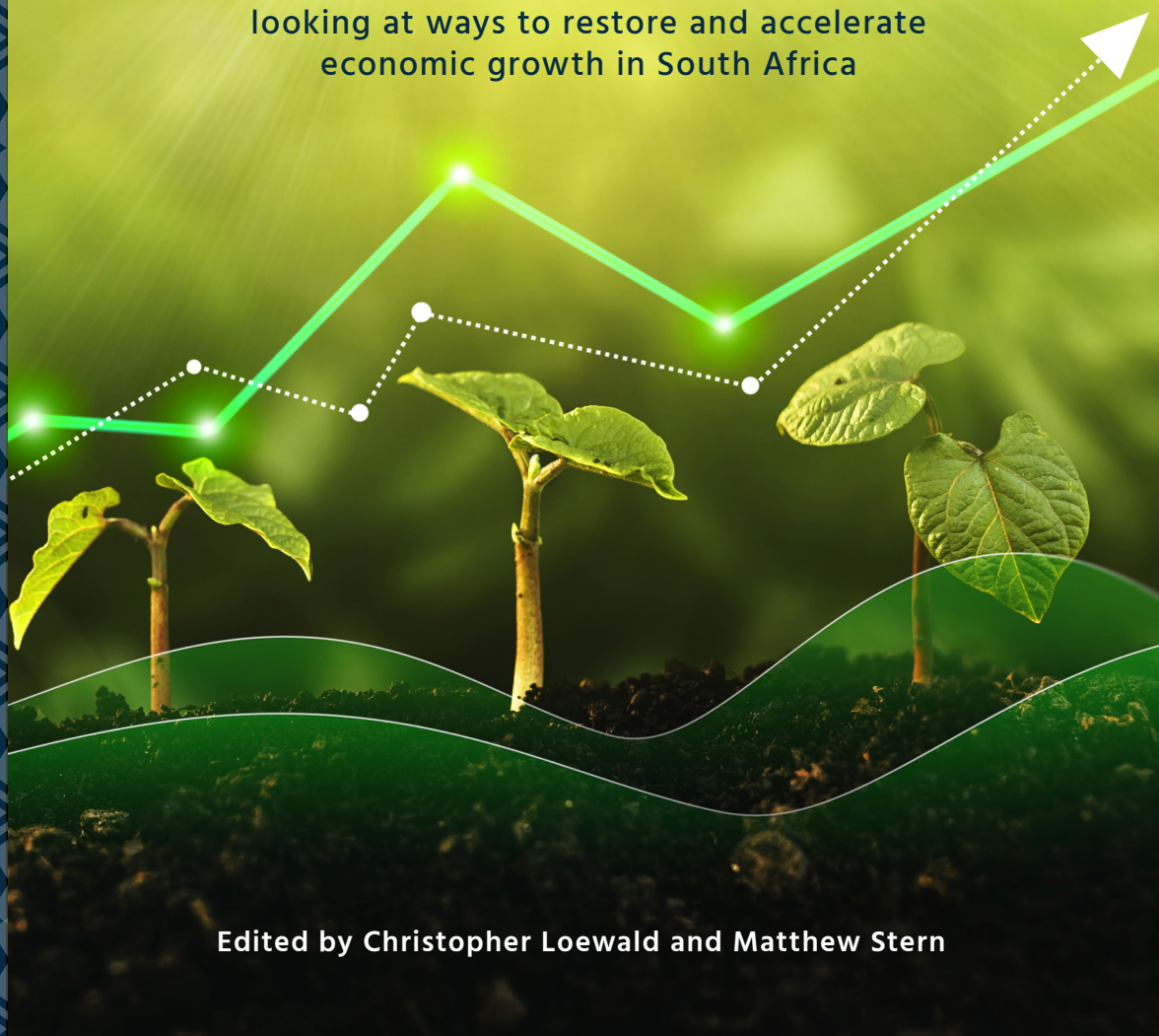


Unlocking growth prospects in post-pandemic South Africa

A compilation of working papers looking at ways to restore and accelerate economic growth in South Africa



Edited by Christopher Loewald and Matthew Stern

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About this book

To assess the likely trajectory of South Africa's economy over the next few years and to outline the available options to restore and accelerate economic growth, the South African Reserve Bank, International Food Policy Research Institute (IFPRI) and Economic Research Southern Africa (ERSA) commissioned a series of independent research papers. Supported with funding from the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Fund for International Agricultural Research, this work began in late 2020 and concluded in 2021. The papers focus on current trends and developments in areas critical for economic growth and development: labour markets, trade, food price regulation, monetary policy and the environment. They present a number of alternative growth and policy scenarios. While these papers were intended to address the immediate implications of COVID-19, they all also inevitably point to the longer-term deterioration of the South African economy.

Disclaimer:

The views expressed in the chapters of this book are those of the authors and do not necessarily reflect those of the South African Reserve Bank.

ISBN (print): 978-1-920556-25-9

ISBN (online): 978-1-920556-26-6

List of acronyms

AfCFTA	African Continental Free Trade Area
AGOA	African Growth and Opportunity Act
B-BBEE	Broad-Based Black Economic Empowerment
BEE	black economic empowerment
BRICS	Brazil, Russia, India, China and South Africa
CFTA	Continental Free Trade Area
CO ₂	carbon dioxide
COMESA	Common Market for Eastern and Southern Africa
CPI	consumer price index
DALRRD	Department of Agriculture, Land Reform and Rural Development
DTIC	Department of Trade, Industry and Competition
EAC	East African Community
EEDSM	Energy Efficiency and Demand Side Management
EONIA	Euro Overnight Index Average
EPA	Economic Partnership Agreement
ERSA	Economic Research Southern Africa
ESTR	Euro Short Term Rate
ETI	Employment Tax Incentive
EU	European Union
FTA	free trade agreement
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GEIS	General Export Incentive Scheme
GFC	global financial crisis
GHG	greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GWh	gigawatt hour
HS	harmonised system
IEA	International Energy Agency
IFPRI	International Food Policy Research Institute

IPAP	Industrial Policy Action Plan
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
ITAC	International Trade Administration Commission
KWh	kilowatt hour
LEVs	low emission vehicles
MW	megawatts
NEMA	National Environmental Management Act
OECD	Organisation for Economic Co-operation and Development
OLS	ordinary least squares
PES	public employment services
PPF	production possibilities frontier
PV	photovoltaic
RCA	revealed comparative advantage
REER	real effective exchange rate
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
RMSE	root mean squared error
SACU	Southern African Customs Union
SADC	Southern African Development Community
SAGE	South African General Equilibrium
SARB	South African Reserve Bank
SARS	South African Revenue Service
SEIAS	socio-economic impact assessment system
SMEs	small and medium-sized enterprises
Stats SA	Statistics South Africa
SVAR	structural vector autoregression
TES	temporary employment services
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
UNIDO	United Nations Industrial Development Organization
US	United States
VET	vocational education and training
VIX	Chicago Board Options Exchange Volatility Index
WEF	World Economic Forum
WTO	World Trade Organization

Introduction

Christopher Loewald and Matthew Stern

1. Background

South Africa's official unemployment rate reached 34.9% in the third quarter of 2021. This staggering statistic reflects an unsustainable reality. More than 4.5 million South Africans under 35 are unemployed, and around 300 000 more youth enter the labour market every year (Statistics South Africa (Stats SA) 2021b). This unemployment crisis represents the greatest disappointment of the democratic era, a failure to create sufficient economic opportunities for post-1994 generations. For much of the period since 1994, and despite high unemployment, real income per capita grew. However, since 2010, South Africa's real economic growth rate did not even keep pace with the country's population, resulting in a 36% fall in gross domestic product (GDP) per capita in US dollar terms over this period.

High unemployment and declining real income growth left South Africa's economy vulnerable to the unprecedented negative shock of the COVID-19 pandemic. The papers collected in this book together illustrate key aspects of South Africa's growth and development performance over the past decade, the impact of the pandemic and the likely trajectory of the country's post-COVID recovery.

The overall picture is troubling, in large part because various efforts to boost growth have left the economy with much larger financial vulnerabilities than before. Few lessons about what has or has not worked in terms of policies appear to have made their way into reform efforts. Many interventions have had unintended negative effects on the economy and poorer households. This 'expansion without impact' has left the economy and society more susceptible to external shocks, including the COVID-19 pandemic. It will also make recovery longer and more uneven.

As South Africa looks to navigate out of a COVID-induced downturn and to restore economic growth and create new jobs, a more active and better-informed policy response is needed. Given the country's growth performance, weak saving rate and other financial vulnerabilities, policy options are broadly limited to what is sustainable – policies that create or generate financing for the economy into the future. With many years of diagnosis and analysis, the structural causes of South Africa's poor economic and employment performance are generally understood. These include an education system unable to produce the skills needed for the modern workplace; ageing and badly maintained transport and electricity infrastructure unable to provide industry with consistent inputs at a reasonable cost; and the spatial legacy of apartheid, which effectively locks many South Africans out of the formal economy. Efforts are under way to improve the education system, invest in new infrastructure, and provide housing and social support to the poor – but progress has been slow and uneven, and it will take

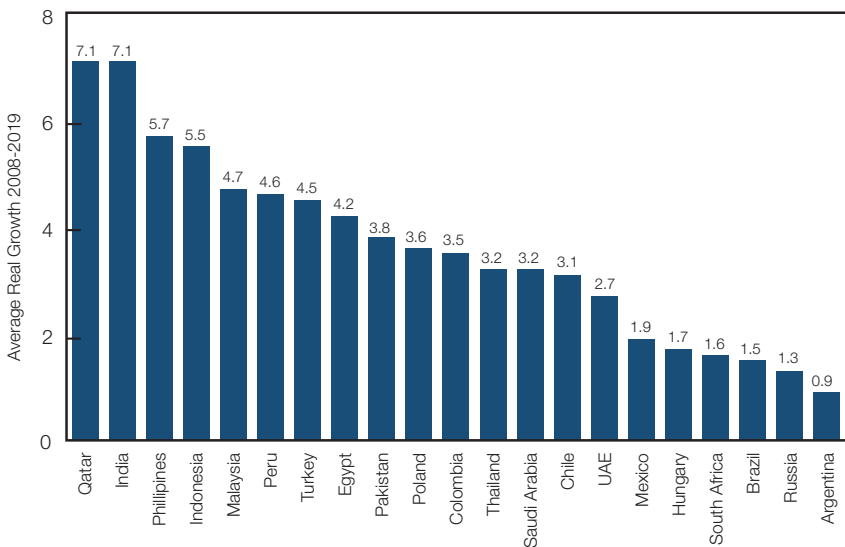
significantly more resources and time to lift these constraints. In the interim, South Africa needs to focus on short- and medium-term policies and actions to boost growth and employment.

2. Understanding weak economic growth

Over the past decade, South Africa's economic growth has slowed and in key areas fallen behind global and peer trends. Figure 1 shows the average real growth rate for all countries in the MSCI Emerging Market Index from 2008 to 2019. Over this period, South Africa recorded an average real growth of just 1.6%; slower than all other countries with the exception of Brazil, Russia and Argentina. Loate et al. (Chapter 1) analyse this growth from a macroeconomic perspective, ascribing this disappointing performance primarily to a decline in the potential output of the economy and very low levels of investment.

In accounting for the impact of monetary policy, they find a clear negative relationship between inflation and economic growth, turning the traditional view of the Phillips curve on its head and suggesting widespread price rigidities in the economy and inelastic supply curves. The authors also assess the flexibility of the conduct of monetary policy, concluding that since the adoption of inflation targeting, the average real interest rate is no higher than it was in previous regimes.

Figure 1: Average real growth (2009–2019) – MSCI Emerging Markets Index



Source: IMF WEO Database 2020, in Loate et al.

However, the authors raise a number of concerns related to South Africa's fiscal situation, which worsened significantly in the aftermath of the COVID-19 shock. At the time of writing (in 2021), public debt was expected to exceed 100% of GDP

by 2024/25. They trace a clear link between South Africa's debt expansion between 2014 and 2019 and the sharp increase in the country's risk premium and long-term interest rates, with negative effects on manufacturing output and capital flows.

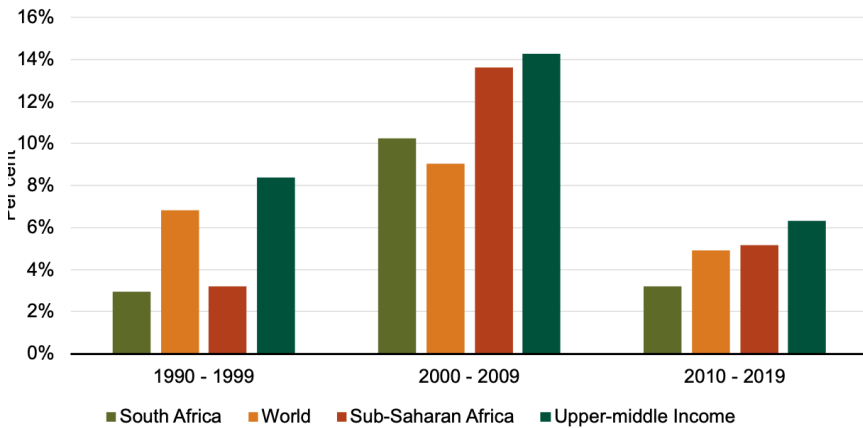
The fiscal balance has therefore become a significant macroeconomic risk. Some have interpreted this outcome as a sign that monetary policy is insufficiently expansionary – lower short-term interest rates would pull down long-term interest rates. In contrast, the authors find clear evidence that South Africa maintained an almost continuously expansionary monetary stance, made possible in large part by the high credibility and transparency of the policy framework. Rather than subordinating one policy domain to the other, the disjuncture between monetary policy and fiscal policy instead illustrates why the two need to be more directly coordinated to achieve better macroeconomic outcomes. Monetary policy can support the economy – and inflation targeting provides the necessary flexibility – in the context of a credible commitment to appropriate long-term fiscal targets that are sustainable and alongside actively pursued structural economic reforms.

A clear articulation of the importance of macroeconomic sustainability to stronger economic growth would improve certainty of a stable trajectory for the economy. The critical ingredients are a future path of fiscal balances that, at a minimum, stabilises public debt (preferably lowering it), and affirmation of the inflation target and its framework. In fiscal terms, temporary support to the economy during the pandemic should be redirected to more growth-enhancing priorities, consistent with the fading of tax revenue growth created by the commodity price boom.

While there is an argument for further adjusting the inflation target itself to a single, lower point, gains could also be achieved from a broader understanding of the role played by monetary policy in meeting the socio-economic needs of the country. In particular, ensuring that the South African Reserve Bank (SARB) remains singularly focused on maintaining price stability is critical to protect the domestic economy from international shocks and uncertainty. According to the authors of Chapter 1, any relaxation in monetary policy that increases inflation expectations will increase nominal wages without any significant boost to firm-level profitability, investment and jobs. They also argue strongly against mandating the SARB with any kind of developmental role – they find no evidence that the credit market is a major constraint to industrial development. Changing the mandate, moreover, risks seriously damaging the international credibility of the institution and the clarity of its policy framework.

Another part of the explanation for the country's weak growth trajectory lies in external trade, with South Africa's international trade performance falling behind its peers. Figure 2 shows that South Africa's export growth rate fell sharply over the last decade and that exports increased at a much slower rate than other middle-income and sub-Saharan comparators. As a result, South Africa's share of world exports fell from 0.6% to 0.4% between 1990 and 2019. This shift alone shaved as much as US\$50 billion off the country's GDP.

Figure 2: Nominal export growth rate



Source: World Bank 2020, in Stern and Ramkolowan

Stern and Ramkolowan (Chapter 3) discuss the reasons for this disappointing trade performance, including the structure of the country's export basket, its dependence on a limited number of large but mature export markets, and the high cost and deteriorating competitiveness of the general business environment. They highlight the important role of trade and industrial policy, which is largely designed to protect domestic sectors and interests, favouring local production and economic transformation over international competitiveness. Stern and Ramkolowan raise concerns that the country's cautious approach to regional and international trade negotiations, the high cost of logistics, and preferences afforded to local companies increase the incentive to produce for the protected domestic market over exploring new export opportunities. And while these policies do not appear to be meeting their intended sectoral goals, they have additional costs: they raise barriers for new entrants, lower competition for incumbent firms and in some cases increase prices for consumers, indirectly inhibiting the expansion of the manufacturing sector more broadly. Makgetla (Chapter 4) discusses a specific case study of this in the food sector, as noted below.

To increase competition and the international scale of South African firms, stronger incentives could encourage businesses to invest, innovate and export, while disincentives should be removed. Current approaches to trade and industrial policy create disincentives to expanding existing manufacturing capabilities, rather than enabling industry to explore new and far larger opportunities abroad. Greater ambition in concluding and implementing regional and continent-wide trade agreements, including a more open approach to the use of preferences and rules of origin, would be useful, alongside the development of better-informed positions that reflect the country's economic interests in services and e-commerce, for example.

Finally, while it is important to change the ownership and employment profile of industry in South Africa, there is also an urgent need for increased international knowledge, technology, investment and competition. To the extent that these priorities conflict, low-cost and effective compromises will need to be found. A useful starting point would be an independent assessment of the possible and unintended consequences of South Africa's local content and black economic empowerment policies on employment, competition, trade and investment. This could be undertaken with the aim of developing new and administratively light mechanisms to enable small and foreign firms to contribute towards the country's broader transformation and development objectives.

South Africa's stated policy response to climate change has been more broadly beneficial, but with similarly perverse effects. Gwatidzo and Simbanegavi (Chapter 6) note that current electricity shortages present an opportunity for South Africa to reduce the carbon intensity of its output, reducing negative externalities for the economy, and simultaneously strengthen the country's strong industrial base and reap positive externalities for exports, job creation and productivity. South Africa's industrial base gives it a potential advantage in the production of green goods in Africa.

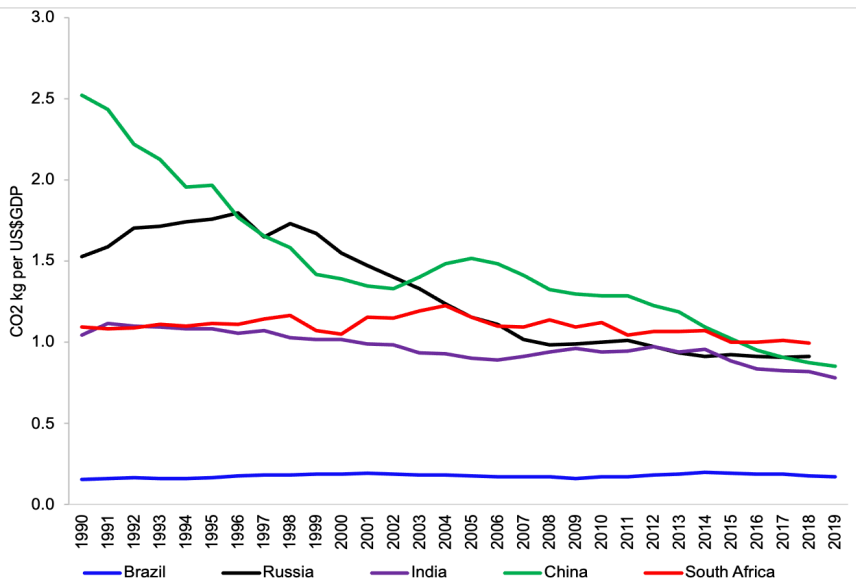
While current policy sets out critical changes to the energy mix, implementation of these plans has been patchy, and there is clear reluctance to move forward on an accelerated transition. This is ascribed by the authors to political economy factors, including the interests of trade unions, the coal mining sector and the vast market power of Eskom. The transition requires policy coherence across the public sector and partnerships with the private sector.

Meanwhile, the lack of progress carries high opportunity costs. Despite progress made in lowering the energy intensity of its production, South Africa has underperformed when compared to Brazil, Russia, India and China (the other BRICS countries). Figure 3 reveals that despite a significant head start, South Africa is now the least energy efficient of the group – largely due to its ongoing dependence on coal for most of its energy supply.

To facilitate growth of the green economy and speed up the country's climate transition, investment in renewable energy production should be ramped up and barriers to green industrialisation removed. Existing industrial incentives should be redirected to encourage greater use of cleaner and more energy-efficient technologies. Given the extreme energy shortfall in the country, Chapter 6 points out that there is no trade-off between renewables and coal in the short term (one need not reduce the other), and that most of the large coal plants will reach the end of their lifespan relatively soon. As a result, there is alignment between South Africa's green, economic and employment objectives. Encouraging greater private sector investment and involvement in energy production will also create space (especially financial) for the public sector to deliver the Just Energy Transition Partnership.

There is now an increasing risk that South Africa, instead of being a global leader in greening and moving onto a higher productivity and lower energy cost industrial base, could be penalised for its high carbon intensity of production and therefore lose even more competitiveness in international trade. The heart of the issue is a relative price problem that the country has been painfully slow to come to grips with – without higher prices for energy (fully reflecting the negative externalities of current energy and positive externalities of alternative energy), the incentive to shift faster is heavily diluted and increases resistance to reform. This in turn hugely increases the cost of the transition in terms of economic growth and jobs that would otherwise have been created. Failing to get prices right will continue to exert a depressing effect on the South African economy overall and prevent new job creation.

Figure 3: CO₂ emissions per unit of GDP, South Africa vs the BRICS countries

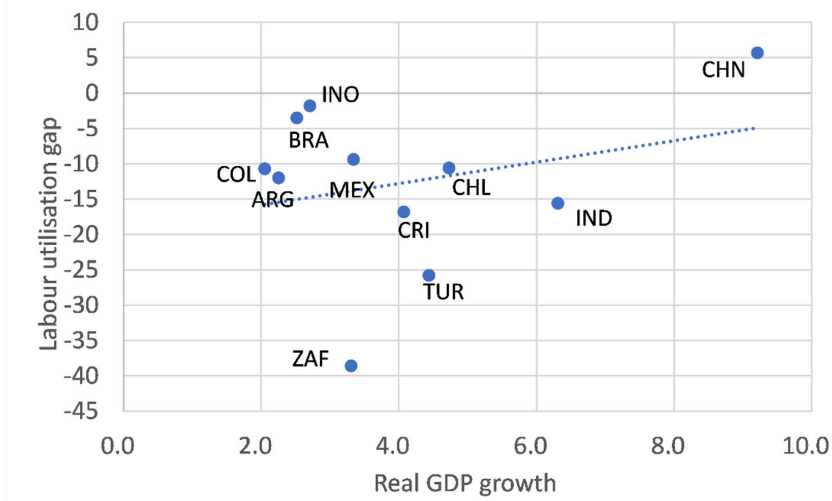


Source: World Bank World Development Indicators and International Energy Agency databases, in Gwatidzo and Simbanegavi

3. Accelerating job creation and development

From a comparative perspective, South Africa's growth and jobs performance looks even more concerning. As Loewald et al. show (Chapter 2), South Africa would need about twice the economic growth rate as Turkey, the next worst performer, in order to achieve the same labour utilisation outcome (Figure 4).

Figure 4: Average GDP growth and labour utilisation



Source: OECD Economic Outlook Database 2019, in Loewald et al.

Loewald et al. identify various factors that explain why the South African economy uses so little labour. These include weak market competition and resulting low demand for labour, skills shortages and ineffective public employment services. High labour supply costs reduce the demand for labour by pushing costs above productivity. The extension of collective bargaining enforces this supply and demand mismatch across the formal economy, while wage compression creates a mismatch between the productivity and cost of younger workers. Long and costly firing procedures discourage small firms from taking on new employees. While many policies are in place to protect the employed from exploitation, these policies – perversely – most harm the unemployed and younger, marginalised workers. The authors advocate for, among other things, a better balance of labour market regulations that reduce the severe supply-demand imbalance. Exempting small and medium-sized businesses from these regulations would create demand for labour in areas where South Africa falls especially far from global norms.

The authors further propose using tax credits to support the employment of graduates, lowering firing costs by linking employment protection to employment tenure, and greatly expanding public employment (job brokerage) services. Alongside more use of well-designed active labour market policies, microeconomic policies need to lower the costs of job creation, address school-to-job transitions, improve the employability of the inactive population and make job search more effective. Workers could be better protected by increasing focus on health and safety standards, backed up by higher quality public services to reduce labour supply costs.

Recognising that many of the skills needed to grow into new sectors are in short supply in South Africa and that improvements to the education system will take time, a more urgent and deliberate approach to relaxing immigration restrictions is needed. The economic simulations undertaken in Chapter 5 demonstrate that a much more open immigration regime for highly skilled and experienced workers has particularly strong potential to stimulate growth, create jobs and reduce inequality at scale, at low public financial cost and with low risk.

Makgetla (Chapter 4) illustrates a specific set of policies implemented to protect and grow the economy, but where the costs weigh most heavily on poorer households. The author explores the reasons behind and impact of higher poultry, sugar and wheat price tariffs imposed at various points over the past two decades. The tariffs were imposed in response to calls to protect local producers from international competition, and in extreme cases from dumping. However, the foods affected – especially poultry and wheat – are dietary staples for low-income groups. As a result, the cost of protecting these industries was most directly and severely borne by these consumers. The author finds that tariffs were not associated with any significant increase in local production, implying that they did not achieve their stated policy objective. Her analysis finds that the decision-making process on tariffs magnified the influence of well-resourced commercial farm and food-processing lobbies, a finding consistent with similar analyses of tariffs in other parts of the world.

While all these policies and trends were in place before the COVID-19 pandemic, the pandemic severely worsened economic growth and development outcomes. By the time of writing (2021), as noted by Arndt et al. (Chapter 5), the economic recovery had been uneven and, in some areas, fragile. Whereas production in most sectors was close to 2019 levels, employment and construction-related activity (reflecting investment) continued to weaken. Moreover, and despite increased government support and buoyant household spending, there is evidence that child hunger increased and poor households remained vulnerable. Government responded to the socio-economic impact of COVID-19 by providing emergency relief of various kinds, including temporary social transfers that could become permanent. Ultimately, however, the extent of any level of redistributive transfers depends on the capacity of the economy to finance them. If job creation is too low to resolve unemployment and GDP growth is too low to achieve real per capita increases in income, then financing capacity will remain limited.

As the chapters in this book demonstrate, many economic policy choices entail trade-offs, in which some group experiences a short-term loss in order for others, or the country as a whole, to benefit. In South Africa's case, many of the trade-offs needed most urgently to create growth will on balance benefit poorer households.

They tend to place higher income households at some short-run disadvantage, while creating gains across the income distribution over the medium and longer term. The chapter on labour utilisation makes the point that reducing the supply cost of less-skilled workers increases the demand for them, raising employment levels across the economy and benefitting all households, even those with workers that might be negatively impacted in the short run by the reforms.

This theme is highlighted again by Arndt et al. (Chapter 5), who show that there are high-impact, low-cost reforms that can boost growth and support the poor at the same time, such as in the areas of skills, food systems and urban structure. The authors underline the need for much greater openness to immigration of highly skilled and experienced workers, reductions in the policy uncertainty associated with land reform and measures to improve urban transport efficiency. These policy reforms can rapidly improve growth prospects, reduce inequities and help realise longer-term development objectives. For example, the authors estimate that a 1% increase in the supply of tertiary-educated workers via immigration could increase GDP by 1.2%.

4. Avenues for action

Most of the policy recommendations outlined in this book can be implemented quickly and at reasonable cost. The authors put forward a range of policy proposals that complement and strengthen those already under consideration by public authorities (National Treasury 2019).

To ensure that any of these reforms are implemented fully and effectively will also require a change to the policymaking process. Currently, a lack of consistency between programmes and instruments in public policy suggests insufficient public coordination. Chapter 1, for example, illustrates how monetary policy has had to counteract an inflationary fiscal stance; Chapters 2 and 3 point to an apparent tension between the country's transformation and competition objectives; and Chapter 6 describes the lack of attention to the green economy in the design of industrial policy.

Achieving policy objectives will require strong leadership from the centre and a willingness to look beyond short-term sectoral and insider interests, acting on the economy-wide (net) impacts of the proposed policy reforms. A functional accord between social actors might be helpful, but process should not trump needed outcomes, as discussed in Chapter 2.

In many respects, the research presented in this book reinforces what is already known about the South African economy. Over the last decade, the country's growth rate has failed to keep pace with its expanding population and the rest of the world, and this has increased unemployment and inequality.

A number of the chapters in this book conclude that to address these challenges economic policies should be reconsidered, refocused and refined. Taken together, the authors illustrate the value of evaluating policy choices and their impact on the economy, employment and development objectives. Ideally, this type of evidence-based reflection provides lessons for South Africa's future both in terms of what to do next (policy recommendations) and what to avoid (lessons from past experience). Greater coordination and careful consideration of the available evidence will help to ensure policies are well-targeted and effective.

The existing data tells us that South Africa should move quickly to ease the current social and economic malaise, and our recent history tells us that the existing policy framework is not up to this task. The chapters that follow present powerful arguments for assessing and responding to the evidence in order to support South Africa's growth and development ambitions.

Macro policy

Chapter 1

Sailing into the wind: evaluating the (near) future of monetary policy in South Africa

Tumisang Loate, Ekaterina Pirozhkova and Nicola Viegi

1. Introduction

Sailing against the wind requires travelling in a zig-zag path, changing direction with seemingly little relation to the final destination, with a keel under the boat to counteract the force of the wind and propel the boat forward. Monetary policy in South Africa has to contend with a series of crosswinds not dissimilar to a boat trying to sail against the wind. The direction of travel will undoubtedly need to be adaptable and new instruments and monetary strategies could become necessary. But monetary policy will be effective in the short run only if it continues to commit to long-run monetary and financial stability and maintains a strong and credible institutional setting to provide the keel to counteract the wind. Alternatively, the wind will determine the direction of travel.

A few years after South Africa adopted inflation targeting, Aron and Muellbauer (2007) reviewed the performance of the regime and the evaluation was certainly positive. The economy was growing at a healthy 5% per year and inflation was under control, even when facing some significant external shocks. Inflation and output volatility had declined and the only concern was the increasing private sector debt. The consensus was that a combination of sound fiscal policy, exchange rate flexibility and inflation targeting would anchor the long-term growth of the economy. Fifteen years later, the prospects of the South African economy and of its monetary policy are much more uncertain, after two large global shocks and 10 years of very weak economic performances which are expected to continue in the foreseeable future. The objective of this paper is to discuss the main challenges that monetary policy will face in the near future, especially after the COVID-19 crisis has accelerated the underlying trends of low growth and high public debt.

South African monetary policy has received considerable attention and there is a large body of literature on its historical development. Aron and Muellbauer (2007) review monetary policy in the first 10 years of democratic South Africa and describe the change in the policy approach from an eclectic combination of monetary and exchange rate targeting to the adoption of inflation targeting that made policy more transparent and predictable. Nowak and Ricci (2006) cover similar ground, but with a longer historical view that shows the difficulty of breaking the inflationary patterns developed in the 1980s and the beginning of the 1990s. After that the literature focuses on the performance of the inflation targeting regime

(Du Plessis et al. 2007; Frankel et al. 2008), its effect on private sector expectations (Reid 2009; Kabundi et al. 2015), its credibility (Kabundi and Mlachila 2018), and its transparency and communication (Reid and Du Plessis 2010). Following the global financial crisis (GFC), the independence of the SARB and its mandate as expressed in article 224 of the Constitution¹ (Republic of South Africa, 1996) and the policy framework of the SARB have come under scrutiny (Padayachee 2014), mainly as a response to continuing economic stagnation.

The main aim of this paper is to locate South African monetary policy in the context of the economic structure in which it has to operate. The main argument is that to understand monetary policy and to evaluate the policy regime, one has to understand the constraints a central bank faces. This is particularly true after the GFC, when monetary policy had to confront an unprecedented international shock and a structurally weakening national economy. This will be more so after the COVID-19 crisis, when monetary policy will have to contend with a critical fiscal position and possible continuing economic stagnation.

In the next section we review the evolution of the SARB's monetary policy framework and its policy rule. We then review three underlying structural constraints that affect monetary policymaking: the external environment, long-term growth and the fiscal balance. The last section concludes by emphasising the importance of inflation targeting as a robust policy framework that has demonstrated the ability to adapt and take on new roles and new instruments while maintaining a strong long-term stability anchor.

2. South African monetary policy: A brief review

The monetary policy consensus of the last 30 years sees short-term business cycle management inside a framework of strong long-term anchors of monetary and fiscal stability (Woodford, 2003). The ability to operate short-run countercyclical policies is stronger when the long-term objectives are also clearly defined. Operationally this means:

- an emphasis on the central bank's institutional independence, to minimise the influence of short-run political pressures and build credibility through the pursuit of long-term price stability (Fischer et al. 1994);
- a clear policy framework, captured by well-defined intermediate policy objectives and procedures, which allow the central bank "constrained discretion" to react optimally to the economic cycle while maintaining a strong nominal anchor (Bernanke and Mishkin 1997); and

1 Article 224 of the Constitution states:

"(1) The primary object of the South African Reserve Bank is to protect the value of the currency in the interest of balanced and sustainable economic growth in the Republic.

(2) The South African Reserve Bank, in pursuit of its primary object, must perform its functions independently and without fear, favour or prejudice, but there must be regular consultation between the Bank and the Cabinet member responsible for national financial matters."

- transparent policymaking, implemented through publication and distribution of the information set used in the decision-making process (inflation forecasts, modelling strategies and assumptions) and a clear demonstration of accountability (publication of minutes, regular appearance before parliamentary committees and regular press conferences) (Geraats 2002).

This consensus is the motivation behind the constitutional provisions that guarantee the SARB's independence and define its long-term objectives and it is the rationale for the adoption of inflation targeting.

This policy framework is based on the acknowledgement that monetary policy in the long run can only influence nominal variables such as inflation and the exchange rate. In the longer term, monetary policy cannot increase the average level or the growth rate of real variables such as gross domestic product (GDP) and employment. It is therefore appropriate for monetary policy to define a long-term desired inflation level as an expression of what monetary policy can and should achieve. Inflation targeting is the technical expression of the recognition of the limits of monetary policy (Svensson 2010).²

Monetary policy can have an effect on temporary deviations of real quantities from their long-term trends. The weight monetary policymakers give to monetary policy temporary real effects defines the monetary policy framework. A policy of strict inflation targeting would focus only in controlling inflation at the shortest possible horizon. In an open economy, this would mean that the policy would concentrate on the variables which most directly affect inflation, almost exclusively the exchange rate. This will stabilise inflation at the cost of a highly volatile interest rate and real variables.

A correct consideration of the negative welfare effects of real fluctuations requires instead that monetary policy takes a longer view of its role, by exchanging in the short run an increase in inflation variability for a reduction in real variability. A policy of flexible inflation targeting takes a more gradual approach to monetary policy, aiming to achieve the inflation target at a longer horizon that is technically possible (two to three years). The convergence of a large number of central banks towards this policy framework and the persistence of the framework even after the GFC show that it provides the best available combination of flexibility around a well-defined objective based on sound general understanding of how the economy functions.

The basic framework to interpret monetary policy can be represented by a standard New Keynesian model, where inflation and output processes are driven by expectations about the future path of the economy and by its underlying structural trends. This reflects a monopolistic competitive market structure in goods and labour markets together with assumptions of price and wage rigidities. The basic

2 This view of monetary policy does not exclude that monetary policy can have long-term consequences on the real economy, (see for example Jordà et al. (2020)) but rather assumes that the best that monetary policy can do to promote growth is to maintain a stable monetary environment. We discuss this debate in section 4 of the paper.

structure can be summarised by the following system of four equations in deviations from exogenous trends:

The **aggregate demand** equation is a standard forward demand equation where the monetary instrument enters in the equation in deviation from a time varying natural rate of interest.

$$y_t = E_t y_{t(t+1)} - a_2 (i_t - i_t^n) + a_3 s_t + \varepsilon_t \quad (1)$$

The **Phillips curve** describes the dynamic of inflation.

$$\pi_t = b_1 E_t \pi_{t(t+1)} + b_2 y_t + \eta_t \quad (2)$$

The **nominal exchange rate** is a standard uncovered interest parity condition augmented by a time-varying country risk premium.

$$E_t S_{t+1} - S_t = i_t - i_t^* - prem_t \quad (3)$$

Finally, **monetary policy** is expressed by a standard policy rule, where policy responds to deviations of inflation from a target and deviations of output from its long-term trend, with a parameter indicating a preference for smoothness.

$$i_t = \alpha 1 i_{(t-1)} + (1 - \alpha_1) [i_t^n + \varphi_\pi (E_t \pi_{t+1} - \pi^*) + \varphi_y y_t] \quad (4)$$

In this framework, the formulation of monetary policy is an essential part of determining the stability of the system. For this reason, the literature has concentrated on estimating policy reaction functions like equation (4) and evaluating its changes through the years. Aron and Muellbauer (2002) were the first to analyse South African monetary policy using a Taylor rule specification, although they showed that the latter was not very suitable for periods dominated by exchange rate management policies and financial repression. The Taylor rule approach has become more popular in evaluating monetary policy after democratisation, financial liberalisation and the adoption of inflation targeting. Ortiz and Sturzenegger (2007) use a dynamic stochastic general equilibrium model to estimate the SARB policy rule, showing that the SARB anti-inflation stance was somewhat moderated by a greater weight on output than what is typically found in inflation targeting central banks. Klein (2012) confirms this result, by investigating the dynamics of the implicit inflation target since the adoption of inflation targeting. He finds that the implicit inflation target tended to drift towards the upper level of the target band (6%), implying that the SARB had a relatively high tolerance for inflation, especially after the outbreak of the GFC. Naraidoo and Paya (2012) explain these results by using a non-linear specification of equation (4) that shows significant policy inertia when inflation is inside the target range.

Coco and Vieg (2020) review these results by considering the underlying change in potential output and the natural, or neutral, interest rate, defined as the real policy rate consistent with real GDP equalling its potential level. Their results show that monetary policy has always maintained a strong inflation stabilisation stance with a Taylor coefficient (φ_π in equation 4) consistently above one.

The results also show that, after the GFC, the SARB has followed the downward trend in the natural interest rate which has diminished the policy focus on cyclical output variations. In fact, the output gap coefficient in the policy rule, reflecting the responsiveness of the central bank to output fluctuations, is insignificant for the period 2010–2019 and while policy rate reacts one-to-one to changes in the natural rate.

This can reflect a change in preferences or an increase in uncertainty about the output gap estimates (Orphanides 2002). This shows the main problem in the practical implementation of this approach to monetary policy. The history of the world economy in the years after the GFC has shown that a correct institutional environment, a correct application of policy rules, and transparent and credible policy communication are necessary but not sufficient conditions to provide macroeconomic stability. Three further elements need to be considered:

- the external environment and its effect on the country's access to international financial and real markets;
- the economy's potential growth and the evolution of its natural real interest rate; and
- the country's fiscal balance and its effect on long-term private sector expectations.

Formulating monetary policy, that is stabilising the economic cycle, requires paying close attention to these critical aspects of the economy's evolution. In what follows we will review each of these aspects.

3. Monetary policy and the external constraint

3.1 The external environment

South Africa is a small open economy with most of its macroeconomic dynamics conditioned by external factors over which it has little or no control. The evolution of the international economy is, therefore, the backdrop of national macroeconomic policies.

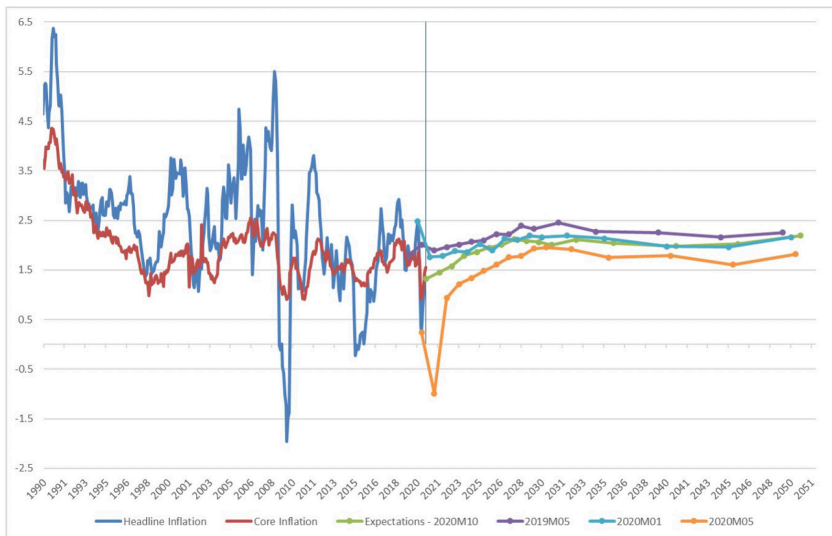
What are the expectations for the near future of the world economy? The main characteristic is uncertainty. Figures 1a and 2a plot the nominal interest rate and inflation rate for the United States (US) and the euro area, respectively. The combination of the evolution of expected nominal interest rate and inflation

expectations gives the evolution of the real interest rates for the two economic blocks. The figures also include the projections for the two variables as derived by indexed swaps at various horizons that span 30 years into the future. While any markets beyond 10 years are rather thin, and therefore not very informative, they do provide an indication, at least, of the level that markets expect the equilibrium to be.

In the US the interest rate is expected to remain around 1% for the foreseeable future, an expectation reinforced by the Average Inflation Targeting framework adopted by the Federal Reserve (Fed), as announced by Chair Powell in August 2020. This change in strategy and the overall effect of the COVID-19 crisis has clearly solidified the expectations that low-for-long policies will continue. This has not affected inflation expectations, which remain well-anchored at the 2% target. The combination of these two observations clearly indicates long-term market expectations of a negative real interest rate in the US.

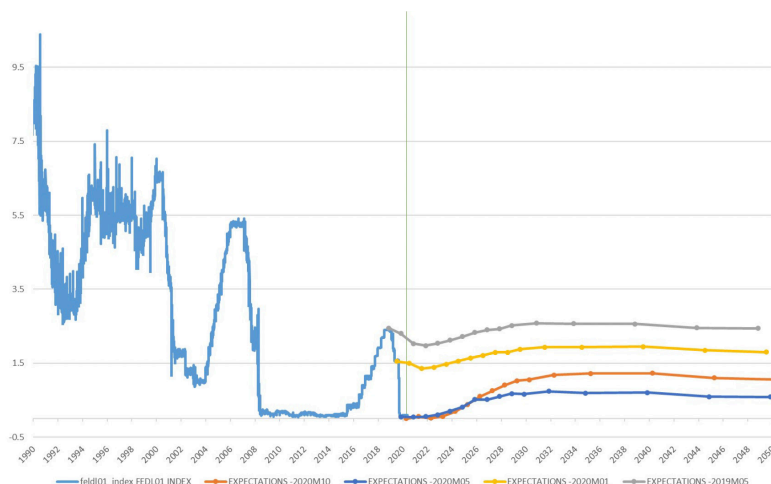
The situation is even more striking in the euro area, where nominal policy rates are expected to be negative for the next 10 years and thereafter hover around zero. But, as markets expect inflation to climb up towards 2%, they also expect very negative real interest rates, at about -2%, for a protracted period of time.

Figure 1a: US long-term inflation expectations



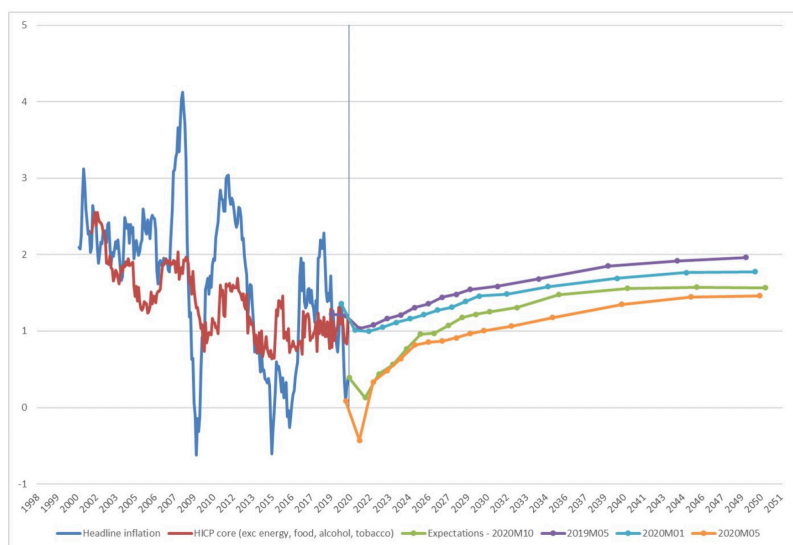
Note: US inflation expectations are derived from inflation zero-coupon swaps of different terms – from 1 to 30 years – which provide information on market expectations of average yearly inflation over the contract term..

Figure 1b: US long-term nominal policy rate expectations



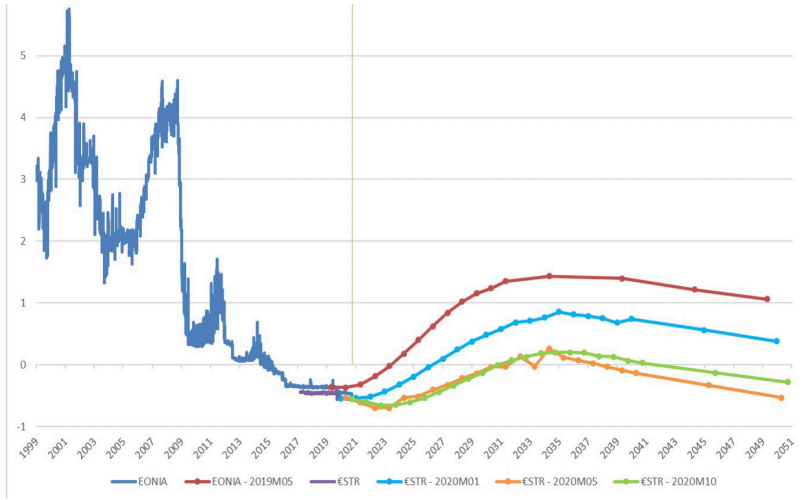
Note: US policy rate expectations are derived from Federal Funds Rate zero-coupon overnight indexed swaps of different terms – from 1 to 30 years – which provide information on market expectations of the compounded overnight Federal Funds Rate over the contract term.

Figure 2a: EU long-term inflation expectations



Note: EU inflation expectations are derived from inflation zero-coupon swaps of different terms – from 1 to 30 years – which provide information on market expectations of average yearly inflation over the contract term.

Figure 2b: EU long-term nominal policy rate expectations



Note: EU policy rate expectations are derived from zero-coupon swaps of different terms – from 1 to 30 years – of overnight benchmark market rate published by the European Central Bank. In October 2019, the Euro Overnight Index Average (EONIA) was replaced by the Euro Short Term Rate (ESTR). In practice, EONIA is now fixed at ESTR + 8.5 basis points.

What drives these long-term expectations? One useful way to organise our thoughts is to use the basic linear risk-free real interest rate definition (with lognormal consumption growth and power utility), where the rate is related to the growth of consumption and its volatility, that is:

$$r^f = \delta + \gamma E_x (\Delta \ln c_{t+1}) - \frac{\gamma}{2} \sigma_t^2 (\Delta \ln c_{t+1}) \quad (5)$$

The risk-free rate is driven by the discount rate (δ), expectations of future consumption growth ($\Delta \ln c_{t+1}$) and uncertainty around future growth $\frac{\gamma}{2} \sigma_t^2 (\Delta \ln c_{t+1})$, which determines the level of precautionary savings. A persistent negative real rate (when inflation expectations are anchored to the target) indicates long-term pessimism over a country's growth prospects matched by significant uncertainty. There is a wide and increasing literature discussing the source of these negative real rates, starting from the "secular stagnation hypothesis" of Summers (2015). Each contribution stresses one of the elements described by equation (5). For example, Farhi and Gourio (2018) show the importance of increasing macroeconomic risks and the reduction in productivity induced by an increase in concentration. While the debate is ongoing, the implications for a small open economy are clear: there is no expectation that developed economies will regain a stable economic growth path in the near future. This in turn implies that the current combination of zero or close to zero monetary policy rate and the use of central bank balance sheet policies is the new normal of monetary policy, at least in

developed countries. These two facts imply that international financial markets will continue to be characterised by excessive sensitivity to news, bubbles and rapid flow reversal. This will be the main source of transmission of international economic conditions to the national economy, together with its effect on commodity prices. South Africa will continue to experience volatility in the exchange rate and in the country risk premium, with significant macroeconomic consequences, amplified by the structural weakness of the economy.

In practical terms these observations mean that the country risk premium will continue to fluctuate sharply, capital flows will overheat or suddenly contract the economy and monetary policy will be strongly advised to build buffer stocks, macroprudential policies and other balance sheet instruments to protect the development of the national economy (Rey 2015).

3.2 The risk premium as external interface

South Africa is a peculiar emerging market country in that, compared to countries at the same stage of development, it does not suffer from the original sin of past debt default or hyperinflation (Calvo and Reinhart 2002). This has favoured the development of a large and well-connected financial market which provides the country with relatively easy access to international capital markets. Until now, the South African government could always borrow in domestic currency and at long maturity, thus reducing the effect of short-run fluctuations on the sovereign's balance sheet. These characteristics have favoured a consumption-led growth strategy that relied on international capital inflows to finance the economic expansion of the country. The current account has remained persistently negative. A consumption-led growth model has two consequences relevant for monetary policy:

- If no other instrument targets the external balance, monetary policy is constrained by the need to keep open access to international capital in order to finance a persistent current account deficit.
- The economy becomes more sensitive to the direction of international financial flows, with higher volatility in the exchange rate.

This strong financial link between South Africa and the global economy is the first channel transmitting global shocks to the South African economy. The variable that most captures this relationship is the country's risk premium, which is the excess return that the country has to provide to borrow from abroad. The risk analysis of the risk premium and its determinants provide the following headlines:

- South Africa is particularly sensitive to world "risk cycles" (Hassan et al. 2015; Gabaix and Maggiori 2015).
- While government debt determines the trend level of the risk premium (as shown later), external factors determine its fluctuations, which can be large and unpredictable.

- Given the expected international environment of low growth, low global risk-free rates and pervasive uncertainty, the risk premium is one of the most serious threats to the country's macroeconomic stability.

The first point is well-illustrated by Hassan et al. (2015). They analyse the response of emerging market exchange rates to the so-called taper tantrum triggered by a speech on 22 May 2013 to the United States Congress by Ben Bernanke, then Fed chairman, signalling a gradual reduction in the monthly volume of Fed stimulus. Because the announcement was a surprise to the global market, it represented a natural experiment to evaluate the external vulnerability of countries and its determinants. The strongest correlates are the level of foreign exchange reserves, the current account balance in previous years and the level of external debt.

These results are confirmed by Abiad et al. (2015) who provide a wider analysis of the determinants of resilience in emerging market economies. The first determinant of resilience is flexibility in policy instruments to respond to shocks, represented by inflation targeting and fiscal countercyclical measures. But the underlying determinants are the overall policy space, represented by low inflation, low public debt, current account surpluses, low external debt and high reserves. Low inflation and accumulation of reserves are also the most direct instruments to reduce speculative financial flows because they help reduce the interest rate differential with the US thus reducing the currency's speculative appeal and the cost of reserve accumulation.

Moreover, socio-economic conditions affect the long-run resilience of a country to external shocks. In particular, the level of inequality and the level of education influences a country's ability to respond to shocks by worsening the political economy trade-off between macroeconomic stabilisation and distribution of its cost (Alesina and Drazen 1991) and reducing the country's ability to adapt to change (Aizenman et al. 2018).

South Africa is weak in all these dimensions: dependent on foreign capital, with low buffer stocks, high inequality and high public debt. The COVID-19 crisis has accelerated these trends.

The relationship between the country risk premium and its determinants is well-illustrated by Figure 3. The figure shows the level of South African government debt, the country risk premium, as measured by the JPMorgan EMBI+SA index, and the Chicago Board Options Exchange Volatility Index (VIX) as a proxy of global uncertainty, from 2000 to 2019.

The figure suggests that, at least in the last 10 years, the risk premium of the country has followed a growing trend parallel to the growth in the stock of debt, but its fluctuations are strongly correlated with the ability of international financial intermediaries to absorb risk. Table 1 shows the evolution of the relationship between the country risk premium, the level of government debt and the VIX

during the inflation targeting period.³ We use a simple ordinary least squares (OLS) regression with structural breaks identified with a sequential Bai-Perron test. The structural break is found to be just after the GFC, when government debt entered a growing trend.

Figure 3: Determinants of risk premium 2002–2019

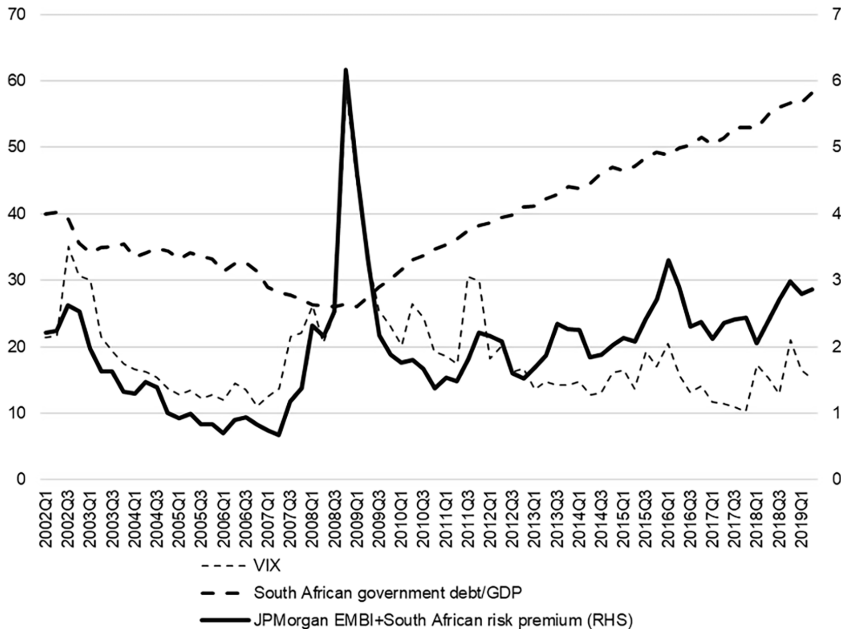


Table 1: Determinants of South African risk premium (OLS with Bai-Perron tests of $L+1$ vs. L sequentially determined breaks)

Regressors	2000–2008		2009–2019	
	Coefficient	Prob.	Coefficient	Prob
Constant	-0.066	0.845	-1.143	0.001
Risk Premium (-1)	0.297	0.039	0.526	0.000
Government Debt	-0.017	0.104	0.036	0.000
VIX	0.089	0.000	0.032	0.000
Adjusted R-squared	0.906485			

³ We analyse the sample starting from the beginning of 2002, as this is when the risk premium series has some non-negligible variability.

To get better insight into the underlying causes of the changes in the risk premium, we ran a series of OLS regressions searching for other determinants, correlated with VIX and government debt, to provide a narrative behind the above correlations. These regressions are shown in Table 2. We found that debt-to-GDP ratio and foreign debt-to-GDP ratio variables explain changes in the risk premium over the sample considered. Using the dummy variable to control for the GFC, we found that using debt variables alone allows us to explain 78.3% and 84.1% of risk premium movements. When the VIX as a measure of global risk attitude is considered together with either of the debt variables, 90% of risk premium fluctuations are accounted for, which is the highest adjusted R-squared coefficient obtained. Hence, this combination of factors that captures the international and domestic aspects of the country risk premium appears to provide a useful path towards a structural interpretation.

Table 2: Determinants of South African risk premium – OLS regression results

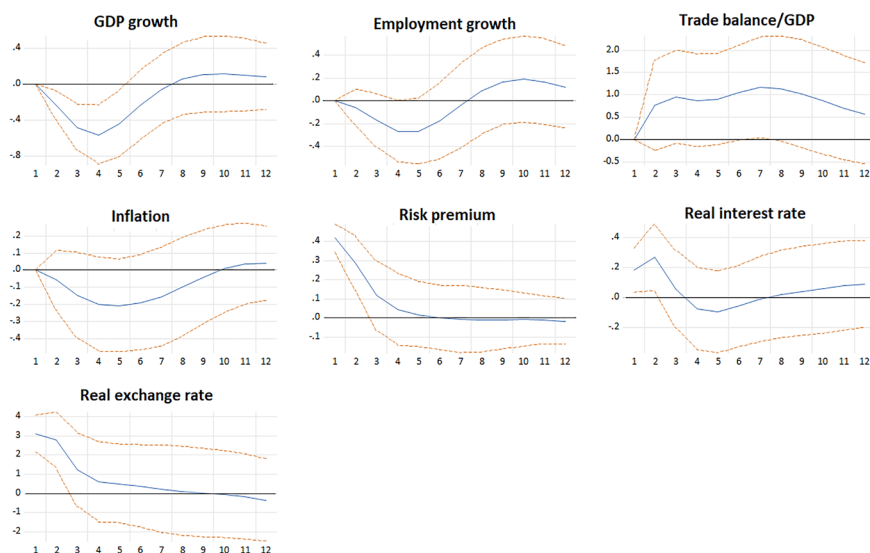
LHS variable - risk premium, EMBI+SA	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Govt debt, % of GDP	0.062*** (0.006)			0.071*** (0.004)					
Total foreign debt, % of GDP		0.052*** (0.004)			0.054*** (0.004)				
Primary balance, % of GDP			-0.192*** (0.058)						
Govt debt-to-GDP growth, year-on-year, pp						0.080*** (0.025)			
VIX			0.029*** (0.009)	0.060*** (0.006)	0.050*** (0.008)				
Primary balance * VIX			0.008*** (0.003)						
Commodities							-0.001 (0.006)		
Labour productivity							-0.067** (0.028)	-0.065** (0.027)	-0.046** (0.023)
Foreign growth							- 0.271*** (0.078)	- 0.283*** (0.065)	-0.037 0.545*** (0.071)
Risk premium (-1)			0.461*** (0.080)						0.545*** (0.101)
GFC 2008Q1-2009Q4	1.377*** (0.199)	1.019*** (0.163)	0.011 (0.211)	1.113*** (0.131)	0.575*** (0.149)	0.619** (0.259)	-0.011 (0.317)	-0.049 (0.285)	0.055 (0.238)
GFC 2008Q4-2009Q1	3.053*** (0.342)	2.816*** (0.301)	0.924* (0.478)	1.474*** (0.268)	1.509*** (0.325)	3.029*** (0.493)	1.881*** (0.524)	1.899*** (0.516)	1.797*** (0.431)
Constant	-0.695** (0.271)	0.042 (0.162)	0.513** (0.222)	- 2.128*** (0.224)	- 0.830*** (0.196)	1.760*** (0.080)	2.927*** (0.299)	2.968*** (0.260)	1.045** (0.417)
Q3 dummy			-0.125 (0.133)						
Adjusted R-squared	0.783	0.841	0.762	0.909	0.900	0.530	0.582	0.588	0.713
Sample (adjusted)	2002Q1- 2019Q1	2004Q1- 2019Q1	2002Q1- 2019Q1	2002Q1- 2019Q1	2004Q1- 2019Q1	2002Q1- 2019Q1	2002Q1- 2019Q1	2002Q1- 2019Q1	2002Q1- 2019Q1
Observations (adjusted)	69	61	69	69	61	69	69	69	69
RMSE 2002-2019	0.406	0.355	0.532	0.255	0.279	0.585	0.544	0.544	0.614
RMSE 2010-2019	0.316	0.312	0.552	0.284	0.267	0.499	0.476	0.480	0.469

When both world commodity prices and productivity are accounted for, 54% of the country's risk premium movements are explained. We used foreign growth to control for the foreign demand conditions in these regression specifications. We found that only labour productivity and foreign growth are significant explanatory variables in these specifications. Allowing for an autoregressive component in the regression reduces the significance of foreign growth while the negative effect of labour productivity is still significant. An autoregressive term improves the explanatory power of the regression with commodities and productivity by 13% – it reaches 71.3%. The best in-sample fit, measured by the root mean squared error (RMSE), is gained by specification with the debt variable and the VIX. Also, the

RMSE at least doubles when the debt variable is not controlled for. This could indicate a case of omitted variable bias in equations 6 to 8 of Table 2, and emphasises the importance of employing a debt series for the relevant country risk premium explanation in South Africa.

The risk premium has a significant effect on the country's economic dynamics and therefore on the conduct of monetary policy. Figure 5 shows that a positive risk premium shock has a contractionary effect on GDP growth that lasts for two years. Employment growth also drops significantly. The effect of a positive risk premium shock on inflation is negative, but not significant. The real interest rate and real exchange rate respond to the positive risk premium shock with, respectively, a significant increase and exchange rate depreciation. Importantly, the key result of the contractionary effect on GDP growth, real exchange rate depreciation and the increase in the real interest rate (significant or insignificant depending on the identification order) holds for all the alternative model specifications. We thus have some evidence of a pronounced financial channel in South Africa: financial conditions tighten, that is increased cost of borrowing, as a result of a positive risk premium shock.⁴

Figure 4: Impulse response functions to a positive risk premium shock in a structural vector autoregressive (SVAR) model



4 We estimate a SVAR model using South African quarterly data on GDP growth, employment growth, trade-balance-to-GDP ratio, inflation, country risk premium, real interest rate and real exchange rate. The series are taken from the Quarterly Projection Model database for 2002Q1-2019Q2, and the GFC period is controlled for. Cholesky ordering is used to identify the risk premium shock; a country risk premium variable is placed after the slow-moving macroeconomic variables: GDP, employment, trade balance and inflation, under the assumption that the country risk premium shock does not have an effect on macro variables on impact. At the same time it is assumed that an exogenous innovation to risk premium variable has a contemporaneous effect on the fast-moving financial variables: the real interest rate and real exchange rate. For the robustness check we also consider alternative specifications, placing the risk premium variable first and last in the VAR.

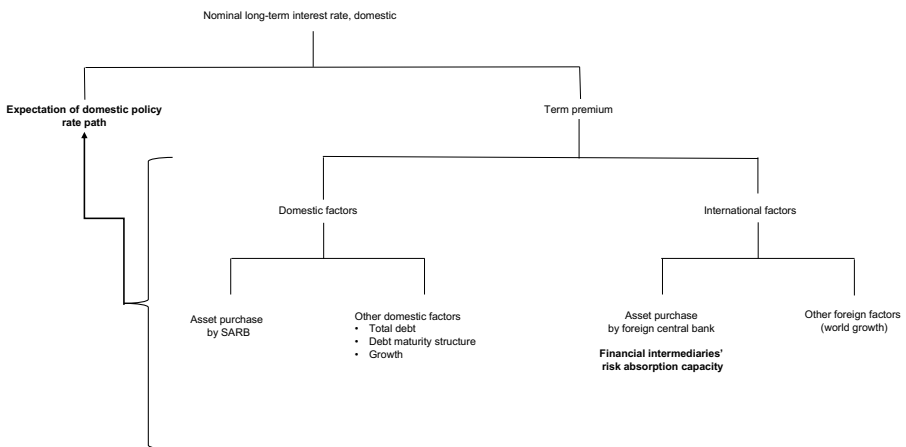
This significant macroeconomic effect of fluctuations of the risk premium and the experience of many developed central banks in using quantitative easing for controlling the long-term government bond yields suggests that South Africa monetary policy could use some form of quantitative easing to reduce the long-term interest rate and the interest cost of debt. The next section discusses quantitative easing in the context of a small open economy not at the zero lower bound of the policy rate.

3.3 Is quantitative easing an instrument for external stability?

What is the role of monetary policy in dealing with external stability? In an inflation targeting framework, monetary policy targets internal objectives – inflation and output – while the external equilibrium is a product of a combination of long-term fiscal stability and institutional credibility. In this framework there is little room for dealing with external fluctuations driven by global shocks affecting international financial markets.

The COVID-19 crisis has seen central banks in almost every emerging market country experimenting with the use of the central bank balance sheet as an extra instrument deployed rapidly to deal with a large external shock that was putting pressure on domestic bond markets and hampering efforts to deal with the pandemic. In March 2020, the SARB announced the purchase of government securities in the secondary market, across the entire yield curve, to ease liquidity strains observed in funding markets. The operation successfully overcame the short-run spike in the country’s risk premium which rapidly returned to or below the level before the COVID-19 crisis, as the historically large monetary and fiscal response around the world eased market fears.

Figure 5: Determinants of nominal long-term rates in small open economy



Source: Authors’ adaptation from Nelson (2020)

Figure 5 illustrates how the SARB affects the long-term nominal interest rate and how its actions interact with other factors influencing long-term rates. The first way the SARB influences the long-term interest rate is via the private market expectations of the future path of the policy rate. The SARB tries to control this direct influence by maintaining a predictable policy path and by controlling inflation expectations.

Beyond the SARB policy rate, the term premium is influenced by domestic and international factors illustrated on the right side of Figure 6. Domestically, the main determinants are expected growth, the stock of government debt and its maturity structure. Internationally, the main determinants are world growth, foreign central bank policies and financial intermediaries' risk absorption capacity.

The SARB can certainly use its own balance sheet to control the long-term interest rate. Many South African commentators have called for "yield curve management" to reduce the cost of government debt and of long-term investment. The problem with trying to use quantitative easing to deal with the trend growth in long-term nominal rates is that this policy will affect the expectations of the domestic policy path, the left side of Figure 6, pushing the nominal interest rate in the opposite direction than desired by inducing higher inflation expectations. While this is the objective of quantitative easing in countries in a liquidity trap, it would not solve the South African problem by steering the country towards higher inflation expectations and higher inflation. It is critical for the success of any new monetary policy intervention that it should not affect the long-term objective of monetary stability.

On the other hand, quantitative easing has proved to be useful in smoothing external shocks affecting the domestic bond market. Because the shock is transitory, the intervention does not signal a change in long-term policy objectives and does not affect inflation expectations. It is also a policy fully included in the SARB mandate. The advantages of using quantitative easing to deal with external shocks are that:

- it is relatively easy to deploy;
- it does not try to influence the exchange rate by using limited reserves but stabilises a domestic market using domestic currency;
- it is reversible once the shock has passed and the market stabilises, and it can be used symmetrically for positive and negative risk shocks; and
- together with a credible long-term plan of debt reduction (which induces a trend increase in South African bond prices), it is without significant risk for the SARB balance sheet as the trend price of government bonds would increase with the reduction in government debt.

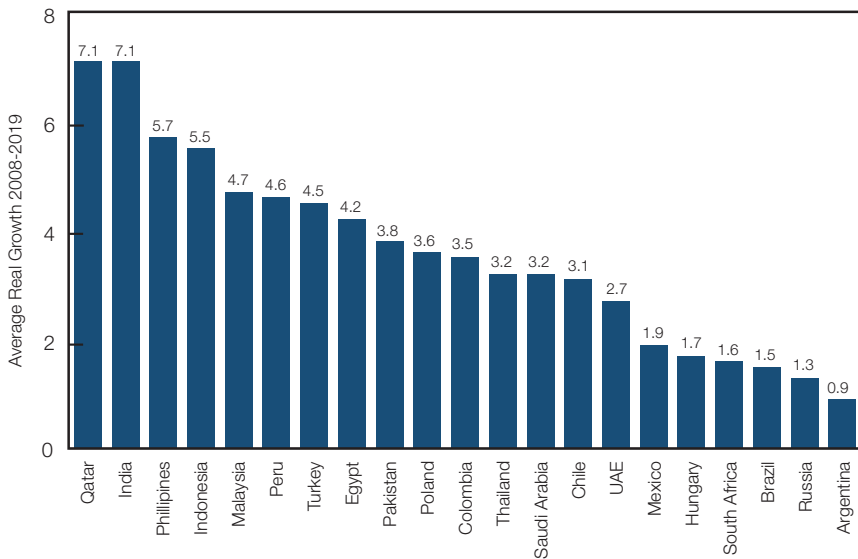
It is critical that quantitative easing is not seen as an instrument to control bond yields. That would carry significant risk of distorting the central bank's objectives

with a consequent loss of the long-term anchor of prices. Quantitative easing can be considered only as an instrument to stabilise the fluctuations in the risk premium. In this context balance sheet use should operate symmetrically, meaning quantitative easing when capital outflows dry liquidity in the bond market and quantitative tightening – that is selling government bonds – when there are large capital inflows in the bond market.

4. Monetary policy and economic growth

The importance of the external environment in determining the country’s macroeconomic dynamics should not make one forget that the first constraint to monetary policy in South Africa is persistently low economic growth, particularly in the years since the GFC. Figure 6 shows average growth in the 10 years after the GFC for countries in the MSCI Emerging Market Index. South Africa had an average real growth of 1.6%, with only Argentina, Russia and Brazil having a worse performance in the period.

Figure 6: Average real growth 2008–2019 – MSCI Emerging Markets Index

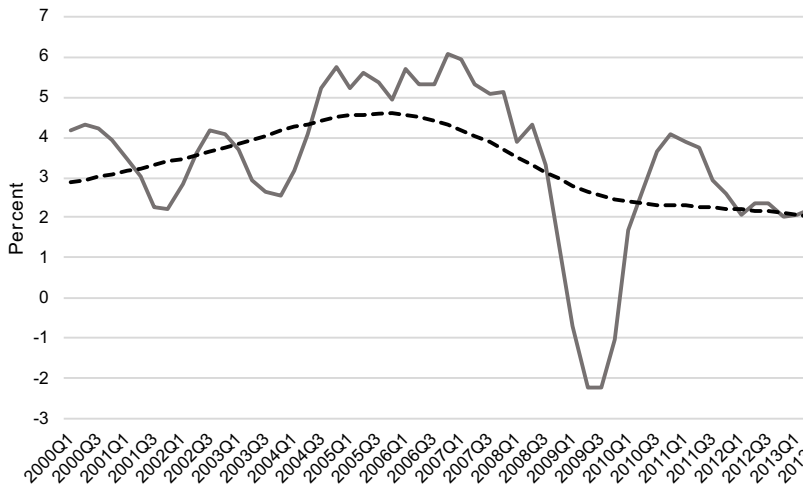


Source: International Monetary Fund (IMF)

This growth performance has been driven by a decline in the potential output of the economy, shown in Figure 7, which we estimate to be below 1% at the beginning of 2020,⁵ and by a level of investment barely enough to cover the depreciation of capital.

5 See also, for example, Anvari et al. (2014) and Fedderke and Mengisteab (2017).

Figure 7: Real growth and potential output



Source: Authors' calculations on SARB data

This downward trend in potential output puts two kinds of pressure on monetary policy. Firstly, the uncertainty around potential output estimates increases short-run volatility and policy uncertainty, inducing a delayed response or difficulties in implementing and communicating the policy target.⁶ Secondly, it reignites a longstanding discussion about the long-run effect of monetary policy and the possibility that monetary policy could play a more direct developmental role (Epstein and Yeldan 2008).

4.1 Is monetary policy responsible?

The first question that arises from the country's low growth after 2008 is whether monetary policy is responsible for this outcome and whether it could play a significant role in pushing the country out of the current stagnation trap. Stiglitz (2008) notoriously argued that inflation targeting is not the right policy framework to deal with large external shocks and that it has imposed more restrictive conditions than would have been necessary if the policy was inactive. This line of reasoning has been followed by many South African commentators. For example, Kantor (2017: 34) has argued that "the insistence on inflation targeting regardless of the causes of inflation has made South African monetary policy highly procyclical", inducing a credit bubble during the expansion phase and worsening the recession after the GFC. Match this procyclicality with a strong hysteresis effect, and short-run overreaction becomes long-run stagnation in capital accumulation and growth (Jordà et al. 2020). The argument is twofold: it is an issue of determining, firstly, if monetary policy has been procyclical during the inflation targeting period, and, secondly, if any other monetary policy framework would have done better.

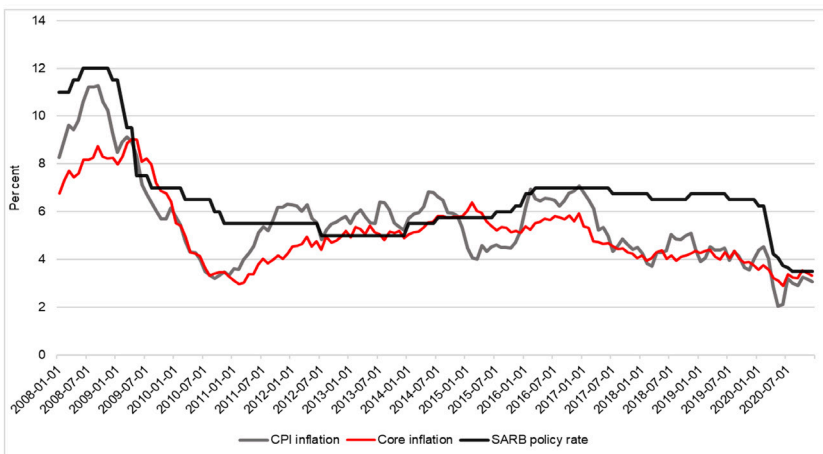
6 Orphanides and Williams (2002) and Taylor and Williams (2010).

The evidence seems not to support the idea that monetary policy in South Africa is procyclical or that the average real interest rate after the adoption of inflation targeting has been on average higher than in other regimes. Du Plessis et al. (2007) show the stabilising effect that monetary policy played before the GFC. Alton (2018) finds that monetary policy is strongly countercyclical only when real time estimates of the output gap are considered. Considering instead the ex-post realisation, monetary policy was strongly procyclical, especially during the expansion phase between 2000 and 2007. The reason for this difference is not the source of shocks but rather the uncertainty around the trend growth rate of the economy (Orphanides 2002). In the period leading up to the GFC, the acceleration in growth was interpreted as a structural improvement, not a cyclical boom. When inflation accelerated faster than expected, the real interest rate became negative, reinforcing the cycle. After the GFC, interest rates were cut rapidly to support growth and then kept low as growth continued to disappoint, assuming that the growth slowdown was largely cyclical. Instead, most of the growth slowdown has been attributed to a slowdown in potential output, thus making monetary policy inflationary.

Loewald et al. (2020) present a strong defence of the SARB policy after the GFC, focusing on the structural nature of the South African crisis. They point out that monetary and fiscal policy in South Africa has been expansionary for 10 years after the crisis but that this could not stop the declining trend in potential output and the country's natural rate.

Looking at the path of inflation and the policy rate in Figure 8 for the post-crisis period, it is quite clear that monetary policy has maintained an expansionary stance at least until 2016. In 2016, growing inflationary pressures and an explicit aim to target the middle of the target band at 4.5% convinced the SARB to raise the policy rate, but the change was not long lasting (Coco and Viegé 2020).

Figure 8: Inflation and policy rate in South Africa 2008–2020



Source: SARB

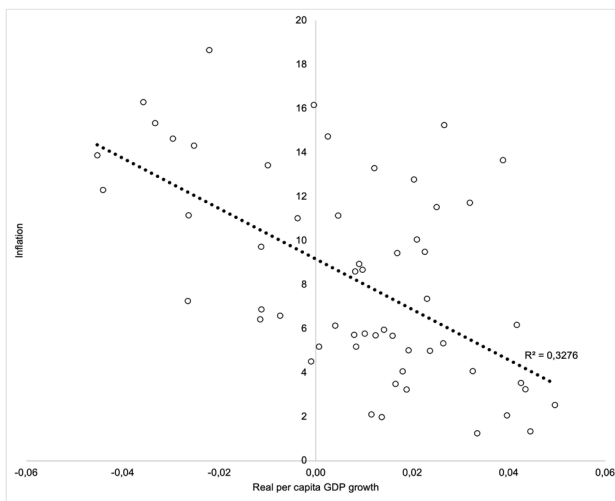
In fact, the most salient characteristic of monetary policy, especially after 2016, is how little the SARB has used the policy rate, preferring to wait for better information and using more active communication tools to control private sector expectations. This is a reflection of the uncertainty faced about the underlying real trends.

4.2 What can monetary policy do?

A more general question is to what extent monetary policy can be used to target real growth. According to the proponents of growth targeting (Epstein 2015), by employing a more expansionary monetary policy, using a higher inflation target or using the central bank as a “creditor of last resort” for emerging enterprises, monetary policy could permanently affect the growth path of the economy with an insignificant increase in inflation. This argument focuses attention on the relationship between inflation and growth which has been on the research agenda for a long time, starting from Sidrauski’s (1967) paper ‘Inflation and economic growth’, where the author elaborated on the Tobin hypothesis that inflation would induce faster capital accumulation by penalising money savings.

The question is ultimately an empirical one, that is if it is possible to find a positive long-run causal relation between monetary policy stance and economic growth. There are a few papers looking at the inflation-growth relationship in South Africa. Mariotti (2002) uses cointegration techniques to investigate (among other things) the impact of different levels of inflation on long-run economic growth. Her results suggest that the impact of inflation on growth is in fact negative at levels over 1%. Similar results are obtained by Hodge (2006), who uses OLS regressions to show that higher inflation is associated with lower growth in South Africa over the long and the short term. The negative relationship is clearly evident in the data, as shown in Figure 9.

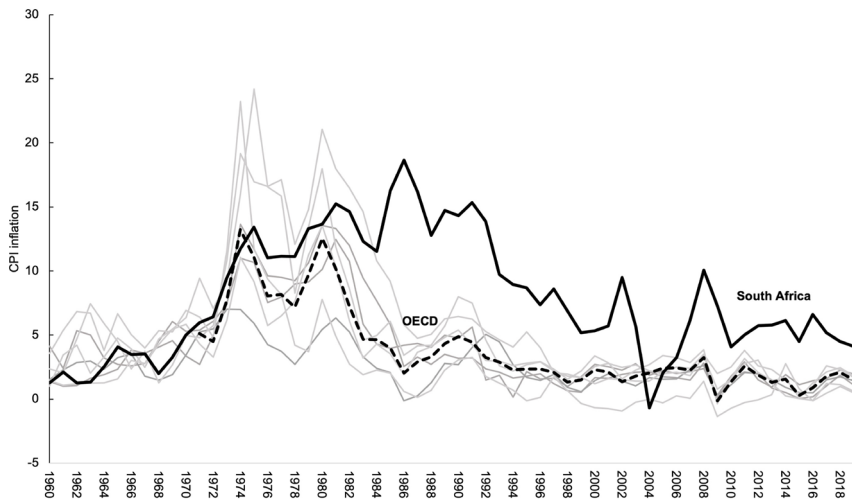
Figure 9: Inflation and growth in South Africa 1960–2018



Source: Authors’ calculation on SARB data

Neither cointegration nor OLS is an identification strategy for a causal relationship that can be used for policy purposes. In order to identify the role that monetary policy plays in the country's long-run growth we should find episodes where monetary policy was purposefully, or accidentally, used to promote growth and evaluate its impact. Unfortunately (or fortunately), South African monetary history does not provide a good test case for this hypothesis. Figure 10 compares the historical record of inflation in South Africa from 1960 to the present with the record of a sample of G7 countries. We can only use G7 countries as every other emerging market country, from South Korea to Brazil, experiences inflation of several orders of magnitude higher than South Africa, making the comparison meaningless. In fact, until the 1980s inflation in South Africa was in line with that of any G7 country: moderate and increasing inflation was the outcome of a combination of negative external supply shocks and limited policy response, as discussed in Orphanides (2002). The stagflation period in South Africa persisted during the 1980s, when shocks become mainly internal and in many ways more dramatic than during the previous decade. The policy response was difficult given the dimension of the shocks, but inflation was never out of control and there is little evidence of a systematic expansionary bias in SARB policies. Not only was inflation never out of control, but South Africa's inflation peak was also lower than peak inflation in almost any Organisation for Economic Co-operation and Development (OECD) country.

Figure 10: Inflation in South Africa and G7 countries 1960–2018



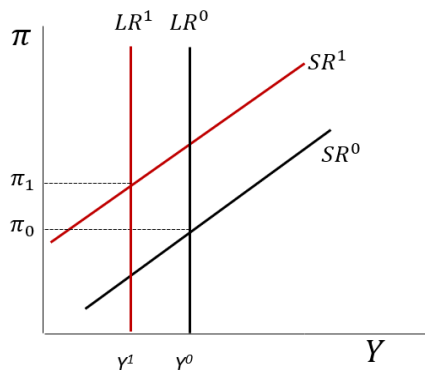
Source: OECD

Once South Africa democratised in 1994, the SARB's main effort was to control inflationary pressures and inflation moved downward, stabilising around just below the upper band of the 6% inflation target. There were still a few shocks to contend with, and the aftermath of the GFC has seen an increasing pressure on the

SARB to expand the economy beyond the mandate of price stability. But the SARB has largely resisted this pressure and monetary policy has been fairly orthodox across the whole sample, while fighting large supply and fiscal shocks. If monetary policy was never used autonomously to promote growth, then South African aggregate data cannot be used to identify the relationship between inflationary policies and growth. An alternative approach is to extrapolate from a cross section of countries, as in the panel analysis of Barro (1995), Sarel (1996) and Khan and Ssnhadji (2001) or to analyse the history of countries that tried to use active monetary policy to promote growth, as in De Gregorio et al. (1992) and Dornbusch and Edwards (2007) for Latin America populist policies. In all this work, the relationship between inflation and growth is negative, generally for levels of inflation higher than the South African experience.

What, then, is the source of the negative correlation between inflation and growth in South African data? The right answer must be in the nature of the shocks and the policy response that followed. Actually, the results of cointegration between inflation and the level of income can be derived in a traditional Phillips curve framework where permanent negative supply shocks are accommodated by neutral monetary policy.

Figure 11: Traditional Phillips curve and permanent supply shocks



Source: Authors' calculation

Consider Figure 11 where a permanent supply shock moves both the short-run and long-run Phillips curve to the left. If monetary policy does not react, the new equilibrium will be a permanent lower income level and a higher level of inflation. If instead monetary policy reacts as in an inflation targeting framework, it will generate a short-run deflation, to bring expectations in line with the target and the short-run Phillips curve will go back to a level consistent with initial inflation. In the first case, inflation and growth are negatively correlated; in the second case, inflation is stationary and cannot be correlated with the growth of income. This is exactly what we can find in the data: the negative correlation between inflation and growth

weakens significantly after the introduction of the inflation targeting regime.⁷ This also helps to interpret the critique of the SARB's monetary policy by Stiglitz (2008) and Kantor (2017). For these authors, monetary policy should not respond to supply shocks and instead accepts a permanent, once-off, increase in inflation. In contrast, the SARB's view is that, by anchoring inflation expectations to the target, monetary policy can break the linkage between inflation stabilisation and growth and thus reduce the need to generate recessions to control the inflation rate.

A different approach is to identify the relationship between monetary policy and growth by exploring the mechanism of this relationship. Recently, Jordà et al. (2020) have used an instrumental variable identification of monetary policy shocks that exploits the trilemma constraint in international finance. They find a strong long-term hysteresis effect of exogenous monetary shocks on capital and total factor productivity. They present a micro-founded model to show that these long-run effects can be generated in a New Keynesian model with nominal rigidities and insufficient stabilisation in an endogenous growth model. Monetary policy can affect long-term growth by affecting firms' real costs, profits and willingness to invest. This can happen if monetary policy can permanently affect real wages (Blanchard and Summers 1987), the real exchange rate (Rodrik 2008) or firms' credit conditions. The question then arises of whether these three channels are active in the South African economy.

4.2.1 Monetary policy and real wages

Monetary policy can affect firms' marginal costs if nominal wages are not responsive to inflation. One mechanism for this to occur is the hysteresis effect in insider-outsider models such as in Blanchard and Summers (1987). In this framework, real wages and unemployment are random-walk processes linked by the trade union objective to maximise the employment of those currently working. Thus, a monetary policy shock that reduces real wages and increases employment in the short run is locked in by subsequent wage negotiations. We should therefore expect nominal wages that are strongly linked with employment fluctuations and little correlation between nominal wages and inflation.

The weak connection between wages and employment can be easily seen in the data. Dadam and Viegi (2015) estimate a reduced form New Keynesian wage Phillips curve (Galí 2010) for South Africa for the period 1970-2014. The main results are shown in Table 3. Private sector wages are becoming progressively less

7 The example above invites one to take the Lucas critique seriously (i.e. we cannot extrapolate economic relationships from past data without incorporating changes in policy regimes and their effect on aggregate behaviour), even when using a data-driven methodology. The data generating process of some macro variables is not invariant to the policy regime followed. If a country is successful in implementing inflation targeting, inflation will be a stationary stochastic process and the interest rate becomes the non-stationary variable because it has to absorb any long-lasting shock hitting the economy. GDP will not have a different stochastic representation as it will still be driven by technological innovations, that is a series of permanent supply shocks. Therefore we cannot see cointegration between inflation and GDP in an inflation targeting regime. There might be cointegration between the level of prices and GDP, but it is not obvious. The point here is that the data generating processes of nominal variables are likely to be influenced by the policy regime used. If there is a strong nominal anchor, nominal variables are stationary. If there is not a strong nominal anchor, inflation will be driven by the same shocks as output. This is consistent with Orphanides (2002) who analyses the conduct of the Fed monetary policy in the 1970s.

sensitive to labour market conditions, which affects wage bargaining across the economy.

Table 3: Estimated wage inflation – private sector wage

	(1)	(2)	(3)	(4)
	1970 – 2014	1994 – 2014	1970 – 2014	1994 – 2014
n_t	0.19*** (0.05)	0.07 (0.04)	0.13** (0.04)	0.06 (0.04)
π_{t-1}			0.55*** (0.05)	0.25* (0.12)

*** denotes significance at the 1% level, ** at the 5% level and * at the 10% level.

Source: Dadam and Viegi 2015

This increasing lack of responsiveness of real wages implies a very flat Phillips curve relating inflation and unemployment and thus a very high sacrifice ratio. Kabundi et al. (2019) confirm these results, showing a slow reduction in the Phillips curve slope following the GFC. They focus on the relation between inflation and output. But this result is also confirmed by the difficulty of finding a strong Phillips curve relationship between the output gap and inflation in South African data (Fedderke and Liu 2018).

On the other hand, Kabundi et al. (2019) show a reduction in inflation inertia and in inflation volatility. They attribute that observation to an increase in anchoring of expectations to a time-varying inflation target and an increase in the SARB's credibility. This is reflected by a strong correlation between wages and expected inflation (Dadam and Viegi 2015).

Therefore, a monetary policy that increases inflation expectations is likely to have a rapid effect on nominal wages without any significant long-run boost to firms' profitability and investment. Conversely, an increase in the anchoring of wages to inflation expectations allows the SARB to use its credibility and communication to minimise the cost of inflation stabilisation.⁸

4.2.2 Monetary policy and the real exchange rate

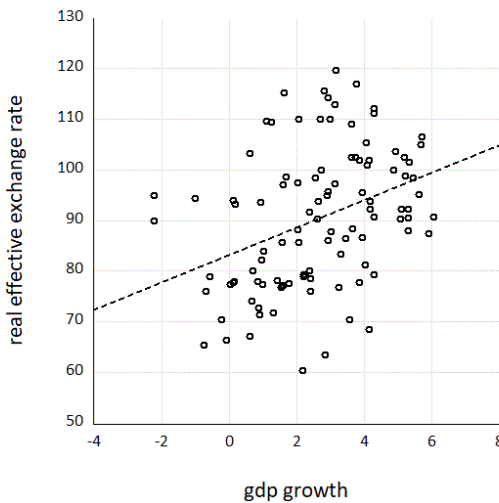
The role of the real exchange rate in a growth strategy has been emphasised widely in the literature, especially as one of the building blocks of an export promotion strategy. Rodrik (2008) shows that the undervaluation of the currency (a high real exchange rate) stimulates economic growth via its effect on the size of the tradable sector. Brunnermeier et al. (2018) discuss how consumption-led growth, by relying on imports and expansion of the non-traded sector, cannot be the base for a long-term growth strategy, as it limits the technological and management spillovers that the tradable sector provides.

8 The increasing convergence of inflation expectations to the inflation target and an increase in the credibility of the SARB is consistently shown across the literature (Miyajima and Yetman 2018; Kabundi and Mlachila 2018; Chen and Creamer 2019).

In the South African debate, this growth strategy is often translated as requiring monetary policy to devalue nominal exchange rates from whatever the current level is or to react to a devaluation of exchange rate with an increase in the interest rate, that is to accommodate the devaluation.

In reality, the real exchange rate is determined by the real expenditure patterns in the country and, as such, is more a fiscal phenomenon than a monetary one. A devaluation of the nominal exchange rate that is matched by an increase in nominal wages and prices will not have any effect on the overall real value of expenditure. Moreover, a devaluation of the real exchange rate must be matched by a move of resources from the non-traded to the tradable sector.

Figure 12: Real effective exchange rate and GDP growth. 1994–2020



Source: Authors' calculation on SARB data

The real effective exchange rate has been in decline for the past 10 years in the aftermath of the GFC. Monetary policy in this period has been largely expansionary, as has fiscal policy. At no time in this period did South Africa experience any growth acceleration or an expansion of its export sector. The structural nature of the South African low growth experience is clearly shown in this correlation. Monetary policy can help in a concerted effort to move the economy towards an export-oriented growth model but it can only play an ancillary role.

4.2.3 Monetary policy and credit conditions

Finally, Epstein (2015) proposes a wider role of central banks as the “creditor of last resort”. In this framework, a central bank should intervene directly in the credit market, expanding access to credit and using instruments of credit control and credit subsidy to direct resources towards industrial development, employment creation and economic growth. This approach raises two questions:

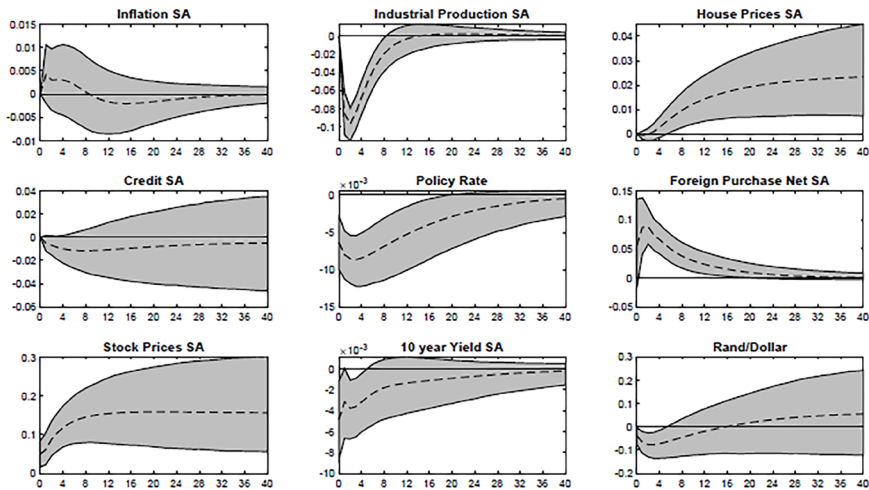
- Are the developmental objectives of central banking compatible with macroeconomic stability in a small open economy?
- Is a credit constraint an important limit to South African economic growth?

The answers to both questions are likely to be negative. Firstly, a direct developmental role gives the central bank a direct fiscal role. It is theoretically possible to have “good policies and appropriate policy coordination, together with appropriate checks and balances, so that central banks can play a positive role in fostering both macroeconomic stability and development” (Epstein 2015: 11). However, with good policies it would not be necessary to change the objective of the central bank, as other institutions (such as, in South Africa, the Development Bank of Southern Africa, Land Bank, the Industrial Development Corporation and the Public Investment Corporation) would be successful in their development finance mandate. The reason central banks do not engage in development finance is that the power and privilege of producing fiat money is conditional on maintaining public trust that the value of the currency will not be compromised. Once this trust is lost, the power of central banks can only be preserved with financial repression, price controls and capital controls. Giving central banks a developmental role is not necessary to establish an effective growth strategy.

Secondly, it is doubtful that a credit constraint is the main source of the disappointing growth of the last 10 years. When looking at external expansionary shocks that would relax a national credit constraint by providing a new inflow of capital to the economy, we do not find any evidence that the credit market is the main constraint to industrial production and development. In Figure 13, the impulse responses show the effect of the Fed’s quantitative easing policies on the South African economy in the 10 years after the GFC.⁹ As expected, the inflow of capital raised asset prices, reduced long-term interest rates and was accommodated by an expansionary monetary policy. Nevertheless, the effect on industrial production and growth was negative, with new credit going to the housing market while firm demand for credit remained stagnant.

9 The impulse responses are calculated using a medium scale Bayesian VAR model as in Kabundi et al. (2020). The model consists of 20 variables. As is standard in the medium to large Bayesian VAR literature, we order the slow-moving variables first and then the fast-moving variables last. We assume the following ordering structure, $Y_t = (X_t^{US}, X_t^{SA}, r_t^{US}, Z_t^{US}, r_t^{SA}, Z_t^{SA})$, where X_t^{US} and X_t^{SA} represent the slow-moving variables for the US and SA respectively, X_t^{US} is the monetary policy in the US, Z_t^{US} represents the fast-moving variables in the US, r_t^{SA} is the monetary policy in South Africa and lastly Z_t^{SA} is the fast-moving variables in South Africa. With this ordering structure, we assume that the slow-moving variables in both the US and South Africa do not respond contemporaneously to US monetary policy. In addition, we assume that the fast-moving variables respond contemporaneously to everything. We treat the South African monetary policy as a fast-moving variable, but put it before the South African variables. This ordering allows us to maintain the ordering of slow- and fast-moving variables within the South African block as $Y_t^{SA} = (X_t^{SA}, r_t^{SA}, Z_t^{SA})$. That is, within the local economy, monetary policy authorities can only respond with a lag to fast-moving variables.

Figure 13: Response of South African variables to US quantitative easing shocks after the GFC



5. Monetary and fiscal policy interdependence

The main constraint to monetary policy, going forward, is the fiscal dynamic that is developing in South Africa. Following the GFC, South African debt entered a growing path, which has worsened significantly with the onset of the COVID-19 shock. Government debt is expected to exceed 100% of GDP by 2025.

The level of debt, and the connected risk of default, significantly affects the dynamic interaction of fiscal and monetary policy:

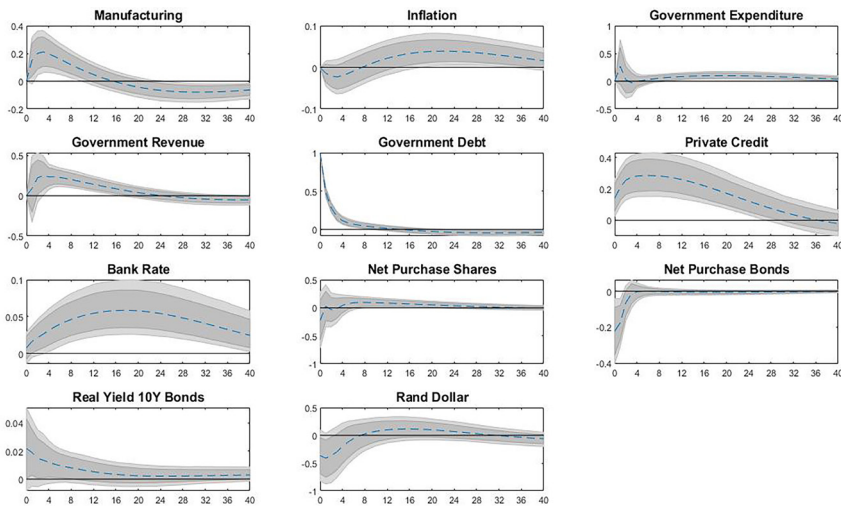
- Firstly, at a high level of debt, fiscal policy becomes a less powerful instrument (Perotti 1999). At the limit, the effect of fiscal policy can be reversed, with the negative effect on the risk premium and exchange rate outweighing the typical short-run Keynesian demand effect (Giavazzi and Pagano 1990).
- Secondly, the fiscal position becomes more sensitive to monetary policy actions via the relationship between the policy rate and the government bond rates. This generates political economy pressure on monetary policy to internalise government solvency in its policy objectives.

Examples of this perverse effect of fiscal policy are often discussed in the literature. For example, Blanchard (2004) notes that, in the early 2000s, Brazil's monetary policy was constrained by the need for fiscal solvency such that a monetary contraction would induce real depreciation of the currency and an increase in inflationary pressure because of the effect it had on the country risk premium. The question is therefore whether South Africa has reached a debt level where the normal monetary-fiscal policy interaction is on a critical path of instability.

5.1 Contractionary fiscal expansion?

We investigated whether the accumulation of debt is changing the economic effect of fiscal policy. We looked at the effect of debt shocks using a medium scale Bayesian VAR model (Bańbura et al. 2010). In Figure 14 we see the impulse response function for a 1% debt shock for the whole sample. The figure is typical of standard fiscal policy expansion: expansion in output and credit, and delayed inflationary response to which the SARB responds with an increase in the policy rate. The long-term yield increases and the exchange rate is revalued.

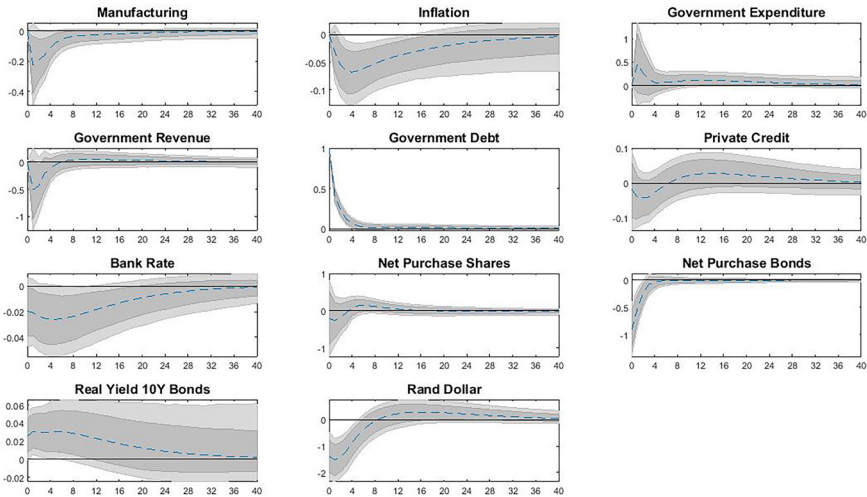
Figure 14: Fiscal policy shock, 2003–2019



The picture changes dramatically if we focus only on the last five years of our sample, which includes the period of loss of credibility in the country's fiscal plan. Currently, the same fiscal shock induces a much stronger response in the long-term yield, has a contractionary effect on manufacturing and inflation, and results in capital outflows from the bond market. Monetary policy counteracts these negative effects of the fiscal shock by reducing the policy rate, partly mitigating the contractionary effect of fiscal expansion.

This result is suggestive of the critical state of the national finances. The main effect of fiscal expansion at this stage is an increase in the country risk premium with the negative consequences that we have analysed previously. Fiscal stabilisation, therefore, is not only necessary to avoid a fiscal crisis but, according to this analysis, is also necessary to reactivate fiscal policy that at the moment has lost macroeconomic efficacy.

Figure 15: Fiscal policy shock, 2014–2019



5.2 Monetary policy and government debt repayment

The effect of monetary policy on long-term interest rates is important given the high share of long-term government debt. We used both monthly and quarterly data for the period from January 2000 to December 2019. Furthermore, we analysed two sub-samples from January 2000 to August 2008 and from September 2008 to December 2019. The second sub-sample corresponds with the start of the sharp increase in South African public debt to GDP (Fedderke 2020). In contrast, the first sub-sample captures a period of strong economic growth and fiscal consolidation that began at the end of the 1990s. During this period, both the yield on the 10-year bond and the term premium were low and declining (Soobyah et al. 2020; Fedderke 2020). Figure 16 shows the spread between 0- to 3-year and 10-year bonds, and 5- to 10-year and 10-year bonds. Both spreads remain at elevated levels since the end of 2008.

Figure 16: South Africa yield spreads, 2000–2019

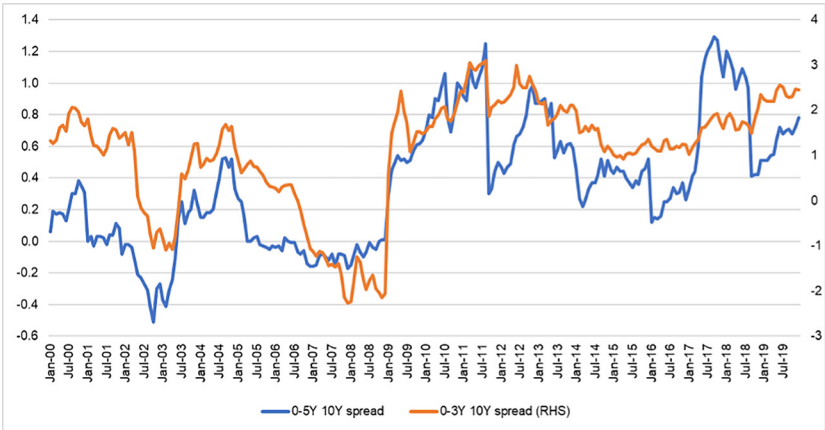


Figure 17: Response to a monetary policy shock – whole sample

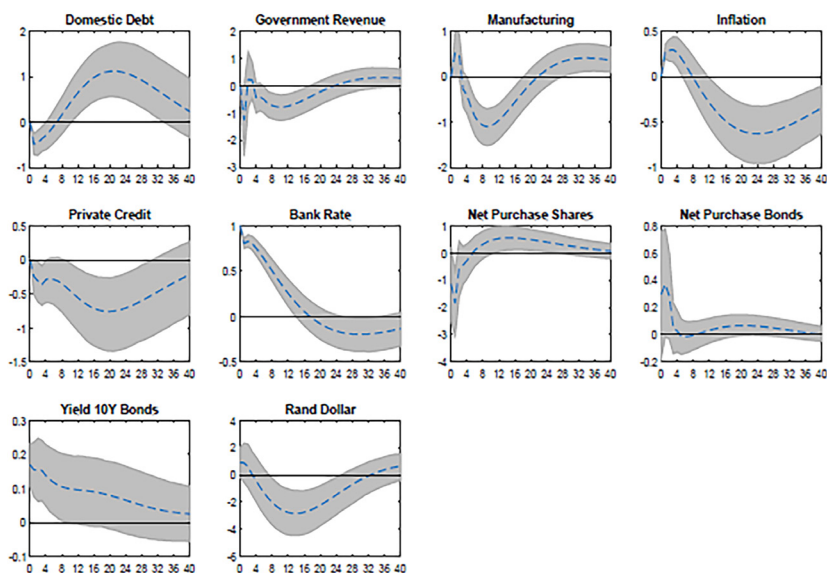


Figure 18: Response to a monetary policy shock – January 2000 to August 2008

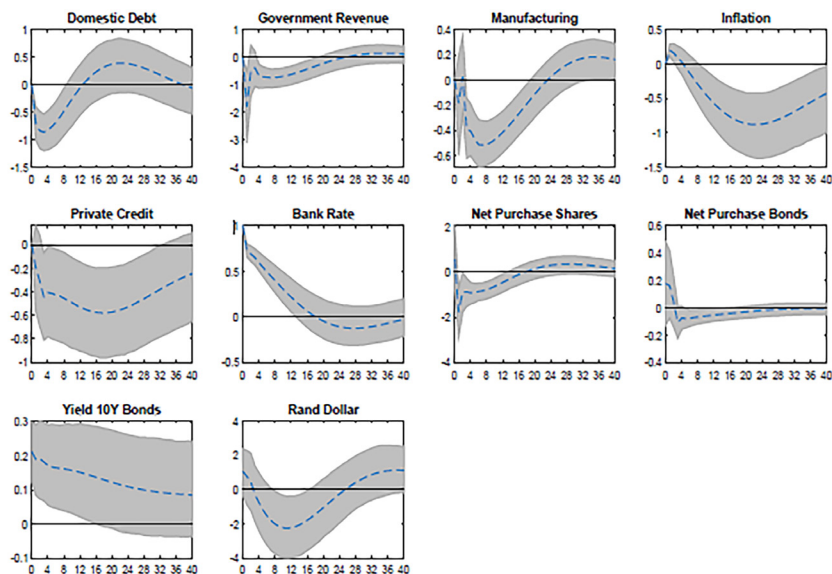


Figure 19: Response to a monetary policy shock – September 2008 to December 2019

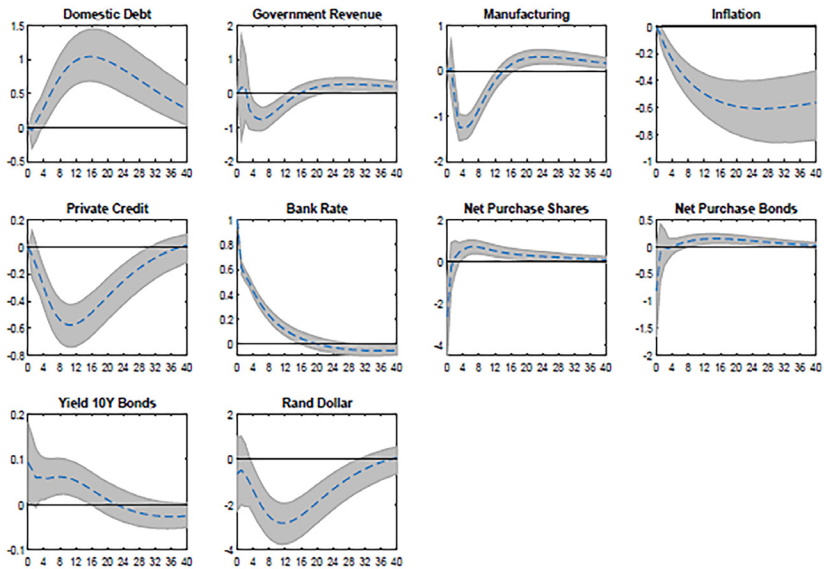


Figure 17 presents the impulse response function of a 100-basis point increase in the monetary policy rate from a standard medium-size Bayesian SVAR¹⁰ for the whole sample. Similarly, Figures 18 and 19 show the results for the two sub-samples. For the whole sample, the results indicate that a contraction in monetary policy has a negative and lagged effect on industrial production and inflation.¹¹ Credit to the private sector also decreases. The effect on asset holdings by non-residents is mixed. While the net effect on bond purchases by non-residents is insignificant, there's a positive (albeit initially insignificant) and significant net effect for shares. In response, the rand appreciates against the US dollar. For fiscal policy variables, government revenue declines due to a fall in economic activity. The yield on long-term bonds increases, indicating a decline in demand for bonds. Government debt increases with a lag, reflecting the need to finance the budget deficit following the reduction in revenues.

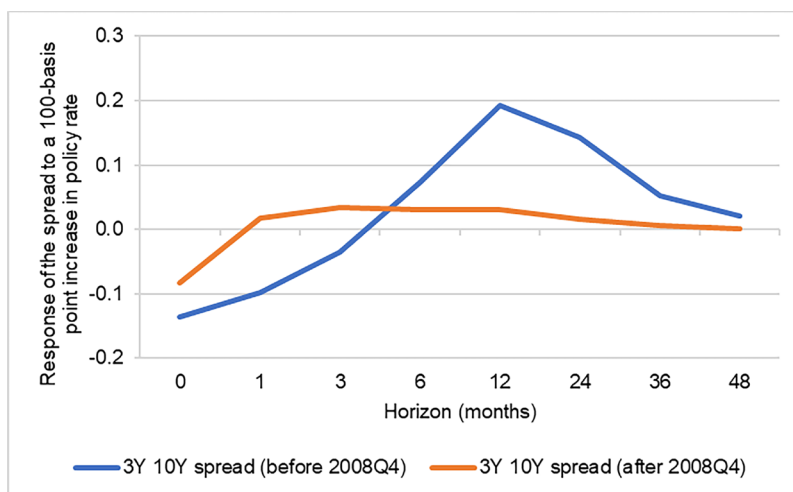
For the sub-samples, we noted a significant difference in government debt dynamics. While in both periods the yield on long-term bonds increases, government debt decreases in the first period despite the decline in revenue.

10 Our Bayesian SVAR model consists of 10 variables. As is standard in the literature, we order the slow-moving variables first, followed by the fast-moving variables. Given $Y_t = X_t, r_t, Z_t'$, where X_t represents the slow-moving variables, r_t is the monetary policy instrument and Z_t' represents the fast-moving variables. X_t includes domestic government loan debt and revenue, industrial production, inflation and total credit extended to the private sector; r_t includes the interest rate; and Z_t' includes net shares and bond purchases by non-residents, the yield on 10-year bonds and the rand/US dollar exchange rate. We use the zero restrictions to identify a monetary policy shock with lag length of 6 months.

11 The light and dark shaded areas in the figure are for the 68% and 90% posterior coverage.

This shows that monetary and fiscal policy are moving in the same direction, or at least that they are not counteracting each other. In the second sub-sample, government debt increases. The response of government debt could be explained by the differences in fiscal and economic positions. It also raises the question of whether a contractionary monetary policy induces an expansionary expenditure-driven fiscal policy.

Figure 20: Impulse response functions – yield spreads



Note: All the impulse response functions are significant

Lastly, we looked at the effect of a contractionary monetary policy on the spread between 0- to 3-year and 10-year bonds, and 5- to 10-year and 10-year bonds. The results are presented in Figure 20. The results show that the yield spread for 0- to 3-year bonds and 10-year bonds was more responsive to a monetary policy shock in the first sub-sample, while the reverse is true in the second sub-sample.

5.3 Two ways out of debt

Reducing the government debt burden is therefore the first policy priority for the next decade. There are two main approaches to reduce the debt burden (Reinhart et al. 2015): either the real economy grows out of debt and the debt burden is reduced by running primary surpluses and selling government assets; or the value of debt is reduced by some form of default on the debt, such as debt restructuring, unexpected inflation or repressing private finance.

Both approaches have consequences for monetary policy. In the first case, monetary policy should support the fiscal stabilisation effort through a reduction in the policy rate to mitigate the recessionary effect of fiscal contractions. This is not

possible when the policy rate is at the zero lower bound as it is in many developed countries, but it is certainly possible in the case of South Africa. Given the critical level of debt, a credible fiscal plan could have a long-run expansionary effect.

The second approach requires monetary policy to be constrained by the need for fiscal solvency, an approach that is constrained by the effect that it has on private sector behaviour.¹² As discussed by Buiter (2014: 2), the policy can successfully reduce the debt burden without long-term economic consequences if “the State can issue un-backed, irredeemable fiat money or base money with a zero nominal interest rate, which can be produced at zero marginal cost and is held in positive amounts by households and other private agents, despite the availability of risk-free securities carrying a positive nominal interest rate”. Therefore, a necessary condition is that private sector behaviour is not affected by the change in policies and that the private sector absorbs the excess money creation in its portfolio as private wealth.¹³ This condition is unlikely to be respected when the amount of money financing is large and permanent, fiat money has close substitutes in other currencies or other assets, and the state cannot credibly commit to long-term solvency. In fact, recent models discussing money financing like Galí (2019) implicitly assume a credible long-term nominal anchor for the economy and thus assume that money financing is credibly transitory.

This is unlikely to be the case in South Africa and in other emerging markets. Historical experience, mainly from Latin America, show the perils of money financing of public debt (Kehoe et al. 2020) and the permanent damage it can inflict on a country’s financial development, access to capital and the credibility of its policies.

On the other hand, the COVID-19 crisis has accelerated the accumulation of public debt in many emerging markets that are now experimenting with ways to monetise this exceptional transitory shock without affecting long-term economic stability. This requires policymakers to commit to long-term goals, which underlines the importance of credible and independent monetary policy institutions.

6. The future of South African monetary policy: robustness, flexibility and coordination under inflation targeting

South Africa will emerge from the COVID-19 crisis as an extremely fragile country, with very few protective buffer stocks. Resources have been used to support current consumption and the economy has become increasingly dependent on international financial markets to finance the double deficit on the fiscal and external balances. Monetary policy has been constrained in maintaining a real interest rate high enough to guarantee a continuing inflow of international capital.

12 See Turner (2013) and Reichlin et al. (2013) for early discussions of monetary financing in the context of policies at the zero lower bound.

13 This is the same condition behind the popular Modern Monetary Theory assertion that a country able to issue sovereign currency cannot default on its debt (Kelton 2020).

The future of monetary policy in South Africa will depend on how the country deals with the constraints analysed above. The country needs to enact structural reforms in order to return to growth and needs to build strong resilience in its economic and social institutions. Monetary policy can help in the transition if it is strongly anchored to long-term stability objectives and the SARB remains credibly independent from short-run political pressures.

Monetary policy operates in the narrow space left between national policies and international trends. If national policies are based on a long-term, sustainable and prudent vision, then monetary policy has room to provide the necessary stabilisation from external shocks and uncertainties. However, if national policies are erratic and dominated by a short-term focus, then monetary policy will struggle to deal with internal economic weaknesses and protect the country from external volatility.

Does this mean that we should not discuss the present policy framework? On the contrary: inflation targeting is a pragmatic response to the need to have both short-run flexibility in policies and a long-term certainty of outcomes. Today, when the increasing uncertainty emanating from the world economy makes it impossible to predict future dynamics, we need a framework that is more robust and we need to build more financial and structural buffer stocks. We need also to think about new policy instruments that focus directly on protecting the economy from external shocks. Academics and policymakers around the world are discussing the role that macroprudential policy can play, how to design effective instruments of capital control and how to use balance sheet policies to support the current interest rate framework. This is a discussion worth having and this paper has contributed to it.

On the other hand, a robust monetary policy is based on a credible commitment to long-term objectives and institutional stability. The inflation targeting framework has demonstrated, during two of the worst global crises the world has ever experienced, that it is a flexible and adaptable monetary regime that can accommodate new instruments and new emergencies while providing a long-term anchor to private sector expectations and decision-making.

Labour policy

Chapter 2

Addressing low labour utilisation in South Africa

Christopher Loewald, Konstantin Makrellov and Andreas Wörgötter

1. Introduction¹

The 2010 OECD Economic Survey of South Africa had a special chapter devoted to the high inactivity rate of people in the country (Barnard 2009). According to the OECD, the main causes of this inactivity are an overall low rate of growth, a heavy regulatory burden for entering markets, poorly coordinated wage bargaining, settlement structures that are far from economic nodes, and a high rate of youth unemployment, especially among black South Africans. Unfortunately, not much has changed since then (OECD 2019a). Unemployment is still extremely high and unevenly distributed, being concentrated among young, less-skilled black South Africans (IMF 2020).

South Africa's stubbornly low labour utilisation rate is an international outlier and an impediment to realising the aspirations published in various strategic policies by the government (National Planning Commission 2013).² It is also a major obstacle to a broader employment recovery after COVID-19, raising a serious risk of hysteresis.³ The Quarterly Employment Survey estimates that the formal non-agricultural sector lost around 630 200 jobs in the second quarter of 2020. The Quarterly Labour Force Survey for December 2020 shows that about 330 000 jobs were created in the fourth quarter and 1.4 million jobs were lost that year. These job losses are on top of very disappointing employment growth over the last decade.

The failure of the labour market to contribute to higher activity levels implies that it also acts as a constraint at a macroeconomic level, inhibiting fiscal and monetary policies in supporting stabilisation and long-run growth. The structural nature of low labour utilisation reduces the responsiveness of wage setting to shocks. This in turn imposes a constraint on monetary policy and reduces the effectiveness of inflation targeting (Bhattarai 2016).

The purpose of this paper is to identify the reasons for this low labour utilisation rate and present solutions based on policies from countries that have achieved a

1 We would like to thank an anonymous referee for their useful comments and suggestions as well as participants in a seminar at the SARB on 8 October 2020.

2 A productivity gap measures how far a country is from the global productivity frontier. A labour utilisation gap measures how much labour is being used per working age adult relative to other economies.

3 Hysteresis refers to a process in which temporary shocks become permanent. A frequently mentioned example is the situation after the first oil price shock in 1975 when unemployment went up during the recession, but did not come down in the following recovery.

significant increase in labour utilisation. The implementation of these policies is more urgent than ever given the large employment losses in 2020 due to the COVID-19 crisis. These policies need to address school-to-job transition, speed up job creation, improve the employability of the inactive population, and make job search more effective. The policies should also be supported by industrial and competition policies that increase market dynamism and labour utilisation.

2. Labour market models

In this section we review three labour market models that are important for understanding South African labour dynamics. These are the “flow matching” and Beveridge curve approach; the model of union and wage-setting arrangements; and the efficient wages perspective.

2.1 Flow matching and the Beveridge curve approach

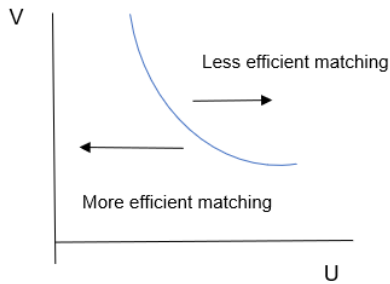
Pissarides (2000) presents the foundations of this approach. Unemployment is in equilibrium when hires (H) are equal to the separations from employment (S). Workers and jobs are heterogeneous. In this case, the role of the labour market is to achieve efficient matching of unemployed workers with available vacancies. The matching function can be expressed as:

$$H = \alpha \cdot m(U, V)$$

where U is the number of unemployed, V is the number of vacancies and α is the efficiency parameter. A higher number of new hires requires greater matching efficiency. Assuming that the separation rate is exogenous and constant and that matching takes place under constant returns to scale, we can generate the Beveridge curve. This is a vacancy-unemployment curve which shows the labour market equilibrium.

At high levels of unemployment, such as during a recession, the number of vacancies is low with a given approach for matching. When unemployment is low, such as during a boom, more vacancies are available for each job searcher. If matching is less efficient, then the curve shifts to the right, indicating that a larger number of vacancies and job searchers is required to ensure equilibrium in the market.

Figure 1: Beveridge curve



Source: Adapted from Carlin and Soskice (2015)

Carlin and Soskice (2015) link the Beveridge curve to wage and price outcomes and show how these are affected by changes in the matching rate. A deterioration in matching increases the vacancy rate for any given rate of unemployment. The higher vacancy rate increases the wage that workers can bargain for or employers need to provide to attract good workers. The equilibrium unemployment is higher and inflation increases. Alternatively, an increase in wages and prices with the Beveridge curve remaining unchanged leads to a movement along the curve. Equilibrium unemployment is higher and the vacancy rate is lower. This change in the unemployment rate offsets the impact of higher wages on the total wage bill.

This model suggests that any factor that reduces matching efficiency leads to higher structural unemployment. These include barriers to occupational and geographic mobility; employment protection legislation that may affect the ability of employers to hire workers; entry barriers for new suppliers, which slow down the flow of new vacancies; and factors that increase wages structurally like the legal extension of collective agreements.

2.2 Unions and wage-setting arrangements

This framework is based on the work of Lars Calmfors and John Driffill (1988). In their model, the relationship between the degree of centralised wage setting and the equilibrium rate of unemployment is hump-shaped. The framework assumes that all workers are unionised and compares the unemployment outcomes under different wage-setting regimes, at firm level, at industry level, and at the level of the economy as a whole. At the firm level, every firm has its own union, while at the industry level there is only one union for the entire industry. In the economy-wide wage-setting regime, the wage setters take into account the economy-wide impacts of their actions. The different regimes reflect different union expectations regarding the impact of wage increases on employment and the economy as a whole.

When there is one union per firm, the union will worry how higher wages are likely to decrease firm competitiveness and sales, ultimately impacting

employment. This serves to reduce the power of unions to impose above-equilibrium wages. Also, the general economic conditions would be taken as given as each union is too small to influence them.

By contrast, unions at the industry level are less likely to take into account the employment effects as they assume that the industry is not facing competition from other industries due to limited product substitution. They will also ignore the economy-wide effects of their actions, because eventual losses and benefits are distributed to the economy at large (some other sector or marginal worker) and not perceived to be associated with wage-setting at the industry level. Workers may not have a clear view of how wage-setting affects the likelihood of themselves becoming unemployed.

A union setting wages for all workers in the economy is assumed to take into account the impact of real wage gains deviating from productivity growth or of international product competition. It recognises that increasing all wages in the economy without increasing productivity would simply increase inflation and leave real wages unchanged. In this case, the union maximises utility by going for the highest possible employment level.

Related to this model is the insider-outsider theory of labour markets. Incumbent workers enjoy more favourable conditions because of labour turnover costs.⁴ Additional costs arise as insiders resist competition from outsiders by refusing to cooperate and harassing outsiders. Given that these costs are at least partially borne by employers, insiders are given market power. This is used to push wages above the market clearing level. The framework generates unemployment persistence and eventually hysteresis.⁵

In South Africa, many industries are characterised by insiders exercising power over outsiders via collective agreements. These are legally extended to all workers and employers in a sector and a region. This procedure also acts as an entry barrier for new suppliers and therefore incumbent suppliers can charge higher prices.

2.3 Efficiency wage model

Carlin and Soskice (2015) describe an efficiency wage model.⁶ This framework tries to explain why we observe involuntary unemployment and why wages do not adjust to clear the labour market. The key argument is that companies pay a premium over the market clearing wage to deal with shirking, fairness and turnover costs. The higher wage is an incentive to work harder but it also increases the cost of being fired. Firms can monitor effort only imperfectly depending on the

4 Another source of insider power is bargaining on the entry level wage, which increases the gap between wage cost and actual productivity for younger workers, reducing demand for them. This, with compression of regional pay disparities, is common in South African collective bargaining.

5 See Lindbeck and Snower (2001) and Lindbeck and Snower (2002) for a detailed explanation of the model and a review of empirical evidence.

6 The efficiency wage model is based on the seminal work of Akerlof (1984) and Shapiro and Stiglitz (1984).

industry and technology. The firms' problem is to identify the minimum wage to induce a certain effort level and monitor performance.

The optimal wage equation for firms depends positively on the level of unemployment benefits and disutility of work; negatively on the probability of being dismissed if shirking; and negatively on the unemployment rate. Higher unemployment benefits reduce the cost of being fired and thus require a higher premium to induce the required level of effort. The disutility of work also reduces the cost of being fired. A higher probability of being dismissed due to shirking increases the probability that a worker will face the cost of being fired. A higher unemployment rate increases the shirking costs for workers and thus firms can pay a lower efficiency wage.

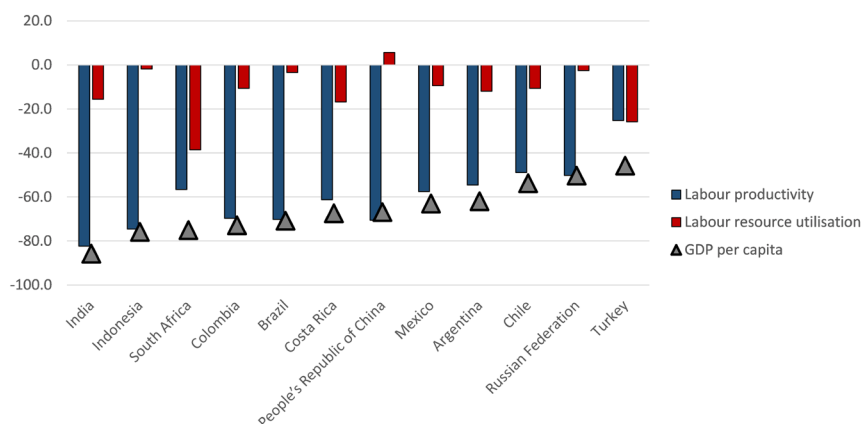
This also suggests that in this framework higher unemployment benefits increase the equilibrium unemployment rate while lower firing costs decrease the equilibrium unemployment rate. It is the relationship between firing costs and unemployment which makes this model applicable to South Africa, as we illustrate later in the chapter.

South Africa's labour market is segmented. Unemployment for skilled workers is low, while unemployment for semi-skilled and in particular low-skilled workers is high. Youth unemployment is very high. These models explain different characteristics of the South African labour market. It is the interaction and interlinkages between the different skill markets that generates particularly high unemployment outcomes. The South African economy has wage setting on an industry level for certain sectors, high firing costs and inefficient matching processes. This is exacerbated by shortages of skilled labour which lead to a large wage premium for skilled workers but also lower demand for other skills through complementarity linkages (that is, fewer skilled workers directly lower demand for less-skilled workers).

3. Labour utilisation drivers

The low level of economic activity of South Africa's working age population puts it far behind the GDP per capita achieved in other countries with a similar labour productivity level (such as Costa Rica, Mexico and Argentina; see Figure 2). Columbia and Brazil achieve a higher GDP per capita relative to advanced economies, compared to South Africa, because they employ more of the working age population (achieving a much lower labour utilisation gap (Figure 2)) and despite their lower productivity levels in the formal sector. This low utilisation rate is the result of several factors. These include the high unemployment of young people, the unemployment variation across different regions, the rate of economic growth, the ineffectiveness of wage-bargaining institutions to support job creation and the absence of a public employment service. We discuss each of these in more detail below.

Figure 2: Countries covered in the OECD's Going for Growth exhibit large variation in GDP per capita (compared to the upper half of OECD countries, 2018)⁷



Source: OECD 2019a

3.1 Youth unemployment

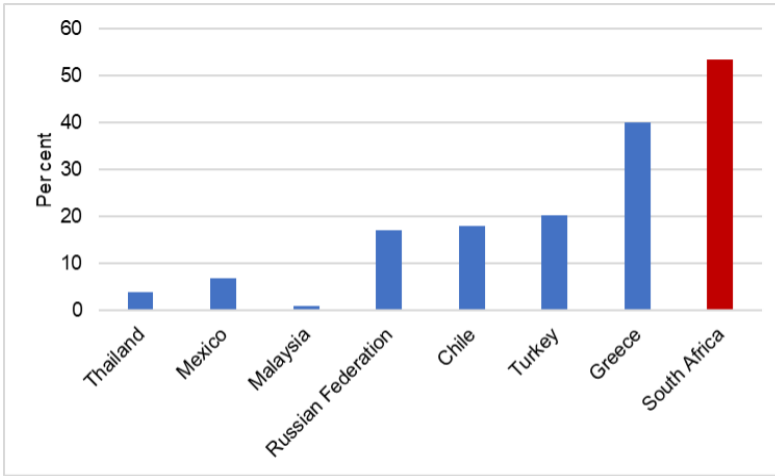
South Africa has one of the highest unemployment rates of its young, predominantly black, population (Figure 3). The large labour utilisation gap reflects the extreme rate of unemployment of black school leavers who do not continue with university studies. This suggests that even 25 years after the transition to a democratic system, the scars of a weak education system from the apartheid period are still present. Among these are the significant infrastructure deficiencies of educational institutions in low-income areas, high student/teacher ratios and ongoing teacher absenteeism.

High youth unemployment occurs, in part, if the school-to-job transition does not work properly. Countries with low youth unemployment, like Germany, Netherlands and Austria, have vocational education systems with a significant share of on-the-job training. Employers play a key role in channelling students on these education tracks into guaranteed employment after graduation. Up to a quarter of a cohort participate in such programmes and another quarter is enrolled in upper secondary vocational schools with experienced and qualified teachers. The quality of vocational training is regularly checked by boards with strong stakeholder (social partner) participation.

⁷ Labour productivity is measured as GDP per hour worked. Labour resource utilisation is measured as the total number of hours worked over the population aged 15-74. The comparison is based on the weighted average using population weights of the 18 OECD countries with highest GDP per capita in 2018 based on 2018 purchasing power parities. The sum of the percentage difference in labour resource utilisation and labour productivity does not add up exactly to the GDP per capita difference since the decomposition is multiplicative.

South Africa has not set up a similar institutional infrastructure to copy a comprehensive “German-style” apprenticeship system, while job-placing vocational training programmes that are in place are not popular and are seen to be low quality (Murtin 2013), limiting demand for them by students and employers.

Figure 3: Youth unemployment across countries (2018)

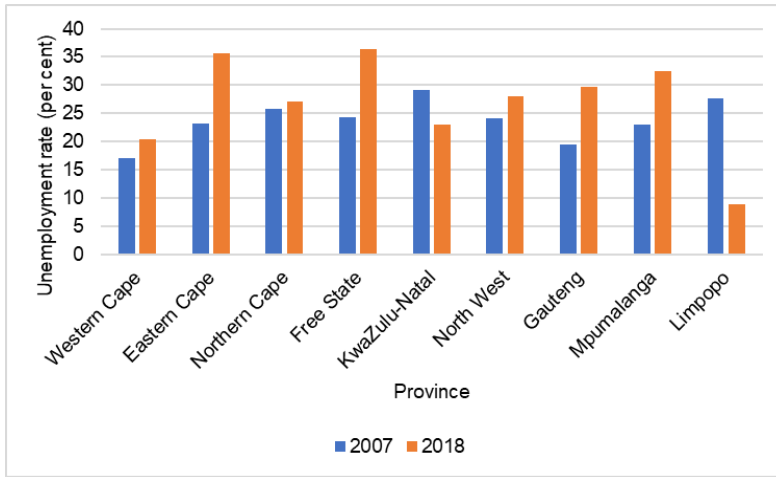


Source: Haver, OECD 2010a

3.2 Regional and structural unemployment

Another obstacle to higher labour force participation is the geographic distribution of the population, a large portion of which is often located some distance from where jobs are available. Social housing is mainly located where land is cheap, which is usually not where employment opportunities are available. Informal housing is filling the gap with only private minibuses operating uncoordinated networks (OECD 2015). This increases job search costs and reservation wages, generating inefficient labour market outcomes (Diamond 1982). As a result, unemployment varies greatly across provinces (Figure 4). This is a visible and persistent legacy of the apartheid settlement policy.

Figure 4: Regional unemployment (2007/2018)

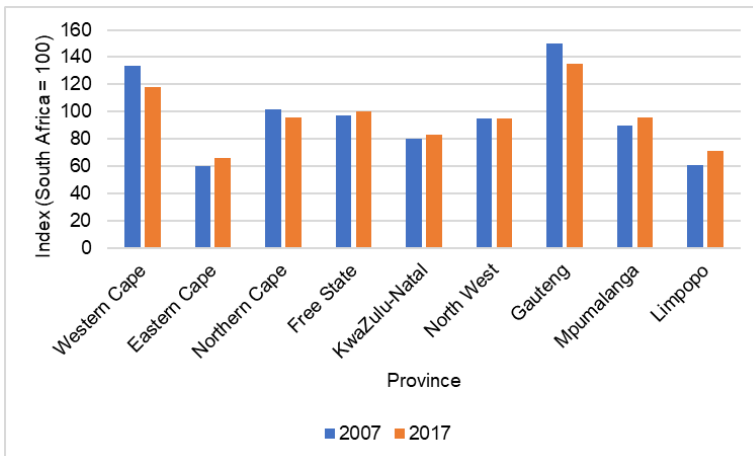


Source: Statistics South Africa (Stats SA)

Note: WC: Western Cape; EC: Eastern Cape; NC: Northern Cape; FS: Free State; KZ: KwaZulu-Natal; NW: North West; GP: Gauteng; MP: Mpumalanga; LP: Limpopo.

Geographic variation in the level of economic activity is even larger than of unemployment. In 2008, GDP per capita was nearly three times as high in Gauteng than in Eastern Cape (Figure 5). Over time, this variation declined and in 2017 the largest difference in economic activity between Eastern Cape and Gauteng declined to two times (of GDP per capita in Eastern Cape). In 2008, provinces with higher unemployment had lower GDP per capita. This relationship is less evident now as a lower unemployment rate in KwaZulu-Natal and Limpopo has not been accompanied by a higher GDP per capita.

Figure 5: Regional GDP per capita variation



Source: Stats SA

These differences across provinces reflect a rural-urban divide. Even 25 years after the transition to a democratic system, the mobility of the rural population is severely restricted by high transport costs, resulting in an unemployment gap of 24% between former homelands and non-former homeland areas (Kwenda, Benhura and Mudiriza 2020). The population of traditional settlement areas is black (Table 1). In these areas, more than half of families have a female head of household who relies on income from a migrant spouse. Average household income is only one third of that of urban areas. Traditional settlement areas are over-represented in pockets of poverty (Lehohla and Shabalala 2014).

Table 1: Percentage distribution of households by characteristics of household head and type of settlement

Population group and gender of household head	Urban area	Traditional area	Farm	Total
<i>Distribution by race</i>				
Black African	70.9	99.3	71.7	78.6
Coloured	9.7	0.2	12.7	7.3
Indian	3.5	0.2	0.4	2.4
White	15.2	0.1	14.8	11.1
Other	0.7	0.2	0.5	0.6
Total	100.0	100.0	100.0	100.0
<i>Distribution by gender</i>				
Male	62.4	47.2	73.1	58.8
Female	37.6	52.8	26.9	41.2
Total	100.0	100.0	100.0	100.0
<i>Proportion of the population by race</i>				
Black African	61.0	34.2	4.8	100.0
Coloured	90.2	0.7	9.1	100.0
Indian	92.7	1.9	0.9	100.0
White	86.7	8.6	4.6	100.0
Other	67.7	27.1	5.3	100.0
<i>Proportion of the population by gender</i>				
Male	71.8	21.7	6.5	100.0
Female	61.9	34.7	3.4	100.0

Source: Lehohla and Shabalala 2014

During the apartheid era, traditional settlement areas were deprived of development opportunities and (mis)used as sleeping villages for low wage-low skills labour. No wonder little economic activity happened in these areas, which were also not suitable for agricultural production. Furthermore, public services were of low quality. According to the 2011 census, the 10 poorest municipalities were located in former homelands, which are typically traditional settlement areas (Lehohla and Shabalala 2014). More than a quarter of the South African population lives in such territories. Hysteresis of bad initial conditions and an institutional design which fosters immobility instead of entrepreneurship and innovation, make traditional settlement areas a drag on overall economic development.

However, a large part of this rural-urban gap is also explained by skills and resource differentials (Arndt, Davies and Thurlow 2019). Appropriate interventions such as increasing entrepreneurial capacity, lifting the basic education level and reforming social housing policies would increase the participation in economic activity of people living in remote and traditional settlement areas

3.3 Gender imbalances

Provincial differences and low labour utilisation also reflect the large gap between male and female labour force participation and employment. Unemployment is more prevalent for women than for men. The transition rate into employment is also higher for men compared with women (Stats SA 2016). The gender gap is wider at young ages and decreases over the life cycle, but it still remains (Mosomi 2019). In Northern Cape, Free State, North West and Mpumalanga, female unemployment is more than 10 percentage points higher than male unemployment rates (Table 2). Eastern Cape, Gauteng and Limpopo have a gender unemployment difference which is close to the countrywide average, while in Western Cape and KwaZulu-Natal female unemployment is only one to two percentage points higher than male unemployment.

As shown in Table 2, between 2007 and 2018 unemployment rose around 10 percentage points or more in Eastern Cape, Free State, Gauteng and Mpumalanga. It fell against the trend in KwaZulu-Natal and Limpopo. In Western Cape, Northern Cape and North West, unemployment rose broadly in line with the countrywide trend. Labour force participation is relatively high in Gauteng, Mpumalanga and Western Cape. It is very low in Eastern Cape, KwaZulu-Natal and Limpopo, and around average in Northern Cape, Free State and North West.

These differences in male and female employment are the result of human capital accumulation, the traditional role of women as care givers, the low participation of women in male-dominated occupations, and the lower participation of African women in the labour force, among other factors (Mosomi 2019).

Table 2: Unemployment rate

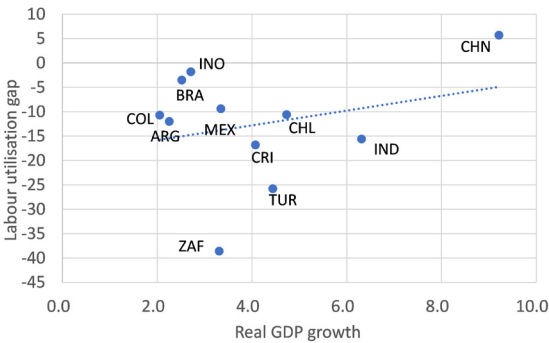
Per cent	Sep 2007	Sep 2018	2007 Female-male	2018 Female-male	Participation
					2018/III
Western Cape	17.0	20.4	1.3		71.4
Eastern Cape	23.1	35.6	7.0		60.5
Northern Cape	25.7	27.0	13.0		67.7
Free State	24.3	36.3	11.6		69.6
KwaZulu-Natal	29.1	23.0	2.8		63.7
North West	24.1	28.0	10.6		68.0
Gauteng	19.5	29.6	6.7		75.6
Mpumalanga	22.9	32.5	13.6		72.1
Limpopo	27.6	18.9	6.1		63.8
South Africa	23.0	27.5	6.7	3.5	68.8

Source: Stats SA, Labour Force Survey 2008 and 2019
Note: Female-male is the difference between female and male unemployment rates.

3.4 Low economic growth

Of course, the low trend growth rate in South Africa has not helped to absorb a rapidly growing population into the formal labour market (Figure 6). One reason for South Africa’s low growth rate is the decline of (normally higher-productivity) export-oriented manufacturing as a percentage of total output since the beginning of the 1990s, which was accompanied by declining profitability in this sector (Rodrik 2008). However, there are countries with much lower trend growth rates (Colombia, Argentina, Brazil, Indonesia and Russia), which manage to keep a much higher share of the population economically active.

Figure 6: Average GDP growth and labour utilisation



Source: OECD Economic Outlook Database and OECD 2019a
Notes: ARG: Argentina; BRA: Brazil; CHL: Chile; CHN: China; COL: Colombia; CRI: Costa Rica ; IND: India; INO: Indonesia; MEX: Mexico; TUR: Turkey; ZAF: South Africa.

Following the trend line, an increase of South Africa's trend growth rate by one percentage point would increase labour resource utilisation by about two percentage points. In other words, if South Africa achieved the same growth rate of real GDP as China, its labour resource utilisation gap would decline from 38 percentage points to 26 percentage points. This means that South Africa needs about twice the economic growth in order to achieve the same labour resource utilisation as Turkey. Compared to Brazil or Indonesia, things are even worse. South Africa's labour resource utilisation is about 35 percentage points lower, even though its trend growth rate has been about one percentage point higher. Growth helps, but more is needed to increase labour utilisation in South Africa.

There are several reasons why the South African economy is not generating the required growth rates to absorb its unemployed, nor making growth more labour-intensive.⁸ One of the more important factors is the low level of competition in the South African economy. This in turn is due to high barriers to entry, a rigid regulatory environment and a high regulatory burden on small and medium-sized enterprises. Table 3 shows that South Africa is among the countries with the least competition-friendly product market regulation indicators (Koske et al. 2015). South Africa is exposed to particularly heavy regulations, high market concentration, cumbersome licensing and permits, and complex regulatory procedures.

Competition-friendly product market regulations foster innovation, productivity and job creation (Egert 2018; Griffith, Harrison and Macartney 2007; Nicoletti and Scarpetta 2003).⁹ This synergy between product market reforms and the functioning of the labour market is particularly important in South Africa. During the apartheid regime, an industrial policy of national champions inhibited competition. The effects of this policy were exacerbated by embargo-enforced isolation during this time. As a consequence, mark-ups and concentration are still relatively high (Fedderke, Obikili and Viegi 2018).

8 These include the availability of skilled workers, the savings rate, the cost of transportation and the regulatory environment. See for example Faulkner, Loewald and Makrellov (2013), Loewald, Faulkner and Makrellov (2020), National Treasury (2019) and OECD (2017).

9 The positive effects of competition-friendly regulation are recurring themes in OECD recommendations, for which a large body of economic literature exists. Numerous references can be found in OECD Economic Surveys and the Structural Policy Reform Series.

Table 3: Product market regulation indicators

Non-OECD countries	Total network sectors	Total energy	Total transport	Total ecommerce	Interaction with interest groups
Argentina	2.58	2.37	2.88	2.17	2.05
Brazil	1.94	2.53	2.29	0.68	5.18
Bulgaria	1.35	1.62	1.81	0.18	2.73
Costa Rica	2.96	4.50	3.03	2.05	3.82
Croatia	1.53	1.49	2.15	0.35	3.41
Cyprus	1.58	2.93	0.97	1.84	3.41
Kazakhstan	2.60	2.66	2.39	2.95	3.82
Malta	1.44	3.83	1.36	0.38	3.14
Romania	1.73	1.87	2.11	0.84	2.45
South Africa	2.59	3.52	2.20	2.46	4.91
OECD average	1.46	1.41	1.83	0.79	2.56
Top 5 best OECD countries	0.93	0.44	1.24	0.09	0.98

Source: OECD, Indicators of Product Market Regulation

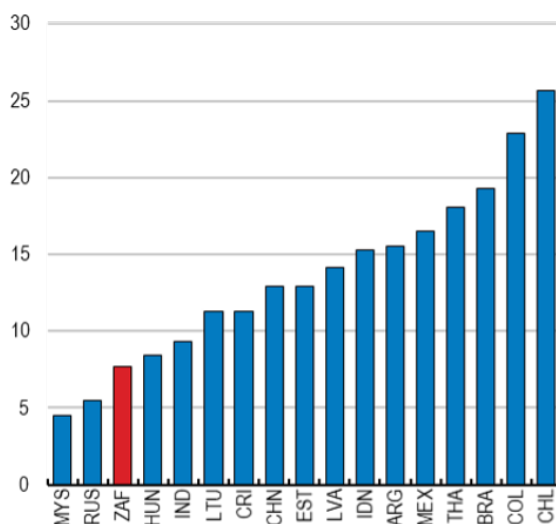
One origin of weak competition in the South African economy is its relatively low exposure to international trade. Because of its focus on domestic markets, commodity exports and business culture shaped in part by historical sanctions, the South African economy is not very well integrated in global value chains. Part of this deficiency could be related to high non-tariff barriers within the Southern African Development Community (OECD 2017a). This poor level of integration suggests large losses, as experiences from other regions indicate that the international division of labour is a forceful driver of economic growth (Fengru and Guitang 2019).

Although South Africa has a well-developed core with leading companies in some sectors, the majority of economic activity is far behind the international efficiency frontier. In this situation, access to best practice technologies (catching up to the efficiency frontier) is more important than shifting the frontier itself (Kreuser and Newman 2018).

Most chances for finding ‘missing’ jobs in South Africa to compensate for the employment losses in export-oriented manufacturing and mining are in services sectors. International experience shows that countries with a more competition-friendly regulatory framework can achieve higher productivity growth and create more employment opportunities in services sectors (Arnold and Wörgötter 2011). Job creation in services sectors has also been retarded by the insufficient and costly supply of telecommunications, transport and especially energy. These network services are crucial inputs that act as multipliers for start-ups, innovation and job

creation. The fragmented availability of ‘old’ network outputs, like electricity, and volatile regulatory pricing of these services, are likely to prove to be severe obstacles to a more dynamic economic environment. Some evidence for this comes from data on entrepreneurial activity. Planning or starting entrepreneurial activity is undertaken less frequently in South Africa than in other countries (Figure 7). Informal activity or self-employment is also less widespread than in other comparable countries. Furthermore, entry rates seem to be lower than exit rates, increasing concentration and reinforcing the dominance of surviving incumbent firms (OECD 2017a).

Figure 7: Early-stage entrepreneurial activity is low (% of working-age population, 2014–16 average)



Source: OECD 2017a

Notes: MYS: Malaysia; RUS: Russia; ZAF: South Africa; HUN: Hungary; IND: India; LTU: Lithuania; CRI: Costa Rica; CHN: China; EST: Estonia; LVA: Latvia; IDN: Indonesia; ARG: Argentina; MEX: Mexico; THA: Thailand; BRA: Brazil; COL: Colombia; CHL: Chile.

3.5 Wage bargaining

It is hard to overstate the importance of the labour market to economic outcomes, both microeconomic and macroeconomic. Ideally, wage bargaining achieves a healthy balance between providing incentives to work and appropriate remuneration of scarce skills, while allowing firms to successfully compete in product and services markets. This task is far from trivial because of the high level of information required. Successful wage-bargaining systems address the asymmetric information situation either with highly coordinated collective agreements or by relying on more decentralised and effective competition in labour and product markets (Calmfors and Driffill 1988). Systems falling between these

ends of the spectrum, such as those situating wage bargaining at industry level and legally extending wage agreements to all firms as in South Africa, are well understood to be least effective in this broader coordination task, as discussed earlier. They are normally dominated by big, key players, limiting competition, but are also insufficiently centralised to take into account the macroeconomic effects of bargained outcomes. The high concentration and pricing power on output markets contributes to the bargaining outcomes, which ignore economy-wide concerns.

With the high degree of labour market segmentation (discussed below), such bargaining systems also result in real wages that are too high to clear the labour market, particularly for less skilled workers, and fail to facilitate employment growth in line with demographic developments. This, alongside high costs of firing, directly contributes to high unemployment rates. As a result of these factors, the South African labour market is generally considered to be inflexible (Fedderke 2012).¹⁰

Where macroeconomic constraints and inflationary consequences of wage bargaining are not internalised, wage-price spirals can emerge, leading to high-risk premia on long-term interest rates. Monetary policy interventions are less effective as labour market frictions maintain a high equilibrium inflation rate and wages are sticky, preventing monetary policy transmission (Bhattarai 2016). These then weigh on financing costs, especially for long-term investments in infrastructure and innovation, and economic growth. South Africa's inflation outcomes were until recently clustering at the upper end of an already high and wide inflation target band, supported in the main by high growth in unit labour costs (Fedderke and Liu 2018).

Where collective bargaining systematically extends wage agreements regionally, this has been shown to decrease employment opportunities, especially in small and medium-sized firms (Magruder 2012). Weakly contested product markets, together with the extension of collectively agreed wages among insiders, acts as a barrier to entry and likely impedes new firms from entering the market and growing.

Furthermore, supply-side rigidities like skills shortages and the high number of unskilled school leavers generate high wage inequality (Van der Berg 2014). These skills shortages also contribute to persistent unemployment as they limit the ability of firms to increase employment during economic booms (Stevens 2007).

3.6 Weak public employment service

Most countries with low unemployment rates also have strong public placement services and provide significant resources for active labour market programmes.

10 This section focuses on wage-related aspects of labour market rigidity. Other aspects are addressed in section 4 on South African policies to tackle inactivity.

South Africa's labour market primarily relies on private job matching and there are few active labour market programmes. Where job matching works poorly, the positive externalities for fiscal policy and growth, like higher employment levels, are foregone. Some countries achieve good results with a clearly defined mix of private and public institutions providing activation services (Finn 2016). The following key aspects of public employment services (PES) (Baptista et al. 2016: 14) involve positive externalities not captured by private job brokers but by society as a whole:

- Job brokerage through public dissemination of vacancies.
- Provision of information about vacancies and searching workers.
- Market adjustments to supply and demand.
- Management of unemployment benefits.
- Management of labour migration by coordinating mobility across borders. In recent years, this has become an increasing part of the service portfolio but is still neglected by national labour market policies.

PES are established in most countries to help the reallocation of labour in the wake of structural changes, ordinary churn, school-to-work transitions, as well as recovery after a crisis. In particular, PES assist workers who want to enter the labour market, get training or requalification, enter employment and find appropriate career tracks to make the most of the transition from education to employment (OECD 2014, 2016b). These tasks require a well-resourced institution with a clear governance structure. A particularly successful example of an efficient public employment service is the German *Bundesagentur für Arbeit*, which went through a series of reforms in the early 2000s (Fleckenstein 2008). Many countries have established PES institutions to support job searchers, upgrade skills and provide wage subsidies for vulnerable groups in the labour force (Baptista et al. 2016). An important feature of PES is a focus on productivity, which helps to improve the quality of work and the outlook for higher wages.

In South Africa, PES are under-resourced and do not have the quantity and quality of counsellors necessary to provide effective services for millions of job seekers. Instead, PES have been privatised "by default" (Medforth 2005). Private recruitment and employment agencies primarily focus on profitable segments of the placement markets, leaving much of the market where unemployment is highest without service. Transition rates between states of employment indicate that 90% of those not economically active remain in that position and only 3% manage to find a job, while around 10% of the unemployed find a job within one quarter (Table 4). This suggests the potential for large economic gains from such services.

Table 4: Retention and transition rates by labour market status, 2014 and 2019

Labour market status 2014/Q3	Labour market status 2014Q4 (in % of 2014Q3)			
	Employed	Unemployed	Not economically active	100
Employed	93.0	3.1	3.9	100
Unemployed	13.0	65.5	21.5	100
Not economically active	3.7	5.5	90.8	100

Labour market status 2019/Q3	Labour market status 2019Q4 (in % of 2019Q3)			
	Employed	Unemployed	Not economically active	100
Employed	94.0	3.1	2.9	100
Unemployed	9.7	74.2	16.1	100
Not economically active	2.6	6.7	90.7	100

Source: Stats SA 2020a

A major expansion of such services should be initiated by consultation and cooperation among stakeholders and different designs tested in pilot phases in different regions and sectors of the economy. Without a well-functioning service, South Africa's labour market will continue to be highly stressed by a range of developments, including ageing, further technological change and associated shifts in the skills required of the workforce.

4. South Africa's labour policies over the last decade

In this section, we discuss the effects on labour utilisation of key labour market-related interventions implemented over the last decade. We focus on the introduction of the employment tax incentive and national minimum wage, employment equity and Broad-Based Black Economic Empowerment (B-BBEE), labour market flexibility and amendments to regulate temporary employment. We draw extensively on the South African literature and our measure is whether policy instruments improve labour utilisation.

4.1 The National Development Plan¹¹

The National Development Plan assessed the employment problem as follows, highlighting the link between product and labour markets:

¹¹ The National Development Plan is available at https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf

Uncompetitive markets for goods and services and low levels of investment mean that new firms are not entering the market and employment is low. Uncompetitive labour markets keep new entrants out and skew the economy towards high skills and high productivity (National Planning Commission 2013: 111).

The plan presents an ambitious reform to increase employment in rural areas and address spatial problems, develop new industries and new firms that support employment growth, and capture global market share. Industrial policies were meant to play a pivotal role in supporting growth and employment:

South African industrial policy will transition from its historical approach of favouring energy- and capital-intensive goods production, sometimes with limited domestic linkages, towards an increasingly diversified industrial base. It is often presumed that substantial employment might be created through trade in light manufactured goods (National Planning Commission 2013: 127).

Chapter 3 of the plan proposes to increase employment and economic growth, recognising that eliminating constraints to economic growth would also increase employment. The recommendations for increasing the employment intensity of growth are:

- expand the public works programme;
- introduce a tax incentive to employers to reduce the initial cost of hiring young labour market entrants;
- provide a subsidy to the placement sector to identify, prepare and place matric graduates in jobs;
- get business and labour to develop their own proposals to reduce youth employment;
- encourage skilled immigration;
- adopt an approach to handling probationary periods that reflects the intention of probation;
- simplify dismissal procedures; and
- strengthen dispute resolution mechanisms in the labour market.

In addition, the plan argues for specific labour regulations for small businesses to reduce the cost of complying with the current regulations, as well as for various interventions to strengthen the capacity of labour courts and the Commission for Conciliation, Mediation and Arbitration to deal with labour cases.

Many of these proposals have not been implemented or have been only partially implemented. Although a tax incentive to support youth employment was introduced, little progress has been made on skilled migration. Efforts to boost economic growth with industrial policy, as discussed below, have failed to create the industries and jobs envisioned in the National Development Plan.

4.2 Labour market flexibility

Labour market regulations have long been analysed and understood to be major obstacles to employment creation in South Africa (Godfrey, Theron and Visser 2007; Rankin 2006). The need for greater labour market flexibility was discussed extensively in the National Development Plan. Table 5 shows several measures of labour market flexibility by country income group.¹² According to these measures, it is more difficult to hire and fire workers in South Africa than in other middle income and OECD countries. South Africa has an employment rigidity index that is comparable to those in low-income countries.¹³ The OECD's measures show South Africa as having long and costly firing costs for small and medium-sized companies (OECD 2010, 2017).

Table 5: Labour market rigidities

Area of regulation	Low income	LMI	UMI	HI-non-OECD	Hi-OECD	South Africa	Total
Difficulty of hiring	44.3	33.7	29.9	27.0	20.6	44.0	34.3
Rigidity of hours	47.6	39.6	40.6	45.2	32.0	40.0	42.4
Difficulty of firing	40.0	33.0	33.4	27.4	14.0	40.0	33.3
Aggregate rigidity of employment index	44.0	35.5	34.6	33.2	22.2	41.3	36.7
Non-wage labour cost	12.4	16.0	17.2	21.4	10.2	2.4	15.6
Firing costs	65.3	50.9	44.6	31.3	54.6	24.0	51.3

Source: Bhorat and Stanwix 2018

Notes: LMI – lower middle income; UMI – upper middle income; HI – high income. The measures are standard and drawn from the World Development Report (World Bank 2005). All indices are normalised to 0.

The employment chapter of the National Development Plan made proposals to strengthen labour market institutions and improve dismissal processes, making it less costly for firms to hire and fire. Specific proposals dealt with the handling of probation periods, dismissal procedures for poor performance and misconduct,

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- 12 The “Difficulty of Hiring Index” measures restrictions on part-time and temporary contracts, together with the minimum wage for trainees relative to worker value-added; the “Rigidity of Hours Index” measures restrictions around work hours and overtime; the “Difficulty of Firing Index” ranks specific legislative provisions on dismissal; the “Non-wage labour costs” measures the social protection costs associated with hiring a worker; and finally, the “firing cost” measures the costs of legislated prior notice requirements, severance pay and any other costs related to firing a worker.
- 13 Bhorat and Stanwix (2018) argue that despite this high rigidity level, labour regulations are less of a constraint to employers due to low compliance levels. Their survey, however, covers only workers that are subject to sectoral determination. For many of those sectors, the compliance with labour law is below 30%.

and accelerating dismissal processes. Despite the recommendations from the National Planning Commission, progress to define and implement any reforms has been slow.

4.3 The employment tax incentive

The employment tax incentive (ETI) is the only clear and direct labour market intervention that increases the demand for labour and reduces the relative price of labour to capital. By increasing labour demand, the incentive contributes to higher labour utilisation. It is also the most researched government incentive due to National Treasury's provision of tax data to researchers and policy interest in its effectiveness.¹⁴

The ETI was implemented in 2011 (National Treasury 2011), although the original policy proposal to use a wage subsidy to support youth employment in South Africa dates back to 2002. The initial proposal was for a tax credit targeting the supply of labour, increasing the returns to work and increasing the labour participation rate. Additional proposals followed, including for a demand-side subsidy to firms – a proposal that was eventually adopted in the design of the ETI. These proposals argued that the subsidy design should include a training and skills development component, and a probationary period with a 'no questions asked' dismissal policy. Further proposals added immigration reform to support youth employment through its complementarity with skilled employment (Levinsohn 2008; National Treasury 2011). Levinsohn (2008) proposed a wage voucher capped at 50% of the actual wage for recent school leavers.

In the 2014/15 fiscal year, the first full year of its existence, the ETI was claimed by 32 368 firms to support 686 402 jobs (National Treasury 2016). Several independent studies have assessed the impact of the ETI on employment. Most studies (particularly those using administrative tax data from the South African Revenue Service (SARS)) find a positive, but small, impact on job creation for youth (Bhorat et al. 2020; Ebrahim, Leibbrandt and Ranchhod 2017; National Treasury 2016). The impact is estimated at 97 850 jobs over the first two years of implementation (Ebrahim, Leibbrandt and Ranchhod 2017).

The evidence of job creation is most pronounced in smaller firms.¹⁵ There is little evidence of substitution effects – the churning of non-youth jobs – as a result of the subsidy (Ebrahim, Leibbrandt, and Ranchhod 2017; Makgetla 2017; National Treasury 2016). Another recent study finds insignificant employment impacts but strong wage effects (Ebrahim and Pirttilä 2019). However, even the most recent studies cover only a short period of time as the tax data provided by SARS lags by almost two years. More data over time is needed to generate more robust econometric results. Overall, the studies to date suggest quite a high level of jobs are supported by the incentive but the number of new jobs *created* remains low.

14 A recent example is Bhorat et al. (2020) finding a statistically significant but small effect.

15 This is despite take-up being higher in larger firms. This suggests that large firms use the ETI to fund jobs they were going to create anyway, while smaller firms use the incentive to create new jobs.

This can reflect data and methodological problems but also factors such as poor targeting and lack of training. A closer analysis of successful use of such subsidies reveals that design and delivery matter greatly. A similar conclusion is found for other African countries (Boadu and Fatunbi 2020).

4.4 Employment equity and Black Economic Empowerment

Policies such as Employment Equity and Black Economic Empowerment (BEE) try to create a degree of economic equality which is impeded by negative market externalities and/or by historical structural obstacles and uncompetitive outcomes. These types of policies have the potential to improve human and capital allocation by creating new and more dynamic labour-absorbing firms and reducing concentration in the economy, while ensuring political and social stability (Acemoglu, Gelb and Robinson 2007; Andrews 2008). They can increase labour utilisation of previously disadvantaged groups but also increase overall utilisation through their impact on economic activity. These effects however depend on the design of the policies and their implementation.

The employment equity policy aims to change the racial composition of the employed workforce, supporting a fairer representation for previously disadvantaged groups. The limited literature suggests that the impact on overall labour utilisation has likely been negative but that the impact on representation is positive. A recent study by Landman and O'Clery (2020) investigates the impact of employment equity policies on gender equality. The results suggest that gender representation and wages have improved as a result of employment equity representation. Horwitz (2013) argues, however, that employment equity policies have led to a brain drain, reducing the total supply of skilled workers, with negative spillover effects to overall employment levels. Other studies show that employment equity can contribute to greater skill mismatches and, because of reduced skill levels, lower total labour productivity (Burger 2014; Dongwana 2016; Kruger and Kleynhans 2014). There may also be a targeting problem, where employment equity policies do little to reduce overall unemployment because it is heavily concentrated among younger people, as shown by Levinsohn (2008). This targeting problem appears to work against the National Development Plan assessment, which recommended that "employment equity should focus mainly on providing opportunities for younger people from historically disadvantaged communities who remain largely marginalised."

The problem with skill mismatches is clearly illustrated using chartered accountants as an example. The South African Institute of Chartered Accountants reports that there are currently around 47 000 registered chartered accountants in South Africa, of which only 6 800 are classified as black African.¹⁶ In this case, a rigid policy requiring strict adherence to employment equity targets will make it more difficult for firms to grow due to the limited number of black chartered accountants and a very high skills premium for them. Increasing the demand for a particular skill set

16 The statistics are available at <https://www.saica.co.za/Members/AboutMembers/MembershipStatistics/tabid/502/language/en-ZA/Default.aspx>.

from a particular group can improve human and capital allocation if the supply of skills is available and the policy leads to a net improvement in overall productivity (Andrews 2008). Again, the National Development Plan labels this approach of overpaying for scarce skills as “counterproductive to the long-term development of both the individual and the company.”

Other BEE elements deal with ownership, management control, skills development and enterprise development. In the past, BEE was criticised for benefiting a small politically connected group of black entrepreneurs (Acemoglu, Gelb and Robinson 2007). The National Development Plan argues that BEE has succeeded somewhat in changing ownership but not in creating new dynamic black-owned firms. Changes to BEE legislation have tried to expand the definition of BEE, but still with a strong emphasis on ownership. In its 2020 report, the B-BBEE Commission highlights the slow pace of transformation, requesting further interventions to increase compliance and stimulate the pace of transformation.¹⁷ The commission, however, has a narrow focus to report on compliance and does not assess whether these targets also translate into more productive and competitive firms. Only very few studies explore the broader economic impacts. For example, Acemoglu, Gelb and Robinson (2007) find no significant impact of BEE on firm investment, labour productivity or profitability. Kruger and Kleynhans (2014) find no significant impact on profitability and competitiveness. These studies, however, focus only on listed companies.

A narrow assessment of BEE on targets without taking into account impacts on firm performance, overall economic activity or the availability of skills in the economy will fail to identify unintended and indirect effects. Higher regulatory burdens may impose larger costs on firms and end up reducing labour utilisation. Dongwana (2016) reports that large, listed companies found BEE codes onerous and costly, while compliance costs are likely to be considerably larger for smaller and medium-sized enterprises. Another possible effect operates through company ownership and the development of new and dynamic firms. If BEE’s main contribution is to change ownership or board representation while maintaining the previous market structures, labour utilisation will remain unchanged. The type of firms created is important. If BEE supports the development of competitive, labour-absorbing companies then labour utilisation will increase. However, if these firms require constant support and are less productive or are less labour absorptive than non-BEE companies, then the impact on labour utilisation will be negative. These firms may turn out to be less efficient as they face limited competition and they can also engage in significant rent-seeking behaviour in order to capture lucrative contracts linked to their BEE status. Hausmann (2017) identifies another possible effect operating through the impact of BEE policies on other groups in the labour market, discouraging participation in the economy, reducing the availability of skilled labour and, similar to the example above with chartered accountants, eventually leading to decreased economic activity and labour utilisation.

17 The report is available at https://www.bbbeeecommission.co.za/wp-content/uploads/2020/07/National-Status-and-Trends-on-Broad-Based-Black-Economic-Empowerment_.pdf.

A review and redesign of employment equity and BEE policies could likely generate lower costs to the economy and better outcomes for unemployed South Africans.

4.5 Amendment to regulate temporary employment work

Labour markets in many economies in recent decades have exhibited increasing duality, generally arising from legal protections and high costs for jobs in formal, often protected, sectors. Job creation then instead occurs in services and other less protected sectors with lower capital thresholds. In these latter sectors, labour intensity is higher, in part because of less restrictive labour regulations that allow lower labour costs. Firms are often able to lower labour costs by using labour brokers and temporary workers, increasing competition with firms and employees in sectors previously protected by regulation. The international literature suggests that increased use of temporary workers often results in stricter employment protection legislation for permanent workers, worsening the duality of the market.¹⁸

In South Africa, the emergence of more competitive approaches in various sectors induced amendments to the Labour Relations Act to increase protection of temporary workers effective from 1 April 2015. The changes covered temporary employment services (TES) employees, employees on fixed-term contracts and part-time employees, and increased the cost of such employees. Exemptions were provided for small and new firms. One of the key amendments was for temporary work to be limited to three months. This is in contrast to the National Development Plan recommendation of a limit of six months (National Planning Commission 2013). It is also in contrast to policies in other countries which have reduced the duality of labour markets and maintained jobs by increasing the flexibility of full-time contracts (Bentolila, Dolado and Jimeno 2019).

Various studies show that the results on employment and labour utilisation have been large and negative. Bhorat, Magadla and Steenkamp (2015) find that the amendments resulted in little increase in permanent employment, a key aim of the reforms. Only a quarter of TES workers were made permanent, around a quarter were fired and the rest remained as TES workers. The most affected sectors were manufacturing and tertiary sectors such as finance.

Similarly, Cassim (2020) finds that a large proportion of TES workers became unemployed, moved to the informal sector or became economically inactive. Their employment status was worsened by the reforms. Comparison of these results with other countries is difficult. Other reforms to dual labour markets have combined greater protections with eased firing and hiring regulations of temporary workers (Cassim 2020). This has shifted the balance of regulation to be less costly and more job creating. Alternatively, countries have introduced significant flexibility in permanent employment contracts for first-time employees. For example, in the major Italian reform to labour market duality, contract protection increases gradually over a period of 36 months (Garibaldi and Taddei

18 For a review of the literature, see Cassim (2020).

2013). This approach ensures that workers are protected, but firing and hiring costs are low, particularly in the initial stages of employment when generating work experience is critical. It also reduces the need for temporary contracts. In South Africa, this transition is instantaneous at the three-month mark.

4.6 Minimum wages

South Africa introduced a uniform National Minimum Wage in 2018. This replaced some minimum wages set through a sector determination process run by committee. Sector minimum wages that are above the legislated National Minimum Wage remain in place, including those set in collective agreements. The legislated intervention aimed to raise compensation for workers in sectors with low unionisation. This intervention, however, increases labour costs directly and relative to the cost of capital. Higher labour costs unmatched by productivity gains directly reduces labour demand as jobs are shed.

Productivity gains can be achieved if minimum wages are set or increased and then induce efficiency wage responses, but it is unclear if this occurred in South African firms and industries. Job creation can rise if the minimum wage increases labour supply but remains below the maximum competitive wage level for the sector.

Certainly, South Africa's experience with sector-specific minimum wages appears to have been mixed. For most sectors, the impact on employment has been neutral; however, the introduction of a minimum wage in the agricultural sector led to large employment losses (Bhorat, Kanbur and Stanwix 2014). Bhorat and Stanwix (2018) compare South Africa's National Minimum Wage to minimum wages in other countries. They find that the ratio of the minimum wage to the median wage is relatively high compared to other countries, which can have negative effects in other segments of firms' workforce and drive up inflation as higher-skill workers try to re-establish the pre-minimum earnings differential. Only the Philippines and Honduras have higher ratios. This contributes to lower labour utilisation, particularly in sectors where salary increases are largest and there are opportunities to replace labour with capital (Bhorat et al. 2016).

4.7 Supportive policies

An array of other policies, such as tax, industrial and competition policy, also play important roles in determining and shaping labour demand and supply (Levinsohn 2008; Rodrik 2008). South Africa has considered and set out policies to boost the development of most sectors, including manufacturing, mining and tourism. Endowments of minerals of course have been a primary determinant of economic activity, and greater beneficiation of domestically mined raw materials has received much policy attention (Oranje 2013). The National Development Plan and more recently National Treasury have called for more support for labour-intensive sectors such as tourism (National Planning Commission 2013; National Treasury 2019).

Despite some attempts to use industrial policy to increase demand for labour, much of the focus has been on more capital-intensive sectors and in particular automated car manufacturing. In 2018, for instance, the sector received R27 billion

in tax support, more than the rest of manufacturing combined, and non-taxable grants ranging between 20% and 30% of their investment and tariff trade protection. To cap it off, manufacturers charge the tariff-inclusive prices, with added mark-up, in the local market (Kaplan 2019).

Independent assessment of the effects of industrial policy on growth and employment are scarce due to data availability. However, a recent assessment by the Department of Performance, Monitoring and Evaluation concludes that many of the industrial incentives are ineffective and not well designed.¹⁹ Kaplan (2019) argues that industrial policy has failed to deliver either jobs or growth as promised in the different versions of the Industrial Policy Action Plan. Certainly, manufacturing output has lagged other emerging markets and employment has decreased in the manufacturing sector relative to 2008. Industrial incentives favour capital, leading to a decline in the employment intensity of production.

Another important supportive policy is Competition Policy, where various amendments to the Act over the years have strengthened the powers of the competition authorities. Some of the key changes are in the definition of the pursuit of abuse of dominance. The Competition Commission is also given more extensive powers to initiate market inquiries and provide remedies to change market outcomes (OECD 2020). The amendments ensure that the level of concentration is properly measured as well as its impact on small and medium-sized enterprises and black-owned businesses.

However, the level of competition in South Africa remains low compared to other countries. The 2020 OECD Economic Survey identifies the following reasons: a high level of government involvement in the economy; barriers to domestic and foreign entry; complex rules for licences and permits; and protection of existing businesses from competition. The regulatory restrictions are particularly high in network industries, and likely have a major impact on investment rates.²⁰

South Africa's policies have failed to shift far enough away from the pre-democracy, closed-economy systems of protection, and therefore do little to directly solve the unemployment problem. Labour market policies do not increase job creation and absorb workers that want jobs. Many policies deviate greatly from global best practice. Rightly, considerable emphasis has been on ensuring fair treatment and compensation of workers. But that effort improves outcomes for relatively high-skilled unionised and formal sector workers, while reducing demand for less-skilled workers and leaving many workers in a more precarious position. Moreover, the extent to which these policies reduce labour utilisation has been ignored and few mitigation or offsetting measures have been put in place. It is also worth noting that in recent years labour demand has been effectively capped by declining

19 The review is available at <https://www.dpme.gov.za/publications/Reports%20and%20Other%20Information%20Products/Evaluation%20of%20Business%20Incentive%20Draft%20Summary%20Report%20V6%2005112018%20%20STC.pdf>

20 The survey is available at https://www.oecd-ilibrary.org/economics/oecd-economic-surveys-south-africa-2019_530e7ce0-en

potential growth rates, caused in part by shortages of electricity, which place a direct speed limit on job creation.

5. Review of international examples to follow or avoid

We turn now to more specific examples of efforts conducted by other countries to boost employment.

5.1 Public employment service

After unification in 1990 and the introduction of the euro in 1999, Germany found itself locked into an overvalued exchange rate, which made the re-integration of unemployed workers difficult. As in other European economies, the unemployment rate increased in the crisis, but did not fall in the recovery. A broad-based reform programme in the early 2000s, designed together with leading employer representatives, started to push unemployment lower.

The reform package included adjustments to taxation of income support benefits, allowing greater use of temporary work agencies and arrangements, and the strengthening of the public employment service. The cornerstone of reforms, implemented over several years and stages, established a strengthened and well-resourced public employment service with a wide range of active labour market policies. At the same time, labour supply and job search were increased with incentives to accept vacancies and by significantly reducing the effective taxation of benefit recipients. Widening opportunities to deviate from the standard labour contract and employ workers through agencies and for fixed terms were provided, but care was taken not to allow the substitution of standard labour contracts. Benefit duration was limited, generosity reduced for some groups and job search obligations strengthened. Lack of compliance with agreed job search and qualification requirements was subject to sanctions.

The German public employment service is among the biggest employers in the country and enjoys operational independence to achieve its goals. New public management principles provide a relatively large degree of freedom for decisions taken by front-desk counsellors (Launov and Wälde 2016).

5.2 School-to-job transition

Most countries exhibit considerably higher unemployment for youth than for older workers. Germany is an exception, with youth unemployment rates similar to the overall unemployment rate. In other words, the school-to-job transition works about as well as the labour market overall, and in particular is free of additional hurdles for school leavers to enter the labour market. The secret behind this success story is a vocational education and training (VET) system, which works in close cooperation with future employers and social partners.

The German VET system rests on two pillars. One is designed for those who leave the general education system at a young age to join a combined school and on-the-job training apprenticeship programme. Participants in this programme are employed and receive practical training in the workplace, while contributing to the output of the employing company. Compensation is far below the minimum wage, but there is an employment guarantee after the successful completion of the three- to four-year programme with a skilled worker certificate in the respective trade (plumber, carpenter, car mechanic, etc.). The split between working time and school time is 3:2 days. The curriculum is standardised according to public regulation established in close cooperation with social partners.

Apprenticeship programmes are very popular and chosen by about one quarter of any cohort. Employers get first-hand access to skilled workers, whom they know already from the training programme for which they have been chosen. Job seekers receive prioritised access to employment opportunities in the region. Successful participants have access to tertiary education in the area of their profession after a certain employment period.

The second pillar of the German VET system is high school-based with teachers, who must have several years of practical experience in the area. The curriculum is designed in close cooperation with social partners and in many cases such schools become part of a sectoral cluster of companies successfully competing on world markets. Graduates from such schools have immediate access to most tertiary education programmes.

The graduates from higher vocational schools are in high demand and their entry wages are often higher than those of university graduates without work experience. The balanced mix of theoretical material brought into the classroom by teachers with practical experience generates a good foundation for the skills needed to implement new technologies in the workplace and participate in incremental innovation activities.

The German VET system builds on a comprehensive general school system and productivity-minded cooperation between social partners. The distribution of benefits from this cooperation between employers, employees and the public sector is facilitated by the exceptional stability of the German economy and society. Many of these aspects are missing in South Africa. Nevertheless, considering South Africa's widespread youth unemployment, it is worth investigating – perhaps in the form of regional or sectoral pilot studies – which aspects of the German VET system could be transferred to South Africa.

5.3 Economic growth

Several countries achieved high growth rates between 2000 and 2020. There are some common drivers of growth, while others are country-specific. A common factor for smaller countries is the importance of export-driven growth, competition-friendly institutions and sound macroeconomic framework conditions, perhaps reflected best in the findings of the Spence Report of the World Bank's Growth Commission.

Besides these common factors, there is also a country- or region-specific context. For instance, Ireland and Slovakia were and still are successful in attracting greenfield foreign direct investment projects for exporting to the neighbouring European Union (EU) market. Low taxes, tailor-made regulation and a highly skilled labour force – albeit with very different sectoral specialisations – provided the right background for location decisions of internationally operating conglomerates.

Slovakia found a way to benefit from major foreign direct investment-backed export-oriented manufacturing projects in two medium-tech sectors: automotive and consumer electronics. This approach benefitted from being part of the internal market in the EU, which provided free market access. While most of the new firms are located in the Western part of Slovakia, close to the highway and railway network connecting to the EU, more remote regions also benefitted through an expanding local supplier network.

Ireland leveraged its membership in the EU to offer a low-cost platform for low-weight, high-tech goods (Buckley and Ruane 2006). Significant support from EU structural funds were used to upgrade the education system and make sure that employers found the skills they needed.

Particularly interesting for South Africa is the successful development of South Korea, which in the 1950s was a low-income country. Korea followed an export-led growth path, but its main drivers were domestic conglomerates. The government established a competitive grant system, which made sure that only productive establishments would be supported (Westphal 1990). This approach helped to avoid the middle-income trap phenomenon, which is common for countries in which industrial policies depend on import protection.

5.4 Regional convergence

Economies with higher income per capita tend to have lower regional differences (Petrakos, Rodríguez-Pose and Rovolis 2003). This relation may not be uniform over time and countries in their early stage of development are often found to experience increasing regional difference (Kuznets 1955; Williamson 1965). The negative relation between regional inequality and economic growth is confirmed by the example of the EU, although several channels are working in different directions and their balance can differ over time and between countries (Piętak 2020).

One source of employment creation is higher growth in low-income regions. This goal is the focus of one common policy area of the EU and has been evaluated by numerous studies (Bachtler and Wren 2006). Cohesion programmes mainly benefit lagging regions and are considered to have significantly contributed to job creation. Furthermore, cohesion policy is supposed to contribute to institution building and facilitate learning processes for policymakers. The Regional Economic Specialisation approach (OECD 2016a) tries to achieve these outcomes. Its implementation requires that policymaking institutions have significant analytical, monitoring and governance capacity.

5.5 Gender gap

In most OECD countries, increasing employment opportunities for women contributed to significant increases in aggregate economic growth and well-being. Obstacles to higher female labour force participation are mostly country-specific, but there are also uniform positive factors, in particular higher education and lower fertility (Klasen et al. 2020).

In countries with high female labour force participation (for instance, France and Sweden), one focus is to provide publicly available institutions that allow families to reconcile their obligations at the workplace with parenthood. Further efforts are devoted to make sure that the marginal taxes on income earned by one partner are not increased by the income earned by the other partner. For instance, this is the case in Germany where the income of the family is taxed, while in Austria the income of each partner is taxed separately. In countries with a traditional family role model for women, the availability of part-time employment opportunities contributes to an increase of female labour force participation, but at the cost of possibly contributing to the dualisation of labour markets (Barbieri et al. 2019).

5.6 Product market reforms and business development

Examples for product market reforms in OECD countries include opening network industries for new suppliers, effective procedures against cartels and reducing the influence of government. The impact of such measures is generally found to be positive with respect to economic growth, productivity and job creation. One frequently mentioned driver of positive effects of product market reforms is increased innovation activity, with governments playing an active role in supporting the implementation of new technologies and providing the necessary infrastructure for the training of employees (Ornston 2013).

5.7 Labour market dualisation

One trap to avoid is increasing employment by allowing a too-wide difference of employment protection for standard and temporary/agency/informal work. The Italian model mentioned earlier provides the right balance.

In Spain, dismissal protection is very strict. In order to make the labour market more flexible, the government allowed the widespread use of non-standard labour contracts, thereby establishing a dual labour market. Contrary to expectations and intentions, only few workers initially employed on non-standard contracts managed the transition to a standard contract. As a consequence, the cyclical volatility of employment increased. A medium-term cost to the economy from too much volatility in employment relations is a decline in firm-specific further education and innovation spending involving workers employed on temporary contracts, limiting growth of both firm productivity and income of workers.

Turkey combines important aspects of German and Spanish labour market reforms. On one side, work incentives are very high (the German element) and, on the other side, a dualisation of the economy is tolerated by allowing informal practices even in well-established formal sector firms.

Dualisation and a rise in precarity has also occurred where immigrants congregate in particular sectors and job categories, and in some countries this is encouraged by eased regulations.

5.8 Wage bargaining

Across countries, wage-bargaining practices and laws vary considerably. Some countries follow a more decentralised approach and favour wage determination at the company level, while other countries have legal frameworks which allow for collective bargaining agreements. OECD recommendations in the 1990s promoted the decentralisation of wage bargaining and wider scope for opting out of legal extensions of collective agreements (OECD 1999). More recently, the benefits and disadvantages of collective bargaining were reassessed (OECD 2018, Chapter 3). One reason is that collective bargaining is increasingly seen as a brake on rising wage inequality in the wake of globalisation and the widespread implementation of new technologies, in particular information and communication technologies.

A successful wage determination system provides the right incentives on both sides of the labour market in order to combine a high labour force participation rate with decent wages. The overall success is often determined by the role played by the replacement rate of benefit systems.

One crucial aspect of wage determination is the ability of social partners to maintain international competitiveness. This characteristic is most prominently attributed to Germany, which became the European wage leader (Ramskogler 2012). The implementation of such a wage policy rests on two pillars: (i) sharing productivity advances, and (ii) widening the objective function by including full employment (Offe 2019). In well-functioning wage determination systems, real wage gains that may be had in the short term are foregone in the interests of more sustainable real wage gains over time. This trade-off is better identified by workers where firms can commit to long tenure and low turnover and where there is a commitment to continuous training and lifelong learning. In most cases, adult learning institutions which provide training opportunities are financed by employers with the help of government.

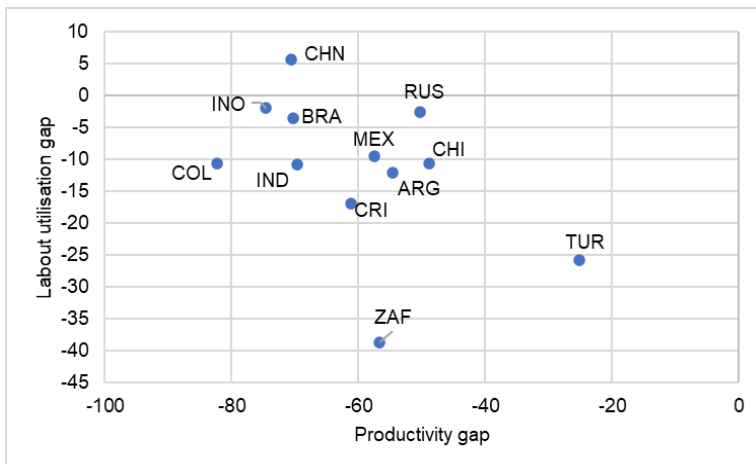
6. Policy recommendations

Achieving full employment has become a common, cross-country economic policy goal agreed along the entire political spectrum. International organisations like the IMF, the World Bank and the OECD give high priority to policies that remove disincentives to accept vacancies (boosting labour supply) or provide incentives to offer employment opportunities (raising labour demand).

Emerging market and developing economies, by definition, lie below global production possibility frontiers – the combination of capital, labour and technology use that is both at the highest level of efficiency and of endowment use. Where economies are less productive (further from the frontier), they often try to raise earnings across the economy by enabling job growth as much as possible. This gives rise to an observed negative relationship between labour utilisation and productivity, although the margin of error is relatively large. Much of the literature on labour market reform reflects determined efforts since the 1980s by many advanced economies to increase productivity and labour utilisation at the same time.

Alternatively, some countries try to artificially boost the earnings of workers by restricting competition and limiting growth in labour demand. South Africa does this, and becomes an outlier among emerging economies, because at current output levels, and with a relatively small productivity gap, its labour utilisation gap is high (Figure 8). Closing this gap, creating many more jobs, should be an achievable target, given the experience of other countries doing so, and would go far in raising overall output and income and reducing inequality in the economy (Anand, Kothari and Kumar 2016). South Africa, however, should not seek to close its labour utilisation gap by reducing productivity in a direct trade-off for more jobs, but if jobs are created for less-skilled unemployed workers, then in the short term there will be a moderation in productivity per worker until such time as full employment causes productivity to rise.

Figure 8: Productivity and labour utilisation gaps (emerging markets)



The particular policy challenge in this situation is to find the right balance between supporting those who lose their employment/business in the course of a productivity-centred growth path and not undermining the associated incentives. Such an approach was popular in countries with a corporatist policy setting (such as Scandinavia, the Benelux and Austria) up to the mid-1970s. In these countries, wage determination, technological decisions and macroeconomic policy were coordinated between the government and social partners. The form of cooperation ranged from complete informality in the case of Austria to more formal agreements in northern European countries. More recently, an innovative form of ‘supply-side corporatism’ switched from demand management towards providing key public goods for the expansion of economic activities in new high-value added sectors of the economy (Heinisch 2001; Ornston 2013).

Increasing labour utilisation in South Africa requires a complete rethink of the current approach to employment creation. There needs to be a shift away from policies that serve certain groups at the expense of the unemployed and a significant improvement of labour market institutions and supportive micro- and macroeconomic policies.

The review of international experience suggests that effective systems for school-to-job transition can increase youth labour utilisation and provide a significant boost to potential growth. Successful systems rely on active industry participation and effective training. Vocational education needs to graduate from an unattractive choice to a mainstream programme. Although South Africa has Technical Vocational and Education Training colleges, which are meant to fulfil a similar purpose, these institutions have been ineffective in providing the right skills. The 2013 OECD Economic Survey of South Africa provided several recommendations on how to improve the school-to-job transition. Recommendations included increasing industry involvement, addressing operational challenges, providing tax credits to support the employment of graduates and reducing firing costs for new hires. Improving the matching of employees with employers decreases the equilibrium unemployment rate in the context of the flow matching and Beveridge curve approaches discussed earlier.

The employment tax incentive has been effective in reducing the relative cost of labour to capital but the empirical evidence shows that targeting needs to improve. The international literature suggests that reducing dismissal costs, targeting specific skill sets and sequencing labour market reforms can increase the ratio of jobs created to jobs supported (Betcherman, Daysal and Pagés 2010; Caliendo, Künn and Schmidl 2011; Chrichton and Maré 2013; Van Reenen 2004)

The German public employment service provides a useful example of how to implement a successful system. Provided that fiscal resources exist, this is an effective way to deal with South Africa’s unemployment problem. However, one cannot argue that South Africa’s expansion of public employment is a sustainable strategy against inactivity. This approach has put government on the verge of a fiscal crisis. Again, while the intention of this approach was good in order to increase the quantity and quality of public service, its design and implementation was poor, benefitting mainly well-connected workers.

The international review and the local evidence suggest that low labour utilisation rates can be reversed if South Africa better addresses regional economic disparities and the gender gap. Again, there are useful international examples, including how the EU supports poorer regions through special funding mechanisms or how it supports temporary and part-time employment for female workers. Employment equity has helped to reduce the gender participation gap.

In South Africa, settlement structures and economic activity are not well coordinated. Reducing mobility costs requires that this is addressed, possibly with different approaches to affordable social housing to overcome the rural-urban divide and contribute to a higher activity rate of the working-age population. The OECD recently published a comparative analysis of traditional settlement areas around the world (unfortunately without South African participation). Recommendations focus on improving empirical information and coordinating with national economic policymaking, on one side, and entrepreneurship and land management as key drivers of economic development, on the other (OECD 2019b). The key recommendations are to:

- Create an enabling environment for indigenous entrepreneurship and small business development at the local and regional levels by establishing local community-led economic development plans, improving access to finance and making public procurement an engine of local business.
- Improve the indigenous land tenure system to facilitate opportunities for economic development and foster the integration of local entrepreneurs in mining value chains as well as sustainable tourism development.
- Adapt policies and governance to implement a place-based approach to economic development that improves policy coherence, empowers indigenous communities and encourages local as well as international experience sharing.

The review of labour market models shows that a high unemployment rate and low labour utilisation can be an equilibrium outcome of the wage-bargaining process. This also hinders the effective implementation of macroeconomic policy. In this environment, one method for optimising labour use is through negotiated, high-level social accords (Nattrass 2004), which often hold down labour cost growth rates to enable economic surpluses to feed into higher investment and job creation. Most instances of the successful use of social accords occur in high-income countries such as Austria, the Benelux, Scandinavia and Germany. Such accords are far less commonly used in developing and emerging economies. One reason for this asymmetry could be the need for fiscal incentives to reach agreements, which high-income countries can provide at lower cost.

Lindbeck and Snower (2001) identify several other interventions to reduce the insider-outsider dynamics and bargaining on a sector level. These include reducing the occupational, industrial and geographic coverage of unions, introducing schemes to convert wage claims into equity shares and profit-sharing schemes, reducing firing costs, and increasing competition in product markets. Higher

competition, accompanied with a threat of entry from imports, make it more difficult for the industry to sustain high wage increases, which are not compatible with economy-wide full employment.

The review of policies affecting the employment market directly in South Africa shows that the emphasis has correctly been on ensuring fair treatment and compensation of workers, but unintended consequences of this approach have been ignored. The outcomes for relatively high-skilled unionised and formal sector workers have been positive, while reducing demand for less-skilled workers and leaving many workers in more precarious positions. Both firing and hiring costs need to be lowered further. This is particularly important in the current environment. Reducing firing costs for new workers for a period of 12 to 24 months can support faster employment recovery in the post-COVID-19 period. This can be implemented by a gradual transition to fixed employment contracts as in Italy.

Employment equity and BEE have been important drivers of transformation. Businesses' compliance with these policies must increase to accelerate transformation. But at the same time the policies need to be reviewed for any unintended consequences or failure to create firms that are sustainable even after years of benefitting from their BEE status. Policy reviews need to focus on the direct and indirect effects on employment, also taking into account the substitution from BEE non-compliant firms.

Supportive microeconomic reforms are key to addressing South Africa's unemployment problem. The importance of competition has been highlighted in most OECD Economic Surveys of South Africa because of positive experiences with opening markets for competition and establishing robust and independent Competition Authorities. The first survey in 2008 highlighted the entry barriers for foreign firms, the role of state ownership and intervention, and the excessive administrative burden which hinders business growth and small, micro and medium-sized enterprise development (OECD 2008). Other surveys continued to highlight problems with product market reforms, and yet progress in addressing these reforms has been slow.

Industrial and other microeconomic policies also have an important role to play in supporting higher labour utilisation. If they work at cross purposes by mainly supporting highly capital-intensive sectors, as is the case with industrial policy at the moment, then it will be difficult to increase labour utilisation. The current approach to localisation may create some jobs in the short run, but it will certainly reduce foreign direct investment and the ability to attract large exporters that are part of global value chains, especially given the small size of the South African market.

Many of these reforms were also highlighted by National Treasury in its recent paper on micro policy reforms.²¹ An aspect that is particularly important in the

21 See National Treasury (2019).

context of South Africa as an emerging economy is to understand the dynamics behind technical progress, productivity and employment. While it is possible to imagine that delaying the implementation of labour-saving technologies could prevent employment losses, it is an illusion to assume that such an approach will have no short-term consequences for employment dynamics. That short-term trade-off is between a static low-wage/low productivity employment gain and a trajectory with rising employment, productivity and income. Where productivity gains lead to job losses, the various components of the labour market regulatory framework and broader competition framework must increase opportunity for new job gains, easing that trade-off into a longer-term economy with a mix of high, medium and low productivity jobs and a transition path for workers from one to the other.

7. Conclusions and a roadmap for the short, medium and long term

High unemployment and inactivity are particularly widespread among school leavers who do not move on to tertiary studies and among women, especially in traditional settlement areas. Informal sector jobs are stepping stones for finding employment in the formal sector, although mostly for temporary contracts.

The legacies of apartheid can partly explain the increase in labour supply and the inability of the economy to absorb it, which has produced extreme levels of unemployment. More should be done to unwind those legacies, while unhelpful outcomes from other policies and institutions are also reversed.

There are several interventions that are key in accelerating employment growth in the post-COVID-19 period, although a range of others could also improve outcomes further. Most urgent, and feasible in the short term, is improving the transition from school to jobs, by widening the volume and quality of the currently minimal public employment service to improve matching in the labour market. Other reforms should lower firing costs by linking employment protection to employment tenure (similar to the Italian example). This latter reform has been shown to be central to job creation in many successful labour market reform efforts around the world.²²

Reforms should further reduce obstacles to the immigration and employment of skilled foreigners and improve skills development and education outcomes for South Africans. Such reforms will reduce the skill constraint directly and indirectly, increasing economic growth and employment for less skilled workers while moderating wage growth in excess of productivity (which works directly against job creation). Removing entry barriers to product and services markets and reducing administrative costs would spur innovation and job creation, especially in areas that could benefit from the implementation of new technologies, in particular around digitisation. Efforts to tackle crime would help make commuting

22 See for example Cournède et al. (2016).

safer, reduce the brain drain and attract skilled immigrants, all lowering the supply cost of labour and increasing job creation.

Over the longer term, improvements in basic education will be key to reducing the excess supply of less-skilled workers. A stronger focus of BEE (including subsequent programmes) on traditional settlement areas could boost entrepreneurship among black South Africans.

Few of our recommendations are new but now South Africa is faced with an even starker choice than usual. The country can continue on the pre-COVID-19 trajectory of low economic and employment growth and expect rising unemployment, fiscal crisis, reversal of the post-apartheid gains and possibly social unrest, or it can implement a well-coordinated growth and employment agenda.

Trade policy

Chapter 3

Understanding South Africa's trade policy and performance

Matthew Stern and Yash Ramkolowan

South African exports to the rest of Africa have slowed significantly after trucks have been delayed at the Beitbridge border post with Zimbabwe, some for as long as three days. Queues of trucks occupying three lanes of road and stretching for more than 8 km have been reported at the crossing for the past two weeks. There is only one gate between South Africa and Zimbabwe, limiting how many trucks can be processed per hour. Road Freight Association CEO Gavin Kelly said this week that members complained after queues had been "horrendously long." Kelly said South Africa's borders still reflect apartheid-era design, which intended to limit movement between countries. "Twenty-five years on ... borders are still based on the physical infrastructure that was created at a time when you didn't want people to pass through [the] border," he said.

Business Day, 3 November 2020¹

1. Introduction²

In the aftermath of the COVID-19 pandemic, global trade has been confronted by multiple challenges, including serious supply chain disruptions; higher logistics costs; political conflict, sanctions and emerging energy shortages; and rising protectionism. There is also a greater focus in many countries on national security and welfare concerns, and increased scepticism about the benefits of globalisation. These developments pose important questions about the role of trade policy in general, and South Africa's ability to raise exports in particular, as the country looks to recover from the pandemic and fast-track economic growth and employment.

South Africa is regarded as a small, open economy. In general, smaller countries are more dependent on international trade, and this is borne out by the data (see

1 <https://www.businesslive.co.za/bd/national/2020-11-03-truck-snarl-up-at-beitbridge-border-post-trips-up-sa-exports/>

2 The authors are grateful to David Fowkes and an anonymous referee for their comments and suggestions.

Figure 1). South Africa currently accounts for around 0.6% of global GDP. The country relies heavily on imports to satisfy consumption demand, and on exports to support production and employment. Moreover, South Africa has become relatively smaller and more open over the last three decades, further increasing its exposure to the global economy.

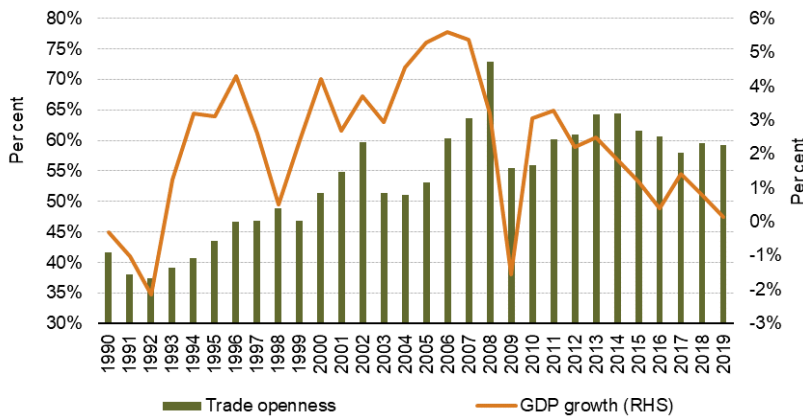
Figure 1: Trade openness and share of world GDP (2019)



Source: World Bank 2020d

Trade openness in South Africa appears to track GDP growth (see Figure 2). As economic growth accelerated from 1990 to 2008, so too did trade increase as a proportion of GDP. Both trade openness and GDP growth have fallen consistently since 2012. It is likely that the causality runs both ways. Export expansion contributed to a rising GDP, while faster economic growth drew in increased imports. It would therefore appear that the relatively high levels of growth experienced by South Africa in the mid-2000s were partly explained by favourable trade conditions (Edwards and Lawrence 2008; Mabugu and Chitiga 2007). South Africa's future growth is therefore likely to be strongly influenced by its ability to access inputs at competitive prices and its ability to expand its exports in new and existing markets.

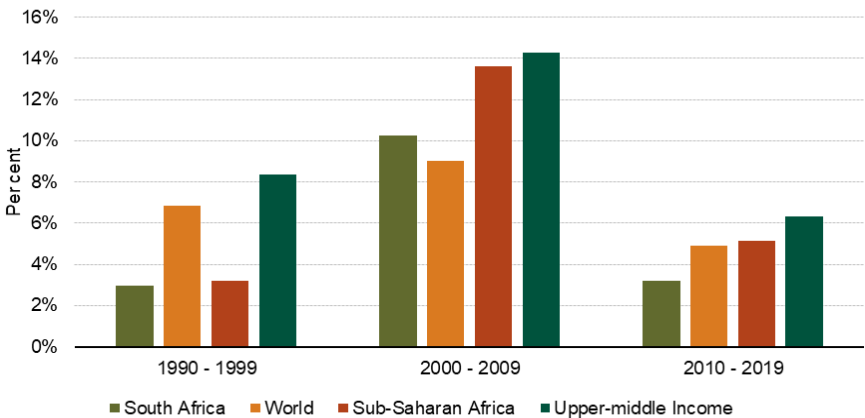
Figure 2: Trade openness³ and economic growth



Source: World Bank 2020d

As shown in Figure 3, South Africa recorded strong export growth over the first decade of the millennium, outperforming the rest of the world on average (but not by as much as other middle-income countries). However, South Africa’s relative export performance has deteriorated over the last decade. Between 2010 and 2019, South Africa’s export growth rate has decreased by more than half. Moreover, exports have grown at a much slower pace than the rest of the world, and the country has underperformed against middle-income and sub-Saharan comparators.

Figure 3: Nominal export growth rate⁴



Source: World Bank 2020c

3 Trade openness is measured as the sum of a country’s imports and exports as a share of that country’s GDP (in %) (World Bank 2020d).
4 Taken as the current price, with average growth rate over the past 10 years.

The net result is that South Africa's share of world trade has fallen considerably over this period. In 1990, South Africa accounted for around 0.6% of world exports and around 0.5% of world imports. While the country's share of world imports has varied a lot over the last three decades, by 2019 it was not much lower than in 1990, at 0.4% of the total. Exports, on the other hand, have declined somewhat consistently over this same period, decreasing from 0.6% to around 0.4% of world exports. This represents a significant drop in the country's potential export earnings. If South Africa had retained its share of world trade, exports in 2019 would have been worth US\$50 billion (50%) more in value terms.

Figure 4: South African share of global exports and imports



Source: World Bank 2020e

Exports clearly have a part to play in raising South Africa's overall growth performance. What, then, explains South Africa's lethargic trade growth over recent years and what can be done to restore export growth? This chapter provides a simple analysis and presents some initial ideas. Further substantive work is needed to explore this important question and some of these suggestions in more detail.

The following section analyses South Africa's export performance and highlights some of the factors that may explain the apparent decline in the country's external competitiveness. South Africa's approach to international trade negotiations is reviewed in section 3. This section draws on interviews with several trade policy experts and officials. Section 4 considers the potential impact of industrial policy on export performance. The main findings from this paper are summarised in section 5, including a set of high-level policy recommendations.

2. Understanding South Africa's export performance

2.1 Slowing trade reforms

In the years leading up to and following South Africa's re-integration into the global economy in the early 1990s, the government undertook numerous efforts to reform its domestic trade administration processes and advance its multilateral, preferential, bilateral, non-reciprocal and regional trade policies. Some of the main trade policy developments undertaken over the last three decades are summarised in Table 1.

Table 1: Major trade policy interventions in South Africa

Year	Trade policy intervention
1990	The General Export Incentive Scheme (GEIS) is introduced
1990	Import surcharges are phased out
1994	South Africa is re-integrated into the global economy
1994	Import surcharges on capital and intermediate goods are abolished
1994	Conversion from quantitative restrictions to tariffs is completed
1995	Remaining import surcharges are eliminated
1995	South Africa's General Agreement on Tariffs and Trade (GATT) Uruguay Round mandate is enacted
1996	The new Tariff Rationalization Process is formulated
1996	A new bilateral trade agreement is signed between South Africa (SA) and Zimbabwe
1996	The Southern African Development Community (SADC) Free Trade Protocol is signed
1997	Export subsidies provided under GEIS are terminated
2000	The SA-European Union (EU) Trade, Development and Cooperation Agreement is implemented
2000	SA products are granted preferential access to the US under the US Africa Growth and Opportunity Act (AGOA)
2000	SADC Free Trade Protocol is implemented
2002	New Southern African Customs Union (SACU) Agreement is implemented
2002	SACU-MERCOSUR ⁵ trade negotiations are launched
2003	SACU-United States (US) free trade agreement (FTA) negotiations are launched
2006	European Free Trade Association-SACU Free Trade Agreement is signed
2006	Memorandum of Understanding is signed promoting Bilateral Trade and Economic Cooperation between China and South Africa
2006	SACU-US FTA negotiations are suspended
2008	SACU Trade, Investment and Development Cooperation Agreement with US is signed

5 Mercado Común del Sur, a South American trading bloc.

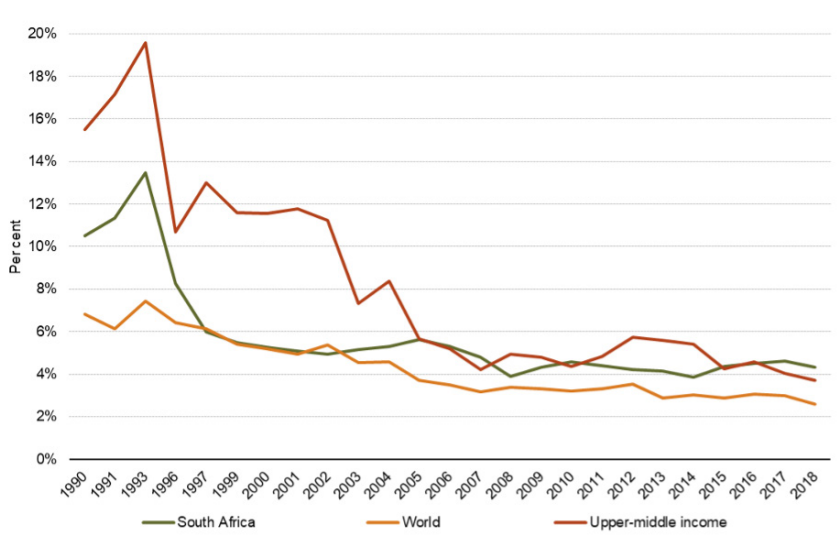
Year	Trade policy intervention
2008	Tripartite FTA negotiations commence between SADC, East African Community (EAC), and Common Market for Eastern and Southern Africa (COMESA)
2008	SACU and MERCOSUR preferential agreement is signed
2010	South African Trade Policy and Strategy Framework is launched
2011	Partnership is signed between Brazil, Russia, India, China and South Africa
2015	COMESA-EAC-SADC Tripartite FTA is launched
2015	Continental Free Trade Area (CFTA) negotiations launch
2016	EU-SADC Economic Partnership Agreement (EPA) is signed
2016	Preferential Trade Agreement between SACU and MERCOSUR comes into force
2019	African Continental Free Trade Area (AfCFTA) comes into force
2019	SACU+Mozambique EPA is signed
2021	SACU+Mozambique EPA comes into force
2021	AfCFTA due to be implemented

Source: Jonsson and Subramanian 2001; Farrell 2001; Malefane 2018; SARS 2020

The World Trade Organization (WTO) has served as the most influential external force for reform. Specifically, the conclusion of the Uruguay Round of the GATT had two main effects on South Africa. Firstly, the provisions related to the use of subsidies were tightened (Altman 1994). This led to the phasing-out of the GEIS – South Africa’s primary export support programme. Secondly, along with all other GATT signatories, South Africa committed to and implemented a significant reduction and simplification of its tariff rates, and the removal of all quantitative restrictions on imports. As shown in Figure 5, South Africa’s average tariff fell from over 13% in 1993 to just below 5% in 2001. Moreover, South Africa made significant progress in simplifying its tariff structure, removing tariff peaks and reducing tariff dispersion over this period (Edwards 2005).

Cumulatively, these trade policy and reform initiatives have contributed to deeper trade relations and increased openness in the South African economy (Malefane 2018; SARB 2000). Edwards and Lawrence (2008) argue that the rapid rise in non-commodity exports between 1992 and 2000 can be attributed to trade policy reforms, and specifically the sharp reduction in tariff protection. Together, this led to a considerable reduction in the anti-export bias – by lowering tariffs, the profitability of exporting increased significantly, relative to selling into the domestic (and previously protected) market.

Figure 5: Average weighted tariff rate on all products



Source: World Bank 2020a

There has been a notable slowdown in trade reforms, especially outside Africa, over the last decade. This is partly as a result of failures at the multilateral level, but also seems to reflect a changed approach from South Africa. As shown in Table 2, since 2014, average weighted tariff rates have increased. Moreover, South African tariffs on primary products are significantly lower than those on manufactured goods. This suggests that effective rates of protection,⁶ while falling over the last three decades, may remain relatively high in many sectors.

Table 2: Average weighted tariff rate

Sector	1990	1999	2006	2014	2018
Average for all products	10.5%	5.47%	5.29%	3.87%	4.32%
Manufacturing	11.41%	6.13%	6.61%	5.28%	5.32%
Primary products	4.8%	2.67%	2.07%	1.24%	1.91%

Source: Quantec Easy Data 2020a

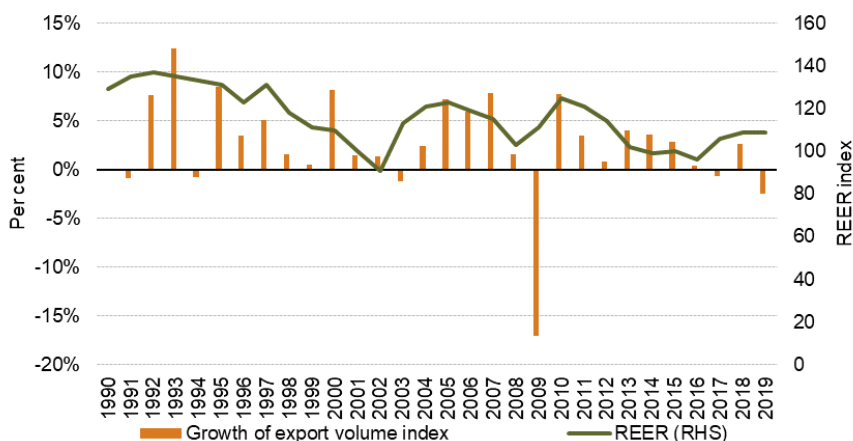
6 A measure of the net amount of protection given to a manufacturer, taking into account tariffs incurred on both inputs and on the final goods produced.

2.2 The exchange rate as a driver of exports

A second factor that may explain changes in South Africa's exports is the performance of the rand. A currency depreciation would make goods produced in South Africa cheaper, compared to our trading partners, and should boost exports. On the other hand, a stronger currency may harm export competitiveness. In assessing the impact of the currency's movement on trade performance, it is important to consider changes in prices within countries, as these may offset currency fluctuations. For this reason, the real effective exchange rate (REER) should provide the best measure of the impact of the rand on South Africa's international competitiveness.⁷

Figure 6 shows the REER index against changes in export volumes. Over the last three decades, the REER has trended downwards, thereby boosting South Africa's international competitiveness. However, there is no obvious pattern between changes in the REER and export growth. For example, a sharp depreciation of the REER in 2001 and 2002 did not lead to an obvious export response; conversely, when the REER appreciated from 2003 to 2005, export volumes increased. Likewise, the REER has depreciated for most of the last decade, but export growth has remained slow. The extent to which the depreciation of the REER stimulates export growth is therefore unclear (Edwards and Schoer 2001).

Figure 6: Real effective exchange rate and exports



Source: SARB 2020

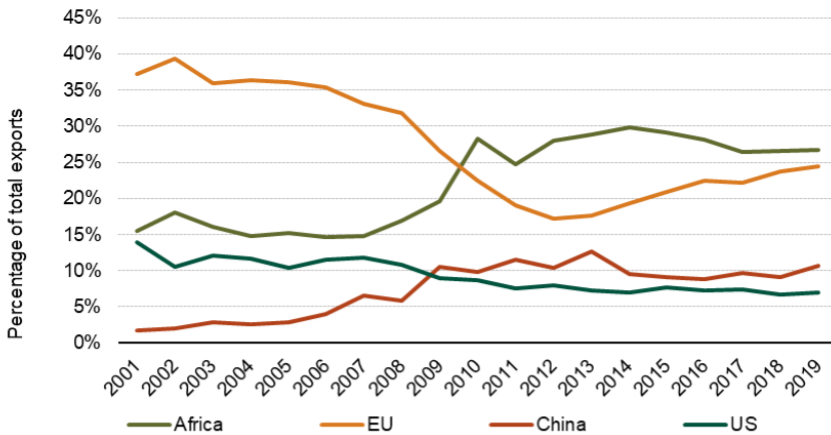
⁷ The real effective exchange rate (REER) measures the weighted average of a country's currency in relation to a basket of other major currencies, after taking into account changes in prices (inflation) in these countries. If the REER is increasing, then goods in South Africa are becoming more expensive relative to the other countries included in the index.

2.3 Geographic and product concentration

South Africa's export performance may also be a function of the country's trade profile. If exports are concentrated among a group of slow-growing markets, then this would hamper South Africa's ability to expand its international sales. In 2001, South Africa's export market was dominated by the US (14%), the United Kingdom (UK) (10.9%), Germany (9.1%), and Japan (8.9%). By 2019, the US had dropped to 7%, the UK to 5.2% and Japan to 4.8%. Germany's share remained relatively consistent at 8.3%.

In comparison, China's share of South Africa's exports increased from 1.8% in 2001 to 10.7% in 2019, while the rest of Africa's share increased from 15.5% to 26.7%. This dramatic shift in South Africa's main export markets is shown in Figure 7. A similar trend can be seen when analysing South Africa's main import markets: the EU remains the dominant supplier of goods to South Africa, at around 30% of the total, though China's share has increased from 4% to 19% over this period.

Figure 7: South Africa's exports by major trading partner



Source: ITC Trade Map 2020

It would seem that, in general, South African exporters did well to diversify out of the relatively mature European and US markets into the fast-growing Chinese market and the emerging African market. It is however notable that from 2013 onwards, this trend has slowly reversed. South Africa appears to be losing some of its foothold in China and Africa, with exports to Europe increasing in importance. Over this same period, South Africa's exports have declined sharply as a percentage of world exports and as a percentage of domestic GDP. Some of the reasons for this apparent turnaround in South Africa's exports to China are described further in Box 1.

Box 1: South Africa's trade with China

South Africa's exports to China are heavily dependent on commodities, as shown in Figure 8. In aggregate, minerals and metals make up roughly 90% of South Africa's exports to China. In 2019, just five products (out of the more than 6 000 products at the 8-digit tariff level) accounted for more than 75% of South African exports to China, all of which were primary metal or mineral commodities.

Figure 8a: SA exports to China by broad sector

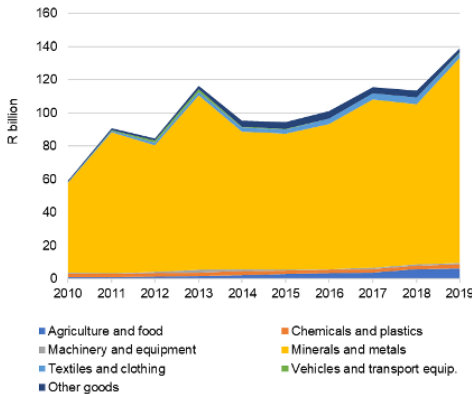
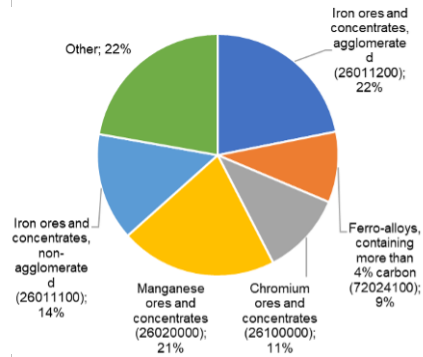


Figure 8b: SA's main product exports 2019 to China, 2019

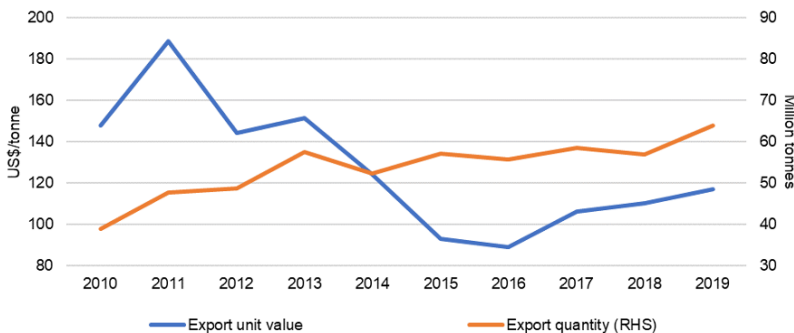


Source: Based on data from SARS

Note: Numbers in brackets indicate the SARS Harmonised System (HS) tariff code.

The relative stagnation of South African exports to China from 2011 can largely be explained by lower commodity export prices for South Africa's five main exports, which has more than offset the modest growth in export volumes. This trend may have reversed with commodity prices rising strongly from April 2020.

Figure 9: Price and volume dynamics for South Africa's main commodity exports to China



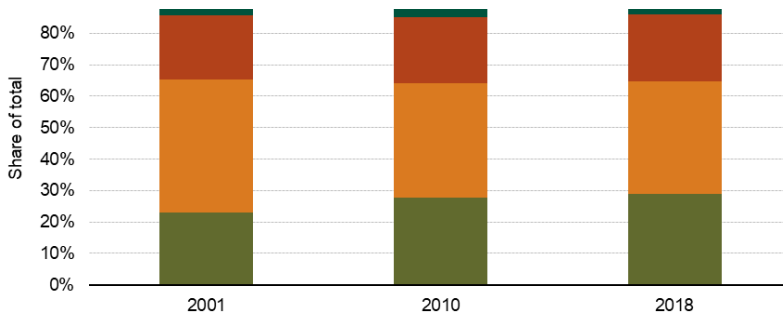
Source: Based on trade data from SARS and exchange rate data from the SARB.

Note: The figure provides the weighted average unit price for South Africa's top five exports to China: Iron ores and concentrates, agglomerated; ferro-alloys, containing more than 4% carbon; chromium ores and concentrates; manganese ores and concentrates; and iron ores and concentrates, non-agglomerated.

South Africa's export growth rate is also likely linked to the structure of trade and specifically the kind of goods that South Africa produces competitively and exports. In 2001, South Africa's top 10 export products were coal, motor vehicles, platinum, oil, gas-filtering machinery, palladium, diamonds, aluminium, platinum and ferro-chromium. Together, these 10 products, out of the 5 300 products at the HS6-digit (sub-heading) level, accounted for 37% of South Africa's total exports. By 2019, the top 10 exported goods (again at the HS6-digit (sub-heading) level) were coal, gold, iron ore, motor vehicles, manganese ore, oil, ferro-chromium, platinum and palladium, making up 36% of South Africa's world exports (ITC TradeMap 2020).

With the exception of machinery, in 2001, and motor vehicles in both 2001 and 2019, South Africa's exports are strongly and consistently concentrated in mineral and metal products. This is highlighted in Figure 10. From 2001 to 2018, the share of raw materials in South Africa's overall export basket has increased at the expense of beneficiated or intermediate goods, while exports of consumer and capital goods have remained relatively static. Moreover, compared to world exports – where raw materials account for less than 10% of world trade, and consumer and capital goods contribute more than 30% of the total each – South Africa's export structure is heavily biased toward lower-value-added products.

Figure 10: Export product share by category



Source: WITS World Bank 2001

When looking at the growth in world exports by stage of processing between 2001 and 2018, raw materials and intermediate products have marginally outperformed consumer and capital goods in value terms (WITS World Bank 2001). The fact that South Africa's export basket is loaded with primary goods is not sufficient to explain the country's overall poor export performance. It is therefore important to explore in more detail the products in which South Africa is globally competitive, and how exports of these specific products have performed.

The revealed comparative advantage (RCA) is a Ricardian-based method of gauging relative differences in productivity. By calculating these differences in productivity, one can approximate a country's competitive strengths in international

export markets. Where a country has an RCA value exceeding one for a product, then the country is defined as having a revealed comparative advantage in that product (United Nations Conference on Trade and Development Stat 2020).

In 2001, South Africa had a particularly strong comparative advantage in mostly primary sector goods (see Table 3). Moreover, South Africa's share of world trade in these products was generally very high. However, for six of these 10 product groups (i.e. the industries in which South Africa had the greatest global comparative advantage), South Africa's share in world trade has declined over the last two decades. Conversely, among these product groups, South Africa has gained most in market share through the export of raw agricultural goods.

Table 3: South Africa's RCA – top 10 product groups by chapter (HS2)⁸

Compe- titive rank in 2001	Product	RCA in 2001	SA share of global exports in 2001	SA share of global exports in 2019
1	Natural or cultured pearls, precious or semi-precious stones, precious metals	10.3	4.4%	2.4%
2	Ores, slag and ash	10.1	4.3%	5.5%
3	Sugars and sugar confectionery	4.9	2.1%	1.5%
4	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations	4.8	2.0%	2.6%
5	Iron and steel	4.4	1.9%	1.4%
6	Edible fruit and nuts; peel of citrus fruit or melons	4.4	1.9%	2.7%
7	Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper	3.8	1.6%	1.2%
8	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals	3.4	1.5%	0.9%
9	Aluminium and articles thereof	3.2	1.4%	1.0%
10	Wool, fine or coarse animal hair; horsehair yarn and woven fabric	3.0	1.3%	3.0%

Source: ITC Trade Map 2020

There has been little change in South Africa's top 10 products in terms of revealed comparative advantage between 2001 and 2019. Vegetable products and a broad group of earth materials are the only new products to make this list, with aluminium and inorganic materials dropping off. However, across all 99 HS2-digit (chapter) product groups, the number of products in which South

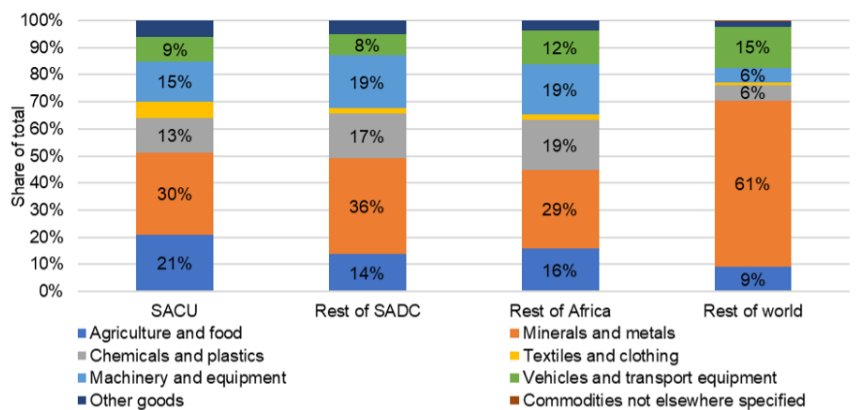
⁸ "Revealed Comparative Advantage is calculated as the ratio of two shares. The numerator is the share of a country's total exports of the commodity of interest in its total exports, and the denominator is the share of world exports of the same commodity in total world exports. The RCA takes a value between 0 and ∞ . A country is said to have a revealed comparative advantage if the value is more than one." (IGI Global 2020)

Africa demonstrates a revealed comparative advantage ($RCA > 1$) has declined from 30 in 2001 to 23 in 2019.

2.4 The nature of South Africa's trade with Africa

While South Africa's global export performance has been disappointing and is dominated by commodity products, there is a perception that export growth into Africa has been strong and much more diversified: "At over R300 billion, the rest of Africa now represents 26.2% of South Africa's total goods exports, marginally behind exports to Asia. The significant difference, however, is that exports to Africa comprise a high percentage (over 50%) of finished and intermediate products" (Department of Trade and Industry 2018: 86). This is partly confirmed by Figure 11, which shows that South Africa's exports to Africa have higher value added (with a higher proportion of food, chemicals and plastics, and equipment and machinery, and a lower proportion of minerals and metals) when compared to its exports to the rest of the world.

Figure 11: Composition of South Africa's exports to Africa, 2019



Source: Based on data from SARS. Own commodity classification based on HS nomenclature

However, South Africa's exports to Africa are highly concentrated in the Southern African Customs Union (SACU) and a few neighbouring markets: six out of South Africa's top seven African export destinations in 2019 were its immediate neighbours and, together, these six countries made up close to 70% of total exports to Africa. Moreover, almost half of South Africa's exports to Africa are destined for other SACU member states, where no rules of origin are in place. It follows that, for trade within the customs union, there is no way to tell whether exports are actually manufactured in South Africa or imported and cleared from elsewhere in the world and then re-exported.

Figure 12a: SA exports to Africa by region

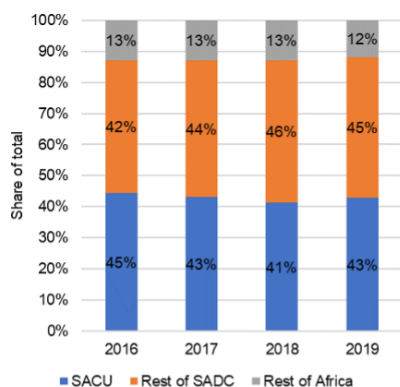
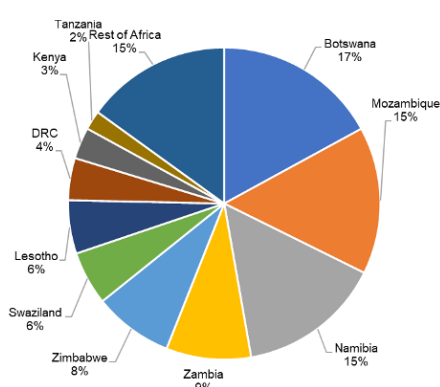


Figure 12b: SA's top 10 export markets in Africa, 2019

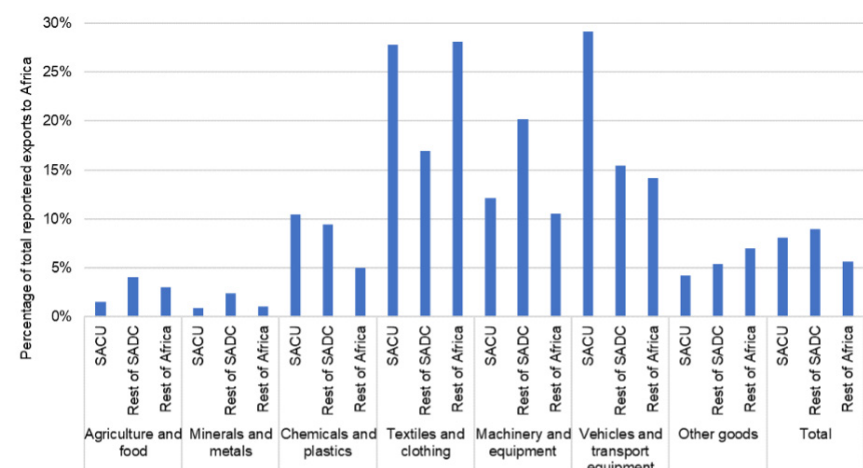


Source: Based on data from SARS

The available data from the South African Revenue Service (SARS) suggests that there is a high proportion of goods in certain sectors that are exported from South Africa to the rest of Africa but that originate in other countries (more than 25% for textiles, clothing and vehicles; more than 15% for machinery and equipment). Overall, this data indicates that at least 8% of South Africa's exports to SACU do not originate in South Africa.

This percentage is likely to be substantially higher. In 2019, Botswana, Lesotho, Namibia and Eswatini reported that 58%, 77%, 45% and 73% (ICT Trade Maps, 2020) of their world imports were sourced from South Africa, respectively. It is implausible that these countries could access such a high proportion and variety of imports from just one country, especially given the size and structure of South Africa's trade with the rest of the world. Moreover, as shown in Figure 14, South Africa consumes more than it produces domestically (i.e. the country is a net importer) in the sectors that constitute a higher share of South Africa's export basket to Africa.

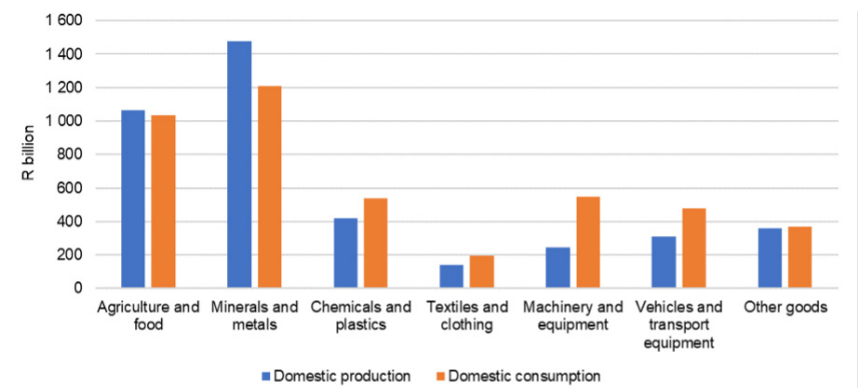
Figure 13: Reported exports from South Africa to Africa originating from outside of South Africa, 2017



Source: Based on data from SARS. Own commodity classification based on HS nomenclature

Note: Data reflects exports classified by SARS as exports from South Africa, but for which the “country of origin” is not South Africa.

Figure 14: South Africa’s domestic production and consumption, 2017



Source: Based on data from Stats SA supply-use tables

It would therefore seem that a large part of South Africa’s apparent manufacturing export success in southern Africa is actually due to success in logistics, wholesale and retail. This reality may also explain the low use of tariff preferences by South African exporters in the region. In the Southern African Development Community (SADC) market, the majority of firms (63%) do not use the lower SADC rates, which would only apply to producers that are willing and able to comply with the SADC Rules of Origin (United Nations Economic Commission for Africa (UNECA) 2020).⁹ For example, “Woolworths [Holdings, a retail company] does not use SADC preferences at all in sending regionally-produced consignments of

9 These rules determine whether a good can be considered as being produced in the region and therefore whether the exporter qualifies for tariff preferences.

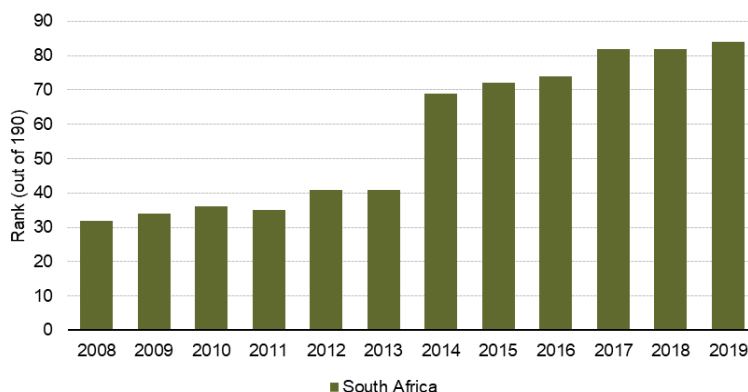
food and clothing to its franchise stores in non-SACU SADC markets” (Gilson 2010). These consignments would likely also include substantial imported content, but for trade statistics purposes, all of these exports would be marked as exports from South Africa.

2.5 The deteriorating enabling environment

Finally, South Africa’s international competitiveness is strongly influenced by a wide range of structural and environmental factors that affect the costs of production and trade. This includes skills and labour market issues, access to well-priced and high-quality electricity and communications inputs, and the efficiency and cost of the logistics system.

The World Bank’s Ease of Doing Business Survey provides a perspective of South Africa’s relative competitiveness across a wide range of dimensions. As shown in Figure 15, South Africa has fallen 52 positions in the ranking in just 11 years. One of the causes of this decline is South Africa’s high trading costs – where South Africa is currently ranked 145th out of 190 countries – and, specifically, border compliance costs. Similarly, in the World Economic Forum (WEF) Global Competitiveness Report, South Africa has fallen from 42nd (of 117 countries) in 2005 to 60th (of 141 countries) in 2019. According to the WEF, South Africa is ranked 77th in trade openness and 69th in trade infrastructure.

Figure 15: South Africa’s ease of doing business ranking, 2008–2019



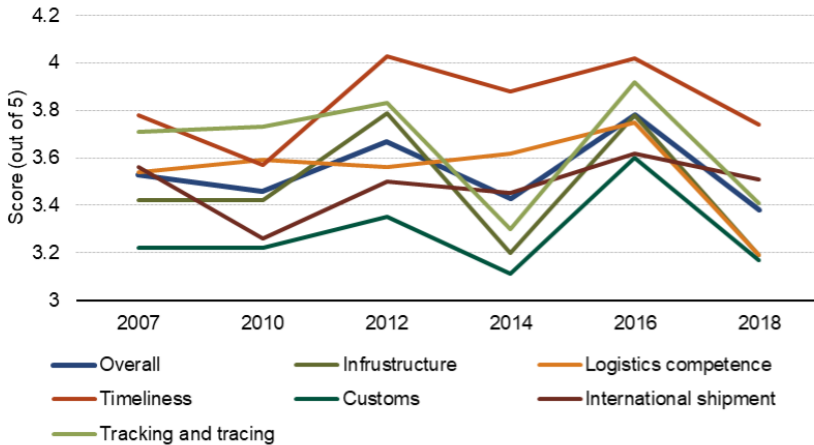
Source: World Bank Ease of Doing Business Survey; Trading Economics

Note: A higher rank denotes a deterioration.

South Africa performs somewhat better in a number of trade-specific indices. In 2018, South Africa was ranked 33rd out of 160 countries profiled in the World Bank’s Logistic Performance Index, though its score against all metrics of this index has deteriorated over the last few years (see Figure 16). Likewise, in the OECD Trade Facilitation Report, South Africa ranked 40th out of 169 countries, and in the

WEF Global Enabling Trade Report, it was ranked 55th out of 136. In all three surveys, South Africa scores lowest on customs administration and border-coordination related matters.

Figure 16: The World Bank Logistics Performance Index (South Africa, 2008–2019)



Source: World Bank Trade Logistics Index

Note: A higher score denotes an improvement.

3. Understanding South Africa's position in trade negotiations

In 2010, a strategic framework for trade policy was launched by the then-Department of Trade and Industry, now the Department of Trade, Industry and Competition (DTIC), in response to the prevailing developments in world trade and in support of South Africa's own industrial policy agenda. In terms of this framework, tariffs were to be applied strategically, and on a case-by-case basis, to drive industrial development and diversification as well as job creation. Specifically, in order to reduce input costs for labour-intensive downstream manufacturing, tariffs on upstream input sectors (primary sectors) were to be lowered or removed. Likewise, tariffs on downstream manufacturing were to be left unchanged or raised, to support the development of priority sectors.

This approach was also expected to inform South Africa's multilateral and bilateral relations (Cipamba 2012), and the 'developmental' positions taken by South Africa in external negotiations are consistent with the policy thrust of this framework. It is also important to note that from 2002 onwards, South Africa has negotiated externally as part of the SACU, and all trade engagements and agreements reflect a SACU-wide view. South Africa's (and SACU's) positions, within African and global trade negotiations, are discussed in more detail next. Note that this section is based largely on interviews with several trade policy experts and officials in South Africa and elsewhere on the continent, who are referred to as interviewees in the paper.

3.1 South Africa in Africa

From 1994, South Africa began to engage formally with the Southern African region. The 1969 SACU Agreement was renegotiated to provide for a changed revenue-sharing arrangement. More importantly, it also created new institutions for the determination and management of trade and industrial policy within the customs union. In 1996, South Africa joined the SADC trade agreement, and the SADC Free Trade Protocol was implemented in 2000. In terms of this agreement, South Africa (and SACU) removed tariffs on 99% of all SADC country imports by 2005, with all other SADC countries backloading tariff reductions to 2012.

With a few exceptions, most SADC countries have now fully implemented the agreed phase-down schedules, and all trade should flow duty-free throughout the region. Restrictive rules of origin – most notably on textiles and clothing, wheat flour and some processed foodstuffs – still prevent trade in some sectors, and non-tariff barriers persist (Harzenberg and Kalenga 2015). Moreover, as indicated earlier, preference utilisation in SADC is very low.

More recently, South Africa has been involved in two ambitious initiatives to consolidate the multitude of regional agreements that extend across the continent. The Tripartite FTA (TFTA) negotiations, which began in 2008, aimed to bring together Africa's three deepest regional integration initiatives – SADC, COMESA and the EAC – into a single trading bloc of 27 member states. The TFTA was officially launched in 2015, on the understanding that it would take a further 12 months to resolve a number of outstanding issues relating to rules of origin and trade remedies and to finalise all offers – but to date, the agreement has yet to be implemented. The TFTA is now overshadowed by the even larger African Continental Free Trade Agreement (AfCFTA), which seeks to achieve a single African market for goods and services (Mevel and Raringi 2012). AfCFTA negotiations on tariffs, rules of origin and trade in services were still under way in August 2022, despite the fact that the agreement was implemented on 1 January 2021.

Publicly, South Africa has talked up the potential of African integration, and the AfCFTA in particular. According to former Minister of Trade and Industry, Rob Davies, “the AfCFTA will boost intra-Africa trade and create a bigger market of over 1 billion people with a GDP of US\$2.6 trillion that will unlock industrial development” (South African government 2018). The current Minister of Trade and Industry, Ebrahim Patel, has gone further: “The CFTA could be a game changer for the local economy, providing a massive market for SA goods and services.” He highlighted that exports to the rest of the continent already account for about 250 000 South African jobs. “If we can get the institutions and infrastructure right and build deep business and social partnership in SA, the [CFTA] can add many billions of rands to GDP, create large numbers of new industrial jobs, attract and expand investment and strengthen the economy” (Phakhathi 2019).

South Africa's enthusiasm is supported by the available evidence. All quantitative studies of the likely impact of the AfCFTA highlight the sizeable trade and growth benefits for the continent, and most suggest that South Africa is likely to be among the largest beneficiaries (see Appendix A). This is not surprising. South Africa dominates intra-regional trade, and the tariffs (and non-tariff barriers) faced by South African exporters are generally higher than those encountered on imports into South Africa. The greatest gains are expected to come from trade facilitation improvements, and the potential reductions in transport times and costs in particular.

In practice, South Africa's approach to regional negotiations does not appear to live up to the rhetoric. Rather, despite South Africa's stated and strong interest in African integration, and the substantial benefits that would likely accrue from freer trade, there is a perception that South Africa has held back progress in many fora, or has pursued an overly cautious approach in regional trade discussions. According to the interviewees, this approach is underscored by "ideological peculiarities" and "protectionist leanings" rather than economic considerations.

In SACU, for example, where South Africa effectively defines the union's external trade position, almost no progress has been made in implementing the substantive provisions related to the harmonisation of trade and industrial policy over the last 15 years, whether in implementing trade facilitation reforms or establishing new trade-related institutions. As a result, and despite its significant first-mover advantage, SACU remains stuck in a 20th century limbo.

It is argued that South Africa has deliberately resisted change in SACU in order to protect its policy space and trade interests in the captured Botswana-Lesotho-Namibia-Eswatini market. In sugar, for example, Namibia and Botswana currently face an equivalent tariff of around 100%¹⁰ – this increases the cost of sugar inputs for these countries to between R3 000 and R4 000 above the international market price, and prevents them from competing internationally in downstream food products. Only South Africa and Eswatini produce sugar in SACU, and Botswana and Namibia receive first access to rebated sugar through a SADC-wide quota. South African officials acknowledge the tension around sugar within SACU, but note that this is complicated by the high levels of subsidies elsewhere in the world, which distorts the world price of sugar.

In SADC, South Africa has played an influential role in ongoing services negotiations. South Africa has an extensive General Agreement on Trade in Services (GATS) schedule, concluded at the WTO, that provides it with a strong base in regional negotiations, and the country has been eager to demand more of others. However, when analysing what South Africa has offered to SADC, the country has not gone much beyond what it committed to in the GATS, and where

10 This tariff is driven by a formula and is linked to a dollar-based reference price. When the international price of sugar rises to above this reference price, the duty is removed.

changes have been made, they are often immaterial.¹¹ More importantly, South Africa was reluctant to adopt the regulatory annexures that have been included in the SADC Trade in Services Protocol, effectively delaying the conclusion of the negotiations for two years before acceding. Given South Africa's strong interests in regional services trade, and the strength of its own regulatory framework, it is disappointing that the country did not see these negotiations as an opportunity to pursue a common (i.e. South African) approach to regulation in priority sectors, such as financial services. According to interviewees, because South Africa 'blinked first', other countries 'backed off' and limited progress was made in deepening these annexures.

South African officials have pointed out that the SADC services negotiations were the first meaningful discussions in this area since the GATS, and there is a general lack of knowhow across the region, including in South Africa. Moreover, trade negotiators are heavily reliant on inputs from other line departments and sector regulators – who are usually reluctant to commit to an agreement that intentionally sets out to limit their policy and regulatory space – and from diverse industry representatives, who are generally unaware of the role and benefits of services negotiations. There is also limited data on trade in services, especially between SADC member states. It is therefore difficult to develop effective offensive negotiating positions.

Elsewhere in the region, South Africa is accused by some of the interviewees of severely delaying the TFTA goods negotiations by raising multiple technical points of order, stalling on the preparation of the draft text of the so-called 'acquis'¹² for two years, and then negotiating rigidly on rules of origin, which have still not been agreed to. South African officials, on the other hand, stress that they still have a strong interest in the TFTA negotiations. They highlight the fact that South Africa was among the first to ratify the agreement and that, although SACU and the EAC have agreed on tariff offers, most COMESA countries have not. As a result, the agreement, which was supposed to be launched in June 2016, still cannot be implemented.

South Africa's approach to AfCFTA negotiations mirrors the pro-development and pro-industrialisation stance it has taken in SADC and TFTA negotiations. In support of these positions, the country favours high rules of origin thresholds across key sectors to promote regional value chains. In doing so, South Africa (along with many other countries) is negotiating from a generally defensive position – it is only willing to talk about tariffs once assured that stringent rules are in place to protect it against 'unfair' exports. For example, South Africa has proposed that sugar must be wholly obtained in the region, regardless of the price, including as an input in the manufacture of drinks and foodstuffs. This view is

11 For example, South Africa agreed to schedule mode 2 in transport services, effectively allowing South Africans to make use of foreign transport services when they are in other SADC member states. South Africa has no ability to limit such transactions and this specific offer is therefore meaningless.

12 The principle that TFTA negotiations would build on the existing agreements that were already in place between SADC, the EAC and COMESA member states.

shared by other sugar-producing countries. According to one interviewee, “this does little to improve the development and competitiveness of these value chains, including in South Africa.”

South African officials argue that they are pursuing a flexible approach, which does allow for alternative arrangements, if a product (such as sugar) is not available in a specific region. Moreover, they recognise that there are vast differences in industrial development and interests across African countries. Whereas some countries are looking to import as many inputs as possible, in order to kick-start new industries, others want to ensure that their established manufacturing capabilities are not undermined by knockdown assembly plants (most notably in home appliances). South Africa is consequently looking to secure a compromise in some sectors, with lower levels of local content required initially but allowing for a phase-in over time to allow companies to invest, adjust and become more competitive. As argued by one interviewee, “it is important to look beyond short-term interests in order to determine what will be the best rule of origin in the longer term.”

Similarly, and despite the prevalence and apparent competitive advantage of South African service firms across the continent, the country (along with most other African countries) has supported a conservative approach to services negotiations in the AfCFTA. As a result, the African Union has adopted the GATS approach, which is unlikely to facilitate meaningful regional harmonisation or reforms. South Africa has been quick to submit a comprehensive offer in AfCFTA negotiations, which is likely to mirror that offered to SADC member states. Interviewees expressed surprise and disappointment that South Africa has been unwilling to assume a more progressive leadership role across the wider continental trade agenda and continues to focus on short-term market access issues.

South Africa is one of a few countries in Africa that is required (by law) to pursue a structured and highly consultative process domestically in defining its trade position, through the National Economic Development and Labour Council. Historically, both business and labour have adopted a strongly protectionist approach to external trade relations, and this constrains South Africa’s negotiating position. There is a perception that some industries were adversely impacted by the EPA, and that the government is not quick enough to protect domestic industry through existing trade remedies (or that business is not always aware of the remedies that are available). The tariff rate therefore becomes disproportionately important.

Whereas business is apparently becoming more open – and starting to see the potential benefits from regional integration – labour remains focused on preventing any potential job losses (even if the net impact is likely to be positive). South African officials also highlight the strength of the domestic legal and institutional system – once an agreement is signed, it is fully and properly implemented. This is not always the case in other African countries.

Across all regional engagements, South Africa is generally silent when it comes to trade facilitation. This might be an ideological hangover – in the run-up to the WTO Trade Facilitation Agreement negotiations, South Africa (again, along with most other African countries) was reluctant to engage on anything new, until the outstanding issues under the Doha Development Round were addressed. A one-stop border policy was developed by National Treasury in 2010, and there was a proposal at the time to develop the first one-stop border policy between South Africa and Mozambique, but this did not succeed. A new draft was published by the Department of Home Affairs for comment in December 2020. Likewise, in 2010, SARS launched a customs modernisation programme, but it would appear that SADC and SACU are being left behind when it comes to streamlining cross-border trade processes. It would also appear that border discussions are currently dominated by security, immigration (and more recently health) concerns, rather than trade and customs matters (see Box 2).

Box 2: The South African Border Management Authority

In 2013, the South African Cabinet agreed to the establishment of a border authority to modernise the management of South Africa's ports of entry, and to improve coordination across the various government agencies represented at South African borders. The resulting Border Management Authority Bill was tabled in Parliament by the Department of Home Affairs in May 2016 and the Act was ultimately signed into law by President Ramaphosa in July 2020 (Parliamentary Monitoring Group 2020).

The main objectives of the Act are to “establish and empower the Authority to achieve (a) integrated border law enforcement within the border law enforcement area and at ports of entry; and (b) co-operation on and co-ordination of border management matters in general” (Department of Home Affairs 2020: 10). The Act provides for the creation of an Inter-Ministerial Consultative Committee, to be headed by the Minister of Home Affairs, including representation from a wide range of government departments, although it excludes SARS.

The primary focus of the Act is border control, and the Border Management Authority (BMA) is provided with extensive powers of entry, search, seizure, arrest and detention: “Officers may stop and board any vessel within the border law enforcement area without a warrant and require the master to produce certain documents, including documents relating to the importation and exportation of goods” (Hunkin 2020). Regardless of whether such powers are constitutional, it is clear that the BMA will have the ability to interfere with cross-border trade.

Of greater concern is that the creation of this agency points to the increased securitisation of South Africa's borders. “With our borders already monitored by the police, as well as Customs, amongst other government agencies, introducing another border monitoring agency could lead to conflicting directions between such agencies. Does a BMA stop trump a police or customs stop, or will the various governmental agencies monitoring our borders co-ordinate their stops? Also, where there are now multiple stops or interventions, the cost consequence of delays could go up significantly. This is cause for concern where such interventions have already pushed up the cost of imports and exports.” (Hunkin 2020).

3.2 South Africa elsewhere

South Africa (and SACU) has negotiated with a number of international partners since 1994. The most significant and deepest of these agreements was the Trade, Development and Cooperation Agreement between South Africa and the EU, which came into force in 2000. This agreement sought to establish a free trade area between the EU and South Africa, and to promote reciprocal liberalisation and the expansion of mutual trade in capital, services and goods (Malefane 2018). While strong progress was made in removing tariffs on goods trade, South Africa has refused to enter into services negotiations with the EU.

The Trade, Development and Cooperation Agreement was replaced by the EU–SADC EPA in 2016, enabling SADC signatories to use regional inputs, as well as inputs from the EU and other African, Caribbean and Pacific states in accessing EU preferences (European Commission 2016). This specific ‘cumulation’ provision has not yet been implemented due to administrative delays among SACU member states. The EU–SADC EPA has been largely replicated in an agreement with the European Free Trade Agreement group of countries – Iceland, Lichtenstein, Norway and Sweden – and forms the basis of the SACU+Mozambique EPA with the UK, which came into force on 1 January 2021.

The only other trade agreement implemented by South Africa over the last few decades is a partial preferential agreement with Mercado Común del Sur / Common Market of the South (MERCOSUR, made up of Argentina, Brazil, Paraguay and Uruguay). Negotiations began in 2002 and were concluded in 2008, and the agreement came into force in 2016. The agreement provides for the liberalisation of just over 1 000 tariff lines, but effectively excludes almost all of the existing trade between the two blocs. Negotiations with India on a similar partial trade agreement began in 2007 and are apparently still under way; while the government is also in discussions with China to develop a Partnership for Growth and Development.

South Africa’s trade relations with the US are governed by the unilateral AGOA, enacted in 2000, which provides duty-free access for qualifying African countries, including South Africa, for a wide range of sectors. AGOA was last extended in 2015, up to 2025, but these preferences can be withdrawn by the US at any time and for any reason. Attempts to sign a reciprocal agreement with the US, which would have provided SACU with permanent preferences, fell apart due to substantial differences over the scope of the agreement. Whereas the US was looking to mirror its agreements with other countries – which included binding commitments on intellectual property rights, government procurement, investment and services, labour and the environment – SACU’s interests were largely limited to extending and locking in AGOA’s benefits (Brown, Kiyota and Stern 2006) through reciprocal market access.

Globally, South Africa has played an important role in WTO negotiations historically, and was a vital party in the conclusion of the Doha Development Round. In general, there is a perception that South Africa is reluctant to engage in any further market access negotiations, including plurilateral discussions on any

new trade issues. The main reason for doing so is because it (and many other developing countries) believes that until all Doha Development Round commitments have been concluded, the multilateral agenda should not be extended.

For these reasons, in the Non-Agricultural Market Access negotiations, South Africa has linked any discussion around market access to negotiations around domestic support (in agriculture), as outlined in the Doha Development Agenda. This is despite the fact that South African non-agricultural tariffs are generally very low and are levied at bound levels.¹³ While it is understandable that South Africa is aggrieved by the lack of progress in the area of domestic support, this 'super-defensive' position does not necessarily reflect South Africa's economic interests in this area.

It is argued that South Africa pursues a similarly defensive approach in WTO services negotiations. For example, in the mandated multilateral discussions to develop domestic regulatory disciplines,¹⁴ South Africa maintains that any new rules will not be compatible with the African agenda and that African regulators do not have the capacity and maturity to commit to generally accepted regulatory principles. Instead, South Africa has been instrumental in creating an opposing caucus – consisting of African countries and least developed countries – to maintain 'policy space' and prevent multilateral progress in this area. As a direct result of this stance, these negotiations are now limited to the 63 members that have agreed to pursue these issues among themselves. Likewise, South Africa has been forceful in stalling progress on e-commerce, which is now being negotiated among more than 90 members plurilaterally. These plurilateral negotiations are likely to set new benchmarks for international agreements on these issues, and by excluding itself from these discussions, South Africa's voice will not be heard.

4. Understanding the influence of industrial policy

Over the last few years, trade policy has seemed to play second fiddle to industrial policy concerns. Whereas the country's trade policy has not been formally updated,¹⁵ since the publication of the strategic framework in 2010, annual Industrial Policy Action Plans (IPAPs) were rolled out by the Department of Trade and Industry from 2009 to 2018. The most recent iteration of the IPAP (2018/19–2020/21) does include a dedicated chapter on South Africa's 'developmental trade policy', but the focus of this section is almost exclusively on strengthening South Africa's testing and standards infrastructure.

13 Bound levels are the maximum tariff level that is permitted in terms of South Africa's WTO commitments.

14 A set of agreed rules which are intended to ensure that services regulations are objective, transparent and efficient and do not restrict supply.

15 The DTIC did release a statement, 'A Trade Policy for Industrial Development and Employment Growth', on 20 May 2021; which sets out the DTIC's overall trade policy objectives (this statement was released after the completion of this paper).

On tariffs, the IPAP reiterates the country's case-by-case approach to reducing tariffs on inputs in order to support the development of downstream value-addition, while also providing for tariff increases in order to preserve or create jobs. The IPAP also includes a chapter on 'African integration and industrial development', through which South Africa plans to identify and facilitate investments into so-called catalytic industrial projects and mega-opportunities across the continent (Department of Trade and Industry 2018).

However, most of the IPAP and South Africa's industrial policy is dedicated to the development of a long list of priority sectors, including automotives; clothing, textiles, leather and footwear; metal fabrication, capital and rail transport equipment; agro-processing; forestry, timber, paper and furniture; plastics, pharmaceuticals, chemicals and cosmetics; minerals beneficiation; green industries; business process services; marine manufacturing and associated services; aerospace and defence; and electro-technical industries. Together, these sectors account for most economic activity and almost all exports. The success or failure of the government's industrial policies in these sectors – and more broadly – can therefore be expected to have a significant impact on the country's trade performance.

South Africa's exports of motor vehicles, for example, can largely be attributed to the government's Motor Industry Development Programme and, more recently, the Automotive Production and Development Programme. This sector alone receives more than half of the government's total spending on industrial incentives and support, at around R25 billion a year (Department of Planning, Monitoring and Evaluation 2018). Although it is likely that investment and exports in this sector would collapse in the absence of this funding (Flatters 2005), it is impossible to know how much more or less South Africa would export if this rent was redirected to other (and perhaps more competitive) sectors, or back to the government and consumers.

There are other industrial policy interventions that likely affect firms' decisions to export in more complex ways. The IPAP identifies public procurement as a key lever for industrialisation through the promotion of local production, and the DTIC has designated 23 sectors or products with varying minimum local content requirements. According to the DTIC, around R60 billion worth of local content was procured by government entities between 2015 and 2017 as a direct result of these designations (Department of Trade and Industry 2018).

Whereas this spend undoubtedly generates significant (short-term) benefits for the firms involved, local content regulations can lead to the reallocation of scarce domestic resources to supported industries, and give rise to price increases and economy-wide inefficiencies. The regulations can also lead to a reduction in trade through an immediate import-displacement effect and a longer-term loss in export competitiveness. In South Africa, for example, the imposition of local content requirements in the procurement of renewable energy production has resulted in cost increases of at least 10% (Kaziboni and Stern 2020).

Similarly, and more widely, South Africa's B-BBEE policy directly and intentionally favours black-citizen-owned (and therefore by definition South African-owned) businesses over entirely foreign-owned businesses, initially through government procurement, but with flow-through effects to the rest of the economy. This inevitably reduces competition and potentially international investment in some sectors and makes the use of foreign skills more challenging. In addition, the policy framework provides for a price premium of between 10% and 20% that can effectively be charged by the most empowered domestic companies. While this policy has undoubtedly served to diversify and transform the structure of the South African economy; it too raises the incentive to produce for the domestic market, relative to exporting.

5. Main findings and possible policy recommendations

South Africa's exports have lagged behind the rest of the world over recent decades, and this has likely constrained overall economic growth. There are multiple reasons for this disappointing trade performance, including the structure of the country's export basket (which remains dominated by commodity products); its dependence on a limited number of large but mature export markets; and the high cost and deteriorating competitiveness of the general business environment. South Africa's manufactured trade with Africa is considerably overstated, but is evidence of the country's important role as a logistics and services hub in the region.

Trade and industrial policy also has an important role to play – effective rates of protection remain high in some sectors; the country adopts a defensive approach to new trade agreements; and there is an increased focus on localisation. The exchange rate does not seem to be a significant contributor in increasing (or decreasing) the competitiveness of exports over the long term. Together, these structural, environmental and policy factors increase the incentive to produce for the protected domestic market over and above exploring new export opportunities, while raising barriers for new entrants and lowering competition for incumbent firms.

To address the inherent bias against exporting, four sets of actions are recommended.

First, South Africa urgently needs to address the high cost of investment and trading across borders, and reverse the country's relative decline in international competitiveness. This will require a concerted and well-coordinated effort to improve rail and port efficiencies; streamline customs, registration, licensing and other administrative processes; lower the costs and improve the quality of critical inputs, such as telecoms, energy and transport; and remove or reduce regulatory impediments to the movement of goods, services and skills into the country. Further analysis recommendations on some of these constraints are addressed in Chapter 5 of this volume, but without real progress in all of these areas, the country will continue to lose ground against developing country comparators.

Second, South Africa should review the impact of its existing industrial, localisation and sector-specific policies on export behaviour. Whereas the existing policy framework strongly supports the transformation and industrialisation of the

domestic economy, in some instances this may come at the cost of the country's long-term international competitiveness. South Africa's deteriorating competitiveness in the export of mining and mineral products – which still account for most of the country's exports – may require specific policy attention. National policies may also have adverse impacts on South Africa's partners in the region – there are already reports of companies from Botswana relocating to South Africa in order to satisfy local content requirements.¹⁶ These trade-offs need to be identified and evaluated, and, where possible, mitigating actions need to be put in place.

Third, to offset some of these costs and overcome the multiple challenges of entering new markets, a comprehensive and targeted export promotion and export finance framework is required. The available international evidence suggests that export promotion agencies are important in addressing information asymmetries, which are typically larger for smaller firms and differentiated products, and when firms try to enter new country or product markets. Moreover, bundled support services – including counselling for new exporters, missions and fairs, and the development of business relationships – are more effective than any isolated actions (Cadot et al. 2011). Likewise, there is a role for government to ensure that exporters have access to world-class financial products and services, including export credit and insurance. Building the capacity of export associations and chambers of commerce is also important in enabling new industries to enter export markets.

Finally, an updated and comprehensive trade policy is needed to guide South Africa's approach to trade support and negotiations, both across the continent and internationally; to develop consistent positions on newer trade issues, such as services and e-commerce; to consider the impact of changed international conditions, such as climate change, the emergence of global value chains and the COVID-19 pandemic; and to promote serious trade facilitation reforms at and beyond the country's borders. This policy should be founded on substantive research that considers the impact of existing policies and institutions on export performance; identifies target markets and priority products and services; and analyses the costs and benefits of alternative policy instruments and options. It should be informed by widespread consultations across government and with external stakeholders in business, labour and civil society. The resulting policy should incorporate a detailed monitoring and evaluation framework so that progress can be measured, problems can be identified, and corrections can be made. The country's trade policy should also be reviewed and revised more regularly.

16 Stakeholder interviews.

Appendix A

Table 4: Summary of research on AfCFTA

Research paper	Overall impact of AfCFTA	Benefits of AfCFTA to South Africa
Deepening Regional Integration in Africa: A Computable General Equilibrium Assessment of the Establishment of a Continental Free Trade Area followed by a Continental Customs Union (Mevel and Karingi 2012)	AfCFTA will significantly increase exports, real income and real wages in Africa. However, the removal of trade barriers on goods within the African continent will not be sufficient to achieve the target announced by the African Union's member states, who wish to see the share of intra-African trade doubling over the next decade. The increase in the share of intra-African trade would, nevertheless, be quite substantial as it would grow from 10.2% in 2010 to 15.5% in 2022. Country-level analysis reveals that some countries would register a decrease in their real income due to tariff revenue losses and/or diminished terms of trade and/or negative net food trade balances. Also, certain categories of workers, in some regions, would see their real wages declining with the reform.	The expected change in real income is 0.7%, tariff revenue is expected to increase by 5.9%, and terms of trade are expected to improve by 1.2%.
General Equilibrium Assessment of the COMESA-EAC-SADC Tripartite FTA (Willenbockel 2013)	AfCFTA leads to a welfare benefit of US\$57 million. However, under the most ambitious TFTA scenario, which combines complete tariff liberalisation for intra-TFTA trade with a reduction in non-tariff trade barriers, the projected aggregate net benefit for the TFTA group rises to over US\$3.3 billion per annum. The study also found that significant sectoral production effects are concentrated in a subset of sectors, including sugar production, with backward linkage effects to sugar cane production, beverages and tobacco, and light manufacturing, and – to a lesser extent for some countries – in textiles, metals and metal production, and chemicals.	South Africa is projected to experience a moderate aggregate net welfare gain of 0.15% under the scenario where all intra-TFTA tariffs are eliminated and a more pronounced welfare gain of 0.34% when intra-TFTA tariffs are removed and real transport/transaction costs are reduced on intra-TFTA flows. The strongest sectoral impact on domestic production is projected for sugar products (5.4%) as South Africa's sugar exports are expected to expand by 19% relative to the baseline. The backward linkage effect on domestic sugar cane output is on the order of 1.7%. The percentage changes in South Africa's exports of all other commodity groups are in a low single-digit range, and changes import flows to South Africa are small.

Research paper	Overall impact of AfCFTA	Benefits of AfCFTA to South Africa
The continental free trade area – a GTAP assessment (Jensen and Sandrey 2015)	The gains from reducing transit time delays at customs, terminals and internal land transportation were forecasted to be higher than the gains from reducing non-tariff barriers as well as intra-African tariff elimination. Although the study did not model the expected gains from a combined approach, the combined outcome from all three is expected to be cumulative and to generate very large gains to Africa.	South Africa is forecasted to be a major gainer in the secondary agriculture market and is expected to be the largest gainer in duty-free access for vehicles and their parts across Africa. South Africa is also expected to see an increase in demand for skilled and unskilled labour.
Trade, Growth, and Welfare Impacts of the CFTA in Africa (Chauvin, Ramos and Porto 2016)	The gains from the reduction in non-tariff measures in goods and the improvement of trade facilitation conditions are far greater than the expected gains from intra-Africa tariff elimination. Overall gains are unevenly distributed across African countries, smaller countries that currently have highly protected economies are expected to benefit the most from this economic integration process. The CFTA would also lead to asymmetric changes in trade patterns among African countries and within countries across sectors, which are also sensitive to trade liberalisation modalities. As a general conclusion on the trade impact of the CFTA, it should be noted that intra-Africa trade would intensify between countries which are already trade partners and new trade relations may not emerge significantly.	The findings reveal that AfCFTA is expected to increase trade shares between Nigeria and South Africa. Terms of trade gains are expected to increase with the elimination of tariffs. South Africa is also expected to experience capital accumulation gains.
Boosting Intra-African Trade: Implications of the African Continental Free Trade Area Agreement (Afreximbank 2018)	The welfare and macroeconomic benefits of the removal of all tariffs and lowering of non-tariff barriers far outweigh the economic benefits of the removal of tariffs alone as well as the removal of all tariffs and less lowering of non-tariff barriers. The decomposed welfare effect shows that AfCFTA will likely result in improved allocative efficiency, technological change, improved terms of trade, and an increase in savings and investment.	The removal of all tariffs and lowering of non-tariff barriers is expected to increase South Africa's GDP by 3.74% and to improve household utility by 1.33%.

Research paper	Overall impact of AfCFTA	Benefits of AfCFTA to South Africa
African Continental Free Trade Area: Challenges and Opportunities of Tariff Reductions (Saygili, Peters and Knebel 2018)	AfCFTA will result in significant welfare gains, output and employment expansion and intra-African trade growth in the long run. Gains are expected to be unequally distributed among member states. In the short-run, countries are likely to bear some tariff revenue losses and adjustment costs which may not be distributed uniformly across the African continent. Both costs and benefits are expected to decrease if sensitive products are exempt from liberalisation.	Not identified
The Trade Effects of the African Continental Free Trade Area (AfCFTA): An Empirical Analysis (Geda and Yimer 2019)	The computed trade indicator indices (RCA Index, Regional Orientation Index, Trade Complementarity Index, Export Similarity Index) suggest that there will be limited benefits from the proposed AfCFTA, since African countries are not natural trading partners. Instead, AfCFTA may lead to trade diversion effects, particularly in manufactured goods trade. Conclusively, AfCFTA may not bring significant benefit, especially in the short run, unless it is combined with other relevant policies such as continental strategic industrialisation.	Not identified
The African Continental Free Trade Agreement: Welfare Gain Estimates from a General Equilibrium Model (Abrego et al. 2019)	There are significant potential welfare gains from trade liberalisation in Africa. Given that intra-regional import tariffs are already low in the continent, the bulk of the welfare gains result from lowering non-tariff barriers.	Simulated welfare gains from tariff elimination and non-tariff barrier reduction are higher than the African median welfare gains.

Chapter 4

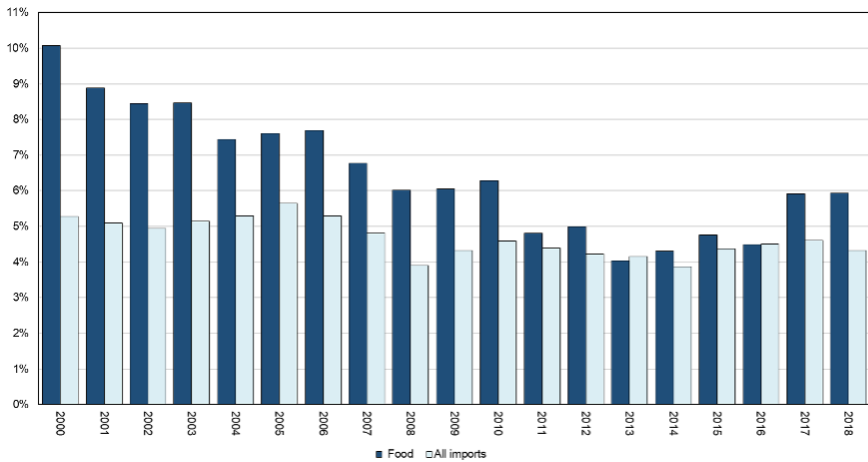
Tariffs on basic foods: evolution and impacts

Neva Seidman Makgetla

1. Introduction

The trade-weighted average of tariffs on food in South Africa declined fairly steadily from 10% in 2000 to 4% in 2013, but then climbed back to 5.9% in 2018, when the latest data was available. As a result, in 2017 and 2018, tariffs on food exceeded the trade-weighted average tariff for all goods by more than 1% (Figure 1).

Figure 1: Trade-weighted average of tariffs on food compared to all imports, 2000 to 2018



Source: World Bank 2021

The increase in import duties on food in the second half of the 2010s presented a paradox. By definition, the tariffs aimed to set a floor under food prices. That in turn placed a burden on lower-income consumers, who spend more of their income on food. As a result, the higher tariffs appeared to run against the national priority of alleviating poverty, which was particularly important in South Africa given its extreme economic inequality.

The increase in tariffs on food also placed a particular burden on monetary policy. Over time, the tariffs tended to increase the relative cost of the affected wage goods. That in turn risked second-round inflationary effects through the impact on wage demands. In contrast, duties on luxury goods risked less of a multiplier effect on prices across the economy.

This chapter seeks to explain the paradoxical increase in food tariffs in South Africa by analysing their impacts and the factors that fuelled their increase. To that end, the paper first outlines the nature of inequality in South Africa and the implications for household food budgets by income level. The second section describes the evolution of duties on major staple foods for the low-income group. The third section reviews the impact of these measures on consumer prices, imports, production and employment. The final section explains the mechanisms behind the rise in tariffs in terms of the political economy of agriculture and the national trade-policy systems.

The analysis here is limited because the agricultural sector does not have a comprehensive statistical system analogous to that for manufacturing and mining. There are only very limited and inconsistent data available on major subsectors within agriculture, especially over time. Information on employment and the number of farms engaged in producing staple commodities is particularly scarce.

2. The tariff debate

Debates about tariffs as a policy to promote economic diversification and growth typically centre on the relative costs and benefits for different groups. Virtually all economists agree that tariffs are worthwhile in cases where they can promote economic diversification or tide local producers over short-term difficulties – although there are substantial differences about how long they can justifiably persist. In contrast, it is difficult to support tariffs that maintain prices for local users above the global norm solely to protect inefficient domestic producers (see Aiginger and Rodrik 2019: 201; UNCTAD 2016: 97; UNCTAD 2018: 6ff). This discourse shows the importance of understanding the impacts of food tariffs on both consumers and producers over the medium to long run, not just the immediate price effects.

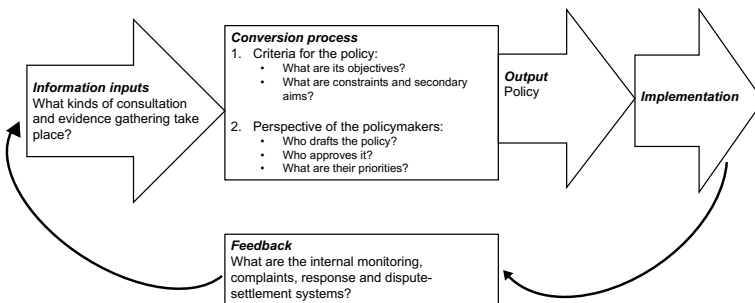
The immediate aim of tariffs is to increase the price of imports relative to domestic products in order to shore up or expand the share of local producers. The obvious cost to consumers is expected to be offset by a variety of benefits to other groups, including:

- maintaining employment and production in uncompetitive industries;
- avoiding imports of sensitive or strategic products, such as medications or arms;
- giving local producers time to gear up to meet intensified or unexpected foreign competition, or to develop new products that will ultimately be competitive internationally; and
- preventing dumping, where foreign producers sell goods below cost in order to drive out competitors, but subsequently increase prices.

On the whole, economists argue that the costs of tariffs are not justified (except possibly for strategic products) unless local producers will ultimately become competitive. In this view, the cost to domestic consumers inevitably exceeds the benefits to companies and workers, who could move into other industries (see Cherif and Hasanov 2019: 59–60). For specific tariffs, the impacts can be evaluated using the socio-economic impact assessment system (SEIAS) approach (see Department of Planning, Monitoring and Evaluation 2015). This exercise is undertaken in Table 1 later in this paper. As a rule, the costs of tariffs are highest where they apply to staple products over the long run; they are least where they affect luxuries or only take effect over shorter periods.

The persistence of tariffs even where they impose substantial socio-economic costs can be understood through a political-economic analysis that considers the relative power of the stakeholders in the decision-making process. In effect, this approach focuses attention on two issues. The first is the political power of the winners and the losers, which depends largely on their ability to mobilise and their access to resources for lobbying and legal challenges. The second issue is the nature of the policymaking process, which inherently empowers some groups rather than others. Figure 2 provides a schematic representation of the elements in the policymaking process that influence the relative power of stakeholders.

Figure 2: The elements of policymaking processes that affect stakeholder influence



Source: Adapted from Seidman, Seidman and Abeyesekere 2001: 131

For economic policy, a core challenge is to evaluate measures that provide substantial benefits for a small number of producers while generating diffuse and often intangible costs for other stakeholders. In these cases, vocal lobbies for the main beneficiaries often overstate the impacts, while other stakeholders do not mobilise effectively. As a result, lobbying is more likely to sway policy decisions, especially if the decision-making process does not require a rigorous quantification

of costs and benefits for all groups. The challenge is particularly acute in South Africa, where economic power remains relatively concentrated in most industries. That makes it easier for companies to mobilise and resource lobbying and legal challenges to ensure favourable policy decisions.

3. Defining staple foods

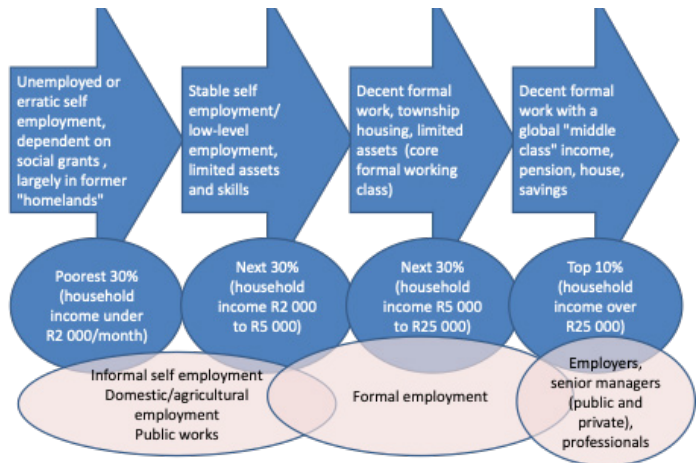
South Africa's extraordinary levels of inequality have heavily affected patterns of food consumption. To identify the critical foods for the poor, this section first describes inequality in South Africa and then the implications for food consumption. On that basis, it reviews the evolution of tariffs on staples for low-income households over the past decade. The analysis finds that higher food tariffs largely targeted staple foods for lower-income groups.

Long before the transition to democracy, economic inequality in South Africa was unusually deep by international standards. This persisted after the advent of democracy in 1994. In the mid-2010s, South Africa was one of three countries that reported Gini coefficients over 0.60; the majority were between 0.30 and 0.49. That said, only around 130 countries reported a Gini at all between 2006 and 2015, and some countries significantly understated the extent of inequality.¹

Inequality in South Africa could be understood in terms of four large groups with divergent economic roles as well as incomes, as illustrated in Figure 3. The poorest 30% of households, with incomes under R2 500 or so a month in 2019, was largely excluded from the formal sector and survived principally from social grants. The next 30% of households had monthly incomes ranging from R2 500 to R6 000. They largely survived off informal work and low-level formal employment, mostly as farm and domestic workers, cleaning and security workers, and employees in light industry and retail. Still, social grants constituted the main source of income for 45% of households in this group. The sixth through ninth deciles covered the core formal working class, employed in manufacturing, mining and skill-intensive services like health and education, as well as those owning small formal businesses. Their incomes ranged from R6 000 to R26 000 a month, with almost 1.5 employed people per household. Finally, the richest decile, with earnings above R26 000 a month, averaged two income-earners per household. The majority worked as managers and high-level professionals, with substantial earnings from investments and business ownership.

1 Angola, for instance, claimed a Gini of 0.3 in the mid-2010s, which would make it more equitable than France, the UK, Germany and a host of other countries, and only slightly more unequal than Sweden, Denmark and Norway. Data here are based on latest World Bank estimates of Gini coefficients for 131 individual countries from 2006 to 2015, out of a total of 217. Countries that do not report a Gini include Saudi Arabia, Qatar, Iraq, both Koreas, Myanmar, Algeria, Kenya, Ghana and Egypt as well as most very small economies and island states such as Palau and the Virgin Islands. Calculated from World Bank 2018.

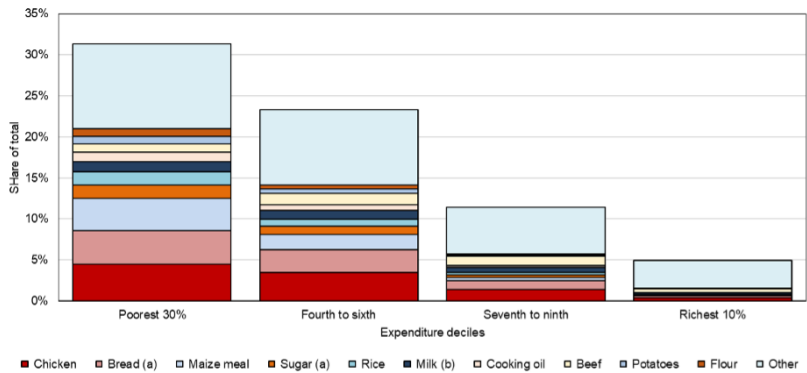
Figure 3: The distribution of income and economic roles



Source: Figures on income levels from Stats SA, ‘General Household Survey’ (2019), interactive database downloaded from Nesstar facility at www.statssa.gov.za in April 2021.

Food expenditure varied widely across these four groups in terms of composition as well as amounts. As Figure 4 shows, in 2014/15 (the latest available official data), food accounted for a third of expenditure by the poorest 30% of households, a quarter for the next 30%, and a tenth for the seventh to ninth decile. For the richest 10% of households, food absorbed only a twentieth of total spending. Yet the richest decile accounted for 19% of total food consumption by value, and 45% of all other household spending.

Figure 4: Share of total expenditure by income group and food type, 2014/15

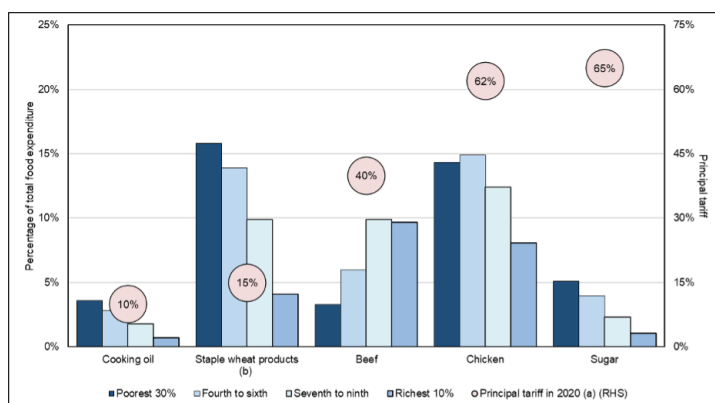


Source: Calculated from Stats SA, ‘Living Conditions Survey 2014/15’, downloaded from Nesstar facility at www.statssa.org in May 2018.

Notes: (a) Brown and white. (b) Fresh whole milk, maas and long-life milk.

As Figure 4 shows, 10 foods accounted for two thirds of food expenditure by the poorest 60% of households, compared to half for the formal working class and less than a third for the richest decile. Of these foods, poultry, wheat, beef, sugar and cooking oil faced above-average tariffs in 2020 (Figure 5). The tariffs ranged from over 50% for poultry and sugar to 10% for cooking oil. Products with above-average tariffs accounted for over 40% of food consumption by the poorest 60% of households. That compared to 36% for the formal working class and 24% for the richest decile. The other foods in the top 10 staples for the poor – maize, rice, milk and potatoes – did not have import tariffs in 2020.

Figure 5: Share of foods in food expenditure by income level in 2014/15 and principal tariffs on each food in 2020/21



Source: Consumption by income level calculated from Stats SA, 'Living Conditions Survey 2014/15', downloaded from Nesstar facility at www.statssa.org in May 2018. Tariffs on sugar and wheat from ITAC, 'Relevant Ministerial Minutes', accessed at tariff investigation page at www.itac.gov.za in May 2021. Other tariffs from SARS, 'Tariff book', accessed at trade statistics page at www.sars.gov.za in May 2021.

Notes:

- That is, the main tariff imposed in 2020. In many cases, including trade with members of the South African Customs Union and the European Union, free-trade agreements meant tariffs were waived for some major exporters to South Africa; in other cases, notably poultry, duties differed by country and even, in the case of dumping, by company. Wheat and sugar tariffs varied more or less on a quarterly basis as international prices fluctuated.
- The tariff on imported flour was 50% higher than the tariff on wheat, but most flour was ground locally. In the mid-2010s, wheat accounted for around a fifth of the price of bread.

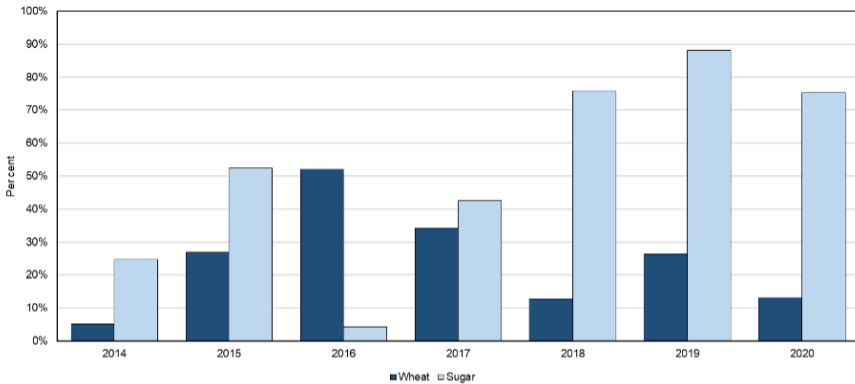
4. The nature of tariffs on staple foods

The tariffs on staple foods took a variety of legal forms, which affected their evolution over time as well as their duration. The general exclusion of agricultural products from international trade agreements enabled long-standing duties on wheat, sugar, beef and cooking oil. In contrast, tariffs on poultry relied on anti-dumping and safeguard provisions for manufactured goods under WTO rules.

Sugar and wheat tariffs were designed to ensure that the price of imports never fell far below domestic production costs, in order to protect domestic producers. To that end, they set a reference price based on an international market, in US dollars.

Whenever the foreign price fell below the reference level, a tariff was set based on a set formula. As a result, the tariff on wheat reached over 50% in the mid-2010s before falling to near zero in 2020. In contrast, sugar tariffs fell to near zero in the mid-2010s but climbed to over 80% in 2018 and 2019 before falling back to 67% in late 2020 (Figure 6). A similar formula applied to maize, but the reference price effectively meant that tariffs were almost never applied.

Figure 6: Effective average annual tariff for wheat and sugar (a)



Source: Calculated from ITAC. Ministerial Minutes. Relevant years. Accessed at www.itac.gov.za in May 2021.

Note: (a) Average over time, not trade weighted.

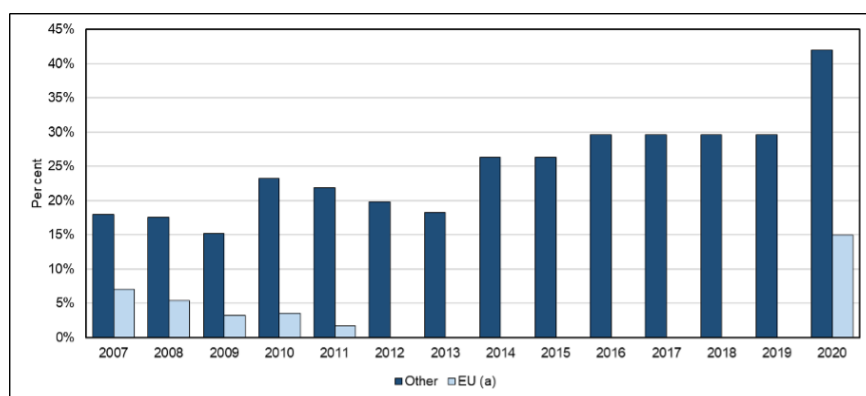
The formulaic prices for wheat and sugar meant that the extent of protection for domestic producers depended on four factors.

- **The level of the reference price.** A higher reference price led to higher tariffs, which were triggered whenever the price fell below it. The reference price for wheat was increased from US\$215 in 2010 to US\$294 in 2014, but was cut to US\$279 in 2018.
- **The exchange rate.** When the rand depreciated, it effectively boosted the cost of imports even if the dollar price remained unchanged. In practice, the value of the reference price in constant rand (deflated by the Consumer Price Index (CPI)) climbed more than 60% from 2010 to 2016. The reduction in 2017 still left it 40% above the 2010 level in real terms. In effect, the rand valuation of the reference price set the floor for domestic prices. (See Bureau for Food and Agricultural Policy 2020: 55)
- **The commodity cycle.** The tariff effectively countered the commodity cycle by placing a floor below import prices during downturns, although it did not set an analogous ceiling during commodity booms.
- **The extent of imports from areas with free-trade agreements.** From 2015 to 2020, two thirds of South African sugar imports came from eSwatini. These imports did not incur duties because eSwatini belonged to the SACU. In contrast, wheat imports came primarily from Europe, and paid the full duty.

The government instituted poultry tariffs from 2013 to prevent dumping and an import surge, rather than using a long-term formula. The amount levied varied depending on the type of poultry imported, with the highest tariffs imposed on whole frozen birds (82% in 2020) and none on fresh meat. Individual quick-frozen pieces, which constituted the bulk of chicken imports, faced a levy of 62% in 2020, up from under 20% before 2010. They were largely sold by small and informal outlets serving lower-income households.

Some major suppliers were exempted from duties as a result of free-trade agreements, although not Brazil, the largest supplier in most years. Bilateral agreements provided some relief for the EU and the US, which were relatively minor sources of chicken imports. Still, they faced import duties of between 15% and 83%, depending on the company and the amount exported. SACU members could export poultry to South Africa duty free, but were not a major source of imports.

Figure 7: Poultry tariffs, 2008 to 2020



Source: From 2007 to 2019, ITC. Market Access Map. Interactive dataset. Accessed at www.macmap.org in May 2021. For 2020, SARS. Tariff Book. Accessed at www.sars.gov.za in May 2021.

Note: (a) EU producers also faced anti-dumping tariffs ranging from 4% to 73%, depending on the company concerned. Anti-dumping tariffs added 13% to US imports.

Finally, frozen beef and cooking oil faced long-standing stable import duties of 40% and 10% respectively. These levies were introduced in the 1990s.

Ultimately, high tariffs on some staple foods largely reflected long-standing protective measures. They increased in the 2010s mostly as a result of the commodity cycle, which saw lower international prices and a stronger rand, triggering higher tariffs. The exception was poultry, the largest single food expenditure by low-income households. It was subject to a rapid escalation in anti-dumping and safeguard tariffs from the early 2010s through the early 2020s.

5. Impact assessment

Evaluating the impact of tariffs on staple foods requires an understanding of both their aims and possible unintended consequences. That is, like any impact assessment, it has to start with an understanding of the underlying theory of

change. In the short run, all tariffs aim to raise prices for domestic producers by increasing the cost of imports. In effect, they remove a source of competition and the associated pressure on local suppliers to reduce their prices. That leads to an immediate social cost since it raises consumer outlays. Proponents argue that a variety of benefits offset this cost, however, at least over time. These benefits fall into three broad categories.

- First, the tariffs could effectively give domestic producers time to improve their competitiveness rather than closing down when imports surge. That would ultimately enable them to reduce prices to consumers while competing successfully against imports. This argument justifies safeguard tariffs in particular, which under WTO rules may only last for three years.
- Second, the benefits of maintaining local production and employment may offset the cost of higher prices for consumers. In these cases, tariffs could remain in place even where there was no reasonable prospect that domestic producers could successfully compete with foreigners. The benefits of this approach are generally more obvious in the case of relative luxuries than for necessities.
- Finally, governments could impose tariffs where they considered production strategic for a country. In these cases, the argument was that without a domestic supply of necessities, the country would be vulnerable to price gouging by foreign producers or to the vagaries of international commodity markets. By extension, a modest increase in prices in the short run to sustain local production was worth the cost to consumers.

Table 1 shows the potential costs, benefits and risks of tariffs on staple foods for the main stakeholders – that is, workers and businesses in the protected value chains; low-income consumers; producers outside the value chain; and the state. It uses the SEIAS approach, which distinguishes impacts by different stakeholders; includes a risk evaluation as well as costs and benefits; and calls for a detailed description of costs, benefits and risks where quantification is not possible or would require excessively heroic assumptions.

Table 1: SEIAS evaluation of tariffs on staple foods

Group	Costs	Benefits	Risks
Low-income consumers	Upward pressure on prices of basic foods, which comprise a significant share of their expenditure.	If affected value chains use the opportunity to improve productivity, they end up with a more reliable and cheaper supply.	Higher food costs lead to higher labour costs and inflation, and ultimately slower economic growth.
High-income consumers	Upward pressure on staple foods, but not a big spending item.	If affected value chains use the opportunity to improve productivity, they end up with a more reliable and cheaper supply.	Higher food costs lead to higher labour costs and inflation, and ultimately slower economic growth.
Employers outside of farm value chain	Upward pressure on staples leads to higher labour costs, higher inflation and interest rates, and slower growth.	If affected value chains use the opportunity to improve productivity, they end up with lower staple prices and labour costs in the long run.	Retaliatory tariffs by trading partners.

Group	Costs	Benefits	Risks
Farm owners	Upward pressure on staples leads to higher labour costs.	Higher profits from bigger sales and/or higher prices, especially as staples characterised by low elasticity of demand.	High prices lead to lower consumption in the long run, since elasticity increases over time. Higher inflation leads to higher real interest rates.
Farm workers	Upward pressure on prices of basic foods, which comprise a significant share of their expenditure.	Avoid retrenchment by farmers unable to compete with imports.	Farming of some products proves unsustainable even with high tariffs, and slower overall growth due to higher labour costs limits options for new employment.
Downstream processing/sales	Upward pressure on input prices.	Reliable supply; lower transaction costs with local suppliers.	Farming of some products proves unsustainable even with higher tariffs, and higher costs of output reduce demand.
Upstream suppliers	Higher labour costs.	Stabilise demand from protected farmers.	Farms end up closing and find it harder to find new opportunities if tariffs slow overall growth.
Government	Anger from consumers, who are however mostly poorly organised; conflict with trading partners.	Avoid lobbying and communication campaigns by farmers' groups and their workers.	Tariffs lead to higher food prices without improving productivity in medium to long run, fuelling voter anger and slowing economic growth.

Source: Author

It was not straightforward to quantify the cost to consumers of tariffs on staple foods. On the one hand, tariffs did not translate directly into higher final prices, which depended on mark-ups by producers and sellers. In the case of very long-standing and stable tariffs, like the 40% import duty on beef, it was hard to find a price that was not affected by the tariff. Sometimes importers managed to evade duties, for instance by re-categorising the goods they imported or undervaluing them to customs. In some cases, they could also shift to untariffed sources, for instance in SACU or the EU. Moreover, a stronger real exchange rate could offset the cost of tariffs for importers. On the other hand, if tariffs change relative prices, households could avoid some of the cost by substituting other goods, for instance eating more maize meal and less bread, or more eggs rather than poultry. By definition, however, in the case of food staples, lower-income households had limited scope to shift away from taxed products.

Table 2 uses a formal theory of change to show the preconditions for tariffs to achieve the first-best outcome of higher productivity in the protected industries. From this standpoint, the upward pressure on domestic prices forms a necessary intermediate step, not an aim in itself.

Table 2: A theory of change for tariffs: objectives, preconditions and blockages

Action	Preconditions for success	Blockages and risks
Tariff introduced	Policymakers agree that benefits outweigh the costs, and WTO rules permit the tariff (as with agriculture, safeguard and dumping duties).	Policymakers see the cost to consumers as excessive relative to the anticipated benefits; WTO rules set time limits or ban tariffs.
Importers raise prices	Importers maintain their margins and cannot find alternative, tariff-free sources; exchange rate does not strengthen; importers cannot evade the tariff.	Importers prefer to maintain market share by reducing mark-ups, or import from tariff-free sources; exchange rate strengthens, offsetting the tariff; importers resort to smuggling or re-categorising or modifying goods to avoid tariffs.
Sales of domestic products increase	Retailers and/or consumers find local producers who can compete with tariffed imports on price and quality; retailers/consumers do not substitute other goods as prices increase on tariffed products.	Retailers/consumers do not increase local purchases because they cannot find enough local producers able to compete with imports even after tariffs are imposed; they find substitutes, depressing the total sales of tariffed goods.
Local producers avoid closure or scale up	Tariffs succeed in reducing import competition without affecting consumer/retail demand. Increase in demand sufficient to stabilise industry.	Tariffs fail to limit purchases of imports or consumers substitute other products. Increase in demand is not adequate, for instance because of high input costs, drought or other cost drivers.
Local producers use space to improve productivity	Producers remain under pressure to improve productivity whether from competitors or government requirements, and have the resources to adopt better technologies.	Local producers gain sufficient market power to charge import-parity prices, passing the full cost of tariffs on to consumers. Producers cannot access required technology due to high costs or lack of investment financing.
Prices on tariffed goods decline in real terms	Local producers are able to improve productivity, do not face an increase in input costs, and do not increase profitability.	Local producers cannot improve productivity or input prices increase, for instance due to exchange rate shifts, upstream market power or tariffs, or drought; they increase their profits rather than reduce prices.

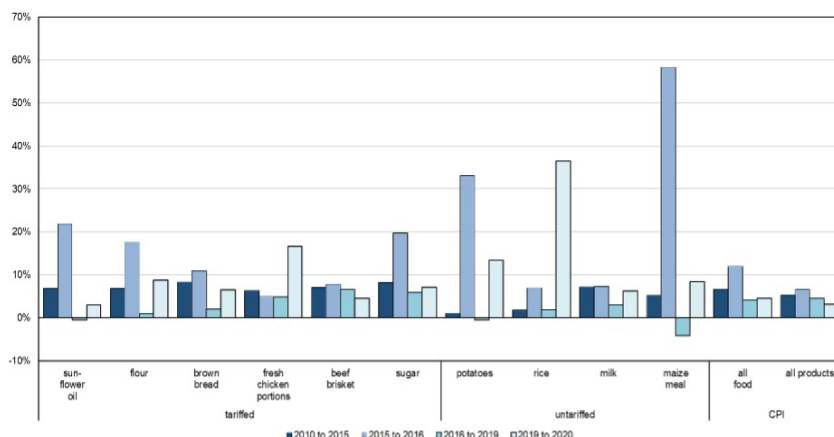
Source: Author

We can model the maximum possible immediate impact of the tariff on consumers if all of the required success preconditions for tariffs described in the theory of change are met. In this worst-case scenario for consumers, the tariffs on staple foods would translate directly into price hikes. As of 2020, that would increase the cost of food for the poorest 90% of households by just over 15%. For the richest decile, food costs would rise less, by 10%, because the tariffed staples make up a far

lower share of their food budgets. The total cost of living would climb by 5% for the poorest 30% of households, mostly because of the very high levies on poultry and sugar in 2020. For the fourth to sixth decile, the tariffs on staples would inflate the cost of living by 4%, and for the seventh to ninth decile, by 1.5%. For the richest decile, the cost of living would only rise 0.5%.

In the event, from 2010 to 2020, food prices rose more rapidly than the overall CPI. Prices for commodities with high tariffs rose faster than other staples, as Figure 8 shows.

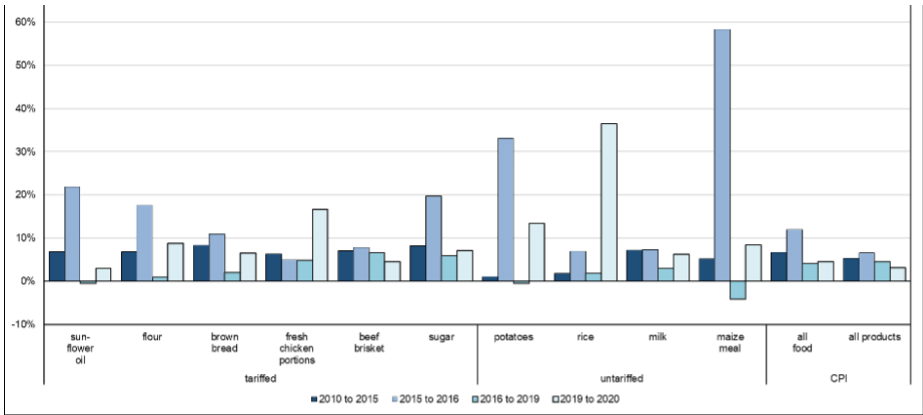
Figure 8: Price increases for staple foods and overall, 2010 to 2020



Source: Calculated from Stats SA, 'Food Prices', Excel spreadsheet downloaded from www.sagis.org.za in May 2021; and Stats SA, 'CPI', Excel table (2008) downloaded from www.statssa.gov.za in May 2021.

Still, while tariffs undoubtedly contributed to prices rising faster for food than for other products, they were by no means the only cause. As Figure 9 shows, food prices increased sharply during the 2015/16 drought, even for products that were mostly imported. Maize was particularly harshly affected. Food prices also spiked during the COVID-19 pandemic in 2020. The reasons included disruptions to both domestic and international supply chains, and the difficulty of redirecting resources from restaurants to retail as higher-income consumers – the mainstay of restaurant dining – stayed home.

Figure 9: Average annual change in prices for staple foods

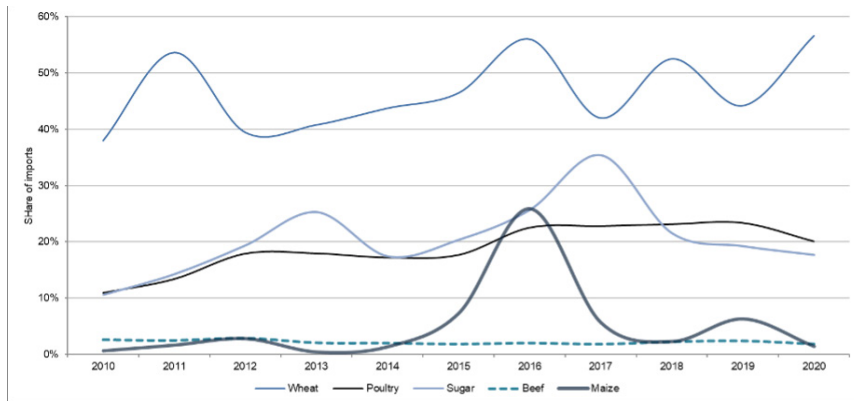


Source: Calculated from Stats SA, 'Food Prices', Excel spreadsheet, downloaded from www.sagis.org.za in May 2021; and Stats SA, 'CPI', Excel spreadsheet (2008), downloaded from www.statssa.gov.za in May 2021.

A second question is whether tariffs helped restrain imports for the affected products. Again, it proved difficult to separate out the impact of trade measures from other factors affecting economic decisions. The costs of imported food commodities were heavily affected by the exchange rate as well as agricultural conditions in South Africa and overseas. Trends in international demand also affected global prices. Moreover, before 2010 the data aggregated all SACU trade together, making it impossible to analyse imports from neighbouring countries.

Overall, as Figure 10 shows, from 2010 to 2020 imports of both tariffed and non-tariffed staple foods fluctuated substantially as a percentage of tonnage available in South Africa. Over the decade as a whole, the share of imports trended consistently downward only for beef. Excluding 2020, which was an outlier because of the pandemic, the share of imports in local consumption climbed from 38% in 2010 to 44% in 2019 for wheat; from 11% to 20% for poultry; and from 11% to 19% for sugar. For maize, which did not face an effective tariff, imports rose from an average of 1.5% of consumption in the three years before the 2015/16 drought to 3.8% in the three years after it. Imports of beef fell from 8% in 2000 to 3% in 2011 and 2% in 2019, although the tariff remained unchanged.

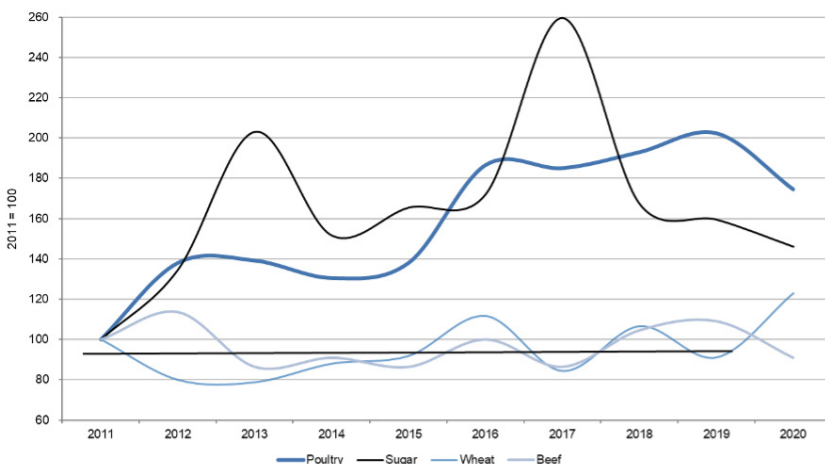
The substantial fluctuations in the share of imports in domestic consumption made it virtually impossible to define reliable long-term trends. Moreover, without tariffs the share of imports might have increased more rapidly and consistently. Still, the lack of a clear downward trend in imports linked to tariffs indicates that while they set a floor under prices over time, they did not lead to a substantial increase in domestic production.

Figure 10: Share of imports in domestically available staple foods, 2010 to 2020 (a)

Source: Calculated from DALRRD. Abstract 2021. Excel spreadsheet. Downloaded from www.dalrr.gov.za in May 2021; and ITC. TradeMap. Interactive dataset. Accessed at www.trademap.org in May 2021.

Note: (a) Domestically available stock is assumed to equal domestic production plus imports; exports are also included. Cooking oil is excluded because data are available only for oilseeds, not for production of oil by volume.

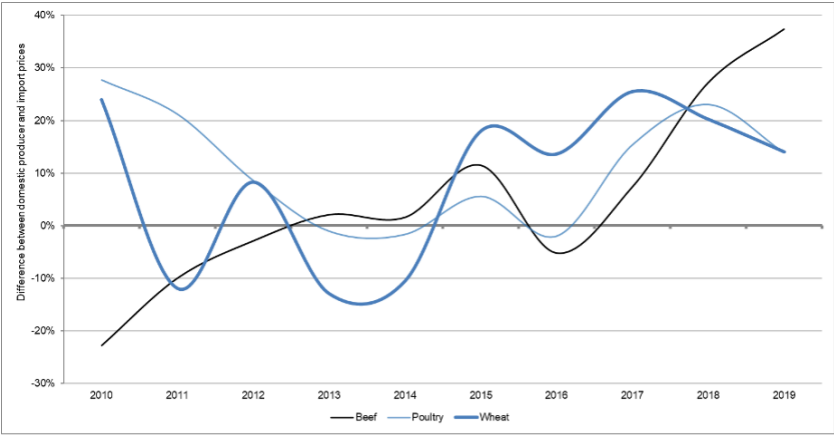
In volume terms, import trends were even more ambiguous (see Figure 11). Poultry imports generally increased over the period, despite the steady rise in tariffs. They dipped sharply from 2019 to 2020, which could reflect the substantial increase in tariffs in that year but was likely also affected by the COVID-19 downturn. In contrast, sugar imports in tonnes initially increased and then stabilised except in the drought year of 2015. Around two thirds of sugar imports came from eSwatini, however, which meant that they were duty free. Both wheat and beef imports initially shrank, but then tended to increase for the rest of the decade. Maize imports soared during the 2015/16 drought. In 2015 and 2016, they averaged 4 million tonnes, 20 times the average for the preceding four years. From 2017 to 2020, they fell back to 1.25 million tonnes a year.

Figure 11: Indices of imports of tariffed staples in volume terms (2011 = 100)

Source: Calculated from DALRRD. Abstract 2021. Excel spreadsheet. Downloaded from www.dalrr.gov.za in May 2021; and ITC. TradeMap. Interactive dataset. Accessed at www.trademap.org in May 2021.

A core justification for tariffs was that they would give local producers space to become more competitive. In practice, there was no evidence that this occurred. Data are available for wheat, poultry and beef. For all of these products, in rand terms the price for tariffed staple foods climbed faster than import prices in recent years, as Figure 12 shows. Moreover, from 2010 to 2019, the producer price for poultry and wheat rose 10% faster than the CPI in real terms. For beef, it rose 30%.

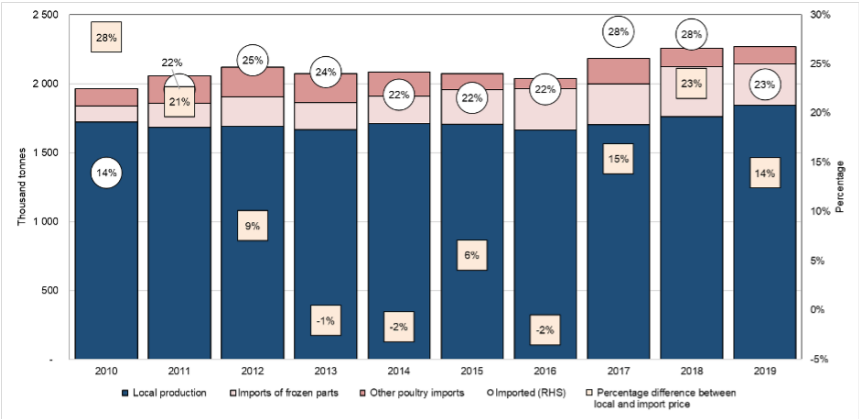
Figure 12: Difference between domestic producer price and unit price of imports (positive percentage is excess of domestic price over import price)



Source: Producer prices from DALRRD. Abstract 2021. Excel spreadsheet. Downloaded from www.dalrr.gov.za in May 2021. Unit price from ITC. TradeMap. Interactive dataset. Accessed at www.trademap.org in May 2021.

For poultry, the increase in domestic producer prices relative to imports at the start and end of the 2010s coincided with a rising share of imports in local poultry consumption, as Figure 13 shows.

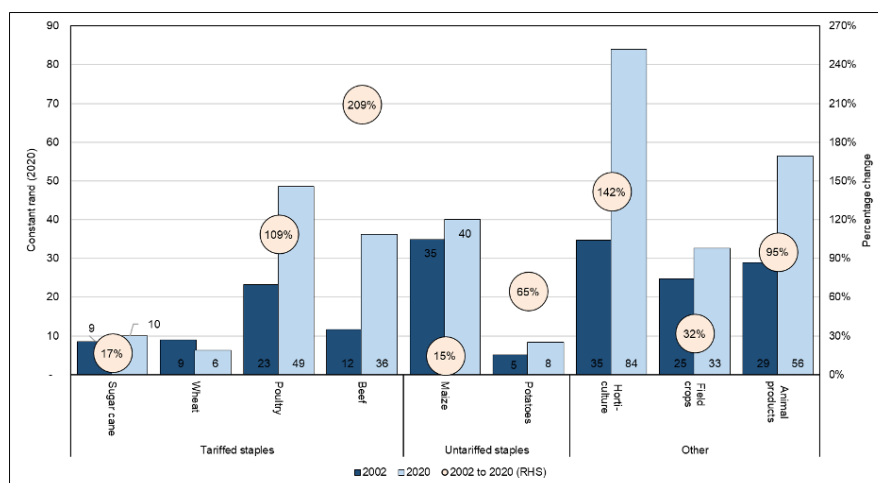
Figure 13: Poultry imports in thousand tonnes and as a percentage of total consumption, and difference in price between imports and local product



Source: Local production and producer prices from DALRRD. Abstract 2021. Excel spreadsheet. Downloaded from www.dalrr.gov.za in May 2021. Imports and unit price from ITC. TradeMap. Interactive dataset. Accessed at www.trademap.org in May 2021.

The ultimate test of competitiveness was the relative growth of protected staple producers compared to other staples and the rest of agriculture. In the event, growth in the value of production varied substantially by product from 2002 to 2020, as Figure 14 shows. Meat production expanded rapidly, whereas wheat and sugar stagnated.

Figure 14: Value of agricultural sales by major commodity in constant (2020) rand (a), seasons ending 2002 and 2020

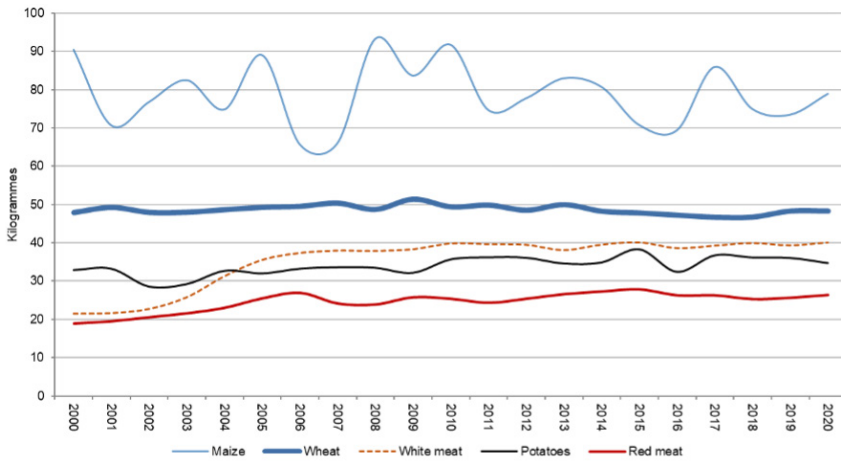


Source: Calculated from DALRRD. Abstract 2021. Excel spreadsheet. Downloaded from www.dalrr.gov.za in May 2021.

Note: (a) Deflated with CPI rebased to 2020.

The differential in growth by agricultural product reflected changes in domestic demand and export capacity more than tariffs. The post-1994 era saw a shift in domestic demand away from starches to protein, fruit and vegetables, especially when the economy and employment climbed relatively rapidly during the international metals price boom that lasted from the early 2000s to 2011. As Figure 15 shows, the result was a substantial divergence in per-person consumption of staple foods. Poultry consumption doubled from 2000 to 2021, although most of the increase occurred during the commodity boom, while red meat grew 20% and potatoes climbed 15%. In contrast, per-capita consumption of maize and wheat was essentially flat.

Figure 15: Consumption of staple food per person, in kilogrammes



Source: DALRRD. Abstract 2021. Excel spreadsheet. Downloaded from www.dalrr.gov.za in May 2021.

Finally, the impact on employment of tariffs on staple foods was inherently contradictory. The tariffs raised the cost of wage goods and consequently put upward pressure on pay. At the same time, they aimed in part to protect jobs on farms that produced the tariffed products.

The protected jobs were relatively limited in number as well as being poorly paid. The available data suggest that taken together, production of the main protected staples – wheat, sugar, poultry and beef – involved employment of around 300 000 workers, or over a third of all farm workers but only 2.5% of total formal employment in the late 2010s. According to DALRRD estimates, wheat production had 30 000 employees; poultry 45 000; sugar 85 000; and beef 140 000.² Information on employment over time by agricultural product is not available. Overall, however, formal agricultural employment fell from over a million in 1990 to 500 000 in 2010, then climbed back over 700 000 through 2019.³ Agricultural employment was relatively poorly paid, with a median income of R3 000 a month in 2019 compared to R4 000 in the rest of the formal sector. Moreover, a substantial share was seasonal or temporary.

Industry representatives and the Department of Agriculture argued that looking only at farm labour understated the impacts on total job creation since it ignored employment in food processing, retail and restaurants. From the standpoint of tariff protection, however, these linkages were not relevant. Downstream industries would be able to produce, and indeed might grow faster, in the absence of tariffs designed to raise the cost of their inputs.

² According to DALRRD profiles of the relevant value chains from 2018. Accessed at www.dalrr.gov.za in May 2021.

³ Calculated from Quantec 2021.

In short, the available data indicate that tariffs on staple foods contributed to the relatively high food prices through the 2010s. That in turn had a particularly negative impact on low-income households, which aggravated the poverty and inequality already prevalent in South Africa. But the tariffs had at best highly varied outcomes in terms of promoting more efficient production in the protected industries. Sugar cane and wheat, in particular, saw only very slow expansion despite substantial protection against imports.

6. The political economy of tariffs

Even if they ultimately succeed in boosting local production, tariffs on staple foods have an inherently regressive effect. That poses the question of why they were so prevalent in South Africa as of 2021, despite the government's stated commitment to reducing inequality and raising living standards for low-income households. This paradoxical outcome emerged from the way agriculture was organised, on the one hand, and from the nature of decision-making systems on tariffs in government, on the other.

6.1 The organisation of the agricultural sector

South Africa was an outlier among upper-middle-income economies in its reliance on high-technology commercial farming, with very limited smallholder and subsistence agriculture. It gave a relatively small number of well-organised and -capacitated farmers substantial influence over government policies based largely on lobbying and media campaigns as well as promises to avoid job losses and open space for black producers. From this standpoint, the tariff system partly replaced the system of domestic price supports that was eliminated in the mid-1990s with the transition to democracy, after being in place for decades.

The number of commercial farmers in South Africa stabilised at around 45 000 in the 2010s, with around a third being African.⁴ The number of commercial farms was around 50% lower than in 1994. The decline largely reflected the loss of various direct and indirect government subsidies, which in the late 1990s led to extensive consolidation of farms and, in some areas, a shift into game farming.

Before the mid-1990s, domestic pricing systems and regulatory frameworks that ensured cheap water, labour and land all contributed to growth in grain and meat production for domestic and regional markets. South Africa also exported citrus and other horticultural products overseas, but these industries were constrained by resistance from consumers and foreign governments as a result of apartheid.

After 1994, commercial farming effectively split into two large groups. Most farmers engaged in production of grain, meat and sugar almost exclusively for the domestic and regional market. A minority pursued more intensive, varied and innovative horticultural production, with a focus on overseas exports as well as meeting high-end domestic and regional demand. Grain, sugar and meat producers increasingly saw tariffs as a way to maintain their market share as the economy

4 Calculated from Stats SA 2019.

opened up with the transition to democracy (see Bureau for Food and Agricultural Policy 2020: 22). This strategy grew in importance after the government eliminated price and other subsidies in the mid-1990s and from the early 2000s instituted a rising minimum wage for farm workers. In contrast, fruit and vegetable farmers had to compete on export markets, so they had limited interest in tariffs. They looked to the state primarily to support their access to water, transport and phytosanitary measures.

Agriculture included thousands of farmers for almost all major outputs except poultry. That should in theory lead to competitive output markets with cost-plus pricing. In practice, however, import-parity pricing largely prevailed except in the main export industries, including maize as well as fruit and wine production. A core reason was that the government explicitly aimed to strengthen farmer organisations and market information after it eliminated direct subsidies. In both red meat and grain production, the government helped establish market information systems that generated detail on import-parity but not cost-plus prices. Table 3 shows the structure of farming for major products and the main farmer and market-information organisations.

Table 3: Governance for major crops

Sector	Commercial farmers (a)	Organisations
Maize	9 000 in maize Fewer than 4 000 in wheat	The South African Grain Information Service was established by the state after deregulation to provide information on international and import prices (not on cost-plus prices). GrainSA produces market information, provides technical support and engages with the state on behalf of farmers. Various other organisations represent producers of specific commodities.
Dairy	Fewer than 2 000	Milk Producers Organisation
Poultry	Poultry is vertically integrated, dominated by three companies that have their own farms and also contract out some production	SA Poultry Association was established in 1904. It provides information on production and prices, and representation in engagements with government. It played a central role in lobbying for poultry tariffs in the 2010s.
Red meat	22 000	The Red Meat Industry Forum was established after deregulation to engage on regulatory frameworks and provide market information to farmers. The Red Meat Producers Organisation engages on behalf of farmers, including on tariffs and imports generally.
Horti-culture	Around 8 000 farmers	Strong associations for wine, citrus and deciduous fruit producers and exporters

Sector	Commercial farmers (a)	Organisations
Sugar	Sugar company estates produce 7%; 680 commercial farmers produce 65%; less than 20 000 small outgrowers grow the rest	The SA Sugar Association is a statutory body that provides information on production and prices, and represents farmers and millers in engagements with government. SA Canegrowers represents farmers in engagements around tariffs, and campaigns against the sugar tax.

Source: Information from sector reports by Who Owns Whom, latest version for sector; webpages for associations; and DALRRD value chain profiles, 2018.

High levels of concentration in the food value chain in South Africa are often associated with greater use of modern technologies, scale production, quality controls, international competitiveness, and better pay for workers. But they also contribute to the use of market power to inflate prices and campaign for higher tariffs. From the early 2000s, the Competition Commission found cartel pricing in a number of food processing industries. It charged collusion in bread baking, maize and wheat milling, grain storage, dairy, poultry and pelagic fish. The Commission did not succeed in every case, but it reached large settlements around bread and cereals, among other industries (Mncube et al. 2016: 8).

In contrast to other sectors that lobbied strongly for tariffs, commercial farmers could not count on union support. In 2019, less than 10% of farm workers belonged to a union, compared to a third in the rest of the formal economy. Workers in poultry, which was dominated by a few large companies, were better organised. In the late 2010s, their unions lobbied effectively for tariffs when employers threatened to close down farms.

Commercial farmers were, however, able to leverage support from actual and potential black smallholders, which improved their legitimacy in demanding tariff protection (see for instance Dubb 2014; PMG 2019). Virtually every farmer association promoted some kind of small producer association. They often promised to support small producers in return for tariffs, for instance through improved conditions for contract producers in sugar and poultry.

In short, tariffs on staple foods reflected the adaptation of commercial farming to deregulation amid the opening of the economy in the 1990s. In this context, export crops focused on marketing and increasing competitiveness. Producers shifted between products fairly quickly as national and global demand changed. In contrast, where producers aimed mostly to meet demand in South Africa and the region, they often sought to limit import competition in order to sustain local production, even if that only effectively slowed a longer run decline or increased the cost of basic foods for the majority of households.

6.2 The tariff decision

In South Africa, in line with WTO guidelines, tariffs were set by an independent regulator, the International Trade Administration Commission (ITAC), in line with national policies and objectives. ITAC was expected to consider the costs and

benefits for stakeholders, including consumers, before granting a tariff. In practice, however, the decision-making system effectively empowered more organised groups at the cost of those less able to engage and lobby. Moreover, it did not entail a consistent and transparent presentation of the evidence on the anticipated costs, benefits and risks of new or modified tariffs to the various stakeholders.

ITAC was required to test applications for tariffs in terms of the costs and benefits along the relevant value chain as well as for final consumers. From the mid-2010s, it argued that a developmental trade policy required higher protection for local producers, especially against unfair dumping, destabilising import surges and other forms of subsidy to foreign producers. It argued that additional factors affected agriculture, including:

- various forms of support provided to farmers in most countries, including in the global North, which reduce international prices at the cost of South African farmers;
- a perceived lack of bargaining power on the part of farmers, which ITAC argued were “price takers in the food value chain”;
- fluctuations in global prices; and
- the impact on consumers, “in particular the poor” (ITAC 2020).

In practice, however, ITAC did not publish a systematic analysis of the impact of agricultural tariffs on the poor. For the increase in the poultry tariff in 2019, it did not publish a cost-benefit analysis of any kind. It noted it had commissioned a study by the National Agricultural Marketing Commission, but did not publish it or provide the main conclusions. Instead, it noted the potential for costs to consumers, but made no attempt to quantify them against the anticipated benefits (ITAC 2019: 15).

As of the early 2020s, ITAC began to argue strongly that it was insisting on a “principle of reciprocity,” to ensure that businesses provided social benefits in return for trade protection. In particular, it sought to ensure increased investment and employment, but did not mention prices to domestic consumers or users. It also aimed to provide more regular reviews of tariffs going forward (ITAC 2020).

In practice, the ITAC system opened the door to well-capacitated business organisations, like those found across commercial agriculture, as well as business associations representing downstream processors. In contrast, consumer groups were typically poorly organised and lacked an advocate in the policymaking system. But the process of engagement on tariffs was highly formalised and legalistic, with extensive use of experts. It did not require that ITAC reach out to consumer groups, empower them around the potential costs and benefits of the measure, and provide space for them to voice their views.

This situation emerged around the decision to increase the tariff on poultry in 2019. A leading Johannesburg law firm lodged and advocated for the measure on behalf of the South African Poultry Association. The Association also submitted commissioned research from business consultants. As noted, ITAC commissioned

but did not publish a report by the National Agricultural Marketing Commission. Opposition to the application came from retail and restaurant chains as well as an importers association. No civil society or advocacy groups participated.

While the ITAC report approving the tariff increase summarised the arguments for and against, it did not provide any evidence to test them or seek to quantify the costs and benefits for different groups, including low-income households. It noted that the poultry producers had committed to raising production, investment and employment between 2019 and 2021. It did not, however, specify targets for these commitments or include any promise to avoid price increases for downstream users (see ITAC 2019).

In short, while the ITAC process aimed to give voice to stakeholders, it effectively included only relatively well-resourced and -capacitated formal business groups. That in turn meant that lower-income households were effectively excluded from the deliberations. Moreover, because ITAC did not seek to quantify or define in detail the costs and benefits to consumers as well as producers, it did not have to justify its decision to adopt the higher tariff on a staple food for working class and poor households.

7. Conclusions and policy implications

Significant and long-standing tariffs on most of the main staple foods for lower-income households in South Africa constituted a regressive tax that contributed to higher costs without visibly promoting more sustainable and competitive production of basic necessities over the past decade. The limited extent of statistics on agricultural subsectors (in contrast to both manufacturing and mining) prevented a more detailed analysis than the one provided here. Still, the available information on the extent and aims of tariffs on staple foods underscores the need for policy reforms. These reforms include the following.

First, all tariffs on staple foods – specifically wheat, sugar, poultry, red meat and cooking oil – should be urgently reviewed in terms of their impact on both consumers, by income level, and producers. The analysis should use the SEIAS approach outlined in section 3, which requires evaluation of costs, benefits and risks for different stakeholder groups; and detailed description of impacts where quantification is not possible.

Second, ITAC should require commitments from tariff beneficiaries to increase prices only in line with CPI for the duration of the tariff, unless those beneficiaries can provide evidence of extraordinary circumstances.

Third, ITAC should publish the evidence it uses to justify increases in tariffs on staple foods in far more detail, with an estimate of the likely costs and benefits provided in a SEIAS approach.

Finally, government should review both the wheat and poultry industries, which are the most important tariffed wage goods, to determine an end-state that does not depend on high tariffs to survive.

Other micro policies

Chapter 5

Building back fairer from the COVID-19 pandemic in South Africa: Some first-step reforms in an era of fiscal constraints

Channing Arndt, Robert J. Davies, Sherwin Gabriel, Laurence Harris, Michael Sachs and Dirk van Seventer

1. Introduction

On 27 August 2019, National Treasury released a document titled ‘Economic transformation, inclusive growth, and competitiveness: A contribution towards a growth agenda for the South African economy’. Perhaps as a response to the long title, the document became popularly known as “the 77-pager”. No document that proposes a substantial reform economic programme is universally embraced; however, the 77-pager did receive some important plaudits. For example, The Economist magazine described it as “replete with sensible ideas that could form the basis of a new ‘growth strategy’” (The Economist 2019). National Treasury (2019) estimated that the proposed reforms would, following implementation, raise potential growth by 2.3 percentage points (above the baseline) and create over 1 million additional jobs.

Unfortunately, only about six months later the most severe global pandemic in a century fanned out quickly across the globe. An unprecedented economic contraction accompanied the public health measures designed to slow the spread of the COVID-19 disease. Due to a combination of strict public health measures imposed and the structure of the economy, the South African economy contracted more than most (Robinson et al. 2021). Arndt et al. (2020) estimated that the full implications of the lockdown reduced the flow value of gross domestic product (GDP) by about 34%, likely in late April or early May 2020. This steep decline was mostly the consequence of indirect or knock-on effects that followed from the direct effects of restrictions on economic activity. For example, the direct effect of shuttering restaurants was magnified by the knock-on effects of vastly reduced demand from restaurants for trade, transport, electricity and so forth.

These magnification effects also operated in reverse so that economic activity recovered relatively rapidly as lockdown restrictions were eased, as extraordinary government measures – notably social protection – were implemented, and as people began to adapt to a new normal. However, containment of COVID-19 and a complete return to normal levels of economic activity are incompatible. The data suggested that, by the fourth quarter of 2020, the economy was operating at around 4 percentage points lower than it had been the year before (van Seventer et al. 2021)

– a very severe economic contraction by historical standards. Importantly, both the nature of the initial shock and the nature of the recovery appeared to have broadly accentuated South Africa’s already stark inequalities (Arndt et al. 2020; van Seventer et al. 2021). For example, Spaull et al. (2021: 7), using data from the National Income Dynamics Study – Coronavirus Rapid Mobile Survey (NIDS-CRAM), pointed to “drastic increases in household and child hunger” with rates remaining “stubbornly high” through April and May 2021.

With a concerted effort to vaccinate as much of the South African population as possible as quickly as possible and with some luck (for example, no new variants that evade the vaccines), South Africans could reasonably hope that the novel coronavirus will pose substantially reduced risk of death or severe illness to most of the population sometime during the first quarter of 2022. Van Seventer et al. (2021) focused on this near-term period – the next six to eight months. Here, we focus on the period following broad availability of vaccines, with all who choose to make use of the protection offered by the vaccines being able to do so. This period is likely to represent a new normal characterised by ongoing but much milder steps to preserve public health (compared with the second half of 2020) and by learnings from the pandemic era, such as revised modes of working. The new normal will not be a complete reversion to the patterns of living and working that prevailed in 2019, but it will be the environment in which growth and development must occur if growth and development are to occur at all.

This chapter focuses on select policies that can rapidly improve growth prospects, reduce inequities and lead towards the realisation of longer-term development objectives while recognising the presence of significant fiscal constraints. The 77-pager provides a valuable reference and starting point. The ideas in this chapter complement policy ideas developed elsewhere in the book, focused on monetary policy (Chapter 1), labour markets and unemployment (Chapter 2), trade policy and exports (Chapters 3 and 4) and industrial policy (Chapter 5). In a separate policy bulletin, Loewald, Makrelov and Wörgötter (2020) address the electricity sector, which has been a clear constraint on growth.

It is important to highlight that the 77-pager began with a deeply sobering view of economic performance, trends and prospects under business as usual in 2019. The then Minister of Finance, Tito Mboweni, began his foreword to the document with the statement: “We are facing a slow-burn economic crisis.” Today, the economic situation has worsened in essentially every measurable dimension. If there is a silver lining to this terrible pandemic from the perspective of the South African economy, it might be found in an enhanced willingness to implement reform measures designed to rekindle growth, improve equity and drive sustainable development in a context of limited fiscal space.

To this end, this chapter first assesses the overall macroeconomic picture, emphasising the fiscal consolidation that is currently anticipated. Next, it considers three areas: skills; food systems, nutrition and health; and urban structure. In each area, we first briefly consider long-term perspectives and then turn attention to

high-return positive steps that can be implemented in the very near term and are consistent with the realisation of a positive long-term vision. We find that much greater openness to immigration of highly skilled and experienced workers (and their families) stands out as a rapidly implementable policy that offers strong potential to stimulate growth, create jobs and reduce inequality at low cost to government and with low risk.

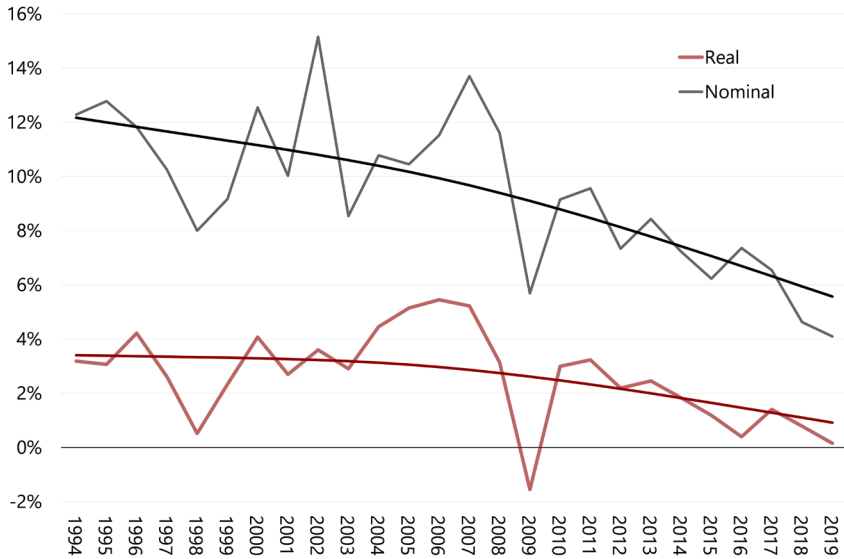
With respect to food systems, nutrition and health, we point to a solid basis for optimism about growth and employment prospects in the long term. We also highlight the potential benefits of a holistic perspective that includes implications for nutrition and health. Turning to the very near term, we underline the need to reduce the policy uncertainty associated with land reform. In this respect, we recommend reforms be considered that focus in the near term on favourable dryland areas that can be equipped with supplemental irrigation, with the goal of enabling these areas to specialise in producing higher-value products. Judicious planning of water resource use must accompany this policy, but this is within South Africa's capabilities.

Turning to urban structure, we note the persistence of the spatial inequities entrenched by the apartheid era. With tight fiscal constraints on government investment that are likely to extend to the medium term, we seek to refocus policy on measures designed to increase efficiency and equity outcomes based on existing infrastructure.

2. Macroeconomic position

In South Africa's case, the recovery cannot be thought of as a return to the path of growth that existed prior to the COVID-19 shock. The pandemic came on the back of a severe recession, which was itself the low point of a path of decelerating growth that had lasted for nearly a decade (see Figure 1). New structural conditions are needed to enable growth in productivity. But the increasingly anaemic aggregate demand that characterised the pre-COVID status quo also needs to be addressed.

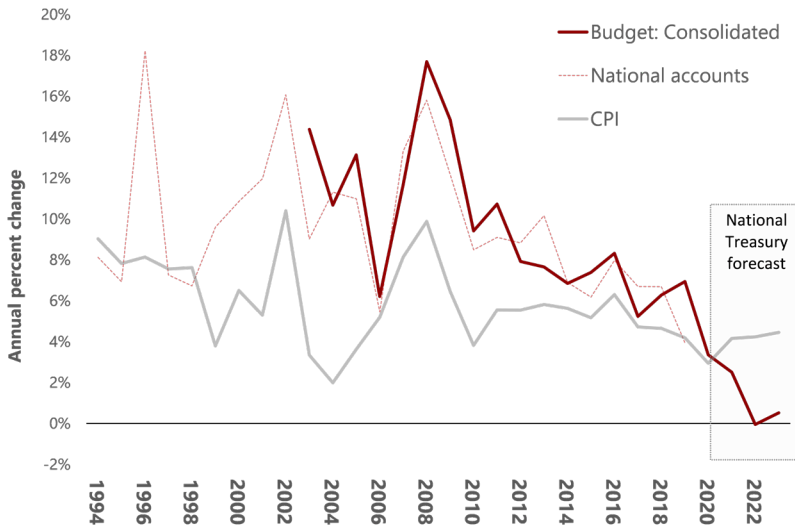
Figure 1: GDP growth – real and nominal (1994–2019)



Source: SARB, IHSMarkit and authors' calculations

Note: Trendlines are HP filters

On top of the long-run slowdown in nominal growth, aggregate demand will face unprecedented headwinds from the planned contraction in government consumption. The fiscal consolidation proposed by government looks to be the largest and most sustained in South Africa's history (see Figure 2). Projections in the 2021 *Budget Review* indicated zero growth in government consumption, which accounts for more than 20% of nominal GDP, over the next three years. Furthermore, National Treasury has indicated that further efforts to achieve a primary surplus may need to continue beyond this planning horizon to achieve debt stabilisation. The substantial literature on the size of the fiscal multiplier in South Africa is inconclusive. But, unless other elements of aggregate demand more than compensate for the stagnation of government consumption, it is difficult to envisage a sustained recovery.

Figure 2: Nominal growth in government consumption (1994–2023)

Source: SARB, Stats SA, IHSMarkit, National Treasury, authors' calculations

An important offsetting factor will be the return of household consumption as vaccinations enable South Africans to emerge from lockdown conditions. Added to this, an upturn in the global commodity cycle looks set to boost incomes as export prices rise. The effects of terms of trade buoyancy on nominal GDP growth and financial conditions may slow the rise in public debt, possibly creating room for some easing of the fiscal constraint.

But cyclical improvements in household consumption and the terms of trade are likely to be temporary. This points to the need for concerted action to accelerate capital formation and underlying productivity growth. If the consolidation succeeds in stabilising the path of public debt, longer-term interest rates can be expected to ease. But short-term rates are likely to rise over the medium term as (global and domestic) monetary policy normalises. And, in any case, easier financing conditions are unlikely to translate automatically into investment demand.

In the post-apartheid era, government has tended to emphasise public investment as a driver of aggregate demand. This now faces two constraints. First, fiscal constraints will limit the capacity of the public sector to finance investment. The use of concessional financing from global institutions might ease this constraint. The prospects for this are particularly strong where public investment is required to support decarbonisation – for instance, extending the electricity transmission grid to accommodate renewable sources. Second, and probably more important, are the financing and institutional challenges faced by public institutions. Eskom, the state-owned electricity utility, faces obvious constraints on its own balance sheet. The passenger rail agency has been unable to galvanise a strong investment

programme despite extensive fiscal support over the last decade. The road construction agency may be ready to deliver, but the use of user-charges to finance road construction appears unlikely in the wake of the e-tolls debacle. It will take time and energy to resolve these and myriad other challenges in the public investment space.

This points to the need for a concerted effort to pursue sources of growth that are not dependent on large-scale public investment. Indeed, achieving a durable growth recovery requires an acceleration of demand from private sources that fully offsets fiscal consolidation. We turn now to policies in three areas that meet these criteria.

3. Skills

3.1 Long-term perspectives

In the post-apartheid era, one of government's foremost goals has been to provide quality educational opportunities for all. An important area of success has been in higher education. Beginning from low levels in 1993, enrolments of previously disadvantaged groups grew rapidly in the immediate post-apartheid period (Dell 2011). Since 2005, tertiary enrolments, particularly of black Africans, have continued to grow rapidly, increasing by about 4.6% per year between 2005 and 2017, bringing total enrolments of black South Africans in tertiary education to more than 750 000 in 2017, or about three quarters of total enrolment (Essop 2020). Even if one restricts one's view to the more prestigious research-intensive universities, the gains remain impressive. Between 2005 and 2017, enrolments of historically disadvantaged groups at these institutions grew at an annual rate of 3.4%. These groups accounted for about two thirds of the student body in research-intensive universities in 2017 (Essop 2020).

Further, evidence is accumulating of an improvement in the quality of primary school education. Drawing from three international testing programmes – the Trends in International Mathematics and Science Study, focusing on Grade 9; the Southern and Eastern Africa Consortium for Monitoring Educational Quality, focusing on Grade 6; and the Progress in International Reading Literacy Study, focusing on Grade 4 – substantial progress appears to have been registered from about 2001 to 2016. While there remains ample room for improvement, Gustafsson (2020) finds that progress in improving quality, as measured by performance on these tests, has been rapid by international standards.

Overall, the long-term perspective in terms of skills is reasonably clear. South Africa has high-quality universities. Access to university education for previously disadvantaged groups has greatly improved. At primary and secondary levels, apartheid left a legacy of very low-quality education. After decades of substantial effort, there is now evidence of improving educational quality, albeit from a very low base. Developing a primary and secondary school system that delivers an increasing number of adequately prepared students to a high-quality university

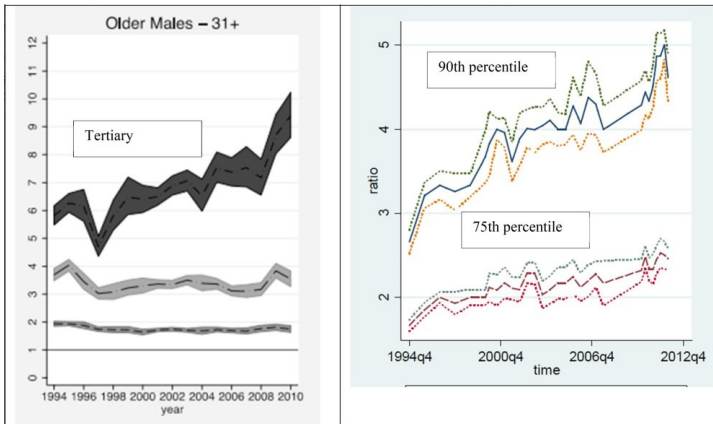
system remains a highly relevant policy goal. This is, of course, a lot easier to say than to do. It is also a very long-term project.

3.2 Growth and skills, and skills and growth

Focusing on the present, there are two notable problems. First, and not surprisingly, economic growth since about 2008 has been insufficiently rapid to absorb growing numbers of people with tertiary education. In the final quarter of 2008, the unemployment rate among workers classified by Statistics South Africa as tertiary educated stood at 6%. In the final semester of 2019, just prior to the outbreak of the pandemic, that rate had risen to about 15% (Stats SA 2021). This understates the problem. The number of people with tertiary education who are not economically active more than doubled compared with 2008, driving labour force participation for people with tertiary education down to about 85% in 2019 compared with about 90% in 2008 (relative to the population aged 65 or younger with tertiary degrees). Furthermore, it is likely that increasing numbers of people with tertiary education accepted jobs for which they are overqualified (underemployment). Data from Statistics South Africa indicate that unemployment is strongly concentrated among younger age cohorts, including those who are tertiary educated. Eventually, these highly educated people may either become economically inactive or join the ranks of the underemployed.

Second, evidence abounds of a profound shortage of highly skilled and experienced labour. Unemployment among highly skilled workers with experience tends to be very low almost everywhere, including in South Africa. If wages are taken as a reasonable indicator of the balance between demand and supply, then rising wages would indicate strong demand pull relative to supply. This is exactly what is observed in the South African context.

Panel A of Figure 3 is taken from Branson and Leibbrandt (2013). The top line in the figure, labelled 'Tertiary', shows the ratio of the wages of employed males aged 31 and over with tertiary education to the wages of employed males aged 31 and over with primary school education or less. This ratio can be taken as a proxy for the ratio between the wages of highly skilled and experienced workers and the wages of unskilled workers. The middle and bottom dashed lines represent those workers with complete secondary and incomplete secondary education, respectively, once again relative to those with primary school education or less. The dark bands illustrate the 95% confidence interval.

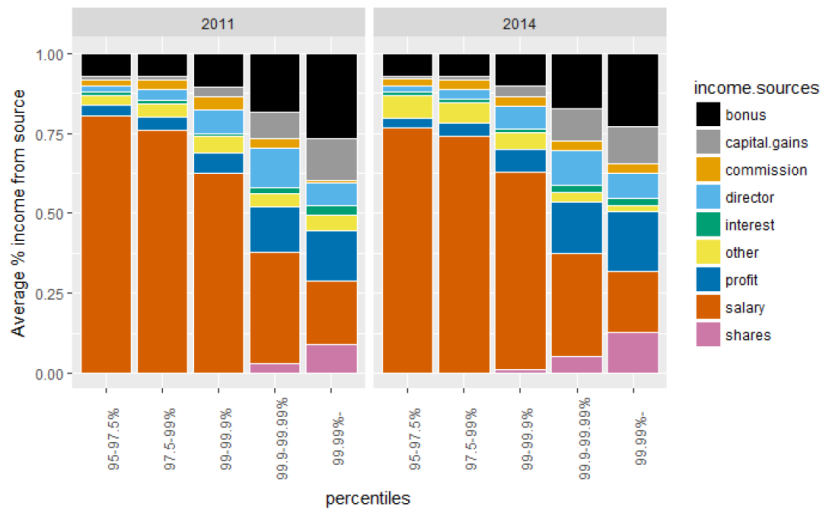
Figure 3: Two indicators of trends in relative wages**Panel A:** By education (ratio relative to primary education or less)**Panel B:** By earnings percentile (ratio relative to median)

Source: Branson and Leibbrandt (2013) for panel A and Wittenberg (2014) for panel B

As discussed in Arndt (2018), the top line ratio (tertiary/unskilled) begins at a relatively high value, which is not surprising given the policies that prevailed prior to 1994. Less intuitively, the ratio grows by more than 50% between 1994 and 2010. Panel B of Figure 3, from Wittenberg (2014), tells essentially the same story. Earners at the 90th percentile gained substantially relative to the median earner over roughly the same period.

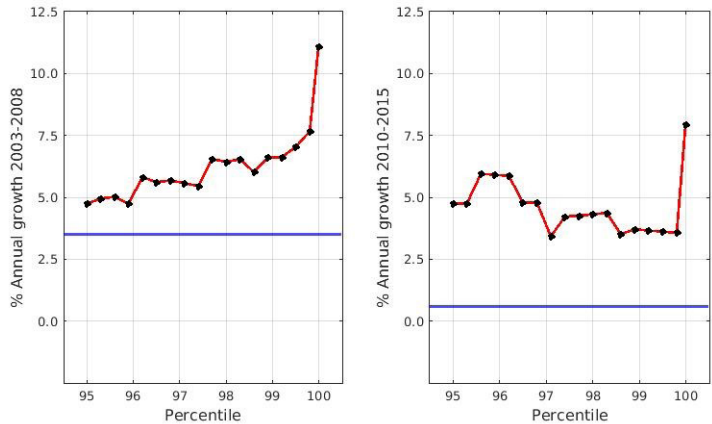
Figures 4 and 5, from Bassier and Woolard (2020), reinforce the findings from Figure 3 and show that the trend of increasing wages for top earners continued at least through 2015. Figure 4 uses detailed income tax data to determine income sources for the top 5% of earners. The data indicate that labour income (represented by the categories salary, bonus, commission and director) represents the large bulk of income for nearly all top earners. Furthermore, this structure of income appears to be reasonably consistent through time. Hence, growth in total income is a good proxy for growth in labour income for all but the very top earners (those at the 99.9th percentile and above).

Figure 4: Income sources for top earners



Source: Bassier and Woolard (2020)

Figure 5: Growth incidence curves at the top of the income distribution



Source: Bassier and Woolard (2020)

Figure 5 draws from the same data to show growth in total income for the top 5% of tax returns compared with growth in per capita GDP, broken into two time periods: 2003–2008 and 2010–2015.¹ The first panel, corresponding to 2003–2008, supports the findings of Branson and Leibbrandt (2013). The second panel illustrates that the trend continued from 2010 to 2015. If anything, the tendency is

1 The analogous figure in Bassier and Woolard (2020) compares growth in income of the top 5% of earners with GDP growth. A comparison with growth in GDP per capita is more apt, which is the comparison presented in Figure 5.

more extreme in the later period as per capita GDP growth slowed dramatically compared to the earlier period but growth in top incomes slowed less markedly or not at all.

In summary, in recent years, economic growth has not been fast enough to absorb the output of people with tertiary education from the university system. In the aggregate, it is not the case that growth in the number of graduates is too high. Rather, economic growth is too low. Failure to absorb all graduates occurred even though the labour market is clearly shifting to favour greater skills. Table 1 shows growth in employment by major education category from Q1 2008 to Q1 2020 (taken as the final pre-pandemic period). Employment among those with tertiary qualifications grew by far the most rapidly at 3.1% per annum. At the same time, employment among those with less than secondary education declined at an annual rate of 0.6%. As a result, the structure of employment has shifted. At the beginning of 2008, more than half of employed workers possessed less than complete secondary qualifications. By the beginning of 2020, that share had fallen nearly 10 percentage points, to about 43%. Tertiary-educated individuals now comprise more than a fifth of employed individuals.

Table 1: Growth in number of employed people, by educational attainment, from Q1 2008 to Q1 2020

Description	Growth rate	Structure	
		2008	2020
Less than secondary	-0.6%	53.3%	43.9%
Secondary completed	2.4%	28.5%	33.5%
Tertiary	3.1%	17.0%	21.6%
Other	0.0%	1.2%	1.1%
Total	1.1%	100.0%	100.0%

Source: QLFS data accessed May 2021

Note: The 'less than secondary' category aggregates all persons with less than complete secondary education

As noted, all available evidence indicates that the failure to employ people with tertiary qualifications is concentrated at the inexperienced end of the spectrum (recent graduates). At the experienced end of the spectrum, the problem is reversed – a lack of highly skilled and experienced people is constraining growth. This has been a consistent observation for more than a decade. After years of studying the South African economy, Ricardo Hausmann and colleagues pointed directly to skills constraints as slowing potential growth (Hausmann 2014; Levinsohn 2008). A follow-on effort, led by the United Nations University World Institute for Development Economics Research (UNU-WIDER), arrived at the same conclusion (Arndt 2017). National Treasury's growth strategy document echoed this conclusion (National Treasury 2019).

Further, these two problems could well be related by more than just aggregate GDP growth. Inexperienced tertiary-educated labour and experienced tertiary-educated labour are plausibly complements, not substitutes. For example, in the absence of an adequate supply of skilled and experienced people, a firm is unlikely to be able to complete a large and complex engineering project no matter how many recent university graduates are hired. At the same time, the productivity of highly skilled and experienced workers is augmented if they can assign reasonably well-defined tasks to younger workers with skills but not much experience. This is the way that nearly all organisations in knowledge-based fields operate.

Given its importance, there is a surprising dearth of research into the relationship between senior workers with skills and experience and junior workers with tertiary degrees, even on a global basis. A recent article by Li et al. (2017) examines this relationship for China. The authors find that experienced and inexperienced workers with college degrees are in fact complements. In particular, they find that rapid growth in the number of recent university graduates drives up the skills premium for experienced workers with university degrees and puts downward pressure on wages of recent university graduates (or results in unemployment for recent graduates if labour markets are not sufficiently flexible).

This implies that increasing the supply of skilled and experienced workers could increase potential growth by two mechanisms. First, it would loosen a binding constraint on growth broadly. Second, through the complementarities, it would pull in tertiary-educated but inexperienced labour particularly rapidly. All unemployment is an enormous waste, but unemployed workers with tertiary degrees also fail to provide society with returns on the (large) investments made in their training.

3.3 Policies

As emphasised, the long-term policy with respect to skills is clear: ongoing improvements in the quality of education are required at all levels alongside ongoing growth in the number of skilled people, particularly those with tertiary qualifications and above. Broadly, this appears to be happening. The key challenges, looking ahead, are to ensure that the quality of primary school education continues to improve rapidly and, at a minimum, that the quality of tertiary education does not decline as quantity expands.

The most obvious short-term policy for increasing the pool of skilled people is also reasonably clear, but it is not happening. As emphasised by multiple studies, South Africa would benefit from greatly increased immigration of highly skilled people. The potential benefits of such immigration can be estimated in a straightforward manner using a version of the South African General Equilibrium (SAGE) model maintained and used by National Treasury. The simulation shown in Table 2 illustrates the implications of a 1% increase in the quantity of tertiary-educated labour driven by immigration of highly skilled and experienced individuals. The simulation assumes that more capital and labour (with lower educational

qualifications than tertiary) can be obtained at prevailing rental and wage rates.² It also assumes that incremental electricity demand is met (see Loewald, Makrelov and Wörgötter 2020).

Table 2: Implications of a 1% increase in the quantity of tertiary-educated workers via immigration

Description	% change
GDP at market prices	1.21%
Total absorption	1.20%
Private consumption	1.53%
Fixed investment	1.47%
Changes in inventories	0.00%
Government expenditure	0.00%
Exports	1.46%
Imports	1.40%
Net indirect taxes	1.32%
Employment of factors of production	
Primary-educated labour	1.27%
Middle-educated labour	1.24%
Secondary-educated labour	1.07%
Capital	1.37%

Source: SAGE model simulation

There are multiple observations worth noting from the results shown in Table 2.

- The effects are large. A 1% modelled increase in the supply of tertiary-educated labour drives up GDP by more than 1.2%. Absorption, the broadest measure of economy-wide welfare, also rises, by 1.2%. Employment gains for lower-skilled workers are particularly pronounced. Those with less than secondary-level education experience employment gains of about 1.25%. Total tax revenues also increase by more than 1%.
- The number of highly skilled migrants required is not large. Based on the latest data, 1% of the employed stock of tertiary-educated labour is about 33 000 people. With a focus on attracting highly skilled and experienced workers, the wages of these migrants would be well above average for tertiary-educated labour. For example, if the average highly skilled and experienced immigrant

² SAGE effectively assumes that unemployment exists in all factors other than tertiary-educated labour. Alternatively viewed, the supply of tertiary-educated labour is exogenously fixed; and the supply of all other factors adjusts endogenously to meet demand guided by a perfectly elastic supply curve at prevailing factor prices.

earned three times the average tertiary wage in South Africa, then only about 11 000 migrants would be required to generate the outcomes illustrated. This amounts to 0.33% of the skilled labour force, 0.07% of the total labour force and 0.02% of the population. This implies that the required numbers of highly skilled and experienced immigrant workers will not significantly change the structure of South Africa's labour force.

- Model results are always only indicative, but these results are plausible. There are two elements to this.

The basic assumption of elastic supply of semi-skilled and unskilled labour is very plausible. In terms of capital, the initial incidence of increased immigration of highly skilled labour will be mainly associated with larger formal sector firms, whose access to capital is widely viewed as reasonably efficient given the sophistication of the South African financial sector. Secondary or multiplier effects will spill into smaller and medium-sized enterprises (SMEs) as well as the informal sector, where availability of capital may be more of a constraint. However, production by SMEs and in the informal sector is normally not capital-intensive. In addition, the frictions that the model assumes away may well be offset by positive effects that the model is not positioned to account for. For example, if inexperienced tertiary-educated labour is in fact complementary to highly skilled and experienced tertiary-educated labour (as discussed earlier), then the growth implications of immigration of highly skilled workers would be larger.

The spillover effects that lead to large impacts do not rely on trickle-down economics as classically conceived. Classic trickle-down economics functions at the margin. For example, if taxes are cut for top earners, this may, at the margin, cause top earners to work more, take more risks and spend more on domestic goods. Of course, it may not. Top earners might instead use the windfall to, for example, take vacations in Europe, potentially decreasing aggregate demand in South Africa with negative multiplier effects. In contrast, the stimulus delivered by highly skilled immigrants relates to their average expenditure patterns. Highly skilled and experienced immigrants will spend money on housing, food, services and so forth. Substantial positive multiplier effects are essentially guaranteed. And their magnitude can be enhanced by policies that augment the share of total earnings of highly skilled migrants that are spent in South Africa as opposed to remitted. Encouraging highly skilled migrants to come with their families is one good example.

There is no evidence that open immigration of highly skilled people will generate unemployment among highly skilled and experienced South Africans. Almost everywhere, unemployment among highly skilled and experienced people is very low and essentially transitory, reflecting a search period where a highly skilled person tries to match with the right job. This statement is distinct from asserting that there will not be competition for jobs between highly skilled South Africans and highly skilled immigrants in the case where immigration restrictions are loosened substantially. There will be competition. In fact, an important *success* indicator will be stories where highly skilled South Africans lament that they were not chosen for a particular position, with the job actually won by a highly skilled immigrant.

- Allowing greater skilled migration is relatively straightforward, at least in principle. It requires changes in rules and regulations with no need for major budget allocations. With respect to issuing visas, simple rules could be applied. For example, any formal sector organisation in good standing could hire globally for any job paying more than some specified amount. If the successful applicant is not a South African citizen, a work visa could then be issued to that person. Negotiating rules relating to BEE is potentially trickier. BEE rules could constitute an effective restriction on highly skilled immigration if not carefully reviewed.
- Loosening other rules and considering special circumstances would also help. For example, professionals licensed to practise in countries with high standards (for example, medical professionals licensed to operate in the United Kingdom) could be automatically or very quickly licensed to practise in South Africa. Universities are a second good example. They are important for two reasons. First, they play a key role in advancing the long-term objective of increasing tertiary-level skills of the South African population. Second, they are a reasonably high-potential exporting sector with an ability to attract paying students from around the world. Because of quality of life, academic freedom and other non-pecuniary benefits, university faculty frequently earn significantly less than other comparably trained professionals. Universities, especially the so-called research-intensive universities, might be allowed to hire globally for faculty positions (such as a position requiring a PhD) without reference to a minimum salary.

Overall, a much more open immigration policy for highly skilled and experienced labour has very good prospects to increase growth, exports, tax revenue, jobs and the welfare of South African people, particularly those with lower incomes. The simulation estimates that if 11 000 skilled migrants arrived who earned on average about triple the average earnings of current tertiary-educated workers, they would generate about 78 000 jobs for unskilled and semi-skilled workers or about seven jobs per each highly skilled immigrant. By increasing employment among unskilled and semi-skilled South Africans and cooling the wage growth of top earners, the policy should also contribute to reducing inequality. As depicted in Figures 3, 4 and 5, and as pointed out by Hundenborn, Leibbrandt and Woolard (2018), “over the past 20 years, labour income has been the major contributor to overall inequality.” Finally, and importantly, by increasing the number of skilled and experienced managers/mentors, the short-term employment prospects and long-term career prospects of recent university graduates might brighten considerably.

As emphasised in the introduction, if there is a silver lining to the COVID-19 pandemic from an economic perspective, it is likely to be found in an expanded willingness to adopt reform measures. Much more open immigration policies for highly skilled labour appears to offer high upsides with near-zero investment requirements as well as limited downsides.

4. Food systems, nutrition and health

4.1 Long-term perspectives

Globally, food systems are frequently viewed as not ‘fit for purpose’ for the 21st century (see, for example, Webb et al. 2021). The list of shortcomings is long and includes:

- food systems as a major source of environmental degradation including greenhouse gas (GHG) emissions, biodiversity loss and other forms of unsustainable resource use (for example, groundwater depletion);
- frequent precarity of livelihoods for people engaged in food systems;
- high costs of nutritionally adequate diets are helping to fuel an obesity epidemic while still leaving more than one in 10 persons on the globe hungry; and
- high levels of vulnerability to climate change.

These criticisms of food systems as they currently stand reflect, at least in part, an embedded optimism around what they could become. From this perspective, expectations are high (see the Food Systems Summit Action Tracks). Globally, food systems are aiming to become much more ‘nature-positive’ in production, convert from a major source to a net sink of GHG emissions, serve as a powerful lever to improve livelihoods in a manner commensurate with its role as the world’s largest employer, combat all forms of malnutrition, and take steps to improve resilience to climate change.

The South African food system reflects this global pattern of a status quo judged as unsatisfactory in many dimensions, with the gulf between current performance and high expectations of what might be as drivers for change. In light of the ongoing legacy of apartheid, the role of the food system in improving livelihoods is often highlighted in the South African context. At the very broadest level, there is considerable agreement that food systems can be a driver for growth, jobs and equity. For example, agriculture and food are highlighted in the 77-pager as a key sector. Proponents of rapid and large-scale land reform in South Africa also view agriculture and food as a means to stimulate growth, redress inequities and improve livelihoods.

Keeping the longer-term perspective, there is a solid basis for optimism about growth and employment prospects in the agriculture and food sectors in South Africa. Relative to the rest of the world, the agricultural sector in South Africa is reasonably productive. Arndt and Nin-Pratt (2020) found that the sector operated at about 88% of the global production possibilities frontier (PPF) in the 2005–2014 period, meaning that South African agriculture converted inputs – such as land, labour, capital and intermediate inputs – into real agricultural outputs only about 12% less efficiently than the most productive agricultural economies in the world (such as the United States) over that period. Furthermore, South Africa has been approaching the global PPF. In the 1981–1994 period, South African agriculture

operated at only about 66% of the global PPF or about 34% less efficiently than the most productive agricultural economies.

Continued population and income growth in South Africa will continue to drive domestic demand for food. At the same time, very large opportunities exist to expand exports. Over the past 20 years, exports of food, notably to other countries in sub-Saharan Africa, have been a comparative bright spot (Stern and Ramkolowan 2021). Overall, food exports currently represent about 11% of total merchandise exports (World Development Indicators 2020), and the South African food export basket is by far the most diversified (or least concentrated) on the sub-continent. Fukase and Martin (2018) calculate the Herfindahl-Hirschmann Index – a measure of concentration – for major economies in sub-Saharan Africa. They also calculate the numerical equivalent of the index, which shows the number of identically distributed products that would give the same Herfindahl-Hirschman Index value as the actual basket. The number for South Africa is 44.³ The next closest country is Tanzania at 18. For most economies in sub-Saharan Africa, concentration is strikingly high. For example, the number equivalent for Kenya is five.

Over the next 30 years, rapid population growth, high shares of food in total expenditure, and rapid growth in income look set to approximately triple food demand in the rest of sub-Saharan Africa (Wiebe et al. 2017; Sulser et al. 2015). Food demand will also be shifting in composition towards more formal markets as incomes grow and urbanisation progresses. Proximity to this major demand growth pole combined with (i) the productivity / competitiveness of South African agriculture and agri-food processing; (ii) the diversity of the current export basket; and (iii) the role of South African firms in formal sector food retailing throughout the sub-continent open real possibilities for export-driven growth in food / agriculture with positive implications for employment, livelihoods and equity (das Nair and Landani 2019).

South Africa is also relatively well-positioned to address the malnutrition issues that bedevil many middle-income countries. This malnutrition comes in two forms. First, many individuals fail to consume sufficient micronutrients (hidden hunger). Second, a rapidly growing proportion of populations in developing countries, notably middle-income countries, consume too many calories (overweight). Hidden hunger, especially among children, and obesity impose huge societal costs in terms of lost productivity and the burden of non-communicable diseases (Alderman et al. 2017; *Global Nutrition Report 2020*).

Hidden hunger and overweight/obesity are serious problems in South Africa. Nearly 25% of children aged 0-5 are stunted (low height for age) with micronutrient deficiency a part of the problem. Remarkably, nearly two thirds of adult women are overweight and almost 40% are obese (the corresponding numbers for men are

3 In other words, if South Africa's export basket contained only 44 products with each product 1/44th of total food export value, it would have (about) the same Herfindahl-Hirschmann Index as the actual basket. By this measure, South Africa is approximately 2.5 times more diversified than Tanzania, which has the second most diversified basket on the sub-continent.

41% and 15% respectively). And rates of overweight and obesity are growing rapidly, especially among children and young adults (*Global Nutrition Report 2020*).

South Africa's high level of social support spending, combined with spending to support agriculture, provides an opportunity to consider how to design programmes and policies that improve nutrition across the board. Even more broadly, a holistic and forward-looking view of policies in agriculture and food has the potential to enable development of a food system that:

- grows rapidly, thereby creating jobs, diversifying exports and improving livelihoods and equity;
- supports nutrition and health with significant positive spillover effects for health expenditures as well as for aggregate productivity, growth, employment, income distribution and resilience; and
- respects the environment and resource use constraints, notably water.

This is a long-term agenda with many of the elements already spelled out in the 77-pager.⁴ In addition, water infrastructure is a focus of Operation Vulindlela,⁵ which is ongoing. The principal new element discussed here involves nutrition and health and the potential for a holistic view of agriculture and food policies to help deliver all three of the objectives contained in the bullet points listed immediately above. Shorter-term priorities in the immediate post-pandemic period are the focus of the next section.

4.2 Shorter-term policies and priorities

While the 77-pager highlights that “the current pace of land reform is not satisfactory”, it also highlights steps to mitigate the uncertainty that may be generated by a comprehensive approach to land reform. These steps focus on management of the process “in a manner that is transparent, consultative, and within a broad framework to ensure that factors critical to ongoing investment in agriculture and food security, such as the security of private property rights, are respected throughout the reform process” (National Treasury 2019). If agriculture and food are to play important roles in building back fairer by helping to realise long-term development objectives, an essential priority is to reduce the policy uncertainty surrounding land reform.

The government has recently taken steps to increase the pace of land reform. In October 2020, the Minister of Agriculture, Land Reform and Rural Development, Thoko Didiza, announced the process to be followed for making available 700 000 hectares of agricultural state land as part of the government contribution to the land reform programme (South African government 2020).

4 The 77-pager also specifies a series of policies that could be implemented in the relatively short term. For example, failure to deliver to food exporters the necessary export documentation and licensing in a timely and accurate manner is a homemade export barrier (see page 51). There are other opportunities, notably under the broad rubric of export promotion.

5 Operation Vulindlela is a joint initiative of the Presidency and National Treasury to accelerate the implementation of structural reforms and support economic recovery.

Looking further ahead, the basics of land reform can be useful in defining priorities and putting in place a clear process. Typically, land reform involves breaking up larger operational units into smaller ones, and this appears to be what most advocates for land reform in South Africa have in mind. Hence, there is a natural focus on the transition from larger units to smaller units and the implications of that shift.

While debate exists about the empirics of the farm-size/productivity relationship, the fundamental ideas are relatively clear. On the production side, small farms have the potential to increase productivity because of the quality of attention that an owner/operator can devote to production. Compared to larger operators, small farmers, especially those benefiting from appropriate knowledge support through extension programmes, may be able to deliver to their crops and livestock the right amount of attention at the right time. In addition, small owners/operators avoid principal-agent conflicts of interest. If there are productivity gains to be reaped from shifting to smaller farm sizes, it is in these domains that the gains are most likely to be found.

At the same time, small farms almost certainly suffer from diseconomies of scale in input purchase and output sale due to higher transaction costs. The vulnerability of smaller operators to the exercise of market power by larger operators is another potential source of inefficiency and inequity. The upshot of these observations is that small farms are more likely to thrive where their advantages in terms of devoting quality time and attention to production are maximised, and their disadvantages in terms of transaction costs in input and output markets are limited. One set of arrangements that accomplishes this involves clusters of small farms each of which intensively operates a relatively small area. The clustering helps smaller farmers to cope with their disadvantages in input and output markets (for example, through cooperative buying/selling) while the focus on farming small areas intensively plays to their advantages in terms of the quality of time and attention.

To farm intensively, these sorts of arrangements depend on sufficient access to water. Statistics related to small farms in South Africa are surprisingly sparse. However, those that do exist indicate that about half of the 2 million households engaged in farming practised some form of irrigation.⁶ While there are perils for the generaliser, both the theory and the available empirics indicate that access to water is a key element, perhaps *the* key element, to a reasonably successful land reform programme in South Africa, especially one designed to increase the number of small owner/operators.

Bringing water into the equation raises the already high stakes associated with the land reform programme. Irrigated agriculture frequently sits near the beginning of a complex value chain that generates substantial additional value. Further, the outputs of irrigated agriculture are often heavy or perishable, implying that local value addition facilities are highly dependent upon local production. Wine is a good, if somewhat extreme, example. A failed land reform effort that also diverts

6 Calculated from the General Household Survey of 2019.

water away from productive uses and deprives downstream processing industries of supply would be very costly in terms of output and jobs. In contrast, a failed land reform effort of a dryland operation that focuses mainly on tradeable bulk commodities such as maize would have lower consequences per hectare reformed and much lower costs in terms of downstream disruptions.

In this respect, it would be worth considering a focus on higher-potential zones where current large farms mainly produce bulk commodities. Investment in supplemental irrigation, to be used at critical junctures, may facilitate a shift in production patterns towards higher-value crops, such as fruits and vegetables. Given the detailed knowledge of water resources in South Africa that already exists, combined with recent assessments of climate change (for example, Schlosser et al. 2020), the identification of potential areas is likely to be relatively straightforward. These areas provide an opportunity to continue to gain experience in executing a land reform programme with a relatively high upside and lower risk.

To close this section, it is useful to note some broad consistencies across objectives. Envisioning an agriculture and food system that (i) produces high-value products to meet rapidly growing export demand, notably in sub-Saharan Africa; (ii) supports healthy, tasty, convenient and nutritious diets for domestic consumers; and (iii) generates very substantial numbers of decent jobs and livelihoods appears to be a sensible and reasonably coherent path forward. By focusing on intensively operated farms on higher potential land, potentially buttressed by supplemental irrigation capability, land reform can help to move South Africa down that path. Moving in this direction will require very judicious use of water resources as well as a holistic consideration of agriculture, food and social policies. Some tangible steps in these directions, alongside a policy research agenda that would flesh out the details, could form important elements of a build back fairer agenda.

5. Urban structure

Much has been written about the stubborn spatial legacies of apartheid. In urban zones, lower-income households, almost exclusively from previously disadvantaged groups, were shoehorned into township communities that were almost invariably long distances from job opportunities. To this day, many workers, notably lower-income workers, commute significant distances to work (Fobosi 2020). These commutes are characterised by unidirectional flows, high-peak demand and minimal off-peak use.

The result is an enormous waste of time and resources, with lower-income South Africans bearing the brunt of these costs. As shown by Kerr (2015), private transport represents by far the largest category of provision of transport services. According to the data analysed by Kerr, private cars transport slightly more people than privately provided mini-bus services. All other forms of transport, except for walking, are small compared with private cars and private mini-bus services. Not surprisingly, lower-income South Africans are particularly large users of mini-bus services, especially when compared with private cars.

Kerr finds that, in 2013, mini-bus users spent on average 53 minutes commuting each way, compared with 42 minutes for private cars. Journey times have been broadly increasing since 1993. If one aggregates mini-bus users with users of multiple modes of transport (75% of whom rely on mini-buses for a part of their journey), this aggregate group spends the highest share of income (17%) on transport of any group. Mlatsheni and Ranchhod (2017) estimate that the lowest wage earners spend around 40% of their income on transport. Kerr (2015), following an approach developed by Hausmann (2013) that accounts for both the indirect cost of travel time and the direct transport costs paid, finds that mini-bus users pay an approximate 30% implicit 'tax' on their wages related to travel time and expense (compared with an implicit 'tax' of about 16% for those who rely on private cars). Given these statistics, it is not surprising that around 70% of discouraged job seekers cite their location as the key constraint to looking for a job (Mlatsheni and Ranchhod 2017).

Over the long term, major investment in public transport systems combined with targeted housing and urban development interventions can diminish these spatial legacies (South African Cities Network 2014). In the near term, housing patterns and transport infrastructure are effectively fixed. In addition, as discussed in section 2, fiscal constraints may substantially limit public investment in the medium term. In this light, steps that increase the efficiency of this infrastructure are important for alleviating the costs associated with long commutes. Among the options, dedicated bus lanes have been shown to be an effective standalone policy to mitigate congestion (Basso et al. 2011). In the South African case, the dedicated lanes would have to accommodate mini-buses to be meaningful. Increasing the average speed of the mini-bus service between townships where people live and locations where people work would reduce the time costs associated with commuting and increase the efficiency of the mini-bus service, which should eventually result in lower direct costs to consumers.

Road space is, in the short run, a fixed resource. Giving privileged access to road space to mini-buses and buses during peak travel hours implies less road access for other users of the road, notably private cars and other commercial vehicles. Hence, a policy such as dedicated mini-bus lanes amounts, in the short run, to a redistribution from the relatively wealthy, who tend to drive private cars, to the relatively poor, who tend to take mini-buses. Looking only marginally further forward in time, there is good reason to encourage the emergence of more upscale mini-bus services that might attract current drivers of private cars so that they can avail themselves of the faster travel speeds provided by dedicated lanes along with lower unit costs of travel per kilometre. If each upscale mini-bus on net reduced congestion by removing private vehicles from the roads, average travel speed could increase across the board, with widespread benefits. It is worth noting that people who drive private cars to work can be assumed to be reasonably digitally savvy in most instances. Digital applications relying on smartphones, such as rideshare apps, have clear potential to efficiently group commuters who want to depart from nearby locations and go to nearby destinations.

6. Conclusions

Alongside the human costs and economic disruptions and dislocations caused by COVID-19, the pandemic also increases uncertainty about the future. For example, we point, in the introduction, to the possibility that the pandemic may serve to catalyse the development and implementation of an economic reform agenda. This is conjecture. It may not. Nevertheless, a few points are reasonably clear. First, it seems unlikely that a continuation of the policies and practices that resulted in the dismal economic performance of the past decade (pre-pandemic) would yield substantially better outcomes over the next decade. Second, the tightening of fiscal space that was occurring prior to the onset of the pandemic has been exacerbated. Third, in South Africa like elsewhere, the burdens of the pandemic appear to have been inequitably distributed, with poorer and more vulnerable people suffering most.

Further, while the pandemic has wrought many changes, many fundamentals remain functionally very similar. South Africa's economic structure, including its embedded inequities in outcomes and key institutional features, broadly persist. Hence, good ideas for sparking growth and reducing inequities pre-pandemic appear likely to remain good ideas looking ahead. As such, we highlight National Treasury's growth strategy document as a key reference. At the same time, the ongoing economic crisis in South Africa is no longer "slow-burn". Rather, it is acute and severe.

The three policy areas in focus here seek to respond to current exigencies. They are quickly implementable, require little in the way of public investment and are likely to confer relatively greater benefits at the lower end of the income distribution. They are also consistent with the longer-term vision developed in the 77-pager, thus linking short-term response with long-term strategy. Of the policies considered, much greater openness to immigration of highly skilled and experienced workers (and their families) stands out as offering particularly strong potential to stimulate growth, create jobs and reduce inequality at scale, at low cost to government and with low risk.

Green opportunities

Chapter 6

Building a competitive and dynamic green industrial sector in South Africa

Tendai Gwatidzo and Witness Simbanegavi

1. Introduction¹

The COVID-19 pandemic has brought the fragility of the global economy to the fore. Like many other economies around the globe, the South African economy was not spared by the pandemic. The lockdowns instituted to mitigate the spread of the virus have had large negative impacts on the economy. The economy was literally shut down in April 2020, under Alert Level 5 lockdown, and gradually reopened as of May 2020. The lockdowns and the uncertainty induced by the COVID-19 pandemic have resulted in severe impacts on the economy, manifested in firm closures, job losses, restricted movement of people, heightened uncertainty and large GDP decline in 2020.² The country's GDP contracted by 7% in 2020, the largest annual contraction in a century.

However, climate change may pose a greater risk to global economies than the COVID-19 pandemic. While there are some similarities between the shocks caused by climate change and COVID-19 – namely, high downside risk – shocks are also quite distinct. Specifically, while the COVID-19 impact is immediate and sharp but with a strong prospect of a rapid recovery, climate change is persistent, long term, and more difficult to mitigate and recover from. Expressed differently, unlike the COVID-19 pandemic for which a (hopefully effective) vaccination is already in progress, climate change is here to stay.³ Once the temperature threshold is breached, the world will have to learn to live with a changed climate, with no possibility of reversal (Intergovernmental Panel on Climate Change (IPCC) 2007).

While efforts to address climate change predate the COVID-19 crisis, the pandemic has served as a reminder of the ravaging effects of natural disasters on economies and livelihoods, particularly given the interconnectedness of global economies today. The COVID shock caused unprecedented GDP contractions across major global economies. However, this could pale in comparison to climate shocks as

1 The authors would like to thank an anonymous referee for their useful comments and suggestions as well as participants in a seminar at the SARB on 26 January 2021.

2 In quarter 2, South Africa's GDP declined by 51% (quarter on quarter SAAR) and more than 2 million jobs were lost (Stats SA 2020b).

3 Several COVID-19 vaccines have already been approved for emergency use across many countries, with the hope of vaccinating enough people to achieve herd immunity by the end of 2021. South Africa expects to have vaccinated about 67% of the population by the end of 2021, enough to achieve herd immunity. However, some believe that COVID-19 is just one round of multiple outbreaks which have been hitting the world with increasing frequency and are likely to continue.

they have the potential to bring about hitherto unknown disease burdens in addition to the direct impacts on livelihoods and economies, particularly on agriculture and infrastructure.

Climate change is associated with extreme weather events, among them hurricanes, droughts and extreme temperatures. The COVID-19 pandemic, having decimated large parts of countries' economies, presents an opportunity and impetus to build better and smarter by 'greening' country development trajectories for sustainable growth and development. Such a reorientation would support more efficient production, make economies more resilient to shocks and enhance welfare.

This paper looks at the challenges and opportunities facing the South African industrial sector with respect to greening production and consumption after COVID-19. We argue that path dependence poses a challenge to South Africa's transition. We consider the energy efficiency of the country's manufacturing sector and then proceed to identify specific challenges and opportunities and the role that policy can play in promoting green industrialisation in South Africa. In particular, we look at different strategies to reduce the manufacturing sector's carbon footprint.

The paper is structured as follows. Section 2 explores the concept of green industrialisation and its relevance for South Africa. Section 3 discusses South Africa's emissions profile and environmental indicators. Section 4 presents the environmental policy and legal frameworks. Section 5 discusses the apparent trade-off between greening the economy and economic growth and development. Section 6 considers the necessity of green industrial policy as a tool for structural transformation. Section 7 examines the challenges and opportunities for South Africa in greening its industry, as well as progress achieved. The paper concludes with Section 8.

2. Green industrialisation and why it matters for South Africa

The industrial sector, particularly manufacturing, is central to economic development, and South Africa is no exception.⁴ South Africa's National Industrial Policy Framework identifies industrial development as core to the diversification of the economy and achievement of the country's growth and development goals (Department of Trade and Industry 2006). However, a glaring gap in this framework is any consideration of sustainable industrialisation. There is virtually no mention of climate change or environmental considerations in relation to industrial

4 Manufacturing has high economic multipliers due to its strong forward and backward linkages to both downstream and upstream production sectors. It is a major driver of research and development and associated spillovers. According to the Industrial Development Corporation (2019), the GDP multiplier of manufacturing equals 4 and the employment multiplier equals 5. Manufacturing also contributes directly to employment, exports and skills development, and jobs in this sector tend to be more highly paid and stable and less vulnerable to shocks compared to other sectors. See, for instance, OECD 2012.

development. As shown in Figure 1, the South African industrial sector is built around the so-called minerals-energy complex, which has made South Africa one of the major carbon emitters in the world (ranked 14th in 2018).⁵

South Africa, like many other developing economies, is confronted by climate change, environmental degradation and resource depletion, which are challenges that impinge on the country's ability to grow sustainably and reduce poverty (United Nations Industrial Development Organization (UNIDO) 2011a). Recent climate change discussions, both at the global and national level, have made it abundantly clear that South Africa, like many other countries, must reorient its economy towards sustainable production and consumption.

2.1 A closer look at the concept of 'greening' industry

Given the pivotal role of the industrial sector in the South African economy, successful greening of industry should put the economy on a path to sustainable growth and development. According to UNIDO (2011b), "greening of Industry is a method to attain sustainable economic growth and promote sustainable economies. It includes policymaking, improved industrial production processes and resource-efficient productivity". In other words, greening industry is a process of reducing the carbon footprint of producing (and consuming) goods and services. Such efforts involve policymakers developing the right policy mix to incentivise or push private enterprises towards contributing to a cleaner economy, and industry making the right investments to reduce not only the energy intensity of production but also the amount of resources used in achieving a given level of output.

The above suggests at least two distinct paths to realise industry greening. First, greening can be achieved through enhanced efficiency in the production of existing products: that is, using fewer and fewer inputs to produce a good or service. As an example, vehicles have over time become increasingly more efficient in terms of fuel burn, thus reducing their carbon footprint. Another example is increased energy efficiency in production whereby the same output is produced using less energy than before. Whether the input in question is energy or physical materials, as long as it takes fewer resources to produce the same amount of output, or more output can be produced with the same amount of inputs, the notion of greening of production holds.

The second approach to the greening of industry is to develop wholly new industries and products using clean technologies. By definition, these industries should be resource efficient in the sense of low contributions to environmental pollution (air, water, land, etc.) and climate change. The fundamental idea is to decouple economic growth or GDP from resource use (UNIDO 2011a; Altenburg and Rodrik 2017; Schwarzer 2013). Examples include renewable energy (such as

5 About 86% of South Africa's electricity is generated from coal. South Africa's manufacturing industry is dominated by three subsectors: namely, petroleum products, chemicals, rubber and plastic; metals, metal products, machinery and equipment; and agro-processing (see Figure 1).

wind and solar), electric vehicles, and biodegradable bottles and carrier bags. Thus green industries comprise both existing industries and new industries.

2.2 Why South Africa should care

Green industrialisation (and green growth more generally) is a policy imperative the world over. The world is confronting a potential climate crisis, requiring major efforts by all countries to slow down the rate of climate change. Global efforts are focused on keeping temperature increases below 1.5 degrees Celsius above the pre-industrial level (IPCC 2007). It is believed that this level is the point of no return, above which temperature increases and climate change will be uncontrollable. For example, at 1.5 degrees Celsius about 50% of the coral reefs would simply vanish and at 2 degrees Celsius more than 90% would be destroyed (IPCC 2008; Banerjee and Duflo 2019). To realise this objective, virtually all countries in the world agreed to binding targets during the COP21 meeting in Paris, seeking to first contain and then reduce their emissions.⁶ South Africa committed to reduce greenhouse gas emissions by up to 42% relative to the 'business as usual' trajectory by 2030 (Department of Environmental Affairs 2018). South Africa has since ratified the Paris Agreement, meaning that it is now government policy to realise the commitments entered into in Paris. The policies to address climate change are designed to either mitigate the impacts or help countries adapt to climate change.⁷ Industry, as a major consumer of energy in South Africa, will be a major source of mitigation.

There are numerous reasons why the greening of the economy is in South Africa's interest. First, high concentrations of greenhouse gas emissions are associated with health complications, particularly respiratory problems, and indirectly, negative economic impacts.⁸ Second, since South Africa made public commitments during COP21 and proceeded to ratify the agreement, it now has an obligation to deliver on its promises. In other words, the transition to a greener economy has become an imperative, with potential to impinge on government's credibility if not executed. Third, and perhaps more important, greening the economy has implications for competitiveness, particularly given that consumers are becoming increasingly environmentally conscious. In addition, some countries/regions are mooting changes to global trading regimes to explicitly account for carbon content in trade,

6 The US withdrew from the Paris Agreement following the election of Donald Trump as president. The US has since rejoined following the inauguration of President Biden in January 2021.

7 The policy menu to address climate change typically consists of both market-based measures such as pricing of externalities and non-market measures such as regulation. Where markets exist and are functional, price measures can support efficiency in resource use. However, with climate change, markets may not exist or may not be complete, rendering the price mechanism ineffective. Regulations can be more potent in such situations.

8 Zar et al. (2007) find that 5% more South African children and adolescents suffered from asthma in 2002 than in 1995, while Nkosi, Wichmann and Voyi (2015) demonstrate that people living close to mine dumps in South Africa suffer more from respiratory diseases. Schwarzer (2013) states that health costs arising from mostly air pollution in the US range between 0.7% and 2.8% of GDP. To the extent that pollution may affect health outcomes, it impacts on firm productivity and also on labour supply (Hanna and Oliva 2011). Such costs apply to South Africa too.

with the possibility of penal codes directed at non-conformers.^{9, 10} Countries that move last are likely to face larger adjustment costs as a result. Lastly, greening of the economy can be growth enhancing, as it involves efficient use of resources and development of new technologies, both of which can push out the production possibility frontier. Green industrialisation presents a new source of growth opportunities for South Africa, a country that presently suffers from anaemic economic growth.

Moreover, South Africa's current electricity constraints present an opportunity for the country to add new, low-cost energy in the form of renewable energy. The country cannot afford to miss the opportunity presented by the climate crisis.

3. South Africa's emissions profile

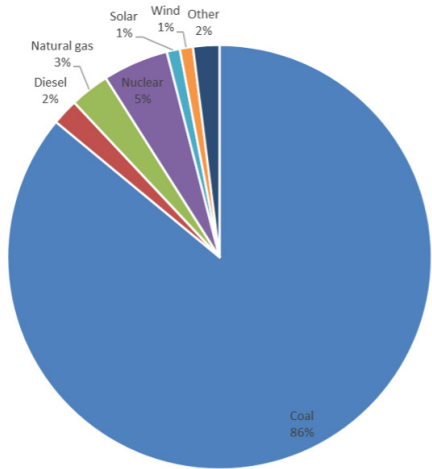
South Africa is among the major polluter countries globally, ranking 14th in the world in 2018 in terms of total greenhouse gas emissions (Carbon Brief 2018), despite ranking 37th in the world in terms of per capita GDP (South African Market Insights 2019).¹¹ This constellation suggests that the South African economy is carbon intensive. Figure 1, which shows the country's energy profile and the manufacturing sector's structure, provides further evidence of carbon intensity. The energy sector alone contributes close to 80% of the country's total emissions, of which 50% is from electricity generation and production of liquid fuels.

3.1 South Africa's energy profile and industry structure

Figures 1 and 2 present the profiles of South Africa's energy and manufacturing sectors. Energy is dominated by coal while manufacturing is dominated by metals and chemicals.

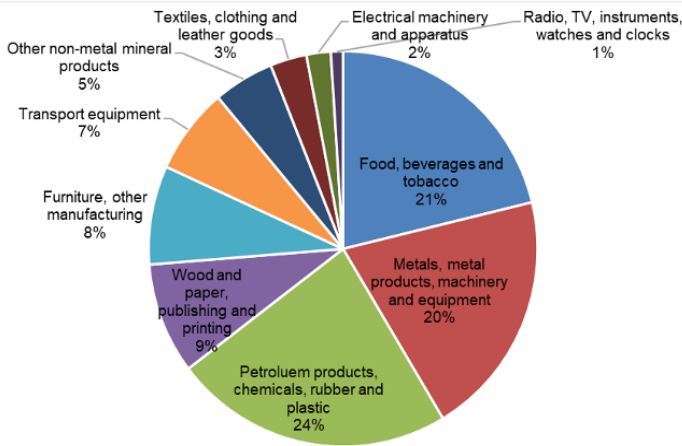
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- 9 The EU, with its 'European Green Deal' (European Commission 2019), is already working on a plan to impose a carbon border adjustment mechanism (carbon tax) on goods perceived to be produced in ways that are not environmentally friendly. The mechanism seeks to ensure that the price of imports more accurately reflects their carbon content. Should this come into effect, countries like South Africa with high carbon content in their goods stand to lose market share in the lucrative EU market as competitiveness is eroded by the carbon adjustment. The return of the US to multilateralism, and to the Paris Agreement in particular, should give this EU initiative a 'shot in the arm'.
 - 10 Some South African banks (e.g. Standard Bank and Nedbank) are no longer financing coal-powered electricity projects. See <https://www.gov.za/speeches/media-statement-minister-energy-jeff-radebe-renewable-energy-independent-power-producer>.
 - 11 The top ten polluters as of 2020 are China, the US, the EU, India, Russia, Japan, Germany, South Korea, Iran and Saudi Arabia, in that order (World Population Review 2021). With emissions of 8.9 tonnes per capita, South African is among the countries with the highest per capita emissions in the developing world (Legg 2011).

Figure 1: South Africa’s energy profile



Source: Stats SA (2018): Electricity, gas and water supply industry, 2016

Figure 2: South Africa’s manufacturing sub-sector shares: 1993–2017



Source: Mnguni and Simbanegavi 2020

The major sources of greenhouse gas emissions in South Africa include the primary (mining) and secondary (energy generation and manufacturing) sectors. Transport also contributes significantly to emissions. Electricity generation in South Africa is largely from coal (86%), with the balance distributed between nuclear (5%) and renewables (9%) (Stats SA 2018). South Africa is also among the global leaders in synthetic fuel production, producing about 25% of its liquid fuel needs from coal. The value chain involves several other chemicals. South African industry is a major source of greenhouse gas emissions for various reasons. First, it is reliant on ‘dirty’ energy (coal). Second, industrialisation in South Africa since the 1940s was

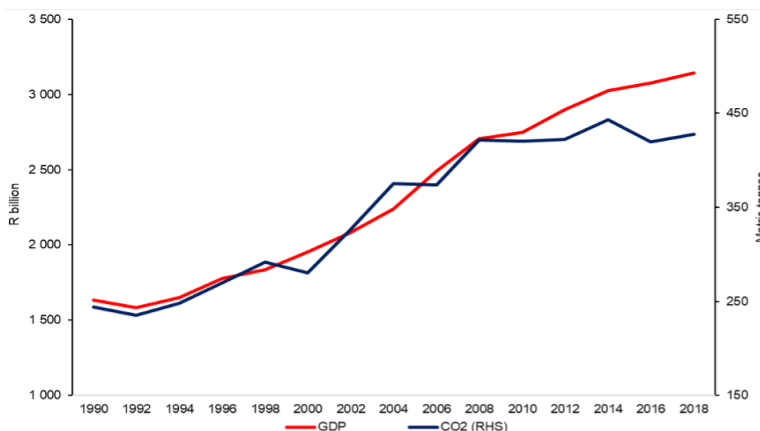
anchored around the so-called minerals-energy complex – leveraging cheap electricity to process mineral products. This meant high energy consumption per unit of output. Cheap electricity incentivised investments in energy-intensive production methods, including smelters, resulting in lock-in and path dependence which still bedevils the country today.¹²

While the government has enacted policies around green growth and climate resilience, there hasn't been the necessary coherence in policy, particularly between industrial policies and environmental policies, to incentivise industry to modernise. South Africa has thus been slow to adopt more modern, energy-efficient systems and production methods due to poor policy signals. In particular, electricity prices remained too low for too long. The recent increases in electricity prices, which have had the effect of 'forcing' energy efficiency across the whole spectrum of electricity consumers, are largely a result of underinvestment in energy, requiring market-based rationing of electricity, rather than deliberate policy signals to internalise carbon externalities. Indeed, one could argue that there has been vacillation around carbon taxes which, while adopted as government policy, are still to be implemented. Transport is another major contributor to greenhouse gas emissions for South Africa. To government's credit, the carbon tax on motor vehicles was implemented nearly a decade ago with the goal of incentivising the production and sale of cleaner vehicles.

3.2 Environmental indicators for South Africa

Figure 3 shows the relationship between GDP and carbon dioxide (CO₂) emissions in South Africa. There is a very high correlation between GDP and CO₂ emissions up until 2008, and thereafter a noticeable decoupling of GDP from resource use, particularly energy. This is corroborated by Figure 4, which considers CO₂ emissions per unit of GDP.

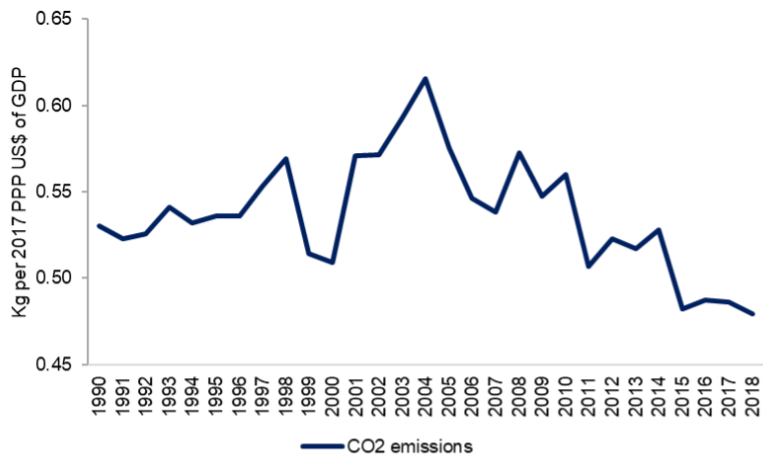
Figure 3: Has South Africa's GDP decoupled from CO₂?



Source: Authors' calculations based on World Development Indicators and International Energy Agency (IEA) online databases

12 The increases in electricity prices and the frequent power outages may have affected this dependence. For example, a large number of smelters were forced to close.

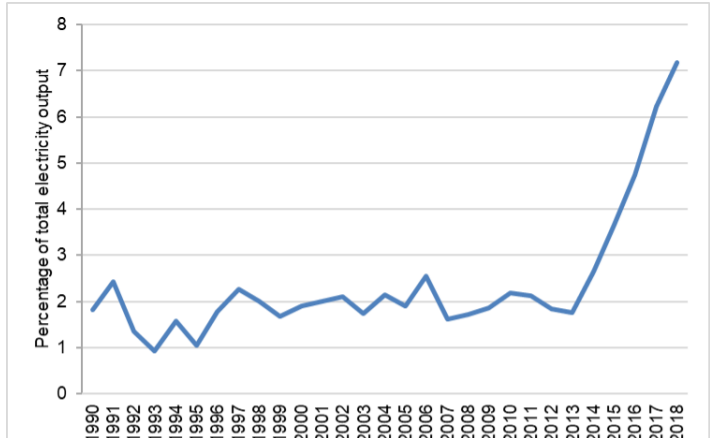
Figure 4: South Africa CO2 emissions 1990–2018



Source: Authors’ calculations based on World Development Indicators and IEA online databases

In purchasing power parity terms, emissions per unit of GDP sharply increased between 2000 and 2004, but have been trending downwards since then, though the rate of decline is rather slow. Specifically, emissions per unit of output declined from about 0.57 kg in 2009 to about 0.48 kg in 2018 – a 16% decline. This period coincides with the government’s strong drive towards renewables. Figure 5 shows that while renewable energy grew sharply, it still accounts for a small proportion of total electricity generated in South Africa. Renewable electricity’s share hovered around 2% during the period 1990–2013, but sharply increased after 2013 to reach about 7% in 2018.

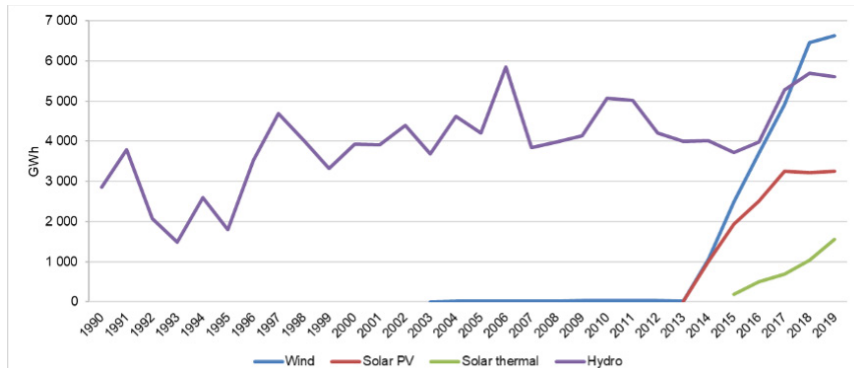
Figure 5: South Africa’s renewable electricity output (% of total electricity output)



Source: Authors’ calculations based on IEA online database

Figure 6 shows the composition of renewables supply for South Africa. Hydro has been steady over the years, but there has been an impressive increase in the supply of wind, solar photovoltaic (PV) and solar thermal energy since 2013. Government has expressed its commitment to renewables through the various rounds of independent power producer procurements, with over 6 400 megawatts (MW) procured to date.

Figure 6: South Africa's renewable electricity mix



Source: Authors' calculations based on IEA online database

What explains these encouraging trends and can they be sustained? Section 7 explores in some detail the possible factors driving these positive trends. Table 1 shows the government's efforts to reorient South Africa's energy mix and carbon footprint more generally. While there are questions regarding the institutional and political economy challenges to implementing these policies (WWF 2018), at least the signal is reasonably clear as to the preferred trajectory for the economy. The Integrated Resource Plan of 2010 set the tone by articulating the need to add some 17 800 MW of renewable electricity to the grid by 2030 – a goal that is highly achievable. The electricity outages experienced in 2008, which remain unresolved at the time of writing (2021), have also forced the government and electricity users to invest in energy-saving production and consumption methods, as discussed in Section 7. The sharp increase in electricity prices since 2008 has provided further impetus for firms (and households) to reduce the intensity of their energy use. Thus a combination of policy and market-rationing mechanisms seem to explain the positive developments with respect to renewable electricity generation and declining energy intensity. We are however unable to quantify the relative impacts of particular initiatives and policies.

4. South Africa's green economy, environmental policies and legal framework

The efforts by the South African government to protect the environment and facilitate the transition to a greener economy are reflected in various policies and enacted legal instruments. The main policies are: the National Climate Change Response Policy (NCCRP) of 2011, the National Strategy for Sustainable Development of 2011, the National Climate Adaptation Strategy of 2017, the Working Paper on Integrated Pollution and Waste Management of 2000, and the Environmental Management Policy working paper of 1998. These are supported by economic policies such as the National Development Plan (see Table 1).

Table 1: Policies supporting the transition to a low-carbon economy in South Africa

Year of publication	White paper, strategy or policy	Responsible department
1998	White Paper on Environmental Management Policy for South Africa	Department of Environmental Affairs
2000	White Paper on Integrated Pollution and Waste Management	Department of Environmental Affairs
2003	Annual Industrial Policy Action Plans	Department of Trade and Industry
2005/2015	National Energy Efficiency Strategy	Department of Energy
2011	The National Climate Change Response Policy	Department of Environmental Affairs
2011	Green Economy Accord	Economic Development Department (now the Department of Trade and Industry)
2011/13	Independent Power Producer Procurement Programme	Department of Energy
2016	Integrated Energy Plan of 2016 (plus earlier iterations)	Department of Energy
2017	National Climate Change Adaptation Strategy	Department of Environmental Affairs
2019	Carbon Tax Policy	National Treasury
2019	Integrated Resource Plan 2019 (plus earlier iterations)	Department of Energy

Source: Authors' own compilation

The government's national policy is guided by the white paper on Environmental Management Policy for South Africa of 1998, which is in line with the Constitution, the Environmental Conservation Act of 1989 and the National Environmental

13 The Independent Power Producer Procurement Programme is a vehicle to procure electricity from the private sector. The first bids were received in 2011.

Management Act of 1998, and entrenches environmental sustainability. It emphasises that integrated and sustainable management of the environment is essential for sustainable development, and aims to ensure sustainable economic growth.

South Africa's detailed response to climate change is enunciated in the NCCRP. This white paper explains the government's plans to transform the country into a low-carbon and climate resilient economy (Department of Environmental Affairs 2011). Its main objectives are (i) to manage climate change impacts through sustainable interventions, and (ii) to significantly contribute to global efforts to stabilise greenhouse gas emissions. The NCCRP also stipulates the need to identify sectoral adaptation interventions and facilitate coordination across sectors.¹⁴ When it comes to mitigation, the NCCRP stipulates the need for each sector to establish emission reduction targets, with identified firms and sectors required to submit mitigation plans. It proposes that the right incentives be developed to reduce emissions (e.g. carbon tax and emission reduction trading permits).

The main legal instruments aimed at environmental protection in South Africa are the Environmental Conservation Act of 1989 and the National Environmental Management Act of 1998 (NEMA). These two acts, together with the country's Constitution, provide the legal framework for the protection of the environment. NEMA, in particular, provides for the enforcement of instruments and what is required to ensure compliance.¹⁵ For example, there are a number of environmental impact assessment regulations in place to ensure firms do not embark on environmentally damaging activities; where firms are considering activities that may damage the environment, these activities need to be assessed and approved before going ahead. Under NEMA there are other more specific instruments like the National Environmental Management: Waste Act of 2014 and the National Environmental Management: Air Quality Act of 2004. The Waste Act focuses on the generation and disposal of waste, while the Air Quality Act is aimed at preventing negative air quality related environmental impact.

In addition to NEMA and the Environmental Conservation Act, there is the Carbon Tax Act of 2019 and the National Water Act of 1998. Table 2 shows the main legal instruments aimed at protecting the environment and ensuring the economy transitions to a low-carbon economy.^{16, 17}

14 The country's climate change adaptation efforts are articulated in the National Climate Change Adaptation Strategy of 2017.

15 In terms of NEMA requirements, the government, through the Department of Environmental Affairs, is required to prepare environmental implementation management plans.

16 The Department of Environmental Affairs is also developing some carbon budgets.

17 In addition to the discussed laws, there are by-laws promulgated by local municipalities.

Table 2: Main legal instruments protecting the environment in South Africa

Legislation	Main emphasis
Constitution of South Africa of 1996	Provides the foundation for environmental regulation and policy, while promoting sustainable development.
Environmental Conservation Act of 1989	Provides the framework for the protection of the environment; provides for enforcement and compliance.
Environment Conservation Act of 1989: Waste Tyre Regulations (2008)	To regulate the management and disposal of waste tyres.
National Environmental Management Act of 1998	Currently the main legal instrument governing the protection of the environment in South Africa, it addresses a number of weaknesses of the Environmental Conservation Act.
National Environmental Management: Waste Act of 2001 and its 2014 Amendment	To prevent environmental impacts related to waste.
National Environmental Management: Air Control Act of 2004	To prevent environmental impacts related to negative air quality.
Carbon Tax Act of 2019	To sustainably reduce greenhouse gas emissions; it gives effect to the polluter-pays principle.
National Water Act of 1998	To ensure that the nation's water resources are protected, used and developed in ways that take sustainable use into account, reducing and preventing their pollution and degradation.

Source: Authors' own compilation

5. Greening of industry/economy and attendant trade-offs

Should South Africa prioritise the greening of its industry and thus economy or should it prioritise economic growth and development, leaving greening for later? In other words, is there a trade-off between green growth/industrialisation and economic growth and development? On the face of it, this question is a difficult policy challenge for many policymakers, but as we argue here, it is a false choice, for it is premised on a misconception of sustainability.

One of the major reasons for developing countries' failure to realise meaningful development is inadequate resourcing. There is not enough spending in key development areas such as health, housing, education and social welfare. Africa generally suffers from inadequate infrastructure, particularly for transport and energy, which has stifled economic growth in the continent.¹⁸ At the same time, African policymakers must confront the challenges of climate change and the investments needed to mitigate and adapt to its effects. However, many climate-related investments tend to have long payback periods (Arndt et al. 2020).

For these reasons, many African policymakers regard environmental protection as a luxury to be dealt with at a later stage, once more urgent development challenges

18 The African Development Bank assesses Africa's infrastructure gap at about US\$100 billion per annum (African Development Bank 2018). South Africa has the most developed infrastructure on the continent and is thus not as constrained as most other African countries.

have been addressed (Altenburg and Rodrik 2017). Thus promises and commitments aside, there is likely to be less drive to push environmental protection and climate change mitigation policies, particularly where there are perceived conflicts with other development imperatives.

South Africa has made some bold statements around climate change and environmental protection, with the government publishing various climate change policy papers and enacting acts of parliament to effect these policies (see Tables 1 and 2). However, as they say, the proof of the pudding is in the eating. There appears to be tension in the body politic, given the prospects of job losses in some carbon-intensive activities, including coal mining. Policy (or at least its implementation) does not seem to be well-coordinated across government. For instance, Eskom, the state monopoly in the electricity sector, recently embarked on a massive build programme with two mega coal-fired power plants – Medupi and Kusile. These plants will likely remain operational (and thus polluting) for the next three to five decades, if the lifespan of the existing coal plants is anything to go by. This step has been taken despite government’s expressed commitment to green the economy, and clear opportunities provided by renewable energy to close the electricity supply gap from the perspectives of cost, construction time and technology leapfrogging. It would thus appear that South African policymakers also perceive a trade-off between green industrialisation and economic development.^{19, 20}

There are however strong reasons to believe that the perceived trade-offs being acted on by policymakers are based on a misconception of sustainable growth and development. Altenburg and Rodrik (2017: 7) articulate six arguments for why greening of growth is fundamental for sustainable development. For instance, failure to transform and green the South African economy while other countries transform would mean that South Africa would continue to produce goods for which demand will be declining, reducing the country’s ability to effectively compete in the medium to long term, affecting its growth and employment. Also, given the awareness about climate change and measures being taken by various countries to reduce their carbon footprint, the world is likely to see trade regimes in the near future that penalise carbon in international trade.²¹ Furthermore, failure to transform now means South Africa would deepen the carbon lock-in effect, raising the costs of switching to a greener economy in the future.

Equally, the failure to transform the economy will result in the country missing out on opportunities to leverage green technologies for growth and development. First, green industrial policies drive innovation and thus productivity growth

19 However, there are some encouraging developments. First, the share of renewables in the country’s energy basket continues to increase, with a total of 6 400 MW already procured (Department of Energy 2019). Second, South Africa has adopted a carbon tax (signed into law in 2019 but still to be made operational) to disincentivise production and consumption of carbon-intensive goods. Critics, however, argue that the rates are too low to force behaviour change (WWF 2018). Perhaps the point that is being missed here is that the promulgation of the carbon tax shows that the government has made a tangible commitment to transition the economy to a low-carbon trajectory.

20 In the case of South Africa, UNECA (2015) argues that there is apparent competition for financial resources between green growth interventions and general development challenges facing the country.

21 The EU is working on such a regime – the carbon border adjustment mechanism.

(Altenburg and Rodrik 2017). Given its relatively advanced industrial capacity, South Africa should be able to realise some of the new green innovations. Second, by reducing pollution green technologies support better health outcomes, which support better quality of life and in turn enhances productivity (UNIDO 2011a). Thus the perceived trade-off between green industrialisation and status quo-based development is largely a fallacy.²²

In the case of South Africa, which is facing a binding electricity constraint, greening the energy grid should complement the government's development efforts. At present, the electricity supply shortage is negatively impacting production, as was shown by the many brownouts (planned power outages) during the winter of 2020, even as the country was under lockdown. The power shortages disincentivise new investment, particularly in the more energy-intensive industrial sectors. Indeed, inadequate electricity is one of the main factors explaining declining potential growth in South Africa (Heinemann 2019).

Lifting the energy constraint should have a multiplier effect across all sectors of the economy, unleashing growth and employment. Policy could for instance encourage private sector renewable electricity generation with access to the grid to offload excess power or to supply energy to potential customers. This, however, requires reforming Eskom's integrated electricity system – in particular, unbundling generation, transmission and distribution and creating an open (competitive) electricity market. Such interventions should help lift the electricity constraint on growth, increase the share of renewables in the grid and enable competitive pricing of electricity. This is especially important given that the cost of constructing new renewable energy plants significantly decreased during the period 2010–2019, and that this trend is expected to continue.²³

6. Green industrial policy as a tool for structural transformation of the economy

Markets are not good at identifying transformation opportunities and implementing measures to take advantage of them, and often must be cajoled by policy to allocate investments in a manner consistent with the country's development imperatives (see, for instance, Rodrik 2004).²⁴ Industrial policy – government actions to alter the structure of an economy, encouraging resources to move into particular sectors that

22 To the extent that externalities are under-priced in the global economy, unilateral greening efforts by firms in one country (e.g. internalising externalities) raise relative production costs and reduce short-term competitiveness. In this case, one could argue that there exists a trade-off between green industrialisation and welfare. But again, the real issues here are that the externalities are under-priced and firms are unilaterally internalising externalities, thus causing them to lose competitiveness in a relative sense.

23 According to the International Renewable Energy Agency (2020), between 2010 and 2019 the cost of new solar PV projects went down by between 47% and 82% while that of wind projects went down by between 29% and 39%. This corroborates findings by a South African asset management firm (Future Growth Asset Management) that “compared to the most competitively priced new coal plant construction today, a renewable energy plant is at least 30% cheaper to build, when translated to a cost per unit of electricity produced by each technology.”

24 It is well known in welfare economics that markets are good at generating efficient outcomes but such outcomes are not necessarily desirable. This is a point that is often missed by the proponents of ‘free’ markets.

are perceived as desirable for future development – is one of the important tools for effecting structural transformation of an economy (Altenburg and Rodrik 2017; Aghion, Boulanger and Cohen 2011). It can be deployed in relation to climate change to help countries transition to low-carbon economies or to reduce environmental pollution more generally. The argument for (green) industrial policy rests on the existence of, and the need to correct, market failures impeding (green) transformation. Externalities are often cited as the rationale for industrial policy, particularly self-discovery externalities, coordination externalities, learning-by-doing externalities and environmental externalities.²⁵

6.1 Industrial policies needed to address externalities

Self-discovery externalities: Entrepreneurs must experiment with ‘new products’ and/or new ways of producing available products using domestic resources. Whereas the activity of discovering the cost structure of ‘new’ products has high social value to the economy, the entrepreneur is often unable to appropriate most of this value. Furthermore, the risk of carrying out such an activity is borne solely by the investor. This lopsided risk allocation disincentivises entrepreneurs, resulting in under-investment in self-discovery, a low range of green products and under-diversified economies.²⁶

Coordination externalities arise when there is failure to properly coordinate and/or sequence investments in a way that makes private investments profitable. This is particularly the case with high fixed-cost investments if such investments are to be undertaken sequentially and by different firms (Rodrik 2004). The sequential nature of the investments creates hold-up problems for early investors. Under these conditions the private sector may not be able to coordinate its investments in a way that makes it worthwhile for each individual entrepreneur to invest, especially if the profitability of each firm’s investment depends in part on investments by other firms. This is likely to be the case with green goods as the existing infrastructures may not support production of such goods, requiring completely new investments across the value chain. Government can intervene to remove hold-up problems by either guaranteeing a certain return for the initial investors in sequential investment projects or directly undertaking the basic investments itself (e.g. in green infrastructure).²⁷

Learning-by-doing externalities also matter for green industrial development. Khan (2015) points out that “owners, managers, and supervisors often do not know

25 While the presence of market failures provides the rationale for government intervention in the economy, government failure is rife and can itself be a stumbling block to (industrial) development. Government failure may arise due to lack of capacity to formulate policy or the capture of policy by vested interests, or due to political considerations. Even if the policy design were to be optimal, government failure can still occur in the implementation phase. South Africa’s lethargic electricity sector reforms are a good illustration of government failure.

26 New innovations associated with research and development (R&D) expenditures get rewarded through the patent system, hence there are no market failures associated with R&D-induced innovations. ‘Self-discovery’ investments as discussed here generate non-patentable ‘innovations’, hence competitors can immediately imitate successful innovations, denying the ‘innovator’ the opportunity to recoup costs.

27 Or, in the case of South Africa, simply agreeing to enable and purchase renewables.

how best to set up the factory, align the machinery, set up systems for quality control, reduce input wastage and product rejection, manage inventories, match order flows with production cycles, maintain after sales services, and approach a host of other internal team coordination and management issues that are essential for achieving competitiveness". Firms can only build capabilities through 'learning by doing'. Like any other new sector, building a competitive green industrial sector will undoubtedly require significant learning by doing. However, to the extent that learning by doing is associated with low profitability or losses, it can become a constraint to green industrial development, especially in an environment where externalities are not correctly priced, if at all. However, as Khan (2015) notes, the 'doing' is necessary but not sufficient for 'learning' to take place. Owners or management often need to be cajoled to exert high levels of effort in the learning process. The history of industrial policy is littered with examples of 'infants' that never grew despite government support.

Environmental externalities are the costs (or benefits) associated with the production or consumption of goods and services that are borne by (or accrue to) third parties. These have a bearing on the structure of economies as they may favour certain sectors over others. Because of the inability to properly assign property rights, markets generally fail to adequately price the environmental effects of economic activity, and this can lead to economically viable but socially undesirable economic activity (Schwarzer 2013).²⁸ In addition, overexploitation of natural resources undermines their ability to support future economic development and could cause a reversal of the gains realised to date (Altenburg and Rodrik 2017 citing Fay et al. 2015). Environmental externalities are major sources of inertia in green transformation, insofar as industries are constrained by carbon-intensive technologies acquired years earlier owing to path dependence. Such path dependence gives these technologies an unfair advantage (e.g. coal-generated electricity) as externalities are not (adequately) priced. As we will discuss further below, where pricing of externalities is not feasible or is inadequate to level the playing field, the government can, and should, use (green) industrial policies to achieve the desired reconfiguration of the economy, with market forces ensuring efficiency along this new path. This approach is consistent with the second theorem of welfare economics, which argues that the market can achieve resource efficiency for any given initial allocation of endowments.

There are several reasons why green industrialisation is unlikely to develop to the optimal level without government intervention. First, in most cases the markets for green goods are not well developed (possibly due to both self-discovery and coordination externalities) – a case of incomplete markets.²⁹ An example is the market for low emissions vehicles (LEVs), where these vehicles

28 For negative externalities, social costs exceed private costs and as a result there is excessive provision of the externality-generating activity.

29 An incomplete market is said to exist when "certain goods or services cannot be traded because there is no organized market on which to trade; e.g., when there are too few people interested in trading goods of a given type to make an organized market in them worth the costs of operating it" (Oxford Reference, *A dictionary of economics*).

have a small share of the market despite being environmentally friendly. In 2019, electric cars accounted for 2.6% of global car sales while the global stock of electric cars stood at 1% of global car stock (IEA 2020). The low stock indicates market incompleteness as governments in the past did not have strong policy measures to support the development of this market. Recently, many governments have increased fuel taxes and also imposed carbon taxes, which have encouraged technological innovations in LEVs and raised the relative prices of vehicles propelled by fossil fuels.

A related but different reason why green industries may fail to develop or flourish is unfair competition from carbon-intensive goods. Governments have, through their actions or inactions, inadvertently incentivised production and consumption of carbon-intensive goods, making it difficult for green goods to effectively compete.³⁰ Again, a good example is the market for LEVs.³¹ Because the free market does not penalise fossil-fuel-based vehicles for the emissions they produce, and because fossil fuels are relatively inexpensive and in some cases even subsidised, LEVs (electric cars, hydrogen cars, etc.) cannot quite compete with established fossil-fuel-powered cars. Policy could help strengthen the market for LEVs by fully pricing in carbon through, for instance, fossil fuel/ carbon taxes, standards regulations, providing R&D incentives to support technological advancements in the sector as well as demand-side incentives to shift consumer tastes.³²

7. Green industrialisation in South Africa: challenges, progress and opportunities

7.1 The challenges

As mentioned earlier, South Africa is one of the world's dirtiest producers with 86% of its electricity generated from coal. The energy sector therefore has an important role to play in the government's climate change mitigation efforts, as decarbonisation of the sector would have ripple effects across the economy. The Integrated Resource Plan 2019 details the country's planned energy transition and the changing energy mix with a view to significantly reducing emissions.

South Africa faces various challenges in its attempt to green the economy, among them challenges relating to skills, financing, technology, institutional arrangements

30 For example, in South Africa, Eskom has significant monopoly power in the electricity market. It derives this power from government regulation, not necessarily from economies of scale.

31 The energy market – for example, coal versus renewable energy – is also a good example where policy inaction or complicity has slowed the decarbonisation of the energy sector.

32 The IEA (2020) notes: "Ambitious policy announcements have been critical in stimulating the electric-vehicle rollout in major vehicle markets in recent years. In 2019, indications of a continuing shift from direct subsidies to policy approaches that rely more on regulatory and other structural measures – including zero-emission vehicles mandates and fuel economy standards – have set clear, long-term signals to the auto industry and consumers that support the transition in an economically sustainable manner".

and the political economy (WWF 2018).³³ The political economy challenge looms large, and is compounded by high unemployment (around 30%), high poverty and high inequality (a Gini coefficient of 0.65), low skills, powerful trade unions and an inefficient state-owned electricity company (Eskom) that has vast market power. In addition, the structure of the economy, centred on heavy industries in the minerals extraction and processing value chains, gives policymakers pause. This constellation explains government's reluctance to aggressively force transition, instead preferring a gradual approach to decarbonisation (Amis et al. 2018).

As an example, while the government has expressed strong interest in shifting electricity generation from coal to renewables through various iterations of the Integrated Resource Plan, the country faces the challenge of potentially stranded assets if the shift happens too quickly. Equally, demand for electricity currently exceeds supply, which has resulted in the country experiencing rolling brownouts which have constrained investment and growth. As such, there is little appetite by policymakers to retire these coal plants at this point, even as procurement of renewable energy has progressed. Perhaps the silver lining is the fact that most of the coal plants (except for Medupi and Kusile) are now approaching the end of their useful life, which naturally allows for a low-cost switch to clean energy.

Another consideration relates to the jobs in the coal sector supporting these aging plants.³⁴ Decommissioning these plants would see a substantial decline in the demand for coal in the domestic market, and with it the loss of associated jobs.³⁵ While new jobs are expected to be created in the renewable energy sector as it expands, the skills challenge could potentially limit labour mobility across activities. Furthermore, to the extent that the new jobs are skill intensive, unemployment could worsen as the laid-off workers might not be able to reskill to take advantage of the green opportunities (Wakerford, Hasson and Black 2016). Furthermore, renewable energy jobs are likely to be capital intensive whereas coal jobs tend to be labour intensive.

While any job losses are unwelcome, the jobs argument above is static and thus largely flawed. As pointed out earlier, the status quo is already costing the country jobs – both existing and potential – as the instability in the electricity grid is impacting production and competitiveness and also forestalling investment. Important as they are, there is thus the danger of over-emphasising the existing

33 WWF (2018) argues that the country lacks a common national narrative of and reference point for the green economy, which has resulted in government institutions focusing on different and sometimes conflicting goals. One example is the misalignment between “the ethos of the green economy, industrial policy, and the structure of the financial system”, with the financial system not adapted to support investment in low-carbon technologies, except perhaps in the renewable energy sector. Moreover, South Africa faces a binding skills constraint, and has over the last few decades morphed into a technology adopter rather than a technology leader. South Africa also spends relatively little on R&D (less than 1% of GDP).

34 Transition in the energy sector will, among other things, require reforming the electricity sector. After dragging its feet for a long time, government finally appointed a Chief Restructuring Officer at Eskom in 2019.

35 Demand for coal at the global level has been declining and is projected to decline further (Chamber of Mines 2018). This will likely put pressure on the government to support coal jobs in the domestic market, delaying the needed transition. Electricity generation from coal in South Africa has become expensive, particularly if one considers the incessant blackouts, which cost investment, growth and jobs. Over and above the high prices paid by consumers, Eskom has literally pushed the government to a fiscal cliff through the many bailouts afforded to the entity to help keep the lights on. Things only get worse for coal if one also consider externalities, which we should.

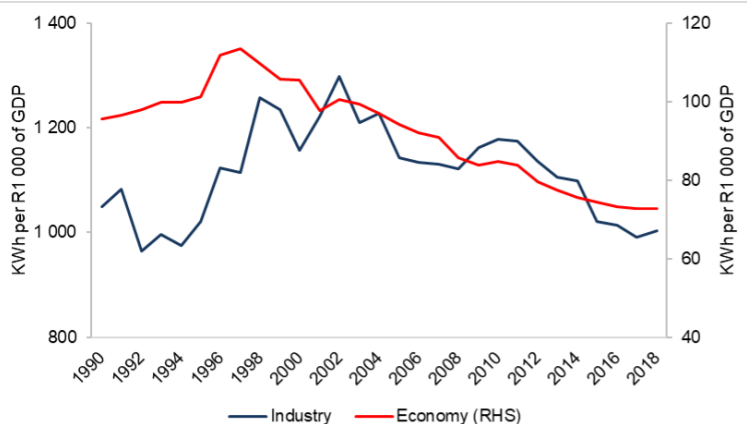
jobs at the expense of growing the economy and expanding opportunities (the insider/outsider problem). As argued by Simbanegavi and Mnguni (2019), “without building competitiveness and viability, policy efforts aimed at ‘protecting jobs’ can only delay, but not prevent, the demise of the struggling incumbent firms, and at a high cost to society”.³⁶

There are potentially strong multiplier effects from relieving the energy constraint. Pursuing renewable energy has multiple benefits. It not only relieves the energy constraint, but also allows the government to realise its Paris commitment, supports investment and employment growth, supports technological innovations thereby enhancing spillovers and competitiveness, and possibly enables technology leap-frogging. This should expand green job opportunities in the rest of the economy (Economic Development Department 2010).

7.2 Progress

How much progress has South Africa made in greening its industry and economy? Amis et al. (2018) give South Africa a score of 5 out of 10, arguing that the efforts have largely been a “public relations exercise” as opportunities to green the economy have not been properly exploited. Notwithstanding this negative assessment, we show below that some commendable progress has indeed been realised. Figure 7 shows a sustained reduction in the energy intensity of production.

Figure 7: Energy intensity of production



Source: Authors' calculations based on IEA 2020 and World Bank 2020 data

Owing to advances in technology, policy support and rapid declines in costs, renewable energy technologies have been widely adopted around the world, and are by and large cost competitive vis-à-vis fossil-fuel-based technologies (International Renewable Energy Agency 2019). Indeed, in terms of new

³⁶ It is apparent that the coal industry is now a sunset industry by any measure. Where possible, policy should support restructuring and reskilling of workers to soften the landing, but still allow for ‘creative destruction’. Tying resources in declining sectors through subsidies not only costs the fiscus, but also constrains the economy’s potential to grow as the opportunity cost of resources is higher outside the declining sectors.

investments globally, renewable energy beats all forms of fossil fuel investments combined (Renewable Energy Policy Network for the 21st Century 2017). South Africa has taken advantage of these positive developments in the global energy technologies space, with some appreciable diversification of the energy pool in the recent time period (see Figure 5). To date, 6 422 MW has been procured from more than 100 independent power producers, of which 3 776 MW is already feeding into the national grid (Department of Energy 2019).³⁷ As mentioned, a shift in the energy mix towards renewables supports the greening of production, particularly with respect to manufacturing, since manufacturing in South Africa is energy intensive.³⁸ Other notable initiatives to reduce the carbon content of output include industrial energy efficiency, demand-side management policies and market-based incentives. We discuss these initiatives below.

7.2.1 South Africa's industrial energy efficiency project

One might ask: What has the South African government done to support energy efficiency by firms (and households) and thus reduce the country's carbon footprint? Is it all talk and no action, as Amis et al. (2018) suggest? The answer, in our view, is that the government has done a fair amount, though there still is a long way to go. The industrial energy efficiency project is the flagship thus far and, as we discuss later, is world pioneering.

Hosted by the National Cleaner Production Centre of South Africa, the industrial energy efficiency project was established in 2010 in collaboration with UNIDO, the Swiss Secretariat for Economic Affairs and the United Kingdom's Department for International Development (which is now the Foreign, Commonwealth & Development Office).³⁹ The project contributes to the sustainable transformation of industrial energy usage practices in South Africa by, among other things, formulating and implementing an enabling policy framework that supports energy efficiency; creating institutional capacity to implement the energy management standards; raising awareness around the importance and impact of industrial energy efficiency; and energy audits. Five major industrial sectors were targeted for the pilot project on account of their potential to bring about a reduction in energy consumption and thus emissions: namely, agro-processing; chemicals and liquid fuels; metals processing and engineering; the automotive industry; and mining (United Nations Economic Commission for Africa 2015).

According to the National Cleaner Production Centre (2020), the benefits of the industrial energy efficiency project up to 2020 include a saving of 6.5 TWh of energy, mitigation of 6.4 million tonnes of CO₂ equivalent and a saving of R5.3 billion in energy costs for the participating companies. In addition, nearly

37 The share of renewable energy in total energy production in South Africa has now reached 7% (Figure 5).

38 Given that the manufacturing sector has very high economic and employment multipliers, greening in this sector may significantly affect the greening of other economic sectors (Wakeford, Hasson and Black 2016).

39 The concept of industrial energy efficiency was first developed and implemented in South Africa, and now is widely implemented in other countries.

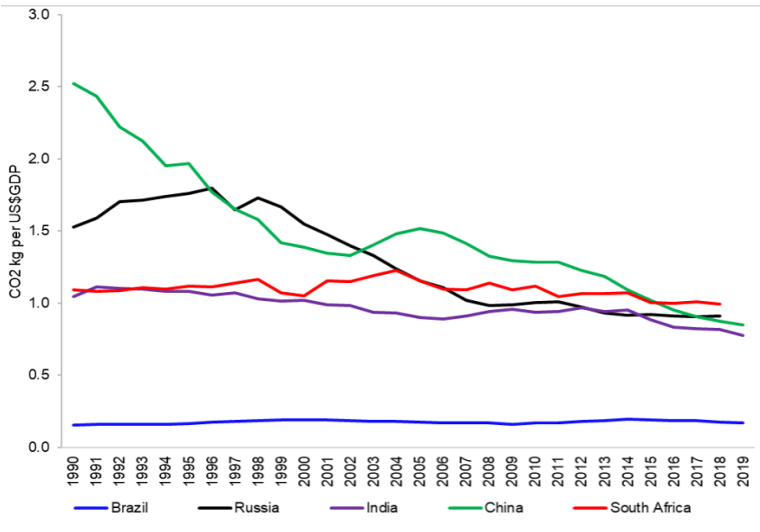
6 500 engineers, technicians and managers were trained in energy efficiency while over 200 experts were trained in energy management standards and energy systems optimisation. The industrial energy efficiency project won the International Energy Award 2020 in recognition of its achievements.

7.2.2 Energy efficiency (demand-side management) policies

The government also intervened to support energy efficiency by households and small firms through the municipal Energy Efficiency and Demand Side Management (EEDSM) programme. The programme included retrofitting existing facilities such as street lighting, traffic signals, municipal buildings, water pumps and waste water treatment plants (UNECA 2015). Among the expected benefits were reduced electricity demand and thus reduced greenhouse gas emissions. One of the main elements of the EEDSM is the National Solar Water Heater Programme, which targeted the installation of 1 million solar water geysers between 2010 and 2015, with the goal of saving 3 500 GWh per annum. The programme, funded by the Department of Energy and implemented by Eskom, integrated the three dimensions of sustainable development (economic, social and environmental), allowing for job creation in project management and solar water heater manufacturing, installation and maintenance (UNECA 2015).

The question, however, is whether the programme goals and objectives were met. It turns out that the programme fell far short. Only 400 000 units were installed under the rebate programme by 2014 against a target of 1 million solar water heaters – a 40% success rate (Cilliers 2018; Netshiozwi 2019). Apart from low uptake, another challenge with the programme was the extensive use of imported geysers or components, which created both quality issues and undermined localisation efforts, reducing the sustainability of the programme. The Department of Energy has since taken over the programme from Eskom and has set a new cumulative target of 1.75 million units by 2019 and 5 million units by 2030 (Cilliers 2018). On a positive note, the establishment and growth of the solar factory in Atlantis (Cape Town), and at least six other solar water heater manufacturers nationwide, was nurtured by the state programme, with manufacturers benefitting from the programme's 70% local content requirement.

While South Africa has made notable progress in lowering the energy intensity of production (Figure 7), it is instructive to assess its performance relative to peers, particularly the BRICS countries (Brazil, Russia, India and China). Figure 8 shows this comparison in CO₂ emissions per unit of GDP (in constant 2010 US dollars).

Figure 8: CO₂ emissions per unit of GDP: South Africa vs the BRICS countries

Source: Authors' calculations with data from the World Bank's World Development Indicators and IEA databases

Figure 8 is illuminating. Brazil is an outlier, with very low emissions per unit of output. This is explained by Brazil's reliance on hydro power for the bulk of its electricity supply. Coal is an insignificant source of electricity for Brazil. China and Russia have shown strong decarbonisation over the period. China reduced its CO₂ emissions from over 2.5 kg per US\$ of GDP in 1990 to under 1 kg by 2018. Given that China is the second-largest economy in the world, this augurs well for world greening. India and South Africa are the worst performers in the group, with South Africa ranking lowest, showing very marginal improvement in the carbon intensity of its GDP over a 30-year period. Although South Africa began significantly below China and Russia in 1990 (1.1 kg / US\$ of GDP for South Africa versus 1.5 for Russia and 2.5 for China), by 2018 South Africa had the most CO₂ emissions per unit of GDP of all BRICS countries.⁴⁰ This poor performance can be attributed to South Africa's excessive reliance on coal for its electricity. Also, policy implementation to improve the energy mix has been weak, despite promising policies on paper. With the EU working on a border carbon tax adjustment and the US re-joining the Paris Agreement, South Africa's export competitiveness could be in jeopardy.

7.2.3 Market-rationing mechanism

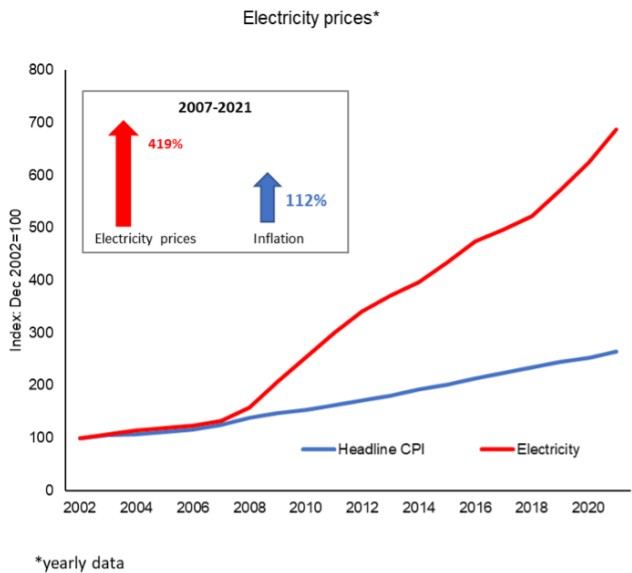
In 2008, South Africa experienced debilitating blackouts and brownouts which affected industry and households. Prior to that, electricity prices in South Africa were among the lowest in the world, and these low prices not only encouraged energy-intensive investments, but also incentivised inefficient consumption of electricity. The industrial energy efficiency project and the EEDSM programme

⁴⁰ When viewed in this context, the skepticism by Amis et al. (2018) seems warranted.

were largely a response to the high energy consumption per unit of output in South Africa. At the same time that these programmes came into effect, electricity prices began increasing to fully reflect the costs of providing the service (Figure 9). This increase in prices encouraged firms and households to conserve electricity, reinforcing the impacts of the industrial energy efficiency project and EEDSM.

The sustained above-inflation electricity price increases since 2008 have moved South Africa from being among the countries with the cheapest electricity in the world to the middle tier. South Africa compares poorly among emerging market peers, which is concerning from the point of view of its competitiveness. As of 2018, South Africa ranked as the most expensive country among the BRICS countries.⁴¹ The cost of electricity in South Africa was R2.56 (p/kWh) while that for Brazil, Russia, India and China was R2.16, R0.92, R1.19 and R1.38 (p/kWh), respectively.

Figure 9: Electricity prices in South Africa



Source: Power Optimal

Looking at Figure 7 on its own, one is tempted to argue that energy efficiency initiatives in South Africa have permeated the industrial sector and the economy more generally. The energy intensity of total GDP shows a strong downward trend since the mid-1990s. Similarly, the energy intensity of the industrial sector also shows a declining trend since the early 2000s, with the slope steepening since about 2010. This period coincides with a number of initiatives directed at reducing the energy intensity of production, including the industrial energy efficiency project, energy demand-side management policies and strong electricity price increases

41 See <https://www.businessinsider.co.za/how-south-africas-electricity-price-compares-to-other-countries-around-the-world-2022-2>

(Figure 9). However, there are other factors that could just as well explain this pattern, including the exit of some high energy-intensive users in the metals, foundries and smelting subsectors as a result of the global financial crisis (weak demand) and lack of competitiveness (South African Institute of Foundrymen 2015).⁴² An interesting question is how much scope remains for further improvements in energy efficiency and thus lower energy intensity in the industrial sector, particularly in the absence of a change in the energy mix.⁴³

7.2.4 The Renewable Energy Independent Power Producer Procurement Programme

The South African Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) was established in 2011. It is a competitive procurement programme for renewable energy introduced to facilitate private sector investment into grid-connected renewable energy generation (Eberhard and Naude 2016). Its establishment was in line with the 2010 Integrated Resource Plan and the 2003 White Paper on Renewable Energy. According to Eberhard and Naude, the programme has been relatively successful in terms of metrics such as capacity, investment and price outcomes. Between 2011 and 2019, a total of 6 422 MW was procured from more than 100 renewable independent power producers. Due to competition and innovation in the industry, the price offered by the independent power producers has continued to decrease. For example, for wind technology, the average bid price, which was 151 cents per kWh in 2011, had decreased to 62 cents per kWh by 2016. Supported by various government instruments, and with likely increased support from financial institutions in future, we are more likely to see renewable energy accounting for an increased proportion of the total electricity generated in the country.

7.3 Opportunities

Greening the energy sector, though important, is only one part of the greening process for the industrial sector. Cleaner energy implies, all other things being equal, lower energy consumed to produce a unit of output. Greening of production and consumption also requires the production of green goods (and services) and complementary policies to incentivise demand of the same. South Africa is the most advanced manufacturing economy on the African continent. It is ranked the regional lead in sub-Saharan Africa, and 45th globally with respect to the competitiveness and industrial development index (UNIDO 2018).⁴⁴

42 According to the South African Institute of Foundrymen (2018), over 100 South African foundries have closed since 2003, and for those remaining, production has slowed by about 43% since 2007.

43 There must be limits to energy efficiency in production. Beyond a certain point, firms are not able to meet regulatory standards through enhancing energy efficiency, hence new products or completely new ways of producing the product may be the only solution. For example, further tightening of vehicle emissions standards in such regions as Japan, the EU and the US may force manufacturers to abandon or significantly modify the workings of the internal combustion engine (Altenburg and Rodrik 2017).

44 This index is composed of three dimensions: dimension 1 assesses a country's capacity to produce and export manufactured goods, dimension 2 assesses technological deepening and upgrading, and dimension 3 assesses a country's world impact.

These capabilities mean that South Africa has potential to participate in many industries/sectors producing green goods (see Altenburg and Rodrik 2017: 8). Leading in the production of green manufactured goods, including green energy components, should not only expand the country's renewable energy significantly but also help fast-track the greening of the economy. Efforts are under way to expand investments in concentrated solar power in South Africa, particularly in the Northern Cape region. Table A1 in the Appendix shows the projects that are either under construction or already operational.

8. Conclusion

COVID-19 gave the world a glimpse of how devastating natural disasters can be to economies and livelihoods. Climate change would be far more devastating than the COVID shock, given its permanence and difficulty that countries will have to adapt.⁴⁵

Countries globally have committed to engage in climate mitigation more concretely through the Paris Agreement. The South African government has made bold statements around climate change and environmental protection, as exemplified by various climate change policy papers and laws. This chapter has explored how well these policies and regulations have been implemented and what the outcomes have been so far. We have considered the challenges and opportunities facing the South African industrial sector when it comes to greening production and consumption, and the role that policy can play in promoting green industrialisation.

One challenge the country faces is how to significantly shift electricity generation from coal to renewables without compromising on short-term economic growth and while addressing the challenges of high unemployment and poverty. We argue that the current electricity shortages, which are constraining investment and growth, are a blessing in disguise as renewable energy can be ramped up without the need to decommission some coal-generating assets in the short term. In the short term, the trade-off between coal and clean energy is not at all binding. Furthermore, the concern that a transition to renewables-based electricity generation could create the risk of stranded generating assets in the medium term is also unfounded for South Africa, as most of these assets are already nearing the end of their lifespan. Policy should also address the apparent misalignment between green economy objectives and those of other key sectors. For instance, the government may need to increase its spending on R&D or create incentives for the financial system to increase its support of risky investments in low-carbon technologies.

The country has an opportunity to transition into renewables and a low-carbon economy. First, most coal plants are approaching their decommissioning state. Second, South Africa, as the most developed manufacturing economy in Africa, has the capacity to participate in a large number of sectors that produce green

45 Although there are some that suggest that pandemics like COVID-19 may become more frequent in future.

goods and to lead the greening crusade in Africa, creating regional green value chains. In particular, South Africa can increase its participation in renewable energy technologies. These include high-tech components of solar photovoltaics, concentrated solar power, wind turbines and energy storage technologies such as the battery energy storage system being pioneered by Eskom. However, just because South Africa has the opportunity to produce renewables does not necessarily mean that it also has an inherent comparative advantage in the production of the related technologies. Areas where the country has a comparative advantage – whether these are sectors or certain stages of the energy production value chain – need to be identified and focused on. It may also be important to identify areas with potential and work on those to ensure future comparative advantage.

Although South Africa compares unfavourably to its BRICS peers with respect to the emissions intensity of its output, the country has realised some successes. These include renewable energy procurement from the independent power producers programme and government's initiatives to reduce carbon content (e.g. through the industrial energy efficiency policy, demand-side management policies and market-based incentives). The carbon intensity of the country's GDP has decreased appreciably, though more remains to be done.

A major concern for South African policymakers ought to be the developments in the EU around the carbon border adjustment mechanism. If South Africa continues to dither on greening, there is a risk that it will be heavily penalised in trade once the EU's carbon border adjustment mechanism takes effect. The country has no choice but to pursue green growth in general, and green industrialisation in particular, as failure to do so will undermine its growth prospects and carry major socio-economic ramifications. South Africa's position vis-à-vis its peers suggests it will likely experience substantial erosion of its competitiveness. Government needs to be decisive and remove any barriers to the development of the renewable energy sector. It also needs to put in place better incentives to encourage green industrialisation. More specifically, all government industrial support must be reviewed, with particular attention being given to aspects of policy that hinder change.

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