# SOUTH AFRICA

## SELECTED ISSUES

January 2020

This Selected Issues paper on South Africa was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on January 10, 2020.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
PO Box 92780 • Washington, D.C. 20090
Telephone: (202) 623-7430 • Fax: (202) 623-7201
E-mail: publications@imf.org  Web: http://www.imf.org
Price: $18.00 per printed copy

**International Monetary Fund**
**Washington, D.C.**

# INTERNATIONAL MONETARY FUND

# SOUTH AFRICA

**SELECTED ISSUES**

January 9, 2020

| Approved By | Prepared by AFR South Africa team |
|---|---|
| **D. Robinson (AFR)** | |

## CONTENTS

# THE GROWTH-INFLATION TRADEOFF OF MONETARY POLICY IN SOUTH AFRICA[1]

*The combination of low growth and stubbornly high inflation expectations for a protracted period has complicated monetary policy decisions. Staff analysis contributes to the ongoing growth-inflation tradeoff discussion in South Africa, concluding that there is limited growth tradeoff of monetary policy efforts to anchor inflation expectations at a lower level at present.*

## A. Introduction

**Growth and Inflation**

1. **Economic growth declined in South Africa and started to undershoot its peers in the past decade, highlighting the role of unaddressed structural constraints**. As discussed in Annex I, South Africa's macroeconomic performance appears to have witnessed an important inflection point between the 2000s and the 2010s, which broadly coincides with the global financial crisis in 2008–09. Real GDP growth (year on year) halved after the Global Financial Crisis, from 4.3 percent during 2000–07 to 2 percent during 2010–17 and eked out just 0.8 percent in 2018. Monetary and fiscal policies have lent significant growth support, but structural rigidities have kept business confidence low, depressing private investment and growth. Demand for credit has weakened, while banks have refrained from expanding loans, in the low growth environment.

2. **The SARB's target measure of inflation, the monthly consumer price index (CPI), has been affected by a range of factors**. The inflation index includes all the major metropolitan areas and the largest towns in each of the nine provinces. Prices of imported goods, hence exchange rate performance, play an essential role in the inflation process in an open emerging economy such as South Africa. The rand is a relatively volatile currency, reflecting the extent of domestic and external shocks, and the SARB's policy of no foreign exchange intervention. The exchange rate pass through to inflation has declined (Kabundi and Mbelu, 2018), owing partly to greater central bank credibility (Kabundi and Mlachila, forthcoming). Administered price inflation has generally been above overall CPI inflation, and in recent years has on numerous occasions underpinned elevated wage demands on occasions in the context of a rigid labor market, despite unemployment being persistently high.

**Impact of Monetary Policy**

3. **The central bank may influence some of the supply factors of inflation through the exchange rate and credibility channels**. Gumata et al. (2013) highlight the importance of the exchange rate and expectations channels in South Africa during the two decades since 1990.

---

[1] Prepared by Ken Miyajima, reviewed by Ana Lucía Coronel.

- The exchange rate represents a relatively important component for domestic food and petrol prices.[2] Accommodative monetary policy may weaken the exchange rate and lift non-core and core inflation.

- Central bank credibility may have a role in setting the extent of the positive feedback loop between inflation and inflation expectations, particularly that of price and wage setters (South African Reserve Bank, 2016). Inflation expectations of businesses and trade unions closely follow inflation outturns with a lag, which can be attributed to the expectation trap hypothesis, where trade unions determine wages with little consideration of the central bank objective, and with the view that the central bank will accommodate their demand for higher wages to support economic activity.
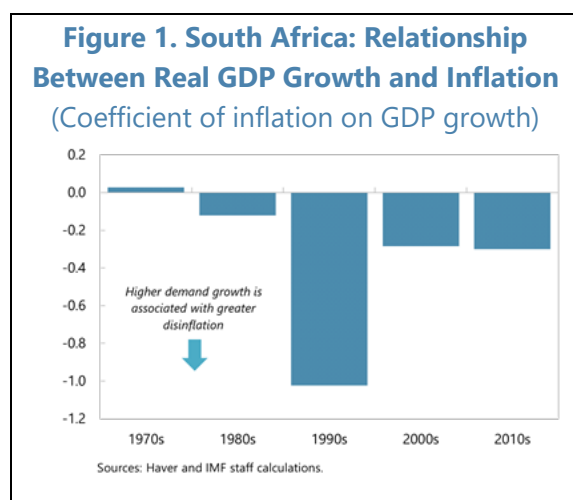
4. **In this context, the impact of monetary policy on growth may have diminished from pre- to post-2008, but it is less clear whether its impact on inflation has weakened as well**. When economic activity is suppressed due to structural rigidities, subdued business confidence, low investment, and risk aversion on the part of lenders, monetary policy could affect growth little by marginally changing the cost of funds.  This would also imply a weaker monetary policy transmission through demand to inflation. However, monetary policy could affect inflation expectations to a greater extent through the exchange rate and credibility channels as discussed above.

5. **This note helps understand how the growth-inflation tradeoff of monetary policy has evolved by** (i) describing the conventional Phillips curve for South Africa, and, (ii) estimating econometrically the impact of real policy rate changes on domestic demand growth and inflation expectations.

## B.   The Growth-Inflation Phillips Curve

6. **The slope of the growth-inflation Phillips curve has been generally negative in South Africa** (Figure 1). During the 1970s, the relationship between inflation and real GDP growth was around zero, that is, inflation changed little systematically when real GDP growth changed. The fact that the rand was pegged may have partly been responsible for the observed disconnect. In the 1980s, the slope started to turn negative, that is, lower (higher) inflation was more systematically associated with higher (lower) real GDP growth. The negative slope steepened markedly in the 1990s as higher domestic demand growth was associated with significantly lower inflation. The slope flattened back in the 2000s and 2010s, as periods of lower demand

**Figure 1. South Africa: Relationship Between Real GDP Growth and Inflation**
(Coefficient of inflation on GDP growth)

*Higher demand growth is associated with greater disinflation*

Sources: Haver and IMF staff calculations.

---

[2] The exchange rate pass through to these prices is relatively immediate and large. That to core inflation is estimated to be smaller, at around 10–15 percent (IMF, 2017).

growth were associated with more muted increases in inflation. The fact that inflation generally remained in single digits may have contributed to the flattening of the curve (see Annex I).

**7.      The observation that higher GDP growth and lower inflation go hand in hand can be interpreted in several ways.** One view is that growth mainly stems from productivity improvements, which is disinflationary at the same time. Therefore, structural reform implementation is important to boost productivity and growth. It also facilitates the SARB's job to anchor inflation and inflation expectations at a lower level. Another view is that inflation dampens growth in the long run, thus the SARB should continue to maintain inflation and inflation expectations low and stable (Ndou and Gumata, 2017).
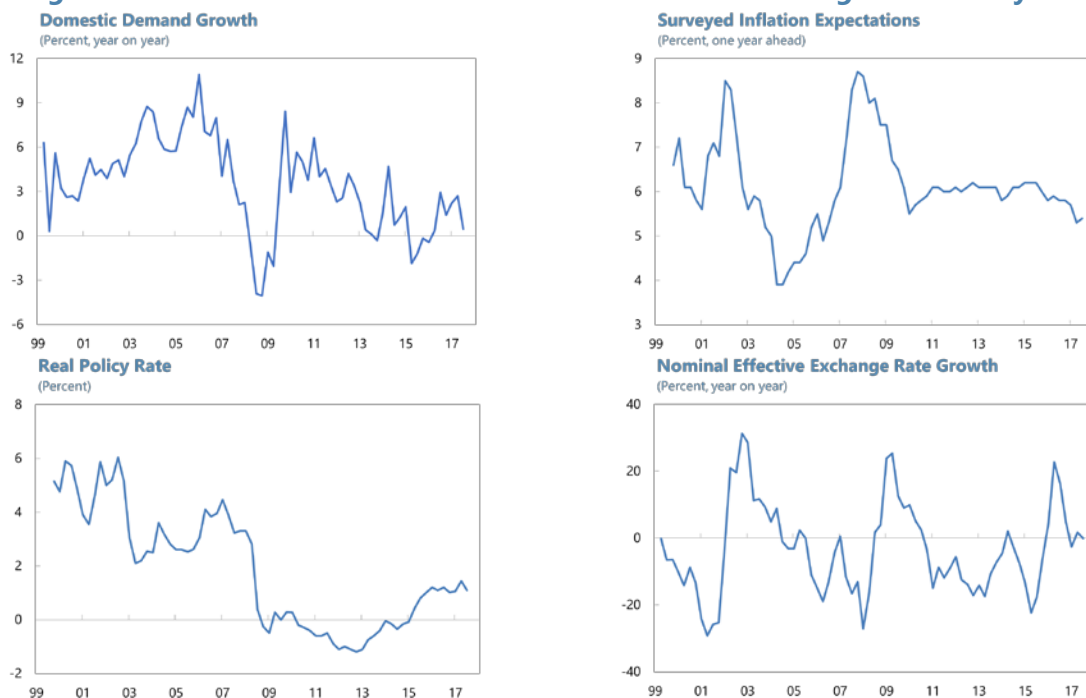
## C.   Econometric Analysis

**Baseline Model and Results**

**8.      The impact of monetary policy action on domestic demand growth and inflation expectations is estimated using four key macroeconomic variables** (Figure 2). These variables are 1) real domestic demand growth to capture the strength of economic activity; 2) a survey-based indicator of inflation expectations one year ahead (average for financial analysts, businesses, and trade unions) to reflect the fact that monetary policy tends to affect inflation 12–18 months ahead; 3) real policy interest rate (deflated by inflation expectations) to measure monetary policy action to the extent that the monetary policy stance could ease after a rate hike if inflation (expectations) rose more; and 4) nominal effective exchange rate to capture its essential role in the inflation process in an open emerging economy such as South Africa.

**9.      Using the four variables, a quarterly VAR model is estimated for 2000Q3–18Q2**. The variables are detrended, except for inflation expectations, to reduce the chance of obtaining spurious results. The variables are stacked in the order of domestic demand growth, inflation expectations, real policy rate, and NEER growth. The model is estimated for a period through 2008 (2008Q2) and after 2010 (2010Q3) to assess changes in the impact of monetary policy action. Three lags are used to estimate the VAR. Generalized impulses are reported.

**10.     Results suggest that a rise in the real policy rate tends to reduce inflation expectations throughout the two sample periods, but its impact on domestic demand growth weakens from the 2000s to 2010s** (Figure 3, and Appendix II for the responses of other variables). A 1 percentage point increase in the real policy rate is associated with a 2 percentage point decline in domestic demand growth during the 2000s but does not generate a systematic impact during the 2010s. By contrast, monetary policy action systematically reduces inflation expectations in both sample periods, but the impact diminishes from 1–1.5 percentage points during the 2000s to 0.5 percentage point during the 2010s. These results appear consistent with those by Ramcharan (2008), who, using data up to the middle of the 2000s, finds that a 1 percentage point increase in the nominal policy rate is associated with a 0.8 percentage point decline in GDP growth two quarters later (similar to findings in the literature of the US economy).

**Figure 2. South Africa: Macroeconomic Indicators Used for Regression Analysis**

**Domestic Demand Growth**
(Percent, year on year)

**Surveyed Inflation Expectations**
(Percent, one year ahead)

**Real Policy Rate**
(Percent)

**Nominal Effective Exchange Rate Growth**
(Percent, year on year)

Sources: BER South Africa, Haver, StatsSA, and IMF staff calculations.

**Figure 3. South Africa: Response to One Percentage Point Increase in Real Policy Rate**
(Percentage points)

2000Q3–2008Q2                    2010Q3–2018Q2

Domestic Demand Growth

Inflation
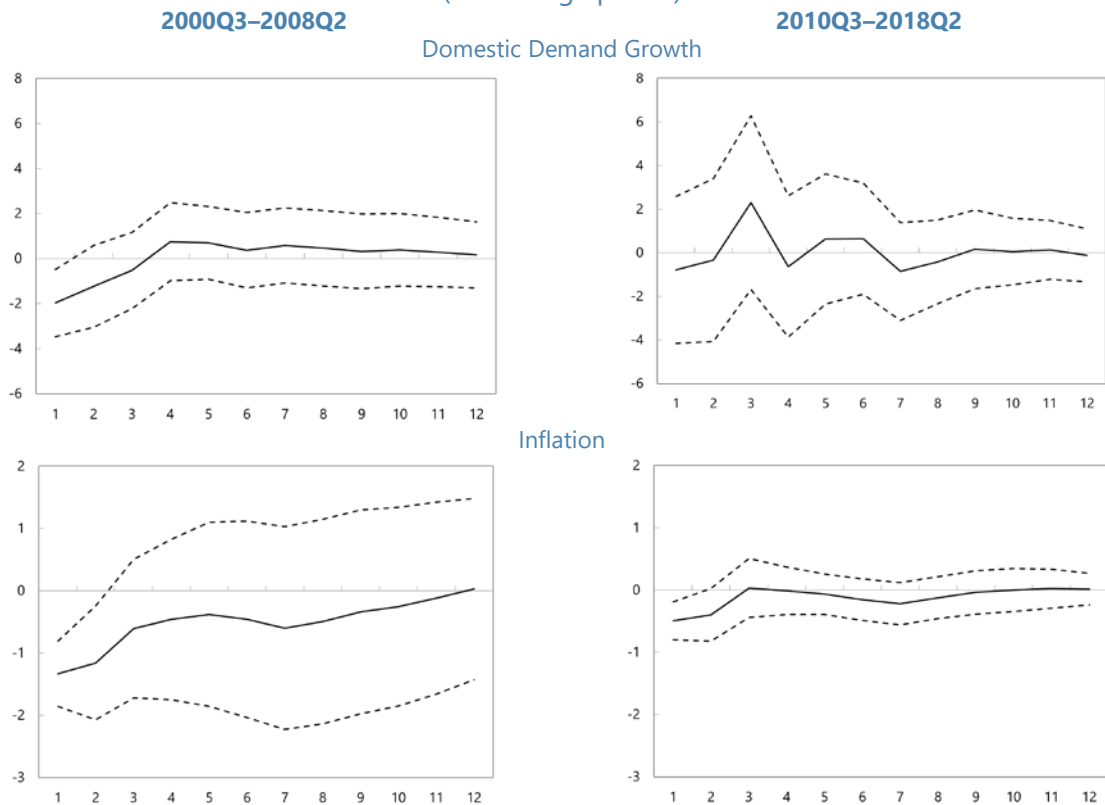
Sources: Haver and IMF staff estimates.
Note: Time scale in quarters. Broken lines are the 95 percent confidence bands.

**Robustness Checks**

**11.      Additional models are estimated to address the following questions and confirm some of the baseline results.** The first question is whether there are threshold effects. One view is that monetary policy may have a stronger effect when economic activity is stronger, and interest rate and inflation expectations are higher. This could be driving the baseline findings, as the 2000s (2010s) can be characterized by high (low) growth/interest rate/inflation regime. Another question is the role of core inflation. The baseline results suggest that the monetary policy transmission through demand growth to core inflation is likely muted.

**12.      Additional findings confirm the prior hypothesis.** To address the first question, the baseline model is re-estimated after splitting the whole sample period (excluding quarters around 2008–09) into "high" and "low" real policy rate regimes. A threshold of 1.5 percent splits the whole sample broadly in half. The results show that both demand growth and inflation expectations respond to monetary policy action during the "high" real rate regime, but only inflation expectations respond in the "low" real policy rate regime. To address the second question, the baseline model is estimated after replacing (headline) inflation expectations with (realized) core inflation (detrended). The model is estimated for the 2010s only as the sample for the 2000s is short when core inflation is used. Results show that core inflation declines with a lag after monetary policy tightening, but the relation is statistically insignificant.

## D.   Conclusion

**13.      The findings in this note suggest that the SARB should continue its efforts of anchoring inflation and inflation expectations at a lower level because monetary policy lends limited support to growth dampened by structural issues**. During the 2010s, domestic demand growth responded little to monetary policy action. The environment of weak growth, low interest rates, and relatively moderate inflation (expectations) could have muted monetary policy transmission. Ultimately, the constraints to economic growth need to be removed. Meanwhile, inflation expectations continue to respond to monetary policy action albeit to a lesser extent. Monetary policy transmission through demand has weakened—demand growth does not systematically respond to monetary policy action nor does core inflation—but the exchange rate and credibility channels appear to remain operational.

# Appendix I. Scatter Plot



Figure AP1.1. South Africa: Real GDP Growth and Inflation
(Percent)
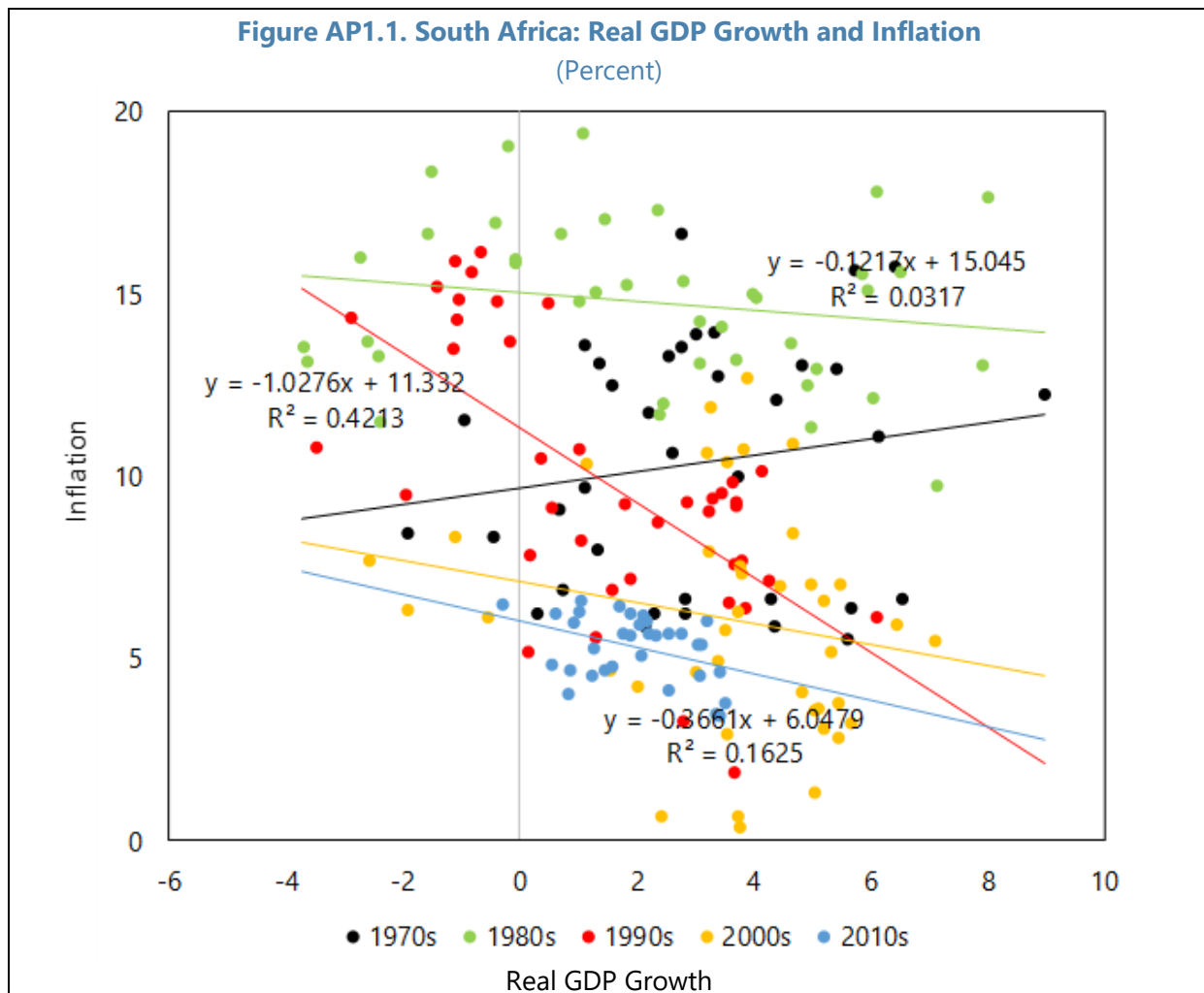
# Appendix II. Detailed Results

1.      **During 2000Q3–2008Q2, inflation expectations increased in response to stronger domestic demand and a lower real policy rate**. The real policy rate increased in response to stronger domestic demand and higher inflation expectations. It declined in response to a weaker currency, probably through higher inflation.

2.      **During 2010Q3–2018Q2, the real policy rate declined in response to higher domestic demand and inflation expectations, potentially as the response of the nominal policy rate lagged a rise in inflation.** It declined in response to a weaker currency.



**Figure AP2.1. South Africa: Response to Generalized One Standard Deviation Shocks (2003Q3–2008Q2)**
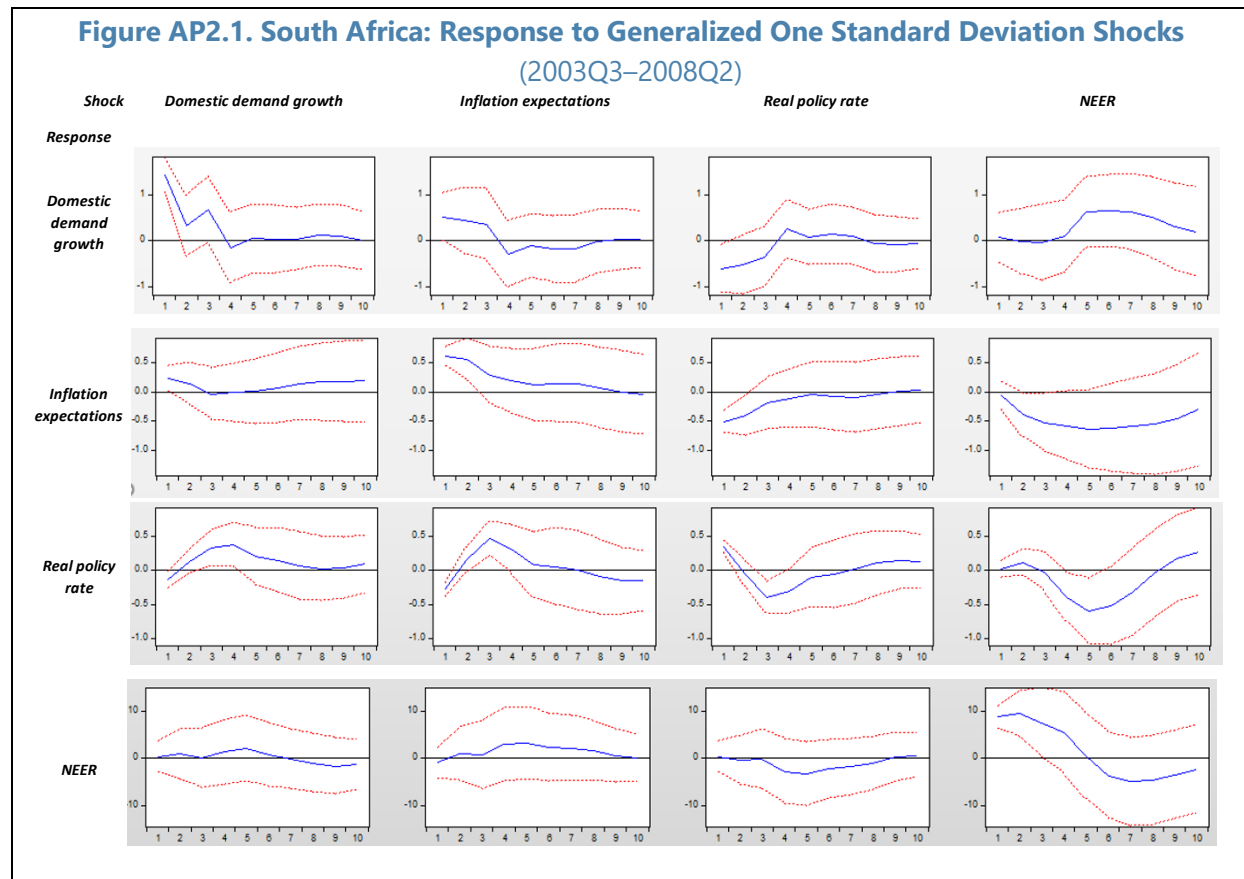
## Figure AP2.2. South Africa: Response to Generalized One Standard Deviation Shocks
### (2010Q3–2018Q2)
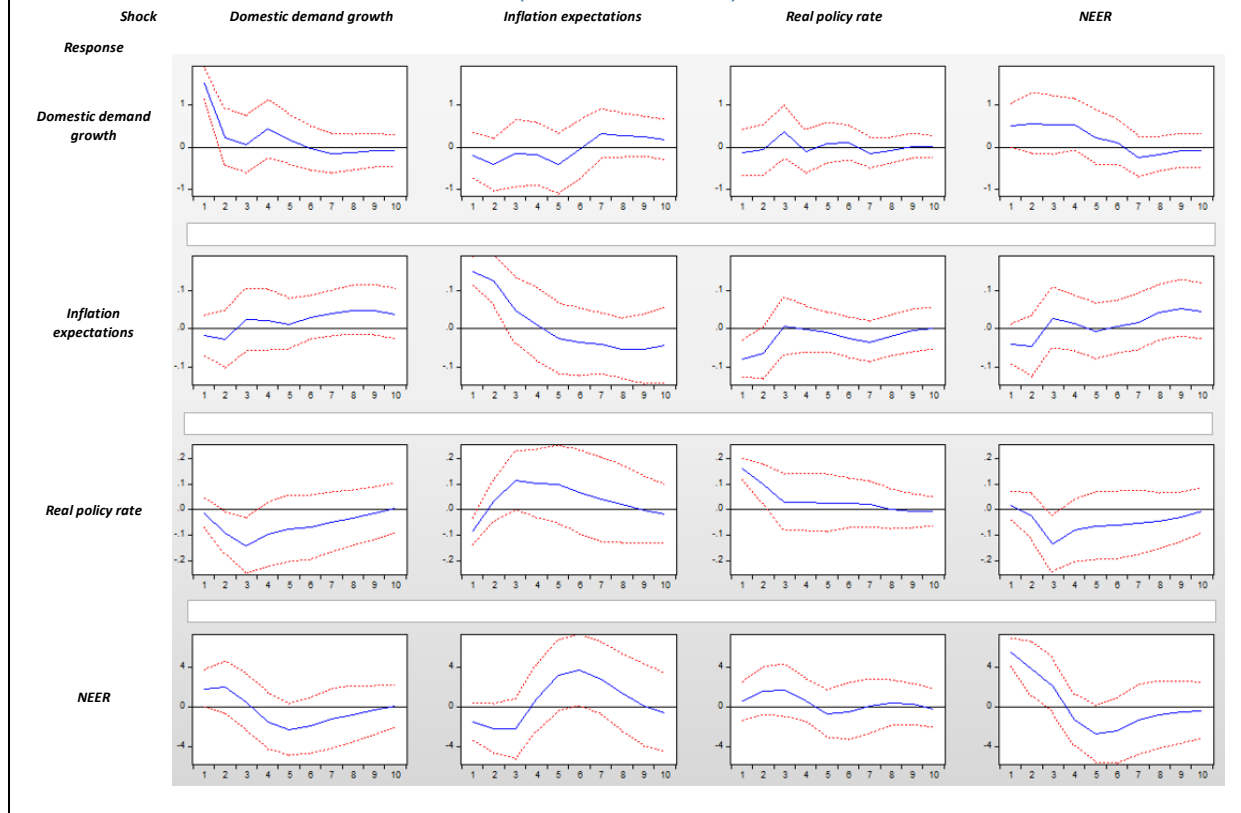
# References

Gumata, N., A. Kabundi, and E. Ndou. 2013. "Important Channels of Transmitting Monetary Policy Shock in South Africa", ERSA Working Paper.

International Monetary Fund. 2017. South Africa Staff Report, Annex III, "Exchange Rate Pass-Through to Core Inflation in South Africa", 17/189.

Kabundi, A. and A. Mbelu. 2018. "Has the Exchange Rate Pass-Through Changed in South Africa," South African Journal of Economics, 86, 3, September, 339–60.

Kabundi, A., and M. Mlachila. forthcoming. "The Role of Monetary Policy Credibility in Explaining the Decline in Exchange Rate Pass-Through in South Africa," Economic Modelling.

Ndou, E. and N. Gumata. 2017. "Inflation Dynamics in South Africa", Palgrave Macmillan.

Ramcharan, R. 2008. "The Impact of Interest Rates on Real Activity in South Africa", South Africa: Selected Issues, 09/276.

South African Reserve Bank. 2016. "Inflation Mechanisms, Expectations and Monetary Policy", BIS Papers No 89, 345–48.

# RAND VOLATILITY: DOES IT MATTER?[1]

## A. Introduction

**1.      The South African rand has been relatively volatile as the currency has flexibly responded to domestic and external disturbances**. Domestic shocks have been relatively large in recent years, elevating rand volatility to above the VIX (US stock price volatility, a commonly used indicator of global risk appetite). External shocks have also had important transmission channels—the rand is traded globally in large volumes, sometimes as a currency that proxies emerging market (EM) risks, and nonresident investors hold large shares of local assets.

**2.      The exchange rate regime, consistent with the SARB's successful inflation targeting, has served the country well as a main mechanism to absorb shocks**. There are a number of factors that mitigate the impact of rand movements on the economy. The large and sound domestic financial sector can provide a buffer. The low share of foreign currency-denominated and long maturities of public debt limits the economy's vulnerability to exchange rate risk. Further, the share of overall external debt denominated in foreign currency i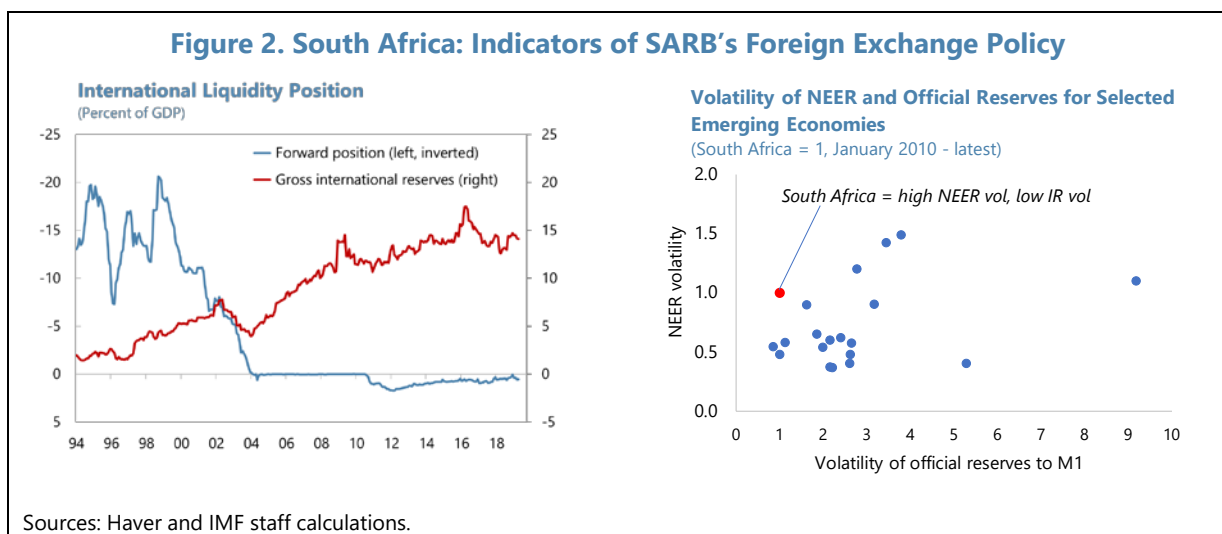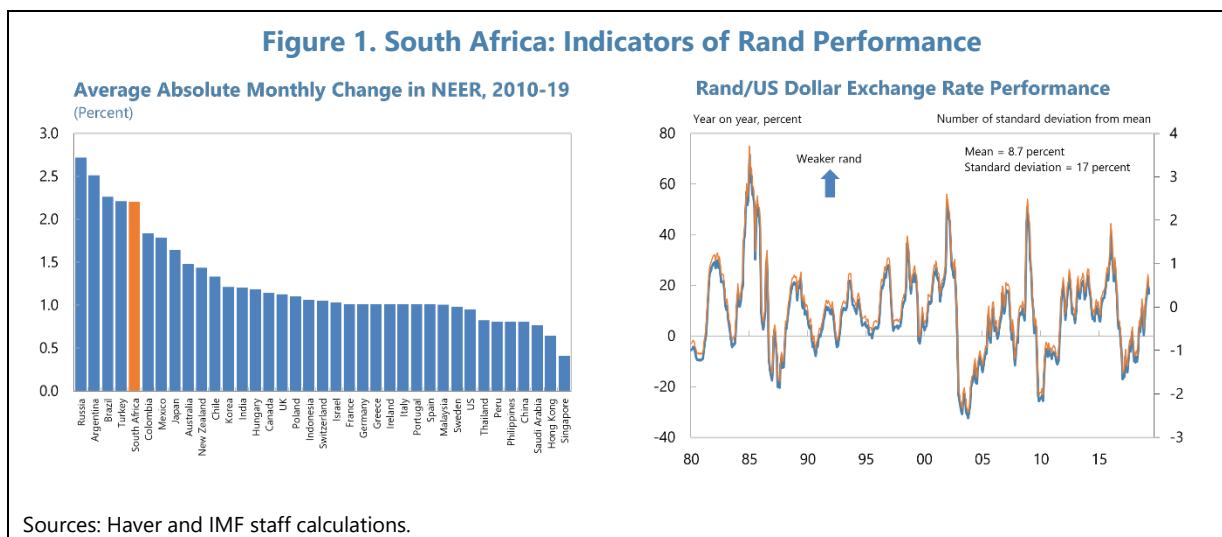s not too large by international standards.  Moreover, the consequent rand volatility has worked as a signaling mechanism of economic developments.

**3.      Against this backdrop, this note quantitatively analyzes the impact of rand volatility on domestic corporate investment and cross-border portfolio investment**. Private investment is critically needed to boost South Africa's anemic growth. One view is that domestic corporates are accustomed to large rand volatility, which is consistent with the ostensible absence of major corporate distress events due to rand movements. However, survey results in South Africa warn that rand volatility prevents firms, particularly small and medium-sized enterprises (SMEs), from embarking in long-term investments (RMB Global Market Research and National Treasury, 2015).

**4.      The main findings of this analysis continue to support staff's view that the policy tradeoffs related to a volatile rand are limited, even though SMEs suffer more**. Rand volatility has some impact on investment for SMEs, and cross-border capital inflows. But these effects are generally relatively small, economically. To alleviate the potential negative impact of rand volatility on investment by SMEs, which are the most affected, greater policy certainty and bank competition would reduce rand volatility and the cost of hedging for exchange rate risk.

**5.      The rest of the note is structured as follows**. Section B reviews the stylized facts about rand volatility. Section C discusses South Africa' resilience to relatively large rand volatility. Section D econometrically analyzes the potential impact of rand volatility on private investment. Section E concludes.

---

[1] Prepared by Ken Miyajima and Hui Tong; reviewed by Ana Lucía Coronel.

## B. Stylized Facts about Rand Volatility

**6.      The rand has been relatively volatile**. In nominal effective terms and in terms of the absolute size of monthly movements, the rand is one of the most volatile currencies within the group of advanced economies (AE) and EMs (Figure 1, left panel). Its performance is comparable to that of the Brazilian real and Turkish lira. The Russian ruble and Argentine peso have registered even larger degrees of movement, but most other currencies have been less volatile. Central banks in some of the countries mentioned intervene in foreign exchange (FX) markets, in the absence of which volatility of their currencies would have been higher. Historically, the rand weakened more than 70 percent year on year against the dollar in the mid-1980s when a debt standstill took place.[2] In the 2000s, the

### Figure 1. South Africa: Indicators of Rand Performance

**Average Absolute Monthly Change in NEER, 2010-19**
(Percent)

**Rand/US Dollar Exchange Rate Performance**

Sources: Haver and IMF staff calculations.

### Figure 2. South Africa: Indicators of SARB's Foreign Exchange Policy

**International Liquidity Position**
(Percent of GDP)

**Volatility of NEER and Official Reserves for Selected Emerging Economies**
(South Africa = 1, January 2010 - latest)

Sources: Haver and IMF staff calculations.

---

[2] Debt standstill is a mechanism by which a country agrees to cease payments on its debts until a restructuring agreement has been negotiated with its creditors.

currency pair weakened around 40–50 percent year on year in 2001, 2008 and 2015 (right panel).[3]

7.      **Rand volatility has been determined by market forces since 2003**. The left panel of Figure 2 illustrates the evolution of the SARB's foreign exchange policy. The blue line represents the SARB's forward position as a share of GDP, inverted, and plotted on the left scale. The forward position was short until 2003, indicating that the SARB sold dollars and swapped the short dollar positions into forwards. The stock of short positions was sizable, up to 20 percent of GDP through the late-1990s. After the adoption of inflation targeting, much of the short forward positions declined. Gross official reserves (red line) increased gradually, likely as the SARB bought foreign inflows opportunistically. The right panel illustrates that South Africa has used the rand, rather than official reserves, to absorb shocks—the volatility of the rand is relatively high, while that of official reserves relative to M1 is one of the lowest among EMs.

8.      **Rand volatility is relatively high reflecting domestic and external disturbances given its major role as a shock absorber**:

- **Domestically, policy and political uncertainty have tended to increase rand volatility at least in the past several years**. In Figure 3, the red and gray lines show the volatility of the rand against the US dollar implied by the pricing of option contracts, and the VIX, a similar index for US stock prices, often used as an indicator of global investors' risk appetite. Rand volatility lied below the VIX until the early-2015. Following an increase in policy and political uncertainty since the late-2015, rand volatility rose and stayed above the VIX much of 2016 and 2017. Since then, the two lines have been changing positions relative to each other.

  **Figure 3. South Africa: Implied Volatility of Rand-US Dollar Currency Pair and US Stocks**
  (Percent)
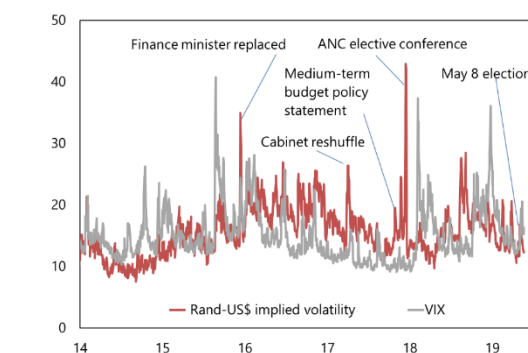
  

  Sources: Bloomberg and CBOE.

- **The rand is also subject to external shocks, at least through two important channels**. Rand volatility generally co-moves with the VIX, confirming the importance of external drivers (Maveé et al, 2016). First, the rand trades in large volumes globally. Compared to major EMs, South Africa's daily currency turnover in global markets scaled by official reserves is by far the highest as the rand is traded as EM proxy (Figure 4, left panel). Second, nonresident holdings of local assets are large in South Africa (right panel). This could increase the impact of a given external shock—discussions with market participants suggested that some nonresident

---

[3] South Africa witnessed several bouts of large currency depreciation and capital outflows in the past: the mid-1980s (a debt standstill; Harris, 1986), 1998, 2001 (Bhundia and Ricci, 2005), the global financial crisis (GFC) in 2008, and the removal of the finance minister in 2015. Capital flight is estimated to have been worth 15–20 percent of GDP in the early-1980s and up to 15 percent of GDP in the late-1990s (Mohamed and Finnoff, 2004).

investors tend to trade South Africa's local bonds based mainly on changes in global conditions.

**Figure 4. South Africa: Key Transmission Channels of External Shocks**

**Daily OTC Foreign Exchange Turnover, 2016**
(Local currency global turnover in percent of central bank reserves)

**Nonresident Holdings of Local Assets**
(Percent of GDP)

Note: Turnover is reported on an unconsolidated basis, by the sales desks of reporting dealers. Dealers in as many as 53 jurisdictions participate in the BIS Triennial Survey, and the statistics are reported to the BIS at a country, rather than individual dealer level.

Sources: BIS, Haver, and IMF staff calculations.

**Figure 5. South Africa: Distribution of Rand Performance**
(Percent, daily rand-US dollar data, January 2000–February 2019)

Sources: Bloomberg and IMF staff calculations.

Note: High rand volatility refers to three-month rand-dollar volatility implied by option pricing being one standard deviation (std) or more above the mean. Daily rand performance relative to HP trend.
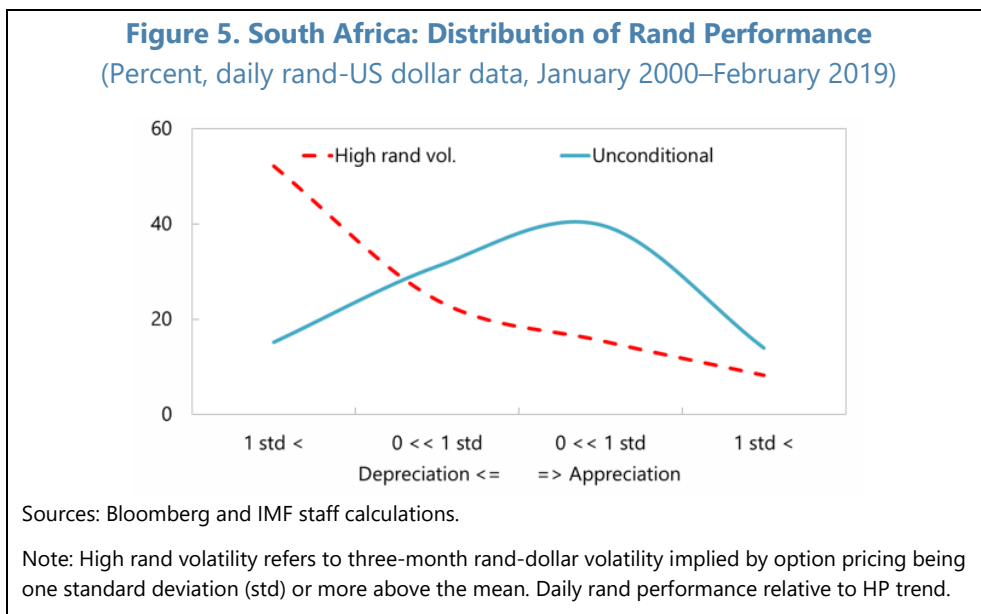
**9.** **Historically, high rand volatility has been accompanied by rand depreciation**. Generally, asset prices tend to fall abruptly and increase uncertainty and risk premium. This linkage is particularly shown in the rand exchange rate against the US dollar (Figure 5). The x-axis represents rand performance—from large rand depreciation on the extreme left to mild depreciation as one moves to the right, and large appreciation on the extreme right. The y-axis represents the percent share of total observations. The blue line, which shows the distribution of rand performance without conditioning on rand volatility, is broadly bell-shaped, that is, moderate appreciation and depreciation take place more often than more extreme appreciation and depreciation. The red line plots the distribution of rand performance by sampling the data only when rand volatility is relatively high (one standard deviation or more away from the historical average). The red line is upward

slowing to the left, suggesting that, relatively high rand volatility tends to be accompanied by relatively large rand depreciation.

## C.   South Africa's Resilience to Rand Volatility and Depreciation

**10.      The economy's favorable balance sheet composition makes South Africa less susceptible to rand volatility**. Figure 6 shows that FX debt as a share of GDP in South Africa is intermediate compared to other EMs. This could limit concerns about FX mismatches in the domestic economy. The effective extent of FX mismatches depends on natural and financial hedges. While the extent of hedging is difficult to measure, it is a fact that SOEs are mandated to hedge and large corporates that borrow in FX tend to have natural hedges, or FX revenues. Moreover, survey results indicate corporates, including some SMEs, tend to hedge exchange rate risk (Rand Global Markets Research and National Treasury, 2015).



**Figure 6.  South Africa: Foreign Currency Denominated Debt**
(Percent of GDP)

Sources: Bloomberg and IMF staff calculations.
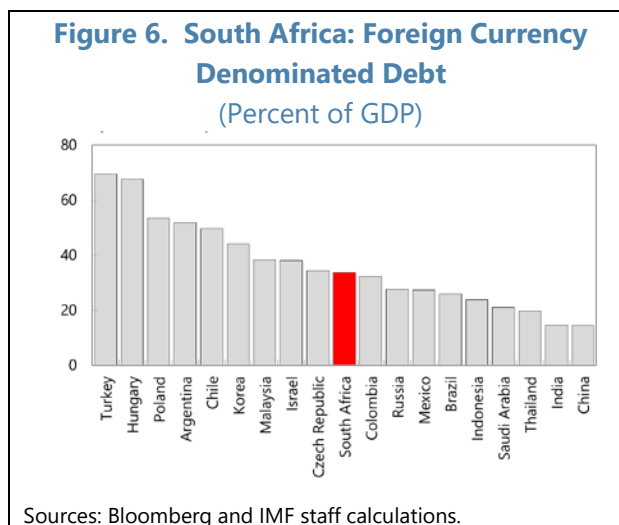
**11.      The fiscal sector does not appear to be vulnerable to rand movement**. Figure 7 shows that the level of public debt is not very sensitive to rand performance. For instance, historically a 10 percent rand movement in year-on-year terms would change the debt-to-GDP ratio by 0.4 percentage points. This is mainly because South Africa's debt is in large part denominated in rand. Moreover, long average maturities help reduce pressures from rollovers, particularly when the rand value of FX bonds increases due to rand depreciation. Fiscal revenue and expenditure are mainly in the local currency.

**12.      The banking system is resilient to rand movements**. The left panel of Figure 8 shows South African banks borrow and lend mainly in rand, thus, they are little affected by rand movements. In addition, the impact of any adverse shock would be absorbed by strong bank balance sheet conditions-the right panel shows that domestic banks are well capitalized, profitable, and their NPLs are relatively low, thus representing strong buffers to absorb shocks.

**13.      The system-wide picture masks significant diversity among banks**. For instance, some small banks have relatively high FX debt as a share of total assets (Figure 9). This reflects their business models, which make their equity holdings high relative to total assets. Yet large FX movements could put those banks under pressure. In isolation these banks are small, but if negatively affected, the broader banking system could suffer through confidence effects.

## Figure 7. South Africa: Fiscal Sector Characteristics

**Public Debt Due To Rand Performance**



Debt elasticity to rand performacen = 0.04

■ Debt due to ER depreciation (% of GDP) 1/
●— Rand per dollar (%, yoy, right)

1/ Derived from FX debt, rand performance, and interest rates.
Sources: Haver and 2018 South Africa Staff Report.

**Sovereign Debt Average Maturity and FX Share**



Sources: BIS, Haver, and IMF staff calculations.

## Figure 8. South Africa: Financial Sector Characteristics

**Emerging Market Bank Forex Loans and Liabilities**



**Selected Emerging Market Bank Soundness**
(Percent, showing quartiles and South Africa)



Sources: Financial Soundness Indicators and IMF staff.

Sources: BIS, Haver, and IMF staff calculations.

**14.      The pass-through of exchange rate depreciation and volatility to inflation is small**.
Kabundi and Mlachila (2019) suggest that the exchange rate pass-through to headline inflation in
South Africa declined from around 50 percent in the late-1990s to 20–25 percent in more recent years
owing largely to improved central bank credibility. This degree of exchange rate pass-through is
comparable to other EMs, gauging from cross-country results discussed by Carstens (2019), even
though the two sets of estimates are based on different approaches. Forbes et al (2017) find South
Africa's pass-through fell from 15 percent in 2004–09 to 6 percent, one of the lowest across its peers,
in 2010–15. Staff analysis shows that the pass-through of rand volatility to inflation is relatively small
(Miyajima, 2019).

### Figure 9. South Africa: Selected Balance Sheet Items of South African Banks

| | FX debt (% of assets) | Equity (% of assets) | Assets (% of system) |
|---|---|---|---|
| **Bank with FX debt** | | | |
| Baroda | 66.4 | 30.8 | 0.0 |
| SBI | 58.3 | 18.1 | 0.2 |
| Taiwan | 44.7 | 14.0 | 0.0 |
| BOC | 34.6 | 18.0 | 0.8 |
| BNP | 32.1 | 18.1 | 0.4 |
| ChiCon | 24.6 | 14.7 | 0.6 |
| HSBC | 16.0 | 10.7 | 1.0 |
| StanChart | 8.9 | 12.5 | 0.6 |
| DB | 6.7 | 10.1 | 0.2 |
| Standard | 6.3 | 7.5 | 24.0 |
| Investec | 4.8 | 7.9 | 8.1 |
| JPM | 3.7 | 12.8 | 0.9 |
| Firstrand | 3.1 | 7.8 | 21.4 |
| Ned | 2.8 | 7.7 | 17.3 |
| Habib | 1.8 | 9.3 | 0.0 |
| Absa | 1.6 | 7.5 | 19.7 |
| Sasfin | 1.1 | 10.7 | 0.2 |
| Socgen | 0.9 | 10.0 | 0.1 |
| Citi | 0.6 | 15.8 | 1.1 |
| HBZ | 0.4 | 8.8 | 0.1 |
| Merc | 0.0 | 17.8 | 0.3 |
| | | | |
| **Banking system average** | **4.3** | **8.6** | **100** |

Sources: SARB BA900 lines 38 and 63, and IMF staff.

**15.      The large domestic investor base represents another source of resilience**. South Africa's local investor base as a share of GDP is one of the largest in EMs and has tended to reduce asset price volatility by buying local assets when their valuation became more attractive and vice-versa (Figure 10). A large local investor base works as a shock absorber to rand volatility.

## D.   Impact of Rand Volatility on Private Investment

**16.      There are at least two channels through which rand volatility and depreciation could affect private investment**. First, higher volatility generally increases uncertainty and the risk premium, discouraging firms from investing—particularly those sensitive to uncertainty. Indeed, exchange rate volatility, including rand volatility specifically, is found to be a key deterrent to FDI (Hanusch et al, 2018; Rand Global Markets Research and National Treasury, 2015). Second, higher currency volatility and depreciation would have negative effects in the presence of currency mismatches in investors' balance sheets, reducing resources available for

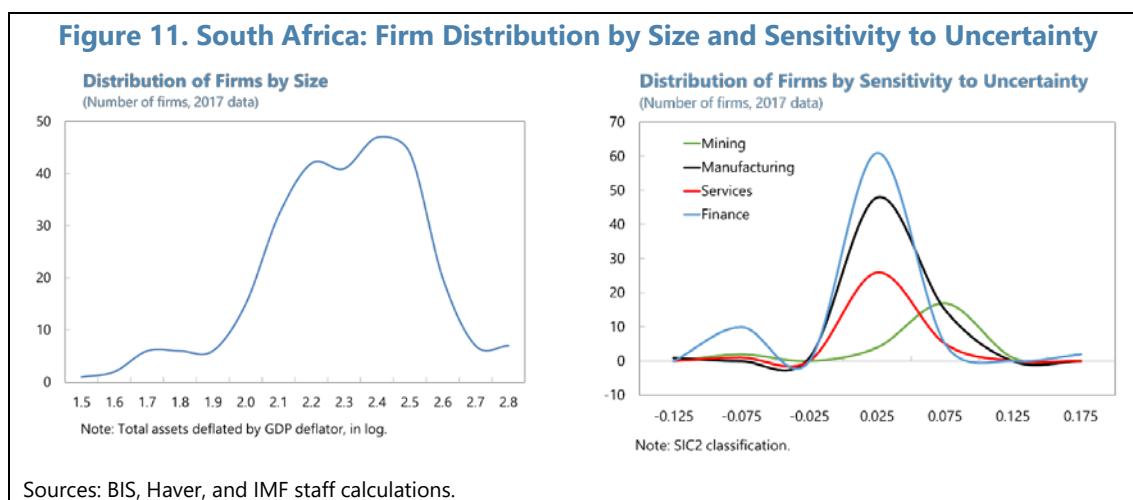### Figure 10.  South Africa: Domestic Investor Base
(Percent of GDP)
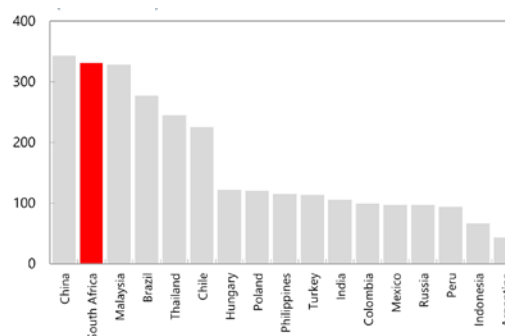


Sources: BIS, Haver, and IMF staff calculations.

investment. These impacts could be larger for SMEs than for large firms, to the extent that SMEs are more financially constrained and have less access to natural and financial hedging on currency risk.

**17.     Two different sets of private investment are considered for this analysis**. First, we look at domestic firm-level capital expenditure. The micro-level data would allow us to assume sector-level sensitivity shocks and identify heterogeneous response depending on firm size. For instance, the results would provide useful information with respect to SMEs. Second, we also look at non-resident portfolio investment. High-frequency data would allow us to capture important market reactions which could be lacking in low frequency data. What we do here relates to the literature on the impact of currency movements on economic growth, including Fowkes, Loewald and Marinkov (2016).

**Capital Stock**

**18.     The impact of rand volatility on capital stock accumulation is estimated using firm-level data at the 3-digit SIC level**. The data include a wide spectrum of 704 listed firms in South Africa for 2000–17 from the Worldscope dataset. The left panel of Figure 11 shows the distribution of firms by size, with its long-left tail implying the inclusion of SMEs.[4] The analysis focuses on the heterogenous responses of firm investment to rand volatility, depending on their intrinsic sensitivity to uncertainty. To do that, we use an index of sector-level sensitivity to uncertainty estimated from US firms, which allows us to address the endogeneity issues in measuring sensitivity to uncertainty.  The right panel shows the distribution of firms in South Africa data by sensitivity to uncertainty.[5] The distributions of mining and manufacturing firms are located more to the right, reflecting greater sensitivity to uncertainty, compared to those of services and finance.



**Figure 11. South Africa: Firm Distribution by Size and Sensitivity to Uncertainty**

Sources: BIS, Haver, and IMF staff calculations.

---

[4] We use the median value of firm size in the sample to separate SMEs from large firms.

[5] To construct the index, we follow Tong and Wei (2019) and take three steps as below. First, we regress each US stock's daily returns onto the daily VIX index for 2000–06. Second, the firm-level sensitivity to uncertainty is defined as the negative value of the coefficient for the uncertainty index. Finally, for each 3-digit SIC sector, we define the sector-level intrinsic sensitivity to uncertainty by the median value of the firm-level sensitivity within the sector. This uncertainty-index is assumed to vary mostly due to technological reasons, such as the sector's intrinsic sensitivity to the volatility of the economy through the input-output linkages.

**19.      The results suggest that higher rand volatility reduces SME investment**. In Table 1, we look at how the interaction of sensitivity to uncertainty with rand volatility affects firm-level capital stock accumulation.[6]  We first look at the whole sample of firms (column 1), and then we further split the sample into SMEs (Column 2) and large firms (Column 3). The overall pattern, as illustrated in Figure 12, is that rand volatility significantly reduces investment of SMEs but has little impact on investment of large firms. The results are consistent with the IMF team's finding that policy uncertainty limits private investment and growth.[7] The economic impact can be considered relatively large for SMEs. For an SME with relatively large sensitivity to uncertainty (at the 90 percent threshold of sensitivity to uncertainty shocks, 0.046), a relatively large increase in rand volatility (inter-quartile increase of rand volatility, 0.6), leads to a decline in the ratio of capital stock to assets by 1 percentage point. This is relatively large compared to the variation in the data (the inter-quartile change of the capital/asset ratio is 3.4 percentage points). This could underestimate the negative impact on SMEs' investment if smaller SMEs not captured in the database are more averse to uncertainty.



**Figure 12. South Africa: Impact of Rand Volatility on Firm Investment**

(Coefficient on term "rand vol x sensitivity to uncertainty")

Note: ** and *** signify significance at the 5 and 1 percent level.

Sources: BIS, Haver, and IMF staff calculations.
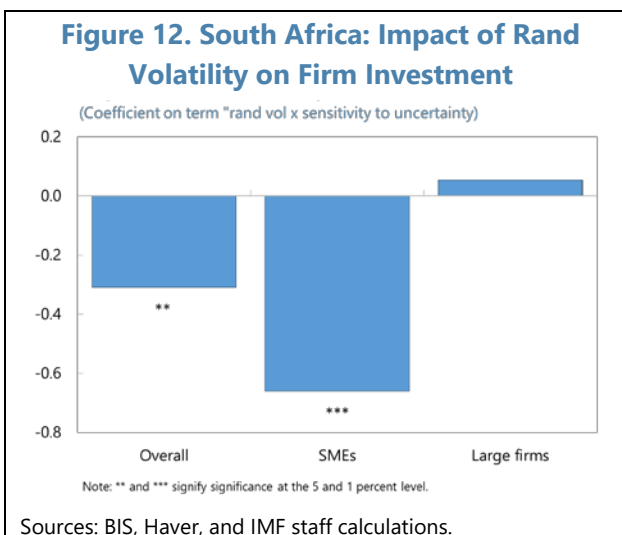
**Cross-Border Capital Flows**

**20.      Next, we examine the impact of rand volatility on cross-border portfolio investment flows into South Africa**. Portfolio inflows are important for South Africa. The left chart of Figure 13 shows that portfolio investment, the yellow bars, was historically an important source of current account financing. The role of portfolio investment declined as nonresident investor sold local bonds and equities during much of 2018. We use net nonresident purchases (weekly flow data) from January 2000 to April 2019 (in billions of rand) in the econometric analysis. The right panel gives a visual impression of such flows in cumulative terms since January 2000. The green line represents total flows, and the red and blue lines are subcomponents, equities and bonds, respectively. Total flows started to stagnate in 2013–14. Since early-2018, South Africa has lost $15 billion dollars' worth of net portfolio flows. As for the model, flows are regressed on rand depreciation in percent change, lagged by one week, and rand volatility (the standard deviation of the percent change of US dollar-rand pair over the past four weeks).
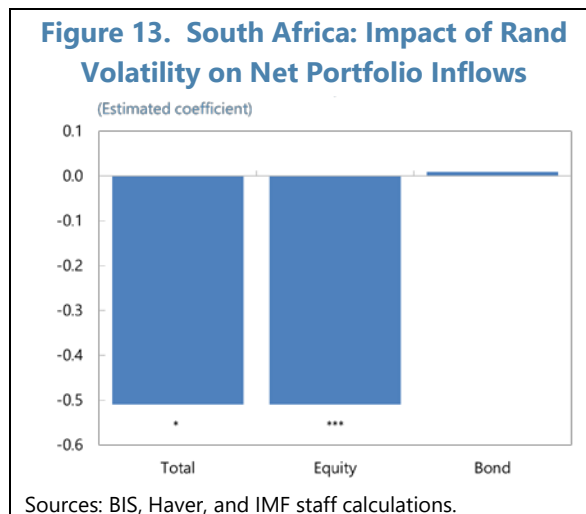
---

[6] Rand volatility is measured as the volatility of the daily percent change in dollar-rand currency pair for each year. Capital stock is expressed relative to total assets.

[7] This pattern also confirms the earlier findings by Fowkes, Loewald and Marinkov (2016) that rand volatility has limited impact on the growth of large firms.

**21.     Results show that uncertainty (captured by rand volatility) negatively affects equity flows, consistent with our hypothesis**. Figure 13 shows that higher rand volatility significantly (statistically) reduces total portfolio net inflows (see also Column 1 of Table 2). The reduction in portfolio inflows is mostly driven by the decline of equity inflows, and to a lesser extent by bond inflows (Columns 2 and 3 of Table 2). This is because rand volatility increases the volatility of firm profits and stock returns, and hence increases the risk premium and reduces the demand for equities. By contrast, bond holders, receiving fixed income, are less subject to volatility of firm operations, and instead worry more about defaults on their debt liabilities. In terms of economic significance, the impact of rand volatility on equity flows does not appear large, suggesting that many factors are at play in affecting equity flows. Faced with relatively large rand volatility (an interquartile increase of rand volatility of 0.5), equity flows would fall by R250 million. This is relatively small compared to several different benchmarks—one standard deviation of weekly net equity flows is 10 times larger, or R2.4 billion; over the past year, R4 billion worth of net portfolio flows left the country every week, on average; and the SARB's international reserve holdings are at more than R700 billion.



**Figure 13.  South Africa: Impact of Rand Volatility on Net Portfolio Inflows**
(Estimated coefficient)

Sources: BIS, Haver, and IMF staff calculations.

## E.   Conclusion

**22.     Findings of this study suggest that rand volatility tends to have limited policy tradeoffs, even though SMEs tend to be adversely affected**. The impact of rand volatility on economic indicators such as firm investment and portfolio flows is relatively small. However, there are some subsectors that are more vulnerable to rand volatility than others, such as SMEs. To reduce rand volatility affecting investment in these sectors, greater policy certainty is needed. This could be achieved by clearer communication of the policy agenda and the decisive implementation of announced measures. In doing so, it is critical to avoid measures that could negatively affect private investment and economic growth. Lower risk premium, in terms of inflation and sovereign, would reduce interest rate differentials with trading partners and the attendant premium for hedging against expected rand depreciation. While advancing these reforms, it would be crucial to maintain the SARB's policy of allowing the rand to freely absorb shocks while preserving its international reserve buffers—a regime that has served South Africa very well.

**Table 1. South Africa: Rand Volatility and Firm Investment**
(By Firm size)

| | All firms | Small/Medium firm | Large firm |
|---|---|---|---|
| Rand volatility * sensitivity to uncertainty | -0.31** | -0.66*** | 0.054 |
| | [0.15] | [0.26] | [0.17] |
| Firm fixed effects | Yes | Yes | Yes |
| Year fixed effects | Yes | yes | Yes |
| Observations | 5708 | 2,948 | 2760 |
| Number of firms | 704 | 429 | 275 |
| R-squared | 0.02 | 0.02 | 0.02 |

**Table 2. South Africa: Rand Volatility and Portfolio Inflow**

| | (1) | (2) | (3) |
|---|---|---|---|
| VARIABLES | total inflow | equity inflow | bond inflow |
| % change of rand (lag) | -19.3*** | -2.82 | -16.5*** |
| | [5.34] | [3.24] | [4.06] |
| rand volatility | -0.51* | -0.51*** | 0.0011 |
| | [0.28] | [0.17] | [0.21] |
| Constant | 0.81** | 0.58*** | 0.22 |
| | [0.32] | [0.19] | [0.24] |
| Observations | 1,153 | 1,153 | 1,153 |
| R-squared | 0.014 | 0.009 | 0.014 |

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

# References

Carstens, Agustín. 2019. "Exchange rates and monetary policy frameworks in emerging market economies." Bank for International Settlements General Manager's Lecture at London School of Economics, 2 May 2019.

Forbes, Kristin, Ida Hjortsoe, and Tsvetelina Nenova. 2017. "Shocks versus structure: explaining differences in exchange rate pass-through across countries and time." Bank of England Discussion Paper No. 50.

Fowkes, David, Chris Loewald, and Marina Marinkov. 2016. "Inflating our troubles: South Africa's economic performance and the exchange rate", Economic Research Southern Africa (ERSA) Policy Paper 22.

Hanusch, Marek, Ha Nguyen, and Yashvir Algu. 2018. "Exchange rate volatility and FDI inflows: Evidence from cross-country panel data," World Bank Macroeconomics, Trade, and Investment (MTI) Discussion Paper 2.

Kabundi, Alain, and Montfort Mlachila. 2019. "The role of monetary policy credibility in explaining the decline in exchange rate pass-through in South Africa." Economic Modelling. 79, 173–85.

Maveé, Nasha, Roberto Perrelli, and Axel Schimmelpfennig. 2016. "Surprise, surprise: What drives the rand / U.S. dollar exchange rate volatility?" IMF Working Paper 16/205.

Miyajima, K. 2019. "Exchange Rate Volatility and Pass-Through to Inflation," IMF Working Paper No. 19/277.

RMB Global Markets Research and National Treasury. 2015. Currency risk and risk management in South Africa.

Tong, Hui and Shang-Jin Wei. 2019. "Endogenous Corporate Leverage Response to a Safer Macro Environment: The Case of Foreign Exchange Reserve Accumulation", NBER Working Paper No. 26545.

# GROWTH IN SOUTH AFRICA: ISSUES AND REFORM OPTIONS[1]

*Since 2007 South Africa's growth performance has been persistently weaker than in other emerging markets due to a deteriorating business environment that in turn responds to weakening institutions, reduced competition, and low public spending efficiency, compounded by labor market rigidities. Boosting growth will require strengthening the macroeconomic environment and institutions, reducing microeconomic distortions in product and labor markets, and improving the provision and quality of complementary inputs for production.*

## A.  Introduction

**1.      South Africa's weak growth performance has contributed to high unemployment levels**. Real per capita GDP growth has averaged 1.2 percent since 1994 compared to 2.8 percent for emerging market (EM) comparators and 5 percent for the top EM growth performers within the sample.[2] Underperformance became more marked in the last 5 years when per-capita GDP growth was negative. Except for a growth acceleration period (2001–07), job creation was persistently insufficient to absorb a rapidly growing labor force, driving the unemployment rate to about 29 percent (56 percent for the youth). Moreover, 40 percent of the unemployed (60 percent of the youth) have never had a job, and one third of the unemployed have not been employed for 5 years.



**Real GDP Per Capita Growth**
(Percent change, year on year)
— South Africa  - - EM median  - - EM top performers in growth
Source: IMF World Economic Outlook, October 2019.

**Unemployment**
(Percent)
— South Africa  - - EM median  - - EM top performers in growth
Source: IMF International Financial Statistics.
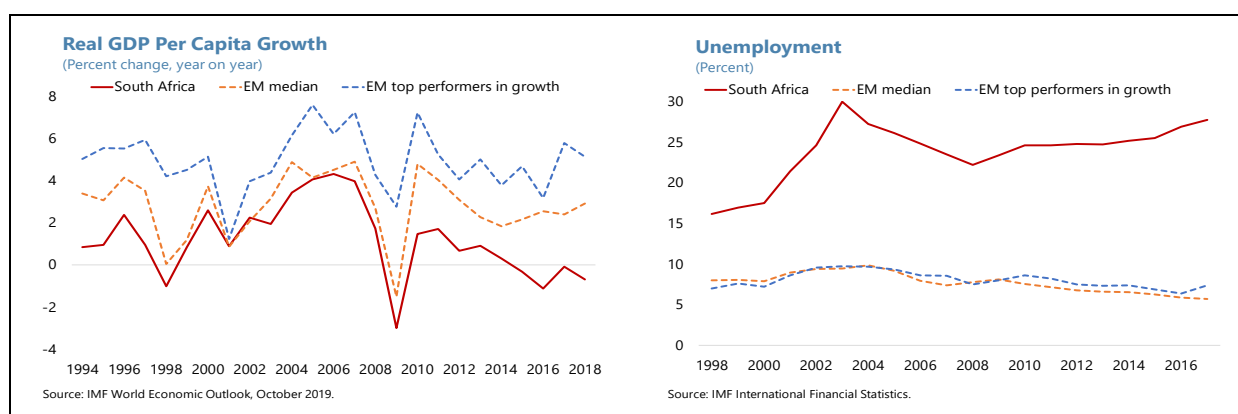
**2.      Poverty and inequality have increased due to their correlation with employment**. Income from employment accounts for 40 percent of total income for poor households and 80 percent for households that move out of poverty. In the context of feeble growth and skilled labor scarcity, the bulk of new jobs are taken by high-skilled, educated, and experienced workers,

---

[1] Prepared by Alejandro Simone, Zhangrui Wang, and Yiruo Li; reviewed by Ana Lucía Coronel.

[2] The EM group includes Argentina, Brazil, Chile, China, Colombia, Egypt, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, The Philippines, Poland, Russia, South Africa, Thailand, Turkey, and the United Arab Emirates. The EM top performers are the 5 countries within the EM who experienced the highest compounded growth rates in real GDP per capita from 1994 to 2018 and includes India, China, Peru, Poland, and Turkey.

who are also better paid, contributing to increasing income inequality. Improving growth performance and job creation is critical to reversing the deteriorating trend in social indicators.

## B.   Growth Characteristics
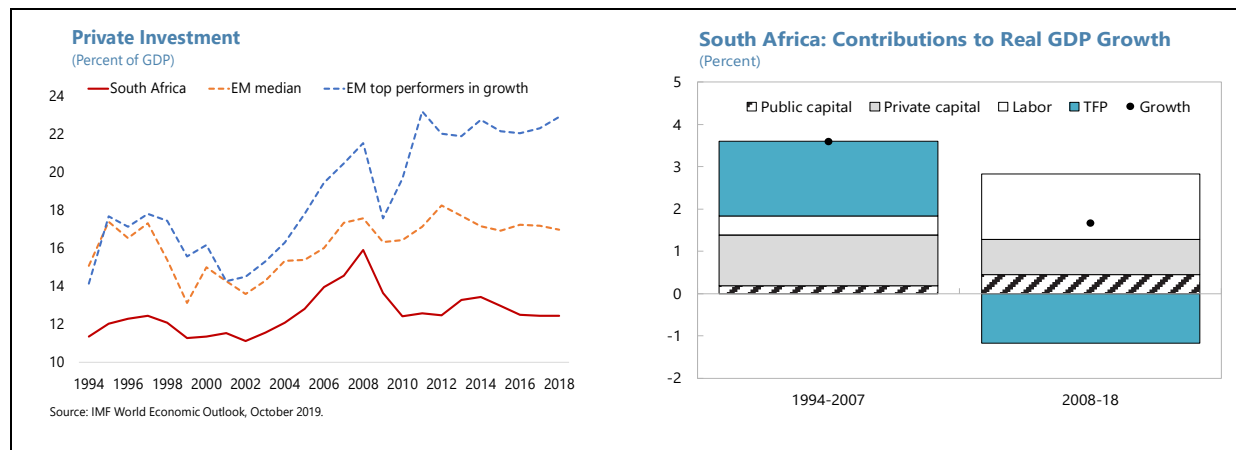
**Weak Private Investment and TFP**

3.      **Low contributions of private investment and total factor productivity (TFP) underlie South Africa's subdued growth performance**. A growth accounting exercise suggests that private investment's contribution to growth was about half of that of the median EM and 40 percent of the top growth performers' in 1994–2018. This has been accompanied by a contribution of TFP that is less than half of that in the median EM and one third of the one for top growth performers, clearly revealing the large role of factor allocation efficiency in growth underperformance.

### Growth Accounting: South Africa and Other EMs 1994–2018

|  | South Africa | EM Median | EM Top Performers Median |
|---|---|---|---|
| **Real GDP Growth** | <u>**2.8**</u> | <u>**4.5**</u> | <u>**5.9**</u> |
| **Contribution of Physical** | **1.3** | **2.3** | **3.1** |
| *Public Capital* | 0.3 | 0.5 | 0.6 |
| *Private Capital* | 1.0 | 1.9 | 2.5 |
| **Contribution of Employment** | **0.7** | **0.7** | **0.4** |
| *Public Employment* | 0.1 | 0.1 | -0.1 |
| *Private Employment* | 0.6 | 0.6 | 0.5 |
| **Contribution of Human Capital** | **0.2** | **0.4** | **0.6** |
| **TFP (Allocative Efficiency)** | **0.5** | **1.1** | **1.8** |

Source: Fund Staff Estimates.

4.      **The relative growth underperformance with respect to peers after 2007 coincided with a sharp decline in TFP growth and a change in the composition of investment.** TFP growth was above the median EM's in 1994–2007 but became negative and lower than the median in 2008–18, reflecting deteriorating allocative efficiency. In addition, while the contribution of investment to growth was lower than in other EMs in both periods, its composition changed significantly with private investment contributing 30 percent less and public investment doubling its contribution. This trend is also confirmed by the evolution of investment levels. After some catch-up during 2001–08, private investment declined drastically and remained largely stagnant, reopening a large gap with other EMs. Public investment started to increase in 2006 (25.6 percent), peaked in 2009 (36.7 percent), and declined in recent years due to weakening finances.

**Private Investment**
(Percent of GDP)

South Africa ·-·- EM median ··-·· EM top performers in growth

**South Africa: Contributions to Real GDP Growth**
(Percent)

Public capital   Private capital   Labor   TFP   Growth

Source: IMF World Economic Outlook, October 2019.

## Large Contribution of the Non-Tradable Sector amid Lackluster Export Performance

**5.      Growth was led by sectors that tend to produce exclusively for the domestic market** (i.e., non-tradable sectors). The share of private non-tradable sectors (i.e., construction and tertiary private services)[3] in total value added increased by about 14 percentage points since 1994 largely at the expense of tradable sectors (i.e., agriculture, mining, and manufacturing) and to a lower extent the public non-tradable sector (i.e., general government, electricity and water). The relative price of tradable goods in the economy, measured through national accounts deflators, exhibited a declining trend, reflecting incentives to allocate resources to non-tradable sectors.[4] Within the tradable and non-tradable sectors, all sub-sectors contracted and expanded, respectively. Mining was the worst performing sub-sector, while finance, business services, and real estate were top performers.

**Sector Shares in Real Value Added**
(Percent of real gross value added)

Tradable
Private non-tradable
Public non-tradable

Source: Statistics South Africa.

**Relative Price of Tradables in terms Private Non Tradables**
(Index, 2010=100)

Relative Price of Tradables

Source: Statistics South Africa.

---
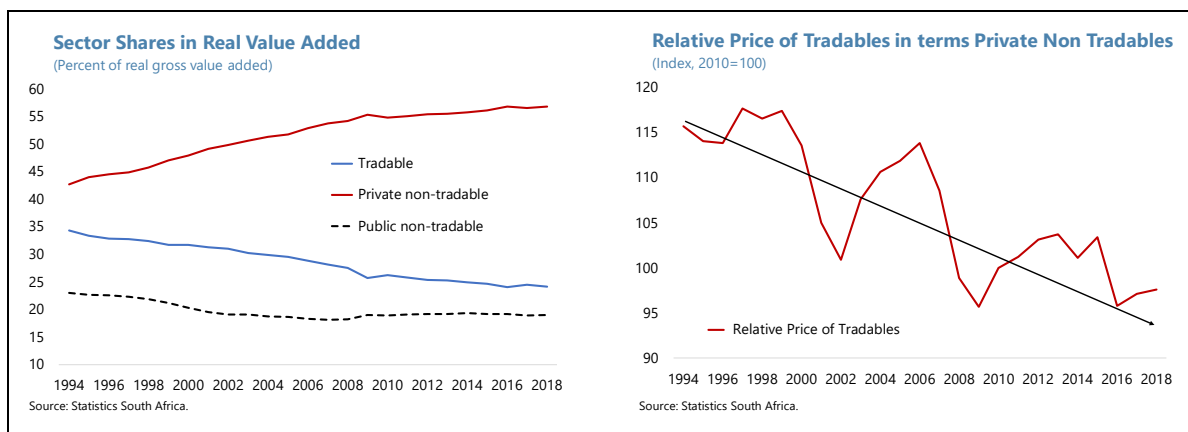
[3] Tertiary private service sectors include wholesale, retail, trade, hotels and accommodation, transport, financial, business and real estate, and personal services as defined by the National Accounts.

[4] The relative price of tradables is defined as the price of tradables divided by the price of private non-tradables. The price level for each relevant sector component was weighted by its corresponding share in value added for a given year to give the overall sector price level for a given year.

**Tradable Sectors Shares in Real Value Added**
(Percent of real gross value added)

Share of agriculture
Share of mining
Share of manufacturing

Source: Statistics South Africa.

**Non Tradable Sector Shares in Real Value Added**
(Percent of real gross value added)

Construction
Finance
Wholesale
Personal Services
Transport

Source: Statistics South Africa.
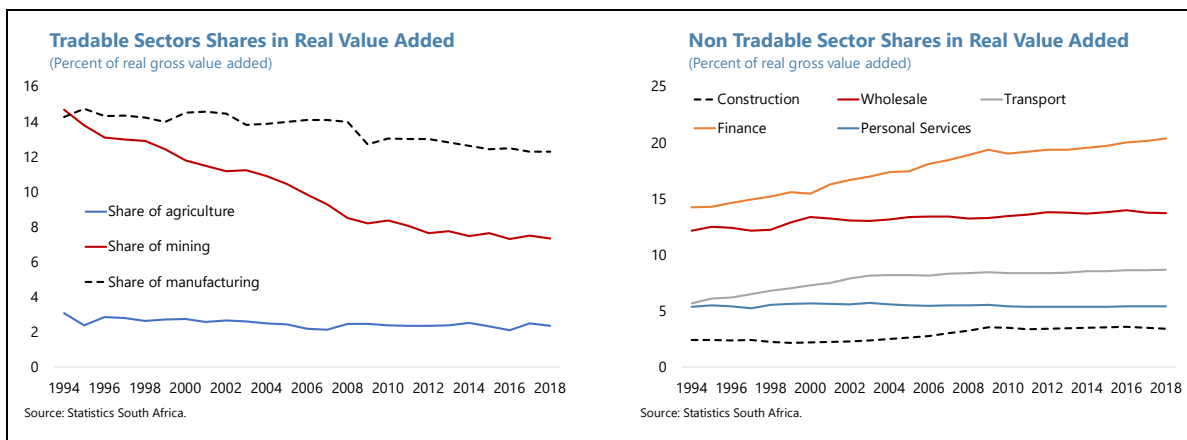
**6.** **Export performance was lackluster compared to other EMs**. South Africa's exports have remained broadly stagnant as a share of world goods exports, in clear contrast to the increasing trend in exports of the median EM and the fastest growing EMs in the sample. The composition of exports shows that the importance of minerals and manufacturing sectors has remained broadly unchanged. The lack of export dynamism is also confirmed by the export complexity index of the Growth Lab at Harvard University, which presents South Africa with one of the least complex export structures among EMs.

**Market Share of Goods Exports**
(Percent of total world goods exports)

South Africa
EM median
EM top performers in growth

Sources: IMF International Financial Statistics, and staff calculations.

**South Africa: Export Structure**
(percent of goods exports)

Manufactured goods
Crude materials, inedible, except fuels
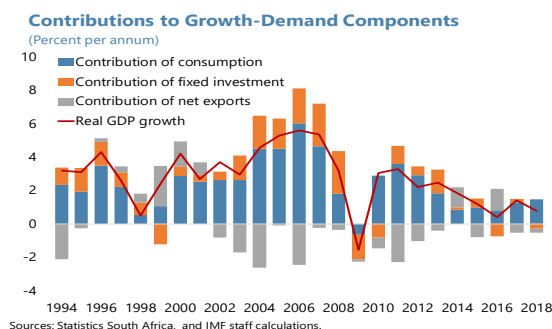Other Exports
Machinery &transport equipment
Mineral fuels, lubricants & related

Source: UN Comtrade and staff calculations.

## Strong Consumption Contribution

**7.** **On the demand side, consumption provides the greatest contribution to growth.** This is consistent with the relatively weak contribution of private investment and net exports during 1994–2018, with some exceptions usually related to growth decelerations in recent years.

**Contributions to Growth-Demand Components**
(Percent per annum)

Contribution of consumption
Contribution of fixed investment
Contribution of net exports
Real GDP growth

Sources: Statistics South Africa, and IMF staff calculations.

## Large Role of Government

**8.** **The public sector carries out a larger share of investment compared to other EMs.** On average, public investment in South Africa has represented 31 percent of total investment compared

to 22 percent in the median EM and 24 percent in the top growth performers during 1994–2018. Public investment has been particularly high by historical standards since 2007 and has only declined in recent years to give room to other budget and SOE expenses. The high public investment period after 2007 coincided with the deterioration in TFP growth captured in the growth accounting exercise.[5]



**Share of Public Investment in Total Investment**
(1994-2018 average, percent)

Sources: Statistics South Africa, IMF World Economic Outlook (October 2019).

**Public Investment**
(Percent of GDP)

Source: IMF World Economic Outlook, October 2019.
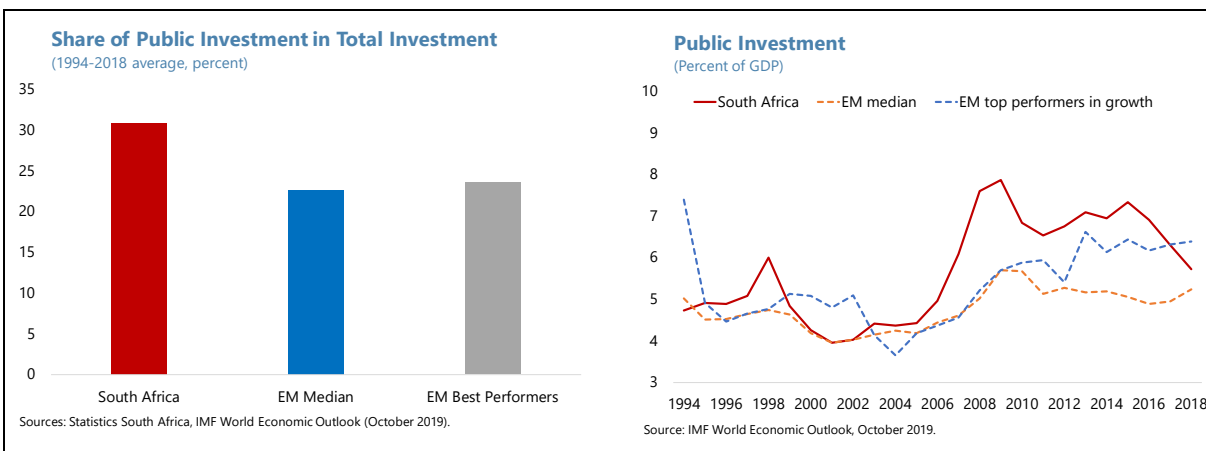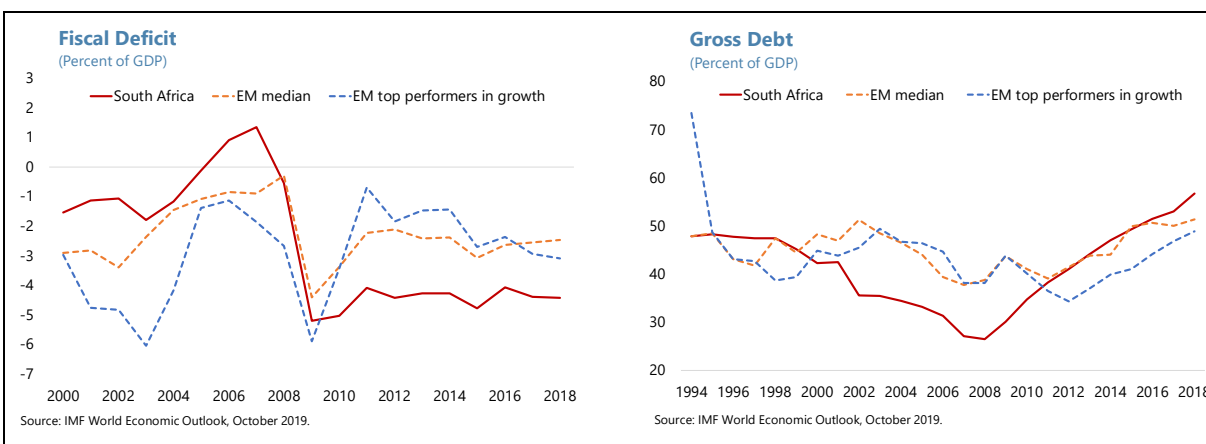
**9.      The role of government, as measured by the size of public expenditure, increased significantly after 2007**. South Africa's government expenditure was on average about 2 percentage points of GDP above the median EM and about the same level of the top performers in 1994–2007. After increasing on average by 6 percentage points of GDP in 2008–18, public expenditure as a share of GDP was about 3 percentage points of GDP higher than the median EM and 2 percentage points of GDP higher than the top performers during the period.



**Government Expenditure**
(Percent of GDP)

Source: IMF World Economic Outlook ,October 2019.
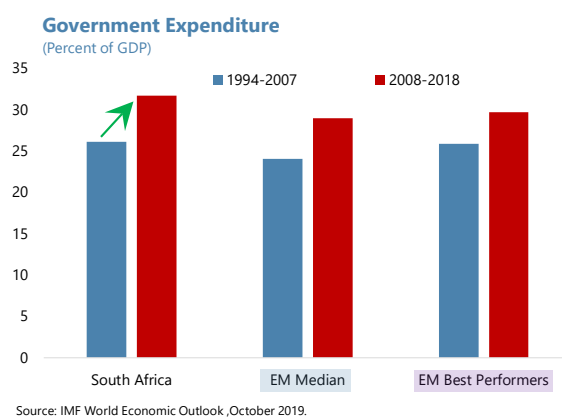
**10.     Increased expenditure resulted in a permanent widening of fiscal deficits and led to a faster debt accumulation than in other EMs.** While South Africa had significantly lower debt levels than other EMs in 1994–2007, as of end-2018 its debt surpassed the median of EM comparators and top growth performers. The favorable trend of accelerating growth and debt reduction that occurred during 2001–07 was replaced by the worsening dynamics of slowing growth, high deficits, and debt accumulation.

---

[5] Concerns about efficiency and governance of SOEs could help explain this performance as they carry out about 40 percent of public investment as shown by the 2019 Budget Review for FY15/16 to FY17/18.

**Fiscal Deficit**
(Percent of GDP)

Source: IMF World Economic Outlook, October 2019.

**Gross Debt**
(Percent of GDP)

Source: IMF World Economic Outlook, October 2019.

## C.   Identifying Main Constraints to Growth

**Methodology**

**11.      The methodology used to identify main constraints to growth is based on the growth diagnostics approach by Hausmann *et al.* (2008)**. The approach offers a structured method to consider alternative hypotheses that could explain the factors behind weak private investment and TFP based on country experiences. These hypotheses are summarized in the form of a stylized tree with several levels. The first level explores whether weak private investment responds to a low rate of return (i.e., either because of dearth of profitable investment projects or because investors cannot appropriate the returns) or to availability/cost of financing. The next levels explain more specifically potential factors that could lead to low rates of return, and investment financing issues (i.e., availability or cost).
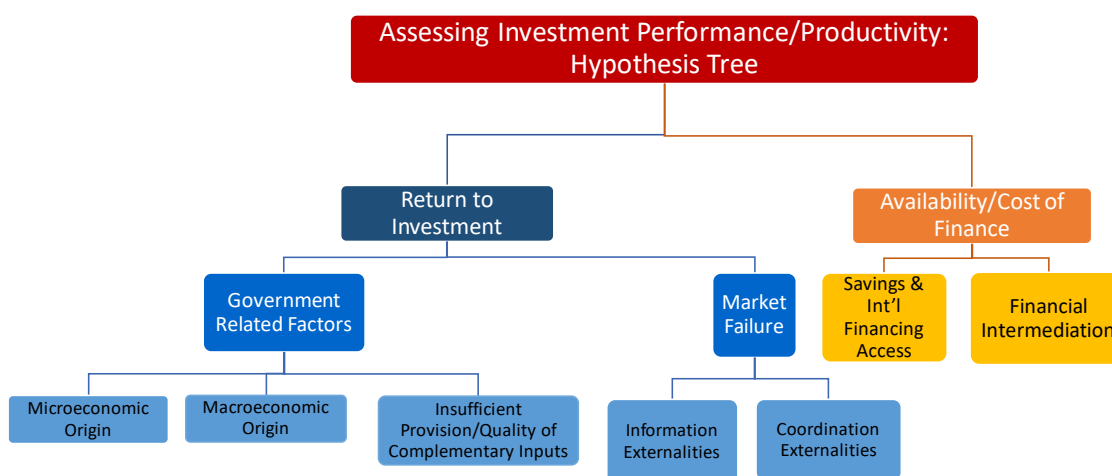


**12.      Specific hypotheses to explain weak private investment are considered**. These include (1) microeconomic features (e.g. market regulations, labor market legislation, governance weaknesses) that raise the cost of doing business; (2) macroeconomic factors (e.g. unsustainable debt, high and volatile inflation, political risks, conflict) that lower the return on investment or create

uncertainty; (3) complementary inputs for business (e.g. inadequate infrastructure, education, health and security); (4) market failure (coordination / information externalities) that constrain the availability of key inputs;[6] (5) financing constraints as measured by the level of national savings or international market access; and (6) financial intermediation issues that could lead to high lending spreads and borrowing costs.

**13.      The growth diagnostics approach is then complemented by a quantification exercise to provide a sense of which reforms could produce the largest per capita growth gains**. The exercise, which draws from Prati *et al*. (2013) and Egert and Gal (2016), investigates the impact of certain reforms on per capita GDP growth to further inform reform prioritization.[7] The reforms under consideration guided by the growth diagnostics results are (1) improving the efficiency of product markets; (2) increasing the flexibility of labor markets (i.e. addressing wage rigidity and the cost of workforce management); (3) improving the provision/quality of complementary factors/inputs such as health, education, infrastructure, security; and (4) adopting macroeconomic reforms that reduce policy and regulatory uncertainty.

## Main Results

### *Growth Diagnostics*

**14.      Access to finance or cost of financing were not binding constraints to private investment**. Private savings exceeded private investment during most years in 1994–2018 excluding the period 2004–08 (except for 2008–09, where financing became a constraint to most EMs). Even in the few years when private investment exceeded private savings, abundant access to international finance was available to cover the gap as evidenced by wide current account deficits. These deficits continued thereafter but largely to finance the general government

**Savings and Investment and Current Account Balances**
(Percent of GDP)



Source: Haver Analytics.

---
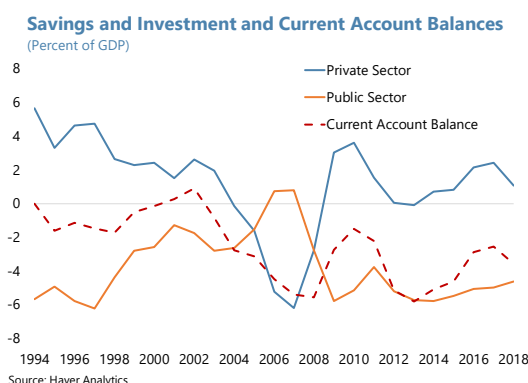
[6] Coordination externalities refer to circumstances where it is not profitable for suppliers to produce certain key inputs because of insufficient demand, which in turn occurs because those considering producing goods that use these key inputs lack suppliers of these inputs. Information externalities arise when an innovating producer has to incur costs to adapt a certain technology to a country where imitators can free ride. As a result, there will either be insufficient incentives for production of optimal levels of certain inputs or, in the extreme, production will not occur.

[7] Estimates of the impact of structural reforms on per capita GDP are performed in three steps. First, the impact of an improvement of each structural indicator on each production factor (i.e., capital, labor, and productivity) is estimated with a panel data regression on a sample of 184 countries over 2000–18. Second, the impact of an improvement in each statistically and economically significant indicator to its corresponding 75th percentile value in the sample over a certain period is calculated. This is done by replacing the impact on capital, labor, and TFP estimated in the first step for a given indicator into a production function. Third, the overall impact of a given reform (e.g. product market reform) is computed by aggregating the impact of an improvement in all its component indicators to the 75 percentile.

and SOEs.[8] South Africa also has access to a large pool of financial savings, especially through pension funds, insurance companies, and investment banks (more than 200 percent of GDP).

**15.      Financial intermediation was not a major obstacle either**.[9] The lending spread had been close to the EM median before 2007 but below thereafter. Similarly, after 2007, the real lending rate has continued to decline in line with the EM median for the most part. Even when the real lending rate was higher than the EM median, growth was considerably faster than in recent years.



**Lending Spread**
(Percent)

Sources: IMF International Financial Statistics, and staff calculations.
Note: Difference between lending and deposit rates.

**Real Lending Rate**
(Percent)

Sources: IMF International Financial Statistics, World Economic Outlook (October 2019), and staff calculations.
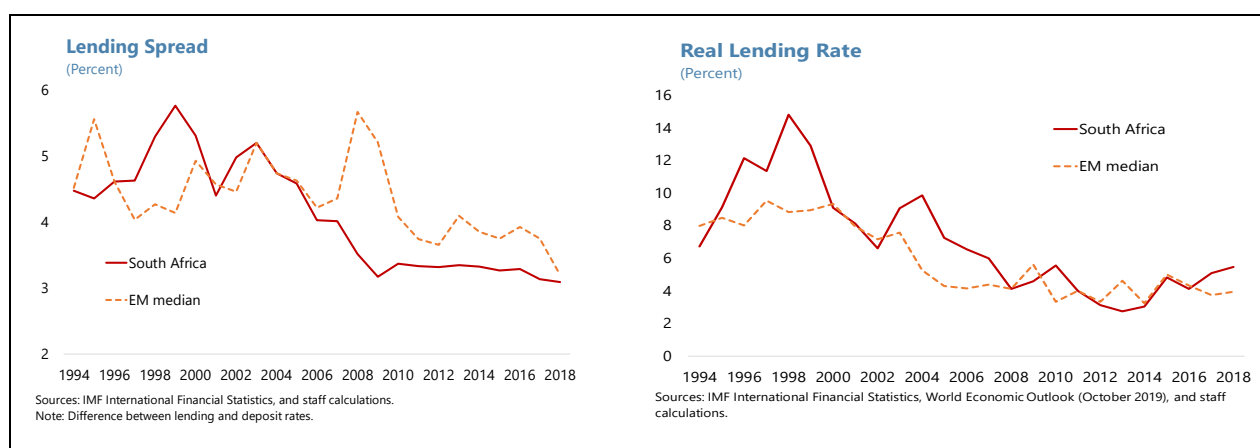
**16.      The behavior of foreign direct investment points to low returns to investment**. The five-year moving average of FDI has been consistently below the median level of other EMs. Moreover, the decline in FDI that followed 2009 was slightly above 50 percent compared to 20 percent in the median EM despite already low levels. At the same time, South African corporates increasingly started to seek investment opportunities abroad (see IMF 2016). These developments suggest that a low rate of return to private investment has been a long-standing problem, worsening after 2009.



**Direct Investment, Net Incurrence of Liabilities**
(Percent of GDP)

Source: IMF World Economic Outlook, October 2019.
Note: Five year moving average.
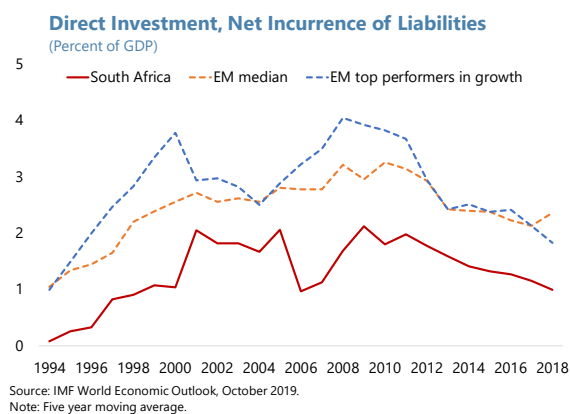
**17.      The evidence that low returns to private investment are a result of market failures is limited**. Countries where this problem is prevalent are expected to have significant correlations between GDP per capita and terms of trade, as they cannot easily shift to other types of exports with better relative prices when terms of trade shocks occur. However, the evidence is mixed on this hypothesis during 1994–2018. While South Africa's export complexity is relatively low as previously

---

[8] The correlation between the current account deficit and per capita GDP growth is low. Current account deficits have been persistent despite slowing growth. This is consistent with access to international finance not being a constraint.

[9] This is not to suggest that all segments of the corporate and household sectors had access to credit at affordable rates. As discussed in IMF (2017), surveys suggest that lack of access to affordable financing is an issue for SMEs and vulnerable households.

noted, the correlation coefficient between GDP per capita and the terms of trade is weak (0.2).

**18.      A business environment not conducive to investment is the most likely factor underlying low and deteriorating rates of return to private investment**. A significant deterioration in South Africa's Global Competitiveness indicators (GCI) and Doing Business Indicators (DBI) scores coincided with the protracted decline in private investment after growth peaked in 2007.[10] Main areas of deterioration in the GCI categories include the macroeconomic environment, higher education and training, goods market efficiency, and institutions.[11] Deterioration in the infrastructure category is also observed. The most significant long-standing relative weaknesses compared with other EMs remained in health and primary education and labor market efficiency areas.[12] (Box 1) Within the institutional category, a long-standing relative weakness in security is also noteworthy and is confirmed by a variety of other data pointing to adverse impacts on the cost of doing business, especially on SMEs and tourism (see Annex I).

**South Africa: Global Competitiveness Index**
(Distance of Score from EM Median Score, Percent of standard deviation)

Sources: World Economic Forum Global Competitiveness Index and IMF staff calculations.

**South Africa: Ease of Doing Business**
(Distance of Score from EM Median Score, Percent of standard deviation)

Sources: World Bank Doing Business and IMF staff calculations.

**19.      These findings are broadly consistent with those in the literature and recent work by the National Treasury**. Dube, Hausmann, and Rodrick (2007) in a survey of possible binding constraints to growth point to low levels of competition by international standards, and high cost of labor (especially elevated premiums for skilled workers and regulated hiring and firing). Faulkner and Loewald (2008) documented the critical role that prudent fiscal policy and sound macroeconomic management had in the growth acceleration period but noted that microeconomic reforms broadly in the areas identified above were needed to sustain the growth acceleration. More recently, National Treasury (2019), which draws on a large array of South African and international

---

[10] The GCI are produced by the World Economic Forum, and combine both official data and survey responses from business executives on several dimensions of competitiveness. The DBI are produced by the World Bank and are survey-based indicators that reflect investors' perceptions on the business environment.

[11] The categories mentioned are those where South Africa's scores declined the most in the pre-2018 revision GCI methodology excluding the financial market development which was discussed in the previous paragraphs based on more reliable non-survey-based data. The pre-2018 GCI methodology revision data is used to maximize comparability with the 2008 data. The GCI methodology was subject to a major revision in 2018 and scores are no longer comparable thereafter.

[12] These are the categories where South Africa scored below the EM median using the pre-2018 revision GCI methodology in both 2008 and 2018.

literature, points to political and policy uncertainty, institutional weaknesses, poorly managed state-owned companies, and barriers to entry that distort product markets as important factors contributing to the low growth environment. It also acknowledges the need to support the stable macroeconomic environment necessary for sustained growth.

***Per Capita Growth Gains from Reform Estimates***

**20.     Results suggest the need to prioritize product market reforms and improve the macroeconomic environment**. Product market reforms are estimated to add slightly above 1 percentage point to per-capita growth once complete. South Africa lags other EMs in this area by less than in the area of complementary factors. In this sense, reaping the full benefits of product market reforms may be less difficult than achieving gains from complementary factors (e.g., health and education), which by their nature also take longer to materialize.[13] Similarly improving the macroeconomic environment would yield about 0.7 percentage points, and the distance to the frontier is lower than for labor markets and



**Real GDP per Capita Growth Gains and Distance to the Frontier**
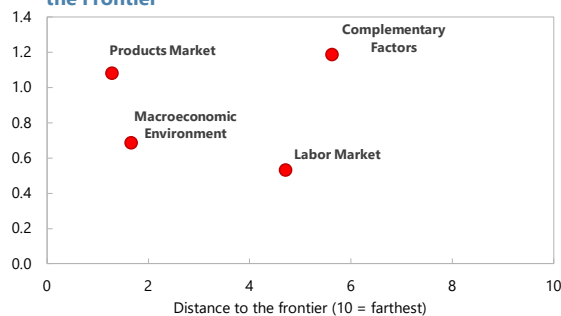
Sources: IMF Staff estimates.
Note: The chart shows the distance from the frontier and the estimated increase in annual growth rate of real GDP per capita if the gap is closed in five years. For complementary factor reforms, a longer time horizon is assumed. The frontier is the 75th percentile value for each indicator in a sample of 20 EM countries.

complementary reforms. These results confirm the findings of the growth diagnostics that the deterioration in the macroeconomic environment and goods market efficiency were among the top factors underlying the weakening business environment since 2008.

**21.     Estimates also confirm the importance of addressing deficiencies in the provision of complementary factors and labor market rigidities**. While the gains from reforms in these areas may be more difficult to achieve and could involve more time, the combined growth payoff of these reforms over time would be potentially as large as those in the macroeconomic environment and labor markets. Moreover, these areas are also those where South Africa tends to lag other EMs the most. Successful implementation of product market and macroeconomic environment reforms can help create reform momentum to advance other reforms. The text chart summarizes the policy options to boost growth suggested by the growth diagnostics and this analysis, which are discussed in detail in the staff report.



**Policies to Boost Growth**

---
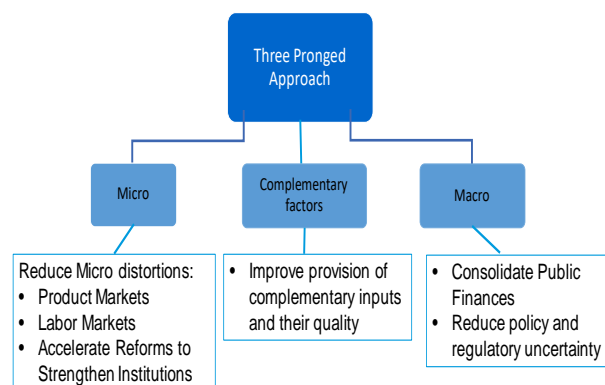
[13] The distance to the frontier is a proxy for reform difficulty. The further the indicators are from those of the better performing EMs, the more they suggest that there is some difficulty in a specific country to improve them since they otherwise would have achieved improvements already.

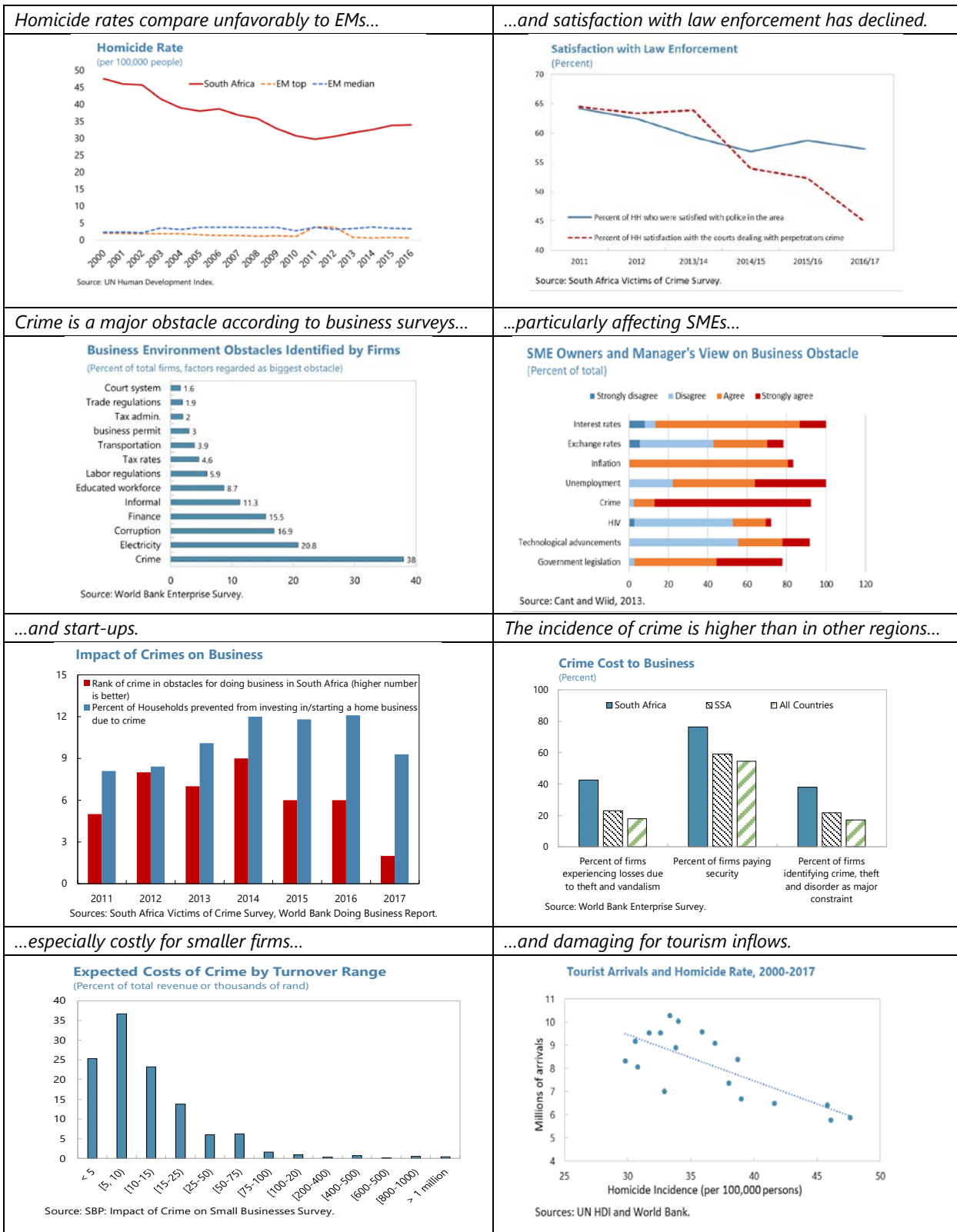| Box 1. Main Issues Highlighted by GCI, 2008–2018 | | |
|---|---|---|
| **Issues** | **Indicators** | **Deviation of Scores from the EM Median between 2008 and 2018** |
| **Institutional Weakening** | • Diversion of public funds<br>• Public trust in politicians<br>• Favoritism in public decisions by public officials<br>• Efficiency of government spending | Change from 0.7 standard deviations above the median to 0.4 below the median, on average. |
| | • Property rights<br>• Strength of auditing and reporting standards<br>• Strength of investor protection | Change from 1.8 standard deviations above the median to 0.8 above the median, on average |
| **Increasing policy and Regulatory Uncertainty** | • Transparency in policy making | Change from 1.2 standard deviations above the median to slightly below the median, on average |
| **Lack of Competition[1]** | • Number of days to start a business<br>• Prevalence of non-tariff barriers<br>• Extent of market dominance<br>• Business impact of rules of FDI.<br>• Effectiveness of anti-monopoly policies | Change from 0.7 standard deviations above the median to 0.1 standard deviations below the median, on average. |
| **SOE Domination of Network Industries** | • Quality of infrastructure | Change from 1.1 standard deviations above the median to 0.1 above the median, on average. |
| **Labor Market Rigidities** | • Cooperation in labor employer relations<br>• Flexibility in wage determination<br>• Hiring and firing practices<br>• Pay and productivity | Despite an improvement of 0.5 standard deviations, indicators remained, on average, below 1.3 standard deviations below the EM median in 2018. |
| **Deficiencies in Higher Education Provision[2]** | • Extent of staff training<br>• Availability of research and training services | Change from 1.4 standard deviations above the EM median to 0.3 standard deviations above the EM median, on average. |
| **Deficiencies in Health Provision[3]** | • Tuberculosis cases<br>• Infant mortality<br>• Life expectancy | Despite an improvement of 0.6 standard deviations, indicators remained 2.1 standard deviations below the EM median in 2018, on average. |
| **Deficiencies in Security Provision** | • Business cost of crime and violence<br>• Organized crime<br>• Reliability of police services | Despite some marginal improvement, indicators remained, on average, 1.1 standard deviations below the EM median |

[1] For a more detailed discussion of barriers to entry see World Bank (2018), Section 3.4 "Contestability of Product Markets". Results on regulatory issues suggested above are also consistent with the OECD findings that South Africa is more heavily regulated that many OECD countries.

[2] Restrictions to skilled immigration further increase the scarcity of skilled workers.

[3] These results are consistent with findings in IMF (2018) where health and education expenditure levels are found comparable to OECD levels, but outcomes are weaker than countries that spend considerably less.

# Annex I. Crime in South Africa and Its Business Impact

| *Homicide rates compare unfavorably to EMs...* | *...and satisfaction with law enforcement has declined.* |
|---|---|
| **Homicide Rate** (per 100,000 people) <br><br> South Africa --- EM top --- EM median <br><br> Source: UN Human Development Index. | **Satisfaction with Law Enforcement** (Percent) <br><br> Percent of HH who were satisfied with police in the area <br> Percent of HH satisfaction with the courts dealing with perpetrators crime <br><br> Source: South Africa Victims of Crime Survey. |

| *Crime is a major obstacle according to business surveys...* | *...particularly affecting SMEs...* |
|---|---|
| **Business Environment Obstacles Identified by Firms** (Percent of total firms, factors regarded as biggest obstacle) <br><br> Court system 1.6 <br> Trade regulations 1.9 <br> Tax admin. 2 <br> business permit 3 <br> Transportation 3.9 <br> Tax rates 4.6 <br> Labor regulations 5.9 <br> Educated workforce 8.7 <br> Informal 11.3 <br> Finance 15.5 <br> Corruption 16.9 <br> Electricity 20.8 <br> Crime 38 <br><br> Source: World Bank Enterprise Survey. | **SME Owners and Manager's View on Business Obstacle** (Percent of total) <br><br> ■ Strongly disagree ■ Disagree ■ Agree ■ Strongly agree <br><br> Interest rates <br> Exchange rates <br> Inflation <br> Unemployment <br> Crime <br> HIV <br> Technological advancements <br> Government legislation <br><br> Source: Cant and Wiid, 2013. |

| *...and start-ups.* | *The incidence of crime is higher than in other regions...* |
|---|---|
| **Impact of Crimes on Business** <br><br> ■ Rank of crime in obstacles for doing business in South Africa (higher number is better) <br> ■ Percent of Households prevented from investing in/starting a home business due to crime <br><br> Sources: South Africa Victims of Crime Survey, World Bank Doing Business Report. | **Crime Cost to Business** (Percent) <br><br> ■ South Africa ▨ SSA ▥ All Countries <br><br> Percent of firms experiencing losses due to theft and vandalism; Percent of firms paying security; Percent of firms identifying crime, theft and disorder as major constraint <br><br> Source: World Bank Enterprise Survey. |

| *...especially costly for smaller firms...* | *...and damaging for tourism inflows.* |
|---|---|
| **Expected Costs of Crime by Turnover Range** (Percent of total revenue or thousands of rand) <br><br> Source: SBP: Impact of Crime on Small Businesses Survey. | **Tourist Arrivals and Homicide Rate, 2000-2017** <br><br> Millions of arrivals vs Homicide Incidence (per 100,000 persons) <br><br> Sources: UN HDI and World Bank. |

# References

Dube, O., R. Hausmann and D. Rodrik. 2007. "South Africa: Identifying the Binding Constraint on Shared Growth." {Publisher?}

Égert, B. and P. Gal. 2016. "The Quantification of Structural Reforms in OECD Countries: A New Framework." OECD Working Paper No. 1354.

Faulkner, D. and C. Loewald. 2008. "Policy Change and Economic Growth: A Case Study of South Africa." World Bank Working Paper No. 41.

Hausmann, R., B. Klinger and R. Wagner. 2008. "Doing Growth Diagnostics in Practice: A 'Mindbook'." Harvard Center for International Development Working Paper No. 177.

Organization of Economic Cooperation and Development.2017. "OECD Economic Surveys South Africa", http://www.oecd.org/economy/south-africa-economic-snapshot/

International Monetary Fund. 2018. Selected Issues, "What Led to the Doubling of Public Debt in the Last Decade? Was Debt good for Growth?" Page 4. Washington, DC.

_____. 2016. Staff Report for the 2016 Article IV consultation, Box 2, Page 7. Washington, DC.

_____. 2017. Staff Report for the 2017 Article IV consultation, Annex 2, Page 44. Washington, DC.

National Treasury. 2019. "Economic Transformation, Inclusive Growth, and Competitiveness: Towards and Economic Strategy for South Africa." http://www.treasury.gov.za/comm_media/press/2019/Towards%20an%20Economic%20Strategy%20for%20SA.pdf

_____. 2019. Budget Review. Annex D Public Infrastructure Update. Table D1. http://www.treasury.gov.za/documents/national%20budget/2019/review/FullBR.pdf

Prati, A., M. Onorato, and C. Papageorgiou. 2013. "Which Reforms Work and under What Institutional Environment: Evidence from a New Dataset on Structural Reforms." *Review of Economics and Statistics*, 95(3) July, p. 946–968.

The Global Competitiveness Index 4.0 Dataset. 2018. http://reports.weforum.org/global-competitiveness-report-2018/downloads/

The Growth Lab at Harvard University. 2019. "Growth Projections and Complexity Rankings", https://doi.org/10.7910/DVN/XTAQMC

World Bank Group. 2018. "Systematic Country Diagnostic: An Incomplete Transition - Overcoming the Legacy of Exclusion in South Africa". Washington, D.C. http://documents.worldbank.org/curated/en/815401525706928690/South-Africa-Systematic-country-diagnostic-an-incomplete-transition-overcoming-the-legacy-of-exclusion-in-South-Africa

World Bank Doing Business Data, https://www.doingbusiness.org/en/data