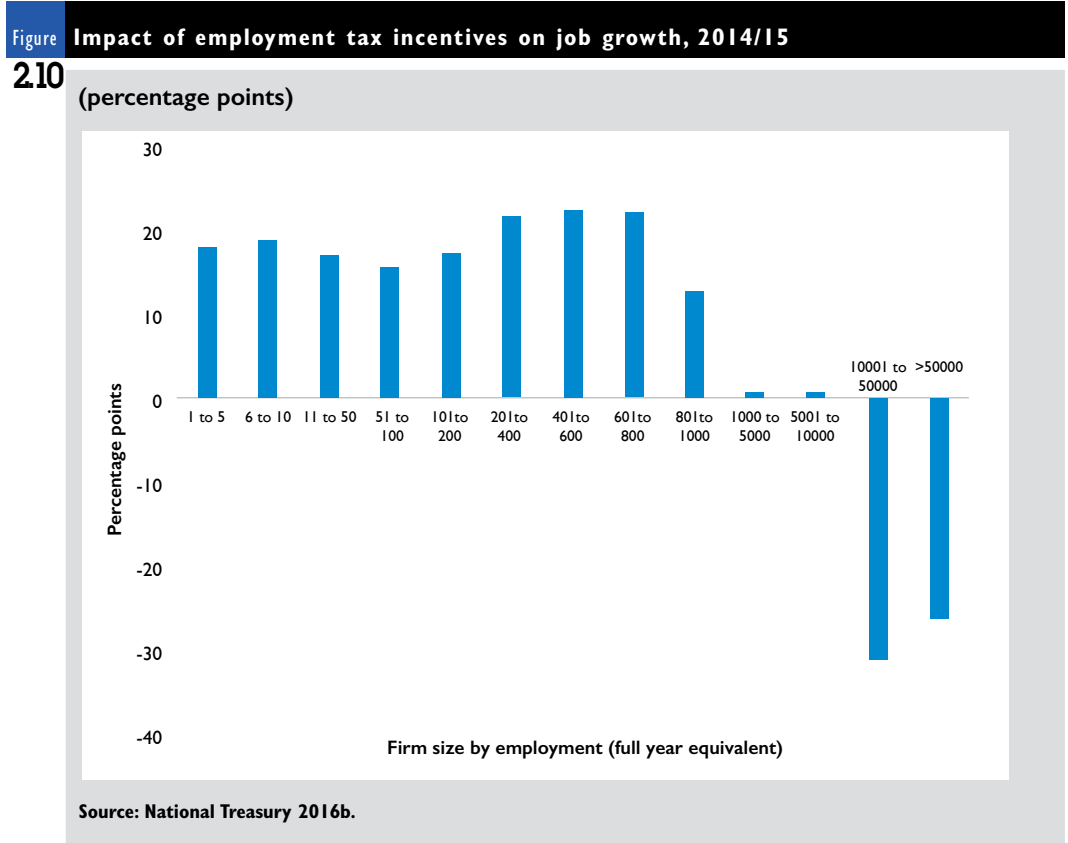
The cost of directly creating a job through Investment tax incentives is broadly comparable to that of directly creating a job through employment tax incentives, when controlling for remuneration

Finally, the impact and cost of capital allowances can be compared with those obtained from direct employment incentives.³⁹ In 2014, South Africa launched the ETI, to encourage firms to employ workers ages 18 to 29 years. The incentive acknowledges the lower probability of being employed without prior professional experience (Anand, Kothari, and Kumar 2016). Since its inception, the take-up of the incentive has been strong, and the related, cumulative foregone revenue was estimated at ZAR 6.1 billion between January

2014 and March 2016. Larger firms were the largest claimants by rand value. Financial services, trade, manufacturing, and agriculture were the largest claimants of the incentive, as these sectors had the highest proportion of eligible workers in the overall workforce.

The National Treasury uses administrative data to estimate econometrically the impact of such incentives on job creation. The results suggest that on average the incentive increased labor demand (number of workers ages 18-29 earning less than ZAR 78,000 annually) by 10.6 percentage points, with greater relative impacts for smaller firms, see Figure 2.10. Such job creation implied a unit fiscal cost per job created of about ZAR 37,334 per year.

Large employment multipliers in the manufacturing sectors strongly amplify the impact of tax incentives on job creation



As these computations exclude potential indirect job creation through multiplier effects, they need to be compared with the costs of direct job creation through ITIs (Table 2.6). At ZAR 37,334 per year, the cost of direct job creation through ETI compares favorably with that of ZAR 188,377 through ITI. The cost also compares favorably with the cost of direct job creation through ITI in responsive sectors only, which is ZAR 89,026 on average. Nonetheless, the difference in costs narrows when expressed

in percentage of labor remuneration. By benefiting only workers earning less than ZAR 78,000 annually, creating a job through ETI represents a subsidy equal to at least 48 percent of the labor remuneration. In comparison, creating a job through ITI is equivalent to a subsidy representing about 80 percent of the average labor remuneration in the responsive sectors, and to a subsidy representing about 44 percent of the average labor remuneration in the manufacturing sector. In other words,

compared with ETIs, ITIs have the potential to create better remunerated jobs, although at a higher cost. This finding is not surprising, as ETIs encourage job posting of unexperienced workers, while ITIs encourage capital deepening and related demand for skilled and experienced labor.

Recent external developments could favorably amplify the positive impact of investment tax incentives

South Africa's industrial policy aims to reveal and amplify the country's comparative advantages and build on them to boost growth and job creation. Since the outset of the current decade, the South African economy has experienced two major external shocks: a sharp depreciation of the domestic currency against that of most of the country's trade partners, and a significant decline in the world price of South Africa's main export commodity, mineral products. Although such changes in relative prices over a relatively short period of time may certainly not be the only factors influencing the determination of comparative advantages and related investment decisions, they cannot be ignored, given their large magnitude and likely persistence.⁴⁰ Indeed, based on trade patterns (by product and partner) recorded in 2012, between 2012 and 2015, import prices (expressed in rand) grew by 35.8 percent; exports prices, excluding minerals, grew by 39.6 percent; and mineral export prices decreased by 18.7 percent. As such, these evolutions could contribute to reverse some of the negative factors that are often cited to explain South Africa's slow growth and modest employment gains: an overvalued currency and an excessive concentration of factors of production in the extractive industry, non-tradable, and consumption sectors (Zalk 2014; Bhorat, Tian, and Ellyne 2014).

Box 2.3 reports the results of a simulation exercise meant to capture the long-term impacts of these external developments on the allocation of capital across sectors. The results

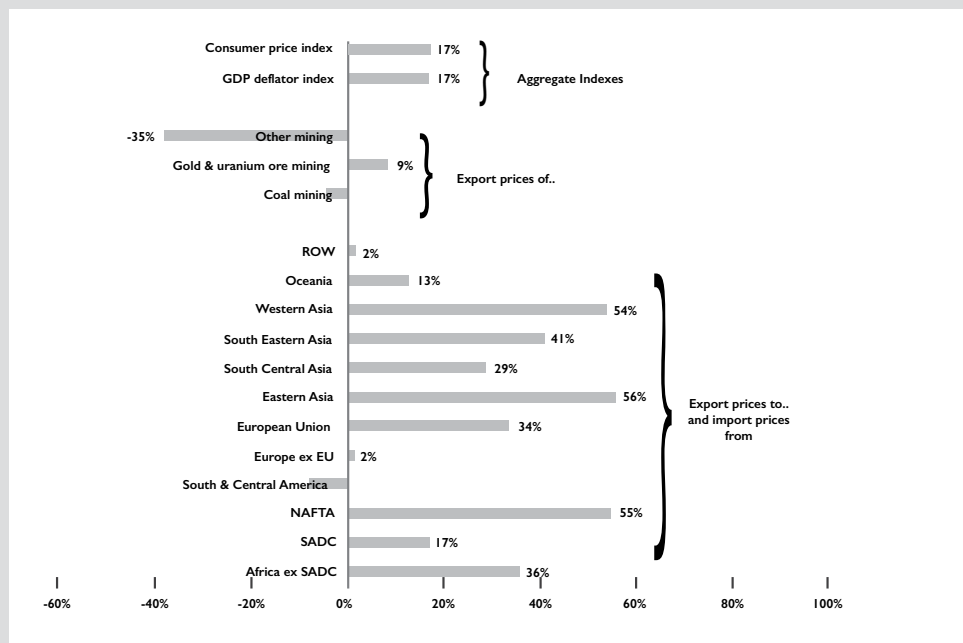
suggest that the economy has been suffering at the aggregate level from lower commodity prices (inducing a loss equivalent to 4 percent of GDP in 2012). But the results also suggest that investing in the manufacturing sector should become much more attractive under this new external environment, and increase overall demand for labor. Thus, the results of the simulations exercise further justify the use of effective industrial policy instruments to overcome structural rigidities and capture positive externalities.

To date, the reallocation of factors toward sectors enjoying new comparative advantages has nonetheless been modest, although reallocation has started to pick up, as noted in Chapter 1. Between 2012 and 2015, the mining sector saw its actual share in total capital stock increase by 0.3 percentage point, while the simulation results suggest a significant contraction in the sector's capital demand over the long term. Conversely, the business services sector saw its share decline since 2012 (see Figure 2.6) while the model suggests it would gain from terms of trade changes.

Long reaction time from investors may explain these delays. But other factors may have also contributed to prevent a rapid reallocation of factors (and the avoidance of allocation losses recorded between 2012 and 2015; see Figure 2.7). The other factors could include policy uncertainty; increased risk aversion to investing in sectors presenting new, but maybe fragile, comparative advantages; and the influence of nonmarket forces in capital allocation. International Monetary Fund (2014) indeed emphasizes the negative impact of electricity bottlenecks, limited market competition, and labor market constraints on the export supply response to the depreciation of the rand. The continued preference given through ITI to invest in poorly remunerative mining projects is also a factor in explaining the delayed response to the changing terms of trade.

In recent years, the South African economy was strongly shaken by several external shocks, namely, the end of the commodity super cycle, capital flight from the BRICs (Brazil, the Russian Federation, India, China, and South Africa) to high-income economies, and China's rebalancing of its production toward domestic markets. Combined, these shocks had a very significant impact on South Africa's terms of trade. Box 2.3 figure 1 reports variations in exchange rates with trade partner groups, and variations in mining export prices, expressed in nominal rand. The cumulative variation in consumer prices and factor remuneration (gross domestic product (GDP) deflator) is also reported.

Box 2.3 figure 1: Cumulative price variations, in rand, 2012–15 (percent)



Source: World Bank staff calculations based on World Bank 2016b.

Note: NAFTA = North American Free Trade Area; ROW = rest of the world; SADC = Southern African Development Community.

In all likelihood, such ample variations in relative prices are expected to influence investment decisions, given their impact on the relative profitability of capital across sectors. For instance, the 38 percent drop in the export price of other mining combined with the 17 percent increase in the remuneration of capital and labor observed across sectors should have significantly reduced the profitability of the sector. Nonetheless, the impact of these shocks is difficult to estimate for a couple reasons: first, because other factors may have influenced investment decisions over the same period (one of them being “policy uncertainty” reflected in short-term exchange rate volatility; another one being insufficient electricity and inland transport capacity); and second, because the period might be too short to observe the long-term consequences of shocks.

For these reasons, we employ a computable general equilibrium model to assess ex ante the long-term impact of the shocks. The model is static, in the sense that the quantity of factors of production (labor types by skills, capital) is fixed and fully used. The model also assumes perfect factor mobility across sectors, to identify the impact of shocks on long-term investment decisions (capital reallocation) under perfect factor market competition. Obviously, the reality is different, as the potential market failures that could justify the industrial policy discussed in this Chapter are not considered in this modeling exercise. But these assumptions are precisely useful to identify potential comparative advantages that could be mobilized through the correction of market failures. In other words, the assumptions are useful for assessing the scalability of some policy interventions as helping a given sector to realize its comparative advantage and meet its effective business opportunities.

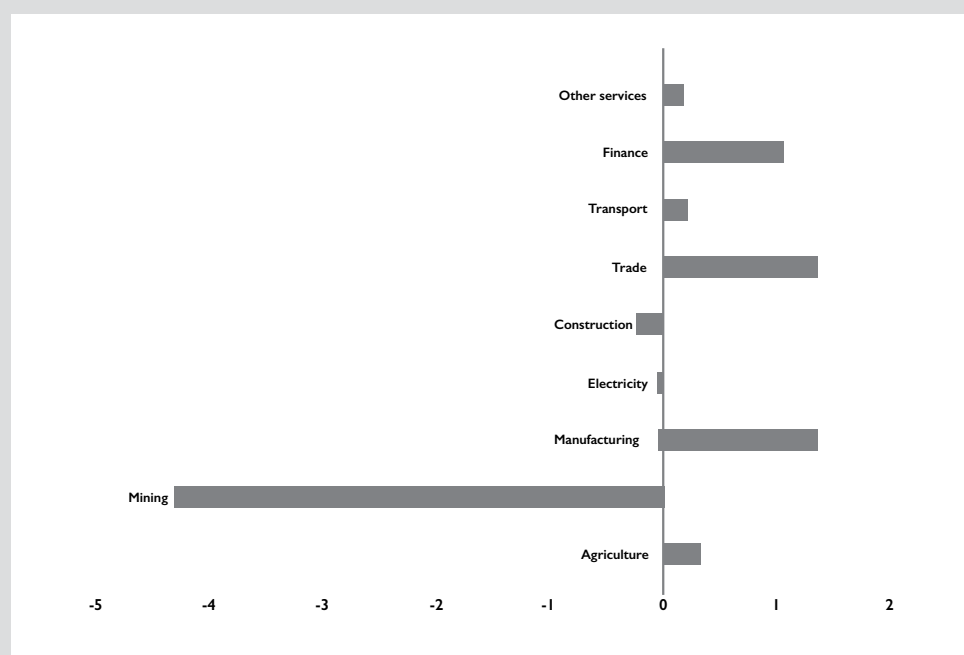
The model is built using a social accounting matrix for 2012 (Chitiga-Mabugu 2016). The model comprises 54 sectors of activities, four labor types, capital, 12 trade partners, and one representative household. It assumes imperfect substitutability between imports and domestic products (on the demand side), as well as between exports and domestic products (on the supply side). The model assumes imperfect substitution elasticities (equal to 1.0, equivalent to Cobb-Douglas functions of production) between factors of production, and fixed consumption of intermediate inputs in proportion of total output (and thus value added) at the sector level (Leontief structure). Traditional closure rules apply, including (i) savings-driven

With the end of the commodity super cycle, South Africa recorded massive changes in its terms of trade

investments, (ii) fixed trade balance, and (iii) fixed real government expenditures and policy tax rates (thus, an endogenous fiscal balance affecting the savings available for investment).

We use the model to simulate the long-term impact of the observed variations between 2012 and 2015 in the terms of trade, through exchange rate variations and changes in commodity prices (as reported in box 2.3 figure 2; induced variations in the Consumer Price Index and GDP deflator being endogenously determined by the model). The simulation results suggest that the terms of trade observed between 2012 and 2015 induced a negative transfer from the rest of the world, equivalent in real terms to 4.0 percent of GDP in 2012. This estimate, which is to be compared with the actual 5.3 percent cumulative real GDP growth over 2012–15 (1.7 percent a year) could be interpreted as a lower bound estimate, as market failures could have inhibited efficient factor reallocation across sectors. In other words, cumulative real GDP growth could have at least reached 9.3 percent in the absence of such shocks (3.0 percent a year). The results also suggest that the induced decline in the real remuneration of factors was felt differently across sectors. On the one hand, the remuneration of unskilled labor and capital declined by 6.0 and 1.8 percent, respectively, with respect to the GDP deflator. On the other hand, remuneration increased for informal labor by 9.2 percent (highly concentrated in retail trade, one of the main beneficiary sectors of the shocks), for highly skilled labor by 3.2 percent, and for skilled labor by 2.6 percent. In other words, since the factor supply is fixed at the aggregate level, terms of trade changes could have induced higher demand for skilled and informal labor, and lower demand for capital and unskilled labor.

Box 2.3 figure 2: Capital reallocation across sectors
(percentage point change in sector capital share)



Source: World Bank staff calculations.

From a sector perspective, the results suggest that capital would need to be reallocated toward manufacturing (based on nonferrous metals), trade and accommodation (wholesale and retail trade), and financial services (business services) to meet new comparative advantages. Capital would need to be reallocated away from the mining sector (other mining), which would see its share in total capital stock drop from 11.8 to 7.5 percent. (A second best option, more likely to materialize in the short run, is a strong decline in mining profitability, given capital's relative inertia across sectors.)

Note: World Bank (2016e) provides a detailed discussion of the nature and impact of recent shocks.

Conclusion

Three consecutive years of negative per capita economic growth highlight the structural challenges South Africa faces in creating jobs and achieving significant reductions in poverty and inequality.

Although job creation was almost nil in the first decade of the democratic era, it suddenly accelerated from 2005, was temporarily halted during the peak of the global financial crisis in 2008, and reversed from 2015. The period of job creation coincided with the commodity super cycle, and likely illustrates the continued high dependency of the South African economy on mineral commodities. We estimate that the change in the terms of trade recorded since 2012 may have cost 4 percentage points of GDP.

The authorities are fully cognizant of the shortcomings of South Africa's economic structure, which is characterized by low domestic competition and dependency on natural resources. The authorities have thus accelerated efforts to promote industrial development, with the expectation that the acceleration could potentially generate several positive outcomes, including higher wages for workers (benefiting from potential labor productivity gains from technological investments); larger employment and growth multipliers through forward and backward linkages with other sectors; increased domestic competition through greater exposure to highly competitive world markets; increased reliance on the larger world demand, as the potential for stimulating higher domestic demand through debt financing is being progressively exhausted for households and government; and more stable growth, as underpinned by stable global demand for manufactured goods and a less volatile capital account. Through appropriate investments, industrial development can seek to expand production in sectors where comparative advantage already exists, or alternatively develop new comparative advantages through technological upgrading.

In the process of industrialization, investment is expected to foster technological upgrading. Thus, capital-labor ratios are expected to rise, with the expectation that related improved competitiveness will entail as well the expansion of volumes produced, and

thus greater employment demand. Since 1994, South Africa's capital-labor ratio has increased steadily. Although the capital-labor ratio rose in most sectors, capital went disproportionately to low-paid, labor intensive sectors (services in particular, most of them being shielded from international competition). This composition effect reduced the substitution of labor by capital and protected jobs; but it conversely slowed the reallocation of labor toward the most productive sectors, which is also called structural transformation.

Although several policy instruments have been deployed to promote industrial development, fundamentally they have all consisted of encouraging the redeployment of private investment toward the industrial sector. PBO (2016) reports that ZAR 476 billion (in 2015 constant prices) was cumulatively devoted to national industrial development programs and initiatives between 1994 and 2014, to which can be added the direct financing of industrial projects from IDC (ZAR 178 billion between 1994 and 2013, in 2013 prices), the impact of procurement and competition policies, and local government initiatives.

Nonetheless, such initiatives translated into neither a significant reallocation of private capital toward industrial sectors, nor higher industrial employment. Thus, the share of the manufacturing sector in South Africa's total capital stock has decreased since 1994, by 3 percentage points (with most of the decline occurring since 2008), and 335,000 jobs were lost over the same period (including 207,000 jobs since 2008).

Such a contrast between industrial policy ambitions and industrial development calls for an assessment of the impact of industrial policies on private investment. Thus, in response to a request from the Davis Tax Committee, the World Bank undertook to measure the extent of ITIs across sectors, and their impact on demand for capital.

As a first step, marginal effective tax rates (METRs) were computed for the various sectors of activity. In a nutshell, the METR measures the difference in investment rates of return before and after taxes are paid by firms. The larger the METR is, the lower is the economic incentive to invest in a given sector. METR computations consider several tax instruments (including in particular capital allowances), some of which are applied to the

use of various investment assets, and some of which are sector specific. The METRs show significant variation across sectors: although all sectors enjoy an METR below the corporate income tax rate of 28 percent, manufacturing stands out as the second most taxed sector. In contrast, the tourism and mining sectors exhibit the lowest METRs, reflecting for tourism the negligible weight of inventory and the high weight of buildings in its asset structure. As for mining, and notwithstanding important variations between minerals, the low METR is mainly driven by the provision that mining companies can immediately and fully write off their capital investment in the year it is incurred. The corporate income tax formula for gold also contributes to the low METR.

As a second step, the impact of capital allowances—which are the principal contributors to the observed differences in METRs across sectors—on private investment was tested econometrically using the South African Revenue Service tax data for more than a million of firms over 2006–12. The methodology used allows for controlling for other factors that could have affected private investment, and is thus able to provide estimates of the counterfactual situation without capital allowances. The results suggest first that several sectors are not systematically responsive to changes in the cost of capital, which is influenced by capital allowances: mining, electricity, transport, and finance. Second, the overall implicit cost for the fiscus is significantly larger than that reported in the Budget Reviews, although it was still modest (at ZAR 3.9 billion) in 2012 compared with the full panoply of industrial policy instruments. Third, without such capital allowances, private investment would have been lower by a quantum (ZAR 5.1 billion in 2012) larger than the subsidy. Thus, capital allowances can be considered effective and efficient overall in their attempt to encourage private investment.

In addition, the methodology was also used to derive the implicit job creation resulting from the additional investment encouraged by capital allowances. The results suggest that the induced substitution of labor by capital, which was encouraged by the capital allowances, was more than offset by larger volumes of production. All in all, it was estimated that without capital allowances, labor demand

in the beneficiary sectors would have been 30,000 jobs less. At first sight, this looks like a very modest and expensive outcome, given the implicit high fiscal cost per job created (ZAR 188,377). This cost exceeds the average annual remuneration of workers in 2012, and, with a view to encourage job creation, directly subsidizing the full employment cost would have thus been cheaper for the same result. However, when only considering the sectors that are responsive to incentives, the fiscal cost of creating jobs through capital allowances is more than halved, as sectors such as mining, electricity, transport, and finance benefit from more than half the total capital allowances in value. Moreover, accounting for the indirect job creation generated by higher production further reduces the fiscal cost. In the manufacturing sector in particular, the cost was brought down to about ZAR 15,079, which is comparable to that estimated for the service sector, which is much labor intensive and where remunerations are lower.

Therefore, the results suggest that the investment incentives granted to the manufacturing sector actually contained, at a modest cost, the destruction of jobs recorded in this sector since 1994.

In light of these results, it is likely that several other factors may have affected investment in the manufacturing sector. Although it is beyond the scope of this report to explain this phenomenon, it is striking to see that capital allocation has deteriorated since 2008 and generated economic losses since 2012, indicating that capital moved away from the most lucrative sectors. This finding could suggest that investors and capital markets have become more risk averse, or less attracted by potentially higher remuneration in sectors where profitability may be questionable over time, as policy and macroeconomic uncertainty remains. High capital rents in some sectors, the result of insufficient competition, may also deter the government's efforts to alter relative prices at the margin. Other factors, such as the insufficient supply of skilled labor, reflecting the poor quality of the education system, or the poor reliability of the electricity supply, may have prevented the development of new industrial projects. But the continued preference given through tax incentives to invest in poorly remunerative mining projects is also a plausible factor to explain this capital

misallocation and delayed response to the massive changes in the terms of trade recorded since 2012.

Some successes have already been recorded in the energy domain, for instance, where supply now meets demand, given accelerated investment in capacity in the recent past. While continuing to address the macroeconomic, competition, education, and infrastructure challenges, it may be warranted to revisit some of the tax provisions granted to

the various sectors. In particular, the question arises whether the capital investment in mining should be given preferential treatment, and if investment allowances in mining should be brought closer in line with other sectors, such as manufacturing. The greater potential for job creation in manufacturing has been reinforced in recent years by the end of the commodity super cycle and the protracted devaluation of the rand.

Endnotes

- 1 See Maveé, Perrelli, and Schimmelpfennig (2016). These findings confirm those of Clark et al. (2016), who underline the prime influence of commodity prices on the volatility of emerging markets' external capital accounts (as opposed to U.S. monetary policy).
- 2 Due to the data categories that were available, Chapter 1 uses Statistics South Africa's Labor Force Surveys for labor figures, and Chapter 2 uses Quantec's employment figures, which are derived from Statistics South Africa's Quarterly Employment Surveys.
- 3 The Talent Shortage Survey is conducted annually across 43 countries by Manpower Group.
- 4 See Ethics Institute (2016).
- 5 Given SAB Miller's cross-listing at the London Stock Exchange, only a part of the transaction will have impacted the exchange rate.
- 6 Over a third of South African government bonds is held by nonresidents.
- 7 Demographic transition, reflected in the increasing share of working age population in total population (the result of significant gains made over 1950–90 in increased life expectancy and reduced fertility), could allow workers to build massive financial savings (instead of supporting dependents' daily consumption) to be invested in education, health, technology and innovation, infrastructure, and productive capacity, thereby significantly raising labor productivity and real wages. Such a "demographic dividend," however, is not a given. Extra working-age people does not equal more output if the extra people are not working. Bruni, Rigolini, and Troiano (2016) suggest that, given the current joblessness, demographic change will exert a drag on the economy as the population keeps aging. On the contrary, if South Africa were to converge to the current Organisation for Economic Co-operation and Development employment ratio by 2050, gross domestic product per capita would be 41 percent higher than under current policies.
- 8 In 2015, the private sector, including agriculture, accounted for about nine in 10 jobs, formal and informal, in South Africa.
- 9 Throughout this Chapter, we define the private sector as all sectors minus government services, that is, including parastatals that are commercially run and/or can attract private capital.
- 10 Before 2000, labor force surveys conducted by StatsSA were annual and did not consider informal employment. From 2000, they started to consider informal employment. From 2000 to 2007, they became bi-annual, before being conducted every quarter since 2008.
- 11 StatsSA defines unemployed workers as: "persons aged 15–64 years who: a) Were not employed in the reference week; and b) Actively looked for work or tried to start a business in the four weeks preceding the survey interview; and c) Were available for work, i.e., would have been able to start work or a business in the reference week;

- or d) Had not actively looked for work in the past four weeks but had a job or business to start at a definite date in the future and were available.” StatsSA defines a discouraged job seeker as a person who was not employed during the reference period, wanted to work, and was available to work or start a business, but did not take active steps to find work during the past four weeks, provided that the main reason given for not seeking work was any of the following: no jobs available in the area, unable to find work requiring his/her skills, or lost hope of finding any kind of work.
- 12 Agriculture, forestry, and fishing is not comprised of any subsectors. Mining and quarrying is comprised of three subsectors; manufacturing, 28 subsectors; electricity, gas, and water, two subsectors; construction, two subsectors; trade, catering, and accommodation, two subsectors; transport, storage, and communications, two subsectors; financial intermediation, insurance, real estate, and business services, two subsectors; and community, social, and personal services, four subsectors.
 - 13 Sectors that recorded a decline in capital intensity include beverages, tobacco, textiles, wearing apparel, leather and leather products, coke and refined petroleum products, basic iron and steel, metal products excluding machinery, other transport equipment, wholesale and retail trade, and business services.
 - 14 As an illustration, it is likely to be simpler to purchase a new machine that would respond to the needs of a given sector than to change the functions of an already existing machine. For instance, a tractor used in agriculture cannot be converted into a computer for services.
 - 15 Total capital stock is the sum of sectoral capital stocks used throughout this analysis (source: Quantec 2016). The pace of reallocation of capital across sectors is measured by the sum of absolute changes in sectoral capital shares with respect to the previous year.
 - 16 The computations of sectoral capital reallocation and capital stock growth in Figure 2.5 do not include portfolio investments.
 - 17 The authors thank Jorge Maia for his characterization of the three distinct periods. The accelerated growth of capital stock since the late 1990s is generally attributed to the adoption of the inflation-targeting monetary policy regime and the related decline in real interest rates.
 - 18 Sector rates of return to capital are measured by the ratio of sector gross operating surplus over sector capital stock (source: Quantec 2016). Dispersion is measured by the standard deviation over the average of sector rates of return (weighted by the share of the sector in total GDP) for a given year. The results are robust to the level of disaggregation used. Figure 2.7 reports computations using a 45-sector disaggregation level. A similar computation using a nine-sector disaggregation level also suggests growing dispersion in rates of return to capital since 2008.
 - 19 Capital productivity is measured by the ratio of GDP to aggregate capital stock.
 - 20 This relatively high contribution of capital reallocation to GDP growth, by international standards, could be reflective of South Africa’s high untapped potential for capital reallocation across sectors and firms. Using South Africa’s firm-level data, including services, manufacturing, and nonagricultural primary activities for 2007, Lashitew (2012) estimates that the complete elimination of capital misallocation across firms could induce a gain of 84 percent in total factor productivity (or equivalently GDP) levels. This compares with an average of 38 percent for the 77 low- and middle-income countries considered in the study, ranking South Africa 74th (from best to worst) in capital allocation.
 - 21 Firms’ capital stock is here measured by the sum of the following assets: Property, Plant and machinery and Other Assets. One methodological caveat with this approach is the possible re-evaluation of assets from one year to another, which would induce a change in the capital stock not resulting from depreciation or investment. While there is no obvious way to control for assets re-evaluation (as it is not reported in tax files), it is likely that re-evaluation mostly concern firms’ financial

- assets, which are not considered in this analysis.
- 22 See World Bank (2016e) for a discussion on competition.
- 23 Between end-2008 and July 2016, an additional capacity of 33,400 gigawatt hours was put online, including 19,769 gigawatt hours from July 2015. The increase resulted from very regular annual investments throughout the period.
- 24 Although it is beyond the scope of this report, a review of the allocative efficiency of South African capital markets may also be warranted to explain the allocation losses recorded since 2012.
- 25 This acceleration is reflected in the share of the national budget devoted to national (as opposed to local) industrial development initiatives. From 2008 to 2013, an annual average of 3.4 percent of the public budget was devoted to national industrial development initiatives, against 2.6 percent from 1994 to 2007 (source: staff calculations based on PBO (2016)).
- 26 Costly past failures in African and Latin American countries (Robinson 2009) have underlined the risks of political capture and that industrial policy has a smaller chance of success when the selection of industrial projects and locations is driven by political considerations as opposed to economic ones (PBO 2016). Close monitoring and evaluation and sunset clauses can help reduce the risks of political capture; and reliance on comparative advantages determined by endowment structures can help reduce the risks of economic failure (Lin 2012).
- 27 Over 1994–2013, IDC financing of projects in South Africa cumulatively amounted to ZAR 178 billion (2013 constant prices).
- 28 The SEZ fund is designed to finance basic infrastructure development costs for 3 to 5 years.
- 29 Redundancy rates are measured by the percentage of investors that claim they would have invested even without tax incentives.
- 30 Payroll taxes and excise taxes on fuel are also omitted from consideration, since, arguably, their amounts are unaffected by marginal increases in the capital stock. Property taxes affect the returns to capital but are excluded from our METR measure, because the basis for the assessment of property values is subjective, and thus unlikely to represent market values uniformly.
- 31 Comparison of METRs across countries for manufacturing and services sectors nonetheless suggests that South Africa corporate income tax regime is internationally competitive, in particular with respect to G7 countries (World Bank 2015b).
- 32 When the inflation rate is changed, say to 2 percent, the METR decreases to 12.1 percent, showing the sensitivity of the METR on inventory to inflation.
- 33 The METRs for minerals range from a high of 31.9 percent for iron ore to a low of -19.7 percent for chrome (World Bank 2015b).
- 34 Profit-based incentives and general tax incentives are generally not recommended for activities that generate location-specific rents, such as mining.
- 35 Compared with World Bank (2015b), World Bank (2016f) only retains three types of investment assets (as recorded in the SARS data set): building, plant and equipment, and other fixed assets. The formula for calculating the UCC also assumes (due to lack of information on firms' financing variables) that all investment is financed by retained earnings. As such, the UCC computations do not capture the advantage (in terms of METR) given to firms relying on debt to fund their investments.
- 36 Consistent with World Bank (2016f), it is assumed that firms minimize costs through factor demand derived from a constant elasticity of substitution production function, and that the price of output is fully determined by factor costs. Demand for the products is assumed to be exogenous, and is thus not affected by the introduction (and related financing) of ITIs.
- 37 These estimates differ from the tax expenditures reported in the Budget Reviews (National Treasury 2016a), because the former consider not only the impact of capital allowances provided under sections 12G and 12L, but also that of capital allowances provided under sections 12B, 12C, 12D, and 13. Further,

tax expenditures are not additive and may interact with each other. See World Bank (2016f) for more details.

38 The inclusion of additional corporate taxes from additional investment only marginally affects the total fiscal cost (an estimated increase in corporate taxes of ZAR 36 million only in 2012).

39 Employment multipliers measure the number of jobs created directly and indirectly from additional production in a given sector. Indirect effects capture jobs

created in other sectors through derived demand for domestically produced inputs (hence, the computations do not include imported inputs).

40 These paragraphs draw from the preliminary analysis conducted by the National Treasury (2016b).

41 World Bank (2016a) foresees that world nominal prices of mineral goods (expressed in US\$) will stay below their 2012 levels until 2025.

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