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South Africa: Some first-step reforms in an era of  
fiscal constraints**

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# 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\*

## Abstract

This paper focuses on three areas: skills, food systems and urban structure. In each area, we first consider long-term perspectives and then turn attention to high-return steps that can be implemented in the near term. We highlight 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 – such as dedicated lanes for mini-buses – in urban centres. These policies can rapidly improve growth prospects, reduce inequities and help realise longer-term development objectives while recognising the presence of significant fiscal constraints.

**JEL classification:** O40, O50, J68

**Keywords:** COVID-19, South Africa, recovery, growth

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## 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'" ('Cleaning up the rainbow nation' 2019). National Treasury 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 ('Economic transformation, inclusive growth, and competitiveness' 2019).

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 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 suggest that the economy is currently operating at 4 or 5 percentage points below potential (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 appear

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), using data from the National Income Dynamics Study (NIDS) – Coronavirus Rapid Mobile Survey (CRAM), point to “drastic increases in household and child hunger” with rates remaining “stubbornly high” through April and May 2021 (p. 7).

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 can 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 paper 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 paper are complemented by policy ideas developed in the series of papers developed by ERSA that cover labour markets and unemployment (Loewald, Makrellov and Wörgötter 2021), trade policy and constraints to exports (Stern and Ramkolowon 2021), industrial policy (Gwatidzo and Simbanegavi 2021) and monetary policy (Loate, Pirozhkova and Viegi 2021). Finally, in a policy bulletin, Loewald, Makrellov 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 paper 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.

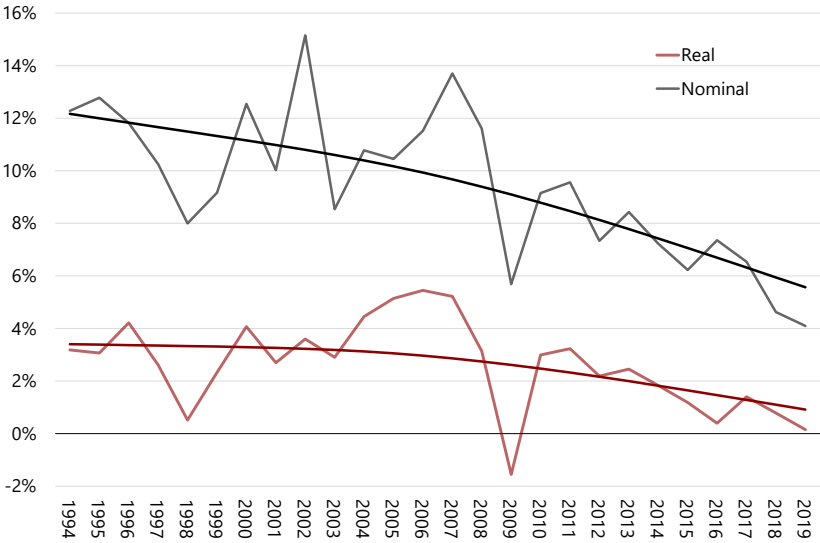
With respect to food systems, nutrition and health, we point to a solid basis for optimism about growth and employment prospects in the long term. We also highlight the potential benefits of a holistic perspective that includes implications for nutrition and health. Turning to the very near term, we 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)

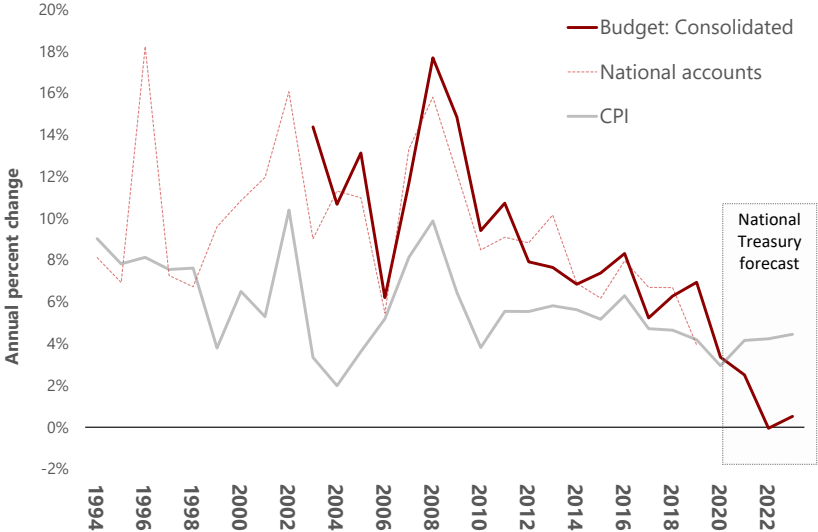


Source: SARB, IHSMarkit and authors’ calculations

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* indicate 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 programs – the Trends in International Mathematics and Science Study (TIMSS), focusing on Grade 9; the Southern and Eastern Africa Consortium for Monitoring Educational Quality

(SEACMEQ), focusing on Grade 6; and the Progress in International Reading Literacy Study (PIRLS), 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.

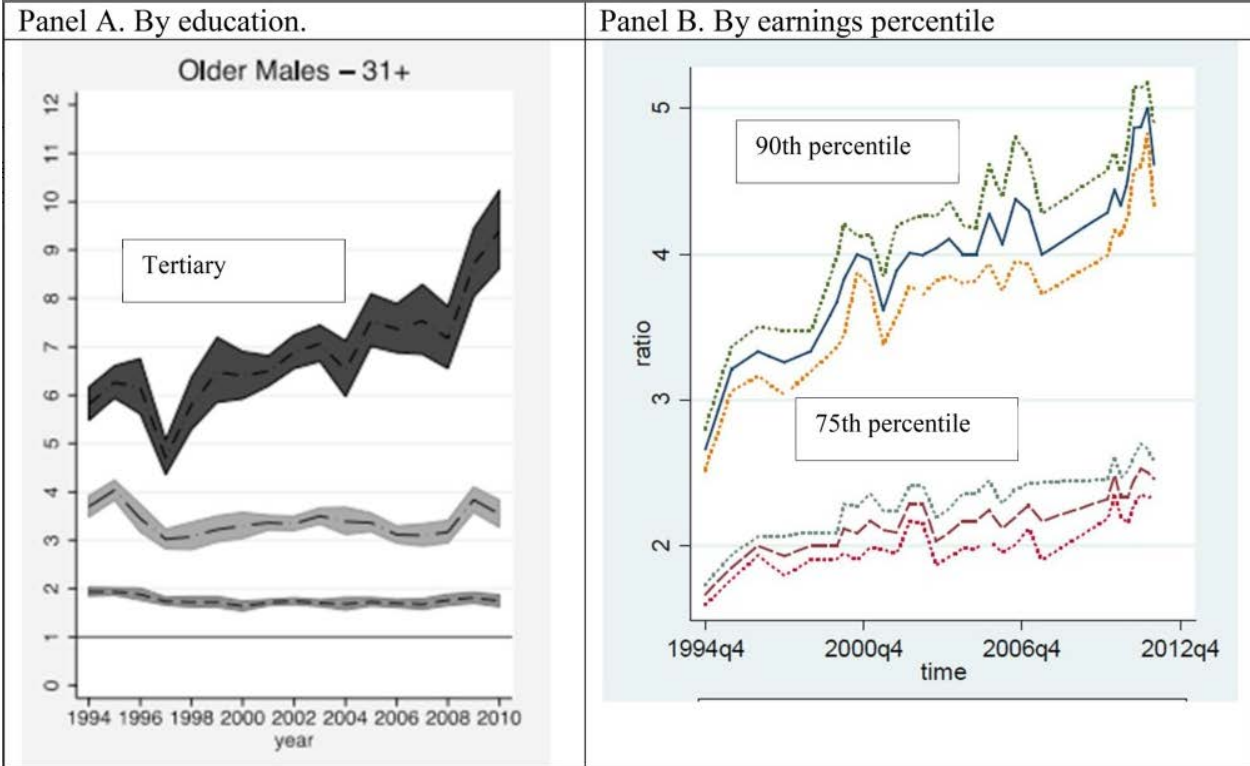
### **3.2 Growth and skills, and skills and growth**

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% (Statistics South Africa 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**

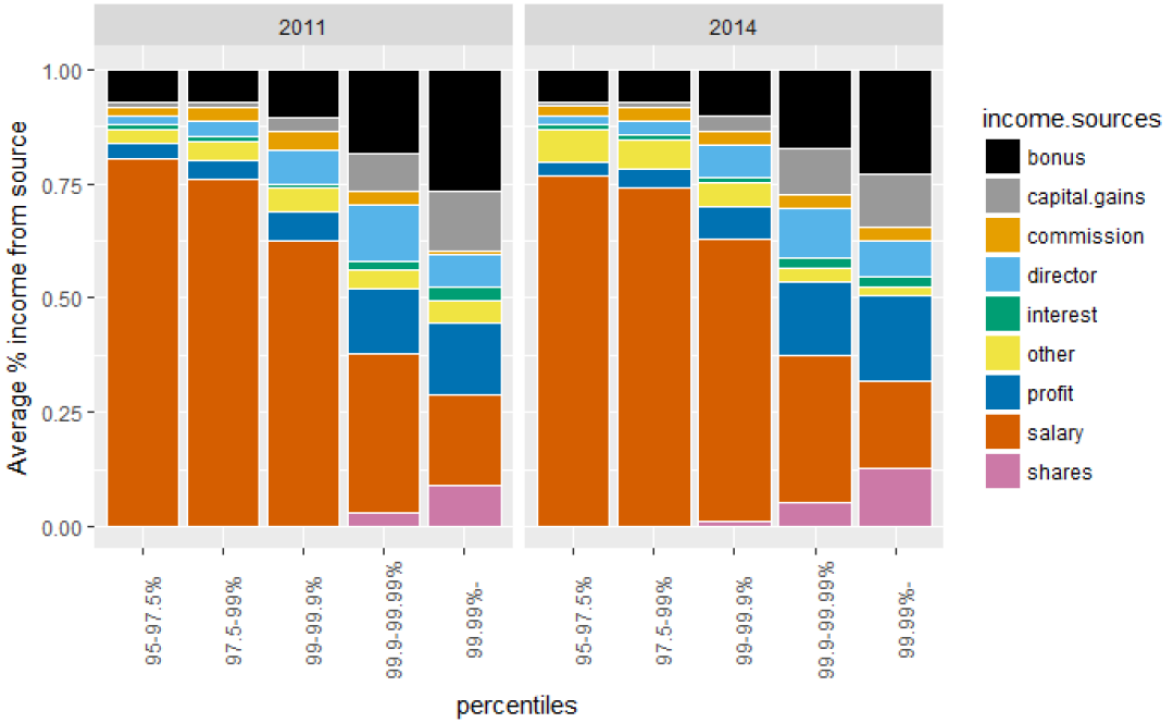


Source: Branson and Leibbrandt (2013) for panel A and Wittenberg (2014) for panel B

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.

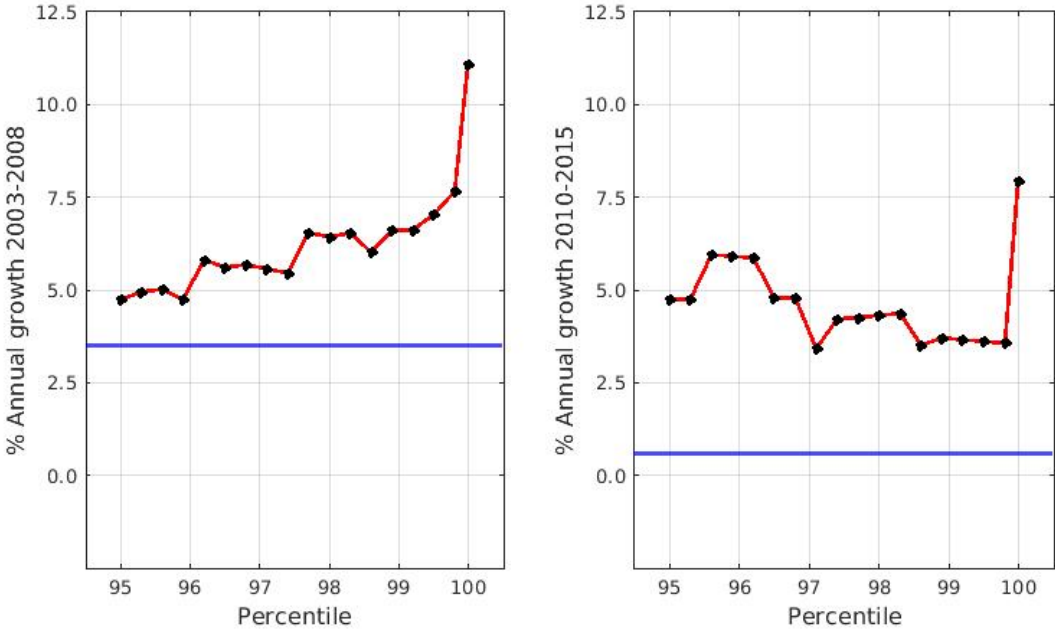
Figures 4 and 5, from Bassier and Woolard (2020), reinforce the findings from Figure 3 and show that the trend of increasing wages for top earners continued at least through 2015. Figure 4 uses detailed income tax data to determine income sources for the top 5% of earners. The data indicate that labour 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.<sup>1</sup> 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 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

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<sup>1</sup> 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.

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 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 and structure of employment 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

Notes: 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 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. They 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 via immigration. The simulation assumes that more capital and labour (with lower educational qualifications than tertiary) can be obtained at prevailing rental and wage rates.<sup>2</sup> 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 driven by immigration of highly skilled and experienced individuals**

| 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

<sup>2</sup> 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.



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

1. The effects are large. In the model, an exact 1% increase in the supply of tertiary-educated labour drives up GDP by more than 1.2% and absorption, the broadest measure of economywide welfare available, by 1.2% exactly. 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%.
2. 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 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.
3. Model results are always only indicative, but these results are plausible. There are two elements to this:
  - a. 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.

- b. 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.
4. 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.
5. 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 black economic empowerment (BEE) is potentially trickier. BEE rules could constitute an effective restriction on highly skilled immigration if not carefully reviewed.

6. Loosening other rules and considering special circumstances would also help. For example, professionals licensed to practice in countries with high standards (for example, medical professionals licensed to operate in the United Kingdom) could be automatically or very quickly licensed to practice 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, labor 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 ten 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 in what they could become. From this perspective, expectations are high (see the Food Systems Summit [Action Tracks](#)). Globally, food systems are aiming for: much more ‘nature-positive’ production, conversion from a major source to a net sink of GHG emissions, serving as a powerful lever to improve livelihoods in a manner commensurate with its role as the world’s largest employer, combatting all forms of malnutrition, and taking 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.<sup>3</sup> The next closest country is Tanzania at 18. For most economies

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<sup>3</sup> In other words, if South Africa's export basket contained only 44 products with each product comprising 1/44th of total food export value, it would have (about) the same Herfindahl-

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

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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.

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.

Obviously, this is a long-term agenda with many of the elements already spelled out in the 77-pager.<sup>4</sup> In addition, water infrastructure is a focus of Operation Vulindlela,<sup>5</sup> 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,

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<sup>4</sup> 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.

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

such as the security of private property rights, are respected throughout the reform process” (page 39). 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.

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.<sup>6</sup> While there are perils for the generaliser, both the theory and the available empirics indicate that 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 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

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<sup>6</sup> Calculated from the General Household Survey of 2019.

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 (analogous to the Uber app) 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.

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