



FINANCIAL
AND FISCAL
COMMISSION



Technical Report

SUBMISSION FOR THE DIVISION OF REVENUE

2022/23



**TECHNICAL REPORT:
SUBMISSION FOR THE DIVISION OF
REVENUE**

2022/23

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List of acronyms

ADF	Augmented Dickey-Fuller
AGSA	Auditor-General of South Africa
AIDS	Acquired Immunodeficiency Syndrome
ANC	African National Congress
ANN	Artificial Neural Network
ARMA	Autoregressive Moving Average
BEAM	Basic Education Assistance Module
BIG	Basic Income Grant
BOO	Build-own-operate
BOT	Build-operate-transfer
BRICS	Brazil, Russia, India, China, South Africa alliance
BROT	Build-rehabilitate-operate-transfer
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CGE	Computable General Equilibrium
CGE	Commission on Gender Equality
CGP	Child Grants Programme
CIDB	Construction Industry Development Board
CIT	Corporate Income Tax
CoGTA	Department of Cooperative Governance and Traditional Affairs
COVID-19	Novel Coronavirus Disease
CPI	Consumer Price Index
CRAM	Coronavirus Rapid Mobile (study)
CSG	Child Support Grant
DALRRD	Department of Agriculture, Land Reform and Rural Development
DDM	District Development Model
DEA	Data Envelopment Analysis
DBE	Department of Basic Education
DEL	Department of Employment and Labour
DFFE	Department of Forestry, Fisheries and the Environment
DG	Disability Grant
DHA	Department of Home Affairs
DHET	Department of Higher Education and Training
DHSWS	Department of Human Settlements, Water and Sanitation
DJ&CD	Department of Justice and Constitutional Development
DMRE	Department of Mineral Resources and Energy
DMU	Decision-making Unit
DoH	Department of Health

DPLG	Department of Provincial and Local Government
DPME	Department of Planning, Monitoring and Evaluation
DPSA	Department of Public Service and Administration
DPWI	Department of Public Works and Infrastructure
DRDLR	Department of Rural Development and Land Reform
DSBD	Department of Small Business Development
DSD	Department of Social Development
DSGE	Dynamic Stochastic General Equilibrium
DTIC	Department of Trade, Industry and Competition
DWS	Department of Water and Sanitation
DWYPD	Department of Women, Youth and Persons with Disabilities
EMDE	Emerging Markets and Developing Economies
ENE	Estimates of National Expenditure
ERRP	Economic Reconstruction and Recovery Plan
FAO	Food and Agriculture Organisation
FCG	Foster Care Grant
FFC	Financial and Fiscal Commission
FIA	Fiscal Incidence Analysis
FMG	Financial Management Grant
FPL	Food Poverty Line
FSPT	Free State Provincial Treasury
FTE	Full-time Equivalent
G20	Group of Twenty (countries)
GBM	Generalised Boosted Machine
GBV	Gender-based Violence
GCIS	Government Communication Information System
GDP	Gross Domestic Product
GE	Government Expenditure
GET	General Education and Training
GHI	Global Hunger Index
GLiM	Generalised Linear Model
GPF	Gender Policy Framework
GRB	Gender-responsive Budgeting
GRPBMEA	Gender Responsive Planning, Budgeting, Monitoring, Evaluation and Auditing Framework
GVA	Gross Value Addition
HDA	Housing Development Agency
HIV	Human Immunodeficiency Virus
HP filter	Hodrick-Prescott filter

HSDG	Human Settlements Development Grant
IBT	Increasing Block Tariffs
IDP	Integrated Development Plan
IFC	International Finance Corporation
IFPRI	International Food Policy Research Institute
IGFR	Intergovernmental Fiscal Relations
ILO	International Labour Organisation
IMF	International Monetary Fund
INEP	Integrated national Electrification Programme
IPP	Independent Power Producer
JICA	Japan International Cooperation Agency
KPI	Key Performance Indicator
KRLS	Kernel-based Regularised Least Squares
Lasso	Least Absolute Shrinkage and Selection
LBPL	Lower-bound Poverty Line
LCS	Living Conditions Survey
LED	Local Economic Development
LEXP	Log of Municipal Expenditure
LGES	Local Government Equitable Share
LGFF	Local Government Fiscal Framework
LGVA	Log of Gross Value Addition
LHDI	Log of Human Development Index
LML	Lower Middle Income
LOR	Log of Own Revenue
LPOP	Log of Population Growth
LUN	Log of the Unemployment Rate
MEC	Member of the Executive Council
MFIP	Municipal Financial Improvement Programme
MFMA	Municipal Finance Management Act
MIG	Municipal Infrastructure Grant
MIGA	Multilateral Investment Guarantee Agency
MINMEC	Ministerial and Member of the Executive Council
MOLISA	Ministry of Labour, Invalid and Social Affairs
MPI	Multidimensional Poverty Index
MPRA	Municipal Property Rates Act
MSIG	Municipal Systems Improvement Grant
MTEF	Medium-term Expenditure Framework
MTSF	Medium-term Strategic Framework
NCoP	National Council of Provinces

NCS	National Curriculum Statement
NDP	National Development Plan
Nersa	National Energy Regulator of South Africa
NGM	National Gender Machinery
NIDS	National Income Dynamics Study
NIPFP	National Institute of Public Finance and Policy
NPM	New Public Management
NSC	National Senior Certificate
NYDA	National Youth Development Agency
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
OLS	Ordinary Least Squares
OPEC	Organisation of the Petroleum Exporting Countries
OPG	Older Persons' Grant
OSW	Office on the Status of Women
PBB	Performance-based Budgeting
PEPUDA	Promotion of Equality and Prevention of Unfair Discrimination Act
PERSAL	Personnel Salary System
PFMA	Public Finance Management Act
PIT	Personal Income Tax
PPBB	Performance- and Programme-based Budgeting
PPE	Personal Protective Equipment
PPI	Producer Price Index
PPP	Public-private Partnership
PRASA	Passenger Rail Agency of South Africa
PSN	Productive Safety Net
PSP	Private Sector Participation
RF	Random Forest
RLT	Rehabilitate-lease-transfer
ROT	Rehabilitate-operate-transfer
QLFS	Quarterly Labour Force Survey
SADC	Southern African Development Community
SAHRC	South African Human Rights Commission
SALGA	South African Local Government Association
SAM	Social Accounting Matrix
SANDF	South African National Defence Force
SANRAL	South African National Road Agency Limited
SAPS	South African Police Service
SARB	South African Reserve Bank

SARS	South African Revenue Service
SCM	Supply Chain Management
SCTP	Social Cash Transfer Programme
SDBIP	Service Delivery and Budget Implementation Plan
SDG	Sustainable Development Goals
SIDA	Swedish International Development Agency
SONA	State of the Nation Address
SRD	Social Relief of Distress
Stats SA	Statistics South Africa
SSEG	Small-scale Embedded Generation
STI	Sexually Transmitted Infections
SVR	Support Vector Regression
SWIID	Standardised World Income Inequality Database
TB	Tuberculosis
TERS	Temporary Employer(ee) Relief Scheme
TFP	Total Factor Productivity
UBPL	Upper-bound Poverty Line
UIF	Unemployment Insurance Fund
UK WBG	United Kingdom Women’s Budget Group
ULC	Unit Labour Cost
UMI	Upper Middle Income
UN	United Nations
Unicef	United Nations Children’s Fund
UNIFEM	United Nations Women
USAID	United States Agency for International Development
USDG	Urban Settlements Development Grant
US EPA	United States Environmental Protection Agency
VAR	Vector Autoregression
VAT	Value-added Tax
VIP	Ventilated Improved Pit (latrine)
VRS	Variable Returns to Scale
WBS	Women’s Budget Statements
WDI	World Development Indicators
WHO	World Health Organisation
WSA	Water Service Authority
WSP	Water Service Provider

About the authors

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Executive summary

The COVID-19 pandemic is still spreading relentlessly across the breadth and depth of the country, causing serious damage to the economy and livelihoods. It has intensified the existing inequalities and condemned many people to poverty and unemployment. It has also posed many challenges, including the efficacy of the macro-fiscal system in accommodating pandemic-induced challenges.

Questions abound on the impact of the pandemic on one of the state's fundamental obligations: the progressive realisation of citizens' basic rights, as enshrined in the Constitution. Such questions arise because the COVID-19 pandemic has brought to bear the inadequacies in access (both in terms of quantity and quality) to basic services and food, and has heightened imbalances and conflicts in society, especially along gender dimensions.

This technical report, under the theme "The effects of COVID-19 and the changing architecture of subnational government financing in South Africa", served as background to inform the FFC's flagship submission: The 2022/23 Annual Submission to the Division of Revenue.

Positions taken in the technical report should therefore not necessarily be seen as reflecting the position of the Commission. It should also be noted that the chapters of this report have been further summarised into policy briefs reflecting key research findings.

Research Department

Financial and Fiscal Commission

Chapter 1

Measuring the macroeconomic impacts of COVID-19 in South Africa



Chapter 1:

Measuring the macroeconomic impacts of COVID-19 in South Africa

Chen Tseng

1.1 Introduction

The COVID-19 pandemic and the sudden imposition of the nationwide lockdown have triggered the most significant recession ever recorded in South Africa's economic history. Real gross domestic product (GDP), measured by production at market prices, declined at an unprecedented annualised quarterly rate of -51.7% in the second quarter of 2020 (Stats SA, 2021a). This is more than eight times the decline of -6.1% witnessed in 2009 during the height of the financial crisis (Stats SA, 2021a). Before the onset of COVID-19, the South African economy was amidst a technical recession that started in the second quarter of 2019, influenced in part by the structural failures of state-owned monopolies, which rendered them unable to provide a reliable and quality supply of energy. Inefficiency in public sector service provision, combined with the pandemic's shock on overall productivity in the economy, has led to the country facing its highest level of unemployment, deepening poverty and escalating inequality. The sustainability risks of maintaining social transfers to the vulnerable, the previously disadvantaged and the marginalised groups are now materialising. The sudden halt in economic activities due to the national shutdown exacerbated existing structural fragilities within the economic (and fiscal) architecture of South Africa. Not only has this caused significant uncertainty, but the momentum of addressing the socio-economic legacies of apartheid since the country's transition to democracy has been disrupted.

During the peak of the nationwide lockdown, between April and June 2020 (in the second quarter), all but one industry (agriculture) suffered significant losses in output. The construction and mining industries were closed. Upstream and downstream factory plants for manufacturing goods and trade, as well as the logistics involved in moving these goods, also came to a halt. As people lost their jobs and income, and economic activity became restricted, finance operations became reluctant to move and release capital. Household demand patterns were disrupted and became conservative. In addition to this, there were closures of facilities such as hotels, restaurants and recreational facilities, and public transport ceased operating. Those most impacted by the shock of the COVID-19 pandemic are economically marginalised individuals – those without a secure and stable job and a means of income, and without access to services to meet their basic needs in terms of water, electricity, housing, health care and education.

Following the easing of the COVID-19 lockdown restrictions, economic activities slowly resumed, supported by demand, although from a lower base. As such, the South African economy recovered by an annualised quarterly rate of 67.3% in the third quarter of 2020. The fourth quarter of 2020 maintained this positive trajectory, growing at an annualised quarterly rate of 6.3%. This was bolstered mainly by the return of industrial activities in manufacturing and trade. However, comparing the same quarter, year-on-year, the overall change in outputs (measured by the real GDP at market prices) shows that the South African economy contracted by -7.0% in 2020 relative to 2019 (Stats SA, 2021a). Since the economy's size has shrunk, while population growth has continued, the GDP per capita decreased to a level equivalent to 2005 (Stats SA, 2021a).

Initially, government responded to the COVID-19 pandemic with a commendable level of efficiency. The pandemic was declared a “national disaster”, and the necessary nationwide lockdown measures were imposed mere days after the domestic patient-zero had been identified in March 2020. Subsequently, the lockdown level stepped down from Level 5 to Level 4 on 1 May 2020, Level 3 on 1 June 2020, Level 2 on 17 August 2020 and then to Level 1 in September 2020. However, in December 2020, a local variant of the infectious virus emerged, and the second wave of the pandemic forced the country to move back to Level 3 just before the new year, on 29 December 2020. Nevertheless, tentative signs of recovery in economic activity have emerged since the second peak of the COVID-19 infection rate started to subside in January 2021.

Since the onset of the COVID-19 pandemic, government has been forced to balance, on the one hand, the need to implement policies aimed at protecting the health and safety of its population, and on the other, the need to minimise the negative economic consequences of the lockdown. Government's capacity, capability and adaptability have thus been put to the test. The pandemic has also exposed many of the structural weaknesses in the economy that undermine the country's economic recovery. Access to basic public services, such as electricity and water, which are necessary to support production factors (labour) and growth, is lacking. Therefore, the current economic outlook, which is beset with significant downside risks, is unlike any situation experienced in South Africa before.

The potential new waves of the infection caused by variants of the virus, combined with the weakened fiscus, leaves the South African government little choice but to reprioritise in order to administer the rollout of the vaccines, as this will ensure the health and safety of individuals, and allow them to return to work. However, reversing the downside risks and fostering economic recovery will require more than just the COVID-19 vaccine rollout, as only such progress will return potential output in the economy to pre-COVID-19 levels of production. In order to overcome the current challenges and future risks that the pandemic has created, government must undertake additional measures in the form of effective policy support interventions, and take tangible steps towards informed and strategic structural transformation.

Policies, systems and structures of the economy should all learn from our current experience of the pandemic in order to prepare for future possible public health outbreaks in the country and elsewhere in the world. For instance, the COVID-19 pandemic and the induced nationwide lockdown have demonstrated how information technology, social and economic infrastructure, and even the way of functioning and production (i.e. working remotely for specific industries) could be productivity preservers or even multipliers. Relying on the most recent empirical data, this paper aims to provide a first-hand examination of the economic impact of COVID-19 in order to inform policies for recovery in South Africa.

1.2 Problem statement and research questions

Faced with the unprecedented macroeconomic shock of the COVID-19 pandemic, the problem statement of this research is: How has COVID-19 impacted economic growth in South Africa?

According to the latest available information on GDP for the first quarter of 2020, economic models and literature have offered a wide range of predictions for the South African economy's GDP growth trajectory. Estimates presented ranged from a contraction of GDP of -5.8% to over -20% in 2020 (IMF, 2021a). Accurate economic estimates provide reliable information that can inform policymakers to make more effective and appropriate policy decisions. Therefore, there is a need for a better understanding of the macroeconomic environment through a robust examination of the impacts of COVID-19 on the domestic economy. To this end, the research questions underpinning this study are as follows:

- i. How does COVID-19 impact the South African economy relative to countries in the Brazil, Russia, India, China, South Africa alliance (BRICS countries)?
- ii. How has COVID-19 impacted the supply system as factors of production in terms of productivity in the real economy?
- iii. How has the COVID-19 shock altered the industrial construct and product value chain proposition as demand patterns in the economy?
- iv. What are the long-run potentials of output and output gaps that could inform growth predictions and trajectories?

1.3 Research aims and objectives

The overarching aim of this paper is to present and empirically measure the impact of the COVID-19 pandemic on the macroeconomic variables underpinning the structural pattern and the trajectory of growth in South Africa.

The specific research objectives addressing the research questions above are as follows:

- Measure the impact of COVID-19 on the South African economy relative to BRICS countries.
- Measure the changes in domestic factors of production and productivity to supply that have resulted from the COVID-19 pandemic.

- Investigate the changes caused by COVID-19 on the domestic market's industrial construct and product value chain propositions by uncovering any shifts in demand patterns in the economy.
- Conduct an econometric prediction of the long-run potentials of output and output gaps that inform South Africa's growth trajectory or growth path.

The outcome of this research shall result in robust economic modelling of production with systems of demand and a value production framework, using official, representative data for the purpose of uncovering the COVID-19 pandemic's economic impacts. The results from the economic model will allow the Commission to gain a clearer understanding of the growth path of the South African economy – particularly from the perspective of aggregate demand, industry and supply productivity – in order to inform policy decisions on the basis of reliable empirical evidence.

1.4 Research methodology and data

This paper adopts a quantitative approach of financial programming, descriptive analysis and macroeconometric techniques of simple time series. In order to analyse macroeconomic developments that may inform the design of appropriate policies, a descriptive model on the determinants of productivity contributors towards economic growth is employed. In terms of data, the System of National Accounts of the South African Reserve Bank (SARB) and GDP data from Statistics South Africa (Stats SA) are used as the primary sources of information upon which a framework for interpreting economic growth is built. The model uses the Financial Programming and Policies Framework of the International Monetary Fund (IMF) as its base. This is an internationally recognised system of organising fundamental economic flows.

This paper begins by locating the South African economy's position relative to its BRICS peers and highlights the key socio-economic challenges of poverty, inequality and unemployment in the domestic context. This is an important yet often neglected step in macroeconomic research because the South African economy, especially in terms of its labour market, is unique compared to other economies due to the legacy of apartheid. Thus, these idiosyncratic characteristics should be considered for measuring the impact of COVID-19 at the macro level. Thereafter, the supply system, as factors of production and their changes in terms of productivity, is analysed to identify the impediments to growth that affect South Africa's development. Thereafter, the impact of COVID-19 on the supply system is analysed in terms of the changes in productivity in factors of production for the purpose of identifying further impediments to growth in the domestic context.

The paper adopts the fundamental calculation of the Solow (1956) growth model in the theoretical and experiential economic growth literature, using input labour and capital as the primary production factors for economic growth to solve for the Solow residual as total factor productivity (TFP). The TFP (or the Solow residual) essentially represents the remaining factors of growth after the primary factors of production (labour and capital) have been taken into account, which allows us to explain variations in the growth rates.

Residual factors represented by the TFP, such as innovation and the structural resilience of domestic institutions, form a powerful measure for the overall efficiency level of factors other than labour or capital in the growth process. Kumo (2017) indicates that TFP is important for “explaining the trajectory and momentum for long-term growth”. For example, Kim and Loayza (2019) find that sub-Saharan Africa has a low TFP growth rate relative to other regions. This finding is consistent with an earlier study by Senhadji (1999), which shows that Africa had the lowest annual TFP growth (negative growth), ranging from -0.26% to -0.79%. This explains the lack of overall productivity and the persistent growth struggles that are prevalent in the region.

The paper not only uses a non-parametric methodology of estimating averages and trends, but will also adopt multivariable macroeconomic aggregates of labour, capital and TFP as factors of production. Furthermore, the paper applies a more nuanced mapping of the labour market by taking into account skills as represented by industry codes in order to gain deeper insights into sector productivity and sector-specific employment productivity. For capital, the paper will briefly analyse the dynamic process of capital accumulation with gross capital formation as investment and depreciation for capital losses. Based on the production model, the research will examine the impact of the COVID-19 pandemic on the industrial and labour compositions in order to analyse how the pandemic may have changed the supply side of the economy. More specifically, the essence of the production function takes after the fundamental theory of the Cobb-Douglas production function in the general form, represented by Equation 1.1.

Equation 1.1: Cobb-Douglas production function

$$Y^* = A^* K^{*\alpha} L^{*1-\alpha}$$

Equation 1.1 shows that the output of an economy (Y) is a function of capital (K) and labour (L), contributing with the assumed elasticity of capital (α), and complemented by the same, but of labour ($1 - \alpha$), to form the constant economies of scale. Everything else is denoted as TFP (A).

The process of capital (K) accumulation follows the perpetual inventory method, given by:

$$K_t = (1 - \delta)K_{t-1} + I_t$$

This method of capital accumulation indicates that current (i.e. at time t) capital (K) is accumulated by the previous period's (i.e. at time $t - 1$) capital, less the amount depreciated, plus what has been added as new capital or investment (I). Labour (L) is represented by aggregate employment, while the output (Y) uses the seasonally adjusted GDP as its proxy. With the assumption that the elasticity of capital contribution (α) is at 30% of the economy, the model solves for TFP in the general form, which is represented in Equation 1.2.

Equation 1.2: Total factor productivity

$$A_t = \left[\frac{Y_t}{K_t^\alpha L_t^{1-\alpha}} \right]$$

Before turning to the economy's demand function, the paper will take a modest look at the industrial construct and sector employment proposition in order to shed some light on how the pandemic impacts the industrial sectors of the economy.

With this evidence on the supply side, the paper carries out the Neo-Keynesian theory of demand analysis by decomposing the aggregate demand into consumptions of different sectors: private, public and external balances. The general form of the Keynesian aggregate demand for consumption is given by Equation 1.3.

Equation 1.3: The Keynesian aggregate consumption (expenditure) model

$$Y^* = C + I_{private+public} + G + NX$$

Equation 1.3 shows that aggregate demand, denoted as (Y), is comprised of private consumption (C), investment (I), government purchases or consumption (G), and net of exports minus imports (NX)

With both the supply-side (Equation 1.1) and demand-side (Equation 1.3) simple models of the economy, the paper then turns to conducting an econometric exercise of predicting the long-run potentials of output and output gaps. More specifically, the paper uses the parametric techniques of the Hodrick-Prescott (HP) filter,¹ a median-moving average and the parametric function of supply as in Equation 1.1, to inform South Africa's growth trajectory.

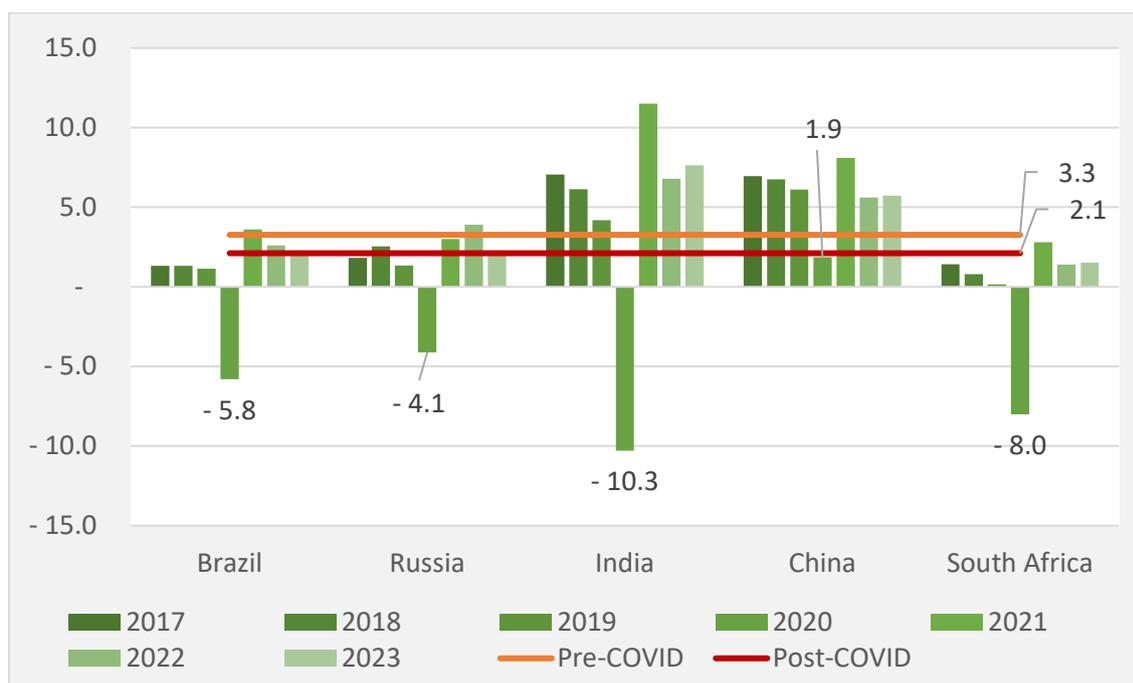
1.5 Results

1.5.1 South Africa in prospect

The BRICS group of countries (Brazil, Russia, India, China and South Africa) are essential role-players in reshaping international economic relations. These countries encompass more than 25% of the world's land area and 40% of the world's population. The combined GDP of the BRICS countries reached US\$17 trillion in 2014, representing just under 22% of the global economy (Lowe, 2016).

¹ The Hodrick-Prescott filter (also known as Hodrick-Prescott decomposition) is a mathematical tool used in macroeconomics, particularly in real business cycle theory, to remove the cyclical component of a time series from raw data. It is used to obtain a smoothed-curve representation of a time series, one that is more sensitive to long-term than to short-term fluctuations.

Figure 1.1: GDP growth in constant prices, 2017–2023, BRICS countries (in percentage)



Source: International Monetary Fund (2021b) and Commission’s calculations

Figure 1.1 shows that South Africa, Brazil and Russia’s GDP growth was already lower than the 3.3% averaged GDP growth among BRICS countries during the pre-COVID-19 period. For the post-COVID-19 period, all BRICS countries’ GDP growth is projected to decline significantly below the 2.1% mean with an assumed, temporary rebound of economic activities, thereby stabilising towards pre-COVID-19 levels of economic growth over time. Despite this, it is worth noting that South Africa’s growth rates for the pre- as well as the post-COVID-19 periods are below the BRICS countries’ calculated average. With the exception of the temporary rebound period in 2021, the below-average growth estimate of South Africa relative to BRICS countries may be attributed to unresolved structural issues, related to both lack of electricity supply (by the monopoly state-owned company Eskom) and long-standing socio-economic challenges of poverty, inequality, unemployment and governance issues.

The unprecedented global health and economic crisis has, to varying degrees, jeopardised the developmental gains of BRICS countries and upended millions of lives and livelihoods. With potentially multiple incoming waves and mutations of the virus, it has added complexities to the already volatile situation that needs serious consideration. Economic recovery from the devastating impacts of the COVID-19 pandemic will differ across countries depending on, inter alia, the structural soundness and resilience of their institutions, their agility to adaptive governance, and their capabilities to reignite domestic productivity. Therefore, as the crisis is still unfolding and uncertainties persist, it cannot be reasonably expected that these countries’ economic behaviour towards recovery will occur uniformly. This fact will be particularly noticeable in South Africa, whose growth momentum during the pre-crisis period was the weakest among the BRICS countries.

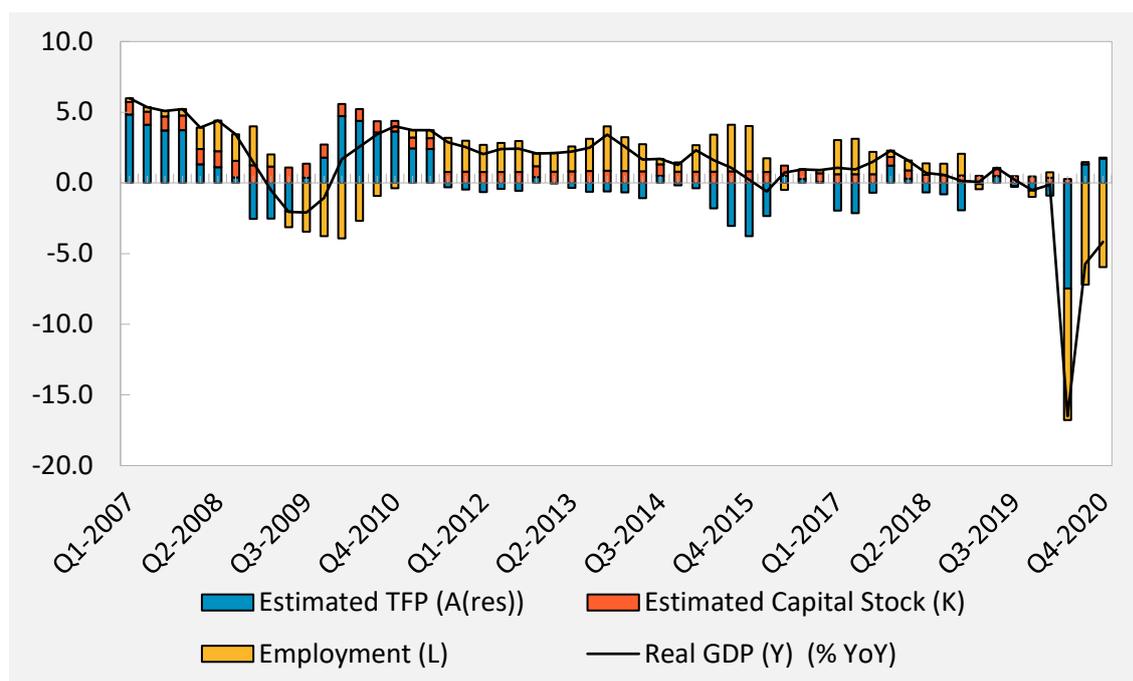
The results below unpack the likelihood of the growth levels post-COVID-19 for South Africa and of the assumption that the economy will rebound, taking into account considerations of supply and productivity, the industrial construct of South Africa, aggregate demand and the domestic economy's long-run potential output.

1.5.2 Supply and productivity

Figure 1.2 presents the factor contributions of capital, labour and the estimated TFP to economic growth over time by deconstructing the South African economic growth, or growth decomposition, as per the production function (see Equation 1.1). The focus is on the estimated TFP as a proxy for residual productivity factors such as technology, institutions, policy certainty and governance in the growth process. According to the data, South Africa entered a prolonged period of structural decline before the arrival of the COVID-19 crisis, especially around 2015 and 2016, represented by the decline in estimated TFP over that period. The onset of the COVID-19 pandemic drastically deepened the underlying structural vulnerabilities in TFP by roughly -7.5%, notwithstanding the collapse in labour by -9.3% in the second quarter of 2020. Due to the necessary nationwide lockdown to contain the spread of the virus, masses of unemployment ensued as businesses halted their operations, causing people to lose their jobs and income. Restrictions on the movement of persons have also limited people's freedom to search for work, causing affected individuals to become economically inactive.

The TFP recovered positively in the third and fourth quarter of 2020 due to lockdown restrictions easing after the first wave of COVID-19 infections. Such easing coincided with the reopening of industries and trade in a phased manner. However, the improvement in productivity did not prevent overall economic growth from declining because labour, as a factor of production, continued to decline, and this outweighed the growth in the TFP. Furthermore, capital's contribution to growth decelerated to almost 0% since the onset of COVID-19, which compromised growth in terms of the supply of capital stock. A possible reason for the subdued growth contribution of capital as a factor of production is that, despite the reopening of the economy, firms remain risk-averse in investing in machinery and infrastructure, which contributes to capital. Furthermore, financial markets may have also taken a conservative outlook on lending liquidity to firms to accumulate the stock of physical capital for growth, which would undermine the growth trajectory.

Figure 1.2: Contributions to growth, Q1-2007 to Q4-2020 (in percentage, year-over-year)



Source: South African Reserve Bank (2021) and Commission's calculations

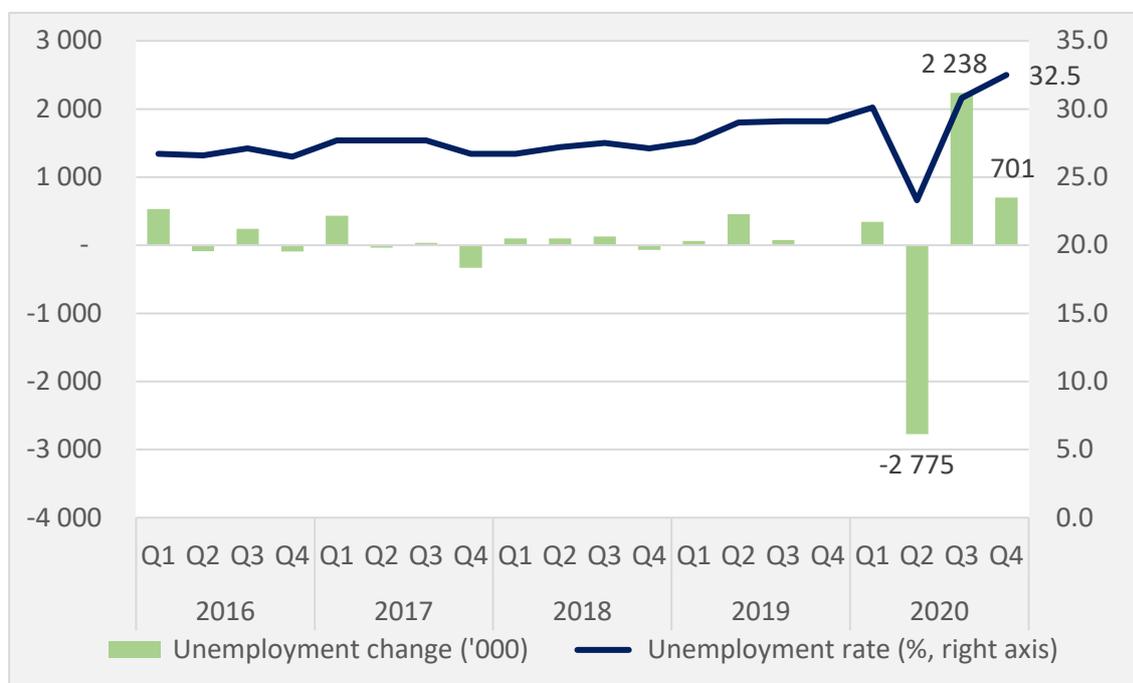
A noteworthy structural trend that may be observed in the growth analysis is that growth in South Africa is capital-biased, as it is the only component to have sustained positive growth throughout the period under study. This fact also implies that South Africa's economic development has a higher marginal productivity – or lower marginal cost of capital – relative to labour. On the labour side, due to active union movements, reservation wage rigidities and non-competitive labour policies, the marginal productivity of labour remained relatively low and the marginal cost high. The result is a distortion in the productivity ratio between labour and capital, resulting in an inability to reach optimal competitive rates of productivity or minimum cost by input substitution. Simply put, the cost of labour has been kept high by decisions and policies, which has resulted in the economy being unable to pivot away from its historically skewed industrial structure (which relies heavily on capital) towards labour-inclusive economic growth.

Figure 1.3 shows the impact of the COVID-19-induced lockdown on the labour market. From the graph, mass unemployment is clearly the most noticeable impact of the pandemic. Following the restriction of people's movement in the second quarter of 2020 (Q2-2020), many job seekers were unable to look for employment and became economically inactive, resulting in the unemployment rate declining temporarily to 23.3%.²

² The decline in the unemployment rate notwithstanding, mass job losses during this period are due to the fact that the official unemployment rate in South Africa (which is according to the strict or narrow definition) does not include discouraged work seekers, but only those individuals who are unemployed and actively seeking work, i.e. economically active.

With the easing of lockdown restrictions and people emerging from their homes to seek employment in the labour market, the number of economically active and unemployed people increased by more than 2.2 million in the third quarter of 2020 (Q3-2020) and by 701 000 individuals in the fourth quarter.

Figure 1.3: Quarter-to-quarter changes in unemployment (thousands)

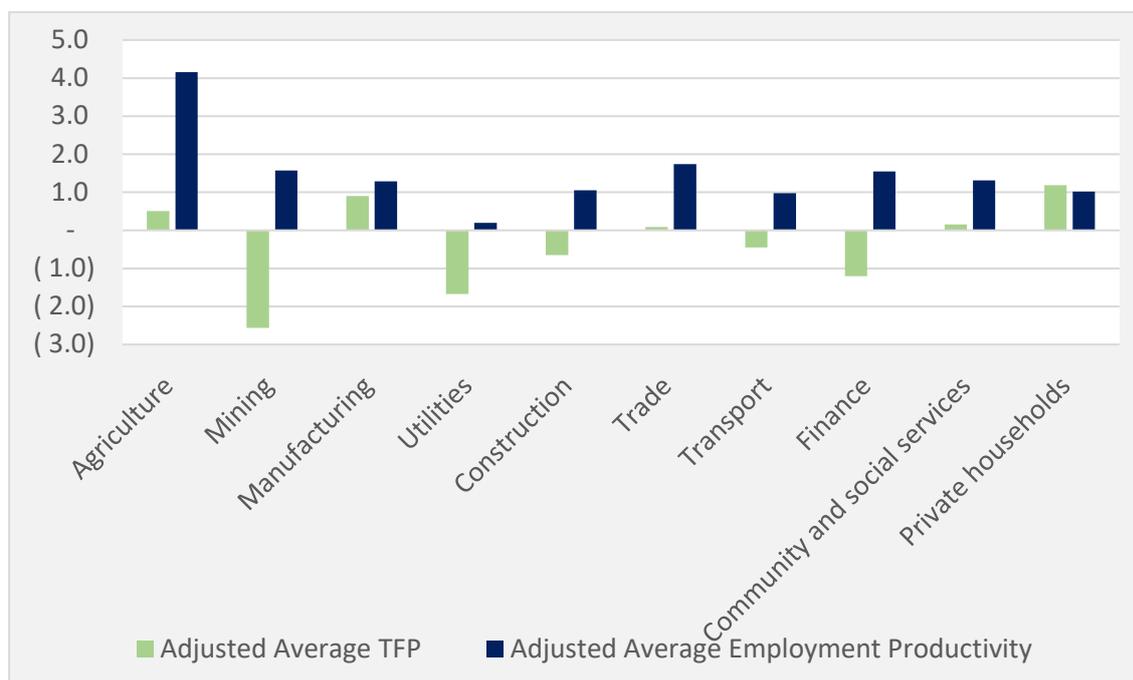


Source: Statistics South Africa (2021b)

The methodology of decomposing factor contributions to growth conducted thus far can also be applied at a disaggregated, sectoral level. This allows us to gain a more nuanced understanding of economic growth by its industrial productivity and construct. Figure 1.4 presents the adjusted means of TFP and employment elasticity of each sector, from the time of the global financial crisis of 2008–2009 to the present.

According to the data, agriculture, manufacturing and private households’ adjusted means of TFP are positive, as are their average employment elasticities. This synchronisation indicates that these sectors’ productivity gains correspond with employment growth, such that more employment in these sectors may result in more productivity and more economic growth. However, other sectors show a desynchronisation between sector productivity and employment elasticity, indicating structural inefficiencies in their productivity. In particular, mining’s TFP contribution to growth is the lowest compared to other industries and corresponds negatively to growth, despite its high employment elasticity. Most concerning of all, utilities in terms of electricity, gas and water – which are vital to both social and economic infrastructure for economic growth – also have a negative TFP, with a near-zero employment elasticity.

Figure 1.4: Adjusted means of total factor productivity and employment elasticity, 2009 to the present (in percentage)



Source: South African Reserve Bank (2021), Statistics SA (2021b) and Commission’s calculations

Note: Adjusted means are means corrected for the 95% confidence interval. Employment elasticity is calculated as the percentage growth rate of employment over the percentage growth rate of GDP growth in the respective industry.

The worrying result observed in the utility industry can be attributed to the lack of competitive efficiency borne in structural legacy and regulatory barriers to entry (Conradie & Messerschmidt, 2000). Over 95% of the power consumed in South Africa is produced by Eskom and the rest is produced by independent power producers (IPP) (Hlongwane, 2012). The regulatory environment is governed by the Eskom Amendment Act, Act No. 126 of 1998,³ which was later repealed by the Eskom Conversion Act, Act No. 13 of 2001.⁴ The government’s initial aim of establishing these regulations was to protect consumers and promote social justice and the general welfare of society. Despite intentions to incentivise innovation, advance technologies and improve productivity through a monopolistic structure and reduced competition, the latter conditions instead gave rise to inefficiency and wasteful expenditure, which may be attributed to corruption, maladministration and governance failure. This has collapsed the TFP of both the utility company and the sector as a whole.

³ The repealed Eskom Amendment Act, Act No. 126 of 1998, intended to amend the Eskom Act, 1987 [repealed in 2001], so as to vest the ownership of Eskom’s owner’s equity in the state and to remove the exemption of Eskom from the payment of income tax, stamp duty, levies or fees, and to provide for matters connected therewith.

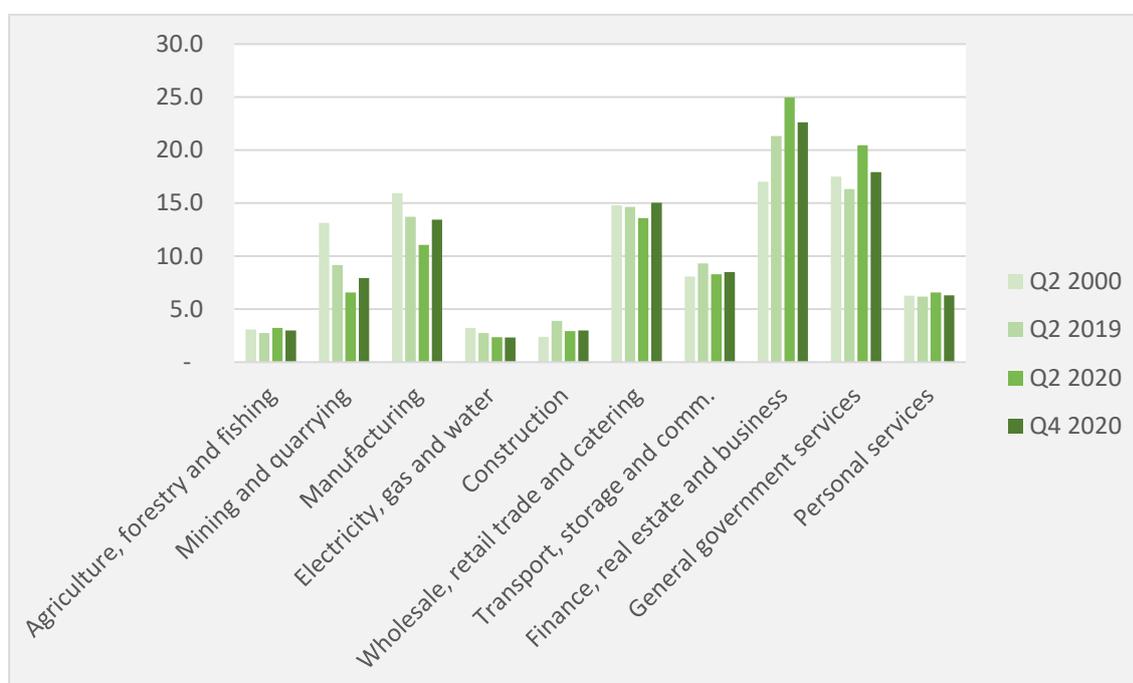
⁴ The Eskom Conversion Act, Act No. 13 of 2001, intends to provide for the conversion of Eskom into a public company having a share capital incorporated in terms of the Companies Act, and to provide for matters connected therewith.

In sum, the results show significant structural weaknesses in South African industries in terms of both productivity and employment. Taking into consideration the structural decline in TFP over the last decade, improving efficiency becomes crucial to countering the negative impacts of the COVID-19 pandemic. On the downside, the country has three critical deficiencies holding back TFP growth and efficiency gains: firstly, employability-targeted education and appropriate in-demand skills training; secondly, basic infrastructure and utilities; and thirdly, market competition. South Africa’s industries are highly concentrated and weak in competition, posing significant entry barriers for new, small businesses to enter the market (Kumar, Pacheco & Rossouw, 2010). Competition in the product market is a particularly crucial incentive for productivity gains. On the upside, South Africa has some well-forged institutions, an open economy, and a sophisticated financial and private sector that can be used as leverage to enhance its productivity and growth. The government should take these factors into account when making informed decisions to implement structural transformation.

1.5.3 South Africa’s industrial construct

As an upper-middle-income developing country, South Africa is unique in that its industrial composition resembles that of a developed economy in the tertiary sector (Fedderke, 2013). This section of the paper examines changes in the share of GDP by industrial composition over time and compares the most recent changes since the onset of the COVID-19 pandemic in the second quarter of 2020.

Figure 1.5: Industry share of GDP (second quarter of 2000, 2019 and 2020, and fourth quarter of 2020, in percentage)

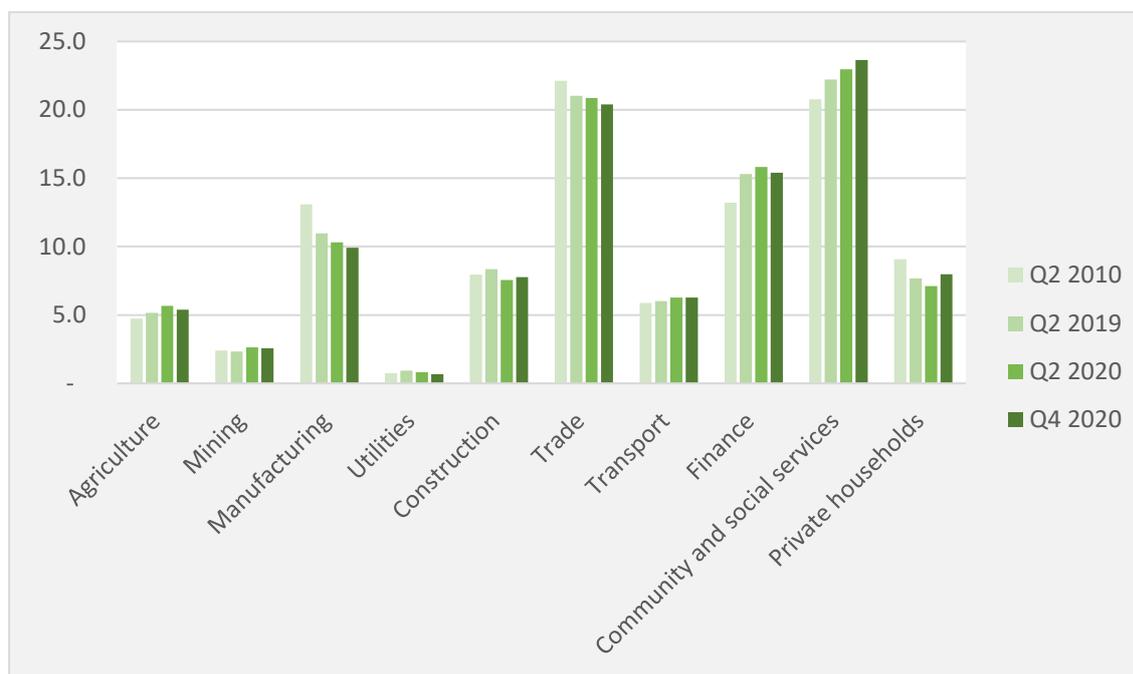


Source: Statistics South Africa (2021a; 2021c) and Commission’s calculations

Figure 1.5 presents each industry's share in the second quarter of 2000, 2019 and 2020, along with the fourth quarter of 2020, in order to account for the impact of COVID-19. According to the data, the pandemic appears to have exacerbated the long-term structural decline in the GDP shares of mining, manufacturing, utilities (i.e. electricity, gas and water) and trade (including catering and accommodation) that is seen between 2000 and 2019. These declining shares appear to have been replaced by an increase in the share to GDP of the tertiary sectors (i.e. finance and government). However, this replacement in GDP shares lasted only temporarily as the lockdown restrictions eased and firms adapted their functions to the pandemic in the fourth quarter of 2020. More specifically, mining and quarrying declined from 13.1% to 9.2% over nearly two decades between 2000 and 2019, but the onset of COVID-19 and the induced nationwide lockdown in the second quarter of 2020 caused the mining industry's share of GDP to decline to 6.6% before returning to its operations and to increase to 7.9% of GDP in the fourth quarter. Similarly, the share of manufacturing, which contracted from occupying 15.9% to 13.7% of GDP over 19 years since 2000, declined further to 11.1% in the second quarter of 2020, before re-emerging at 13.4% at year-end.

Furthermore, the COVID-19-induced lockdown in the second quarter of 2020 also abruptly ended the increase in GDP shares specifically for sectors relating to logistics, such as construction and transport, as economic activities and movement were restricted. The restriction of movement, combined with the shutdown of restaurants and hotels, also impacted activities in the trade industry. The industries that maintained their GDP shares during the initial impact of COVID-19 and the induced lockdown were agriculture, forestry and fishing (at about 3.0% of GDP), as well as personal services (at about 6.3% of GDP). The shifts in industry shares to GDP due to COVID-19 have led to an increase in the dominance of the tertiary sector. The share of this sector, comprising finance and government services, increased from 37.6% in 2019 to 45.5% in the second quarter of 2020, thereby accounting for nearly half of all economic activities.

Figure 1.6: Industry share of employment (second quarter of 2000, 2019 and 2020, and fourth quarter of 2020, in percentage)



Source: Statistics SA (2021c) and Commission’s calculations

The COVID-19-induced lockdown could also have affected South Africa’s labour market composition, as decreased output activity lowers the sector producers’ needs and expectations for labour input. Figure 1.6 presents each industry’s employment share in the second quarter of 2010, 2019 and 2020, as well as the fourth quarter of 2020. Contrary to the abrupt changes in the GDP composition of Figure 1.5, the impact of COVID-19 on South Africa’s labour market (Figure 1.6) exhibits a much more gradual shift in its employment shares. Two reasons could explain this phenomenon. Firstly, the implication of the nationwide lockdown on the labour composition of the market may be so pervasive that it impacted all sectors almost equally. Secondly, firms and households are still contemplating and formulating their production strategy and demand for labour input for supply in coping with the pandemic and its economic impacts. In 2010, the sector with the highest proportion of employed individuals was the trade industry (which includes catering and accommodation). Since 2019, however, the community and social services sector has had the greatest proportion of employed individuals, and this positive trend has continued. For the manufacturing sector, the share of employment has decreased since 2010, which coincides with the compositional changes of GDP (Figure 1.5). A decline may also be observed for the construction industry, albeit to a much lesser degree.

In sum, the impacts of the COVID-19 pandemic and the nationwide lockdown on the labour market is much more gradual and ambiguous in trend. These expressed changes in shares suggest that, on the labour input side of supply, firms and businesses are still adjusting to the changes imposed by the public health crisis of COVID-19.

1.5.4 Analysing aggregate demand

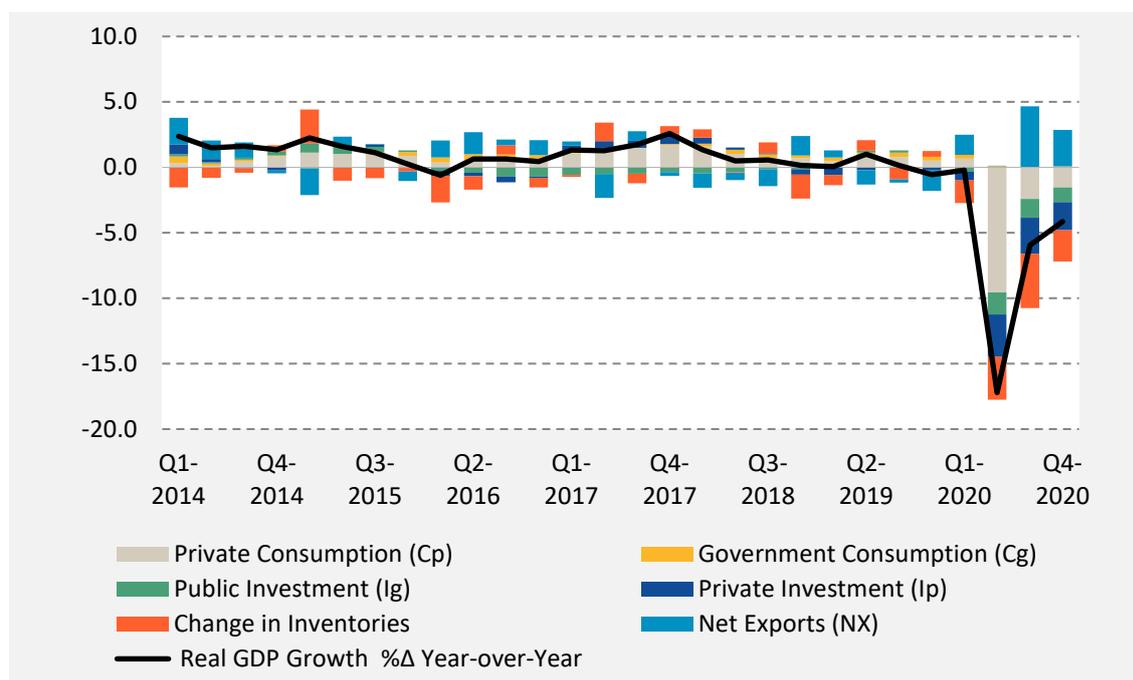
The COVID-19-induced lockdown has, without a doubt, disrupted the composition and productivity, in production factors, of both labour and capital for economic growth. However, due to changes in output, people's consumption patterns, investment decisions and imports have also impacted the demand side. There are three main channels through which the COVID-19 pandemic impacts the economy through its demand activities. Firstly, the lockdown led to drastic changes in household demand for goods and services. Secondly, the increased levels of uncertainty impacted investment decisions. Thirdly, the disrupted global production and supply chain affected South African imports and exports.

Figure 1.7 presents the decomposition of aggregate demand, which contributes towards real GDP growth. The data shows that, before the onset of COVID-19, South Africa's economic growth was predominantly a consumption-driven economy, as private and public consumption remained positive for most of the period under review. Public and private investments behaved erratically, as did the terms of trade in exports and imports, which affected inventory stock and aggregate demand for growth.

In the second quarter of 2020, with the onset of the COVID-19 pandemic and nationwide lockdown, Figure 1.7 shows that the contribution of private consumption to aggregate demand and GDP decreased by -9.6%, while that of private investment decreased by -3.2%. Similarly, public investment and change in inventories also declined by -1.7% and -3.3%, respectively. The only component of demand that remained positive, although minuscule, was government consumption. In the first quarter of 2020, there was no contribution of growth through the aggregate demand of net export.

As South Africa eased its lockdown restrictions and firms gradually reopened for business, the third and fourth quarters of 2020 showed a significant recovery in private consumption, although still negative. The same marginal increase may be observed for investment (private and public) and change in inventories. This suggests that the economy is slowly returning to its regular consumption and investment patterns, although still at a lower level of aggregate demand relative to the pre-COVID-19 period. In the third and fourth quarters of 2020, net exports increased by 4.6% and 2.8%, respectively, which suggests that South Africa is exporting more than it is importing with trade resuming. However, the lack of imports and continued depletion of inventory stock may undermine the potential for a quick recovery in short-term GDP growth by consumption of inventories. Furthermore, the risk of a protracted economic recovery is compounded by the slow and marginal increase in private and public investment. The only component that remained positive throughout the pandemic is government consumption, although this may crowd out other demand consumptions.

Figure 1.7: Contributions to demand growth, Q1-2014 to Q4-2020 (in percentage, year-over-year)



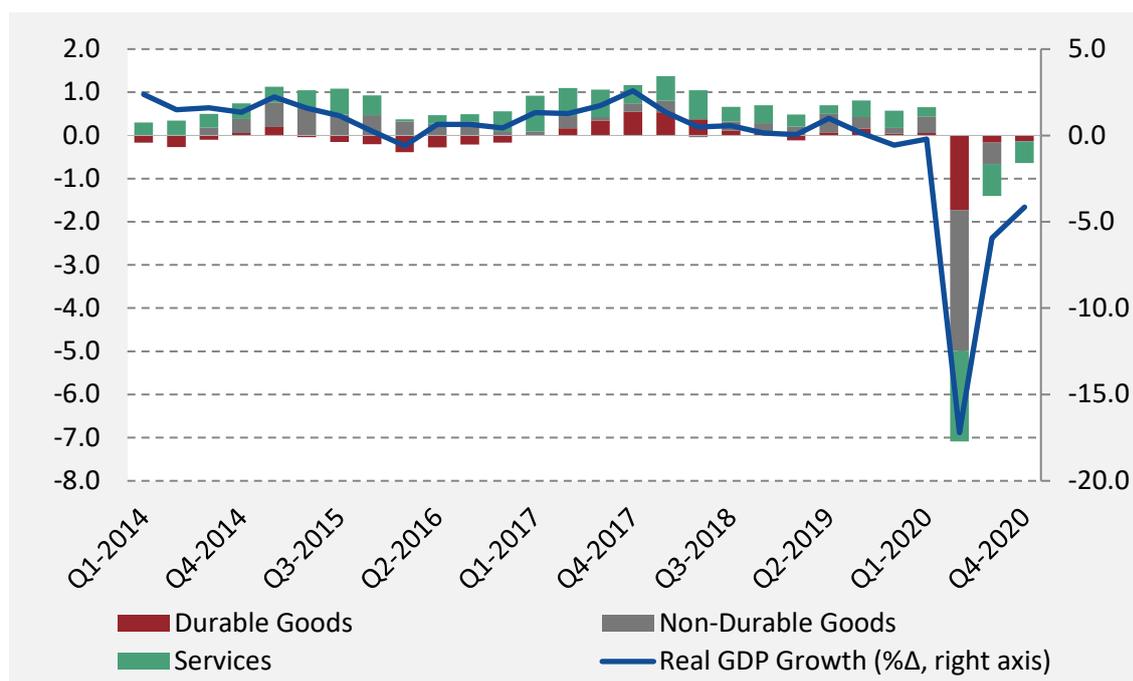
Source: South African Reserve Bank (2021) and Commission’s calculations

The COVID-19 shock also affected the consumption patterns of private households and aggregate demand in terms of durable and non-durable goods and services.

Figure 1.8 shows that the contributions of consumption for all types of goods and services declined with aggregate demand of GDP in the second quarter of 2020 and with the demand for non-durable goods, which was impacted most severely at -3.3%. It is evident that the loss of income caused by the pandemic has reduced household consumption.

By the third and fourth quarters of 2020, households began to consume again, prioritising non-durable goods, then durable goods and services. However, consumption of these goods and services is still lower compared to a year ago. In particular, since becoming the most prominent negative contributor of the three components in the fourth quarter, the reduced consumption of services may delay the recovery of demand in the services sector for growth. This could mean that, despite the reopening of businesses and easing of the lockdown restrictions, confidence in the sector is still hampered as services struggle to return to their pre-COVID levels.

Figure 1.8: GDP growth vs consumption contributions to growth (in percentage)



Source: South African Reserve Bank (2021) and Commission’s calculations

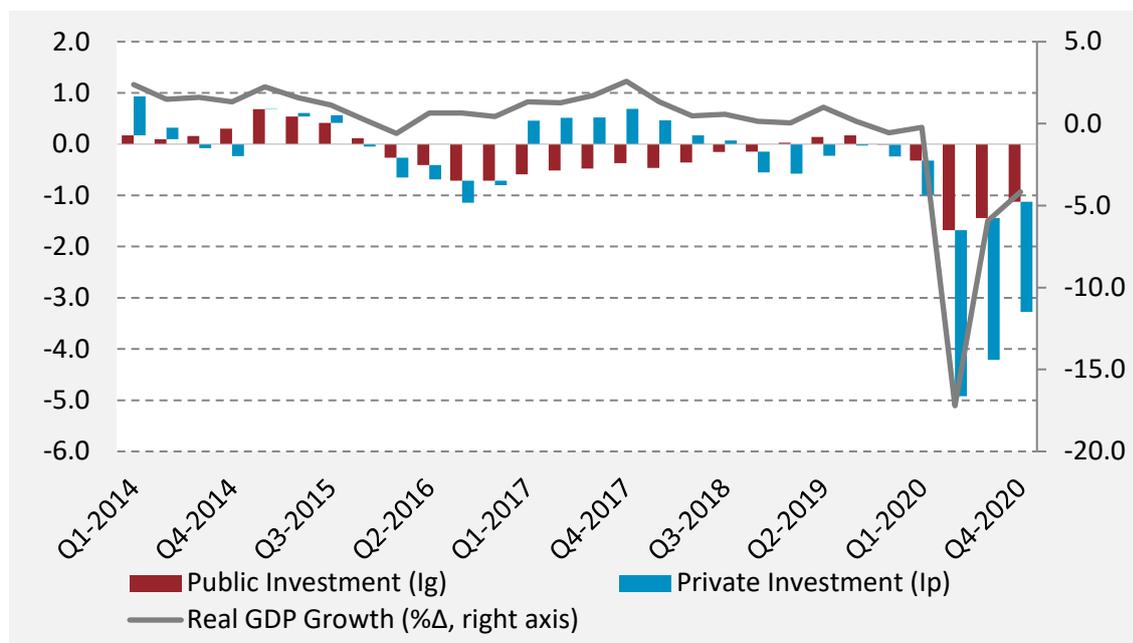
The evidence of the sharp declines in consumption of non-durable and durable goods, combined with the outcome of the earlier analysis that showed a depletion of inventories for consumption, confirms that the possibility of a strong rebound sustaining towards a positive economic outlook is highly implausible. The prospect of demand for services to spring back to life also remains questionable with the rise of the virus’s local variant, resulting in South Africa’s second wave towards the end of 2020, which lasted until January 2021. Furthermore, the uncertainty surrounding the vaccine’s efficacy and the efficiency of the rollout compels us to conclude that South Africa’s road to economic recovery, at least from the perspective of consumption, will be unlikely to follow the optimistic projections as predicted in Figure 1.1.

Looking at the potential for long-term growth, data in Figure 1.9 shows the extent to which both public and private investments contributed to the decline in aggregate demand and economic growth in the second quarter of 2020, and how both have recovered at a slow pace. Investment is vital for accumulating capital and improving infrastructure, as buildings (residential and non-residential), machinery and other equipment, transportation equipment and communication networks all influence future production and future potential growth. It is worth noting that such investments – infrastructure build, capital machinery and other equipment – are complementary across private-public lines. Hence, the forging of public-private partnerships for these investments may enhance the efficiency of utilisation and boost returns on investment, which may, in turn, elevate the future potential growth path onto a higher level.

Public sector investment in infrastructure, in particular, plays a critical role in generating complementary value for factor productivity for long-run economic growth through improvements in access to water and electricity, as well as improvements in communication networks and roads.

The pausing of construction due to the COVID-19-induced lockdown significantly affected investment in and spending on infrastructure, thereby impacting the future potential growth of the South African economy. Investment decisions are also affected by the uncertain economic outlook, as risk-averse and conservative investors readjust their investment strategies, seeking alternative assets and investment havens.

Figure 1.9: GDP growth and the contribution of public and private investment to growth



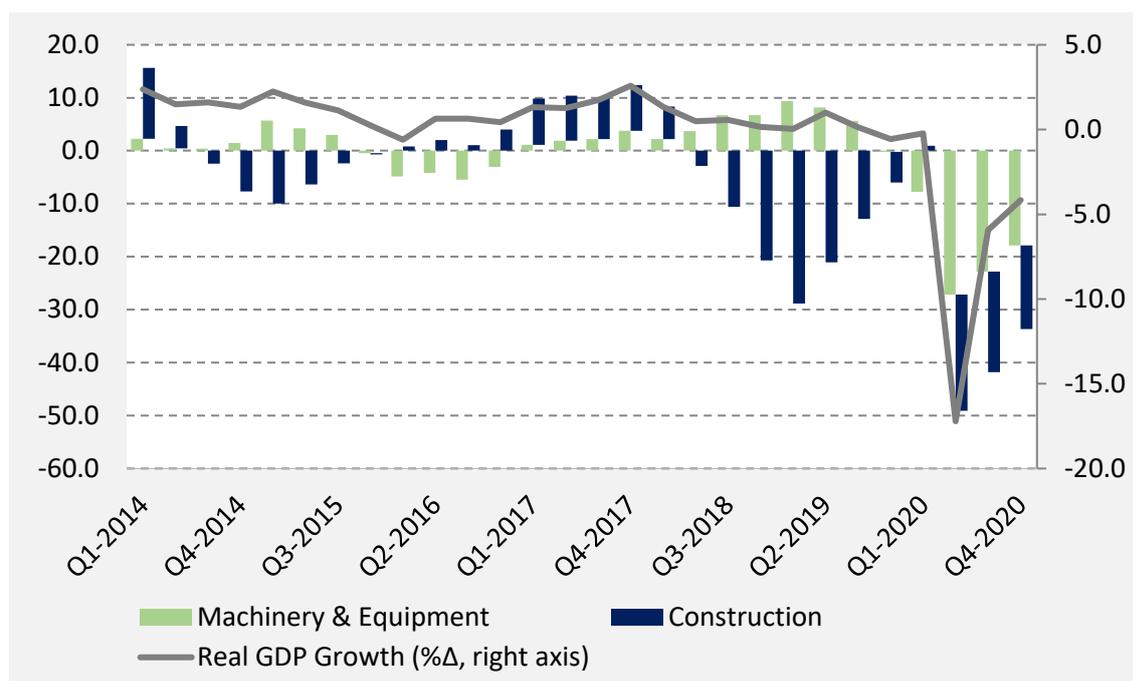
Source: South African Reserve Bank (2021) and Commission’s calculations

The decline in public sector investment is corroborated in the statistics on public capital expenditure (Stats SA, 2020),⁵ which identifies the state-owned company and sole utility power producer, Eskom, as the most significant infrastructure capital spender. At 21%, Eskom was responsible for more than a fifth (or R48.3 billion) of total public sector capital expenditure in 2019. Eskom reduced its spending by R15 billion in capital spending due to budget cuts, the reconciliation of build projects and the termination of contracts.

Second, after Eskom in terms of capital spending on infrastructure, is Transnet, which registered a decrease of R4.5 billion due to spending reprioritisation from machinery and equipment towards new construction works in order to maintain its rail and ports divisions. The third-largest contributor, the South African National Roads Agency Limited (SANRAL), reduced its spending as it cut back on road construction.

⁵ The public sector, in this context, is comprised of national government and provincial government departments, municipalities, public corporations, higher education institutions and extra-budgetary accounts and funds.

Figure 1.10: Contribution of private investment and real GDP growth (in percentage)



Source: South African Reserve Bank (2021) and Commission’s calculations

Decomposing the contribution of private investment to real GDP growth, Figure 1.10 shows that growth in private construction recovered marginally, whereas investment in machinery and other equipment remained positive towards GDP growth in 2019, leading up to 2020. With the onset of the COVID-19 pandemic, both private investment types declined drastically, by -27.2% for machinery and equipment and -21.9% for construction. A slow recovery in these investments followed, albeit still at levels lower than a year before. The shutdown of heavy industries and the construction sector resulted in these industries declining, which does not bode well for the economy’s long-term future growth potential.

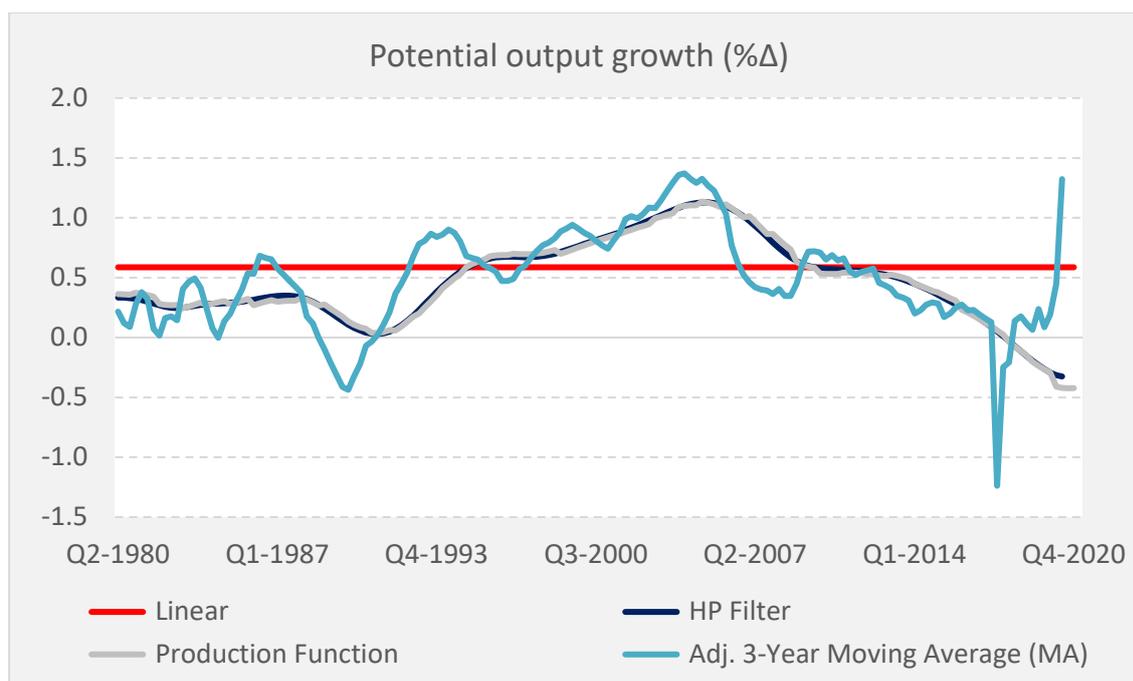
1.5.5 Long-run, potential output

This section of the paper examines South Africa’s economic potential output, which represents the long-term output levels that the economy is likely to sustain. Under normal circumstances, analysing the economy’s growth potential against its actual output can provide powerful insights for policymakers, which allows them to gain an understanding of the macroeconomic environment. Where actual output exceeds potential output (i.e. a positive output gap), the economy is deemed to have excess demand beyond its sustainable means of supply. This overheats the economy and results in growth instability. Conversely, a negative output gap (i.e. actual output is lower than potential output) suggests that the economy is under-employed or under-utilised, and thus expansionary policies are encouraged (Fedderke & Mengisteab, 2017).

However, due to the significant shock of the COVID-19 pandemic on South Africa’s economic output, the analysis of output gaps would not yield much meaning. Hence, this section examines the long-run potential growth using parametric (i.e. linear, statistical filters and production function), as well as non-parametric methods of moving averages in order to construct a range of possible scenarios for potential output growth.

Estimates in Figure 1.11 show close estimations of potential output using the production function and HP filters, which projects a downward trend of economic growth into the recession territory, at -0.5% of potential growth. Even the optimistically naïve, linear projection of potential growth shows a long-term average of 0.6% growth for the period under review. The adjusted three-year moving average, limiting to non-outliers, shows that, at best, potential long-term growth is to be at 1.3%.

Figure 1.11: Long-run, potential GDP growth, linear, HP filter, production function and three-year forward moving average, second quarter 1980 to fourth quarter 2020



Source: South African Reserve Bank (2021) and Commission’s calculations

1.6 Conclusion

This paper examined the impact of COVID-19 on the South African economy in terms of total factor productivity, industrial activity and aggregate demand. It further estimated a range of potential output projections, which informs the potential growth path for South Africa for the 2022/23 Division of Revenue.

The paper finds little to no evidence – from either the supply or the demand side – to justify South Africa’s assertion to recover quickly from the COVID-19 shock. What emerged from the evidence is a number of unfavourable conditions that have been prevalent since the 2008–2009 financial crisis. These include structural decay in terms of factor production intensity and productivity: the inflexibly high marginal cost of employment and inefficiencies in critical basic infrastructure under the control of state-owned companies. The shock of COVID-19 exacerbated these structural fragilities and growth weaknesses. State-owned companies, and therefore, state-backed monopolies, became a severe impediment to development as Parliament – as representative of the people – has not held them accountable.

There is evidence that public consumption by government expenditure alone will not be sufficient to revert the overall decline in the economy on the demand side. Inventory stock is depleting faster than it can be replaced by production and imports, thereby undermining the likelihood of short-term economic growth. Investments by private and public sectors are still lower than their pre-COVID-19 levels, recovering much too slowly as uncertainty mounts and investors' risk appetite remains low.

By all accounts of estimations, the long-term potential output of South Africa's economic recovery from the COVID-19 pandemic is likely to be protracted and uncertain. The anticipated economic rebound is predicated on the notion that households, firms, investors and even government's activities would immediately return to their pre-crisis levels and that this would be supported by the effective and efficient rollout of vaccines without further delay. It is also assumed that the same spending patterns and risk appetite comparable to before the onset of COVID-19 will be adopted after the nationwide lockdown is lifted. However, even with these bold and unlikely assumptions, the likelihood of sustained economic recovery is improbable, as the shock of COVID-19 has made permanent changes to economic behaviour by exacerbating the South African economy's structural inefficiencies.

1.7 Recommendations

In light of the macroeconomic impacts of COVID-19 on the South African economy, the Commission makes the following recommendations:

- 1. The Commission calls for active engagements between the three spheres of government to ensure the formalisation and alignment of provincial and local government economic reconstruction and development plans with the Economic Reconstruction and Recovery Plan (ERRP). More specifically, provincial economic recovery plans should justify their strategic planning approach to stimulate economic growth at the provincial level and the implementation plans to address, among other things, reducing youth unemployment as a key priority. Reconstruction and recovery are about the availability of budget and sacrifices, cooperation and hard work.*

As seen from the Commission's research regarding the impact of COVID-19, the economy endured various demand and supply-side shocks alongside increased unemployment and poverty, which permanently impaired people's livelihoods and behaviour. Government's ERRP should guide the economy towards recovery by creating sustainable jobs and promoting inclusive growth. To that end, government's actions to mitigate the effects of COVID-19 evidenced above are essential. This necessitates the cooperation of all three spheres of government in order to coordinate and justify recovery and development plans across all extremities of the public sector. Expenditure and service delivery outcomes will determine the efficiency and credibility of government spending. Additionally, the alignment of COVID-19 responses, especially in resource allocation and vaccination administration, is required between all levels of government.

- 2. Government should adopt clear and tangible reforms for effecting the economy's structural transformation by reinforcing market competition to improve the efficiency and productivity of the economy. This transformation includes reconciling all costs of operations, wages and salaries, such that they are more market-related and thereby responsive to the economy's productivity needs. Inefficient state-owned and, therefore, state-backed companies should be held accountable to the public (represented by Parliament) for their institutional failures, with a clear deadline of resolve and final conditions of a bailout.*

The Commission emphasises that structural reforms, in terms of improving the efficiency of public investment, lowering wasteful costs and redundancies, focusing on infrastructure and developing skills, are required to resuscitate the economy and move it onto a higher growth path. Violations by state-owned companies in committing inefficiencies, ranging from contract mismanagement, procurement irregularities, and fruitless and wasteful expenditures at the Passenger Rail Agency of South Africa (PRASA), Eskom and Transnet, must face immediate consequence management within the Public Finance Management Act (PFMA) framework for managing scarce public resources.

- 3. Government's main macroeconomic agenda should focus on the following prioritised, concrete objectives. Firstly, to eliminate the immediate threat of the pandemic by making the vaccine available as quickly as possible. Secondly, to mobilise, within limits, both monetary and fiscal instruments in order to sustain the liquidity, and then, the economic flows of households and firms with the economic recovery momentum. Government should provide support to both households and firms in order to adjust their behaviour and risk appetite, and thereby ameliorate the long-term economic and social consequences of COVID-19. This approach is not limited to income transfers alone, such as social grants, but may include lowering the tax burden and underwriting credit, as income reliefs could also be a great means of assistance to citizens.*

The Commission notes the consistency in government trying to balance a sustainable fiscal path while also assisting citizens out of the economic crunch. However, the socio-economic rights of citizens should remain at the forefront of all economic planning during this severe economic recession, meaning there should not be a retrogression of the realisation of the socio-economic rights of citizens. Reprioritised current spending should be invested to yield maximum multiplier effects of economic returns. This includes returns to addressing the COVID-19 pandemic. Additionally, providing support to the livelihoods of households will result in improvements in consumption, which will ultimately boost various industries and potential growth.

- 4. The 2022/23 Division of Revenue should, in promoting economic growth, be more specific in supporting local demand and localised product procurement in order to support value chains, as endorsed by the President in the State of the Nation Address (SONA) towards economic transformation and development. The Commission, in its 2021/22 Annual Submission for the Division of Revenue (Chapter 3, Recommendation 2),*

also recommended the concept of a localised product value chain approach towards growth. This was further agreed to in the 2021 W1 Annexure: Explanatory Memorandum to the Division of Revenue.

The Commission notes the drastic effect of the COVID-19 pandemic on local demand in South Africa. The product value chain approach would serve to address inequality and economic barriers present in the local economy. The aim of this approach is to stimulate domestic demand and encourage job growth through incentive frameworks that serve to promote the procurement of goods within South Africa.

5. *Public investment is increasingly important to promote growth and the creation of jobs. Investment in infrastructural projects, such as conducting the necessary maintenance, ensuring health and safety in buildings, and improving transport systems, may reduce uncertainty and improve confidence, which may attract private investment (or create a more favourable environment for attracting investments). Additionally, investment in reform, particularly in state-owned companies, as suggested in Recommendation 2, would serve to crowd in private investment.*

Over 2020, collapses in both private and public investment resulted from the consequences of the crisis and were associated with the fall in real GDP growth. This highlights the importance of attracting investment as a means for bolstering recovery. All means to accelerate recovery are needed to overcome exacerbated poverty, inequality and unemployment.

1.8 References

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Chapter 2

Measuring the financial and fiscal impacts of COVID-19 in South Africa



Chapter 2:

Measuring the financial and fiscal impacts of COVID-19 in South Africa

Chen Tseng

2.1 Introduction

The COVID-19 pandemic has caused an unprecedented shock to the South African economy with significant financial and fiscal consequences. However, even prior to the pandemic, both South Africa's financial stability and fiscal position have been deteriorating, along with the commodity price cycle, currency depreciation and a reduction in profits and productivity, particularly in the mining and manufacturing sectors. In the decade preceding the onset of the pandemic, tax revenue had declined, the sovereign credit rating had been downgraded to sub-investment, and debt-servicing costs had escalated, causing public debt levels to soar. The underperformance of tax revenue has been particularly prevalent in tax collectables on corporate income, which diminished significantly prior to the impact of COVID-19.

The COVID-19 pandemic has created many structural changes in the labour market with lasting effects on South Africa's fiscal position. The unemployment rate stood at 32.8% in the fourth quarter of 2020, with an estimated 1.4 million individuals becoming jobless and thus without any source of income during that period (Stats SA, 2021a). This has massive implications for South Africa's projected tax base and future fiscal prospect. The fiscal metrics collectively show that the budget deficit has breached its initial trajectory and has reached 14% of gross domestic product (GDP) for the 2020/21 fiscal year.

As the virus spread and its devastating effects on livelihoods were felt, many countries, including South Africa, unveiled stimulatory fiscal policy and socio-economic support packages in an attempt to preserve the health, safety and wellbeing of individuals. Where funds were insufficient, governments requested rapid financing instruments, drew down on all cash balances available in the reserves, and sought additional funds from international financial institutions and bond markets (IMF, 2020a).

Government was agile in facilitating the post-COVID-19 recovery, and identified four policy priorities, as announced by the President in his State of the Nation Address (SONA) in 2021:

- **First**, to defeat (contain and overcome) the Coronavirus pandemic by strengthening the health system and implementing a massive, agile vaccination programme.
- **Second**, to accelerate economic recovery in order to overcome poverty and hunger, joblessness and inequality.
- **Third**, to implement economic reforms that foster sustainable jobs and drive inclusive growth.
- **Fourth**, to fight corruption and strengthen the state.

There is great uncertainty about what the financial and fiscal roadmap should look like in order to ensure that these policy priorities are realised. Alternatively, how can the fiscus fund these policy priorities? Albeit not within the scope of this research to answer this question, an investigation into the financial stability and fiscal position of South Africa, taking into account the impact of the COVID-19 pandemic, remains a crucial step in evaluating how effect may be given to these policy priorities within the current macroeconomic and fiscal environment.

2.2. Problem statement and research questions

This paper follows the previous research paper “Measuring the macroeconomic impacts of COVID-19 in South Africa” by examining the following problem statement: How have South Africa’s financial and fiscal conditions been impacted by the COVID-19 pandemic?

The research questions underpinning this paper are as follow:

- i. What is the impact of COVID-19 on South Africa’s fiscal position, and how does this compare to other countries in the Brazil, Russia, India, China, South Africa alliance (BRICS countries)?
- ii. What is the impact of COVID-19 on the financial stability of South Africa, represented by prices and inflation, and how can this inform fiscal policy?
- iii. How did the shock of COVID-19 impact public revenue in South Africa, particularly on the components of revenue stipulated in the Tax Matters and Revenue Laws?⁶
- iv. What are the macroeconomic and fiscal intergovernmental determinants of public debt, and how can these inform our understanding of the sustainability of South Africa’s fiscal position? Furthermore, what potential rules may be adopted to restore South Africa’s fiscal credibility?

2.3. Research aims and objectives

The overarching aim of this paper is to inform policy on how best to attain fiscal sustainability and credibility in South Africa, given the quantitative impact that COVID-19 has had on the financial and fiscal position of the economy, based on the most recent data. In doing so, this paper aims to formulate a baseline economic model for public debt and its determinants at both the national and intergovernmental levels.

⁶ These components are personal income tax, corporate income tax, value-added tax, specific excise duties, fuel levies and customs duties.

The research objectives addressing the research questions posed are as follows:

- Measure the fiscal impact of COVID-19 in South Africa relative to its BRICS peers.
- Measure the impact that COVID-19 has had on South Africa's financial stability, as represented by fluctuations in prices and inflation, and clarify what relevance this has for fiscal policy.
- Measure the shock that COVID-19 has had on public revenue within South Africa's fiscal framework.
- Conduct an econometric analysis on the macroeconomic and intergovernmental determinants of fiscal sustainability, as represented by public debt, so as to identify potential rules for restoring fiscal credibility.

2.4. Literature review, methodology and data

Before the onset of the COVID-19 pandemic, there had been a persistent increase in the level of government debt globally (IMF, 2020b). Public debt is a legal obligation for government to make interest and amortisation payments to lenders, following a defined payment schedule for spending on future revenues. Public debt is one of the leading indicators of financial and economic stability, credibility and capability. However, if managed poorly, public debt may also be indicative of a country's fiscal fragility and economic downfall. Several factors can influence public debt, and some may cause it to increase to excessive debt-to-GDP ratios that exceed the total value of a country's GDP (Gargouri & Keantini, 2016). According to Fall, Bloch, Fournier and Hoeller (2015), developing countries should limit their government debt to around 40 to 50% of GDP, subject to their ability to raise revenues, their growth prospects and the nature of the fiscal threats with which they are confronted.

This paper adopts a quantitative approach of financial programming, econometrics and macroeconomic techniques of time series to analyse South Africa's fiscal position given the impact of COVID-19. The paper begins by locating the financial and fiscal environment of South Africa relative to its BRICS peers in the global economy. By highlighting key macro-financial and fiscal indicators that measure the impact of COVID-19, the first results of this paper inform our broader understanding of South Africa's fiscal position. Thereafter, the paper turns to an examination of the impact of COVID-19 on financial stability, fiscal policy, and fiscal sustainability and credibility in South Africa.

For financial stability, this paper examines the impact of COVID-19 on inflation, using the Producer Price Index (PPI) and Consumer Price Index (CPI). This not only gives insight into South Africa's financial position generally, but furthers our understanding of fiscal sustainability in the country due to the intricately related dynamics between price fluctuations and the value of economic flows, which include public finances. Particular attention is given to how the pandemic has impacted on consumer and producer behaviour, and why this matters for fiscal policy.

The paper then turns to investigate the impact of COVID-19 on fiscal policy in South Africa. This is done by, firstly, measuring the impact of the pandemic on public revenue; and secondly, measuring the fiscal impulse.⁷ Finally, the paper considers the impact of COVID-19 on South Africa's fiscal sustainability. An initial analysis is conducted on South Africa's projected debt-to-GDP levels.⁸ Thereafter, the focus turns to how fiscal credibility can be restored following the impact of COVID-19 on South Africa's rising public debt. In order to do so, an investigation is conducted into the fiscal determinants of public debt, where the latter serves as an indicator for measuring fiscal sustainability. Thus, by identifying these determinants, this paper investigates the drivers of fiscal sustainability in South Africa, which informs appropriate policy responses to the shock of COVID-19.

The approach adopted in this paper is based on an internationally recognised system developed by the International Monetary Fund (IMF) for organising continuous financial and fiscal flows that relate to a country's revenue and expenditure performance.

Importantly, both macroeconomic variables and intergovernmental fiscal determinants of public debt are accounted for in the econometric model.⁹ This provides new insights into the drivers of public debt at an intergovernmental level, which is not only appropriate – given the governance structure of fiscal decentralisation in South Africa – but also assists policymakers in targeting key challenges that are currently undermining fiscal credibility. Based on the findings of this research, recommendations are made on how inclusive economic growth and fiscal credibility may be fostered, given the challenges that the COVID-19 pandemic presents.

The primary sources of information for this research are the Global Fiscal Monitor Report of the IMF, data from Statistics South Africa (Stats SA), National Treasury's 2021 Budget Review (the statistical annexure) and data from the South African Reserve Bank (SARB). Stats SA's data on producer and consumer prices is used to analyse financial stability in South Africa during the COVID-19 pandemic. Data from National Treasury's 2021 Budget Review is relied upon to examine the impact of the pandemic on public revenue, specifically components of revenue stipulated in the Tax Matters and Revenue Laws. Finally, the SARB's database, specifically its Quarterly Bulletin, is used to estimate the macroeconomic and intergovernmental fiscal determinants of public debt.

Three methodological techniques employed in the development of this research paper are set out below.

⁷ This is discussed in more detail below.

⁸ Five separate projections of South Africa's debt levels are made. These account for different scenarios based on current domestic fiscal policy choices and international macroeconomic developments that have arisen since COVID-19, thereby allowing for comparisons to be made.

⁹ These are discussed in more detail below.

2.4.1 Fiscal impulse

The concept of fiscal impulse encapsulates the change in government's budget balance, which results from a change in government expenditure and tax policies. It is essential to distinguish the fiscal impulse from the fiscal multiplier: the fiscal impulse is an important marker for measuring government's fiscal stance or behaviour trend, while the fiscal multiplier attempts to measure the impacts of a fiscal policy change on economic growth and activity (IMF, 1991). The fiscal impulse is calculated as the first difference of the cyclically adjusted inverse of the primary balance, represented more succinctly by Equation 2.1.

Equation 2.1: Fiscal impulse

$$FI = FS_t - FS_{t-1}$$

Where FI , or fiscal impulse, is the first difference between fiscal stance (FS), at time t and at time $t - 1$. The fiscal stance (FS) is calculated as the inverse of the cyclically adjusted primary balance (CAPB), which is essentially the difference between actual revenue (T) and expenditure (G), both cyclically adjusted.

Alternatively:

$$\begin{aligned} \text{Cyclically adjusted revenue: } T^{CA} &= T \left(\frac{Y^P}{Y} \right)^{\varepsilon_{T,Y}} \\ \text{Cyclically adjusted expenditure: } G^{CA} &= G \left(\frac{Y^P}{Y} \right)^{\varepsilon_{G,Y}} \end{aligned}$$

Where the potential output (Y^P) and ε represent the elasticities of either revenue (T) or expenditure (G) with respect to output (Y).

2.4.2 Determinants of fiscal debt

Government debt results from a combination of factors: macroeconomic, socio-economic, institutional, structural, exogenous and endogenous (Holtfrerich, Feld, Heun, Illing, Kirchgassner & Kocka, 2016). From a basic level, economic growth is the first determinant of government debt, since GDP growth is a measure of the economy's ability to generate tax revenue in order to repay what it has borrowed. Poor economic growth and low revenue collection, combined with higher spending, will compel the government to raise debt in order to finance the deficits (Van Caurenbergh & Laleman, 2018). The creditability of fiscal and monetary policy is also an essential factor determining the level of public debt, especially from a financing and debt-servicing cost point of view. If the credibility of a country's policies is deemed uncertain or government debt is at risk of a default, debt securities will have a higher cost of servicing, or a higher interest rate. If managed improperly, the compounding factor of the interest rate will drive the overall debt level out of government's reach in terms of refinancing and repayment, which would lead to a sovereign debt default where liquidity ceases to flow into the country (OECD, 2020).

Inflation is another critical variable that determines government debt levels. Research has found that higher debt is often associated with higher inflation, especially in emerging economies (Reinhard & Rogoff, 2010).

This phenomenon is due to the lack of financial stability and the uncertain economic prospect of emerging markets, which results in high risks of local currency depreciation and the repayability of loans (Sachs & Larrain, 1993). Other factors include the global exchange rate, utilisation efficiency of debt and the fiscal policy multiplier on growth, as well as potential panics in the market, which may result in capital flight and balance of payment, all of which affect debt sustainability.

Political uncertainty could also cause a country's debt levels to escalate by undermining both the credibility of its fiscal policy and the certainty of debt repayments being honoured, as well as by lowering investment (Henisz, 2000). More precisely, policy uncertainty could cause risk-averse investors, households and firms to withdraw from investing, moving their assets and operations away from the domestic market, thereby lowering economic growth (Alesina, Özler, Roubini & Swagel, 1996).

According to Fourie and Burger (2010), if the local currency depreciates against the foreign currency in which the loans were raised, the real debt burden is raised (Holtfrerich et al., 2016). This debt-exchange rate relationship also influences the terms of trade, with adverse effects for countries that are dependent on primary exports, since their returns on exports are vulnerable to shocks in the exchange rates and commodity price cycles (Van Caurenbergh & Laleman, 2018).

Demographic factors, such as age, can also influence public debt through government spending, especially if the spending structure is skewed towards current spending (OECD, 2020). According to Ellis and Schansberg (1999), contrary to a country with an elderly population as its majority, a country with a higher proportion of young people is likely to require higher spending and debt finance, especially when the country is faced with high youth unemployment and masses of indigents enrolled in social assistance.

With these considerations of debt determinants informed by literature, under the *fiscal sustainability* section of this paper, the Commission conducts a simple estimation of determinants for the outcome variable of the debt-to-GDP ratio for South Africa. More specifically, the econometrics of the model, using time series data of the selected variables, takes the form of Equation 2.2.

Equation 2.2: Determinants of debt

$$d_t = \frac{\alpha_{t-1}r_t^f + (1 - \alpha_{t-1})r_t}{(1 + g_t)} d_{t-1} - pb_t$$

Where the formulation of fiscal debt, d (measured as a proportion of GDP), at time t , is determined by the debt ratio of the previous period ($t - 1$), growing by the weight (α) between foreign (f) and domestic (d) debt service costs or interest rate (r); offset by the growth in the economy (g), and exacerbated by the primary balance (pb) of the current year.

The effect of the exchange rate is embedded within the cost of carrying foreign debt (r^f) using the fundamental Fisher equation between the nominal and real interest rate:

$$r^f = \frac{(1 + i^f)(1 + \varepsilon)}{(1 + \pi)} - 1$$

Where exchange rate depreciation (ε) compounds the cost of foreign debt, but offset by inflation (π), and r and i are the real and the nominal interest rates of debt, respectively.

2.4.3 Intergovernmental determinants of fiscal debt

First-of-its-kind in the field of researching the determinants of fiscal debt in South Africa, in the final section of the paper, the Commission presents an econometric analysis of fiscal debt by adding intergovernmental determinants. Here, the Commission considers, by testing for statistical significance, the impacts and coefficients of the operating cash balances of all spheres, entities and agencies of government as exogenous variables that determine fiscal debt. The functional form of this model is given by Equation 2.3.

Equation 2.3: Intergovernmental determinants of fiscal debt

$$d = f(c^j | g, i, \varepsilon, \pi)$$

Where c represents the operating cash balance of different spheres of government, state-owned entities and agencies of government (j) – where the latter includes national, provincial and local governments, extrabudgetary institutions,¹⁰ social security funds, non-financial public enterprises and corporations,¹¹ as well as financial public enterprises and corporations.¹²

2.5 Results

2.5.1 Fiscal position relative to BRICS

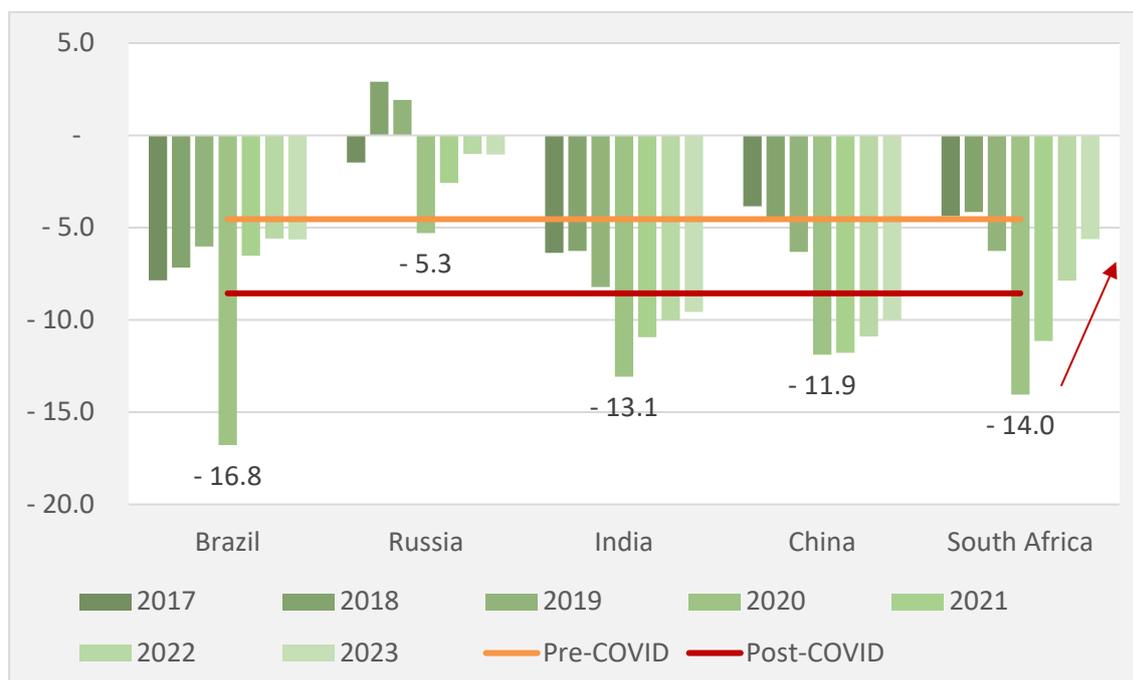
Figure 2.1 presents the fiscal balance as a percentage of GDP for the BRICS countries over seven years from the historical 2017–2019 until the projected medium estimates of 2020–2023. The data suggests that countries, irrespective of their prior fiscal positions, initiated stimulatory interventions to defend the economy against the impacts of COVID-19 by increasing infrastructure spending, cash grants to households and supplementary unemployment benefits. South Africa followed the same footsteps in 2020, as its fiscal position deteriorated with the onset of COVID-19, which has led to a substantial increase in the projected primary balance deficit.

¹⁰ The scope of the extrabudgetary accounts and funds encapsulates institutions of general public services, defence, public order and safety, education, health, social protection, housing and community amenities, recreation, culture and religion, environmental protection, and economic affairs – over 230 organisations in total.

¹¹ Non-financial public enterprises and corporations include Eskom, Telkom, Transnet and the water boards.

¹² Financial public enterprises and corporations are comprised of the Industrial Development Corporation of South Africa Ltd (IDC). The South African Reserve Bank, Corporation for Public Deposits, the Land Bank and the Postbank are not included because their statistics are covered in the monetary statistical pages.

Figure 2.1: General government net lending/borrowing to GDP, 2017–2023, BRICS countries (percentage)



Source: International Monetary Fund (2021) and Commission’s calculations

In China, due to its high economic growth and a moderate debt position before COVID-19, there is sufficient fiscal room for it to justify its expansionary fiscal policy stance, with a higher primary deficit for investing in infrastructure post-COVID-19 (IMF, 2020c). Despite Brazil’s success to reign in its primary deficit prior to the pandemic, the delay in its response to curb the spread of the virus resulted in a substantial number of infections and deaths. This policy misstep had a great impact on the country’s economic and fiscal position.

Due to prudent fiscal policy, Russia displayed a favourable fiscal position in both 2018 and 2019, despite economic sanctions. This position allowed the country to manoeuvre cautiously into fiscal deficit with the onset of the COVID-19 pandemic in 2020. However, in March 2020, a supply-induced price war between Russia and other oil-producing countries increased its financial volatility, which affected its fiscal position and the recovery of the primary balance. India’s fiscal trajectory is projected to remain negative, in excess of 10% of its GDP for the foreseeable term. Although the increase in India’s fiscal deficit between 2019 and 2020 is not as pronounced as South Africa’s, the country is suffering from rapidly rising debt (IMF, 2020d).

Prior to the pandemic, South Africa’s fiscal status deteriorated as debt levels escalated, partly due to protracted and slow economic growth following the commodity cycle. Inherited structural inequality, compounded by the failure to stimulate and sustain economic growth to create jobs, and the persistent over-expenditure relative to revenue, resulted in South Africa’s debt-to-GDP growing exponentially (FFC, 2021). Over the last decade, South Africa’s debt-to-GDP ratio increased from 26% to over 60%. With the onset of the COVID-19 pandemic in 2020, this ratio is anticipated to accelerate even more dramatically.

Over the medium term, the recovery in South Africa's primary balance is based on the assumptions that, firstly, economic activity will return to its pre-crisis level, and secondly, that government will undertake an active fiscal policy stance in order to control its fast-growing public debt.

Income from labour is the largest contributor to household income and the largest source of inequality in the domestic economy (Van der Berg & Louw, 2004). A slowdown of GDP and labour income will aggravate structural inequality and decrease overall consumption. Given these considerations, a fiscal projection of an improved primary balance post-COVID-19 means that government undertakes an exceptional, robust position of reprioritisation in response to the pandemic. At the same time, it narrows the fiscal deficit to relieve the debt burden. In other words, government must make difficult decisions in order to attain a balance between fiscal sustainability, on the one hand, and saving the economy through fiscal supports and reliefs, on the other hand, despite lower fiscal revenue.

2.5.2 Financial stability

2.5.2.1 Consumer Price Index

In terms of financial stability, South Africa's CPI, represented in Figure 2.2, shows the shifts in price volatility, as well as the divergence in the consumer prices of core¹³ and non-core¹⁴ items. This price divergence affects consumer behaviour as marginal propensities to choose between consuming and saving. In an ideal situation, prices would be both low (i.e. affordable and cost-efficient) and stable (i.e. consistent with expectations). High inflation, combined with low growth in income and GDP, means that people's purchasing power is eroded by the rising prices of goods and services.

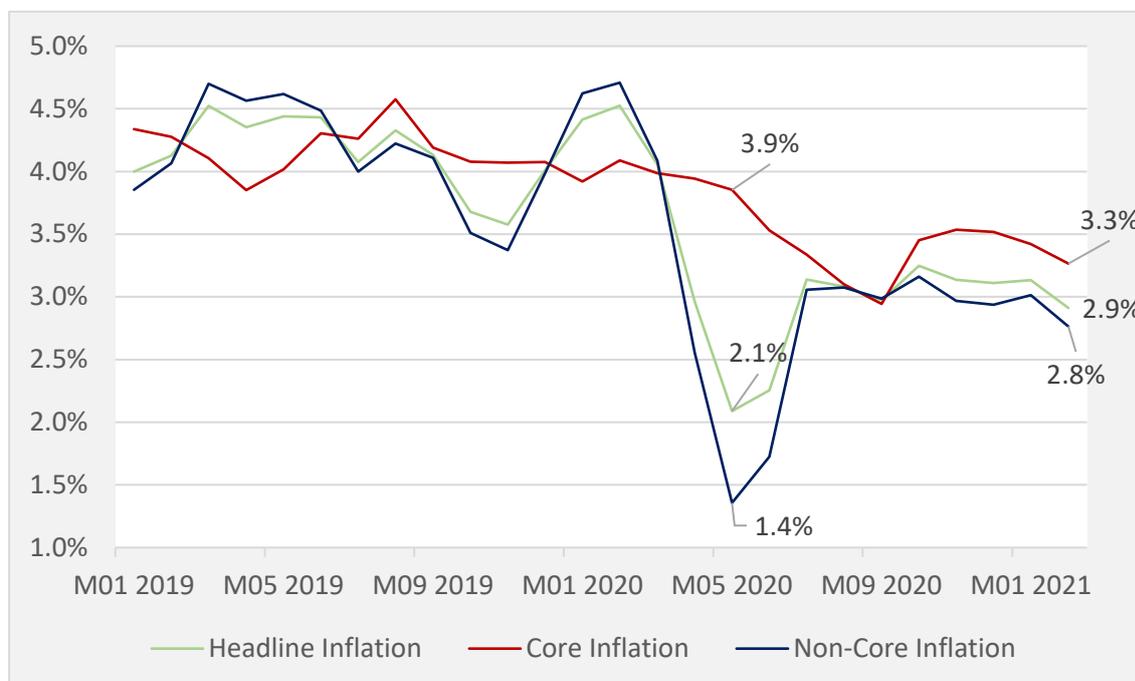
According to the data, the general increase in the consumer prices of goods and services – represented by the headline inflation (captured in the CPI) – declined as a result of COVID-19, from its peak at 4.5% in February 2020 to 2.1% merely three months later. Despite the moderation in headline inflation, the cost of core (or essential) items remained relatively high at 3.9%. This suggests that the financial impact of COVID-19 has been detrimental to people's livelihoods, not only through the income effect (i.e. jobs and income), but also through the price effect (i.e. the affordability of goods). This diverging trend between core and non-core inflation re-emerged in the first few months of 2021, according to recent data. This trend is shown by the 2.8% increase in non-core inflation relative to core inflation, which increased by 3.3% in February 2021.

¹³ Core consumer goods and services include food, non-alcoholic beverages, clothes, footwear, housing and utilities, health care, public transport, communication and education.

¹⁴ Non-core consumer goods and services include goods such as alcoholic beverages, household contents and services, the purchase of private transport operations, recreation and culture, restaurants and hotels, and miscellaneous goods and services.

The persistent gap between the core and non-core CPI indicates the lasting effect that COVID-19 has had on people’s income and price affordability, and brings to light the fact that the pandemic has affected households of different income levels to varying degrees. More specifically, impoverished households – whose budget is dominated more by consuming core items – face higher inflation than affluent households who can afford both core and luxury items.

Figure 2.2: Core vs non-core inflation, January 2019 to February 2021



Source: Statistics SA (2021b) and Commission’s calculations

The financial impact of COVID-19 illustrated above shows that the rate of erosion on people’s purchasing power to acquire essential items necessary for survival is faster than for non-essential items. This negative impact is more significant on those individuals who are dependent on the social grant system in South Africa, as their need to rely on additional support measures is likely to be greater than it would have been before COVID-19. In other words, the pandemic has exacerbated the reliance that less affluent households place on social grants. Aware of this fact, government implemented direct transfers of the Temporary Employer(ee) Relief Scheme (TERS), the Special COVID-19 Social Relief of Distress (SRD) Grant, as well as temporary boosts to some of the existing social grants to the vulnerable.

The SARB also implemented the expansionary monetary policy to boost the economy’s liquidity. This was done by lowering the interest rate from 6.5% at the beginning of 2020 to 3.5% in 2021, following the onset of the COVID-19 pandemic.

With the higher price increases of core items relative to non-core items, the risk of headline inflation increasing may be higher due to cost-push rather than demand-pull inflation. Furthermore, the massive liquidity injected by the SARB through expansionary monetary policy to lower interest rates, combined with the COVID-19 response’s fiscal stimulus package for economic revival, may cause prices to inflate in order to absorb the excess liquidity.

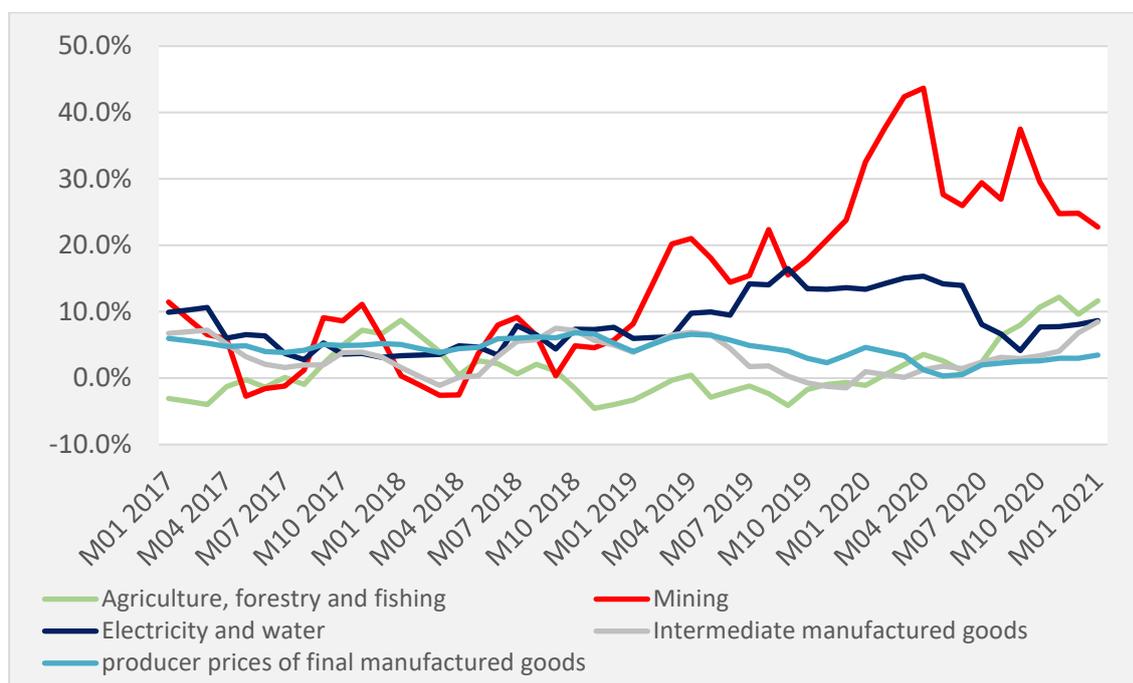
Fortunately, the SARB has committed to staying within its inflation target range throughout the pandemic, ensuring price stability. This ensures financial stability and credibility (Stats SA, 2021b).

Policy considerations should now be aimed at creating the economic base and momentum for inclusive, pro-poor growth, particularly by creating job opportunities for the youth. Only by expanding employment to increase productivity and incomes in South Africa will the economy be able to grow and escape the current downward spiral of a deteriorating fiscus and household affordability.

2.5.2.2 Producer Price Index

Figure 2.3 shows that, shortly before the COVID-19 pandemic, there was a heightened degree of price volatility and uncertainty in the costs of production, especially in the mining industry. In February 2020, a month prior to the nationwide lockdown, the supply of mining decreased relative to its demand, resulting in an increase in the price of mining to over 40%. The rising prices of non-ferrous metal ores, gold and other metals (i.e. the commodity price increase) led to higher cost and – through price markups – generated higher revenue for local mining firms (Stats SA, 2021c). However, this change in prices also created uncertainty for firms to change their production behaviour and productivity, resulting in future price increases.

Figure 2.3: Producer price inflation of domestic output by industry, January 2017 to 2021



Source: South African Reserve Bank (2021) and Commission’s calculations

Later in 2020, the producer price inflation of mining gave a moment of reprieve as the lockdown was eased and some economic activity resumed. However, this only lasted until September, as COVID-19 variants caused the infection rate to rise again, thereby increasing the risk of retightening lockdown restrictions.

The spike in the producer price for non-ferrous, precious metals (e.g. gold and platinum) also signifies the market's wariness against inflation after world economies embarked on extraordinary expansionary fiscal measures and monetary policies to stimulate the economy.

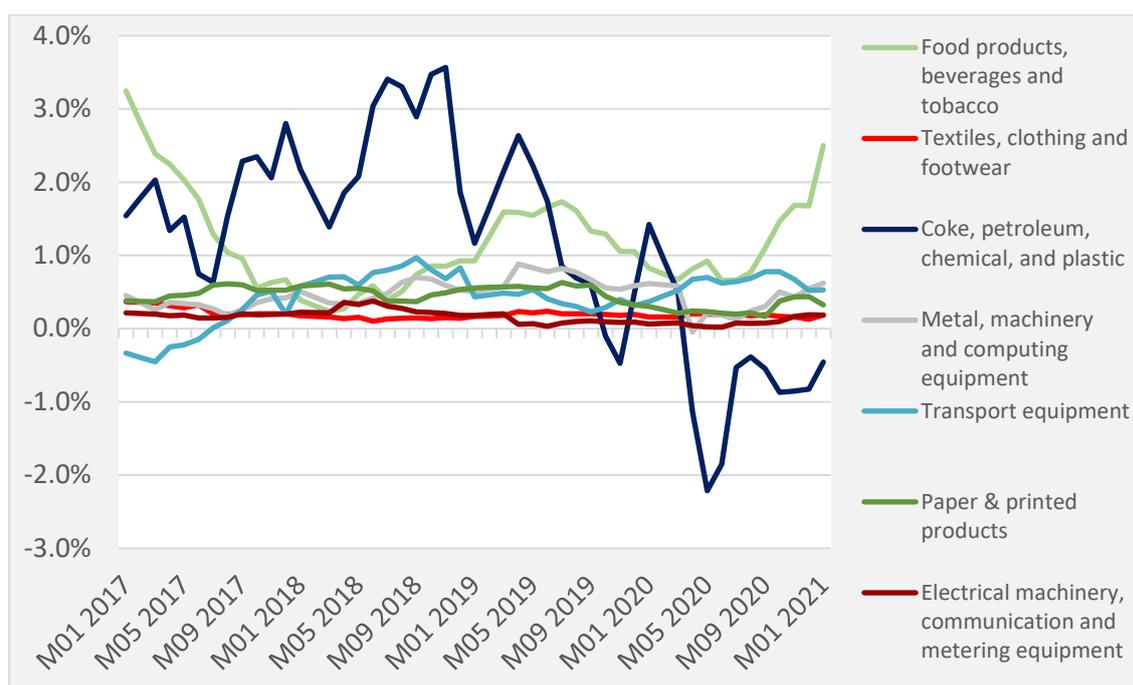
The data further shows that the producer price of electricity and water has increased since 2017. This is mostly due to years of governance failure, financial mismanagement, as well as the operational and performance failure of the state-owned enterprises in charge of these products and services. The country's sole electricity producer, transmitter and – in some cases – distributor, Eskom, is still unable to generate sufficient power supply, causing prices to escalate. This is despite decreased demand for energy due to the COVID-19-induced economic lockdown. As a result, local municipalities have become trapped in debt spirals, as the rising prices of basic bulk services for water and electricity have become increasingly unaffordable.

Producer prices in the agriculture, fishing and forestry industry show that – thanks to a favourable season and productive yields in the sector during the first three quarters of 2020 – prices were relatively stable during this period.¹⁵

The producer price of final manufactured goods as a composite index, illustrated in Figure 2.3, exhibited a stable trend in its cost of production. However, data decomposition by different product items, illustrated in Figure 2.4, shows the difference in the cost of manufacturing final goods as a result of the pandemic. In particular, the impact of the COVID-19 pandemic on the price of manufacturing final goods of coke, petroleum, chemical, rubber and plastic products (shown by the dark blue line) is represented by a reduction to -2% in May 2020. The sudden drop in the producer price inflation of these items is likely caused by the glut in crude oil as its input material, as well as the lockdown that reduced the demand for its associated final goods. With the development of the COVID-19 vaccines and the supply agreement between Russia and the Organisation of the Petroleum Exporting Countries (OPEC) on oil production, the cost of manufacturing these final products is expected to rise as demand resumes with the reopening of the economy.

¹⁵ In the first three quarters of 2020, the agriculture, fishing and forestry industry increased at 35.9%, 19.6% and 18.5%, respectively, in annualised percentage change in the seasonally adjusted quarterly GDP (Stats SA, 2021c).

Figure 2.4: *Producer price inflation of final manufactured goods, January 2017 to 2021*



Source: South African Reserve Bank (2021) and Commission’s calculations

It is of concern that the cost of production for final manufactured goods of food products, beverages, as well as tobacco and transport equipment, increased to a greater degree compared to other final manufactured goods, due to disruptions caused in the chain of production and logistics by the pandemic (OECD, 2020). Furthermore, these rises in costs are likely to be passed on by markups to affect the retail price of these final manufactured goods, thereby affecting consumers’ cost of living and households’ ability and purchasing power to pay for essential food items. Again, the effect will be particularly harsh on poorer households in terms of the affordability of necessary household goods, thereby exacerbating already unacceptably high levels of inequality in the country.

2.5.3 Fiscal policy

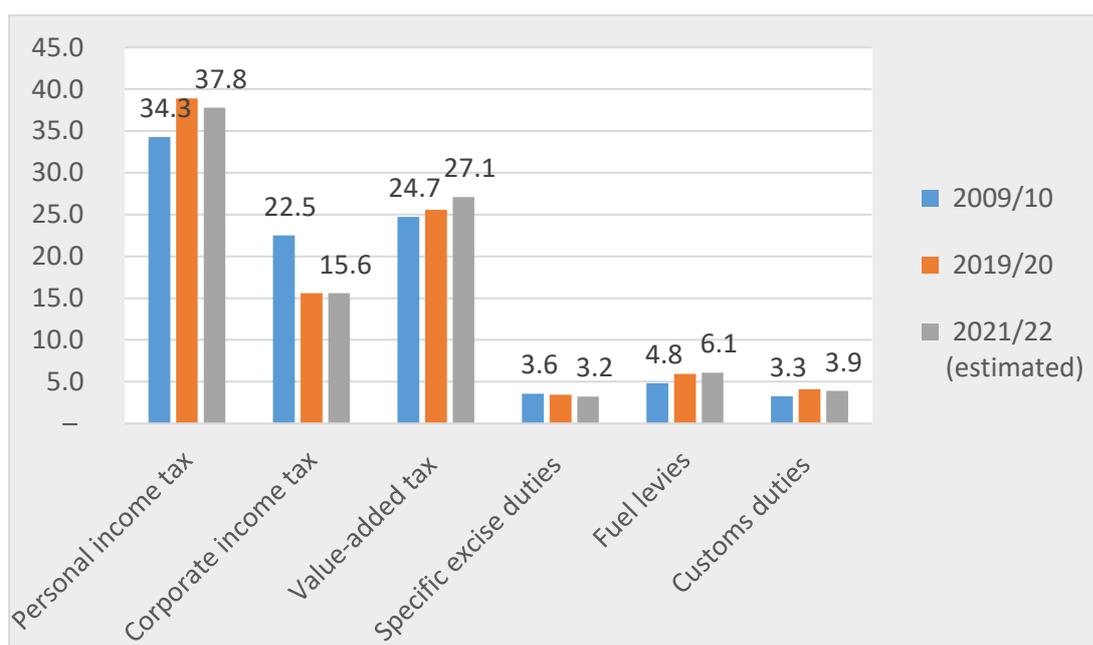
2.5.3.1 Public revenues

Turning to the composition, trend and determinants of fiscal revenue, Figure 2.5 presents the proportion of tax revenue by classification over a decade between 2009/10 and 2019/20, as well as the estimated revenue budgets after-tax proposals for the 2021/22 financial year.

The data indicates that there has been a drastic substitution effect between corporate income tax (CIT) with personal income tax (PIT) and domestic (consumption) taxes on goods and services. More specifically, CIT receded significantly in proportion of total tax revenue, from 22.5% in 2008/09 to 15.6% a decade later in 2019/20. Replacing these gaps in revenue was PIT at 38.2% in 2019/20 (from 34.3% in 2009/10), and value-added tax (VAT) on goods and services at 25.6% (from 24.7% in 2009/10). This result suggests that, over the past decade, South Africa’s fiscus has become more dependent on labour and household income, as well as activities in consumption.

According to reports by the Davis Tax Committee, revenue from corporate income generally moves in line with the economy and is particularly volatile (Davis Tax Committee, 2018). The Committee noted that, prior to 2009, CIT revenue grew strongly with improved tax compliance and economic growth. However, after the global financial crisis, CIT revenue declined due to reductions in companies' profits induced by the fall in global and domestic demand, especially in the mining sector. Furthermore, economic disruptions resulting from labour disputes and declines in prices of commodities in 2015/16 also contributed to the CIT revenue shortfall.

Figure 2.5: Share of total tax revenue (top 90%, in percentage)



Source: National Treasury (2021a) and Commission's calculations

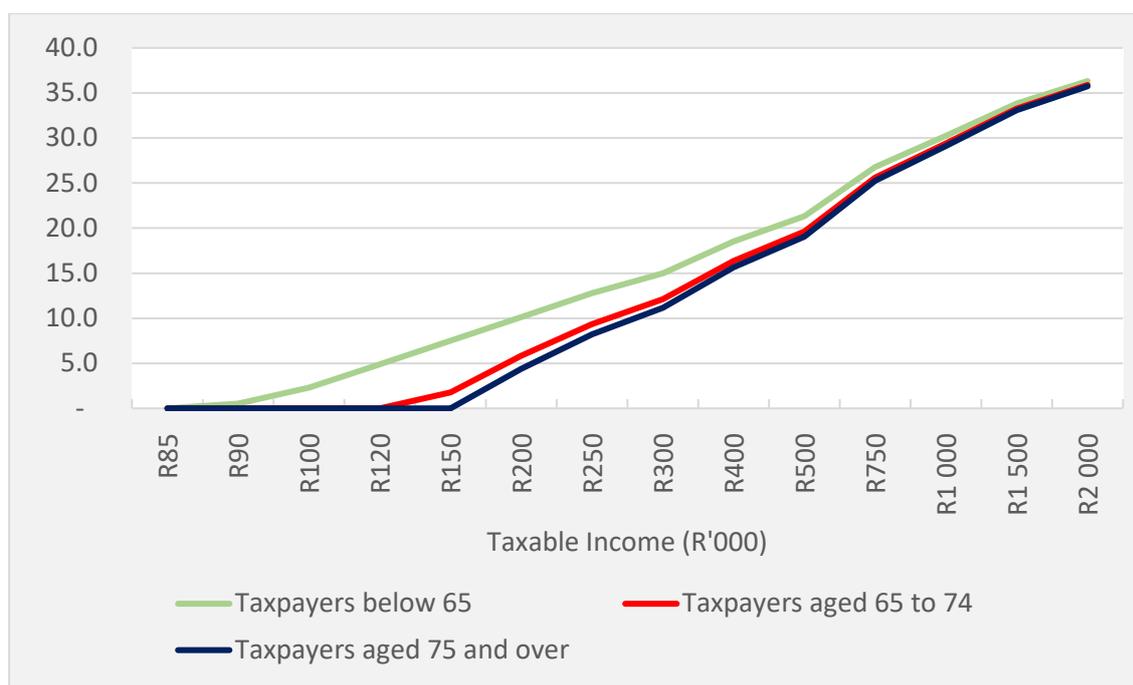
In efforts to fill the gap in the total tax revenue, additional resources had to be raised from alternative means of taxes. In terms of PIT, National Treasury introduced a new income tax bracket at 45% for taxable income above R1.5 million per year and increased the dividend withholding tax from 15% to 20% in 2017 (National Treasury, 2017). Taxes on the domestic consumption of goods and services saw an increase of 1% in the indirect taxation of VAT in 2018 (National Treasury, 2018). Vigilant of the reductions in CIT in its 2020 Budget Review, National Treasury indicated plans to restructure its fiscal policy to broaden the tax base of companies by simplifying the tax code and reducing the rate (National Treasury, 2020). Notwithstanding these measures, the extent of damage done at the tax administration of the South African Revenue Service (SARS), resulting from mismanagement, governance failure and the loss of trust in the institution from as early as 2014, should be acknowledged (Nugent Commission, 2018).

The increase in the concentration and dependence on PIT and VAT for public revenue generation has made fiscal revenue more vulnerable to COVID-19, especially due to the impact that the pandemic has had on household income and consumption behaviour. The COVID-19-induced lockdown has left millions of people unemployed. Thus, the PIT-concentrated tax base will absorb the full impact of the lost income.

In terms of consumption, although government provided the special COVID-19 living allowance grant (R350 per person per month), its impact is negligible when compared to the individual loss of income and reduced spending power. Government should also take cognisance of its fiscal sustainability when overspending in order to smoothen people’s consumption patterns.

To avoid adding pressure on the economy suffering under COVID-19, government has withdrawn its initial proposal to increase taxes in the 2021 budget. Instead, tax relief was issued through the higher-than-inflation adjustment in the tax brackets for PIT at 5%. It is anticipated that the tax relief created will encourage spending and stimulate economic growth with some returns on VAT so that the government can meet its expenditure needs. According to Figure 2.6, taxpayers under the age of 65 carry the tax burden across the income tax scale relative to older taxpayers. Taxpayers over the ages of 65 and 75 also have a higher income threshold. For people over the age of 65, the threshold is R120 000 per annum, while for people over the age of 75, the threshold for PIT is R150 000. It is also worth noting that, as taxpayers’ earned income increases, all three age categories face a converging effective average tax rate, such that if over roughly R1 million is earned per annum, the effective tax burden becomes virtually identical, irrespective of which age group the taxpayer belongs to.

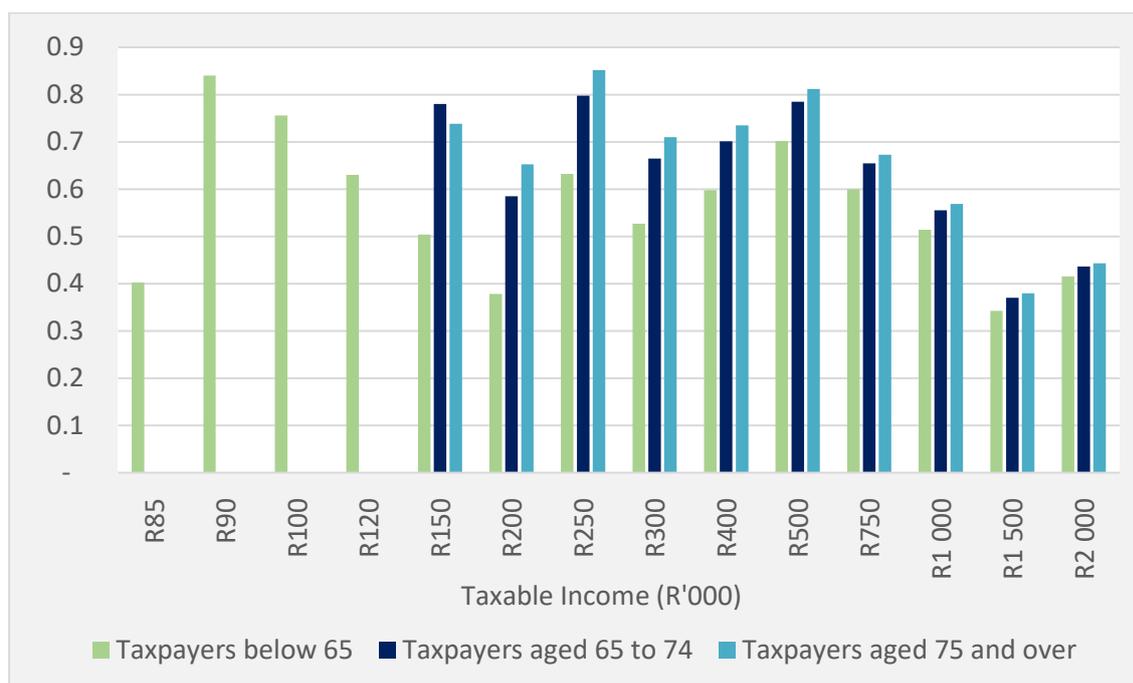
Figure 2.6: Effective average tax rates for 2021/22 (in percentage)



Source: National Treasury (2021b) and Commission’s calculations

Figure 2.7 examines the change in the effective tax rate by income level between the 2020 and 2021 revenue proposals. The annual change between the tax proposals is generally implemented by adjusting the income tax brackets to account for inflation. This provides valuable insight into whether the tax policy is consistent and progressive in structure. The data shows three interesting facts about the revenue proposal of 2021 relative to the 2020 proposal, notwithstanding COVID-19.

Figure 2.7: Effective average tax relief (in percentage), 2020 vs 2021's revenue proposal



Source: National Treasury (2021b) and Commission's calculations

Firstly, as confirmed in Figure 2.6, taxpayers in the older age cohorts have a higher tax threshold than those below the age of 65 and only start paying tax from an income over R120 000 per annum. Secondly, older taxpayers receive more tax relief for the same income relative to taxpayers under the age of 65, although this difference narrows as income rises. Thirdly, and most crucially in terms of tax structure, as a general trend, tax relief decreases as income rises. This suggests that the new tax proposal is progressive, as higher-income earners receive less tax relief and pay more taxes. However, the lack of uniformity and consistency of tax relief could be a matter of concern. In particular, income earners in the highest income category, who earn at least R2 million per annum, receive more tax relief than those who earn less than R2 million, resulting in a regressive or a counter-progressive trend between the two income groups. Therefore, to maintain structural progressivity, consistency and – ultimately – the overall effectiveness of the tax system, it is advisable for the tax relief system to follow a more uniform approach with a consistent trend in the revenue proposals' tax relief.

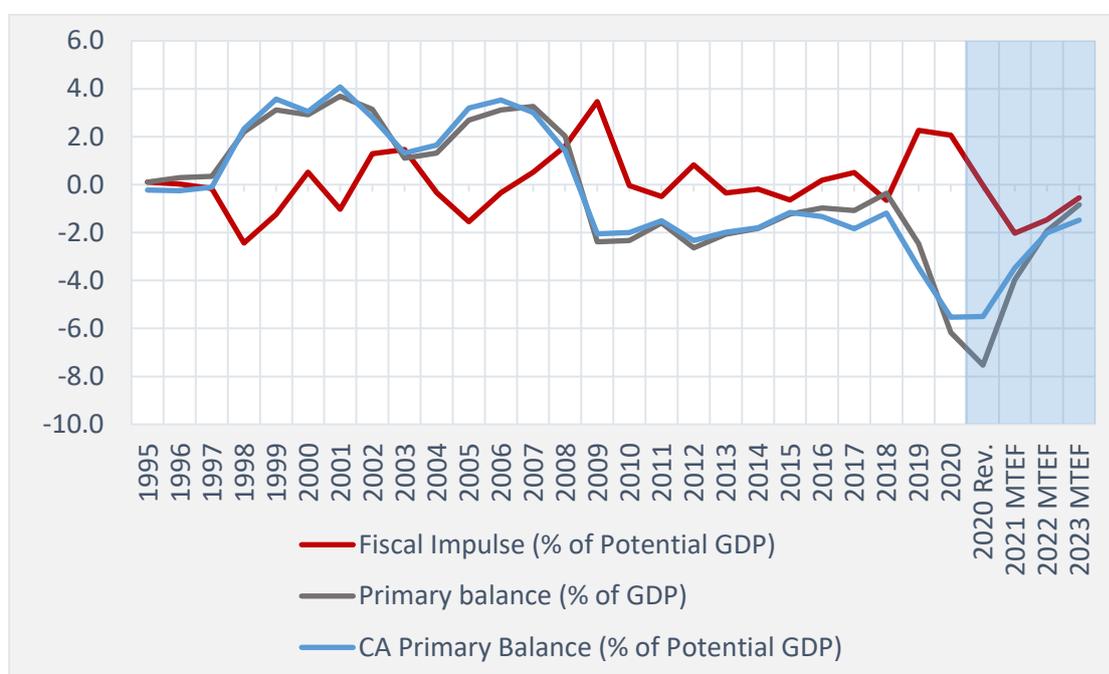
2.5.3.2 Fiscal impulse

To measure South Africa's fiscal stance, Figure 2.8 calculates the fiscal impulse (see Equation 2.1), with primary and cyclically adjusted primary balances as representations of the policy stance undertaken by government. The series shows that, since the fiscal expansion adopted in the financial crisis of 2008–2009 at the expense of primary balance in the last decade, the fiscal space has been under strain to implement real expansionary policy.

In 2019, following the President's Economic Stimulus and Recovery Plan, government re-engaged the expansionary fiscal stance in an attempt to reignite the economy through stimulus (focusing particularly on infrastructure), despite the deteriorated primary balance (South African Government, 2018).

With the onset of COVID-19 and its negative impacts on the economy, the fiscal space of the primary balance deteriorated even further, without a substantial change in the fiscal stance and impulse. This caused risks relating to fiscal sustainability and public finance management credibility to escalate. As seen by the revised estimates of 2020, the primary balance deteriorated to nearly -7.5% of GDP, compelling the fiscal impulse towards a consolidatory stance to bring the primary balances within a more sustainable range. Over the medium term, as per the 2021 budget tabled by the Minister of Finance, government is determined to bring the primary balance towards a zero balance through fiscal consolidation and focused productivity for growth. Essentially, this means reprioritising spending within the aggregate, while ensuring that the same levels of goods and services are delivered.

Figure 2.8: Fiscal impulse, primary and cyclically adjusted primary balances (in percentage of potential GDP), 1995–2020, 2020 revised estimate and 2021 Medium-term Expenditure Framework



Source: National Treasury (2020) and Commission’s calculations

2.5.4 Fiscal sustainability

2.5.4.1 Debt-to-GDP scenarios

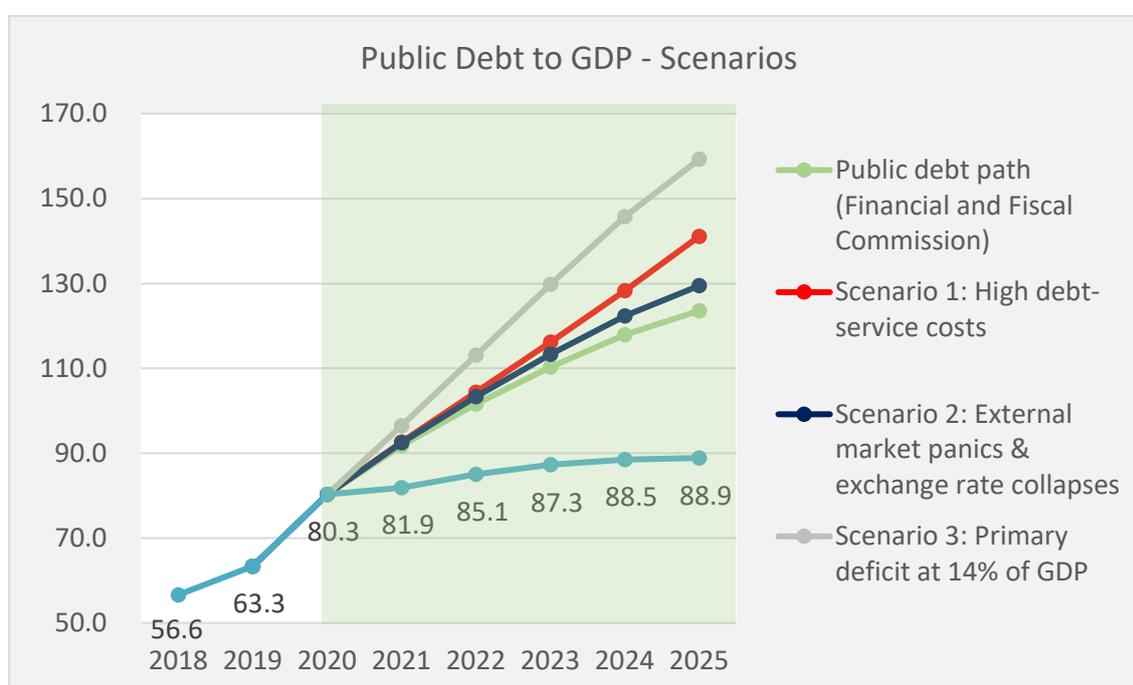
In the 2021 budget review, National Treasury projected the public debt-to-GDP to be 80.3% in 2020, rising marginally towards 88.9% by 2024. The budget review provides the estimate for the active scenario, in which active fiscal consolidation efforts are made, represented in Figure 2.9.

Using Equation 2.2 to calculate debt accumulation – by compounding existing domestic and foreign debt with their respective costs of borrowing (i.e. interest rate and exchange rate), adding primary balance and offsetting this by economic growth – the Commission estimates that, in the passive scenario, the projected public debt path could be substantially higher than National Treasury’s projections.

The passive scenario is one in which government does not impose any consolidation effort to control factors that determine fiscal debt in terms of the primary balance or interest rate. In such a scenario, the debt-to-GDP ratio is projected to grow to over 100% of GDP in 2022.

It is not contested that the accuracy and consistency of these estimates are still up for debate. Unaccounted debt-creating flows – such as contingent liabilities and bailouts to state-owned entities, the special drawdown of deposits and capital flight – affect the accuracy and consistency of the model. Unobservable factors, such as fiscal leakages, mismanagement of public funds and corruption, can also contribute to higher debt. Nevertheless, the significant difference between the passive and the active scenarios for debt signifies the degree of fiscal consolidation effort required to maintain the credibility and sustainability of the fiscal debt path.

Figure 2.9: Public debt to GDP – scenarios (in percentage of GDP)



Source: National Treasury (2021c) and Commission’s calculations

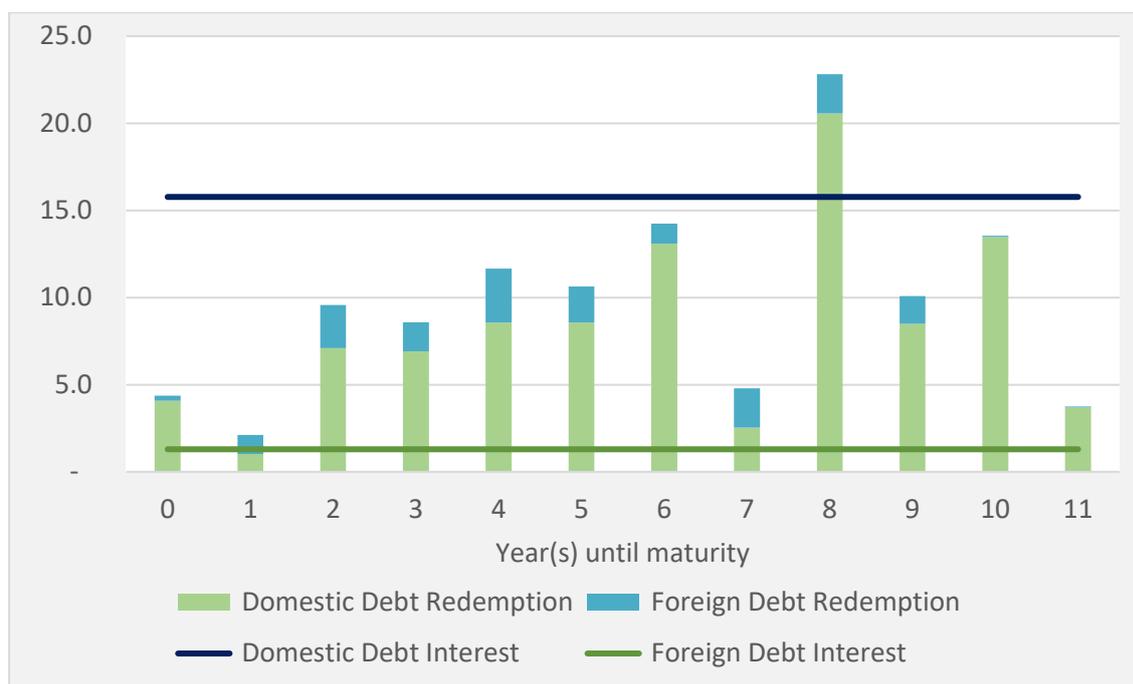
To add further insight into South Africa’s public debt path, taking into account the impact of COVID-19, Figure 2.9 injects three worst-case economic scenarios on specific factors of debt into the model. These scenarios essentially create different debt-creating shocks and show the resulting public debt paths for each case. In Scenario 1, the required return on the national debt (debt-servicing costs) is assumed to be high, at above 15%. Credit ratings remain below investment grade as structural impediments persist with the uncertainty caused by the COVID-19 pandemic. Scenario 1 shows that the public debt-to-GDP ratio maintains an upward trajectory without signs of decelerating as the high debt-servicing costs are compounding.

In Scenario 2, South Africa is confronted by the sustained shock and panic from the external market. This is based on the notion that the panic caused by COVID-19 – and policy responses by world economies – is comparable to that of a long-tail event such as a global financial crisis, where expansionary monetary and fiscal policy is undertaken.

This may induce a situation of hyperinflation from excess, but valueless liquidity. Such a panic in the market would result in world investors divesting from emerging markets to protect their investments from volatility, which leads to the exchange rate depreciation of the local currency. The debt principal and interest service costs for loans denominated in foreign currencies will increase due to the higher cost of repaying these debts in foreign currencies. The second scenario is more muted in its impact on debt because South Africa is a relatively open economy with its currency and trade activities buoyed by the commodity price cycle. However, according to the model, the immediate momentum of increase in the debt-to-GDP ratio is still high, and is expected to breach the 100% threshold in 2022.

The condition for Scenario 3 is that government maintains its fiscal stance during the height of the COVID-19 pandemic, with a primary deficit at 14%. Under this scenario, combined with the passive conditions of the debt factors as determinants, the projected debt path will reach over 150% of GDP by 2025, with no signs of deceleration. This scenario presents the most unfavourable outcome of debt for South Africa. Not only is the total debt amount the highest among the alternative scenarios, but the rate of debt accumulation outpaces all other rates, without turning towards a stabilising equilibrium, and results in a debt spiral.

Figure 2.10: December 2020 debt redemption and interest schedule as a proportion of the 2021 revenue budget (March 2021)



Source: South African Reserve Bank (2021) and Commission's calculations

Focusing on the cost of debt financing and redemptions of borrowing as a proportion of the 2021 revenue budget, Figure 2.10 shows that, in December 2020, South Africa paid 15.8% of its revenue budget towards servicing domestic debt, and 1.3% towards servicing foreign debt. The redemptions of domestic and foreign debt together, as a proportion of total revenue, are just under 5% for the current year.

In total, this means that government will have to commit over 20% of its revenue budget to pay debt-servicing cost redemptions before spending on anything else. In two years, by the 2022/23 financial year, without changing the structure of financing to the current redemption schedule, government is expected to pay over 25% of its 2021 budgeted revenue. By Year 8 (i.e. the 2028/29 financial year), 40% shall be prioritised for paying back the principal debt and interest before the appropriations and division of nationally raised revenue can occur for the intergovernmental fiscal framework and intergovernmental fiscal relations (IGFR).

There is much debate about government's approach to balancing the provision of support to ameliorate the harsh socio-economic circumstances due to the COVID-19 pandemic while still being cognisant of the rapidly rising debt and debt-servicing costs. Looking at the redemption schedule of debt contracts, the USD4.3 billion rapid financing instrument, which the IMF loaned to South Africa at 1% interest, helped the country address the immediate challenges posed by the COVID-19 pandemic. However, the redemption of this emergency fund must be repaid soon and in foreign currency, which may inadvertently put pressure on government to enter into debt refinancing on unfavourable terms while the COVID-19 pandemic still lingers.

Indeed, conventional fiscal policy dictates that fiscal consolidation is the appropriate stance for a country at risk of falling into a debt trap. However, COVID-19 had put many individuals' lives and livelihoods in danger, and support is needed. This leaves government with the challenge of creating higher returns, but from the same level of spending, or even from spending less. In other words, spending efficiently must be prioritised. Given that the third wave of the pandemic is looming, government's primary concern for spending should be how to optimise the inclusivity of returns for citizens – in terms of health, education and economic activity – with the vaccine rollout. All spending must be accounted for and measured against the market price of delivery in order to optimise output and outcome efficiency without leakages and wastefulness.

2.5.4.2 Intergovernmental determinants of fiscal debt

The final section of this paper seeks to determine the intergovernmental factors of fiscal debt. There is a need to triangulate and understand intergovernmental determinants that are causing fiscal debt to increase, such that one can develop fiscal rules in a targeted manner that may be relied upon to restore fiscal credibility and sustainability in the country. To accomplish this, the Commission tested three macroeconomic models to find the determinants of fiscal debt, as represented by the debt-to-GDP ratio in Table 2.1.

The first model is the *Simple* model tested as the baseline. The *Simple* model takes after the common denominators of the variables that were used for the determinants of fiscal debt (considered in Equation 2.2 and forecast in Figure 2.9). These variables are economic growth (dynamic), inflation, the interest rate and the exchange rate. The second model, the *Primary* model, refers to the first baseline model with the addition of the primary balance variables of government revenue and expenditure as a percentage of GDP.

Finally, the IGFR model makes use of the operating cash balance of all spheres and organs of state – instead of the primary aggregates of revenue and expenditure –to examine the interrelationships between intergovernmental fiscal balances in cash, relative to fiscal debt.

The result of the *Simple* model shows that, as expected, economic growth plays a critical role in determining fiscal debt. More precisely, the estimates suggest that, should growth deteriorate by one percentage point, this will result in the debt-to-GDP ratio increasing by over two percentage points in the following period (i.e. dynamically).

Table 2.1: Finding the determinants of fiscal debt

Dependent variable: DEBT_GDP			
Method: Least squares			
Sample (adjusted): 1995 2020			
Included observations (after adjustments):	25	25	26
Variable	Simple	Primary	IGFR
C	1.599	16.460	10.552 *
GDP growth	0.960	0.719	
GDP growth (-1)	-2.119 *	-0.116	
Inflation (CPI)	0.169	0.053	
Required yield on government bonds	2.356 *	1.857 *	1.818 *
Exchange rate depreciation (RSA/US)	0.011	0.020 *	0.011 *
Expenditure as a percentage of GDP		2.388 *	
Revenue as a percentage of GDP		-3.311 *	
Operating cash balance of:			
National government			0.000 *
Extrabudgetary institutions			-0.001 *
Social security funds			0.000
Provincial government			0.000
Local government			0.000
Non-financial public enterprises			0.000 *
Financial public enterprises			0.000
R-squared	0.75	0.88	0.94
Adjusted R-squared	0.68	0.84	0.90
Prob (F-statistic)	0.00	0.00	0.00
Akaike info criterion	6.43	5.81	5.31
Schwarz criterion	6.73	6.20	5.79
Hannan-Quinn criterion	6.52	5.92	5.45
Durbin-Watson stat	1.04	1.53	1.91

Note: The asterisk * signifies that the determinant concerned is statistically significant at a p-value of less than 5%.

On the other hand, inflation does not seem to have any significance in determining the trajectory of the fiscal debt path in terms of debt-to-GDP. Inflation is a derivative (or by-product) of economic growth and the interest rate, and represents the speed of monetary flow relative to goods, or essentially, the redundancy of money. As a result, the impact of inflation is distributed through economic growth and the interest rate. Inflation remains statistically insignificant in the other two more sophisticated models, which include variables of primary balance and intergovernmental operating cash balances.

The most noteworthy determinant and variable that maintained its statistical significance throughout all three models is the required yield on government bonds, or simply, the cost of financing public spending. The results show a positive relationship between the yield on government bonds and the debt-to-GDP ratio: the greater the required returns demanded of government by its financiers in the market, the greater the debt-to-GDP ratio. This result confirms the potentially perilous outcome of a fiscal debt spiral should South Africa lose its credibility. Lastly, although negligible at the baseline model, exchange rate depreciation gained statistical significance as the model specification became more sophisticated and biases were controlled for. This result suggests that higher currency depreciation increases the debt-to-GDP ratio.

Examining the *Primary* model further, one finds that both the expenditure and revenue variables (expressed as percentages of GDP) are statistically significant determinants of debt-to-GDP, with signs in accordance with logic. More specifically, a 1% increase in expenditure as a percentage of GDP results in a 2.3% increase in the debt-to-GDP ratio. Revenue, on the other hand, works in the opposite direction: a 1% increase in revenue as a percentage of GDP results in a -3.3% shift in the debt-to-GDP ratio. Finally, examining the relationship between the IGFR system in terms of operating cash balances and fiscal debt (i.e. the IGFR model), the result shows that national government and non-financial public enterprises are positively related to the accumulation of fiscal debt, whereas extrabudgetary institutions are negatively related. Operating cash balance represents the fiscal leakages in the IGFR system as idle cash or resources that are not being used efficiently.

Interestingly, results from the *Primary* and *IGFR* models show that the impact of economic growth on public debt are statistically insignificant. A plausible explanation for this may be that, once more powerful explanatory variables of government revenue and expenditure as a share of GDP are included in the model, the explanatory power (or impact) of economic growth diminishes relatively. By the same token, in the IGFR model, the result for operating cash balances can be interpreted in light of the significant fiscal leakages in the system: As idle cash is left underutilised in different spheres of government, no level of economic growth could be significant in reducing fiscal debt as a share of GDP. Simply put, the fiscal leakages in the IGFR system cancel out the benefits that economic growth can have in reducing the debt-to-GDP ratio.

More precisely, the results from the IGFR model show that fiscal leakages in national departments and non-financial public enterprises (e.g. Eskom and South African Airways) are positively associated with fiscal debt-to-GDP. This is because public funds are not being used efficiently, at the cost of improving service delivery. When funds that could have been used for building basic infrastructure are instead being wasted or misused, future economic growth is dampened and the chances of generating more revenue for paying off debt are diminished. Furthermore, wasteful behaviour and leakages affect foreign direct investment as investor confidence is held back by such signs of higher risks for low returns, which also dampens growth prospects.

2.6 Conclusion

The impact of COVID-19 on the South African economy has brought about some concerning trends in the prices of goods and services, which affect the cost and standard of living of citizens. The consumer prices of essential goods are increasing at a higher rate than those of non-essential goods. This has changed the demand patterns of households and raises concerns about the affordability of consumer goods. On the producer side, apart from the volatility in the prices of mining operations brought about by the commodity cycle, firms have marked up their prices to manufacture food and provide logistics services due to greater demand (or anticipated demand). Overall, the results suggest that the impact of the pandemic weighs most harshly on poor households, as essential goods have become less affordable, thereby eroding purchasing power. In order to alleviate this price burden, there is a need for government to accurately target its cash transfers and provide tax reliefs, particularly for lower- to middle-income households and individuals who are more at risk of losing their income as a result of the crisis.

In the past decade, South Africa's fiscus has become increasingly dependent on revenue derived from household income and consumption activities, while revenue generated from corporate income has been volatile and has declined substantially. This has made the fiscus more vulnerable to COVID-19 due to the devastating impact that the pandemic has had on employment, household income and consumption behaviour. Despite efforts to assist households with the 2021 tax relief proposal – aimed at stimulating economic growth by encouraging spending – this tax structure lacks consistency, which undermines its progressivity. A consistent tax relief trend is needed to improve the overall effectiveness of the tax system.

Furthermore, South Africa's fiscal position has been strained by low growth and a structural deficit in the primary balance. Government's attempt, in 2019, to initiate an expansionary stance and stimulate the economy was interrupted by the onset of COVID-19, resulting in far less room to respond to the severe economic impact of the pandemic. South Africa is in a financially vulnerable position due to a combination of factors, such as structural fragilities, the mismanagement of funds and weak planning. Efficiency in government spending is thus crucial. In order to ensure that COVID-19 does not continue to jeopardise South Africans' health, safety, education and economic activities, the vaccination rollout should be prioritised. To this end, all public spending must be accounted for in order to mitigate wastefulness.

The results from the econometric model on the determinants of fiscal debt provide evidence that the cost of financing public spending is a significant driver of debt as a proportion of GDP, which confirms the potential of a debt spiral if South Africa cannot maintain its fiscal credibility. Furthermore, economic growth on its own is insufficient to reduce the public debt burden. The evidence suggests that, at the national level, revenue collection and optimal spending decisions are critical components of lowering public debt. At the intergovernmental level, fiscal leakages pose major challenges to fiscal sustainability. The evidence suggests that, in national departments and non-financial public enterprises (such as Eskom and South African Airways), public funds are not being used efficiently due to wasteful spending and the misuse of funds.

This not only undermines service delivery, dampens economic growth prospects and reduces investor confidence, but also reduces our chances of being able to pay off our debts and restore investor confidence.

Government's greatest challenge is to balance the need to provide support in order to overcome the socio-economic consequences of COVID-19, with the need to combat its rising debt and debt-servicing costs in order to ensure fiscal sustainability and credibility. Although government's fiscal consolidation approach in the 2021 budget is needed to restore the primary balance to sustainable levels and restore fiscal credibility through spending reprioritisation, the state must remain cognisant of its obligation under the Constitution to ensure the progressive realisation of socio-economic rights for its citizens in its negotiations for a sustainable fiscal path. This is particularly important, given the long-standing socio-economic challenges of poverty, inequality and unemployment in South Africa.

2.7 Recommendations

In light of the financial and fiscal impacts of COVID-19 on the South African economy, the Commission makes the following recommendations:

- 1. The Commission recommends that the Minister of Finance develops a fiscal sustainability strategy and principles with objective fiscal markers in order to implement targeted financial reforms for inclusive growth, fiscal debt sustainability and fiscal credibility. The fiscal sustainability plan and principles should consider the fiscal, financial and socio-economic consequences of the COVID-19 outbreak in order to direct financing, within justifiable means, and ensure the progressive realisation of the constitutional imperatives.*

Research shows that South Africa faces the rising risk of spiralling debt and debt-servicing costs. A sizable portion of the debt comes from financing state-owned enterprises. Through planned and targeted fiscal consolidation and reprioritisation, government can realign its resources in a manner that achieves debt sustainability and establishes fiscal credibility. Fostering inclusive growth by creating employment opportunities should be an important consideration in the reprioritisation of government spending. Not only will this reduce poverty and inequality more generally, but, in particular, it will ameliorate the impact that COVID-19 has had on the purchasing power of poorer households, while simultaneously increasing the tax base for improved revenue collection, thereby contributing towards the attainment of fiscal credibility.

- 2. The Commission advises the Minister of Finance to eliminate fiscal leakages and inefficiencies that are undermining fiscal credibility. The Commission noted that citizens do not receive adequate returns from public spending. These issues must be addressed by the following:*
 - i. A decisive and coherent strategy and approach of fiscal reprioritisation*
 - ii. The implementation of fiscal consolidation, targeting cuts in areas of underspending and questionable performance*

- iii. *The eradication of duplication of function (i.e. the merging of departments and public entities)*
- iv. *Investment in the use of technology and other areas to improve the capability of public sector personnel*
- v. *The eradication of contract mismanagement and procurement irregularities*

The country's financial and fiscal credibility determines the cost of servicing its debt and attracts investment in South Africa's future growth and development. Fiscal leakages, the mismanagement of public funds, irregular expenditure and corruption undermine government's credibility in utilising fiscal resources for the purposes of delivering value to the public and improving the growth prospects of the economy. The custodian of public finance, National Treasury, under the leadership of the Minister of Finance, should take swift action to remove spending inefficiencies and ensure that maximum value to citizens is realised.

2.8 References

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Chapter 3

Measuring the effectiveness of government expenditure for performance



Chapter 3: Measuring the effectiveness of government expenditure for performance

Amahlongwa Holdings

3.1 Introduction

South Africa's performance measurement has evolved in tandem with its performance reporting processes. Lodge and Grill (2011) reported that the country had experienced three phases of public administration development. The first phase, the Progressive Public Administration Phase, came about in the 1950s and was characterised as emphasising procedural controls and rules. The New Public Management (NPM) Phase followed, which saw the introduction of explicit performance standards, output controls, organisational disaggregation, competition and contractualisation, private sector-style management practices, and parsimony in financial resource use. The NPM approach was perceived to be the best tool to implement improved service delivery. However, this approach is associated with the Washington Consensus, which, among other things, limits the role of governments in the economy. For South Africa, studies believe that the NPM approach achieved an integrated governance approach, which prioritised collaboration in the different spheres of government and among the national government departments (Gumede, 2008).

Luthuli (2007) indicates that performance measurement was strictly concerned with reducing government costs and making governance more efficient. However, this neglected the issues of effective service delivery. Lodge and Grill (2011) claim that the NPM approach had weaknesses produced by the specialisation, fragmentation and marketisation of state organs. In addition, the budget system failed to promote the goals of government. Further reforms were therefore required to reprioritise existing resources towards areas that would maximise welfare gains to all South Africans (National Treasury, 2019).

A series of reforms saw South Africa proceed into the Post-NPM Phase. This phase involved budget reforms that shifted the public expenditure management focus to a performance budgeting system (Engela & Ajam, 2010). According to Van der Nesta and Erasmus (2013), by 2000, legislative reforms had been enacted. Section 27(4) of the new Public Finance Management Act (PFMA) requires national government departments to submit predetermined measurable objectives to Parliament for each main service delivery programme on the introduction of the annual budget. The reforms sought to give rise to the change from an input-based budgeting system (line-item/programme budgeting) to an output-based, results-orientated system (multi-year programme budgeting and performance budgeting). According to Lodge and Grill (2011), the Post-NPM Phase involves strengthening coordination through a more centralised or collaborative capacity. Therefore, it has a far greater potential for facilitating good financial governance.

Many believe that the Post-NPM Phase offers a better financial management system, which supports public accounting (Brusca & Montesinos, 2013). The Post-NPM Phase improves efficiency and effectiveness in the delivery of public services, and promotes the transparency and accountability of governments. This is true for industrialising countries that made the transition in the Post-NPM Phase during the late 1980s (Mucciarone, 2008). For South Africa, the impact of government spending for functions, roles and responsibilities on growth and development remains debated or questioned. In particular, the South African government's credibility to utilise its budget to implement public policy, align market incentives and improve Pareto efficiency was examined. This paper attempts to answer four of these emerging questions as they related to the period during which South Africa implemented a programme- and performance-based budgeting (PPBB)¹⁶ framework.

3.1.1 Research questions

The study addresses the following key questions:

- i. How has the fiscal multiplier effect evolved with economic growth and social development in South Africa?
- ii. How aligned and effective are the performance indicators of government departments representing their mandates and purposes?
- iii. What is the size and shape of the wage bill relative to delivering public value as its performance?
- iv. How would a performance-based budgeting approach determine the efficiency and effectiveness of government expenditure?

This paper deals with each of these questions in each of its sections.

3.2 The fiscal multiplier effect in relation to economic growth and social development

3.2.1 Introduction

Several studies have attempted to conceptualise the fiscal multiplier effect and its effectiveness. For example, Derkacz (2020) views multipliers (i.e. investment, export, the public) as the ratio of change on gross domestic product (GDP) to differences in individuals' autonomous expenditure¹⁷.

¹⁶ It is worth noting that the Organisation for Economic Cooperation and Development (OECD, 2008) has defined performance budgeting as budgeting that links the funds allocated to measurable results. In practice, South Africa adopts performance-informed, programme-based budgeting (Worthington, 2013), where resources are indirectly related to proposed future performance or past performance. The performance information is essential in the budget decision-making process, but does not determine the number of resources allocated and does not have a predefined weight. Performance information is used along with other information in the decision-making process of the programme.

¹⁷ The change in GDP is not equivalent to the change in that expenditure (Derkacz, 2020)

Specifically, several studies (such as Spilimbergo, Symansky & Schindler, 2009; Afonso & Leal, 2019; Sen & Kaya, 2020) define fiscal multipliers, or simply Keynesian multipliers, as the ratio of a variation in output given a unit exogenous change in the fiscal balance, which could be led by a variation in government expenditure or tax revenue. Various growth theory models could explain the effectiveness of government spending, as suggested by the Keynesian school of thought. Those include Wagner's law (Wagner, 1883, 1890) and Barro's endogenous growth model (Barro, 1990).

The early literature in this field exhibits no consensus on the best methods to evaluate the fiscal multiplier (Holland, Marcal & Prince, 2020). One can use different approaches to determine the value of the multiplier. As a consequence of the various methodologies, geographical space and timespan in determining fiscal strategy, different studies deliver inconclusive results (Guy & Belgrave, 2011). For example, several studies (such as those of Giordano, Momigliano, Neri and Perotti, 2007; Alexiou, 2009; Arestis, Sen & Kaya, 2020; Alzyadat & Al-nsour, 2021) have found that the fiscal multiplier yielded positive results on economic activity and other development indicators such as employment and poverty reduction. On the other hand, other studies have found a negative impact (see, for example, Hsieh & Lai, 1994; Hauner & Kyobe, 2008; Aremo & Abiodun, 2020; Aslan, 2020).

Some studies also investigated the impact of public expenditure on unemployment and poverty (such as Madhou & Sewak, 2019; Ogbeide, Kanwanye & Kadiri, 2016; Dallari & Ribba, 2020; Kavese & Phiri, 2020; Omran & Bilan, 2020). While some of these studies' findings suggest that government spending reduces unemployment and poverty, others, such as Ogbeide et al. (2016), argue that government capital expenditure increases unemployment in Nigeria. Results show that an increase in the tax rate was highly associated with increased unemployment.

A review of empirical evidence gathered in South Africa also shows similar inconclusive results regarding how a change in government expenditure affects growth. For example, some studies (Mabugu, Robichaud, Maisonnave & Chiti, 2013; Jooste, Liu & Naraidoo, 2013; Kneller & Misch, 2014; Kavese & Erero, 2018; Makrelov, Arndt, Davies & Harris, 2018) find a positive impact of government spending on economic growth. Mabugu et al. (2013) employed an inter-temporal computable general equilibrium (CGE) model to investigate the effects of fiscal policy in South Africa, and their findings point to a positive impact of the expansion in the fiscal policy on growth. Jooste et al. (2013) used a dynamic stochastic general equilibrium (DSGE) model, a structural vector error correction model and a time-varying parameter vector autoregressive model. The study concludes that, although the countercyclical fiscal policy has been effective in South Africa, its impact differs according to the time. Kavese and Erero (2018) used the social accounting matrix (SAM-Leontief model) to analyse the effect of fiscal expansion in the Eastern Cape. The results suggest that a one rand (R1) rise in government expenditure is associated with increased economic growth, poverty reduction and employment creation. Kneller and Misch (2014) investigated the exact impact of government spending, yet, they disaggregate the data to firm-level and conclude that firm productivity is positively affected by expansionary fiscal policy (also see Makrelov et al., 2018).

Botha (2013) employed an input-output approach to investigate how a change in one sector can affect another industry and, therefore, economic growth in South Africa. The study concluded that a R1 increase in the economy had a significant impact on the economy in 2010 compared to 1980. This suggests that the fiscal multiplier has been declining over time during 1980–2010.

3.2.2 Methodology

3.2.2.1 Empirical models

Following an extensive review of the theoretical and empirical literature, a simultaneous equations model is adapted, starting with the general linkage between government expenditure and output. This is referred to as Wagner’s law. Following Arestis et al. (2020), the empirical model for testing Wagner’s law (the relationship between government expenditure and output) is specified as follows:

$$\ln GDP = \alpha_0 + \alpha_1 \ln GE + \varepsilon, \quad (3.1)$$

Where GDP is gross domestic product (proxy for output) and GE is government expenditure.

Although there is no complete consensus, most studies predict that the relationship between government expenditure and output is expected to be positive. Following Chan, Ramly and Karim (2017), the empirical model for testing the efficiency of government spending on economic growth is specified as follows:

$$\ln GDP_t = \beta_0 + \beta_1 \ln GE_t + \beta_2 \ln UNEMPL_t + \beta_3 \ln INV_t + \beta_4 \ln OPEN_t + \beta_5 \ln POP_t + \varepsilon_t, \quad (3.2)$$

Where GDP, GE, UNEMPL, INV, OPEN, POP are gross domestic product, government expenditure, unemployment, investment, trade openness and population of the economy, respectively. The variable of interest, government expenditure (GE) is measured by government spending on sectors such as education, health, defence, infrastructure, communication, and research and development. It is expected to impact positively on economic growth.

It is important to mention that, although the empirical models are only testing the impact of government expenditure on economic growth, this study will also test the impact of expenditure on social indicators such as unemployment and poverty. The empirical models for testing the impact of government expenditure on unemployment and poverty are presented in equations 3.3 and 3.4:

$$\ln UNEMPL_t = \rho_0 + \rho_1 \ln GE_t + \rho_2 \ln GDP_t + \beta_3 \ln INV_t + \beta_4 \ln OPEN_t + \beta_5 \ln POP_t + u_t, \quad (3.3)$$

$$POV_t = \alpha_0 + \alpha_1 \ln GE_t + \alpha_2 \ln GDP_t + \alpha_3 \ln INV_t + \alpha_4 \ln OPEN_t + \alpha_5 \ln POP_t + \varepsilon_t, \quad (3.4)$$

Where POV denotes poverty and is measured by the poverty headcount ratio. All other variables are as previously indicated.

3.2.2.2 Data and estimation technique

Data description

This study uses annual data sourced from the World Bank Development Indicators and covers 1990 to 2019. The GDP serves as a proxy for economic growth. Government expenditure is proxied by government spending on education, defence, infrastructure, and research and development. Gross fixed capital formation is used as a proxy for investment and population total. The openness of the economy is computed as the sum of the export and import ratio to GDP. Unemployment is computed as the number of unemployed people as a percentage of the total labour force. The headcount ratio is used as a proxy for poverty.

Estimation technique

The availability of data determines the appropriate econometric technique to be used for estimation. Contrary to previous research, this study's empirical models will be estimated at an aggregate level using a time series approach. Therefore, in line with the literature, a rolling regression is employed, as previously used by Auerbach and Gorodnichenko (2015). The advantage of using this approach is that it allows one to compute several simultaneous equations to respond to a given variable given a shock in any exogenous indicators. For the robustness check, the study also digs deeper by exploring vector autoregression (VAR) econometric techniques to estimate these empirical models.

3.2.3 Empirical results

3.2.3.1 Least square regression with autoregressive moving average

This section reports the empirical results computed from the least square autoregressive moving average (ARMA). It first reports the overall regression results to capture the impact of government expenditure on GDP and other development indicators such as poverty and unemployment. Table 3.1 summarises these results. Initially, Model (I) of Table 3.1 reports the estimated coefficient of government expenditure. In a stepwise way, some other covariants in the model are added that are relevant in explaining economic growth. The estimated coefficients across all the regressions for Model (I) are statistically significant and consistent with economic theory. For example, from the estimates of Model (I) across all the regressions, it can be argued that, on the one hand, a 1% increase in government expenditure significantly increases GDP by 0.94% and, on the other hand, decreases poverty and unemployment by 1.17% and 0.32%, respectively. In Model (II), covariants such as investment (INV), openness (OPEN) and population (POP) have been progressively added to check if the results are sensitive to the model specification.

The results suggest that the change in GDP, given a fiscal policy shock, is robust and consistent as it remains statistically significant and in line with economic theory. While variables such as investment and population also seem to play a substantial role, others, such as openness, do not seem to significantly explain the change in GDP, poverty and unemployment.

Given that GDP is also a significant predictor of poverty and unemployment, an attempt was made to control it to see its impact on poverty and unemployment. As expected, it reduces poverty significantly. In addition, although it seems to be increasing unemployment, it is statistically insignificant.

Table 3.1: Autoregressive moving average regression

Variable	LNGDP		Poverty		Unemployment	
	Model (I)	Model (II)	Model (I)	Model (II)	Model (I)	Model (II)
LNGE	.943*** (.038)	.219** (.093)	-1.17*** (.093)	-.305** (.3110)	-.315*** (.050)	-.638** (.276)
LNINV		.292*** (.051)		-.037** (.271)		-.320 (.228)
LNOPEN		-.079 (.091)		-.272 (.317)		-.123 (.273)
LNPOP		.638** (.162)		4.237*** (.632)		1.356** (.557)
LNUNEMP		.026 (.070)				
LNGDP				-.842** (.655)		.230 (.617)
Cons	1.019 (1.018)	1.95** (1.068)	34.625*** (2.495)	12.863** (4.359)	11.77*** (1.330)	-1.797 (3.373)
R-squared	0.9571	0.9962	0.8544	0.9652	0.5987	0.7698

*** = 1% level of significance; ** = 10% level of significance; * = 10% level of significance.

Note: The dependent variables are also logged.

Table 3.1 presents the rolling coefficients of government expenditure in two different models. While Model (I) reports the rolling coefficients for the above Model (I) regression, Model (II) does the same, also for the Model (II) regression given in Table 3.1. Given the controls to prevent omitted variable bias, the preferred model between the two models in Table 3.1 is Model (II). Therefore, the report shows the coefficients for both models. However, the discussion will only be on the coefficients for Model (II).

As mentioned previously, a rolling regression has been used to compute the government spending multiplier¹⁸ over time. According to the results reported in Table 3.2, government spending has yielded different impacts on GDP, poverty and unemployment. For example, Table 3.2 shows that, although positive, the multiplier effect of government expenditure on GDP decreased. Government expenditure had its worst impact from 2007 to 2009, where it was associated with undesirable outcomes.

¹⁸ Robinson (2006) understands multiplier as the extent to which some aspects of a model will change in response to an exogenous change. Botha (2013) defines a fiscal multiplier on GDP as a coefficient by which GDP changes given a change in government spending.

The dynamic clearly shows that government efforts (expenditure) failed to improve welfare during the 2007–2009 global economic and financial crisis. Table 3.2 shows a turnaround for 2010 to 2012, where an increase in government expenditure positively impacted economic activity. The overall results show that, although there were some periods of fluctuation, the fiscal multiplier on GDP has been consistent over time. Since the multiplier is less than 1 (according to Model II), it may suggest that economic activity may not be rising as quickly as government expenditure.

Furthermore, this result indicates a possibility of leakages, capacity constraints or crowding-out effects. Moreover, although the size of the multiplier has declined slightly in the last two years, the impact of government expenditure on GDP should not be assessed based only on one year, but should be done by analysing the entire period. Although, when one looks at Model II, the multiplier is less than 1, and the effect of government expenditure is still positive. However, when one looks at Model I (where government expenditure is the only explanatory variable, although this model may suffer from omitted variable bias), the multiplier is higher than in Model II. The multiplier was even 6.91 in 2017, which is far greater than 1. This means that government expenditure had a significant impact in 2017. Furthermore, the poverty and unemployment multipliers exhibit a consistent increase from 2010 onwards. These results are consistent with earlier studies in South Africa (Botha, 2013; Kavese & Erero, 2018).

Table 3.2: Government spending multipliers

	GDP		Poverty		Unemployment	
	ROLLCOEF	GE	ROLLCOEF	GE	ROLLCOEF	GE
	Model (I)	Model (II)	Model (I)	Model (II)	Model (I)	Model (II)
1990						
1991	-0.45		1.67			
1992	-1.16		2.64		1.94	
1993	1.05		4.97		5.98	
1994	3.91		7.22		1.63	
1995	-0.49		-5.77		-6.62	
1996	1.13		-2.30	0.64	2.94	0.89
1997	1.21	1.00	-3.94	1.87	-4.08	0.34
1998	-0.22	0.53	-5.14	0.79	1.28	0.11
1999	5.47	0.16	-2.15	-0.04	8.19	-0.04
2000	1.43	0.34	-1.00	-0.70	-4.66	-0.13
2001	0.87	0.59	-2.71	0.30	6.03	0.74
2002	0.81	0.75	-8.74	0.30	1.54	0.74
2003	0.53	0.59	-3.05	0.44	-4.71	-0.62
2004	0.87	0.58	-1.31	1.03	-1.36	6.35
2005	1.02	-0.03	-1.92	-2.19	-1.48	-0.86
2006	1.14	0.28	-2.34	1.42	-3.50	-1.85
2007	1.32	-0.21	-6.83	-1.49	-9.65	-0.00
2008	0.56	-0.36	-7.92	0.25	-1.50	1.98
2009	-0.34	-0.31	-5.84	0.07	4.61	3.47
2010	1.02	0.57	-4.93	-5.81	7.21	-0.19
2011	1.19	0.78	1.76	-6.70	-2.60	-3.75
2012	0.64	0.84	2.50	-6.27	3.95	-5.04
2013	0.81	2.52	2.54	-4.00	-9.00	-6.35
2014	1.09	0.27	6.31	-3.20	3.19	1.58
2015	-1.55	0.37	-1.41	-1.33	-5.46	0.38
2016	0.18	0.37	2.45	-0.94	1.04	0.75
2017	6.91	0.27	-3.46	-0.23	4.07	0.17
2018	0.42	0.21	1.95	-1.32	-1.28	-0.43

Source: Commission's computation based on the World Bank Development Indicators

3.2.3.2 Vector autoregression

To check for the robustness of the results and the responsiveness of the fiscal policy shock, VAR is performed. Vector autoregression is an econometric technique used to explain the relationship between variables as they vary over time. According to Sims (1980), VAR is a stochastic econometric technique. It can generalise univariate autoregressive models by allowing time series that are multivariate. This is essential, especially when it comes to discussing the dynamic behaviour of variables and forecasting. It is generally considered an econometric technique that gives better forecasting than univariate time series techniques. Therefore, it allows analysts to investigate the responsiveness of one variable to its shocks and shocks from other variables in the model.

Vector autoregression has three possibilities:

- All variables are stationary. In this case, VAR is used to estimate the equations with all variables in levels.
- Variables are stationary and not cointegrated. It is appropriate to estimate the equation with all variables in differenced form. There will be no long-run components. However, an impulse response can be used to investigate the responsiveness of a variable to shocks from other variables.
- The variables are non-stationary and cointegrated. In this possibility, a vector error correction model should be used to estimate the model. A vector error correction model should be used to conduct all impulse responses. The model will have long-run components.

This study investigated unit root using augmented Dickey-Fuller (ADF) and Phillips-Perron test statistics. The results indicated that the variables for all the models are non-stationary, but cointegrated. This means that it is appropriate to estimate the VAR within a vector error correction model.

GDP model

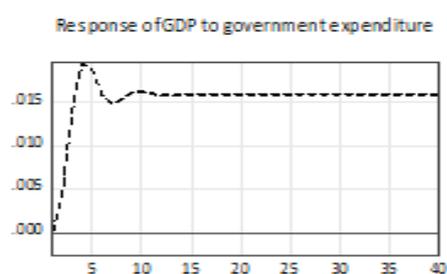
Table 3.3 presents the long-run results. The results indicate two cointegrating vectors. The first cointegrating vector or equation is of interest because the focus is on government expenditure on GDP. The results suggest that government expenditure and gross fixed capital formation have a positive impact on GDP. Figure 3.1 presents the impulse responses. The impulse response shows that GDP responds positively to shocks from government expenditure. The results suggest that government expenditure and investment play a role in increasing economic growth.

Table 3.3: Long-run and short-run results of the GDP model

Vector error correction estimates				
Sample (adjusted): 1992 2019				
Included observations: 28 after adjustments				
Standard errors in () and t-statistics in []				
Cointegrating equation:	First cointegrating equation	Second cointegrating equation		
LNGDP(-1)	1.000	0.000000		
LNPOP(-1)	0.000	1.000000		
LNGE(-1)	-0.775 (0.042) [-18.033]	-0.607 (0.026) [-22.572]		
LNINV(-1)	-0.039 (0.029) [-1.359]	0.131 (0.018) [7.150]		
C	-4.683	-4.616		
Error correction:	Δ LNGDP	Δ LNPOP	Δ LNGE	Δ LNINV
Cointegrating equation 1	-0.900 (0.183) [-4.909]	0.014 (0.003) [3.817]	0.410 (0.333) [1.230]	-3.300 (0.699) [-4.717]
Cointegrating equation 2	-0.061 (0.162) [-0.381]	-0.032 (0.003) [-9.604]	-0.433 (0.295) [-1.470]	-0.465 (0.618) [-0.752]

Note on interpretation of coefficients: The coefficients of the first part of the table (long-run results) are taken to the other side of the equation. Then the sign of the coefficients will change. Hence, interpretation of the sign of the coefficient seems to differ from that presented in the table.

Figure 3.1: Impulse response of the GDP model



Poverty

The poverty equation is estimated in two variations. The first variation has government expenditure, population and investment as explanatory variables. The second variation has government expenditure, investment and GDP as explanatory variables.

Tables 3.4 and 3.5 present the long-run and short-run results of the poverty model. The first variation indicates one cointegrating vector, while the second variation shows evidence of two cointegrating vectors. In the second variation, the first cointegrating vector or equation is of interest in this study. The results for both variations show that government expenditure has a negative effect on poverty. However, the coefficient is not statistically significant. Investment or gross fixed capital formation impacts negatively on poverty, while an increase in population is associated with an increase in poverty.

Figure 3.2 presents the impulse responses. The figure indicates that poverty responds negatively to an increase in government expenditure. The results suggest that poverty can be reduced by raising government expenditure and investment. It is important to note that these results should be interpreted cautiously due to data constraints.

Table 3.4: Long-run and short-run results of the poverty model (first variation)

Vector error correction estimates				
Sample (adjusted): 1992 2018				
Included observations: 27 after adjustments				
Standard errors in () and t-statistics in []				
Cointegrating equation:	Cointegrating equation 1			
LNPOV(-1)	1.000			
LNGE(-1)	0.025			
	(0.372)			
	[0.069]			
LNPOP(-1)	-1.848			
	(0.338)			
	[-5.464]			
LNINV(-1)	1.162			
	(0.170)			
	[6.835]			
Error correction:	Δ LNPOV	Δ LNGE	Δ LNPOP	Δ LNINV
Cointegrating equation 1	-0.240	0.024	-0.003	0.012
	(0.078)	(0.046)	(0.001)	(0.131)
	[-3.055]	[0.520]	[-4.220]	[0.093]

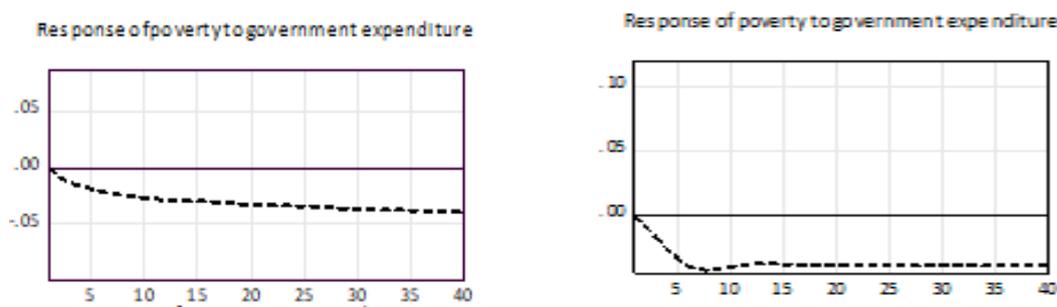
Note on interpretation of coefficients: The coefficients of the first part of the table (long-run results) are taken to the other side of the equation. Then the sign of the coefficients will change. Hence, interpretation of the sign of the coefficient seems to differ from that presented in the table.

Table 3.5: Long-run and short-run results of the poverty model (second variation)

Vector error correction estimates				
Sample (adjusted): 1992 2018				
Included observations: 27 after adjustments				
Standard errors in () and t-statistics in []				
Cointegrating equation:	First cointegrating equation	Second cointegrating equation		
LNPOV(-1)	1.000	0.000		
LNGDP(-1)	0.000	1.000		
LNINV(-1)	1.602 (0.303) [5.284]	-0.259 (0.032) [-7.853]		
LNGE(-1)	0.483 (0.449) [1.075]	-0.101 (0.048) [-2.069]		
@TREND(90)	-0.056 (0.013) [-4.109]	-0.013 (0.001) [-8.809]		
C	-54.905	-17.143		
Error correction:	Δ LNPOV	Δ LNGDP	Δ LNINV	Δ LNGE
Cointegrating equation 1	-0.179 (0.114) [-1.566]	-0.068 (0.037) [-1.808]	-0.409 (0.141) [-2.899]	0.079 (0.054) [1.461]
Cointegrating equation 2	0.302 (1.060) [0.285]	-0.925 (0.349) [-2.645]	-2.625 (1.307) [-2.007]	1.067 (0.503) [2.120]

Note on interpretation of coefficients: The coefficients of the first part of the table (long-run results) are taken to the other side of the equation. Then the sign of the coefficients will change. Hence, interpretation of the sign of the coefficient seems to differ from that presented in the table.

Figure 3.2: Impulse response of the poverty model (first and second variation, respectively)



Unemployment

The long-run and short-run results of the unemployment model are presented in Table 3.6. The table shows that there are two cointegrating equations. The interpretation of the results will focus on the first cointegrating equation.

They indicate that government expenditure and investment are associated with a decrease in unemployment. However, openness of the economy is associated with an increase in unemployment. The impulse response results of Figure 3.3 confirm what is in Table 3.6. The interpretation of the results will focus on the first panel of Figure 3.3. This figure indicates that unemployment responds negatively to shocks from government expenditure, investment and GDP. The results suggest that unemployment in South Africa can be reduced by increasing government expenditure, investment and GDP. It is important to mention that these results are based on limited observations. Hence, they must be interpreted with caution.

Table 3.6: Long-run and short-run results of the unemployment model

Vector error correction estimates					
Sample (adjusted): 1993 2019					
Included observations: 27 after adjustments					
Standard errors in () and t-statistics in []					
Cointegrating equation:	First cointegrating equation	Second cointegrating equation			
LNUNEMP(-1)	1.000	0.000			
LNGDP(-1)	0.000	1.000			
LNINV(-1)	0.434 (0.131) [3.301]	0.340 (0.100) [3.401]			
LNGE(-1)	0.787 (0.223) [3.517]	-1.216 (0.170) [-7.139]			
LNOPEN(-1)	-1.268 (0.255) [-4.964]	-0.514 (0.194) [-2.645]			
@TREND(90)	-0.026 (0.004) [-5.543]	-0.002 (0.003) [-0.578]			
C	-35.512	-2.525			
Error correction:	Δ LNUNEMP	Δ LNGDP	Δ LNINV	Δ LNGE	Δ LNOPEN
Cointegrating equation 1	-0.354 (0.184) [-1.927]	0.194 (0.048) [3.980]	0.465 (0.186) [2.488]	0.154 (0.069) [2.218]	0.636 (0.103) [6.154]
Cointegrating equation 2	-0.311 (0.282) [-1.103]	0.164 (0.075) [2.188]	-0.480 (0.287) [-1.673]	0.559 (0.106) [5.242]	0.044 (0.158) [0.280]

Note on interpretation of coefficients: The coefficients of the first part of the table (long-run results) are taken to the other side of the equation. Then the sign of the coefficients will change. Hence, interpretation of the sign of the coefficient seems to differ from that presented in the table.

Figure 3.3: Impulse responses of the unemployment model



After checking for the sensitivity of the results by performing VAR, the results show that the impact of government spending on growth, poverty and unemployment seems to be robust. In other words, the results confirm that an increase in government spending is associated with an increase in GDP and a decrease in poverty and unemployment.

From the analysis, it is clear that government expenditure has a positive effect on GDP and tends to reduce unemployment and poverty. In terms of the multiplier effects, however, the multiplier on GDP is relatively small, sitting at 0.21 in 2018. This implies that the return on government spending is relatively low. Ideally, the multiplier should be close to or greater than 1. Therefore, an improvement in this multiplier is needed for expenditure to have its desired effect. A stronger multiplier would ensure that spending improves economic activity, as well as reducing unemployment and poverty to a greater extent.

3.3 Alignment and effectiveness of government's performance indicators

The introduction of performance-based and performance-informed budgeting in South Africa has required government departments to introduce a greater variety of performance indicators. This has not only meant an increase in the variety of indicators that provides information on how financial resources have been used, but also an inclusion of non-financial indicators. The non-financial indicators that have been developed have often been classified into higher measures of performance (efficiency and effectiveness) and the component parts that are used to calculate performance (inputs, outputs and results/outcomes). This is supported by Torres, Pina and Yetano (2011). The lower measures of performance report the periodic activities of departments and are most frequently provided, while efficiency and effectiveness indicators are most often derived from these component indicators (Mucciarone, 2008; Fisher & Downes, 2010).

Efficiency indicators are defined as those indicators that provide the ratio of inputs used to outputs achieved (Hyndman & Anderson, 1997). Efficiency indicators enable financial accountability. They utilise data such as costs, the volume of service and productivity, which are relatively simple to measure (Kloot, 1999). On the other hand, effectiveness indicators measure the extent to which the outputs or outcomes achieved meet pre-stated targets, objectives or policy directives (Gregory & Lonti, 2008). These provide information on the effect arising from output provision. Effectiveness indicators may be partly measured in terms of quality of service, customer satisfaction and achievement of goals (Kloot, 1999).

However, most studies have performed efficiency evaluations as opposed to effectiveness evaluations (Kloot, 1999). Efficiency evaluations are more popular because the utilised indicators are a direct record of activities carried out by government officials. On the other hand, the popularity of effectiveness indicators is often constrained by the associated difficulty in isolating the effects of the service (the outcomes) from other factors, lack of quantifiability of the effects of services and conflicts in the interpretation of the results (Kloot, 1999).

Literature shows that this trend is more pervasive in developing countries than in developed countries. Mucciarone (2008) conducted a comparative study between the key performance indicators (KPIs) reported in Malaysia (a developing country in the eastern hemisphere) and those reported by the Australian government (a developed country in the eastern hemisphere).

The study investigated how the frequency of the disclosure and dissemination of KPIs affected how well government departments' accountability and performance measurements were undertaken. The findings from the analysis carried out on the Australian government department's data showed that efficiency performance indicators were the most disclosed indicators of the two higher-order indicators. On the other hand, quality performance (effectiveness) indicators were not disclosed as much as the efficiency indicators in the Malaysian federal government department's data. The study found that the type of KPIs used in the different departments had an impact on the frequency of measurement and the level of disclosure.

Gregory and Lonti (2008) examined New Zealand's data on performance indicators for five government departments for the period between 1992 and 2005. The study examined trends in the indicator types that were used and gauged the extent to which the indicators offered meaningful information for policy development. The study's findings revealed that the indicators that have been used narrowly reported managerial activities at the expense of broader political needs, and therefore failed to lead to the further development of genuinely meaningful measures of the quality of policy advice (Gregory & Lonti, 2008). This means that there were higher proportions of efficiency indicators, which resulted in a lower number of effectiveness indicators being reported. Therefore, although performance was being reported, it was not put in such a way that the public could quickly interpret it.

Hood, Grant and Goldacre (2016) conducted a longitudinal analysis of KPIs measuring standards in children's services and skills. This was done using KPIs reported by the Department of Health covering a 13-year period from 2001 to 2014. The study calculated efficiency-related KPIs (quality of effort) and effectiveness-related KPIs (quality of effect), and compared how the delivery of these performance areas differed in the period under review. The study found that the available quality measures (KPIs) focused mainly on the timeliness of quality of effort, but these did not seem to affect quality of effect. The results also showed that there was an improvement in the former measures of quality rather than the latter.

3.3.1 Theoretical review

The principal-agent theory has been popularly used to explain performance measurement results in public entities (Torres et al., 2011). However, theories have been put forward to explain the effectiveness of reporting practices and of instruments or tools used for performance measurement. One theory that has been used is the theory of institutional logics. The theory states that strategic alignment in an organisation can be achieved given a balance in the amount of information provided by performance indicators (Rautiainen, Urquia-Grande & Munoz-Co, 2017). This entails a balance of information on the economic effectiveness and efficient performance of government. There should be minimal conflicts between the financial, operational and administrative logics. However, institutions are often burdened with conflicting goals; hence, they are often forced to trade off one type of information for another. For example, various stakeholders of public organisations have multiple aims and interests, which create multiple institutional pressures for selecting and using KPIs (Rautiainen et al., 2017).

Other researchers explain that the organisational resource endowment and nature of the work performed often influence the type of performance indicators developed for an organisation or government department. Other analysts claim that there is a natural trade-off between cost efficiency and effectiveness; hence, an imbalance is inevitable. Therefore, strategic misalignment can result from an unbalanced selection of indicators used to report performance and not because of human behaviour.

An alternative school of thought highlights the importance of the accuracy of measurement and interpretation rather than the balance between the types of indicators. According to the ambiguity theory, strategic misalignment can result from limitations in the indicator's sensitivity, frequency of reporting (monthly or annually) of measurement and the form (percentage or proportion) of the indicator (Vakurri & Meklin, 2006). This theory maintains that performance measurement is not always completely rational because of uncertainties and paradoxes in reporting and interpreting data. Therefore, it places emphasis on limiting the unforeseen effects of these factors as they cause severe measurement problems, which may render ideas of results-oriented management untenable (Brusca & Montesinos, 2013).

3.3.2 Methodology

This study used secondary data collected from the electronic reports of the Estimates of National Expenditure (ENE). These reports contained annually selected financial and non-financial performance indicators of South African government departments. Details relating to the departmental programmes and activities, in addition to their expenditure, budget allocations and operations information, were provided. This data source was utilised because a South African executive agency collects all performance data from the national departments and provides a summary of the KPIs (National Treasury, 2011). The variety of indicators from the ENE reports was compared with the indicators reported in the annual reports of seven government departments. These departments were selected to represent government clusters or functional groups. Further comparison was done with the data collected from the provincial reports of South Africa's province with the highest economic activity (Gauteng).

The study extracted, in particular, the financial data on the annual expenditure for the selected departments, as well as their non-economic indicators. Efficiency performance was analysed using a unit cost indicator calculation. An efficiency score was calculated by determining the percentage achievement of a measured outcome divided by the annual expenditure in the department (measured in R1 000). This method of analysis has been widely used in past studies (Pendlebury, Jones & Karbhari, 1994; Pendlebury & Karbhari, 1997; Torres et al., 2011; Mucciarone and Neilson, 2012). One of the greatest strengths of this method is that it is easy to apply, depends on a minimum amount of data, and produces results that are easily interpreted and translated into strategy. The effectiveness indicators were calculated by measuring the extent to which outputs or outcomes were achieved to meet pre-stated targets and forecasts. Outputs were defined as actual goods produced or services delivered by the departments, while outcomes were defined as the effect arising from outputs (Hood et al., 2016; Hyndman & Anderson, 1997; 1998).

3.3.3 Analysis and findings

3.3.3.1 Alignment of departments to mandates

Table 3.7 provides a summary of the data collected from the ENE reports (National Treasury, 2019). As shown, 187 non-economic indicators were provided in the ENE reports of the seven departments under evaluation. No indicators measured the higher measures of performance. As shown, almost all indicators that were measured reported the output produced by the departments. This finding reveals that most of the data in this repository provides information indicating progress in performing prescribed tasks and, to a lesser extent, progress on delivering on targets. This finding is not uncommon. A study by Mucciarone (2008) showed that two counties in the eastern hemisphere (Australia and Malaysia) did not have equal representation of the two types of indicators. However, in years when outcome indicators were reported, they comprised only 33% and 20% of Australia’s and Malaysia’s total indicators, respectively. A study by Fisher and Downes (2010) found that 25% of the surveyed studies report metrics that were outcome indicators used to satisfy external managerial bodies.

Table 3.7 also shows that there is no consistency in the reporting of performance indicators. Less than a third of the indicators were reported for more than four years in a row. This could be interpreted as a positive finding, assuming that indicators are replaced by improved or more informative indicators. On the other hand, a high indicator turnover could result from departments’ efforts to provide a biased picture of the department’s performance. A high number of indicators (78) was reported no more than twice.

Table 3.7: Summary statistics

National department	Total number of indicators (2009–2020)	Output indicators	Outcome indicators	Number of indicators consistently reported for at least a third of the time series (more than four years)	Number of indicators consistently reported once or twice
Home Affairs	31	27	4	7	23
Basis Education	22	20	2	9	3
Health	35	34	1	10	10
Social Development	16	14	2	12	3
Trade and Industry	12	12	0	7	4
Transport	22	22	0	8	5
Cooperative Governance and Traditional Affairs	49	48	1	3	33
Total	187	186	1	56	78

Source: National Treasury (2019)

The uneven split between outcome and output indicators was also evident in provincial annual reports. Table 3.8 shows the results from the 2019/20 annual reports of the selected departments in the Gauteng Provincial Government. As shown in Table 3.8, Gauteng’s departments of Basic Education, Roads and Transport, and Social Development had large proportions of output indicators.

On the other hand, Gauteng’s Department of Health had a larger proportion of outcome indicators, and the Department of Cooperate Governance and Traditional Affairs had an almost even distribution between the two indicator types. The results in tables 3.7 and 3.8 show that there is room to increase the number of effectiveness indicators as this will improve the alignment in the indicators and government’s mandate.

Table 3.8: Summary statistics for selected provincial departments in Gauteng (2019/20)

	Total number of indicators	Output indicators	Outcome indicators
Department of Health	166	70	96
Department of Basic Education	43	31	12
Department of Roads and Transport	24	23	1
Department of Social Development	181	119	62
Department of Cooperate Governance and Traditional Affairs	67	33	34

Sources: Gauteng Department of Health (2020); Gauteng Department of Basic Education (2020); Gauteng Department of Roads and Transport (2020); Gauteng Department of Social Development (2020); Gauteng Department of Cooperate Governance and Traditional Affairs (2020)

3.3.3.2 Efficiency evaluation

Table 3.9 provides the results of the efficiency analysis performed on the data from the ENE reports. This analysis was performed on the seven outcome indicators provided in the data. As shown in the table, the Department of Home Affairs had the largest number of outcome indicators, while the Department of Trade and Industry, the Department of Roads and Transport, and the Department of Health recorded no outcome indicators. An increase in the efficiency scores indicates an increase in the percentage outcome per R1 000 ratio. This is an indication of an improvement in cost efficiency. As shown by the efficiency scores in bold, the highest cost-effectiveness was achieved in the first two years of the time series.

All the calculated indicators of the Department of Home Affairs showed that 2016/17 had the highest cost efficiency, while the peak performance was spread over a number of years for other departments’ indicators. A consistent pattern of decreasing cost efficiency was observed for each department, with the Department of Home Affairs showing the largest reductions in efficiency. The smallest change in efficiency was noted in the Department of Social Development and the Department of Cooperative Governance and Traditional Affairs. This finding is not surprising as the Post-NPM era, as enabled by PPBB, emphasizes welfare improvement as opposed to fiduciary accountability.

Table 3.9: Results of efficiency analysis

Outcome indicators		Efficiency scores per reporting period				
		2015/16	2016/17	2017/18	2018/19	2019/20
Department of Home Affairs						
Percentage of machine-readable adult passports (new live capture process) per year issued within 13 working days (within South Africa)	Indicator 1	9.4	13.0	12.7	10.1	10.8
Percentage of permanent residence applications per year adjudicated within eight months (collected within South Africa)	Indicator 2	11.5	12.0	11.5	10.5	10.2
Percentage of business and general work visa applications per year adjudicated within eight weeks (processed within South Africa)	Indicator 3	10.9	11.5	10.6	10.8	10.8
Percentage of critical skills visa applications per year adjudicated within four weeks (processed within South Africa)	Indicator 4	10.9	11.5	10.6	9.8	10.2
Department of Basic Education						
Percentage of public schools with home language workbooks for learners in grades 1 to 6 per year	Indicator 5	4.8	4.7	4.4	4.2	4.1
Percentage of public schools with mathematics workbooks for learners in grades 1 to 9	Indicator 6	4.8	4.7	4.4	4.2	4.1
Department of Social Development						
Percentage of appeals per year adjudicated within 90 days of receipt	Indicator 7	0.6	0.6	0.6	0.6	0.4
Percentage of non-profit organisation registration applications processed within two months of receipt	Indicator 8	0.7	0.7	0.6	0.6	0.5
Department of Cooperative Governance and Traditional Affairs						
Percentage of municipalities spending on municipal infrastructure grant per year	Indicator 9	1.4	1.4	1.3	1.2	-

Source: Commission's calculations from ENE in National Treasury (2019)

Notes: The Department of Trade and Industry, the Department of Roads and Transport and the Department of Health recorded no outcome indicators.

3.3.3.3 Effectiveness evaluation

Table 3.10 shows the results of the effectiveness analysis performed using data from the ENE reports. Effectiveness is calculated as a percentage change between the projected outcome and realised performance outcome. In other words, a score of zero (0) indicates that the department merely met its target. Of the 45 effectiveness scores calculated, 39 showed positive performance results.

Table 3.10: Effectiveness evaluation

KPIs	2015/16			2016/17			2017/18			2018/19			2019/20		
	Projection	Performance	Effectiveness score												
Department of Home Affairs															
KPI ₁	90%	96.60%	6.60	90%	105.5%	11	90%	106.6%	1.60	90%	91.2%	1.2	90%	90%	0
KPI ₂	70%	84.70%	14.70	85%	98%	13	90%	97%	3	85%	95.1%	10.1	85%	85%	0
KPI ₃	85%	79.80%	-5.20	94%	94%	0	90%	89%	-1	90%	97.9%	7.9	90%	90%	0
KPI ₄	70%	79.80%	9.80	75%	75%	0%	80%	89%	1	89%	88.5%	0.0	85%	85%	0
Department of Basic Education															
KPI ₅	100%	100.00%	0.00	100%	100.0%	0	100%	100.0%	0.00	100%	100.0%	0.0	100%	100%	0
KPI ₆	100%	100.00%	0.00	100%	100%	0	100%	100%	0	100%	100.0%	0.0	100%	100%	0
Department of Social Development															
KPI ₇	65%	71.00%	16.00	70%	86.0%	16	80%	96.6%	16.60	90%	98.6%	8.6	75%	70%	-5
KPI ₈	85%	99.00%	1.00	99%	97%	-2	100%	100%	-0.5	100%	100.0%	0.0	100%	99%	-1
Department of Cooperative Governance and Traditional Affairs															
KPI ₉	__1	92.00%	__2	100%	100.0%	0	100%	100.0%	0.00	100%	100.0%	0.0	100%	100%	0

Source: Commission's calculations from ENE in National Treasury (2019).

Notes: The Department of Trade and Industry, the Department of Roads and Transport and the Department of Health recorded no outcome indicators.

- __1 no projection reported

- __2 Effectiveness score not calculated due to lack of data

Overall, the ENE data shows that the selected departments performed close to their projected outcomes. The Department of Home Affairs not only reported the most outcome indicators, it mostly achieved outcomes greater than its predetermined targets, with the exception of Indicator 3 in the 2015/16 reporting period. This was also the case for the Department of Social Development. During the reporting period, it managed to achieve results that were greater than the projected outcomes. The Department of Basic Education and the Department of Cooperative Governance and Traditional Affairs managed to perform in accordance with the projected outcomes during the reporting period. Comparing the data sourced from the annual reports of the selected departments, it is evident that a larger variety of indicators was reported. The effectiveness indicators reported by the departments differed from the ENE reports. Effectiveness was calculated as a deviation from the annual projections.

As shown in Table 3.11, the data in the annual reports shows similar results where the departments are meeting their projected annual effectiveness targets. A total of 70 effectiveness scores were reported in the five departments' annual reports for 2018/19. Seventeen of these showed under-performance, 13 showed that departments were performing as expected, while the majority (40) showed that the departments were over-performing.

Table 3.11: Projected annual effectiveness target

	Positive performance deviation (over-performance)	Performance deviation of zero (effectiveness = 0)	Negative performance deviation (under-performance)
Department of Health	13	6	13
Department of Home Affairs	19	0	4
Department of Basis Education	5	3	0
Department of Social Development	0	3	0
Department of Cooperative Governance and Traditional Affairs	3	1	0

Source: Department of Home Affairs (2019); Department of Health (2019); Department of Basic Education (2019); Department of Social Development (2019); Department of Cooperative Governance and Traditional Affairs (2019).

The implication of these findings is that government departments should increase the number of outcome indicators reported as this will promote strategic alignment with government's mandate. These should continue to be rationally increased based on the nature of the activities that are performed in each department. Careful consideration should also be given to the interpretation of outcome indicators.

3.4 The size and shape of the wage bill relative to delivering public value in the South African government

In order to reach an informed view about the size and shape of the wage bill in the South African government, various data sources are used, ranging from the World Bank and the International Monetary Fund (IMF) to National Treasury and Statistics South Africa (Stats SA). The analysis begins around 2005 due to the availability of data. This should indicate whether the size and shape of the wage bill in the South African government have changed during the various administrations. For this study, two administrations are analysed. The first administration covers the period 1999–2008. The second administration covers the period 2009–2018. Effectively, data that examines 2005–2020 includes both administrations. This is important because there is a widely held view that the wage bill increased substantially during the second administration.

Investigating the shape and size of the public service wage bill is increasingly necessary due to its growth in the last decade. As South Africa battles large budget deficits and looming debt spirals, it has been proposed to consolidate expenditure, particularly in the overly inflated wage bill. Therefore, this analysis aims to examine its growth over time, as well as areas of particularly high expenditure. The wage bill data captures the wages, salaries (in cash and in kind) and social contributions made on behalf of employees to social insurance schemes. The wage bill comprises basic wages and salaries, health insurance, employers' pension contributions, transportation, housing, meals, and telephone and travel allowances.

The IMF Government Finance Statistics (IMF, 2021), in the context of the public sector, defines the wage bill as “the total remuneration, in cash or in-kind, payable to a government employee in return for work done during the accounting period, except for work connected with own-account capital formation. It includes both wages and salaries, as well as social contributions made on behalf of employees to social insurance schemes. Excluded are amounts payable to contractors, self-employed outsourced workers, and other workers who are not employees of general government units.”

Firstly, the unit cost of a full-time equivalent (FTE) employee at the national government level is R400 000, on average, while it is approximately R235 000 for the provincial sphere. This unit cost per FTE employee is calculated as compensation expenditure divided by FTE employees' headcount. For the period of analysis, comprising the financial years 2006/07 to 2019/20, the unit cost of an FTE employee has been increasing. The most substantial increase is during the 2009/10 and 2010/11 financial years, with an average unit cost per FTE employee growth rate of 20%. It should be noted that, since 2008, there has been significant growth in the unit cost per FTE employee. The unit cost of an FTE employee at the provincial level increased significantly during the 2015/16 to 2016/17 financial years.

Table 3.12: Unit cost per employee, 2006/07 and 2019/20

Financial year	National level	Provincial level	Year-on-year unit cost increase/decrease (national level)	Year-on-year unit cost increase/decrease (provincial level)	Average unit cost growth (national level)	Average unit cost growth (provincial level)
2006/07	172	132	-	-	-	-
2007/08	202	150	30	17	15%	12%
2008/09	218	172	16	22	7%	13%
2009/10	244	196	26	24	11%	12%
2010/11	304	220	61	24	20%	11%
2011/12	343	239	39	19	11%	8%
2012/13	361	250	18	11	5%	4%
2013/14	384	273	23	23	6%	8%
2014/15	412	292	28	19	7%	7%
2015/16	465	317	54	25	12%	8%
2016/17	508	344	43	27	8%	8%
2017/18	543	-	35	-	7%	-
2018/19	581	-	37	-	6%	-
2019/20	626	-	45	-	7%	-
2020/21	641	-	15	-	2%	-

Source: Commission’s calculations using ENE data from National Treasury (2019)

Interestingly, the FTE headcount at the provincial level is almost double that at the national level. The average unit cost of an FTE employee in national government is effectively double that in provincial government. However, more employees at the provincial level (from a unit cost perspective) cost the government less than those at the national level. Consequently, the wage bill is not evenly distributed, but skewed towards those who earn middle- to higher-level wages. The data for the local sphere was limited; hence, the local government sphere is not discussed here. Similarly, provincial data for FTE employees ends in 2016/17. In addition, it is essential to assess the shape of the wage bill; thus, which employees take up the significant portion of the wage bill. Table 3.13 presents the average remuneration by rank from 2006/07 to 2019/20.

Table 3.13: Average remuneration by rank, 2006/07 and 2019/20

Rands	2006/07 average nominal	2006/07 real average (2019/20 rands)	2019/20 average	Real average annual increase
Level 1–5	71 789	151 405	232 673	3.4%
Level 6–9	155 650	328 269	435 430	2.2%
Level 10–11	313 094	660 322	759 384	1.1%
Level 12–16	508 974	1 073 438	1 222 898	1.0%
Average	135 914	286 646	415 460	2.9%

Source: Commission’s calculations using data from National Treasury (2020)

There has been, on average, a 2.9% real annual increase. The increase is significant in the Level 1–5 salary band, which received a 3.4% real annual increase. Employees on levels 1–5 are public servants in the salary band R6 856 to R13 237 per month. This is closely followed by the Level 6–9 salary band, with an actual annual increase of 2.2%. This includes civil servants in the salary band R15 023 to R28 969 per month.

Comparing these levels may be considered more progressive than higher real annual increases, which are directed to employees who earn lower salaries. Average remuneration levels across government are reconstructed and displayed per grade (Table 3.14) or per rank (Table 3.13). Similarly, compound real annual growth rates tend to fall as the salary grade increases.

Table 3.14: Average salary by grade across government

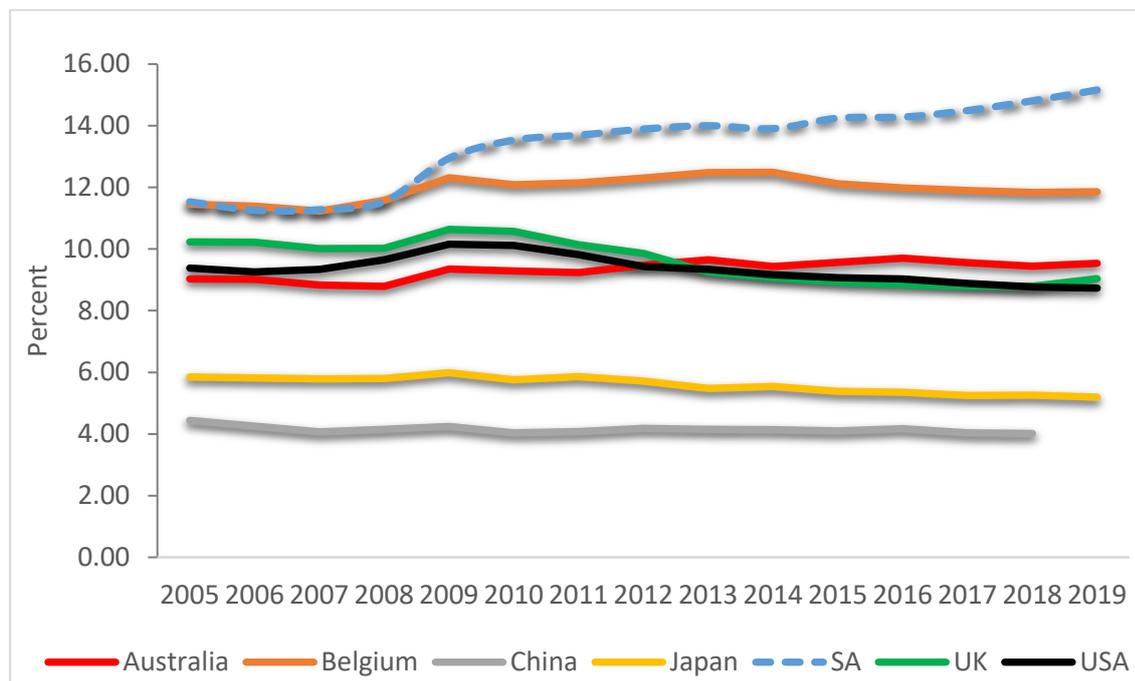
Grade	2006/07 (nominal)	2006/07 (in 2018 rand)	2018/19	Compound annual growth rate (nominal)	Compound annual growth rate (real)
1	R44 253	R89 705	R130 379	9.4%	3.2%
2	R58 812	R119 217	R159 827	8.7%	2.5%
3	R69 747	R141 385	R194 845	8.9%	2.7%
4	R83 124	R168 501	R237 818	9.2%	2.9%
5	R101 200	R205 143	R258 312	8.1%	1.9%
6	R120 002	R243 256	R317 240	8.4%	2.2%
7	R151 147	R306 389	R375 960	7.9%	1.7%
8	R181 134	R367 177	R448 039	7.8%	1.7%
9	R221 102	R448 197	R539 935	7.7%	1.6%
10	R280 757	R569 124	R687 120	7.7%	1.6%
11	R346 959	R703 320	R887 808	8.1%	2.0%
12	R440 097	R892 121	R964 954	6.8%	0.7%
13	R548 380	R1 111 620	R1 212 238	6.8%	0.7%
14	R642 820	R1 303 061	R1 442 967	7.0%	0.9%
15	R792 154	R1 605 776	R1 765 435	6.9%	0.8%
16	R992 563	R2 012 025	R2 169 585	6.7%	0.6%

* Excludes South African National Defence Force (SANDF)

Source: Personnel Salary System (PERSAL) data obtained from National Treasury (2020)

An important indicator of whether the South African government pays its employees excessively is to examine expenditure on government compensation of employees as a percentage of GDP. This is presented in Figure 3.4. It is clear that, relative to other countries, the South African wage bill, as a percentage of GDP, is very high.

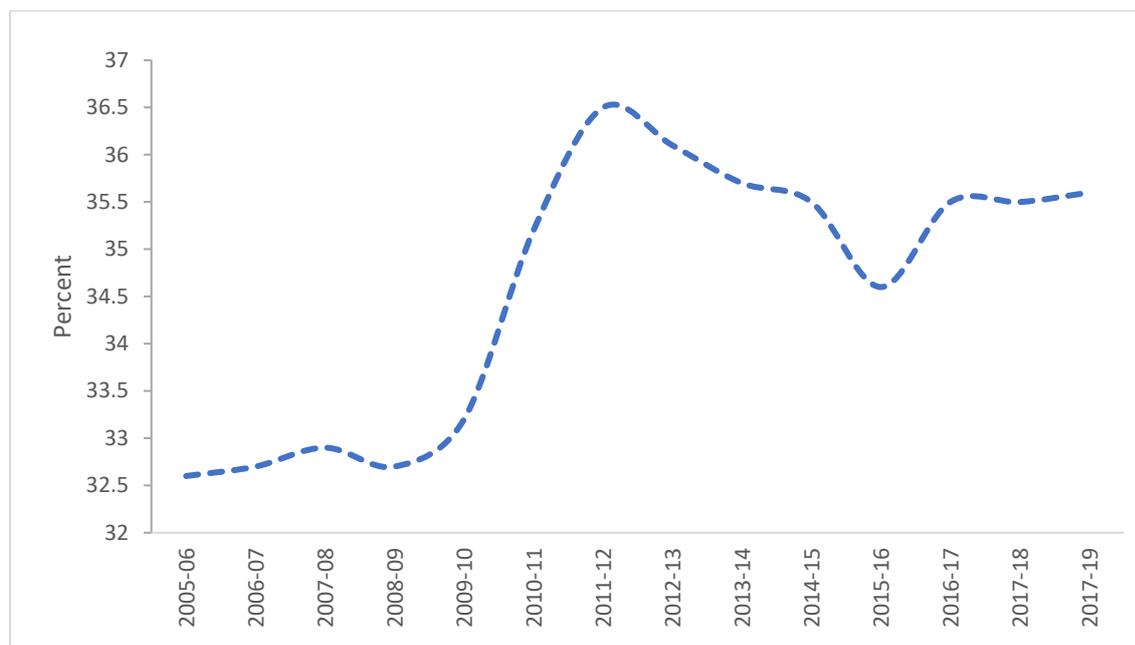
Figure 3.4: General government expenditure on compensation of employees as a percentage of GDP



Source: International Monetary Fund (2021)

Between 2005 and 2008, South Africa’s wage bill, as a percentage of GDP, was stable, but started to increase around 2009/10. It has since grown significantly compared to the wage bill of other countries, such as the USA, UK and China. Furthermore, it is crucial to examine compensation of employees as a share of government’s consolidated expenditure. These results can be seen in Figure 3.5. Compensation of employees as a share of consolidated expenditure remained relatively constant between 2005/06 and 2008/09. However, it rose substantially during the financial years 2009/10 to 2011/12 and never returned to the level seen in the previous years (1999/2000 to 2007/09). Between approximately 2010 and 2018, there have been sharp increases in compensation of employees in the government departments and ministries.

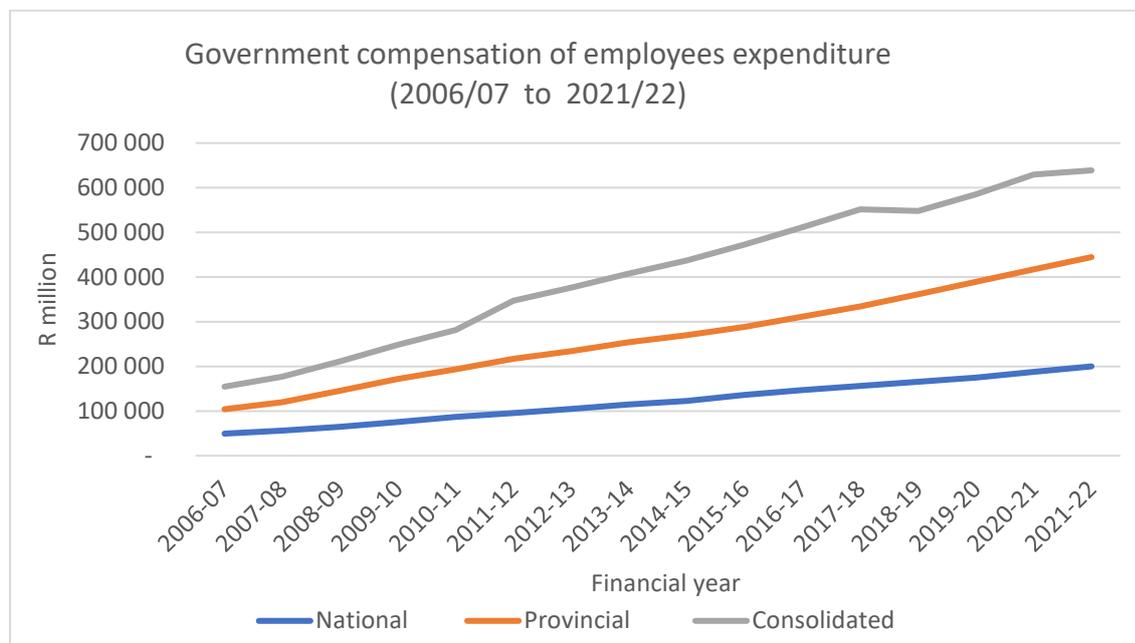
Figure 3.5: Compensation of employees as a share of consolidated expenditure



Source: Based on data from National Treasury (2020)

As Figure 3.6 indicates, the compensation of government employees has been increasing over time. Consolidated government compensation of employees was below R200 billion before 2009. It has since increased steadily. It is projected to be just below R700 billion from 2020/21. The 2021/22 data is based on National Treasury’s projections.

Figure 3.6: Compensation of employees

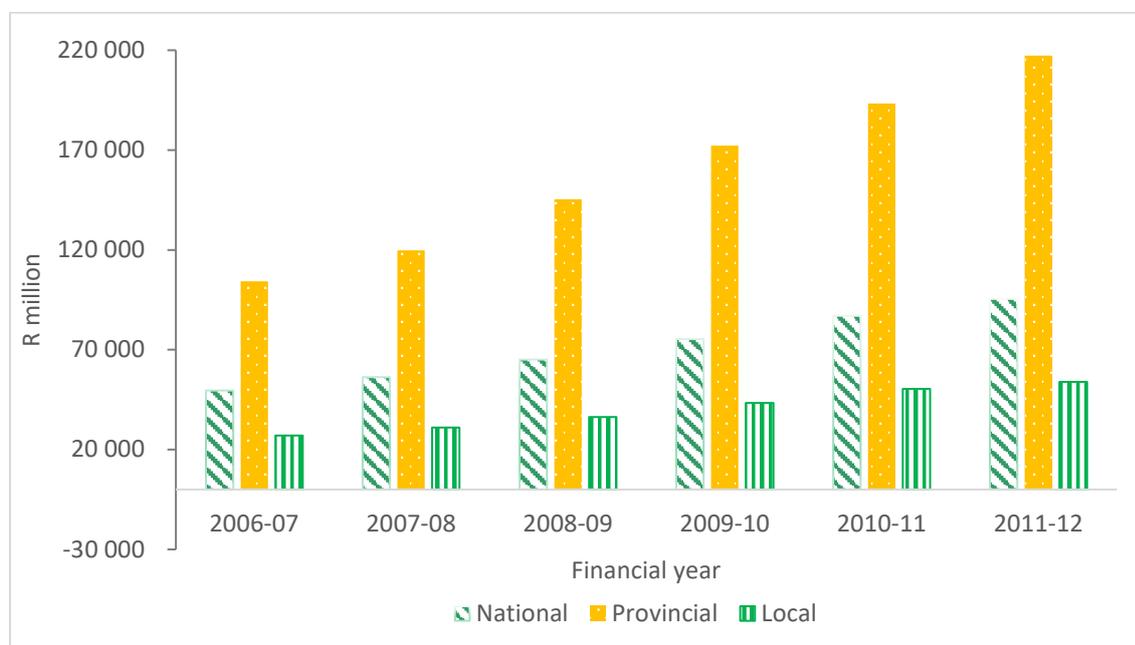


Source: Based on data from National Treasury (2017; 2020)

It should be noted that a portion of consolidated government compensation of employees goes to the local government sphere, but it should also be borne in mind that local governments also generate revenue. Additionally, it is essential to examine where government expenditure is highest, as well as its distribution in terms of the three spheres of government. In its Budget Review for 2020, National Treasury reported that total consolidated expenditure for 2020/21 is R1.95 trillion, with the most significant allocations going to learning and culture (R396.4 billion), health (R229.7 billion) and social development (R309.5 billion).

Figure 3.7 provides an overview of government expenditure on compensation of employees by each sphere of government. As indicated above, the most significant share of compensation expenditure is at the provincial level, although the unit cost per employee is lower than in the national sphere.

Figure 3.7: Compensation of employees by sphere of government

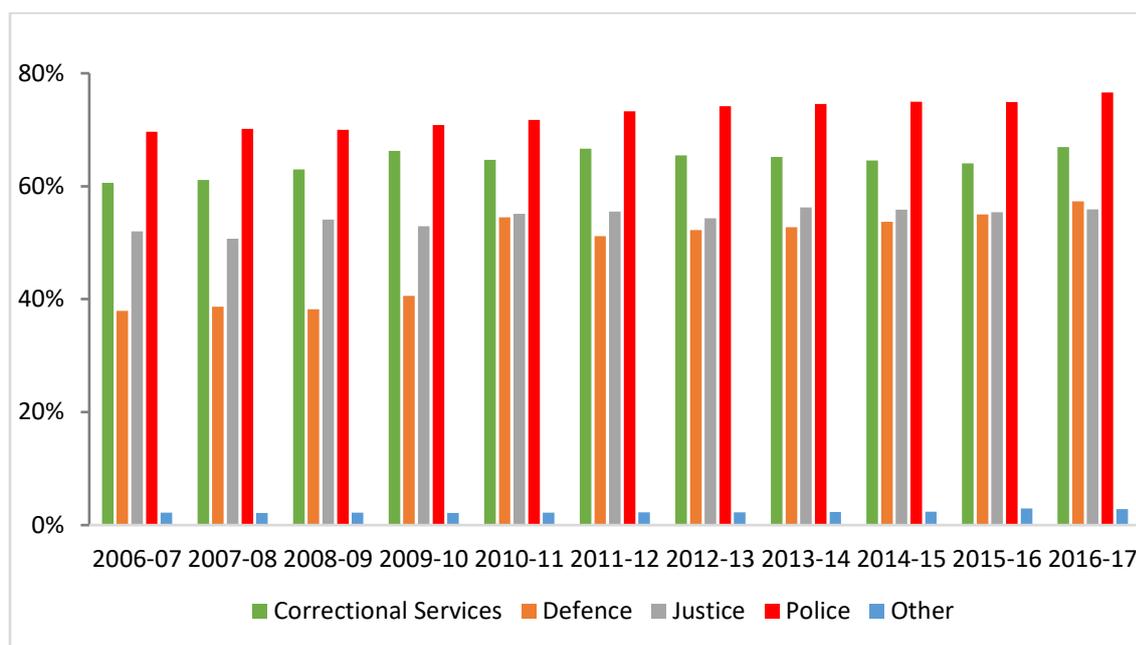


Source: National Treasury (2017); Statistics South Africa (2010)

Provincial governments have the highest share of government expenditure on compensation of employees compared to the other spheres of government, and have been increasing significantly, at least for the years for which data is available. Their compensation of employees is almost double that of national government. Figure 3.7 raises the issue of whether the expenditure in terms of compensation of employees for local government should be higher, as it remains substantially smaller compared to both national and provincial government.

Figure 3.8 presents the national compensation of employees as a percentage of total compensation of employees per department. In terms of government departments, most of the compensation of employees goes to the safety and security function. The South African Police Service (SAPS), Department of Correctional Services, SANDF, and the Department of Justice and Constitutional Development are the departments that receive the most significant portions for the compensation of employees.

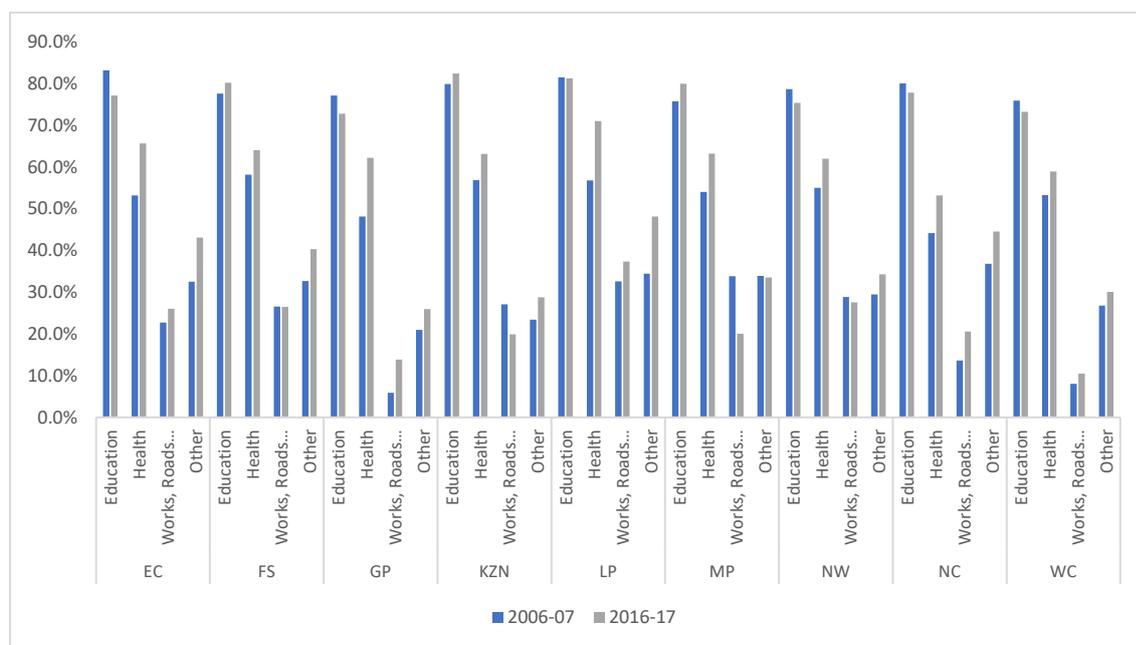
Figure 3.8: National compensation of employees as a percentage of total compensation



Source: National Treasury (2017); Statistics South Africa (2010)

When investigating expenditure on the compensation of employees at provincial level, it is also of interest to examine the percentage of the compensation expenditure by specified provincial departments, as shown in Figure 3.9. The provincial departments of education and health have the highest compensation of employees' expenditure across all provinces.

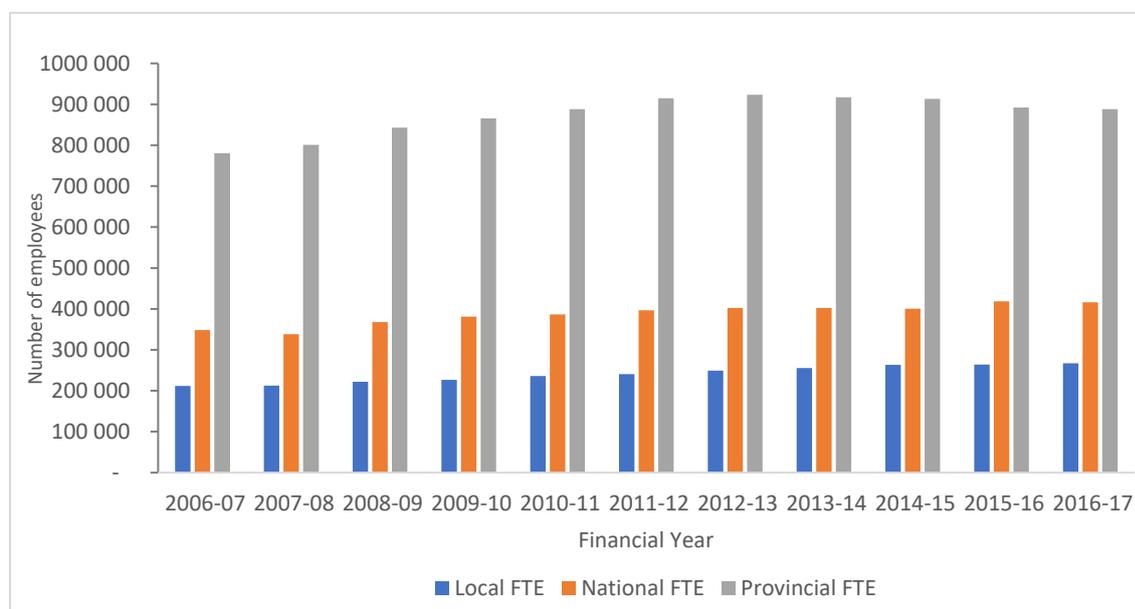
Figure 3.9: Provincial expenditure on compensation of employees as a percentage of the total per department



Source: National Treasury (2017); Statistics South Africa (2010)

Figure 3.10 displays the number of FTE employees per sphere of government. This figure shows that, across the financial years 2006/07 to 2016/17, larger headcounts were observed in provincial government, followed by the national government. Local governments have the lowest number of FTE employees, on average.

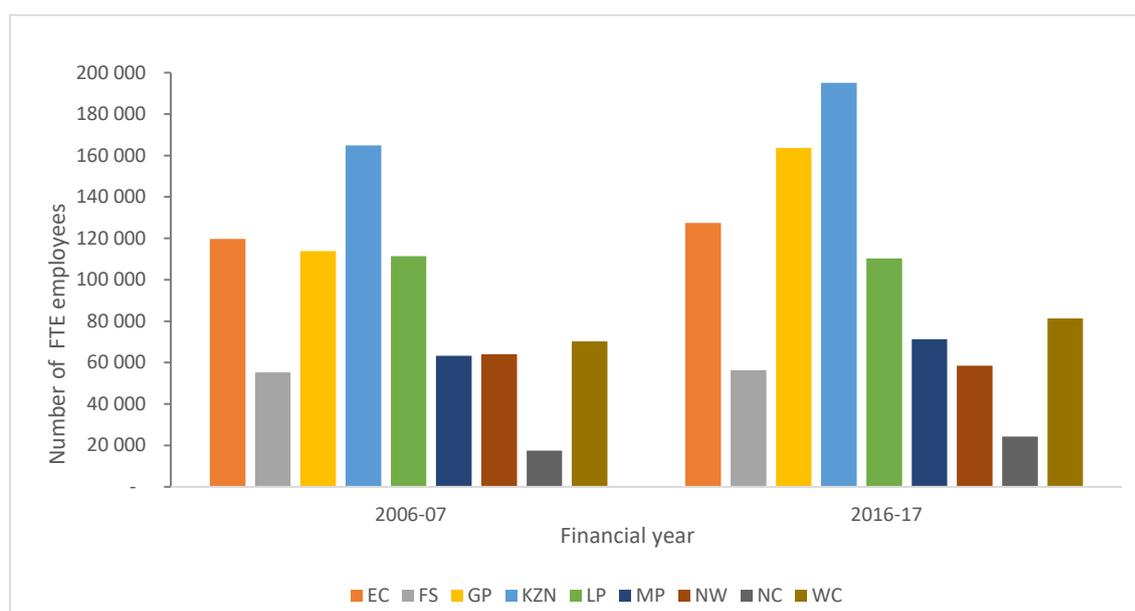
Figure 3.10: Number of full-time equivalent employees by sphere of government



Source: National Treasury (2017); Statistics South Africa (2010)

By examining Figure 3.11, it is clear that there have been significant increases in the headcount in the Gauteng and KwaZulu-Natal provinces over the period 2006/07 to 2016/17. Interestingly, there has been a slight decrease in the FTE headcount in North West. The Northern Cape remains the province with the lowest number of FTE employees.

Figure 3.11: Number of full-time equivalent employees by province



Source: National Treasury (2017; 2020); Statistics South Africa (2010)

In terms of percentage changes of FTE within national and provincial government during the 2006/07 to 2011/12 financial years, the FTE headcount increased significantly in the national departments. In the provincial sphere, there are significant increases in KwaZulu-Natal (by 42 601), the Eastern Cape (by 19 546), Mpumalanga (by 15 141) and Gauteng (by 37 270). Interestingly, in the 2011/12 to 2017/18 financial years, there was a drop of 17 611 in the FTE headcount. This occurred in KwaZulu-Natal, Limpopo, the Free State and the Eastern Cape. Lastly, regarding the wage bill, it would seem that the number of full-time employees has not changed much in the national government sphere, as Table 3.15 shows.

Table 3.15: Average employee headcount

Financial year	National level	Provincial level	Year-on-year employee headcount increase/decrease (national level)	Year-on-year employee headcount increase/decrease (provincial level)	Average employee headcount growth (national level)	Average employee headcount growth (provincial level)
2006/07	348 442	780 468	-	-	-	-
2007/08	337 890	801 114	-10 551	20 647	-1%	3%
2008/09	368 180	842 602	30 290	41 487	4%	5%
2009/10	381 280	865 400	13 099	22 798	2%	3%
2010/11	386 725	888 400	5 445	23 000	1%	3%
2011/12	396 750	914 386	10 025	25 986	1%	3%
2012/13	402 475	923 646	5 725	9 260	1%	1%
2013/14	402 372	917 195	-103	-6 451	0%	-1%
2014/15	400 367	912 842	-2 005	-4 354	0%	0%
2015/16	418 640	892 089	18 273	-20 752	2%	-2%
2016/17	416 396	888 204	-2 245	-3 885	0%	0%
2017/18	408 134	-	-8 262	-	-	-
2018/19	399 787	-	-8 347	-	-	-
2019/20	399 114	-	-673	-	-	-

Source: National Treasury (2017); Statistics South Africa (2010)

The number of full-time employees increased from about 350 000 employees in 2006/07 to 418 640 employees in 2015/16, and has since been declining. It has reduced to below 400 000 during the period 2018/19 to 2019/20. This confirms that the national sphere of government became more significant during the period 2009–2018. Similarly, the number of full-time employees in the provinces increased substantially from about 780 000 in 2006/07 to 923 646 in 2012/13 before declining. However, it is unclear if it has continued to decline because data from 2017/18 is unavailable. As data for the local government sphere is difficult to access, the focus is mainly on the national and provincial spheres of government. In any case, as shown previously, the local government sphere does not employ many people relative to the national and provincial governments.

Missing or insufficient data limited the assessment of the three spheres of government, specifically local government. National FTE employees tend to cost substantially more in comparison to provincial employees. However, overall compensation is highest among provincial governments. There are possibly distribution issues in compensation of employees among the three spheres of government, which must be addressed. In terms of the size of the wage bill, it is clear that it has grown substantially since 2009/10. As the wage bill is substantially higher than in many other countries, there is a case for consolidation.

Regarding the public value of the wage bill, the unit labour cost (ULC) analysis and an examination of productivity in the public sector do not provide conclusive results. However, it would seem that, for the period of analysis (2007–2020), the cost of labour has remained high, while productivity did not keep up with high unit labour costs for the whole government or all national government departments combined. In short, ULC is a measure of the average cost of labour per unit of output, while productivity is generally defined as measuring the amount of output generated per unit of input.

Applying the ULC technique, a simple production function model to incorporate the set of input combinations labour (L) and capital (K) to produce a certain level of output (Y) is estimated. Given government's cost-minimising objective, in order for a certain government department to produce output Y , it employs L and K to minimise, as much as possible, the costs by taking into account factor prices r (cost of capital) and w (wage).

Therefore, the equation is formally written as shown below:

$$Y = F(K, L) \tag{3.5}$$

To account for the cost-minimising objective, Equation 3.5 is transformed such that the unit cost function takes into consideration the prices (r, w) of the production process inputs. This is done by multiplying the cost function by unit cost and output: $C^t(r, w, Y) = C^t(r, w, 1) \cdot Y$

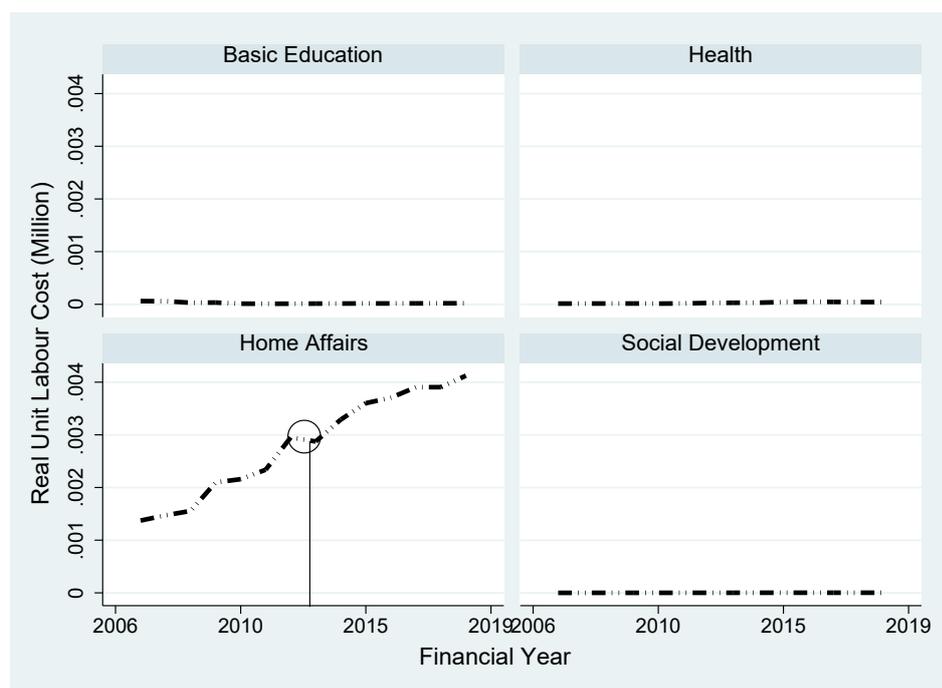
As such, the equation estimated is:

$$ULC = \frac{w_n}{Y/L}, \tag{3.6}$$

Where ULC denotes the unit labour cost, w_n denotes the total labour compensation per employee (measured in millions of rands) and Y/L is the ratio of output (proxied by the government audit expenditure outcome per department and measured in millions of rands) and employment (the number of full-time employees). Essentially, the ULC technique helps to track the relationship between total labour costs and workers' productivity.

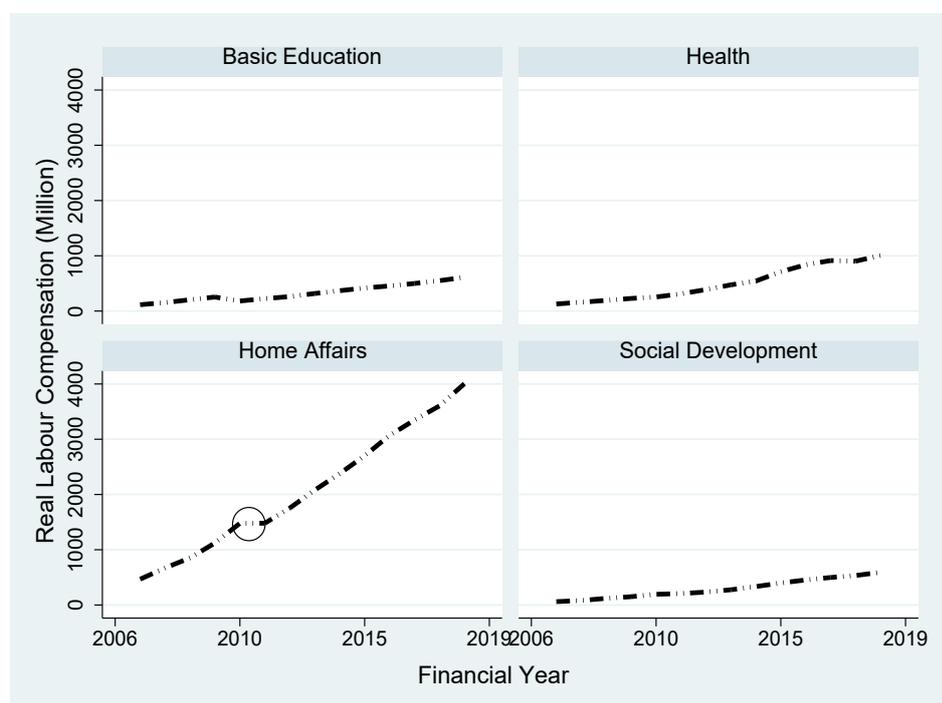
Taking the departments discussed in section 3, Figure 3.12 illustrates that the ULC has been stable for the period of analysis. The Department of Home Affairs, however, experienced a substantial increase in ULC. This could be linked to higher labour compensation in that department, which is not offset by commensurate productivity. This could imply that the Department of Home Affairs is less productive compared to the departments of Basic Education, Health and Social Development. Except for the Department of Home Affairs, this is consistent with the effectiveness of these selected departments. For example, in section 3, almost all selected departments were found to be performing according to their targeted outcomes.

Figure 3.12: Unit labour cost trends



Source: Commission’s computation based on data from National Treasury (2011; 2017; 2019; 2020)

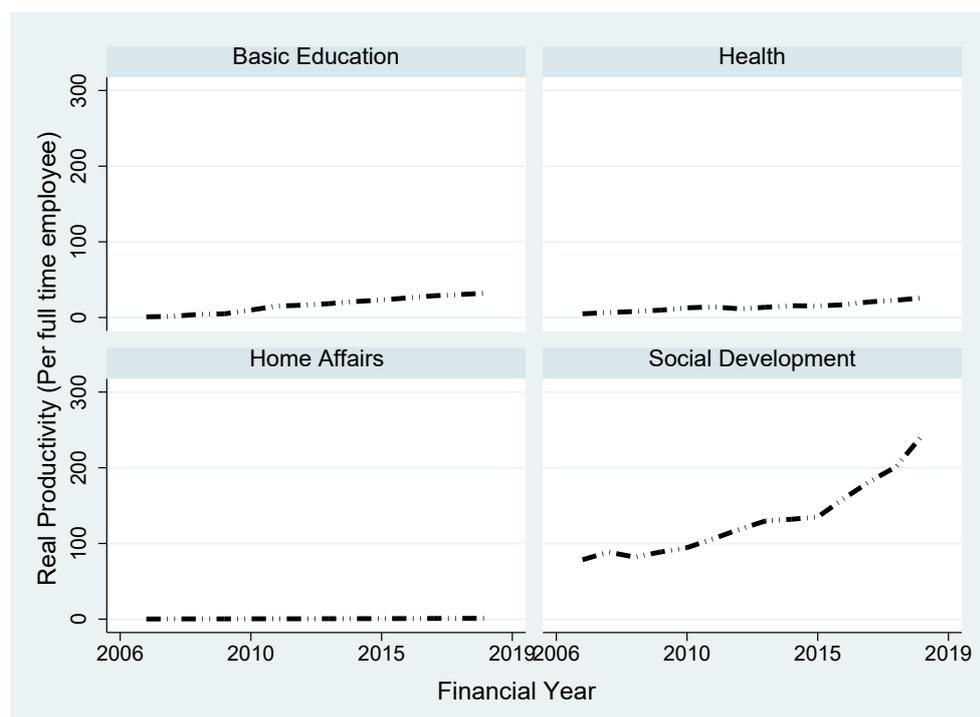
Figure 3.13: Real labour compensation trend



Source: Commission’s computation based on data from National Treasury (2011; 2017; 2019; 2020).

Regarding productivity, as shown in Figure 3.14, there are different trends for the selected departments. Productivity in the Department of Social Development has been increasing, followed by productivity in the Department of Basic Education. For the Department of Home Affairs, productivity has not improved for the period of analysis, while there are some increases in productivity in the Department of Health.

Figure 3.14: Productivity trends



Source: Commission’s computation based on data from National Treasury (2011; 2017; 2019; 2020).

After the end of apartheid, the South African government sought to empower millions of disadvantaged black people by employing them in the public sector. This tripled government spending on salaries. However, there have been several conversations regarding cuts in the wage bill. For instance, National Treasury is seeking a nearly R311 billion reduction in the wage bill by 2023/24. National Treasury has further proposed a wage freeze.

In assessing the relationship between the rising wage bill and the productivity of the departments, this study’s analysis confirms that the wage bill is high, due to compensation of employees in the provinces and at senior levels in government as a whole. Regarding the provinces, it is essential to consider that the share of compensation of employees is mainly on critical functions such as education and health. However, the analysis of ULC and productivity for the whole government at national level does not show conclusive findings. Furthermore, departments such as Home Affairs seem to show higher increases in labour compensation relative to other departments. Home Affairs has a higher ULC relative to its counterparts. This implies that departments such as Home Affairs are not employing the available resources to deliver the desired services to the public. Put differently, the productivity of such departments is not commensurate to higher labour costs.

In conclusion, as far as the size and the shape of the wage bill is concerned, it would seem that there is merit in the view that the size of the wage bill increased substantially during the 2009–2018 administration relative to the 1999–2008 administration. The shape of the wage bill does not seem to have changed, at least for the period of analysis (i.e. 2005–2019).

From about 10% in 2005 to 15% during the 2019 fiscal year, the share of total compensation of employees to GDP is substantially higher for South Africa than other countries, even for advanced economies and comparable emerging economies. The average compensation of employees' expenditure at national government level during the 2006/07 to 2016/17 fiscal years is R100 696 million and R235 173 million, respectively, at the provincial government level. The standard deviation derived at the national level is smaller than the one derived at the provincial level, suggesting that the variation of compensation of employees' expenditure across the specified years is more considerable at the provincial level than at the national level. Compensation of employees, as a share of consolidated expenditure, has grown substantially, from about 32% in 2005/06 to about 36% in 2018/19, having reached almost 37% in 2011/12 to 2012/13.

The provincial sphere has a more significant share of compensation or employees' expenditure compared to other spheres of government. The local sphere has the lowest compensation of employees' expenditure, which is not surprising as it has the lowest number of FTE employees. In terms of total compensation of employees, the provincial sphere has about 60% of compensation of employees' spending. There has been significant growth in compensation of employees' expenditure for the Police Department, increasing about 10% since 2005/6. The Police Department's share of compensation of employees' expenditure is the highest (at about 80%), followed by the Department of Basic Education at 79% and the Department of Health at just above 60%.

3.5 Programme- and performance-based budgeting in relation to the efficiency of and effectiveness of government expenditure

Programme- and performance-based budgeting has been part of the wave of global budgetary reforms, which have been implemented by countries internationally to address the challenges of managing public finance (Cangiano, Currstine & Lazare, 2013). Kelly and Rivenbark (2011) point out that the roots of a programme- and performance-based approach to allocation decisions can be traced to the start of the NPM reforms in the 1990s. Performance information is not new, as Organisation for Economic Cooperation and Development (OECD) countries have been incorporating it into the budgetary process to enhance decision making (OECD, 2008). This moves away from simply reflecting an amount towards what can be achieved with the budget (OECD, 2008). This practice supports the notion of performance budgeting, which assists in its conceptualisation and further development. Robinson and Brumby (2005) state that "performance budgeting refers to procedures or mechanisms intended to strengthen links between the funds provided to public sector entities and outcomes and/or outputs."

Furthermore, this is done with the assistance of performance information, thereby facilitating decision making on resource allocation. Performance budgeting develops a linkage between the funds allocated to results that can be measured (OECD, 2008). According to Sterk and Bouckaert (2006), the objective of performance budgeting initiatives is to strengthen allocative efficiency and improve operational efficiency. According to the OECD (2008), countries want to monitor what is invested in a project and determine how much can be achieved with the budget allocated.

Research indicates that, in the past, the South African budgeting system was secretive. There was no open formula for funding allocation for the country. Again, the literature reveals that the budget was a matter of the executive. This means that the executive was at the forefront of compiling the budget, with Parliament playing a minor role. Parliament was “rubber-stamping” what the executive had compiled. Due to the secretive nature of the budgeting process, it was difficult to analyse and scrutinise service delivery trends and conduct financial analysis because budget documents were not accessible. As a result, accountability and transparency suffered as elements of good governance. The former Department of State Expenditure and the function committees determined budget allocations. These committees were responsible for coordinating budget proposals and distributed allocations for a given function, like health or education (Walker & Mengistu, 1999). This confirms that the executive was the central role-player in the budget process, particularly in allocations to spending departments. Undoubtedly, the budget process or allocation of spending was not a two-way process, neither inclusive nor participatory. In essence, the budget process was highly centralised. For example, the function committees were very exclusive in approach and reflected control of funds rather than managing funds for service delivery improvement. As a result, in 1995, these committees were disbanded (Walker & Mengistu, 1999). The above description of past processes was based on a traditional form of budgeting: the line-item budgeting system. Again, the Exchequer and Audit Act of 1975 reflected the basis for expenditure control because the Act was not intended to “manage” public finances, but to “control” them. Additionally, the Act was too prescriptive, meaning that there was no option for flexibility based on rules.

As Abedian, Strachan and Ajam (1998) explain, traditional budgeting focused on expenditure controls, and the aim was to keep control over the money spent on government. For example, concerning its objective or aim, the Exchequer and Audit Act states that the Act regulates the collection, receipt and control of state property and monies of the state (South African Government, 1975). Given the Act’s objective, it is evident that it was input- and control-oriented rather than focusing on results and management. Since the transition to democracy, the new constitution demands transparency and accountability on matters of governance. In 1998/99, the Medium-term Expenditure Framework (MTEF) was introduced in South Africa to encourage the participative approach in the budgeting process, transparency, accountability and policy-budgeting coordination. The introduction of the PFMA also encourages effective financial management, transparency and accountability. The budget is more decentralised and all spheres of government make decisions about the budget through established forums or structures. Research shows that performance budgeting has been introduced worldwide, including in countries such as Australia and New Zealand. The introduction of performance budgeting in South African public service is essential as it presents a results-oriented approach and encourages the management of government resources with flexibility within the legal framework to maintain accountability.

In order to understand the efficacy of performance-based budgeting, this section analyses some of the prior findings on PPBB. Oktavia (2017) examines the impact of PPBB on the efficiency of local governance in Indonesia.

The study measures the efficiency of local government financial performance before and after the implementation of PPBB. The data envelopment analysis (DEA) method was used to calculate the efficiency of local governance in Indonesia. The results suggest that the implementation of PPBB has increased the efficiency of financial performance on local governance.

Additionally, Klase and Dougherty (2008) examine the impact of PPBB on state budget outcomes in the USA. The study uses a pooled cross-sectional analysis to evaluate the time series trend before and after implementing the programme. The results indicate that PPBB has a statistically significant and positive impact on budget outcomes.

Melkers and Willoughby (2005) examine the effects of performance data on budgetary allocation decisions, communication and other operations in local governments in the USA. They surveyed city and county administrators and budget officers from 300 local governments. The study found that performance measures are least effective in determining appropriation levels. However, it is promising that almost half of the respondents, from both city and county, agreed that performance data is an important decision aid in budget issues. Nonetheless, it is evenly optimistic and too early to expect that performance data can displace political factors in budget allocation decisions. Zemrani (2019) examines the impact of PPBB on the efficiency of higher education in the USA. The dependent variable is the efficiency score or ratio of output to input. The study uses the magnitude of the implementation of PPBB in the 50 states as computed from the Rockefeller Institute over six years (1997–2002). The study's findings suggest that the use of PPBB exerts a positive influence on the efficiency of higher education.

The only empirical literature available within the South African context is that of Vananda (2008), who examines the impact of performance budgeting on service delivery. The study uses a qualitative approach through interviews and surveys of government officials from the Mpumalanga Department of Health. Findings from the study suggest that service delivery has improved since the implementation of performance budgeting. A vast majority of the literature reviewed highlights the importance of PPBB in improving efficiency and performance. However, the efficacy of the implementation of this programme has not yet been empirically ascertained within the context of South Africa, which is what this study seeks to interrogate.

3.5.1 Summary statistics of input, output and exogenous variables

Table 3.16 provides descriptive statistics of the input, output and exogenous variables used in the DEA and the second non-parametric analysis. Data used in this study is derived from various sources, such as World Bank's PovcalNet, the Standardised World Income Inequality Database (SWIID) and the World Development Indicators (WDI). The data is restricted to 19 years owing to missing data. The DEA model includes one input and three outputs. Government expenditure, as a percentage of GDP, ranged from 17.81 to 21.28% during 2000 and 2018, with an average of 19.63%. The output variables include measures of the aggregate economy, poverty measures, inequality and unemployment. The average of GDP purchasing power parity is \$546 billion.

For the poverty measures, the average headcount poverty¹⁹ and poverty gap²⁰ are 0.22 and 0.07%, respectively. The average inequality, reflected by the Gini coefficient in Table 3.16 over the review period is 62.83. The exogenous variables include broad money, credit and urban population. The average of the three variables in the review period are 69%, 140.90% and 61.65%, respectively.

Table 3.16: Summary statistics of the variables

	Variables	Mean	Standard deviation	Minimum	Maximum	Source
Inputs	Total government expenditure (percentage of GDP)	19.629	1.046	17.814	21.282	WDI
	GDP PPP	5.64E+11	1E+11	3E+11	7E+11	WDI
Outputs	Poverty headcount	0.225	0.070	0.162	0.351	POVCALNET
	Poverty gap	0.074	0.029	0.048	0.133	POVCALNET
	Gini-coefficient	62.833	0.531	61.700	63.5	SWIID
	Unemployment, total (percentage of total labour force)	27.089	3.031	22.407	33.291	WDI
Exogenous variable Broad money	Credit	140.896	12.648	110.718	160.125	WDI
		69.701	7.916	52.711	80.800	WDI

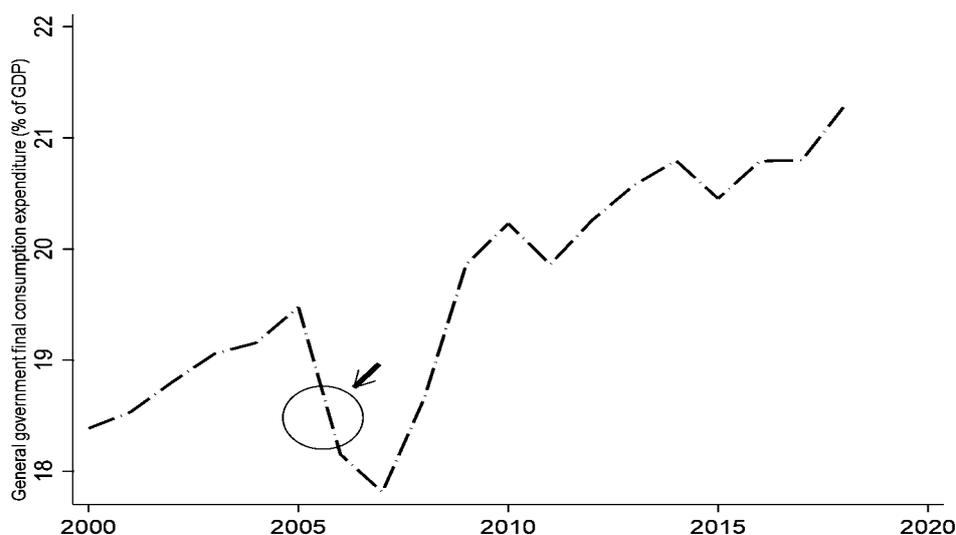
Source: Commission's computation from the World Bank's World Development Indicators, the World Bank's Standardised World Income Inequality Database and the World Bank's PovcalNet

Figure 3.15 provides the trend of government spending in South Africa. In 2000, government spending was just over 18% of GDP. This share increased steadily, reaching a peak of 19.47% in 2005, before declining to 17.81% in 2007. This period coincides with the global financial crises of 2007/08. However, the share of government spending to GDP has been on an upward trajectory post-global financial crisis.

¹⁹ Measured as a percentage of the population living in households with consumption or income per person below the poverty line.

²⁰ The poverty gap is the mean shortfall of income from the poverty line. The mean is based on the entire population treating the non-poor as having a shortfall of zero. The shortfall is expressed as a proportion of the poverty line.

Figure 3.15: Government expenditure: 2000 to 2018



Source: World Bank's World Development Indicators

3.5.2 Methodology

In computing the efficiency scores, this study uses the DEA approach developed by Charnes, Cooper and Rhodes (1978) and Banker, Datar and Kaplan (1989). The DEA is a method used to measure efficiency in cases where multiple input and output factors are observed and when it is impossible to convert them into aggregate input or output. DEA provides a comparative efficiency indicator of the units to evaluate. The units are called decision-making units (DMUs). In DEA, the ratio of the total weighted output to the total weighted input is the relative efficiency of a DMU. This is expressed as follows:

$$Eff = \frac{\sum_r u_r y_{rj}}{\sum_i v_i x_{ij}} \quad (3.7)$$

Where:

y_{rj} is the amount of the r^{th} output from DMU_j

u_r is the weight given to the r^{th} output

x_{ij} is the amount of the i^{th} input used by DMU_j

v_i is the weight given to the i^{th} input

Then, to measure the efficiency of DMU_j , the input orientation in Equation 3.8 is used.

$$Eff = \text{Max} \frac{\sum_r u_r y_{rj}}{\sum_i v_i x_{ij}} \quad (3.8)$$

s.t

$$\frac{\sum_r u_r y_{rj}}{\sum_i v_i x_{ij}} \leq 1 \quad ; \forall_j$$

$$u_r v_i \geq 0 \quad ; \forall_r \forall_i$$

The input in this study is government expenditure as a percentage of GDP, while the output variables include GDP, unemployment rate, inequality, headcount poverty and poverty gap.

3.5.2.1 Tobit model

After computing the efficiency scores, this study proceeds to examine the impact of PPBB on the efficiency scores using a Tobit model. The use of a Tobit model is informed by the fact that the dependent variable (efficiency score) is bounded between 0 and 1. The Tobit model can be expressed as follows:

We assume a latent variable $Y_i^* = M - C$, which is partially observed; M is the maximum number efficiency obtainable and C is the pile-up value (assume C takes a value of 0 in our case):

$$\begin{aligned}
 Y_i^* &= \beta_0 + \beta_1 PPBB_i + X_i + \mu_i; \mu \sim N(0, \sigma^2) \\
 \begin{cases} y_i = 0 & \text{then } Y_i^* \leq 0 \\ y_i = y, & \text{then } Y_i^* > 0 \end{cases}
 \end{aligned}
 \tag{3.9}$$

Y_i^* is the efficiency scores and censored data. The value is positive if Y_i^* equals the efficiency score (y). If Y_i^* is negative, then government spending is not efficient ($y = 0$). $PPBB_i$ is the degree of the implementation of PPBB. This variable is measured using a dummy variable, which takes on the value of 0 before the implementation of performance, and 1 after the implementation of the programme. X_i is the vector of control variables, which includes the unemployment rate, Gini coefficient, credit to the private sector, GDP, government expenditure and broad money supply. Equation 3.9 satisfies the classic linear model assumptions.

3.5.3 Data description

This study uses annual data from 2000–2018. The availability of data dictated the choice of period. Efficiency scores are calculated using government expenditure as a percentage of GDP as the input and GDP as the outcome variables. The unemployment rate is measured by the total number of unemployed in the population by the total labour force. Credit is defined as domestic credit to the private sector as a percentage of GDP. GDP is measured in constant US\$. Expenditure is general government final consumption expenditure as a share of GDP. The Gini coefficient is used to measure inequality. In measuring PPBB, a dummy was created for PPBB implementation in South Africa; 0 for before implementing the programme, and 1 for after implementation.

3.5.4 Empirical results

3.5.4.1 First-stage estimates: efficiency scores

To begin the efficiency investigation, the DEA efficiency scores based on a single input and single output framework are estimated (shown in Table 3.17 and Figure 3.16). Panel A in Figure 3.16 and column 6 in Table 3.17 display the DEA technical efficiency scores derived from general government final consumption, or expenditure, and GDP for the period 2000–2018.

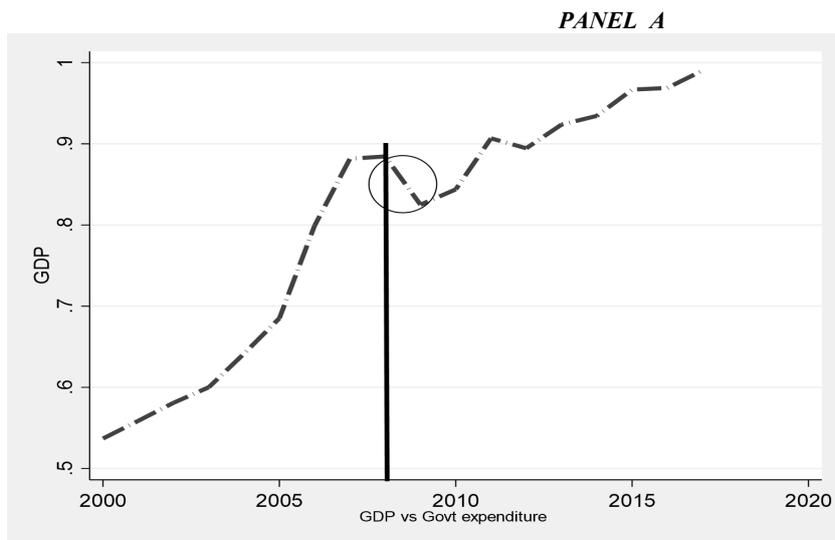
While panels B and C of Figure 3.16 and columns 2 to 5 of Table 3.17 display the DEA technical efficiency scores derived from general government final consumption and distribution indicators (inequality, unemployment and poverty), Panel A, which shows the spending efficiency in terms of economic activity, appears to be operating relatively efficiently compared to panels B and C. More specifically, it shows that, on average, it is approximately 80% efficient (0.81) – 20% below its potential. Panel A displays an upward trend, increasing sharply from 0.54 in 2000 to 0.88 in 2008 (reaching the first noticeable peak in 2008). The DEA efficiency score appears to rise gradually afterwards to levels much higher than the preceding periods. Panel C reveals a distinctive time trend regarding the efficiency score, which declined during the 2000–2010 period and then increased slightly in 2010–2016, followed by another decline in the subsequent years.

Table 3.17: DEA results of the triple challenge efficiency, 2000–2018

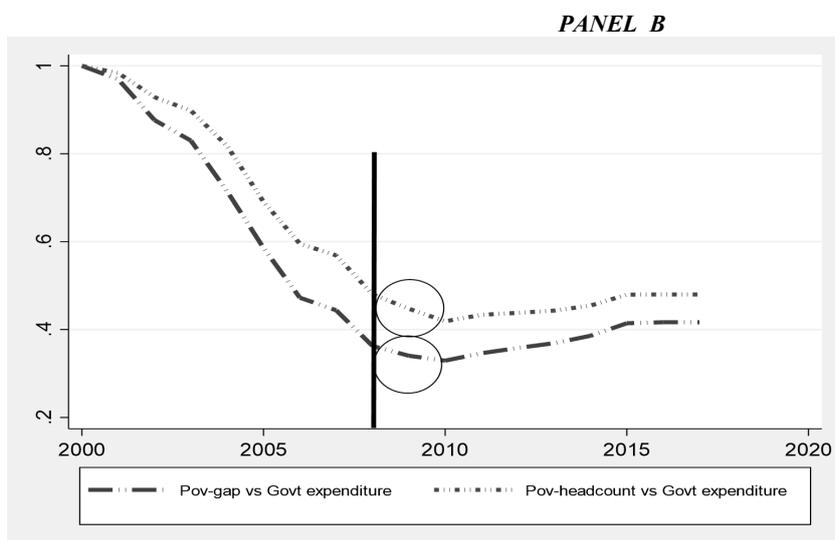
Input, public social expenditure; outputs separately					
Year	Poverty gap	Poverty headcount	Unemployment	Inequality	GDP
2000	1	1	0.917933	1	0.536952
2001	0.969255	0.98364	0.935281	0.992062	0.558787
2002	0.876483	0.928711	1	0.931199	0.580991
2003	0.829887	0.898127	0.95764	0.918852	0.60016
2004	0.714423	0.817529	0.868427	0.868367	0.641593
2005	0.585732	0.690709	0.844542	0.854073	0.685078
2006	0.472589	0.595466	0.881904	0.819932	0.799328
2007	0.443832	0.56879	0.841556	0.83556	0.881644
2008	0.362722	0.480229	0.678372	0.703911	0.884464
2009	0.340436	0.447446	0.668906	0.661156	0.825013
2010	0.329341	0.418868	0.689219	0.649222	0.843876
2011	0.346228	0.433545	0.700711	0.617149	0.906758
2012	0.358252	0.438096	0.689418	0.605035	0.894576
2013	0.369109	0.443173	0.674307	0.638325	0.923746
2014	0.385911	0.454652	0.676082	0.589447	0.934466
2015	0.414401	0.479548	0.694523	0.556477	0.96675
2016	0.416683	0.480031	0.720931	0.589552	0.968842
2017	0.416569	0.479869	0.734237	0.589353	0.990403
2018	0.411914	0.474622	0.714136	0	1
Average	0.5286193	0.605950053	0.783585526	0.7209836	0.811759

Spending on unemployment was about 2% below spending on economic activity, with a mean DEA efficiency score of roughly 80% (0.78). The least efficient spending was in terms of the poverty headcount, poverty gap and inequality (a low of about 50%, 60% and 70%, respectively). Panels A to C reveal some interesting patterns. What stands out is that there was a concurrent decline in efficiency scores for the period 2007–2009. The decrease in efficiency scores during this period could be due to the global financial crisis. Interestingly, the efficiency losses were not necessarily confined to the recessionary period. In 2011 and 2012, spending on economic activity, inequality and unemployment (except for poverty) experienced some efficiency losses.

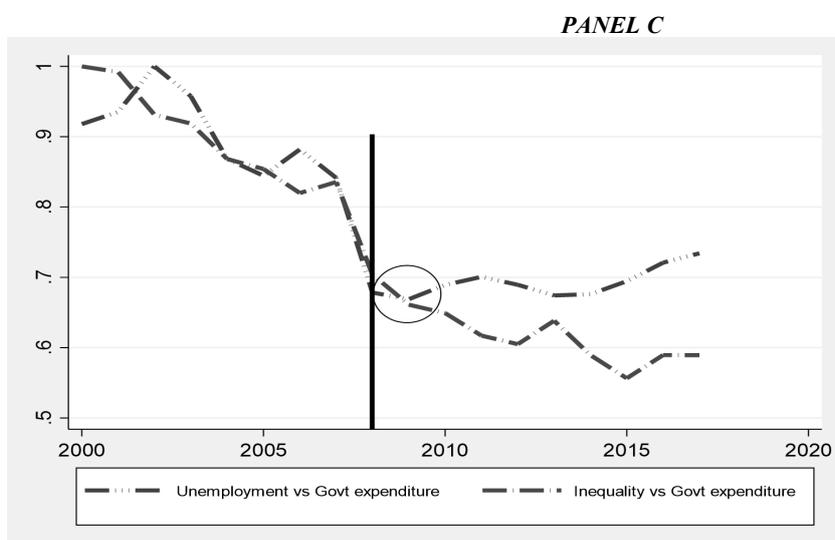
Figure 3.16: Efficiency scores of government expenditure versus socio-economic indicators



Source: Commission’s computation using data from the World Bank’s SWIID



Source: Commission’s computation using data from the World Bank’s SWIID



Source: Commission’s computation using data from the World Bank’s database SWIID

The implementation of PPBB in South Africa started in 2003. The efficiency summary displayed in Panel A suggests that the efficiency of government expenditure vis-à-vis GDP was on an upward trend when PPBB was implemented. This denotes that PPBB implementation aided the efficiency of government expenditure in the overall economy. However, the reverse is the case for other socio-economic indicators like poverty, inequality and unemployment. The trend analysis suggests that government expenditure efficiency vis-à-vis poverty, inequality and unemployment reduces after implementing PPBB. One can infer that government spending has not been pro-poor or inclusive.

3.5.4.2 Tobit regression results

While the DEA estimates shed some light on the efficiency derived from input and output measures, it does not cast light on the effect of PPBB on these efficiencies. Model I of Table 3.18 presents the Tobit estimates when DEA efficiencies are regressed on standard determinants, excluding PPBB, the primary variable of interest. Model II of Table 3.18 presents the results when DEA efficiency is regressed on PPBB, while accounting for the crucial factors in explaining DEA efficiencies. Perhaps expectedly, the estimated coefficients of Model I (in Table 3.18) are significantly associated with DEA efficiencies and are generally in accordance with expected size, direction and significance. Arranged by order of magnitude, the critical predictors of DEA efficiency are GDP ($\beta_1 = 1.46E-12^{***}$), followed by inequality ($\beta_2 = -0.0480791^{***}$). The variables that register the weakest impact on DEA efficiency are government expenditure with the size of impact at $\beta = -0.038879^{***}$ and broad money with the size of influence at $\beta = 0.0008795^{***}$.

In line with several studies in this field (such as Afonso and Furceri, 2010), Model I detects a positive relationship between GDP and DEA efficiencies, implying that higher GDP levels are associated with higher levels of efficiency. A plausible explanation for this relationship is that, as the country becomes richer, it improves the efficiency of delivering public services. Thus, policymakers should continue to prioritise GDP-enhancing programmes (such as the New Growth Path framework), since there appears to be a solid and significant relationship between GDP and levels of efficiency. Of course, one cannot rule out the possibility of a feedback relationship between the two variables: efficient spending can promote economic growth, consistent with the views of essential scholars in this field (such as Barro, 1990) and existing economic theories such as the Keynesian theory. Consistent with Herrera and Pang (2005), the estimated coefficient for inequality displays a negative relationship, implying that inequality reduces efficiency.

Regarding government expenditure, the results suggest a significant and negative effect on DEA efficiency, indicating that greater government expenditure is associated with lower efficiency levels. This finding is not surprising as this study measures government spending in terms of consumption expenditure, thus lending credence to the view that non-productive consumption expenditure brings about a decrease in spending efficiency, compared to, say, capital spending (productive) and pro-poor government expenditure, which is predominantly efficiency-enhancing.

This result is found in many related studies in this field (see Gupta & Verhoeven 2001; Jayasuriya & Wodon 2003; Afonso, Schuknecht & Tanzi, 2006). The estimated coefficient of broad money supply indicates a positive relationship and is highly significant, consistent with Ouertani, Naifar and Ben Haddad (2018). The remaining estimated coefficients, such as unemployment and credit, also reflect the anticipated significance, although insignificant.

Table 3.18: Tobit estimates of the effect of PPBB on government expenditure efficiency

Variables	Model I		Model II	
	Coefficient	Standard error	Coefficient	Standard error
Unemployment	-0.0007817	[0.000641]	-0.0009073*	[0.00044]
Credit	-0.0001808	[0.000095]	-0.0001451*	[0.00007]
GDP	1.46E-12***	[1.67E-14]	1.45E-12***	[1.18E-1]
Expenditure	-0.038879***	[0.002169]	-0.0409252***	[0.00153]
Broad money	0.0008795***	[0.000219]	0.0006016***	[0.000159]
Gini	-0.0480791***	[0.014617]	-0.026983*	[0.010904]
Constant	0.864739***	[0.035824]	0.8736827***	[0.024386]
PPBB			0.0088645***	[0.001992]

Notes: The dependent variable is the efficiency scores derived from Figure 3.16, panels A to C. The standard errors are in parentheses: *p<0.05; **p<0.01; ***p<0.001.

Model II (of Table 3.18) presents the estimates when DEA efficiency is regressed on the PPBB variable, considering the standard determinants of efficiency. Perhaps unsurprisingly, Model II detects a positive and significant association between PPBB and DEA efficiency. This is an essential finding for South Africa as it suggests that PPBB is increasingly becoming a crucial part of administrative practice in the South African government. As a result, PPBB is proving to be a helpful strategy to improve efficiency in the public sector. Unemployment and credit variables were statistically insignificant determinants of DEA efficiency in Model I (i.e. when the PPBB variable was not included in Model I). However, when PPBB is incorporated into Model II, unemployment and credit variables become statistically significant and display the expected relationship. The estimated coefficients of the other standard determinants in Model II mostly retain the initial direction and level of significance as in Model I, indicating that the relationship found in Model I is not responsive to the inclusion of the PPBB variable.

3.6 Concluding remarks

The availability of data influenced the approach to the study. Some of the questions could not be satisfactorily answered. However, sufficient effort ensured that these questions were addressed in as much detail as feasible.

The study also chose to select only a few government departments for detailed analysis instead of all government departments, particularly for the alignment and effectiveness of the performance indicators.

Regarding the first objective (i.e. the fiscal multiplier effect), the results suggest that the change in GDP given a fiscal policy shock is robust and consistent as it remains statistically significant and in line with economic theory. It was also found that, although positive, the multiplier effect of government expenditure on GDP decreased. Government expenditure had its worst impact between 2007 and 2009, where it is associated with a negative outcome. This implies that government efforts (i.e. expenditure) failed to improve welfare during the 2008 global financial crisis. Furthermore, the results indicate that government expenditure and gross fixed capital formation impact positively on GDP. In other words, government expenditure and investment play a role in increasing economic growth. The low multiplier in the last two years (according to the best model, Model II) may suggest that economic activity is not rising faster than government expenditure. Although the size of the multiplier declined slightly in the last two years, it should be noted that the effect of government expenditure on GDP should not only be evaluated based on one or two years, but the analysis should be done by looking at the entire period of estimation. Even though the more appropriate model, the multiplier is small, but government expenditure is still positive. It should be pointed out that when one looks at the other model (although it may suffer from omitted variable bias), the multiplier becomes higher. The multiplier was significantly higher in 2017. This means that government expenditure had a significant impact in 2017. The results further indicate that an increase in government expenditure results in decreases in unemployment and poverty.

Regarding the second objective (i.e. the alignment and effectiveness of the performance indicators), it was found that departments are using the performance indicators to show progress in performing prescribed tasks and not necessarily to report progress on delivering on targets. In addition, there is no consistency in the reporting of performance indicators. Essentially, at least for the seven departments studied, there was no strategic alignment in the institutional logic. This implies that the decision making that utilised KPIs reported by the seven departments studied would be biased towards satisfying the financial and operational logics and under-represent the administrative logic of effectiveness. The results from the performance appraisal showed that there were general reductions in cost-effectiveness in most of the departments. Regarding effectiveness, it would seem that departments are generally performing according to their expected outcomes as reported by the predetermined projections. However, the lack of transparent target reporting poses a challenge for the tracking of government performance.

Regarding the third objective (the size and shape of the wage bill), compensation of employees is more considerable in the provincial sphere of government. It would seem that compensation of employees is going to essential functions or departments (i.e. human capital, and safety and security). However, it should be questioned whether more compensation of employees' expenditure should be directed towards economic-related functions to grow the economy substantially and create employment. It is encouraging to note that a more significant portion of wages and salaries goes to lower levels/ranks, particularly nurses, teachers and police officers. However, salaries and wages at the top ranks are higher for the relatively few employees than at the higher levels (i.e. chief directors to directors-general).

It is also worth noting that the size of the wage bill increased substantially during the 2009–2018 administration relative to the 1999–2008 administration. Overall, the shape of the wage bill does not seem to have changed, at least for the period of analysis (i.e. 2005–2019). Lastly, for many government departments, as far as the public value of the wage bill is concerned, productivity is not commensurate to higher labour costs, implying that the country is not getting value for money with regard to the wage bill.

Regarding the fourth objective (programme- and performance-based budgeting), the overall finding is that the larger the size of government expenditure, the lower the efficiency levels. It would seem that PPBB is increasingly becoming a crucial part of administrative practice in the South African government – PPBB is proving to be a helpful strategy to improve efficiency in the public sector. Results on PPBB indicate that South Africa could achieve significantly higher economic activity and distribution output levels. On average, the efficiency scores of government spending are approximately 80% efficient (0.81) – 20% below their potential. The least efficient spending was the poverty headcount, poverty gap and inequality (a low of about 50%, 60% and 70%, respectively). The results also highlight insightful trends and patterns. There was a concurrent decline in efficiency scores, partly associated with the global financial crisis, from 2007 to 2009. It is essential to indicate that, while efficiency scores provide helpful information, they are a suggestive figure, as the scores vary with the selected output indicator. Thus, it is vital to identify the factors that influence these scores.

The findings regarding PPBB confirm that exogenous factors need to be considered crucial in explaining efficiency. Specifically, the results reveal that variables that are negatively related to efficiency scores include income inequality, government expenditure, credit to the private sector and unemployment. For government expenditure, results suggest a significant and negative effect on DEA efficiency, indicating that the larger the size of government spending, the lower the efficiency levels. Lastly, the results show a positive and significant association between PPBB and DEA efficiency.

3.7 Recommendations

In light of the effectiveness of government expenditure on performance, the Commission makes the following recommendations:

- 1. With regard to PPBB, it is recommended that government should prioritise spending on items that are growth- and efficiency-enhancing, and pro-poor social spending.*
- 2. With regard to the alignment and effectiveness of government's performance indicators, it is recommended that government should ensure that departments increase the number of outcome indicators included in their KPIs. Consistency in the reporting of indicators must be addressed and encouraged. Additionally, indicators that incentivise a target are encouraged instead of merely indicating progress on a specific objective.*

3. *With regard to the size and shape of the wage bill, it is recommended that the size of provincial governments should be significantly reduced. The salaries of directors to deputy directors-general should be reduced, and the number of deputy directors-general across all spheres of government should be reduced. As the wage bill has increased substantially over the last decade and is much higher than that of other countries, there is justification for consolidation in the wage bill. In addition, the disproportionate allocation of compensation spending across the three spheres of government needs to be addressed. However, this recommendation should take into account that the bulk of wages and salaries at the provincial level should go to critical functions such as education, health care, and safety and security.*
4. *With regard to the fiscal multiplier effect, it is recommended that government expenditure should be used to accelerate economic growth and reduce unemployment and poverty. The small multiplier of expenditure on GDP indicates that returns on spending are low. Efforts to improve the multiplier effect need to be investigated. Additionally, data is needed to determine the size of the multiplier since 2018, especially as the economic environment has changed since then.*

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Chapter 4

The impact of the COVID-19 pandemic on the local economy

Chapter 4: The impact of the COVID-19 pandemic on the local economy

Dr Mkhululi Ncube

4.1 Introduction

When the COVID-19 pandemic hit South Africa's shores in March 2020, many municipalities were already in a precarious state. The sector was struggling to fulfil its mandate. It was facing a myriad of challenges that included poor-quality basic services, and weak institutional and governance capabilities. These challenges manifested, among others, in poor audit outcomes, poor asset care, and generally weak service delivery. The following 2018/19 municipal performance indicators demonstrate the precarious position of the local government sphere just before the onset of the COVID-19 pandemic (National Treasury, 2020).

- Some 46% of the municipal budgets were funded.
- Only two out of 186 local municipalities provided adequately for repairs and maintenance (i.e. 8% of operating expenditure).
- Only 71 municipalities had enough cash and investments to meet their current liabilities.
- About 54% of senior managers complied with the minimum competency levels.
- A third of municipalities were dysfunctional.
- As many as 163 of the 257 municipalities, and 27 of the 44 district municipalities were identified as being in financial distress.
- The audit outcomes had regressed for a third consecutive year.

These statistics point to a sector that was already in deep distress right at the onset of the COVID-19 pandemic. The pandemic could only have exacerbated these challenges.

4.2 Background

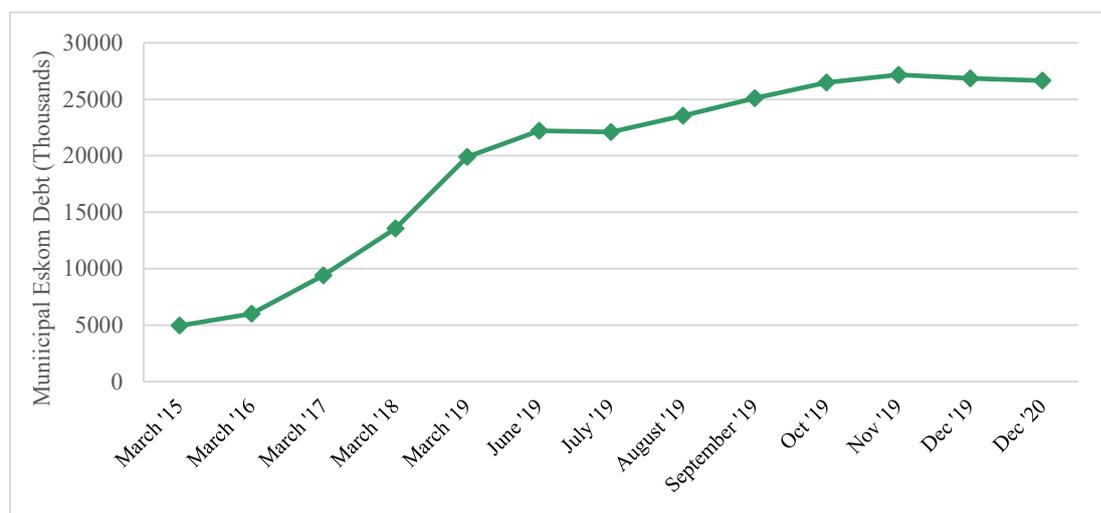
4.2.1 The fiscal health of local government before COVID-19

The onset of the COVID-19 pandemic in South Africa came at a time when many municipalities were already struggling to fulfil their mandates. Many municipalities were dysfunctional. At the end of 2019, almost 50% of municipalities were in financial distress, while the same proportion had passed unfunded budgets.

Over the past seven years, the number of municipalities in financial distress has doubled from 66 to 125 (National Treasury, 2020). In December 2020, municipalities owed Eskom and the water boards R27 billion and R13.4 billion, respectively.

The Eskom debt (see Figure 4.1) has been particularly worrying as it has placed many municipalities in a dilemma: To either forgo service delivery and service the debt or deliver services and forgo servicing the debt. It is also important to note that, by the end of 2020, municipalities were owed about R230 billion by consumers, R20.7 billion by organs of state, R39 billion by businesses, R166.4 billion by households and R4.3 billion by “other” entities (National Treasury, 2020).

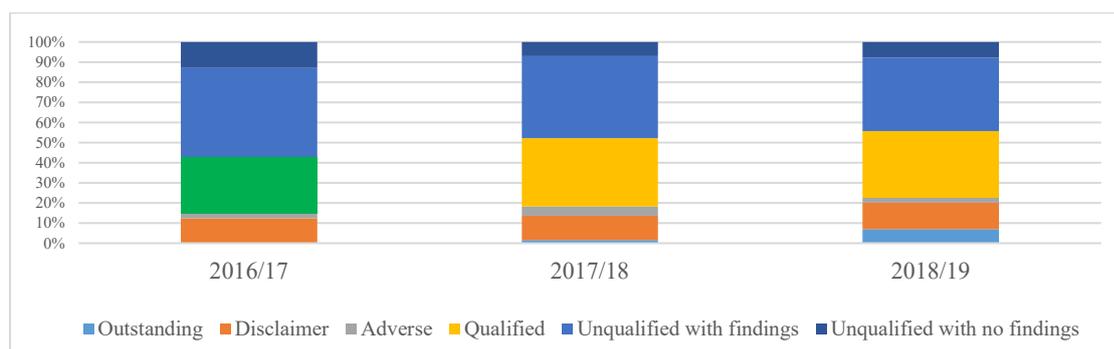
Figure 4.1: Total Eskom debt



Source: National Treasury (2020)

Another often-used indicator for the performance of municipalities is the audit outcomes (Figure 4.2). Over the years, audit outcomes have regressed despite an increased reliance on consultants and efforts by government to improve capacity. The Auditor-General has flagged the quality of submitted annual financial statements as one area of regression, despite the use of consultants. National Treasury has also noted that despite “an annual investment of at least R2.5 billion in capacity-building measures, an increasing number of municipalities are in some form of distress, financial crisis, state of mismanagement or have been placed under an intervention.” (National Treasury, 2020:3)

Figure 4.2: Three-year audit outcomes: 2019/20



Source: Auditor-General of South Africa (2020)

As the sphere closest to the people, the dilemma facing the sector is shared by communities. A bold recovery plan was required even before the outbreak of the COVID-19 pandemic. As the pandemic is believed to have worsened an already bad situation, an even bolder recovery plan is required for local government.

4.3 An overview of the COVID-19 pandemic regulations and the municipal relief package

The onset of the COVID-19 pandemic was followed by various disaster management regulations, albeit with diverse implications for the local government sector. The regulations affected local government service delivery and governance systems, and further amplified many financial and fiscal challenges facing the sector.

The disaster management regulations (issued under the Disaster Management Act in March 2020) were introduced to flatten the COVID-19 infection curve (Department of Cooperative Governance and Traditional Affairs, 2020). The regulations required municipalities to revise their budgets by prioritising programmes and projects aimed at containing the spread of COVID-19. Some municipalities were expected to provide additional services, while in other instances, they were forced to rapidly expand their services. The lockdown regulations also announced additional mandates for municipalities, albeit with additional implications on municipal budgets. For example, the accounting officers of municipalities were directed to identify and make sites available to be used as isolation and quarantine facilities within their local areas. Municipalities were further directed to ensure that communities were to be provided with the means to prevent transmission. Municipalities are required to provide soap, sanitisers, face masks, latex gloves and other material or equipment necessary for the prevention of person-to-person transmission in areas where municipal staff and councillors have direct contact with the public. In collaboration with relevant health authorities, municipalities are also required to establish capacitated and well-equipped response teams that can be rapidly deployed to cleanse and sanitise places and facilities. The regulations also directed municipalities to prepare and roll out COVID-19 awareness campaigns, using available media platforms (print, radio and social media) to the public within their jurisdictions.

Municipalities were also required to rapidly expand water provision during the COVID-19 pandemic. The regulations directed municipalities to deliver potable water and proper sanitation to suburbs, rural communities and informal settlements with a high population density. Table 4.1 provides a summary of the COVID-19 regulations for municipalities.

Table 4.1: Summary of COVID-19 regulations for municipalities

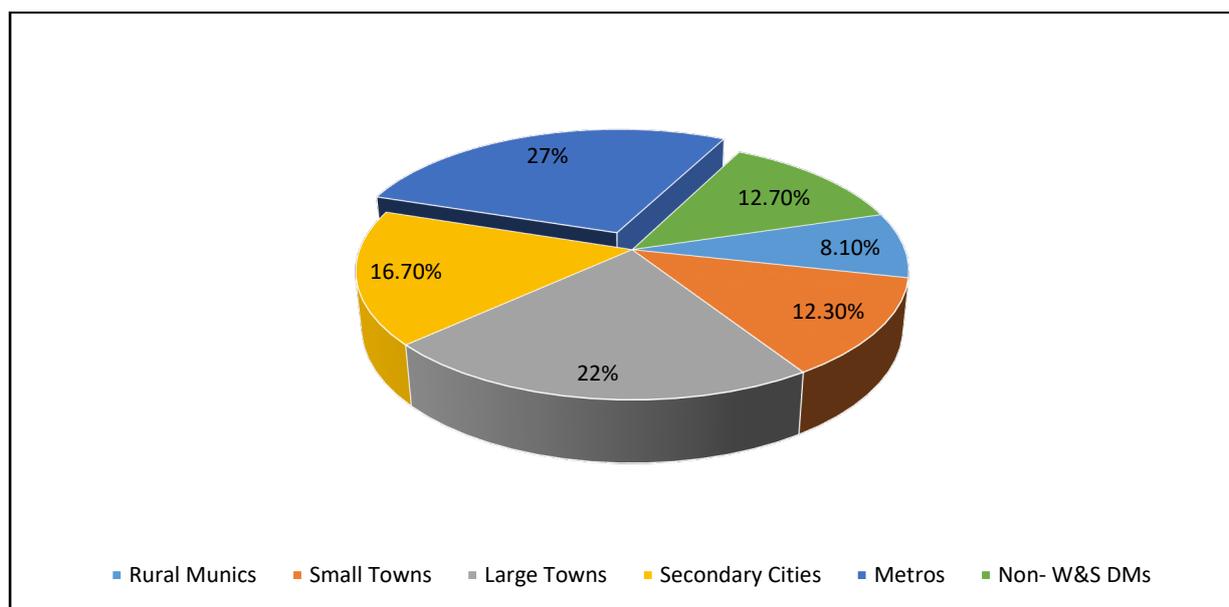
Provision of water and sanitation services	Ensure that communities are provided with the necessary means to prevent transmission, while preventing disruptions in services that are rendered through both municipal programmes and customer interaction.
	Provide potable water and sanitation services to settlements, rural communities and informal settlements with a high population density.
	Provide other appropriate means, like water tankers, boreholes and storage tanks, in water-constrained communities that have limited access to municipal water supply.
	Ensure that, in collaboration with the relevant stakeholders, water and sanitation is available at public facilities and public transport points.
Communication, awareness and hygiene education	Prepare and roll out awareness campaigns on COVID-19 using available media platforms (print, radio and social media) to the public within their areas of jurisdiction.
	Ensure that communication material includes details on prevention methods, identification, infection control, local reporting channels and emergency contacts to raise public awareness and encourage appropriate preventative behaviour and practices.
	In partnership with the health authorities, provide soap, sanitisers, facial masks, latex gloves and other material or equipment necessary for the prevention of person-to-person transmission in areas where municipal staff and councillors have direct contact at public service centres and facilities.
Waste management, cleansing and sanitisation	Identify hotspot areas and mitigation measures within their areas of jurisdiction.
	In collaboration with relevant health authorities, establish capacitated and well-equipped response teams (e.g. with pressure cleansers and spray equipment, and anti-biochemical protective clothing) who could be deployed to cleanse and sanitise places and facilities that could be at high risk for the transmission of the virus.
Isolation and quarantine	Work with the provincial departments to identify suitable quarantine and isolation sites within their jurisdiction.
	Implement provisions for quarantine, self-quarantine and isolation, as guided by the protocols and guidelines of the Department of Health.

Source: Department of Cooperative Governance and Traditional Affairs (2020)

Besides service delivery and exerting tremendous pressure on municipal budgets, the regulations further disrupted municipalities' governance systems. For example, municipal consultation processes were disrupted, as were council meetings and public consultation processes. Key decisions were delayed, with ripple effects on service delivery and the day-to-day operation of municipalities. As the pandemic evolved, the transition to virtual meetings partially eased these disruptions. For example, Council and Council Committee meetings were convened virtually. However, this could not easily be extended to public consultation processes related to, among others, the Integrated Development Plan (IDP) and budgets. Poorer (and mainly rural) communities that would ordinarily participate in these processes were, to a large extent, excluded from these virtual consultation processes.

As part of the COVID-19 relief measures, in July 2020, government allocated municipalities an additional R11 billion through the Local Government Equitable Share (LGES). The distribution of this allocation is shown in Figure 4.3. As the rationale for this allocation was to compensate municipalities for the loss of revenue due to COVID-19, the eight metros and large towns justifiably received the largest chunk of the COVID-19 relief (share of 27% and 22%, respectively).

Figure 4.3: Distribution across municipal groups



Source: Commission's compilation

4.4 Research questions/objectives

4.4.1 Research questions

The COVID-19 pandemic exposed many gaps and inadequacies in the Local Government Fiscal Framework (LGFF). As noted above, many municipalities were unable to fulfil their constitutional mandates. The impact of the pandemic on the economy was further exacerbated by disaster management regulations that constricted economic activity in many sectors. During the second quarter of 2020, gross domestic product (GDP) contracted (i.e. quarter-on-quarter) by 16.5%. Many jobs were lost and several households condemned to poverty. The negative impact of the crisis on municipal economies is certain, but the relative size, scale and extent of this impact remains unknown.

Considering that local government is a non-homogeneous sector, an understanding of the differential impact of the pandemic is critical when designing recovery programmes and strategies and in explaining why some municipalities are vulnerable to disaster shocks, and some are not.

The purpose of this paper is to undertake a comprehensive and systematic analysis of the impact of the pandemic on the local government sector and provide recommendations on how the sector can possibly recover from the crisis. This paper is guided by the following research questions.

- What is the impact of the COVID-19 pandemic on local economic growth and LGFF in particular?
- How can the LGFF be sufficiently repositioned to turn around the local government sector during and beyond the pandemic?

4.4.2 Research objectives

The main objectives of the study are as follows:

- Assess the impact of the COVID-19 pandemic on local government economic growth and municipal finances.
- Recommend measures that would contribute to the recovery of the local government sector.

4.5 Literature review

There is already a growing body of international literature investigating the impact of the COVID-19 crisis on subnational finances. There is also a significant body of literature on the impact of previous pandemics or disaster events on the LGFF, such that critical lessons can be drawn from them. Table 4.2 summarises this literature.

Table 4.2: The impact of the COVID-19 pandemic on the LGFF

Author	Title	Objectives	Methodology	Findings and implications
Chernick, Copeland and Reschovsky (2020)	The fiscal effects of the COVID-19 pandemic on US cities: An initial assessment	This paper estimates the potential impact of the COVID-19 pandemic on American city finances.	The paper simulates changes in city revenue for the 2021 fiscal year and compares these to projected revenues for 2021 assuming there was COVID-19	The main findings of this study were as follows: <ul style="list-style-type: none"> • The fiscal effects of the crisis on cities depended on their economic base and the responsiveness of the various revenue sources to the economic damage. • In 2021, revenues in 150 cities will decline by between 5.5% and 9%, respectively. • Significant declines in government employment and public service provision will be experienced. • Paradoxically, cities that are less reliant on state aid, and have less diversified revenue structures, will be the most insulated from the effects of the crisis.

Author	Title	Objectives	Methodology	Findings and implications
Maseland (2020)	COVID-19 in African Cities: Impacts, responses and policies	This paper reviews the key impacts of COVID-19 on African cities	Simulations based on data from the Africa Local Finance Observatory	<ul style="list-style-type: none"> On average African local governments are projected to experience a drop in local finances by between 30 and 65%. The sources of revenues that will be hit hard include licenses and fees, local service taxes, user fees and property taxes.
Miao, Chen, Lu and Abrigo (2019)	Natural disasters and financial implications for subnational governments: Evidence from China	This study empirically examines the fiscal impact of natural disasters at subnational government level in China	A panel vector autoregression model is used	<ul style="list-style-type: none"> Natural disasters increase subnational government's total governmental spending while having little effect on its tax revenues
Organisation for Economic Cooperation and Development (OECD) (2020)	The territorial impact of COVID-19: Managing the crisis across levels of government	This paper takes an in-depth look at the health, social, economic, and fiscal impact related to the COVID-19 crisis.	Literature review and budget analysis	<ul style="list-style-type: none"> Fiscal impact: The crisis is resulting in increased expenditure and reduced revenue for subnational governments, and while its impact on subnational finance is not uniform, it is expected to be long-lasting. Italy: Loss of municipal revenues due to COVID-19 of between 9%, in a low-risk scenario and 21% in a high-risk scenario, compared to 2019. France: Municipalities would feel the financial shock mainly in 2020 due to decreased tax revenues and user charges (e.g. from car parks) and increased social assistance spending. Austria: Municipalities are forecast to lose 5% to 11% of their revenue compared to 2019
McDonald and Larson (2020)	Implications of COVID-19 on sales tax revenue and local government fiscal health	Explore the impact of COVID-19 on the fiscal health of local governments	Case study of 92 counties in North Carolina, USA.	<ul style="list-style-type: none"> Some 22.4% of counties would be fiscally stressed or very stressed by COVID-19, and another 49.3% would be financially vulnerable

Source: Commission's compilation

The literature summarised in Table 4.2 observes that the pandemic severely erodes local government’s fiscal metrics. At a general level, the pandemic will increase expenditure and municipal debt, while undercutting revenues. However, the magnitude and gravity of the impact varies, depending on the pre-COVID-19 fiscal health of a municipality, the sources of revenue (own revenues vs transfers) and the extent of revenue diversity.

Another focus of the literature is how local government can recover from the COVID-19 crisis. Internationally, there is a steady growth in the literature, identifying strategies that could be adopted by municipalities as part of the recovery process. The recovery strategies suggested by the literature are summarised in Table 4.3.

Table 4.3: Strategies for recovery

Author	Strategies for recovery
Goldsmith and Stitt (2020)	<ul style="list-style-type: none"> • Create a dedicated office for cost savings and innovation. • Transition to a culture relentlessly focused on numbers and data • Use lateral benchmarking to drive innovation and performance • Rapidly adopt other’s innovations; stop reinventing the wheel • Leverage competencies of private partners • Eliminate red tape • Trim all non-essentials
Afonso (2020)	<ul style="list-style-type: none"> • Close facilities • Make staffing adjustments • Increase fees
OECD (2020)	<ul style="list-style-type: none"> • Invest in digitalisation: use digital technologies to help ensure continued service delivery • Review subnational financial management and strengthen expenditure and revenue effectiveness • Support cooperation across municipalities and regions to help minimise competition for resources during a crisis
McDonald and Larson (2020)	<ul style="list-style-type: none"> • Diversify revenue streams and avoid relying on elastic revenues • Invest in innovative solutions

Source: Commission’s compilation

The suggested strategies summarised in Table 4.3 are meant to strengthen the efficiency and resilience of municipalities, among others. Included in the recovery process are revenue enhancement strategies.

4.6 Methodology

The focus of this paper is on how the COVID-19 pandemic has affected municipal economies and the LGFF. The LGFF is complex and multi-dimensional. As shown in Figure 4.4, the LGFF has an external environment, which deals with contextual issues, and an internal structure, which deals with the LGFF’s processes and instruments. At a theoretical level, the COVID-19 pandemic or any shock will affect all the dimensions of the LGFF, from contextual issues (the macro economy), governance and regulations, own revenues, transfers, expenditures and, ultimately, service delivery.

4.6.3 Survey research

To supplement the above research methods, additional information on the impact of the pandemic was sourced from local government practitioners. Using virtual platforms, practitioners were interviewed using a set questionnaire. The questionnaire comprised open and close-ended questions. The questionnaire is included in Annexure A. Thirty municipalities (12%) were interviewed. Tables 4.4 and 4.5 present the response rate by municipal category and by province, respectively. The response rate compares favourably with similar studies (Tustin, Ligthelm, Martins and Van Wyk, 2005:360; Imuezerua and Chinomona, 2015; *Agence Française Anticorruption*, 2018).

Table 4.4: Survey response rate by municipal category

	Total	Actual response	Response rate
Metropolitan municipalities	8	2	25%
Secondary cities (B1)	19	5	26%
District municipalities	44	7	16%
Local municipalities (B2, B3, B4)	186	16	9%
Total	257	30	12%

Source: Commission's compilation

Table 4.5: Response rate by province

	Total	Provincial share
Eastern Cape	8	27%
North West	12	40%
Western Cape	4	13%
Gauteng	1	3%
Limpopo	4	13%
KwaZulu-Natal	1	3%
Northern Cape	0	0%
Mpumalanga	0	0%
Free State	0	0%
Total	30	100%

Source: Commission's compilation

4.7 Analysis and findings

Local governments have always played a significant part in the South African economy. Municipalities play a critical role in the delivery of basic services. They account for 13% of public sector employment. The eight metros combined generate more than 50% of South Africa's GDP. The local government sector has also been at the forefront of the response to the COVID-19 pandemic. This section examines the impact of COVID-19 on the economies of municipalities, as well as on their financial and fiscal metrics. As noted above, three research approaches are advanced: an econometric analysis, a budget analysis, and survey methods.

Econometric techniques were used to simulate the impact of the pandemic on municipalities' economies and key fiscal variables (aggregate municipal expenditure, own revenues and debt). The budget analysis involves describing and detecting unique trends in financial and fiscal variables before and during the COVID-19 pandemic.

4.7.1 Impact of COVID-19 on local economies: An econometric analysis

As every aspect of the pandemic is surrounded by uncertainties, modelling its impact is a difficult task, considering that the pandemic is evolving, and that the sector is very diverse. On the health side, uncertainties include the infectiousness of the virus, effectiveness of the lockdown and social distancing. On the economic side, uncertainties include the financial and fiscal impact of the pandemic and policy responses, the impact of the pandemic-induced changes in consumer spending, and changes in working arrangements or travelling patterns (Baqae, Farhi, Mina & Stock., 2020). Modelling the economic impact of the virus is also fraught with difficulties as sometimes measures that seek to flatten the infection curve will inevitably steepen the macroeconomic recession curve in the short term. With these challenges in mind, this section reports on the results of a panel data model that sought to shed light on the impact of the pandemic on municipal economic growth. Furthermore, this section reports on the results of forecasts of the impact of the pandemic on key municipal fiscal variables (expenditure and revenue).

Municipal economic growth (proxied by municipal gross value addition (GVA)) was regressed against unemployment, expenditure, own revenue and a COVID-19 dummy. The model assumes that the impact of the pandemic will last until 2022/23. Results and diagnostic tests for this model are reported in Table 4.6. The results suggest that, although the pandemic will likely have a negative effect on economic growth, the impact is not statistically significant, most probably because the COVID-19 effect simulation is short, i.e. 2020/21 to 2022/23.

As expected, an increase in unemployment significantly undermines the growth of municipal economies, while expenditure and own revenue significantly boost local government's economic growth. Overall, the results suggest that municipal economies can be reignited by ensuring that municipalities have sufficient funding, and increasing efforts to ensure that mobilising own revenue and spending on basic services is not only curtailed, but is effective.

Table 4.6: The impact of COVID-19 on municipal economies

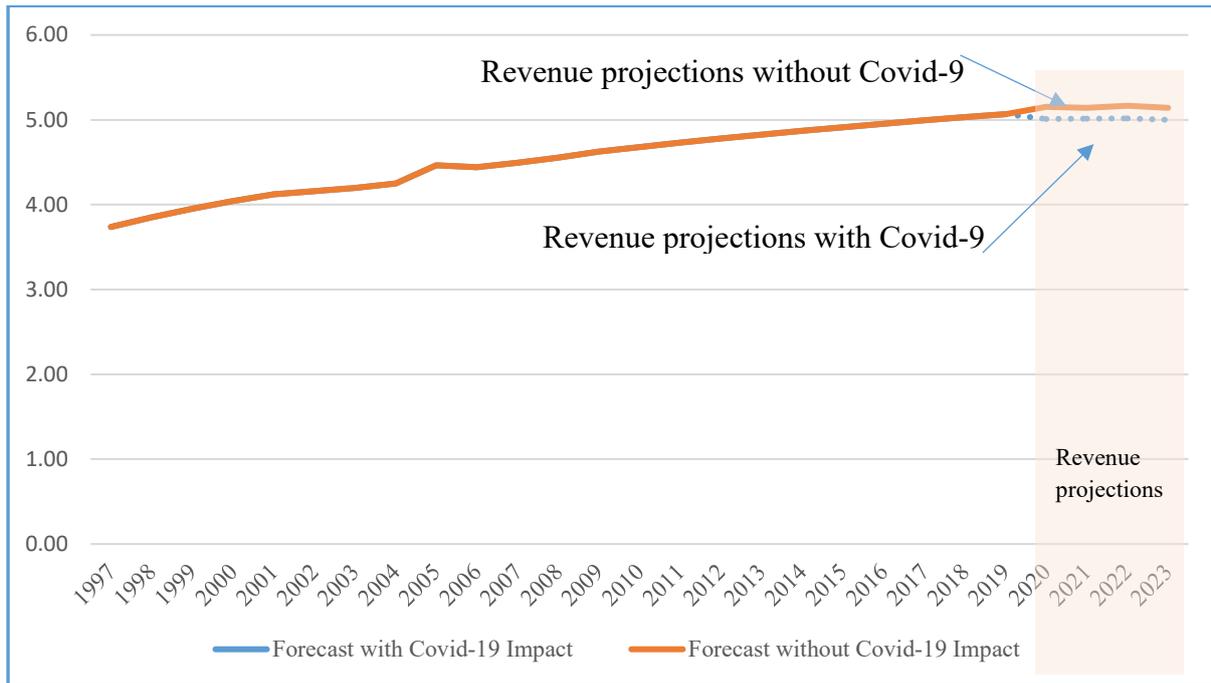
Dependent variable: Local economic growth (LGVA)				
Method: Least squares				
Variable	Coefficient	Standard error	t-statistic	Probability
LPOP	0.071905	0.151829	0.473595	0.6405
LUN	-0.501366	0.253509	-1.977701	0.0606
LEXP	0.223471	0.048374	4.619681	0.0001
LOR	1.046341	0.052530	19.91875	0.0000
COVID_19	-0.052914	0.032091	-1.648873	0.9732
R-squared	0.994097	Mean dependent variable		10.66600
Adjusted R-squared	0.993024	Standard deviation dependent variable		0.569855
Standard error of regression	0.047595	Akaike info criterion		-3.086608
Sum squared residuals	0.049836	Schwarz criterion		-2.846638
Log-likelihood	46.66921	Hannan-Quinn criterion		-3.015253
Durbin-Watson statistic	1.912242			

Note: LGVA: Log of Gross value addition; LPOP: Log of Population Growth; LHDI: Log of Human Development Index; LUN: Log of the Unemployment Rate, LOR: Log of Own Revenue; LEXP: Log of Municipal Expenditure

Source: Commission's estimates

Municipal own revenue and municipal expenditure projections were undertaken, assuming two scenarios: one with COVID-19 and one without the pandemic. The projections were based on revenue and expenditure models reported in Annexure B. Revenue projections suggest that the pandemic is likely to shift revenues downwards from their historical path (Figure 4.5). This trend can only be cut short if municipalities increase their efforts to mobilise their revenues.

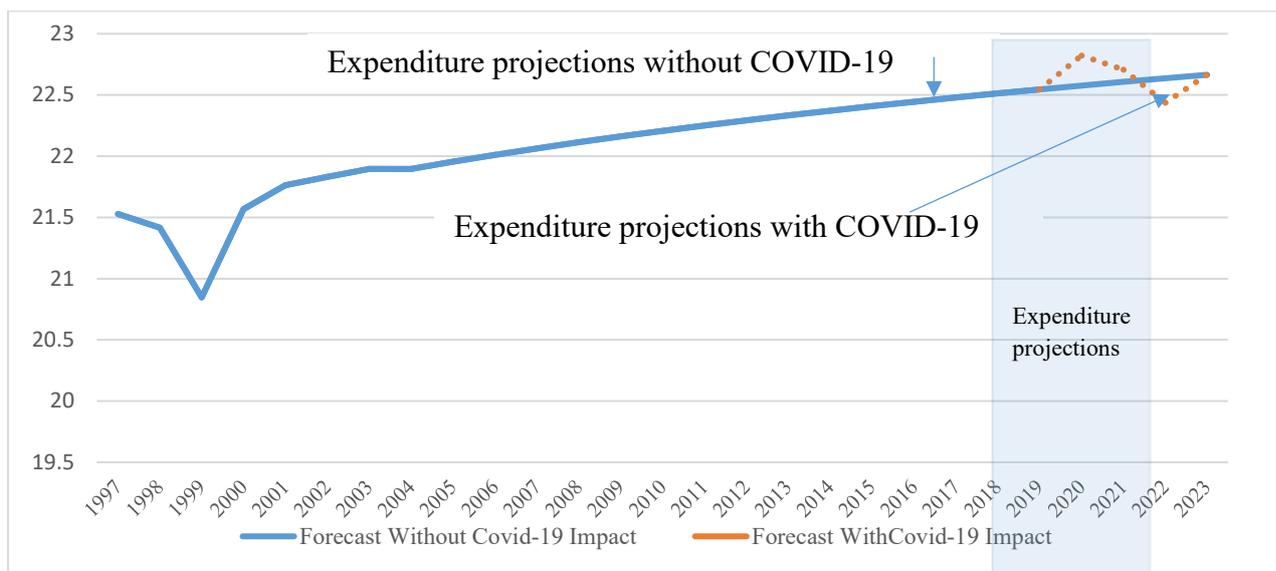
Figure 4.5: Own revenue projections



Source: Commission’s estimates

Municipal expenditure projections show unexpected trends (Figure 4.6). In 2020 and 2021, the pandemic shock shifts municipal expenditures upwards. The upward shift is somewhat short-lived as, in 2022, it is projected that municipalities curtail their expenditures. In 2023, the projections show the expenditure trend returning to its historic path.

Figure 4.6: Municipal expenditure and COVID-19



Source: Commission’s estimates

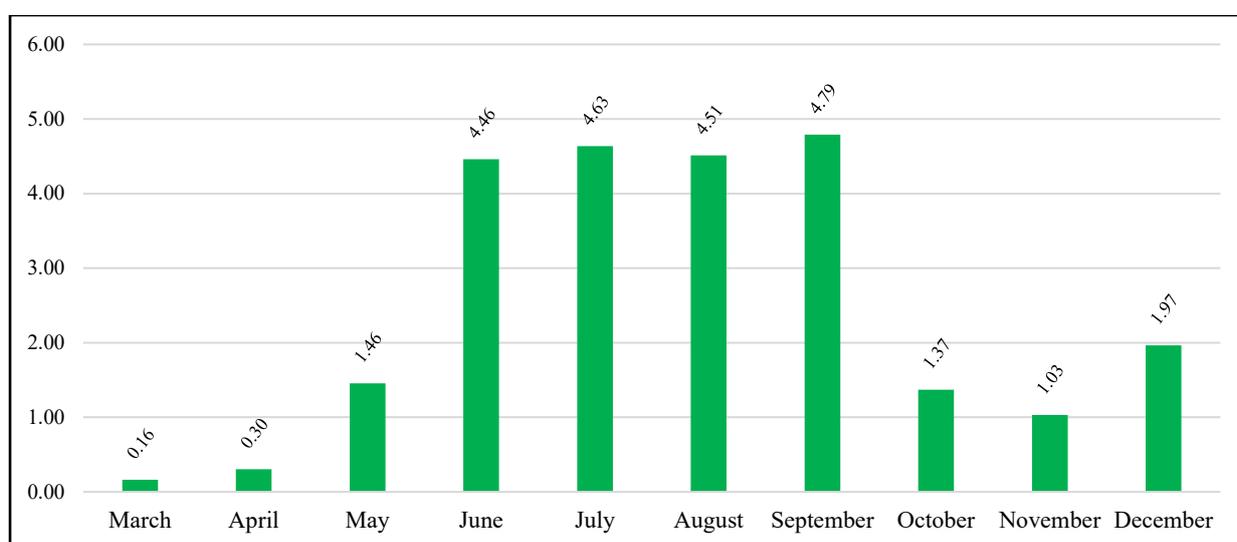
To summarise, the econometric results suggest that the pandemic is likely to have a negative effect on municipal economies, although the effect is statistically weak. It is important that municipalities develop and implement strategies of stimulating their economies. These strategies should come with limited costs or with no price tag at all, considering the financial constraints that municipalities are facing. For example, municipalities should endeavour to evaluate their regulations and eliminate regulations that hinder economic activity. The pandemic is also likely to undermine municipalities’ own revenues.

4.7.2 Impact of COVID-19 on municipal finances

4.7.2.1 COVID-19-related expenditure

As of December 2020, the local government sector had spent close to R25 billion on COVID-19-related expenses. These expenses reached their peak in September 2020 before easing down to R2 billion in December (Figure 4.7). The main drivers of such expenditures were medical supplies, personal protective equipment (PPE), equipment for employees to work from home (the procurement of hardware, software and licences), establishing homes for the homeless, setting up of quarantine and isolation sites, the provision of regular sanitation and the cleaning of public places. Municipalities were also required to rapidly expand water delivery in high-population areas, rural areas and informal settlements.

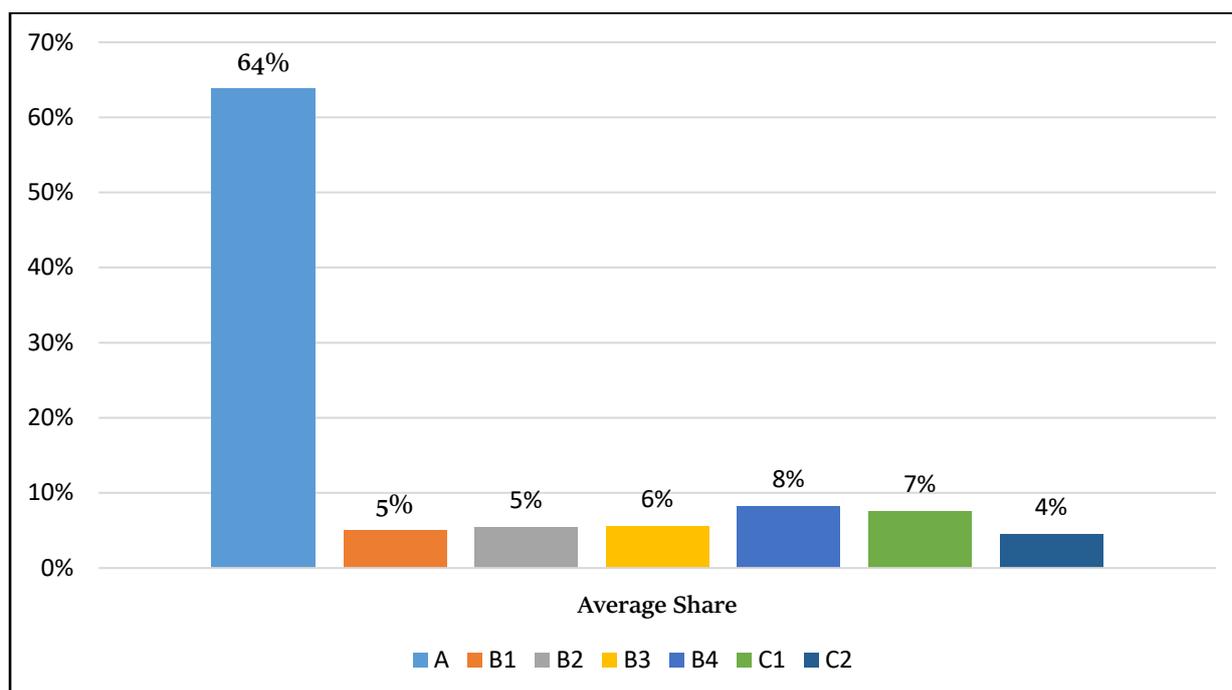
Figure 4.7: Total COVID-19 spending (billions)



Source: Commission’s calculations based on National Treasury’s local government database

As expected, the eight metros accounted for the largest portion of COVID-19-related expenditure. The metros accounted for 64% of COVID-19 spending between March and December 2020 (Figure 4.8). This is not surprising considering that the metros account for 40% of South Africa’s population.

Figure 4.8: Proportion of COVID-19 spending



Source: Commission’s calculations based on National Treasury’s local government database

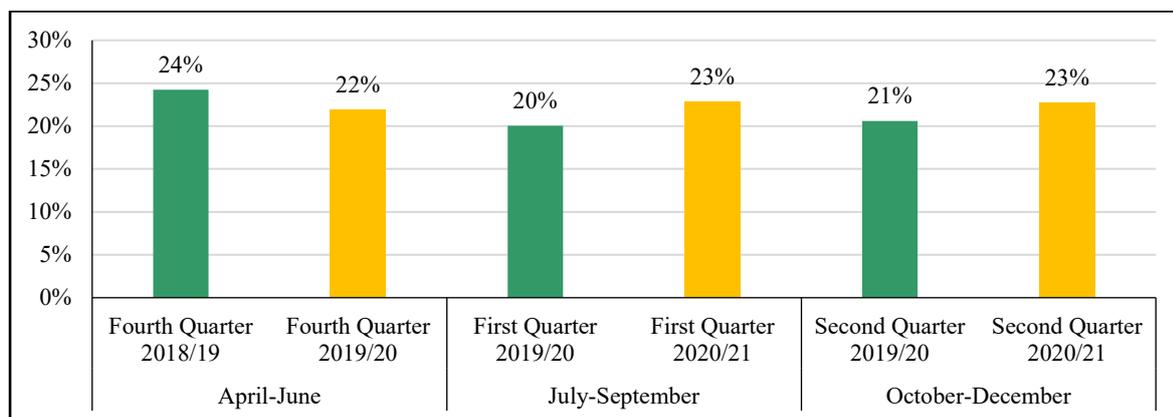
4.7.2.2 Operational expenditure

Figures 4.9 and 4.10, respectively, compare operational and capital spending before and during the COVID-19 period. These two diagrams compare the ratios of operational/capital spending to the operational/capital budget. In essence, the two diagrams provide a picture of what was spent relative to what was budgeted for. The two diagrams furthermore compare spending during the COVID-19 crisis and spending before COVID-19. For example, the pandemic hit the country during the fourth quarter of the 2019/20 municipal financial year. This quarter is compared to the fourth quarter of the previous financial year. In other words, the fourth quarter of 2018/19 was the period without COVID-19, while the fourth quarter of 2019/20 was the period during COVID-19. The assumption is that municipalities will ordinarily spend similar proportions in similar quarters in the absence of the COVID-19 shock.

Figure 4.9 presents a comparative analysis of municipal operating expenditure in different quarters before and during the COVID-19 crisis. Looking at the fourth quarter of 2019/20, which is the period in which COVID-19 commenced, the share of spending was significantly less than the share spent in the fourth quarter of 2018/19. This lower share of operational expenditure in the period during COVID-19 implies that municipalities could not spend as much as they would in a situation without the pandemic. In other words, the pandemic forced the sector to delay or defer their operational budgets. During the first quarter of 2020/21, municipalities spent 23% of their allocated budget, which was greater than the share spent during the first quarter of 2019/20.

During the second quarter of 2020/21 the spending was also more compared to the spending in 2019/20. The overall national picture shown in Figure 4.9 suggests that the shock to operational expenditures was short lived (it only lasted one quarter). This is not surprising, considering that operating expenditure is dominated by salaries, which are much less flexible, even in the face of a debilitating shock.

Figure 4.9: Operating expenditure

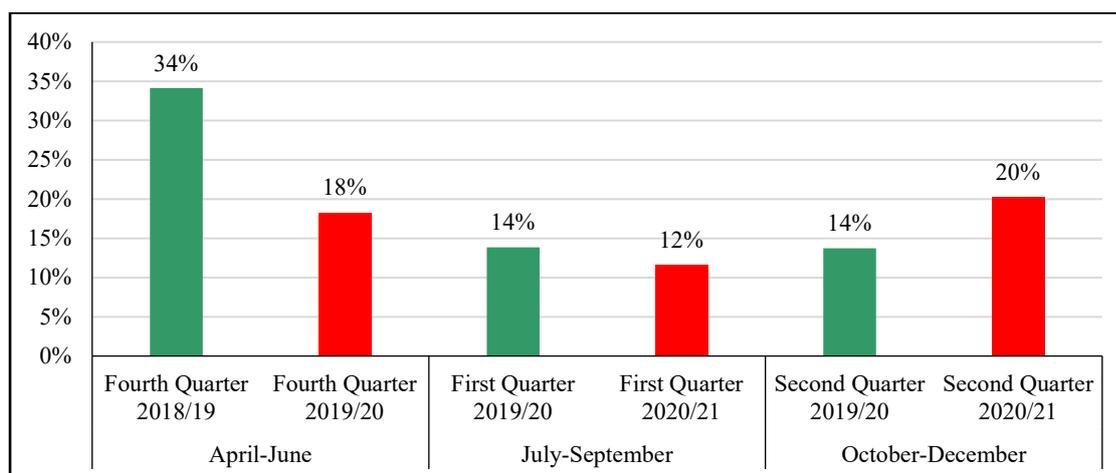


Source: Commission’s calculations based on National Treasury’s local government database

4.7.2.3 Capital spending

In terms of capital spending, Figure 4.10 indicates that the share of allocated capital budget was less in the fourth quarter of 2019/20, relative to the fourth quarter of 2018/19. In the first quarter of 2020/21, it was also less, compared to the first quarter of the previous year, while it was higher in the second quarter. This suggests that capital expenditure took longer than operational expenditure to rebound. In other words, capital expenditure is relatively more flexible, and was at a higher risk of being deferred compared to operational expenditure. Thus, municipalities freed up cash by deferring capital expenditure to mitigate the negative effects of COVID-19. In the long run, this situation will contribute to the widening of the infrastructure financing gap in the local sphere, with negative consequences on service delivery.

Figure 4.10: Capital spending: all municipalities



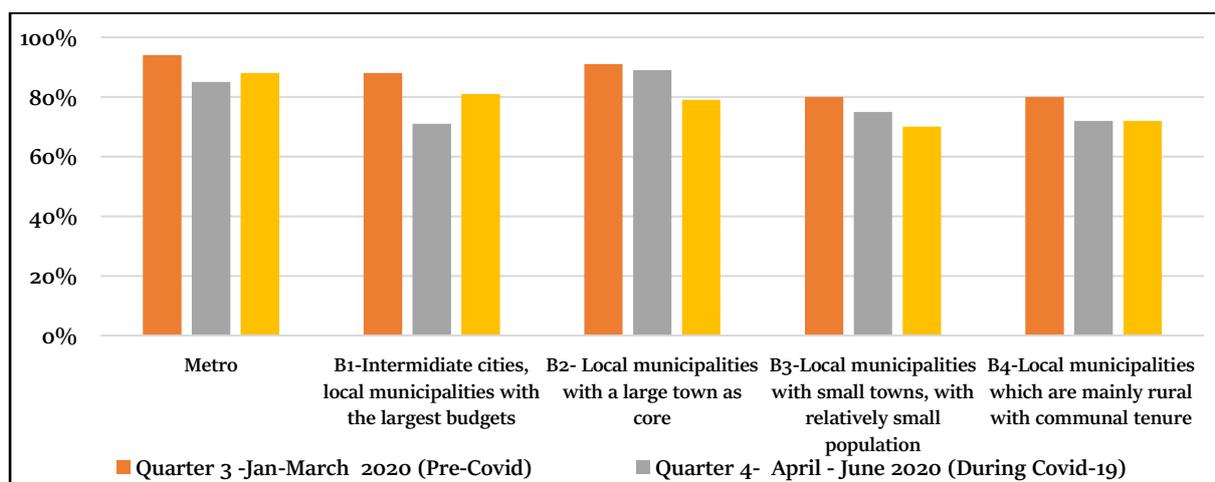
Source: Commission’s calculations based on National Treasury’s local government database

4.7.2.4 Own revenue

The impact of the COVID-19 pandemic has been more evident on the revenue side of the LGFF. The lockdown regulations did not only disrupt economic activity, but also resulted in many payment defaults that affected all revenue streams, albeit to different degrees. The COVID-19-related fiscal (revenue) pressures can partly be illustrated by analysing revenue collection rates (see Figure 4.11).

Figure 4.11 shows that virtually all municipal categories faced revenue collection challenges. It should be noted that, even before the pandemic, this challenge was common, and the pandemic simply amplified the problem. Before the onset of the pandemic, many municipalities had collection rates far below the norm of 95%. Metros and intermediate cities were the hardest hit. Intermediate cities, which were collecting 88% of their revenue before COVID-19 (i.e. below the 95% norm) only collected 71% during the first three months of the pandemic. What is interesting from Figure 4.10 is that metros and intermediate cities had rebounded during the July–September COVID-19 period, while the B2, B3 and B4 municipalities continued on a downward spiral. The quick rebound of the metros and intermediate cities suggests some financial resilience among these two categories, due to a diversified revenue base and better collection rates before the pandemic.

Figure 4.11: Own revenue average collection rates



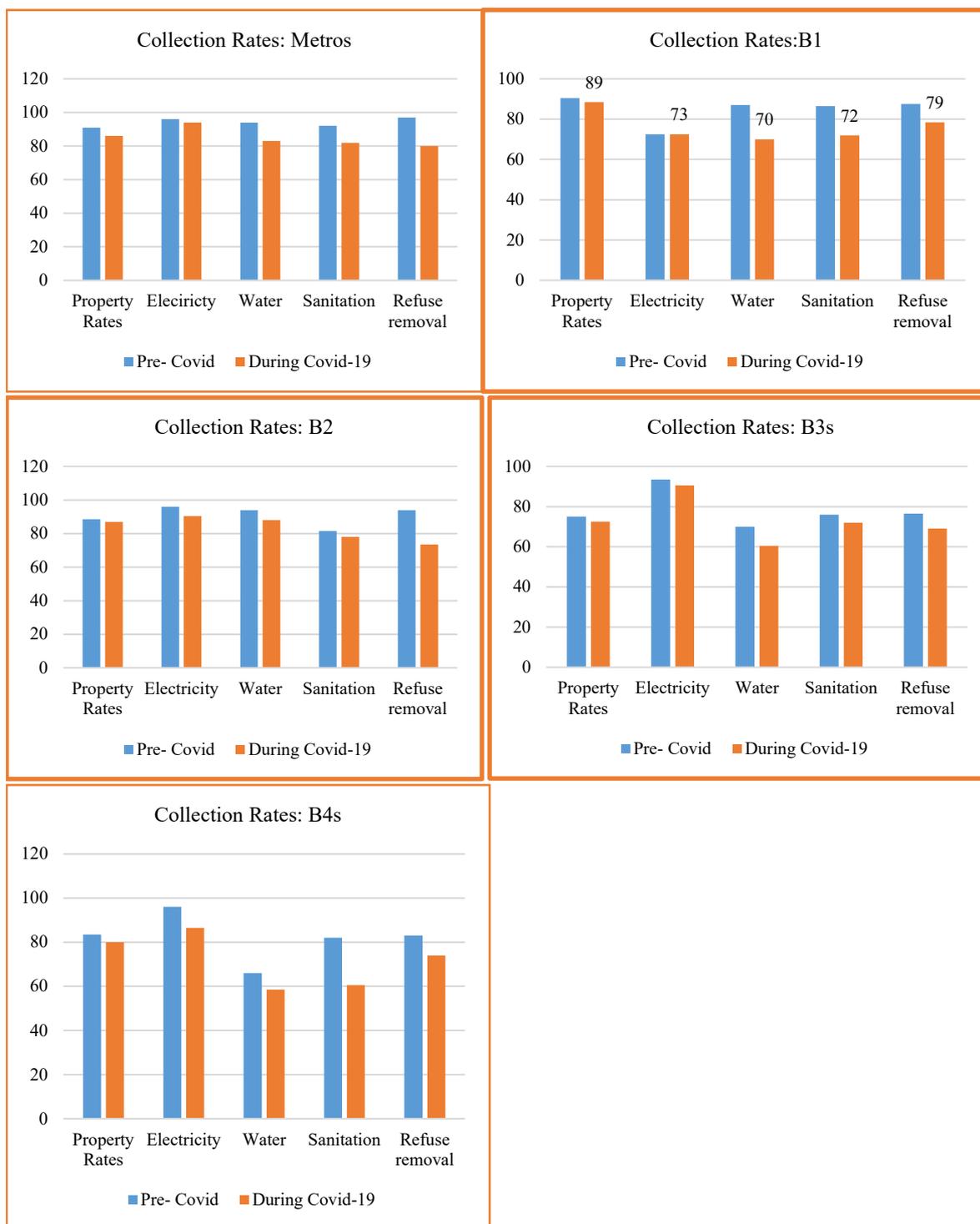
Source: Commission’s calculations based on National Treasury’s local government database

The collection rates were also analysed by municipal category and revenue source (Figure 4.12):

- The metros’ average collection rates fell from 94% before the pandemic to 85% during the pandemic.
- The B1 municipalities’ average collection rates fell from 85% before the pandemic to 76% during the pandemic.
- The B2 municipalities’ average collection rates fell from 91% before the pandemic to 83% during the pandemic.
- The B3 municipalities’ average collection rates fell from 78% before the pandemic to 73% during the pandemic.
- The B4 municipalities’ average collection rates fell from 82% before the pandemic to 72% during the pandemic.

Surprisingly, property rates were the least affected revenue source for all municipal categories. Considering that property prices have remained subdued during the COVID-19 period, one would have expected lower collection rates than depicted in Figure 4.12. However, interviewees at local government practitioners attested to the limited impact of the pandemic on property rates. For example, one municipal officer noted that individuals were more likely to settle property-related accounts than service charges, because of the inherent fear of losing a property. However, it is important to note that, as a major revenue source, property rates continue to be at risk, especially under a cloud of a possible third wave of infections.

Figure 4.12: Collection rates



Source: Commission’s calculations based on National Treasury’s local government database

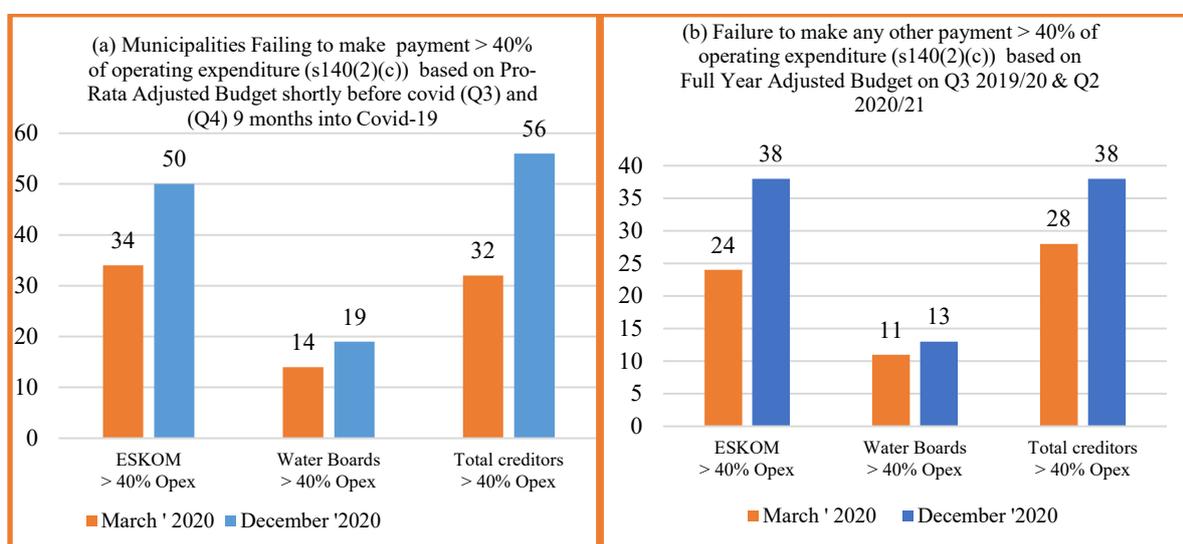
Electricity revenue was also moderately affected, largely because of the inelastic demand for electricity. Revenue from service charges were the hardest hit, largely due to social distancing regulations and many municipalities’ relaxation of credit control policies.

4.7.3 Municipal and consumer debt

Another variable that can be vulnerable to the pandemic is debt: both consumer and municipal debt. More often a shock, such as a pandemic, cuts the flow of finances from consumers, causing municipalities to default on their payments to their creditors. In other words, consumer debt can lead to municipal indebtedness. Virtually all municipalities interviewed noted an increase in consumer debt, which created a huge shortfall in municipal accounts, resulting in municipalities failing to service their debt to Eskom and the water boards.

Figure 4.13 confirms the above observations from the interviewees. It shows that, no matter how municipal debt is viewed, it increased. For example, Figure 4.13(a) indicates that the number of municipalities owing Eskom more than 40% of their operating expenditure increased from 34 during the pre-COVID-19 period to 50 during the COVID-19 period. Similarly, the number of municipalities owing the water boards more than 40% of their operating expenditure increased from 14 during the period before COVID-19 to 19 during the COVID-19 period. Figure 4.13(b) shows the same trend. As noted above, the main driver for the increase in the number of municipalities defaulting on their Eskom and water boards’ debt was an increase in consumer debt.

Figure 4.13: Municipal indebtedness



Source: Commission’s calculations based on National Treasury’s local government database

4.7.4 Looking ahead and beyond COVID-19

Many municipalities are already looking beyond the COVID-19 crisis. Although there are uncertainties due to possible new waves of infections, the vaccine rollout has ignited hope to look beyond the pandemic and begin to think about recovery. The interviewees articulated various recovery strategies. The top 10 strategies mentioned by respondents are listed in Table 4.7.

Table 4.7: Top 10 strategies for recovery

Top ten strategies for recovery
1. Eliminate the red tape
2. Trim all non-essentials
3. Leverage on the competencies of private partners
4. Use lateral benchmarking to drive innovation and performance
5. Make staffing adjustments
6. Invest in digitalisation – use digital technologies to help ensure continued service delivery
7. Improve expenditure and revenue effectiveness
8. Invest in innovative solutions
9. Invest in smart technologies
10. Diversify revenue streams

Source: Commission’s compilation from interviews

This section discusses additional strategies that municipalities can adopt to recover from this crisis, including promoting local economic growth and revenue-enhancement strategies. As the pandemic is still evolving, ideally the recovery process should be an ongoing exercise.

4.7.5 Promoting local economic development

The foregoing analysis has shown the devastating effects of the pandemic across the entire spectrum of municipal finances and economies. In many ways, the COVID-19 pandemic has shown the necessity for municipalities to move from the status quo and challenge the traditional way of doing things. The above analysis reveals the need for municipalities to reflect on options for rebuilding and stimulating their economies and creating opportunities for inclusive growth. Considering the current constrained fiscal environment, municipalities should attract investments by prioritising options that come with little or no price tags, such as changing regulations that hinder economic activity. For example, they should reduce timeframes for getting permits or licences and reduce the compliance burden of their regulations. They should streamline small business registration and approval processes and explore the possibilities of “one-stop shop” initiatives. They should also strive for efficient digitalisation methods of interacting with the business and urban communities in general.

4.7.6 Revenue enhancement

The expenditure and revenue analysis above suggests that municipalities experienced a strong “scissors effect”, whereby spending commitments proliferated against the deteriorating performance of all revenue streams. Many municipalities have struggled as a result. Municipal expenditure increased rapidly during the first few months of the COVID-19 crisis and may increase again if new waves materialise. The COVID-19 pandemic, coupled with social distancing regulations and tough economic conditions, has brought into sharp focus the vulnerability of municipal revenues. Although some municipalities have shown signs of reversing this trend, many are still failing to flatten the poor revenue collection tide. There is consensus among local government practitioners that the prudent management of resources should be the basis for recovery. Key strategies to anchor the recovery process should include the following:

- The need for municipalities to undertake a detailed and unbiased analysis of services they provide in order to align their responsibilities, services and programmes with their financial capabilities. The importance of balancing compensation of employee budgets and service delivery cannot be overemphasised. Ideally compensation of employee budgets should be set at levels that do not crowd out service delivery expenditure. Municipal budgets should also be credible and based on realistic revenue collection rates.
- Municipalities should explore options for new revenue sources. In its 2020/21 submission to the Division of Revenue, the Commission recommended a list of revenue streams for inclusion in the basket of allowable revenue sources. This list must be reconsidered but, on a municipality-by-municipality basis.
- This paper argues that municipalities should also explore other revenue-enhancing strategies, such as selling redundant assets and creating new revenue-generating infrastructure. A good example of the latter includes digital infrastructure. Digitalisation is a megatrend that would require infrastructure investment. Municipalities can generate extra revenue by creating their own digitalisation infrastructure (e.g. 5G) corporations or at least by being partners in the deployment of the underlying infrastructure.
- As the pandemic has heightened the lack of financial resilience for many municipalities, it is important that local authorities improve on this as part of the recovery process. Financial/fiscal resilience is a function of current and past levels of financial and non-financial performance and a higher dependence on individual sources of revenue. To improve on financial resilience the following strategies should be considered.
 - **Embracing e-government:** E-government improves financial resilience through multiple avenues, including digitalising municipal administration and payment systems.²¹

²¹ Countries that have successfully embedded e-government include the Republic of Korea, Singapore, Japan, Denmark, Estonia, Finland, Sweden, United Kingdom, Northern Ireland, The Netherlands, Iceland and Norway (United Nations, 2020).

Digitalisation will improve data management and sharing across municipal departments (Klapper & Singer, 2017). Digitalisation will also contribute towards the broader efficiency goals of the local government and position the sector in the Fourth Industrial Revolution. With physical human interactions being greatly constricted, and online engagements emerging as the key mechanism for conducting business, municipalities should embrace automation and online platform models. Municipalities should therefore position themselves for this revolution and revamp their legacy information technology systems. They should also invest in new skills to take advantage of this digitalisation challenge. The Commission notes that it is vital for government policy to change and to build capacity within municipalities so that they are able to embrace the transition towards digitalisation. Government intervention will ensure that no one is left behind as such technological changes without government involvement can more often than not exacerbate existing inequalities between the rich and the poor. The grant system, especially the Municipal Systems Improvement Grant, should be adapted to fulfil this new challenge. In terms of digitalisation infrastructure, the Municipal Infrastructure Grant should also be reviewed to fund digitalisation infrastructure.

- **Diversifying the revenue mix:** There is ample evidence from empirical literature suggesting that more diversified structures of revenue sources exhibit stronger resilience to revenue volatility arising from shocks (Compaoré, Ouédraogo, Sow, Tapsoba, Allard, Delechat & Joshi, 2020:11). Empirical evidence from municipalities in the Western Cape also suggests this (Ajam, 2021). Ajam (2021) observed that municipalities in the Western Cape had their revenue collection rates rebounding quickly after the COVID-19-induced setback, largely because most of these municipalities had diversified revenue bases compared to their counterparts in other provinces. The implication of this observation is that a diversified revenue base improves financial resilience.
- **Regular communication with residents:** Trust with residents has to be built up through regular communication. Such communication should entail explaining the importance of revenue in a municipality and the importance of ratepayers paying their dues. Building up this relationship with ratepayers leads to more people willing to pay their bills.

4.7.7 Adopting positive COVID-19 experiences

Although the COVID-19 situation continues to evolve, there are already a few positive legacies that municipalities can take advantage of going forward. The mass remote working experiment, for example, has proved to be possible, efficient and effective. Municipalities may want to permanently retain this as the new normal in the name of savings. Local government practitioners interviewed for this project indicated that their respective municipalities have made significant savings as a result of remote working and the use of collaborative technologies.

4.8 Concluding remarks and recommendations

The foregoing analysis examined the impact of the COVID-19 pandemic on municipal economies. It should be underscored that the pandemic only amplified existing challenges in the local government sector. The present study has also shown that the experience of the South African municipalities with the pandemic is not unique to this country, but other local jurisdictions elsewhere in the world have faced similar challenges.

Using budget and econometric analysis tools, as well as information gathered from 12% of the 257 municipalities, the present study demonstrated the devastating effects of COVID-19 on local government finances. The impact on local economic growth has been negative, but weak. User charges (water, sanitation and refuse removal) were hit hardest by the pandemic, largely because of the COVID-19 regulations and commercial/personal bankruptcies. The relaxation of credit controls and discount incentives offered by some municipalities also caused underpayment by many consumers. Although property rates were moderately affected, they continue to be at risk due to the unclear direction of the economy, and subdued property values. The local government practitioners interviewed also pointed to a rise in defaults in property rates due to personal and business bankruptcies.

The study has proposed several measures to spur recovery in the local government sector. To stimulate local economic growth, municipalities must consider strategies that come with lower costs, such as reducing the compliance burden of their regulations. Another strategy proposed is revenue enhancement by selling redundant assets and creating new revenue-generating infrastructure. As the pandemic heightened the lack of financial resilience for many municipalities, it is important that the recovery process is anchored in building municipal financial resilience by embracing e-government, diversifying revenue mix and having regular communication with residents to gain their trust. Finally, this paper proposes that municipalities take advantage of some of the pandemic's positive legacies that have transformed the way municipalities do their business and deliver services. The remote working experiment and use of new technologies have proven to be efficient and effective, and worth sustaining.

4.8.1 Recommendations

In light of the impact of the COVID-19 pandemic on the local economy, the Commission makes the following recommendations:

- 1. Municipalities should undertake a detailed and unbiased analysis of the services they provide to align their responsibilities, services and programmes to their financial capabilities. National and provincial treasuries, the Department of Cooperative Governance and Traditional Affairs (CoGTA) and the South African Local Government Association (SALGA) should ensure that municipal organograms, staffing levels and compensation of employees' budgets are set at levels that do not crowd out service delivery expenditures, and that municipal budgets are credible and based on realistic revenue collection rates. The national and provincial treasuries, COGTA and SALGA should support and monitor progress in this regard.*

2. *Municipalities should stimulate local economic growth by creating investment-friendly conditions and streamlining regulations that impede investments within their jurisdictions.*
3. *Municipalities should consider additional revenue-enhancing strategies such as the selling of redundant assets and creating new revenue-generating infrastructure.*
4. *National Treasury, through the Municipal Systems Improvement Grant, should support municipalities to embrace e-government (digitalisation) and diversify their revenue mix as part of building the financial resilience of the local government.*

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4.10 Annexures

4.10.1 Annexure A: Questionnaire

FINANCIAL AND FISCAL COMMISSION

Administrative information (completed internally)

Name of municipality	
Province	
Date	

COVID-19 impact questionnaire

INTRODUCTION

Good morning colleagues. Thank you for taking the time to meet with us. We know you are very busy, so we appreciate your time. Perhaps we can start by first introducing the team and then I can provide a background to why we requested to meet with you. My name is xxxx and I am part of the research team at the Financial and Fiscal Commission. I am joined by xxxx (name the rest of the team) [Request the municipality to introduce their team].

WHO ARE WE?

I think we can start by just giving you an overview of the research we are busy with and how it fits into what the FFC is currently working on. As you will know the FFC is a constitutional body, established in terms of section 220 of the Constitution. One of our main tasks is to conduct research and make recommendations to Parliament on a range of intergovernmental fiscal relations matters. Each year, we produce a submission outlining our research and recommendations to Parliament.

PURPOSE AND SCOPE OF SURVEY

The submission for this year, and therefore all the research projects we are doing, is guided by the theme: “The effects of COVID-19 and the changing architecture of subnational government financing in South Africa”. The submission will have a macro component and a local government component. We would like to discuss those projects that relate to local government with you. Our thinking is that if we understand the impact that COVID-19 has had on the local government sector, we can make recommendations that can aid recovery.

To ensure that our research is relevant and raises the issues that are most pressing, our approach has been to ensure as much consultation with stakeholders as possible. We believe that understanding the issues from a practitioner’s perspective is key to enhancing the relevance of our research. The questionnaire focuses on the impact of the COVID-19 pandemic on the local sphere.

Impact of COVID-19

Question 1

What revenue types are you most concerned about in terms of a reduction due to COVID-19 during the 2020 budget year? (Check all that apply in the second column). What was/is your estimated collection rate pre-COVID-19 and during the COVID-19 period?

	Collection rate Pre-COVID-19 (January-March 2020)	Collection rate During COVID-19
Property rates	Click here to choose the right answer.	Click here to choose the right answer.
Electricity	Click here to choose the right answer.	Click here to choose the right answer.
Water	Click here to choose the right answer.	Click here to choose the right answer.
Sanitation	Click here to choose the right answer.	Click here to choose the right answer.
Refuse removal	Click here to choose the right answer.	Click here to choose the right answer.

Question 2

	Click below to indicate your answer
Did the municipal debt levels (what the municipality owes) increase as a result of COVID-19?	Click here to choose the right answer.

Question 3

	Click below to indicate your answer
Did the municipal consumer debt levels (what the municipality is owed) increase as a result of COVID-19?	Click here to choose the right answer.

Question 4

What types of expenditures related to COVID-19 has your municipality incurred, or do you anticipate it will incur, over the 2020 budget year? (Check all that apply)

	Click below to indicate the type of expenditure incurred or you anticipate will incur over the 2020 budget year
Staff overtime	Click here to choose the right answer.
Staff sick/administrative leave	Click here to choose the right answer.
Technology/equipment for remote work	Click here to choose the right answer.
Medical supplies/pandemic response	Click here to choose the right answer.
Extra water provision	Click here to choose the right answer.
Extra electricity	Click here to choose the right answer.
Sheltering the homeless	Click here to choose the right answer.
Provision of food	Click here to choose the right answer.
Increased staffing demands	Click here to choose the right answer.
Professional services and consultants	Click here to choose the right answer.
Other (please specify)	Click here to choose the right answer.

Question 5

Do you think the COVID-19 pandemic imposed unfunded mandates?

	Click below to indicate whether you agree or disagree with this statement
My municipality experienced unfunded mandates as a result of the COVID-19 pandemic	Click here to choose the right answer.

Question 6

What type of unfunded mandate (the costs your municipality incurred in the fight against COVID-19, which were not budgeted for) did your municipality shoulder that ought to have been delivered by other spheres. What were the costs of the unfunded mandates?

Description of unfunded mandate	Estimated costs incurred
1.	R
2.	R
3.	R
4.	R

Question 7

What budget strategies are you currently implementing to address revenue loss? Check all that apply:

Budget strategies	Click below to choose appropriate answer
Delay capital projects	Click here to choose the right answer.
Reduce operating expenses	Click here to choose the right answer.
Delay equipment purchases	Click here to choose the right answer.
Hire freezes	Click here to choose the right answer.
Reduce labour force (layoffs)	Click here to choose the right answer.
Delay maintenance and repair of equipment	Click here to choose the right answer.
None	Click here to choose the right answer.
Other - please indicate here	Click here to choose the right answer.
Unknown	Click here to choose the right answer.

Question 8

What types of services have you reduced/eliminated in the current budget, or expect to reduce/eliminate in the 2021 budget in order to cope with COVID-19? (Check all that apply)

Types of services	Click below to choose appropriate answer
Maintenance and repair of equipment	Click here to choose the right answer.
New infrastructure investment	Click here to choose the right answer.
Professional services and consultants	Click here to choose the right answer.
Supplying some of the basic services	Click here to choose the right answer.
Other - please indicate here	Click here to choose the right answer.

Question 9

Do you have any measures in place to increase revenues in 2021? What are those measures?

Type of measures
1.
2.
3.

Question 10

What are some of the COVID-19 lessons you wish to take forward?

1.
2.
3.
4.

Question 11

Will your municipality adopt any of the following measures to recover from the COVID-19 crisis? (Check all that apply)

	Click below to indicate the type of expenditure incurred or you anticipate will incur over the 2020 budget year
Eliminate the red tape	Click here to choose the right answer.
Trim all non-essentials	Click here to choose the right answer.
Leverage competencies of private partners	Click here to choose the right answer.
Rapidly adopt other's innovations; stop reinventing the wheel	Click here to choose the right answer.
Use lateral benchmarking to drive innovation and performance	Click here to choose the right answer.
Make staffing adjustments	Click here to choose the right answer.
Increase fees	Click here to choose the right answer.
Invest in digitalisation - use digital technologies to help ensure continued service delivery	Click here to choose the right answer.
Review subnational financial management and strengthen expenditure and revenue effectiveness	Click here to choose the right answer.
Support cooperation across municipalities and regions to help minimise competition for resources during a crisis	Click here to choose the right answer.
Invest in innovative solutions	Click here to choose the right answer.
Diversify revenue streams	Click here to choose the right answer.

4.10.2 Annexure B: Regression analysis

Dependent variable: Log of own revenue
 Method: Least Squares
 Included observations: 27

Variable	Coefficient	Standard error	t-statistic	Probability
LGVA	0.744432	0.044045	16.90163	0.0000
LPOP	0.459457	0.120868	3.801301	0.0009
LHDI	-0.435435	0.327717	-1.328691	0.1970
LUN	-0.976113	0.199342	-4.896673	0.0001
R-squared	0.987498	Mean dependent variable		4.605071
Adjusted R-squared	0.985867	Standard deviation dependent variable		0.438250
Standard error of regression	0.052101	Akaike info criterion		-2.935327
Sum squared residuals	0.062433	Schwarz criterion		-2.743351
Log likelihood	43.62691	Hannan-Quinn criterion		-2.878242
Durbin-Watson statistic	1.280375			

Source: Own estimates: NB: LGVA: Log of gross value addition; LPOP: Log of population growth; LHDI: Log of Human Development Index; LUN: Log of unemployment rate; LOR: Log of own revenue; LEXP: Log of municipal expenditure

Dependent variable: Log of own revenue
 Method: Least squares
 Included observations: 27

Variable	Coefficient	Standard error	t-statistic	Probability
LGVA	0.746848	0.043791	17.05479	0.0000
LPOP	0.473080	0.120617	3.922174	0.0007
LHDI	-0.358212	0.332315	-1.077929	0.2927
LUN	-0.986124	0.198156	-4.976502	0.0001
COVID_19	-0.047448	0.041279	-1.149435	0.2627
R-squared	0.988206	Mean dependent variable		4.605071
Adjusted R-squared	0.986061	Standard deviation dependent variable		0.438250
Standard error of regression	0.051741	Akaike info criterion		-2.919573
Sum squared residuals	0.058896	Schwarz criterion		-2.679603
Log likelihood	44.41424	Hannan-Quinn criterion		-2.848218
Durbin-Watson statistic	1.307101			

Source: Own estimates: NB: LGVA: Log of gross value addition; LPOP: Log of population growth; LHDI: Log of Human Development Index; LUN: Log of unemployment rate; LOR: Log of own revenue; LEXP: Log of municipal expenditure

Dependent variable: Log of municipal expenditure

Method: Least squares

Included observations: 27

Variable	Coefficient	Standard error	t-statistic	Probability
LGVA	2.121980	0.467174	4.542165	0.0002
LHDI	0.423686	0.984600	0.430312	0.6712
LUN	-1.169252	0.824862	-1.417513	0.1703
LPOP	-1.569968	0.446555	-3.515728	0.0019
LOR	-1.802083	0.603723	-2.984948	0.0068
R-squared	0.898842	Mean dependent variable		22.12534
Adjusted R-squared	0.880450	Standard deviation dependent variable		0.436285
Standard error of regression	0.150850	Akaike info criterion		-0.779489
Sum squared residuals	0.500624	Schwarz criterion		-0.539519
Log likelihood	15.52310	Hannan-Quinn criterion		-0.708133
Durbin-Watson statistic	1.900672			

Source Own estimates: NB: LGVA: Log of gross value addition; LPOP: Log of population growth; LHDI: Log of Human Development Index; LUN: Log of unemployment rate; LOR: Log of own revenue; LEXP: Log of municipal expenditure.

Dependent variable: Log of municipal expenditure

Method: Least squares

Included observations: 27

Variable	Coefficient	Standard error	t-statistic	Probability
LGVA	0.780361	0.151333	5.156568	0.0000
LHDI	-0.358129	1.148415	-0.311846	0.7581
LUN	-2.928661	0.684789	-4.276735	0.0003
LPOP	-2.398453	0.416828	-5.754060	0.0000
COVID_19	-0.001767	0.142654	-0.012384	0.9902
R-squared	0.857875	Mean dependent variable		22.12534
Adjusted R-squared	0.832034	Standard deviation dependent variable		0.436285
Standard error of regression	0.178805	Akaike info criterion		-0.439461
Sum squared residuals	0.703370	Schwarz criterion		-0.199492
Log likelihood	10.93273	Hannan-Quinn criterion		-0.368106
Durbin-Watson statistic	1.561160			

Source: Own estimates: NB: LGVA: Log of gross value addition; LPOP: Log of population growth; LHDI: Log of Human Development Index; LUN: Log of unemployment rate; LOR: Log of own revenue; LEXP: Log of municipal expenditure.

Chapter 5

Addressing gender inequality through gender budgeting in the public sector



Chapter 5: Addressing gender inequality through gender budgeting in the public sector

FFC Research

5.1 Introduction

Globally, the term gender mainstreaming came into effect in 1985 at the United Nations (UN) Third World Conference on Women held in Nairobi, Kenya. It was then deliberated further at the Beijing Platform of Action in 1995. These international platforms called for and mandated governments and organisations around the world to integrate women’s empowerment into gender programmes and projects. This included allocating resources towards advancing women’s needs, as well as conducting gender impact analysis. Previously, the gender discourse focused on issues around discrimination. For example, the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), in 1979, called for “state parties to take all appropriate measures to eliminate discrimination against women in the field of employment in order to ensure the equality of men and women to have the same rights”. The same was pronounced by several International Labour Organisation (ILO) conventions and platforms. The African continent committed itself to gender equality through its Aspiration 6 of Agenda 263, which calls for “an Africa, whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children.”

South Africa has committed to gender equality by being a signatory to various international agreements and passing domestic anti-discrimination laws, as well as initiating various programmes to empower women and other marginalised groups in society. In South Africa, these commitments have been expressed in legislation such as the Women’s Charter (1994), the Constitution (1996), the Employment Equity Act (1998), as well as policy frameworks such as the National Policy Framework for Women’s Empowerment and Gender Equality (2018). Despite these commitments and initiatives, gender inequality remains very high in South Africa (DWYPD, 2018a).

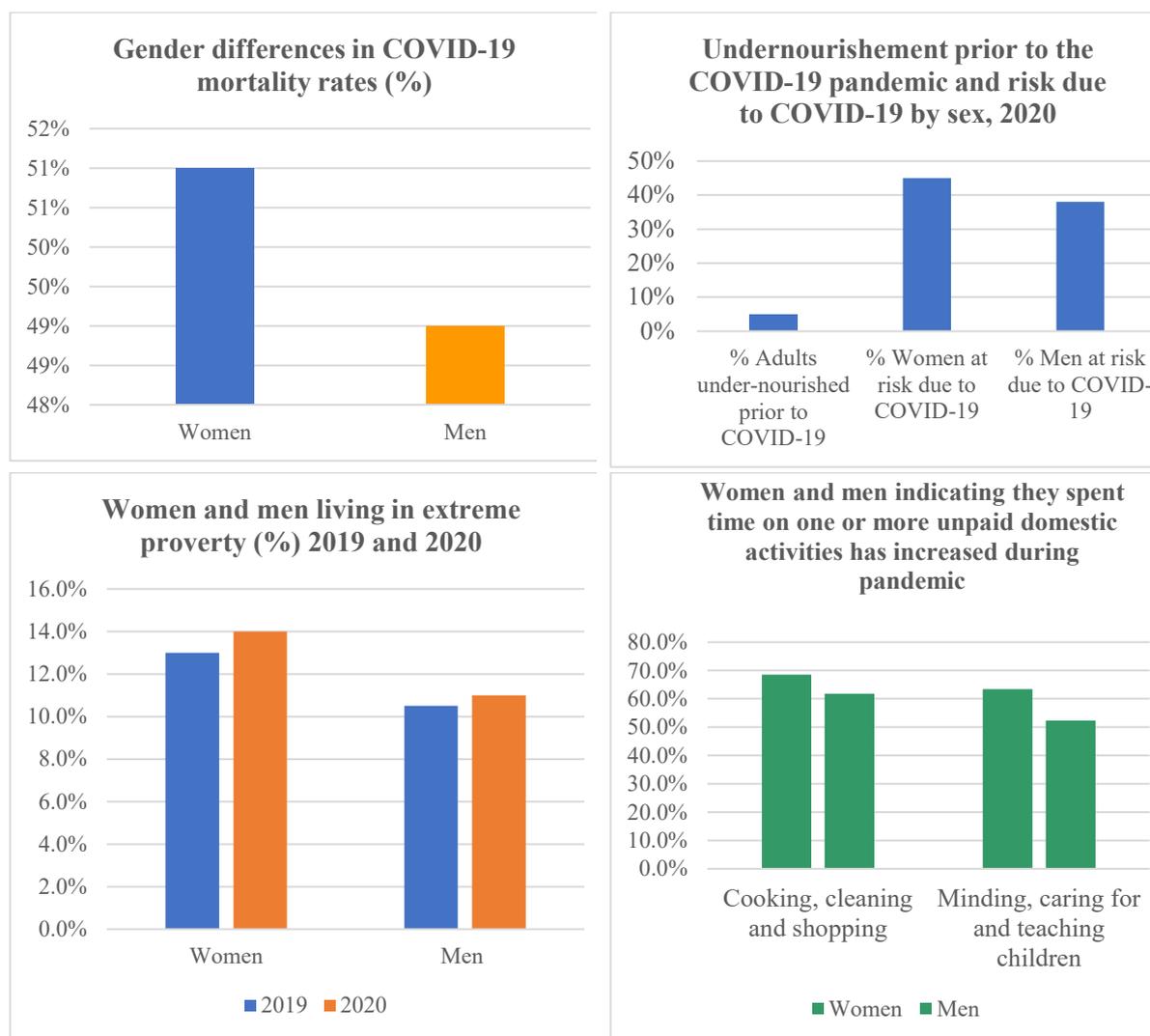
Poverty, inequality and unemployment is gendered in South Africa. Some 52% of poor households are made up of women. The median income for women is 76% that of men (Stats SA, 2018b). Between 2006 and 2015, the average expenditure in male-headed households was consistently double that of female-headed households (Stats SA, 2018b). In 2009, 2011 and 2015, it was shown that male-headed households had greater access to basic services and household assets – including running water, electricity, formal dwellings, flushing toilets, washing machines, computers and internet access – than female-headed households, illustrating the gendered nature of social inequality (Stats SA, 2018b).

Female-headed households also disproportionately experience persistent levels of poverty compared to male-headed households (Zizzamia, Schotte & Leibbrandt, 2019; Stats SA, 2018b). Indeed, evidence shows that children residing with only their mother, are more likely to live in poverty than if they lived with their father (Posel & Rudwick, 2013).

Evidence advanced so far indicates that the COVID-19 pandemic has worsened the problem of gender inequality (UN Women and UNFPA, 2021). Figure 5.1 presents some statistics on the gendered impact of the COVID-19 pandemic in South Africa. The percentage of women living in extreme poverty increased from 13% in 2019 to 14% in 2020 due to the pandemic, while that of men increased from 10.5% in 2019 to 11% in 2020 (UN Women and UNFPA, 2021). Women bear a disproportionate burden of COVID-19-related mortality relative to men. The COVID-19-related mortality rate for South African women is 51% compared to 49% for men. Similarly, women are at a 45% risk of being infected by the COVID-19 pandemic compared to their male counterparts, who have a 38% risk of being infected (UN Women and UNFPA, 2021). The high mortality rate and infection risk among women could be attributed to the fact that they dominate most of the frontline sectors (health care, retail, etc.). Women are also most likely to stay in crowded areas and less likely to afford to practice social distancing at home.

The COVID-19 crisis also disproportionately affects women in terms of the hours they spend in unpaid work at home, i.e. COVID-19 affects the number of hours undertaken in unpaid work in the household for women. The closure of schools, childcare facilities and non-essential work because of the nationwide lockdown resulted in an increase in hours spent in household unpaid work. The time spent on cooking, cleaning and shopping increased by 68.5% for women and 61.8% for men (UN Women and UNFPA, 2021). The time spent minding, caring for and teaching children increased by 63.4% for women and 52.3% for men (UN Women and UNFPA, 2021). The additional time spent on childcare means that women cannot join the labour market to earn an income (Casale & Posel, 2021). According to UN Women and UNFPA (2021), the pandemic has forced more women into extreme poverty than men, and this is likely to continue in the post-COVID-19 recovery phase.

Figure 5.1: Impact of COVID-19 on women and men in South Africa



Source: UN Women and UNFPA (2021)

One of the avenues that has been adopted globally to turn the gender equality commitments into reality has been the budget, specifically the so-called gender-responsive budgeting (GRB). The term GRB has often been used interchangeably with gender-sensitive budgeting or the gender budget. All these terms refer to the process of mainstreaming gender issues in budgets in order to bridge the gender gap (Nair & Moolakkattu, 2018; Sharp, 2003; Bosnic, 2015). As Bosnic (2015) has suggested, GRB refers to the intersection of gender equality and public finance management. GRB seeks to generally improve budgets, while at the same using budgets to promote gender equality and women’s empowerment by systematically integrating GRB into service delivery programme planning, budget processes and programme implementation. GRB is not intended to be a separate budget for women or men, but rather a framework that integrates women’s empowerment into the budget process (Stotksy, 2016). In South Africa, very few studies on GRB have been undertaken (e.g. Financial and Fiscal Commission (FFC) (2012); Commission on Gender Equality (CGE) (2013); and Free State Treasury (2019). The findings of these studies indicate, among others, the continuous challenges experienced by government departments to address GRB in a cohesive manner.

GRB tends to be viewed as an ad hoc project. These studies either questioned the existence of GRB as a policy strategy (e.g. CGE, 2013) or they focused on a particular sector of the economy (FFC, 2012; Free State Treasury, 2019). The main drawback of these studies is that they did not evaluate actual budgets or budget policy issues from a gender perspective. The aim of the present study is to fill this gap and interrogate the budgets of selected key national departments for their gender responsiveness.

5.2 The problem

In South Africa, even though progress has been made since the attainment of political freedom, economic emancipation has been lagging behind due to issues of poverty, unemployment and inequality. Women continue to bear the disproportionate burden of the triple challenges of poverty, unemployment and inequality. The following key statistics provide evidence of this.

- Some 52% of females are poor, while 74.8% of female-headed households in rural areas are poor (CoGTA, 2020).
- In 2018, women's median monthly earnings were 76% of men's median monthly earnings (Stats SA, 2018a).
- In 2018, 11.6% of female-headed households reported being subjected to hunger compared to 8.6% of male-headed households (StatsSA, 2018b).
- According to Stats SA (2017), 41.3% of South African households are headed by females and, of these female-headed households, 56% fall into the poorest quintile compared to 44% of the male-headed households²².
- Only 31% of female-headed households fall into the richest quintile compared to 69% of male-headed households (Stats SA (2017)).

The Department of Women, Youth and Persons with Disabilities (DWYPD) (2020b) states that the majority of women and girls are still subjected to multi-dimensional poverty, inequality and discrimination on the basis of gender. This is compounded by multiple deep-seated social problems, such as gender-based violence (GBV). Some of the reasons for these failures are attributable to the following, among other things:

- There is a lack of coherent gender-responsive planning, budgeting and policy.
- Gender equality and women's empowerment are often seen as an afterthought or relegated to a sector or specific outcome rather than being seen as an integral component across all sectors, outcomes and spheres of government, and the state as a whole.
- Gender discourses are events driven.

²² According to Stats SA (2018b), a household head is a person recognised in the household as the main decision maker or the person who owns or rents a dwelling or the person who is the breadwinner. However, caution should be exercised when interpreting the gender gap in this case, as it is quite probable that male-headed households also have a female partner that contributes to the household income, while female-headed households only receive a single income.

- There is lack of GRB training and capacity building among decision makers.
- There is poor institutionalising of GRB (DPWYD, 2018a; FFC, 2012).

The benefits of gender equality are many and span individuals, firms and nations. It is both a value and a right. Gender equality is a “prerequisite for the health and development of families and societies, and a driver of economic growth” (OECD (2012:1). At an individual level, the benefits of empowering women and girls include education, financial independence, career development and full participation in economic life. Gender-blind policies not only inhibit the full participation of women in the labour market, but also condemn them to poverty and social deprivation. The benefits of empowered women and girls accrue to the wider society through human development and positive economic growth. For the economy, gender equality is an investment in one factor of production that can be leveraged upon. Thus, gender inequality is costly and inefficient as the full productive potential of one factor – the labour force – is not fully exploited. Closing the gender gap has other positive externalities. It accelerates progress in areas that include intergenerational equity, educational attainment, child health and food security.

As noted, above, the budget can be a key instrument to addressing gender disparities. In countries such as Australia, Tanzania, Uganda and the United Kingdom, GRB has been adopted to address gender inequalities (Stotsky, Kolovich & Kebhani, 2016; Chakraborty, 2016; Sharp, 2003). In South Africa, commitments have been made to use the budget to address gender inequalities. However, there has been no concrete and systematic analysis of whether budget processes have been effectively utilised to address gender equality. In the South African context, there has been limited scrutiny of the effectiveness of budgeting processes to address gender disparities. As elsewhere in the world, departments’ budgets can be used as a catalyst to translate governments’ gender equality commitments. Therefore, there is a need to evaluate the performance of departmental budgets for their effectiveness in fulfilling government’s commitments to gender equality. This has been made more urgent by the COVID-19 pandemic, which seems to be reversing some of the gains that have been achieved on gender inequality, as confirmed by Casale and Posel (2021).

The aim of the present study is to assess the effectiveness of key departmental budgets in addressing gender equality. A few key national departments and government entities are used as case studies. The selected departments are the Department of Basic Education (DBE), the Department of Health (DoH), the Department of Social Development (DSD), the Department of Women, Youth and Persons with Disabilities, and the Department of Justice and Constitutional Development (DJ&CD). These five departments were selected because their work directly or indirectly promotes gender equality. The DBE, DoH, DSD and DJ&CD deliver key services that empower women, while the DWYPD coordinates women’s empowerment. The DBE is the primary driver of human capital development in the country. Access to education by women improves their chances to participate in the labour market, narrows gender pay gaps and empowers them to be agents for change in wider society. The DoH promotes the health of everyone in South Africa.

It enables an accessible, caring and high-quality health system. Access to health services for women does not only improve their health status, but also that of their families. It promotes human development and enhances the ability of women to be active participants in the workforce and economy at large. The DSD contributes to the promotion of women's empowerment through, among other things, integrated sustainable development and social protection programmes, including the social grants system. The mandate of the DWYPD is to accelerate socio-economic transformation and the implementation of the empowerment and participation of women, youth and persons with disabilities through oversight, monitoring, evaluation and influencing policy. Finally, the DJ&CD has a big role to play in closing the gender gap. It ensures the promotion of human rights, including women's rights and gender equality rights. In a nutshell, the five departments selected as case studies empower women in various forms and promote their effective participation in economic growth.

In addition, the five departments have the potential to make a difference in gender equality if their expenditures are deliberately biased towards addressing gender imbalances. Out of the 41 budget votes provided for in the National Appropriation Bill, these five departments account for almost a third of total expenditure (National Treasury, 2021:26).

The government entity that was selected as a case study is the Commission on Gender Equality. The focal areas of the CGE include gender and substantive equality, gender and health, women's economic empowerment, the national gender machinery, gender culture, religion and tradition, as well as gender-based violence (CGE, 2017).

The budget data for these departments was sourced from National Treasury's database, expenditure reviews, estimates of national expenditure, budget reviews, the performance plans and strategies of the national, provincial and municipal departments, and any other related documents.

5.3 Research questions and objectives

This study is underpinned by the following research questions:

- i. Are the allocation mechanisms and budgets of national departments gender sensitive and do they promote gender empowerment in South Africa?
- ii. Are the budget processes across departments gender sensitive?
- iii. Are the institutional mechanisms in place adequately supported to promote and monitor a gender-responsible budgeting process?
- iv. How can the budgets and government policy measures be sufficiently repositioned and redirected to address these gender inequalities?

The overarching aim of this study is to evaluate the effectiveness of government expenditure in addressing gender equality. The specific objectives of the study are as follows:

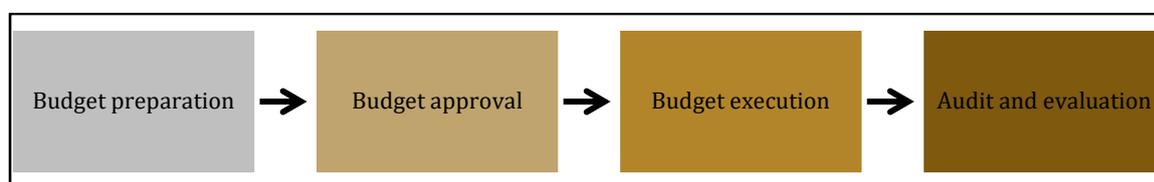
- Assess the gender sensitivity of the budget process.
- Assess the gender sensitivity of the budgets of selected national government departments.

- Assess the adequacy of legislative and internal arrangements in promoting GRB within government.
- Make recommendations on how the budgets of national departments can be repositioned to effectively address gender inequalities.

5.4 Methodology

To attain the objectives of the study, a combination of methods is used. The study is based on case studies of the budgets of five departments (DBE, DoH, DSD, DWYPD and DJ&CD) and one constitutional institution (the CGE). The research also reflects on relevant pieces of legislation and policies around gender inequality. The aim of this paper is to analyse the budget value chain (Figure 5.2) for its gender sensitivity. The paper draws substantially from international and local experiences on GRB.

Figure 5.2: Budgeting value chain



Source: Canadian International Development Agency (2012)

Regarding the first objective (assessing the gender sensitivity of the budget processes), the budget preparation process is evaluated for its gender sensitivity. This involves the evaluation of the Medium-term Expenditure Framework (MTEF) guidelines, i.e. National Treasury's budget circulars. The approach that is followed here is content analysis, i.e. evaluating the content of budget documents tabled for their gender responsiveness.

The case study approach is adopted in respect of the second objective (assessing the gender sensitivity of national government's budgets). The budgets of selected government departments (DBE, DoH, DSD, DWYPD and DJ&CD), as well as that of the CGE are analysed through the budget analysis research approach. Using secondary data, the budgets of selected national departments are used as case studies to determine the responsiveness of government expenditure to gender inequality.

For the third objective (assessing the adequacy of legislative and internal arrangements in promoting GRB), a review of relevant legislation and policies is undertaken. The spending patterns of the CGE, as the primary institution for promoting gender equality, is analysed.

Document analysis was the main approach to ascertain whether progress has been made with regard to GRB and processes. Information was solicited from the status quo analysis reports on gender-responsive measures.

5.5 Findings

5.5.1 Assessing the gender sensitivity of the budgeting processes

The national budget process starts with National Treasury requesting budget proposals from line ministries. In terms of sections 215 and 216 of the Constitution, National Treasury is responsible for prescribing the formats of budgets, and for taking necessary measures to ensure transparency and expenditure control in each sphere of government. Annually, National Treasury develops budget guidelines to guide departments in preparing their budgets. In terms of planning and budgeting, National Treasury's regulations for departments and institutions provide that the accounting officer must prepare a strategic plan for the MTEF period, including multi-year projections of revenue and expenditure. This should be approved by the executive authority.

A review of the budget guidelines since 2015 shows that no specific provision was made for gender issues. A gender aspect was only included in the budget documents of the 2020 MTEF; not as a specific focus area, but linked to other marginalised groups. For example, provision was made that a department must indicate the percentage of its budget currently spent on women, persons with disabilities, youth, and pro-rural and pro-poor activities. Prior to this, there was a facility in the MTEF submission to track specific programmes, and within this, departments could include gender issues. However, departments never included gender aspects in tracking specific programmes. What is needed now, is a more prescriptive or targeted approach in the MTEF guidelines to include gender aspects in the budget process. The technical guidelines of the 2021 MTEF state that National Treasury, in collaboration with departments, will be undertaking spending reviews to contribute to the fiscal consolidation process. Budget tagging was also introduced. This is defined as a tool that identifies, classifies, weighs and marks relevant expenditure in a government budget system that enables the estimation, monitoring and tracking of expenditure to inform policy discussions. Budget tagging will include gender, youth and persons with disabilities. Departments listed under the following policy priorities were requested to provide expenditure data in the MTEF budget process on women, youth and persons with disabilities:

- Women's economic inclusion, especially by the Department of Trade, Industry and Competition (DTIC), the Department of Employment and Labour (DEL), the Department of Small Business Development (DSBD), the Department of Agriculture, Land Reform and Rural Development (DALRRD), the Department of Public Works and Infrastructure (DPWI), the Department of Forestry, Fisheries and the Environment (DFFE) and the Department of Mineral Resource and Energy (DMRE).
- The eradication of GBV and femicide, especially by the South African Police Service (SAPS), the DJ&CD (including the National Prosecuting Authority), the DSD, the DWYPD, the Department of Higher Education and Training (DHET) and the Department of Home Affairs (DHA).
- Social transformation, including sexual and reproductive health and rights, especially by the DoH and the DBE.

- Governance, especially by the Department of Public Service and Administration (DPSA), the Government Communications and Information System (GCIS), the Department of Planning, Monitoring and Evaluation (DPME), the Department of Cooperative Governance and Traditional Affairs (CoGTA), National Treasury and The Presidency

This initiative is a positive development to ensure the mainstreaming of gender issues in the budget process, although it is introduced as part of the spending review process. It will be a critical foundation from which to expand the gender focus to other critical areas, including revenue. The Commission underscores the point that budget guidelines from National Treasury should be gender sensitive to assist line departments to develop GRBs. If the request for proposals is explicit and direct with respect to the advancement of gender equality and women’s empowerment, gender-specific issues will be standardised in the budget documents of line ministries. The same principle applies to provincial and municipal budgets.

5.5.2 Assessing the gender sensitivity of budgeting processes of selected national government departments and an entity

This section uses the budget analysis tool to examine the effectiveness of government expenditure in translating gender equality commitments in South Africa’s national departments identified for inclusion in this study. As noted above, the focus is on health, basic education, women, youth and persons with disabilities, social development, and justice and constitutional development. The CGE is also included in the case study as an entity responsible for promoting gender equality and advancing the protection, development and attainment of gender equality in South Africa. Using budget analysis, this section examines whether the budgets of the selected departments are gender sensitive.

(a) Department of Social Development

The role of the DSD includes ensuring the protection of vulnerable groups (such as women, children, youth and persons with disabilities) by creating an enabling environment and by providing an integrated and sustainable social service. By implication, this Department partly promotes the empowerment of women through, among other things, the social grant system and other welfare programmes. The Department has five budget programmes, as indicated in Table 5.1.

Table 5.1: Budget programmes for the Department of Social Development

Programme	Purpose
1. Administration	<ul style="list-style-type: none"> • Provide strategic leadership, management and support services to the department and the sector.
2. Social Assistance <ul style="list-style-type: none"> • Subprogrammes include Old Age, Foster Care, Disability and Childcare Dependency programmes. 	<ul style="list-style-type: none"> • Provide social assistance to eligible individuals whose income and assets fall below set thresholds.
3. Social Security Policy and Administration <ul style="list-style-type: none"> • Subprogrammes include Social Grants Administration and Appeals. 	<ul style="list-style-type: none"> • Provide for social security policy development and the fair administration of social assistance.

Programme	Purpose
4. Welfare Services Policy Development and Implementation Support Programme Subprogrammes include Social Crime Prevention and Victim Empowerment, Children, Youth, Families, Persons with Disabilities, Older Persons, as well as HIV/AIDS.	<ul style="list-style-type: none"> Create an enabling environment for the delivery of equitable, developmental welfare services through the formulation of policies, norms, standards and best practices; and the provision of support to implementing agencies.
5. Social Policy and Integrated Service Delivery Subprogrammes include Social Policy and Research, Development Community and Special Projects Innovation.	<ul style="list-style-type: none"> Support community development and promote evidence-based policy making in the department and the social development sector.

Source: Department of Social Development (2020); National Treasury (2020b)

Table 5.2 and Figure 5.2 show the distribution of the allocations among the five programmes. Social Assistance (various grants to older persons and children) receives the biggest budget allocation, followed by Social Security Policy and Administration. Budget programmes 4 (Welfare Services Policy Development and Implementation Support Programme) and 5 (Social Policy and Integrated Service Delivery) receive the smallest portion of the budget. The trends remain the same over the MTEF.

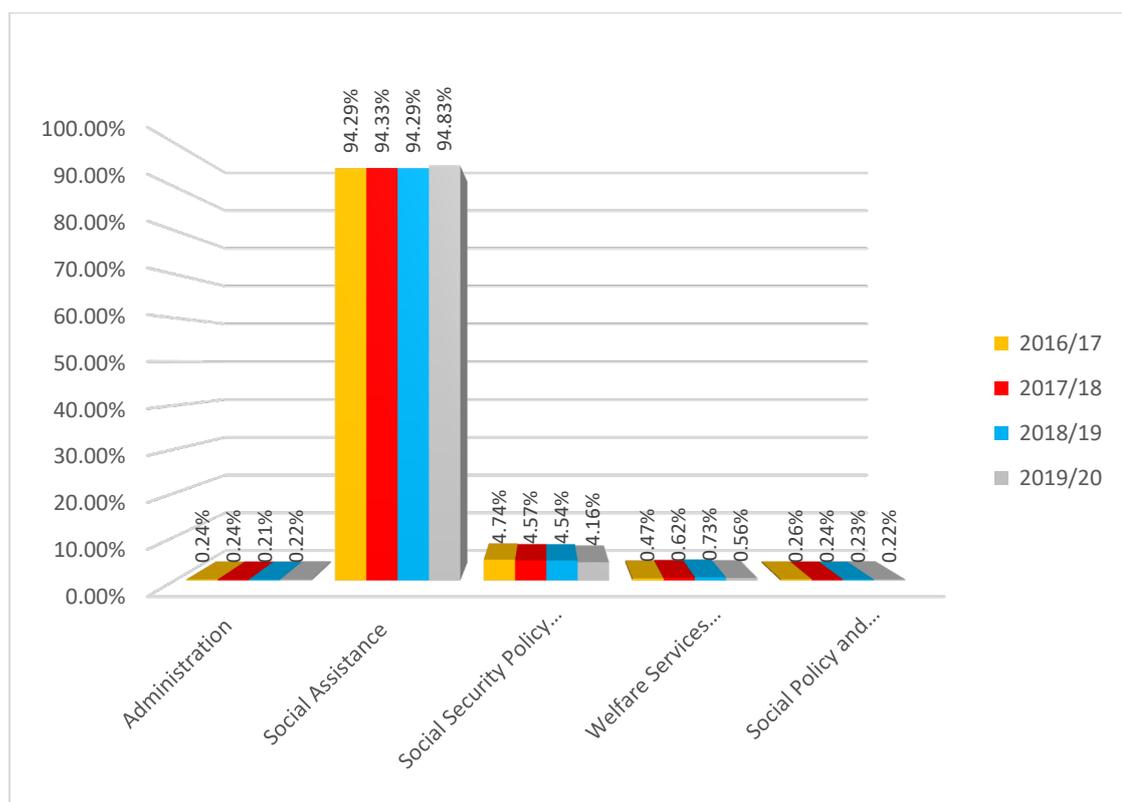
Table 5.2: Budget allocation per programme

Programme	Audited outcome (R million)			Adjusted appropriation (R million)	Medium-term expenditure estimate (R million)		
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Administration	348.1	382.4	359.4	403.0	426.7	452.0	471.3
Social Assistance	138 915.6	150 336.8	162 709.8	175 155.6	187 835.8	201 346.7	216 027.1
Social Security Policy and Administration	6 980.9	7 277.7	7 840.6	7 688.9	7 832.0	8 228.8	8 446.2
Welfare Services Policy Development and Implementation Support	697.1	995.6	1 262.5	1 037.1	1 256.7	1 393.9	1 543.1
Social Policy and Integrated Service Delivery	383.2	386.6	390.3	413.3	367.2	389.6	403.1

Source: Department of Social Development (2020); National Treasury (2020b)

In terms of the percentage allocations in Figure 5.3, the Social Assistance Programme accounts for over 90% of the budget, followed by Social Security Policy and Administration (just above 4%). Welfare Services Policy Development and Implementation Support receives the lowest proportion of the budget (just above 0.4%).

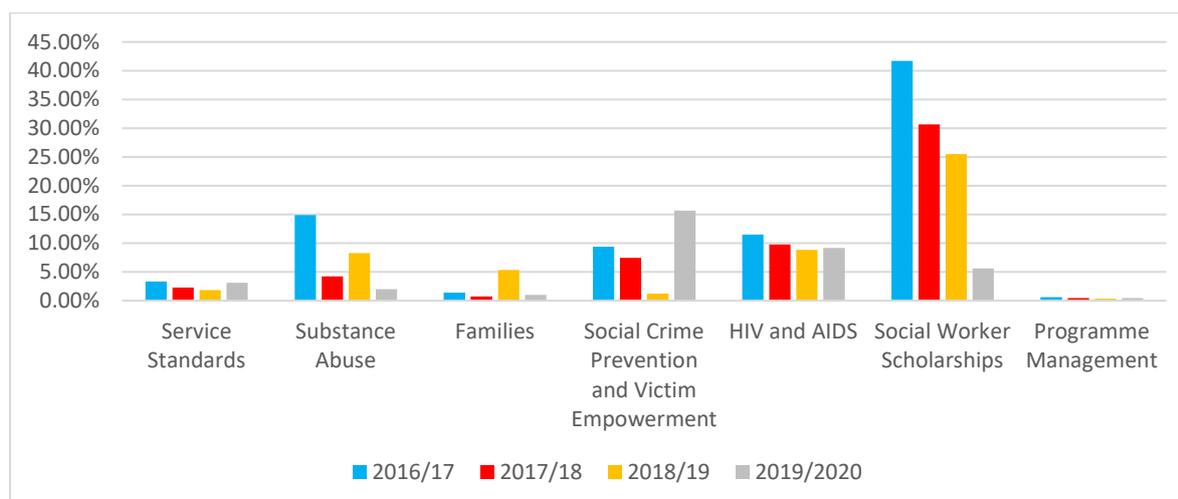
Figure 5.3: Percentage share allocation of the Social Development budget to the programmes



Source: Department of Social Development (2020); National Treasury (2020b)

Welfare Services Policy Development and Implementation Support has subprogrammes such as Families, HIV/AIDS, Social Crime Prevention and Victim Empowerment and Substance Abuse. These subprogrammes play a critical role in supporting vulnerable groups and protecting and supporting victims of crime and violence (GBV). It is important to note the relatively small share allocation to these subprogrammes, which are meant to support woman empowerment. The largest share allocation in this subprogramme goes to Social Crime Prevention and Victim Empowerment at 18%, HIV and AIDS (approximately 10%) and Substance Abuse (see Figure 5.4).

Figure 5.4: Percentage share allocation of Welfare Services and Policy Development



Source: Department of Social Development (2020); National Treasury (2020b)

To further understand the gender implications of the DSD’s budget, the study looked at the indicators used by the Department to monitor progress. Unfortunately, although the DSD has indicators, these are not disaggregated by gender. Thus, it is difficult to ascertain who benefits from the budget allocations in the different programmes. Programme budgets are not neutral but affect men and women differently. Disaggregating the indicators is critical to understand how these programme budgets benefit men and women. Examples of the Department’s indicators (and the amounts spent) that can easily be disaggregated by gender are shown in Table 5.3.

Table 5.3: Social Assistance Programme indicators

Indicator	Budget 2019/20
Total number of Older Persons’ Grant beneficiaries	3.7 million
Total number of War Veterans’ Grant beneficiaries	78
Total number of Disability Grant beneficiaries	1 million
Total number of Child Support Grant beneficiaries	12.7 million
Total number of Foster Care Grant beneficiaries	351 418
Total number of Care Dependency Grant beneficiaries	154 498
Total number of Grant-in-aid beneficiaries	246 910

Source: National Treasury (2020b)

Likewise, Welfare Services and Policy Development has subprogrammes such as Families, HIV/AIDS, Social Crime Prevention and Victim Empowerment, and Substance Abuse which directly impact on women. Again, the gender impact of such programmes is not clear. For example, one of the objectives of this programme is to facilitate and coordinate community development efforts to build vibrant and sustainable communities. The indicator for gauging progress is the number of vulnerable individuals accessing food. The reported planned target is 415 000 vulnerable individuals accessing food through DSD feeding programmes.

This could be an important gender indicator, but as the target is not disaggregated by gender, it does not assist a GRB analysis. At times, the lack of disaggregated data is not a reflection of an absence of such information. The information may be available in other platforms, but departmental systems are not sufficiently mature to integrate such gender information into their strategic documents, and thus into their budgeting processes (planning, budgeting, implementation, monitoring and evaluation). For example, Statistics SA (Stats SA) has a wealth of information on gender issues (e.g. the Living Conditions Survey, the General Household Survey, the Population Census and the Gender Statistics Reports), which departments can tap into for the purposes of gender mainstreaming and GRB.

(b) Department of Health

The Department of Health performs its constitutional and legislative mandate by leading and coordinating health services in all three spheres of government. It is also mandated to promote the health of all people in South Africa through an accessible, caring and high-quality health system that is based on the primary health care approach. The Department of Health’s budget vote comprises six main budget programmes, set out in Table 5.4.

Table 5.4: Budget programmes for the Department of Health

Programme	Purpose
1. Administration	<ul style="list-style-type: none"> • Provide strategic leadership, management and support services to the Department.
2. National Health Insurance	<ul style="list-style-type: none"> • Achieve universal health coverage by improving the quality and coverage of health services through the development and implementation of policies and health financing reforms.
3. Communicable and Non-Communicable Diseases	<ul style="list-style-type: none"> • Develop and support the implementation of national policies, guidelines, norms and standards, and the achievement of targets for the national response needed to decrease morbidity and mortality associated with communicable and non-communicable diseases. Develop strategies and implement programmes that reduce maternal and child mortality.
4. Primary Health Care	<ul style="list-style-type: none"> • Develop and oversee the implementation of legislation, policies, systems, and norms and standards for a uniform, well-functioning district health system, including for emergency, environmental and port health services.
5. Hospital Systems	<ul style="list-style-type: none"> • Develop national policies and plans for all levels of hospital services to strengthen the referral system and facilitate the improvement of hospitals. Ensure that the planning, coordination, delivery and oversight of health infrastructure meet the country’s health needs.
6. Health Systems Governance and Human Resources	<ul style="list-style-type: none"> • Develop policies and systems for the planning, managing and training of health sector human resources, and for planning, monitoring, evaluation and research in the sector. Provide oversight to all public entities in the sector and statutory health professional councils in South Africa. Provide forensic laboratory services.

Source: Department of Health (2020); National Treasury (2020b)

Table 5.5 and Figure 5.5 show that, out of the six budget programmes, the largest proportion of the Department’s budget is allocated to Communicable and Non-Communicable Diseases, followed by Hospital Systems. National Health Insurance and Primary Health Care are allocated the smallest portion of the budget. The trend is set to continue over the MTEF.

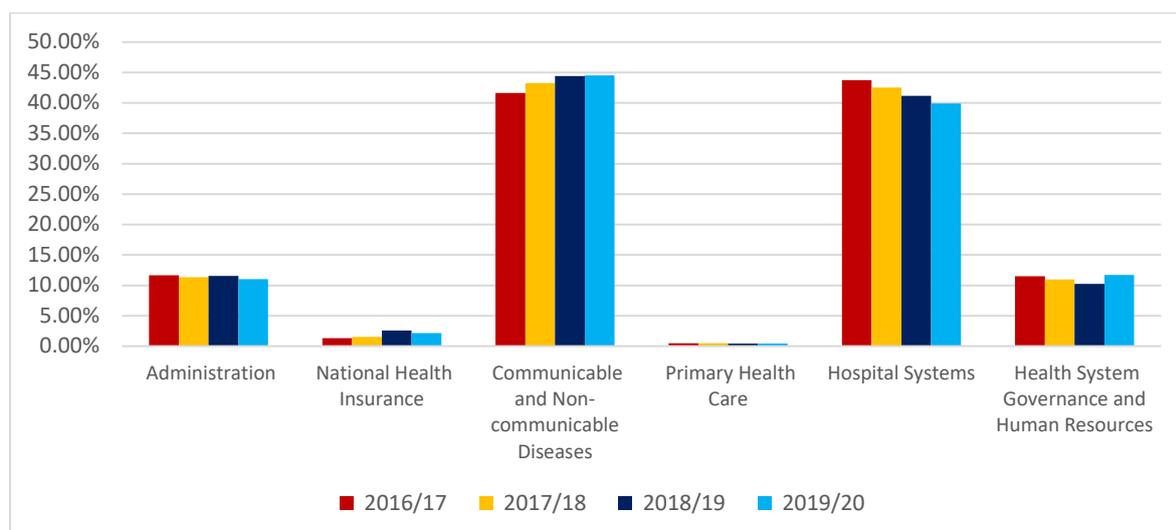
Table 5.5: Budget allocation per programme

Programme	Audited outcome (R' million)			Adjusted appropriation (R' million)	Medium-term expenditure estimate (R' million)		
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Administration	515.4	527.8	551.2	660.2	672.2	727.6	722.1
National Health Insurance	508.3	641.5	1 192.3	1 094.9	1 392.4	1 499.5	1 525.3
Communicable and Non-Communicable Diseases	16 029.9	18 351.0	20 688.3	22 797.1	25 188.4	28 782.9	30 279.3
Primary Health Care	182.9	208.1	199.4	220.9	238.3	254.2	265.4
Hospital Systems	16 834.4	18 043.1	19 189.9	20 435.2	21 774.7	22 863.1	23 953.0
Health Systems Governance and Human Resources	4 425.3	4 653.2	4 773.5	5 986.9	6 250.0	6 511.1	6 745.8

Source: Department of Health (2020); National Treasury (2020b)

The prioritisation of programmes such as Communicable and Non-Communicable Diseases has a specific gender focus as it provides, inter alia, for decreasing morbidity and mortality, including the reduction of maternal and child mortality.

Figure 5.5: Percentage share allocation of the Health budget to the programmes



Source: Department of Health (2020); National Treasury (2020b)

Communicable and Non-Communicable Diseases provides for subprogrammes such as HIV, AIDS, Sexually Transmitted Infections (STIs) and Tuberculosis, and Women, Maternal and Reproductive Health. The HIV/AIDS programme plays a critical role in terms of the national response, particularly by decreasing morbidity and mortality associated with the burden of HIV/AIDS and tuberculosis (TB) epidemics. This programme also supports provinces in implementing programmes on women, maternal and reproductive health, which are key to improving women’s health.

The Department of Health has various performance indicators related to different programmes. In some instances, such as the reduction of maternal mortality, the performance indicator is obviously gender specific.

With regard to other programmes, a similar challenge is experienced as with other departments: a lack of gender-disaggregated data that could be used to track progress made to achieve specific gender targets. For example, Table 5.6 shows some of the indicators in the HIV, AIDS, STI and TB subprogramme, which should ideally be gender disaggregated. The programme relating to the HIV-testing campaign has determined targets, but without gender disaggregation. In a critical sector such as health, the importance of the availability of accurate gender-disaggregated data should be emphasised. Gender disaggregated information within the health domain is abundant, but it is not well integrated in the strategic documents that are key to the budgeting process.

Table 5.6: Selected Health Programme indicators

Programme	Indicator	Planned target 2019/2020
Implement combination of prevention and treatment interventions to reduce burden of HIV, STI and TB infections	Medical male circumcisions performed	600 000
	Number of undiagnosed TB-infected persons (new cases) found	40 000
	Total number of tests for HIV conducted during national health screening and testing campaigns	14 000 000
Reduce mortality among the maternal mortality ratio to under 100 per 100 000 live births, and neonatal mortality rate to under eight per 1 000 live births by 2020	Number of regional hospitals implementing the quality improvement programme for pregnant women and neonates	Eleven regional hospitals implementing the quality improvement programme for pregnant women and neonates
Accelerate the implementation of the 10-year infrastructure plan	Number of hospitals revitalised	Thirty-six hospitals revitalised

Source: Department of Health (2020)

(c) Department of Basic Education

The DBE’s mandate is to monitor the standard and quality of education provision, delivery and performance, including assessing compliance with the provisions of the Constitution and other legislation and education policies. The Department’s budget vote provides for the programmes as set out in Table 5.7.

Table 5.7: Budget programmes for the Department of Basic Education

Programme	Purpose
1. Administration	<ul style="list-style-type: none"> • Provide strategic leadership, management, and support services to the Department.
2. Curriculum Policy, Support and Monitoring	<ul style="list-style-type: none"> • Develop curriculum and assessment policies and monitor and support their implementation.
3. Teachers, Education Human Resources and Institutional Development	<ul style="list-style-type: none"> • Promote quality teaching and institutional performance through the effective supply, development and use of human resources.

Programme	Purpose
4. Planning, Information and Assessment	<ul style="list-style-type: none"> Promote quality and effective service delivery in the basic education system through planning, implementation and assessment.
5. Educational Enrichment Services	<ul style="list-style-type: none"> Monitor and support provinces to implement care and support programmes for learning and teaching.

Source: Department of Basic Education (2020); National Treasury (2020b)

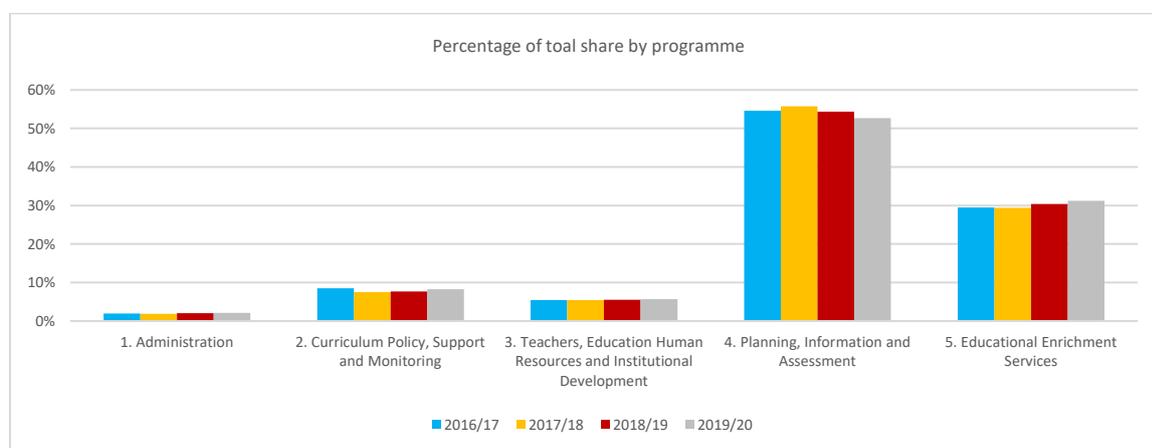
Table 5.8 shows that out, of the five programmes, Programme 4 (Planning, Information and Assessment) receives the largest budget allocation. This programme plays a critical role in the delivery of school infrastructure and improving the quality of teaching and learning, among other things, as well as improving learner health and wellness. The budget allocation trends are set to remain the same over the MTEF.

Table 5.8: Budget allocation per programme

Programmes	Audited outcome R'million		Adjusted appropriation R'million	Medium-term expenditure estimate R'million			
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Administration	418.3	435.1	471.9	518.3	519.4	551.6	574.5
Curriculum Policy, Support and Monitoring	1 826.7	1 731.1	1 802.2	1 996.2	2 025.6	2 123.7	2 182.1
Teachers, Education Human Resources and Institutional Development	1 177.4	1 243.8	1 297.6	1 368.9	1 437.7	1 516.9	1 589.3
Planning, Information and Assessment	11 720.0	12 785.8	12 734.6	13 070.1	13 356.0	14 674.5	15 381.0
Educational Enrichment Services	6 333.7	6 736.2	7 108.4	7 511.1	7 989.5	8 466.2	8 865.5
Total	21 476.1	22 932.0	23 414.8	24 464.5	25 328.2	27 333.0	28 592.4

Source: Department of Basic Education (2020); National Treasury (2020b)

Figure 5.6: Percentage share allocation of the Basic Education budget to the programmes



Source: Department of Basic Education (2020); National Treasury (2020b)

In assessing the performance of the programmes indicated above, the DBE uses various indicators. For instance, it adopted various indicators and set annual targets for Planning, Information and Assessment. However, the indicators do not indicate who the ultimate beneficiaries are in terms of gender. For example, indicators such as the number of schools provided with sanitation facilities and the percentage of underperforming schools are used, but these indicators do not show gender disaggregation in terms of the learners who attend these schools.

Educational Enrichment Services, which is mainly about developing policies and programmes aimed at improving the quality of learning in schools, has several indicators for monitoring progress. This includes the number of schools monitored for the provision of nutritious meals with a planned target set. However, the indicator does not provide for gender disaggregation in respect of the beneficiaries of the provision of nutritious meals. For the purposes of GRB and tracking progress of the gender impact of the Department’s services, it is critical for gender disaggregation to be provided in respect of the targeted beneficiaries. The same principle applies to the information on the number of schools monitored for the implementation of reading norms in various grades, which is also not gender disaggregated. Table 5.9 presents some indicators that could easily be gender disaggregated, not only for the purposes of GRB, but also to enable the monitoring, evaluation, and auditing of gender targets.

Most of the Department’s strategic documents (Annual Report and Annual Performance Plan) are limited in terms of gender disaggregated information, which often inhibits the mainstreaming of gender issues in the budgeting process. The DBE and Stats SA have a wealth of gender disaggregated information that could easily be integrated into the Department’s strategic documents and could prove useful for GRB.

Table 5.9: Basic Education Programme indicators

Programme/strategic objective	Indicator	Planned target 2019/20
Provide data on learner performance through the setting of question papers, administering the examinations and data analysis of the national examinations and assessments conducted periodically.	Number of General Education and Training (GET) test items in Language and Mathematics for grades 3, 6 and 9 developed.	250 annually
Mentor and assess the performance of districts and district officials on an annual basis in order to strengthen the capacity of districts to support schools.	Percentage of underperforming schools visited by district officials at least twice a year for monitoring and support purposes.	60% annually
Monitor the provision of nutritious meals served in identified public schools annually to enhance learning capacity and the wellbeing of learners.	Number of schools monitored for the provision of nutritious meals.	110 quarterly

Programme/strategic objective	Indicator	Planned target 2019/20
Provide support to learners who have not achieved all the requirements of the National Senior Certificate (NSC) through the Second Chance Matric programme.	Number of learners obtaining subject passes towards an NSC or extended Senior Certificate, including upgraded NSC per year.	30 000 biannually
Monitor and support the implementation of the National Curriculum Statement (NCS) on Reading in grades R to 9 each year in order to improve teaching and learning.	Number of schools monitored on the implementation of the reading norms.	20 annually

Source: Department of Basic Education (2020)

(d) Department of Women, Youth and Persons with Disabilities

The mandate of the Department of Women, Youth and Persons with Disabilities is to accelerate socio-economic transformation and implementation of the empowerment and participation of women, youth and persons with disabilities through oversight, monitoring, evaluation and influencing policy. In fulfilling its mandate, the Department has five budget programmes: Administration, Social Transformation and Economic Empowerment, Policy, Stakeholder Coordination and Knowledge Management, Rights of Persons with Disabilities, and National Youth Development (see Table 5.10).

Table 5.10: Budget programmes for the Department of Women, Youth and Persons with Disabilities

Programme	Purpose
1. Administration	<ul style="list-style-type: none"> Provide strategic leadership, management, and support services to the department.
2. Social Transformation and Economic Empowerment	<ul style="list-style-type: none"> Manage policies and programmes that mainstream the social transformation and economic empowerment of women in South Africa.
3. Policy, Stakeholder Coordination and Knowledge Management	<ul style="list-style-type: none"> Ensure policy and stakeholder coordination and knowledge management for the social transformation of women in South Africa.
4. Rights of Persons with Disabilities	<ul style="list-style-type: none"> Oversee the implementation of programmes pertaining to the rights of persons with disabilities.
5. National Youth Development	<ul style="list-style-type: none"> Oversee the implementation of national youth development programmes

Source: DWYPD (2020b)

The budget allocations to the respective budget programmes of the DWYPD, as set out in Table 5.11 indicate that National Youth Development receives the largest budget allocation. This allocation is mainly transferred to the National Youth Development Agency (NYDA). This is followed by Social Transformation and Economic Empowerment, which deals primarily with advancing gender equality commitments. This programme also provides for the transfers to the CGE. Policy, Stakeholder Coordination and Knowledge Management, and Rights of Persons with Disabilities receive the smallest budget allocation, yet these programmes play a critical role in providing strategic leadership and knowledge to advance gender-sensitive issues and women empowerment.

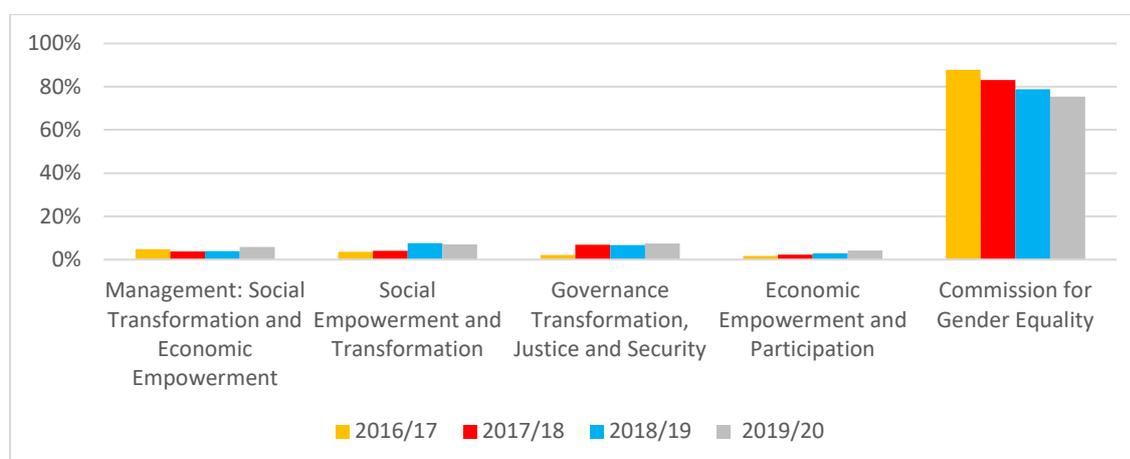
Table 5.11: Budget allocation per programme

Programmes	Audited outcome R' million			Adjusted appropriation R'million	Medium-term expenditure estimate R'million		
	2016/17	2017/18	2018/19		2019/20	2020/21	2021/22
Administration	90.1	84.3	90.0	93.3	93.3	98.6	101.8
Social Transformation and Economic Empowerment	79.5	94.2	102.4	112.9	124.8	132.4	137.4
Policy Stakeholder Coordination	26.7	27.9	31.9	43.5	49.2	51.6	54.6
Rights of Persons with Disabilities	16.0	15.8	15.3	18,8	19.9	21.5	22.5
National Youth Development	411.1	437.6	484.3	469.5	491.3	517.3	536.8
Total	623.5	659.8	723.9	738.0	778.5	821.5	853.0

Source: DWYPD (2020b); National Treasury (2020b)

In disaggregating Social Transformation and Economic Empowerment into subprogrammes, it is clear that the transfer to the CGE constitutes the largest share of this programme, as illustrated in Figure 5.7. The rest of the budget subprogrammes, such as Economic Empowerment and Participation, Governance Transformation, Justice and Security, Social Empowerment and Transformation, Management: Social Transformation and Economic Empowerment receive relatively smaller shares. However, these are critical programmes for driving gender equality. The mandate of the Department includes the coordination of all activities that promote gender equality and women’s empowerment across all government departments. In addition, the DWYPD is supposed to champion the socio-economic transformation of marginalised groups in society and enhance the participation of these socio-economic groups in the economy.

Figure 5.7: Percentage share allocation of the Social Transformation and Economic Empowerment budget to the total share of the Department’s programmes



Source: DWYPD (2020b); National Treasury (2020b)

Monitoring the gender impact of the DWYPD’s budget is limited due to a lack of gender disaggregated data. The Department has adopted various indicators to assess its progress on gender equality. Table 5.12 lists various indicators related to Social Transformation and Economic Empowerment, which is key in addressing gender equality issues. The indicators include the number of reports on interventions and economic opportunities for women produced.

Policy Stakeholder Coordination and Knowledge Management aims to promote gender-responsive policy development and analysis, research, monitoring and evaluation, as well as knowledge management on women’s socio-economic empowerment and gender equality. It contains several performance indicators, e.g. the number of public participation/outreach initiatives on women’s empowerment, including girls and young women; the number of reports on young women’s empowerment; and the number of performance monitoring review reports on women’s empowerment and gender equality. Such indicators are gender-specific on women and can therefore form a useful foundation for gender-responsive planning in the first instance, followed by budgeting, monitoring, evaluation and auditing.

Table 5.12: Women, Youth and People with Disabilities indicators

Programme/Strategic objective	Indicator	Planned target 2019/2020
Women’s social empowerment and participation promoted	Number of reports on interventions and economic opportunities for women produced	Four reports on the facilitation of interventions and economic opportunities for women produced.
Improved gender transformation through measures to advance gender equality and through interventions towards a just and safe society	Number of programmes in 365 days’ programme of action coordinated	Three programmes on the 365 days’ programme of action coordinated.
Women’s social empowerment and participation promoted	Number of progress reports on national rollout of the Revised Sanitary Dignity Implementation Framework in quintiles 1–3 schools produced	Four reports that outline progress on the national rollout of the enabling environment, enabling infrastructure and provincial sanitary dignity programmes in line with the Revised Sanitary Dignity Implementation Framework produced.
Public participation and community mobilisation initiatives to advance women’s empowerment and gender equality	Number of public participation/outreach initiatives on women’s empowerment, including girls and young women	Ten public participation/outreach initiatives on women’s empowerment conducted.
Public participation and community mobilisation initiatives to advance women’s empowerment and gender equality	Number of reports on young women’s empowerment priorities developed	Four quarterly reports on women’s empowerment priorities developed.
Effective monitoring and evaluation of socio-economic empowerment of women	Number of performances monitoring review reports on women’s empowerment and gender equality	Two performance monitoring review reports on women’s empowerment and gender equality produced.

Source: DWYPD (2020b)

(e) Department of Justice and Constitutional Development

The mandate of the DJ&CD is to uphold and protect the Constitution and the rule of law. This is done through, among others, the protection and enforcement of human rights and the protection of vulnerable groups. In achieving this mandate, the Department has five programmes: Administration, Court Services, State Legal Services, National Prosecuting Authority, and Auxiliary and Associated Services (see Table 5.13).

Table 5.13: Budget programmes for the Department of Justice and Constitutional Development

Programme	Purpose
1. Administration	<ul style="list-style-type: none"> Provide strategic leadership, management and support services to the Department.
2. Court Services	<ul style="list-style-type: none"> Facilitate the resolution of criminal and civil cases, and family law disputes by providing accessible, efficient and quality administrative support to the lower courts and managing court facilities.
3. State Legal Services	<ul style="list-style-type: none"> Provide legal and legislative services to government. Supervise the registration of trusts, and the administration of deceased and insolvent estates, and estates undergoing liquidation. Manage the Guardian’s Fund. Prepare and promote legislation. Facilitate constitutional development and undertake research in support of this.
4. National Prosecuting Authority	<ul style="list-style-type: none"> Provide a coordinated prosecuting service that ensures that justice is delivered to victims of crime through general and specialised prosecutions. Remove profit from crime. Protect certain witnesses.
5. Auxiliary Services	<ul style="list-style-type: none"> Provide a variety of auxiliary services associated with the Department’s purpose. Fund the interdepartmental Justice Modernisation Programme, the President’s Fund, and transfer payments to public entities and constitutional institutions.

Source: Department of Justice and Constitutional Development (2020)

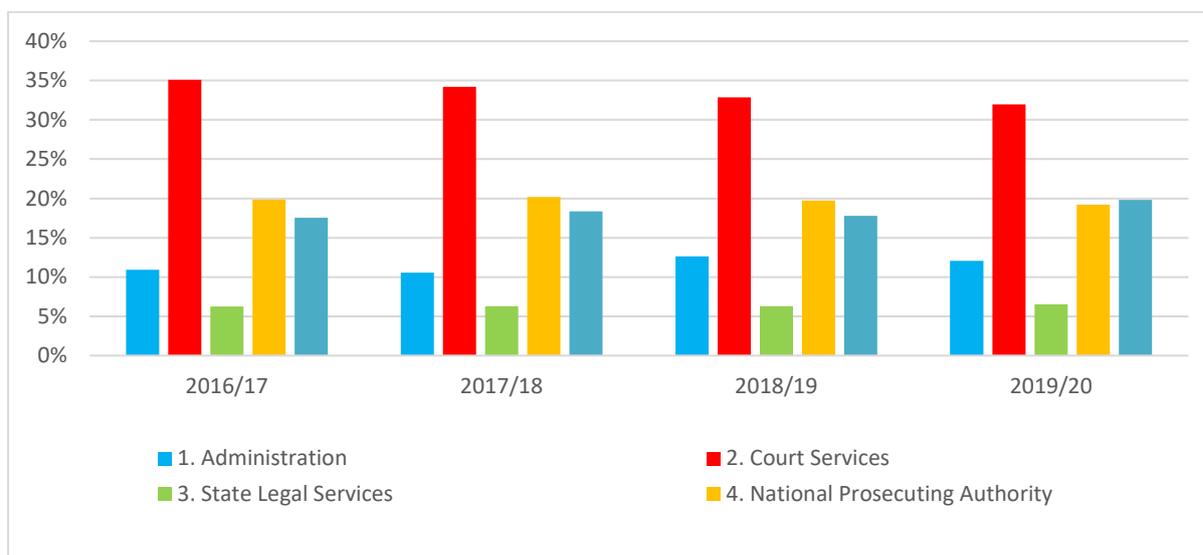
The budget allocation to the various programmes is reflected in Table 5.14 and Figure 5.8. Court Services, which includes addressing issues of GBV, femicide and maintenance services, receives the biggest allocation. The National Prosecuting Authority, which addresses issues of crime and restorative justice, receives the second-biggest allocation. It is followed by Auxilliary Services, which provides for legal services, fund transfers to the South African Human Rights Commission (SAHRC), the Public Protector, Legal Aid South Africa and the Special Investigating Unit. Although State Legal Services receives the smallest budget allocation, it provides essential legal services to government related to the promotion of equality and the prevention of unfair discrimination, among other things.

Table 5.14: Budget allocation per programme

Programmes	Audited outcome R’ million			Adjusted appropriation R’ million	Medium-term expenditure estimate R’ million		
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Administration	1 786.9	1 786.9	2 502.5	2 503.7	2 356.5	2 491.9	2 600.7
Court Services	6 604.6	6 604.6	6 431.0	6 736.9	7 180.3	7 688.4	8 007.3
State Legal Services	1 232.3	1 232.3	1 245.8	1 399.8	1 431.9	1 529.3	1 612.9
National Prosecuting Authority	3 684.3	3 684.3	3 648.8	4 031.6	4 583.9	4 906.0	5 096.2
Auxiliary and Associated Services	3 478.8	3 478.8	3 630.6	4 109.6	4 308.0	4 553.2	4 766.8
Total	16 786.8	16 786.8	17 458.8	18 781.5	19 860.6	21 168.8	22 083,9

Source: Department of Justice and Constitutional Development (2020)

Figure 5.8: Percentage share allocation of the Justice and Constitutional Development budget per programme



Source: National Treasury (2020b); Department of Justice and Constitutional Development (2020)

Court Services facilitates the resolution of criminal and civil cases, as well as family disputes by providing accessible and efficient quality support to the courts. This programme has various performance indicators associated with its programme objectives. These include the number of courts adapted in line with the sexual offences court, the percentage of pending sexual offences, the percentage of criminal cases postponed due to the unavailability of court administrative staff and the percentage of litigation family matters finalised within 12 months of the date of opening the case. These indicators are an important aspect of efforts to address GBV and other matters that have a direct bearing on women. It is of particular importance that these performance indicators are gender disaggregated, not only to determine the impact of services on gender, but also from a gender-responsive budgeting, monitoring, evaluation and auditing perspective. However, while these indicators have targets set, they do not specify or disaggregate according to gender in terms of the beneficiaries of these services. In addition, as noted for other departments, it is important that gender disaggregated information found in other domains or within the Department is integrated in the Department’s strategic documents for budgeting purposes, and that implementation programmes are gender responsive. For example, the CGE has produced various reports related to gender issues that could be useful for the DJ&CD.

(f) Commission on Gender Equality

The CGE is an institution established in terms of Chapter 9 of the Constitution, 1996. Its mandate is to promote gender equality and advance the protection, development and attainment of gender equality in South Africa. In the 2019/20 financial year, the Commission’s total budget allocation amounted to R85.2 million with compensation of employees amounting to R54.4 million. This means that about 64% of the Commission’s budget was absorbed by salaries.

In the previous financial year, the compensation of employees' budget comprised 68% of the total CGE budget. The risk of such a high compensation of employees' budget is that it may crowd out other important priorities (see Table 5.15).

Table 5.15: The CGE's expenditure

	2017/18 R 'million	2018/19 R 'million	2019/20 R 'million
Budget	78.3	81.1	85.5
Expenditure	80.3	80.7	76.6
Percentage spending	98%	100%	112%

Source: CGE (2018; 2019; 2020)

To summarise, the analysis of the five case studies reveals three important issues about government budgets and gender.

Firstly, there is limited mainstreaming of gender issues in departmental budget processes. The main reason for this is that departments generally lack gender disaggregated data and information to enable the implementation of gender-responsive planning – followed by budgeting, monitoring, evaluation and auditing. The lack of gender disaggregated data hinders the effective translation of gender commitments into budgetary allocations. GRB is difficult, if not impossible, to undertake without an institutional plan to effect the engendering of service delivery programmes, supported by gender disaggregated information.

Secondly, the foregoing analysis indicates that gender disaggregated information can be found in other domains or within the knowledge base of departments, but such information is seldom integrated in the strategic documents of departments to allow GRB processes. For instance, Stats SA and/or the CGE generate reports with gender disaggregated data that could be useful to various departments, but departmental systems are not sufficiently mature to integrate such data.

Thirdly, the departmental performance indicators are not sufficiently detailed in providing data on the number of women and girls who benefit from their programmes. The DoH, for example, uses various indicators to monitor the progress of its programmes. However, these indicators, with the exception of programmes focused specifically on women, cannot be used to determine who benefits from the budget in terms of women and men. Similarly, the programmes in the DBE's Annual Report and Annual Performance Plan have defined indicators with set targets, but such indicators are not disaggregated to enable a determination of the beneficiaries of these services and facilities in terms of gender. The DWYPD is at the heart of coordinating gender equality efforts in the country. It has various indicators related to each programme and targets set, such as the number of reports on interventions and economic opportunities for women produced and the number of programmes conducted. The Department is expected to take the lead in coordinating the implementation of government's gender equality commitments, including through initiatives such as GRB.

The absence of gender disaggregated data, limited integration of gender disaggregated data in planning and budget processes, as well as insufficient detail provided in the performance indicators of the beneficiaries of departmental budgets, have been identified in the budget programme analysis. This gives rise to the need to invest in the collection of such data, as well as putting robust mechanisms and systems in place to integrate gender information in government's strategic documents. This will enable departments to plan, implement, monitor, evaluate and audit budgets through gendered lenses. The collection of such data should not be an end in itself. There is a need for the training of the executive and management leadership in the broader public sector on gender-responsive planning and budgeting in general. In addition, targeting training and awareness interventions are required for budget officers in the use of gender disaggregated data in the budget process. Ideally, the DWYPD should champion and coordinate the collection of gender disaggregated data, training interventions required at all levels and developing awareness messages and rolling out gender budgeting campaigns. Strengthened collaboration and coordination between National Treasury, the DWYPD and the DPME on defining and refining gender-specific performance indicators and targets, including gender-based data throughout government will enable government to monitor and assess its progress towards achieving gender equality and to realise its international commitments.

The refining of gender-based performance indicators and targets will enable the introduction of gender audits. There are divergent schools of thought around gender auditing in government, given the various role-players involved in gender-responsive budgeting, monitoring and evaluation processes. On the one hand, the Office of the Auditor-General currently performs performance audits for all government departments based on the performance indicators and targets determined by each auditee. The inclusion of specific gender-based performance indicators and targets in the strategic and annual performance plans of departments could form the basis for extending the scope of the regularity audit of the Auditor-General to include a gender audit. The approach may, however, have inherent limitations as it will only audit such performance indicators and targets that are included and reported on and may not produce a comprehensive overview of the progress made by government to achieve gender equality. Another school of thought supports the CGE as an independent institution that may be well placed to conduct an annual gender audit based on the gender-specific performance indicators, targets and reports of government departments. The financial and human resource capacity of the CGE to undertake such a comprehensive gender audit will, however, have to be further considered.

5.5.3 Assessing the legislative, policy and institutional Framework on GRB

(a) The legislative and policy frameworks on gender-responsive budgeting

The foundation of post-apartheid South Africa's commitment to gender equality is established in the Constitution (1996), particularly in the Bill of Rights, clause 9(2) and 9(3), which guarantees full and equal enjoyment of all rights by all genders and the protection of people against any form of discrimination by sex, while the goal of non-sexism is also set out in clause 12. Chapter 9 provides for the establishment of the SAHRC and the CGE, among the institutions supporting constitutional democracy.

The origins of these constitutional provisions can be traced to, inter alia, the 1954 Women's Charter, the 1955 Freedom Charter and the 1994 Women's Charter for Effective Equality. The Women's Charter for Effective Equality (1994) set out a broad statement of principles of women's rights and called for the equal participation, recognition and development of women in all aspects of life and sectors of society.

South Africa's transition to democracy accelerated its re-entrance to the global environment and the country is a signatory to various international and regional commitments to gender equality and women empowerment. These include the following:

- Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW), 1995
- Beijing Declaration and Platform for Action, 1995
- African Union Heads of States' Solemn Declaration on Gender Equality in Africa, 2004
- South African Development Community (SADC) Protocol on Gender and Development, 2012
- Sustainable Development Goals – Agenda 2030, 2015
- The African Union Agenda 263

The South African Parliament has passed various key pieces of legislation that further the goals of gender equality and women's interests. These include the following:

- The Employment Equity Act (1998), which advocates for non-discrimination against designated groups – among whom are women – in the workplace, including the need for employers to have employment equity targets. Chapter 4 and Chapter 5 of the Act further mandates the establishment of the Commission for Employment Equity in ensuring that the objectives of the Act are met, as well as providing measures to enforce compliance, and where non-compliance have been observed, the necessary steps that should be taken.
- The Promotion of Equality and Prevention of Unfair Discrimination Act (PEPUDA) 2000, which acknowledges South Africa's international obligations under binding treaties and customary international law in the field of human rights, which promote equality and prohibit unfair discrimination, including CEDAW and the Convention on the Elimination of All Forms of Racial Discrimination.

In 2013, Parliament introduced the Women Empowerment and Gender Equality Bill (2013). The objective of this Bill was not to create new anti-discrimination legislation. It aimed at introducing measures and targets to strengthen existing legislation on the promotion of women empowerment and gender equality.

The Bill also clearly states the need for public/government and public institutions to do the following:

- Implement gender equality measures on education and training
- Provide access to health care, equal participation and representation, and meeting targets in the workplace of men and women, including economic empowerment targets

- The implementation and submission of gender mainstreaming processes to the Minister of Women, Youth and Persons with Disabilities within one year of the establishment of those institutions
- The need for measures to be in place on the socio-economic empowerment of women in rural areas and women with disabilities
- The need for public institutions/government to establish gender focal points at senior level within three years of the commencement of the Bill to implement gender mainstreaming in a designated public body and to generally assist the public body to comply with the legislation, assigning responsibility to accounting officers of the public/private institutions being accountable and responsible for gender mainstreaming
- The provision for the Minister to publish a framework on gender mainstreaming and women empowerment

The Bill was introduced in the National Assembly on 5 November 2013. It was passed by the National Assembly on 4 March 2014. On 25 March 2014, it was passed by the National Council of Provinces (NCoP) and returned to the National Assembly for concurrence. On 9 July 2014, the Bill was withdrawn so as to allow further consultation. It is important to underscore the thorough consultation that took place on this Bill. What is of concern is that the process to bring the Bill to Parliament again has taken so long, considering that it is a key pillar towards the promotion of women's equality and empowerment. The Bill is likely to give impetus to GRB as well. Critics of the Bill noted that it failed to recognise existing legislation that promotes gender equality and protects women; it lacks clarity on the CGE's mandate and role, which may potentially lead to the duplication of roles; the objectives of the Bill are laudable, yet vague in terms of how the promotion of women empowerment would be executed and measured; it overlaps with the current legislations in place (Dube, 2014; Bliss, 2014). According to the 2020 budget speech vote by the Minister of Women, Youth and Persons with Disabilities, the Women Budget and Gender Equality Bill will be reintroduced and tabled in Parliament in the 2021/22 financial year.

The gender discourse is characterised by two key national policy documents: The Framework for Transforming Gender Relations (2000), compiled by the CGE, and the 2000 National Policy Framework for Women's Empowerment and Gender Equality. The latter is often referred to as the Gender Policy Framework (GPF) and provides an enabling policy environment to integrate gender into all government policies, programmes and activities. It also provides for the development of policies, programmes and mechanisms to transform gender relations, the establishment of an institutional framework to advance the status of women and achieve gender equality, and advocate for a new culture and respect for women's rights.

The GPF provides guidelines for different sectors to develop more sector-specific gender policy documents, such as the 2006 Strategic Framework for Gender Mainstreaming in the Public Sector. The 2006 Strategic Framework is premised on the need for government to not treat gender issues with a business-as-usual approach. It advocated for a transformation approach by integrating women and gender issues into all government's structures, institutions, policies, procedures, practice, programmes and projects.

In implementing the 2006 Strategic Framework, short- to medium- and long-term goals were listed. These included conducting gender audits in departments and/or sectors, appointing gender focal points, presenting training programmes for all officials on gender mainstreaming in the public service and developing a strategy to encourage the application and use of gender mainstreaming tools in the day-to-day work of the departments. Thus, the objective of the 2006 Strategic Framework was to create an enabling environment within which women empowerment and gender equality could be realised. The Strategic Framework is a key enabling policy for the establishment of GRB across all spheres of government.

The 2018 Framework on Gender Responsive Planning, Budgeting, Monitoring, Evaluation and Auditing (GRPBMEA) acknowledges the need to locate gender-responsive planning and budgeting within the overall public policy cycle and public financing systems. It includes, among its strategic objectives, locating women's empowerment and gender equality at the centre of public policy priorities, results-based planning, and budgeting and accountability. The strategic objectives also include the allocation of adequate and equitable resources for women's empowerment and gender equality, linked to broader public finance reforms. The GRPBMEA included an envisaged implementation plan.

The policies mentioned above are aligned to and support the core priorities of the 2010 National Development Plan: Vision 2030 (NDP): to eliminate poverty, reduce inequality and unemployment through inclusive economic growth, build human capabilities, enhance the capacity of the state, and promote leadership and active citizenship throughout society. Government departments must integrate it into their planning and budgeting processes as required by various policies and legislation highlighted above, including the Medium-term Strategic Framework (MTSF). Although the NDP was not conceived from a specific gender perspective, its core priorities are directly relevant and inclusive of the principles of gender equity and equality.

The CGE produced a gender analysis of the NDP in 2013 with the objective of assisting the state to ensure that its analysis of developmental challenges facing South Africa, and its planning response address gendered implications, gaps and imbalances. The 2020 NDP Review included a section on gender in Part 1 that sets out the background and context of the review. It essentially made two recommendations: that interventions that address GBV should be strengthened, and that barriers to accessing the labour market should be dealt with. However, on the whole, the 2020 NDP Review still misses the point on gender issues as it does not discuss these issues in greater detail. It is, to a large extent, silent on the gendered impacts of its policy proposals. The visibility of women or girls in their indicators is also limited.

(b) The institutional frameworks on gender-responsive budgeting

Following the guidance of the GPF, the National Gender Machinery (NGM) was established. It constituted the institutional structure that guided the roles and functions of all structures and agencies involved in the pursuit of gender equality.

This machinery included the initial establishment, in 1997, of the Office on the Status of Women (OSW) in The Presidency with gender desks in national and provincial departments, the establishment of the CGE, the restructuring of the OSW in 2009 to establish the Ministry of Women, Children and Persons with Disabilities, and the subsequent establishment in 2014 of the Women's Ministry (Department of Women) in The Presidency. The NGM is furthermore inclusive of a broad range of stakeholders, including Parliament, with structures such as the Women's Multi-party Caucus, as well as independent bodies and civil society.

The CGE is critical to the NGM. The CGE is empowered by the Constitution to promote, educate, monitor and lobby for gender equality. While it has been effective over time in meeting its mandate, it has a relatively small budget (Marock & Konstant 2018). This can hamper efforts in realising and achieving its objectives. While being part of the NGM, the functions of the SAHRC are not aligned to a particular group of human rights, and is therefore also responsible to ensure that the rights of women are protected.

In government, there are departments that play a critical role in gender mainstreaming. These include two ministries in The Presidency (the DWYPD and the DPME), as well as National Treasury. The DWYPD is responsible for leading the socio-economic and empowerment of women, youth and persons with disabilities by advocating for gender equality and mainstreaming commitments. Although the DPME is tasked with ensuring that government delivers on all its objectives, which should include gender budgeting, there is limited evidence of national monitoring and reporting systems on GRB (DWYPD, 2018b). On the other hand, the DWYPD has limited human and financial resources to perform and facilitate the process of coordinating principles and practises to the three spheres of government (Parliament of the Republic of South Africa, 2020).

Notwithstanding the progress made with legislation, policies, commitments and obligations, there is limited evidence towards gender mainstreaming across the country (Parliament of the Republic of South Africa, 2020). Gender equality and women's empowerment is often an afterthought or relegated to a sector or specific outcome rather than being seen as an integral component across all sectors of government. Oversight on gender equality and women empowerment also tends to be limited to the Portfolio Committee on Women, Youth and Persons with Disabilities, yet it should be cutting across all committees (Parliament of the Republic of South Africa, 2020).

In summary, the above review of both the legal, policy and institutional frameworks indicate that South Africa is not lacking as far as the legal, policy and institutional frameworks to support GRB is concerned. The need for urgency in the processing of the Women Empowerment and Gender Equality Bill (2013) cannot be overemphasised. It is key to women empowerment. Although the Bill is a critical step towards women's empowerment, departments can still use existing frameworks to translate gender commitments into reality. Indications that the Bill can be brought back to Parliament in this financial year are worth noting.

5.5.4 Lessons from other countries on gender-responsive budgeting

Various countries have implemented some form of GRB. An illustrative set of country experiences is listed in Table 16 to demonstrate strategies employed globally to support the implementation of GRB. These include legislative changes, budget directives, budgeting, tracking systems and accountability mechanisms.

Table 5.16: Gender budgeting: international experiences

Country	Findings
Uganda (Stotsky et al., 2016)	<p>Uganda’s gender budgeting efforts have a primary objective to ensure that government ministries address gender issues through normal planning and budgeting processes. The country has achieved some success in addressing gender-oriented goals in education and health, and in strengthening justice, and law and order to attend to women’s needs through budgeting initiatives at the national and local levels. Gender budgeting was formally adopted in 2004/05 when the Ministry of Finance, Planning and Economic Development included gender budgeting in the budget call circular. Guidelines on how to address gender-oriented goals in the budget were attached as an annexure for sector ministries and local governments. Throughout the plan, the goal of improving gender equality typically focused on programmes and interventions aimed at women and girls. The budget call circular has been refined over the last few financial years to encourage sectors to adopt gender budgeting.</p> <p>The Ministry of Finance, Planning and Economic Development observed that many sectors were providing a blanket approach or general statements about how they planned to address gender inequality in the budget framework papers. Thus, the 2014/15 budget call circular required sectors to submit specific actions to address gender inequality through the budget. In addition, the budget call circular directed ministries, departments, agencies and local government to identify targets related to gender equality and measure progress towards these goals by collecting data disaggregated by sex, age, disability and geographic location.</p>
Rwanda (Stotsky et al., 2016)	<p>Rwanda’s first efforts at gender budgeting dated back to 2002, with its first initiative led by the Ministry of Gender and Family Promotion in collaboration with the Ministry of Finance and with support of the United Kingdom’s Department for International Development (Ministry of Finance and Economic Planning, 2011). During this initiative, the government developed gender budget statements to be incorporated into programme budgets. However, this early attempt foundered. In the government’s view, the first initiative suffered in that the Ministry of Finance was not the lead on this effort, and there was an overreliance on outside experts and insufficient building of local capacity.</p> <p>A second initiative was undertaken in 2008–2010. This time it was led by the Ministry of Finance, with support from UNIFEM, the United Nations entity responsible for women’s issues (now UN Women). This initiative was premised on the view that every ministry was responsible for ensuring that women’s needs were integrated into its areas of responsibility. The key objectives in the first phase were to sensitise planning and budgeting officers, train a core technical team, and establish sex-disaggregated data collection and monitoring at the national level. Initially, the government chose four sectors as pilots: health, education, agriculture and infrastructure. There was also a system of monitoring and evaluation of targets, collecting sex-disaggregated data, and developing indicators on gender-oriented goals for each sector. In 2011, the Gender Monitoring Office published a study of key gender indicators in four sectors.</p>
Tanzania (Stotsky et al., 2016)	<p>Tanzania was a pioneer in gender budgeting in Africa in 1997. Its first efforts began as a civil society initiative involving a network of non-governmental organisations such as the Tanzania Gender Networking Programme and Feminist Activism. The aim of this coalition was to address gender equality and women’s needs through the budget, especially in the social sectors. Research to inform policymaking was a central part of their efforts. One of the coalition’s first products was a book, <i>Budgeting with a gender focus</i>, outlining the concepts of gender budgeting.</p>

Country	Findings
	<p>A tangible outcome was that, in 2000, the government undertook a pilot project with six ministries (Health, Education and Culture, Agriculture and Food Security, Water, Regional Administration and Local Governments, Community Development, Gender and Children’s Development) to integrate concerns into the budget process. Its later efforts began in 2001, with the coalition of non-governmental organisations continuing its focus on incorporating gender-oriented concerns into the budget process, but elevating gender-oriented concerns to macroeconomic programming. A World Bank Strategic County Gender Assessment in 2004 advocated incorporating more gender-oriented objectives into government poverty-reduction programmes. The World Bank saw the efforts to mainstream gender issues in the budget as consistent with government’s move to an output/outcome-oriented budget and recommended providing more guidance to budget officers in addressing gender-oriented issues. First, the government established a core gender budgeting team within the Ministry of Finance to oversee the implementation of gender budgeting in all sectors of the government and in local governments, working in collaboration with other groups. Second, the national government supported the integration of gender equality commitments in government programmes and policies, and tracking gender-oriented spending at the national and local levels. Since 2010, the Ministry of Finance has given gender-specific instructions to national and local government agencies in developing their budgets. It earmarked two ministries (Agriculture and Labour) and two local government authorities (Temeke Municipality and Morogoro District Council) to pilot a new phase of the implementation of gender budgeting.</p>
Cameroon (Stotsky et al., 2016)	<p>Cameroon began its gender budgeting initiative in 2009 as a partnership between its Ministry of Finance and UN Women. It was led by a team from the Ministry of Finance, the Ministry of Economy, Planning and Territorial Development, and the Ministry of the Advancement of Women and the Family. The initiative included all sectors, although some sectors have been identified as priorities: education, health and agriculture. Monitoring of the initiative took place at two levels. Each governmental institution has a task force responsible for monitoring implementation at the ministerial level, while at the national level, a steering committee issues general guidelines for implementation.</p>
India (Chakraborty, 2014)	<p>In India, the process of institutionalisation for GRB was iterative. The Ministry of Finance began to own the process of GRB in multiple phases. The paucity of institutional mechanisms to conduct GRB was identified at the later stages. To begin with, the inclusion of a chapter on gender inequality in the Economic Survey of India, 2000–2001 (a document prepared by the Ministry of Finance tabled before Parliament a day before the Union Budget of India is released), can be considered as the first step with respect of the role of institutions, i.e. the Finance Ministry, in the GRB process. This was the first visible outcome of the involvement of the National Institute of Public Finance and Policy (NIPFP) in gender budgeting. The chapter was prepared on the basis of the Interim Report on Gender Budgeting prepared by the NIPFP for the Ministry of Women and Child Development and UN Women. The next step in terms of institutionalising the gender budgeting process was to prepare the ‘ex-post’ analysis of Union budgets, when Parliament went into recess after the budget presentation.</p>
Philippines (Chakraborty, 2014)	<p>The GRB initiative in the Philippines began in 1995 as part of the gender and development movement. The nation’s General Appropriations Act, which approves the national budget, required all national agencies to set aside 5% of their budgets for gender and development. In 1998, local governments were required to do likewise. This 5% allocation was meant to provide national agencies and local governments with a budget for programmes that would enhance the capability for gender-sensitive planning and budgeting. Philippines has done pioneering work in the field of expenditure, considered in terms of its gender impact.</p>
Australia (Chakraborty, 2014)	<p>The original approach to gender budgeting was developed in Australia in the 1980s. Australia’s landmark gender budgeting initiative in 1984 required government ministries and departments to analyse the impact of the annual budget on women and girls, with a focus on public expenditure. Gender budgeting was given additional impetus by the Fourth World Conference on Women, held in Beijing in 1995, whose Beijing Platform for Action called for ensuring the consideration of a gender perspective and women’s needs in budgetary policies and programmes.</p>

Country	Findings
	A number of other international agreements or declarations since then reaffirm this commitment to using government budgets for gender equality and women. The Australian GRB initiative was the first attempt to analyse government budgets from a gender perspective. This initiative dates back to the mid-1980s, when federal and state governments in Australia implemented what were called Women’s Budget Statements (WBS) as a tool for mainstreaming gender into economic and social policy. State governments produced WBS (official budget documents) on the anticipated impact of all ministries’ budget revenues and expenditures on women and girls.
Mexico (Chakraborty, 2014)	Mexico provides an example of a country where gender-oriented fiscal efforts were undertaken both at the federal and the state levels. At the federal level, the efforts began with health. In collaboration with non-governmental organisations, the Ministry of Health diagnosed the health needs of women, assessed whether existing programmes were adequate to address these needs, allocated budgetary resources to meet those needs, and designed indicators to measure whether the needs were being met. Evidence suggests that Mexico has made progress on women’s health issues, including a drop in maternal mortality and a rise in life expectancy. Federal budget reforms supported the institutionalisation of this approach more broadly in the government ministries. In Mexico City, a similar initiative was undertaken where parts of the government were tasked to identify where gender was relevant to their programmes.
Morocco (Chakraborty, 2016)	As part of its gender budgeting efforts, Morocco assessed the needs of women and girls in education, health, the judicial system, infrastructure and employment, and sought to develop fiscal and other policies to ensure their equal access to education and health care, while expanding women’s labour market opportunities. Various legal reforms that accompanied the gender budgeting efforts strengthened women’s rights in family law and other areas of civic, political and economic life. In 2014, changes to the organic budget law required gender equality to be considered when defining performance objectives, results and indicators in all parts of the budget, and that a gender report be included as part of each year’s Finance Bill. Morocco’s efforts were recognised by the international community with the Ministry of Economy and Finance receiving the United Nations Public Service Award in 2014.
United Kingdom (Stotsky et al., 2016)	In 1989, the United Kingdom Women’s Budget Group (UK WBG) emerged. Gender advocates in the country began through publicly commenting on the effect of the national budget on women. To date, most of the UK WBG’s work has focused on the analysis of national revenue-raising mechanisms, such as changes in taxes and social security instruments.

5.5.5 Key lessons on gender-responsive budgeting

From the international precedents, a few key lessons can be learnt. Ministries of finance take the lead in supporting gender equality commitments in all government programmes and policies. In India and Rwanda, for example, the ministries of finance own the process of GRB. Gender-responsive initiatives have often failed as finance ministries fail to understand and recognise that GRB is ‘their reforms’, i.e. finance ministries have often seen GRB as beyond their remit, instead of embracing GRB as a tool that can be used to enhance gender equality and improve the budget processes. Finance ministries should integrate gender budgeting into the whole budgeting value chain: from planning, coordinating the budget process, and drafting and implementing the national budget. The same process should hold for ministries responsible for gender and women’s programmes, acting and interfacing between themselves and the Ministry of Finance. As in Tanzania, where the government established a core gender budgeting team within the Ministry of Finance to oversee the implementation of gender budgeting in all sectors of government, it is important for the South African government to consider the establishment of such a team within government.

GRB institutionalisation should be taken as part of finance management reforms to support the equitable institutionalisation of the gender budget in planning and processes. Amendments to budget laws have been made to ensure the mainstreaming of GRB and the realisation of gender equality. This has been achieved through gender budget reports becoming a prescribed requirement to be included in the submission of the annual budget documentation and legislation tabled in the relevant legislative authority. Budget circulars are key to starting the GRB process. These circulars should be gender sensitive. In Uganda, for example, guidelines on how to address gender-oriented goals in the budget are attached as an annexure for sector ministries and local governments. The gender budget reports include information on all aspects of the budget, such as performance indicators and gendered impacts of sector budgets.

Furthermore, various gender equality initiatives are never implemented because they do not form part of the budget decision-making processes of government. The effectiveness of gender budgeting processes has often not only been attributed to the Ministry of Finance, but to planning and economic development functions being at the forefront. The involvement of these key government functions ensure that gender budgeting requirements are included in budget circulars that direct the implementation of GRB principles in all ministries and departments. It also ensures compliance where every ministry or department integrates gender equality principles and targets, as well as women empowerment programmes, as areas of responsibility in their respective departments.

In other countries, GRB is based on a sound system of the monitoring and evaluation of targets, collecting gender disaggregated data and developing indicators on gender-oriented goals for each sector. GRB is enabled by gender disaggregated data. This is important as what can be measured is likely to be prioritised and monitored. Brambilla (2001) is of the view that mechanisms that are in place to monitor and evaluate policies, programmes and projects are largely gender blind because data is sketchy. Gender-sensitive indicators are key tools to advance gender equality commitments and women's empowerment. Moser (2017) corroborates the view that gender-sensitive measures are key for taking gender inequalities seriously. However, gendered data is limited and poorly used, which makes it difficult to know or to ascertain if equality commitments are met. Other reasons for the use of gender indicators include advocacy, improved planning, mainstreaming interventions and policies, holding institutions and policy accountable for gender equality commitments and stimulating change through data collection processes.

5.5.6 Concluding remarks

South Africa has committed itself to various international and national commitments with respect to GRB. As such, various legislations, policies and institutional frameworks have been put in place. However, evidence on the ground shows that despite all the initiatives to promote a gender equal society, women empowerment and gender equality remain very weak. Many reasons account for this. As the literature cited suggests, these reasons include a lack of sustainability of the initiatives as a result of the lack of full buy-in at both the political and administrative levels of government.

They also include limited enforcement of the legal requirements for GRB integration, weak mainstreaming of GRB in various government departments, budget circulars and budget documents not clearly requiring this information, and a lack of knowledge on gender issues on the part of government officials. In terms of the budget analysis, the Commission underscores the point that, without gender disaggregated data, it is difficult to implement GRB. All the departments analysed have indicators in place to measure the performance of their programmes. However, the indicators are not detailed or gender disaggregated, making it difficult to assess the impact of their budgets on men and women, as their impacts are not gender neutral. Where there is gender disaggregation, it would be by virtue of the programme targeting particular gender (male circumcision) or maternal mortality (women).

For gender goals to be realised, the international literature reviewed revealed that various reforms would be needed, including national government, through the Ministry of Finance, the DWYPD and the DPME taking the lead in GRB. The Ministry of Finance should be involved in gender budgeting processes through the distribution and allocation of resources. The DWYPD and the DPME should coordinate the entire government machinery in advancing GRB by defining norms and standards for gender-specific performance indicators and targets as well as performance requirements. GRB institutionalisation should be prioritised and made part of the finance management reforms in order to support the equitable institutionalisation of the gender budget in planning and processes. Consideration should be given to whether current budget legislation and regulations need to be reviewed to mainstream GRB. The budget process should start with MTEF guidelines that are gender sensitive. The gender budget reports should contain gender performance and gender impact indicators of all government programmes. In addition, gender-oriented goals should form part of the medium-term expenditure plans as gender equality is a long-term goal that cannot be achieved in a short period of time. Lastly, an independent body should perform gender budget auditing to objectively analyse whether gender equality has been attained in the budgets allocated.

5.5.7 Recommendations

The Commission recommends the following:

- 1. The DWYPD and the DPME should finalise the institutionalisation of gender-responsive planning throughout national and provincial government as envisaged by the GRPBMEA.*
- 2. National Treasury, together with the DWYPD and the DPME, should spearhead the implementation of GRB and mainstreaming GRB throughout the entire scope of the budget process as it applies to national and provincial government. In collaboration with CoGTA, GRB implementation and mainstreaming should be extended to the local government sector.*
- 3. National Treasury should create an enabling environment to institutionalise the GRPBMEA. This may include the development of an overall budget framework for the model to be implemented across the budget cycle and MTEF processes, including the revision of the format of Estimates of National Expenditure to give specific expression to the advancement of gender equality.*

4. *National Treasury and the DWYPD should consider the introduction of a formal gender auditing process to be conducted by a relevant independent institution in respect of the non-financial performance information of departments, entities and municipalities.*
5. *The DWYPD should coordinate and spearhead initiatives focused on the capacity building of political and administrative leadership on gender-responsive planning, budgeting, monitoring, evaluation and auditing at all levels of government. Such initiatives are to include the training of budget officers on GRB and the use of gender disaggregated data in the budget process.*
6. *The DWYPD should, on an annual basis, prepare a comprehensive report on how the Division of Revenue Bill responds to gender inequality and how fiscal policies translate government's gender equality commitments. The report should be tabled for consideration by the relevant Committees of Parliament.*
7. *The DWYPR, together with Stats SA, should provide explicit guidelines for collecting and integrating gender disaggregated data to ensure the visibility of girls and women in government programme execution and in budgeting processes within government. The Department should also invest in statistical capacity building in government to improve the measurement of gender equality indicators and the collection of gender disaggregated data.*

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Chapter 6

Testing the means test: Social assistance in South Africa in the time of COVID-19



Chapter 6: Testing the means test: Social Assistance in South Africa in the time of COVID-19

Benjamin Stanwix

6.1 Introduction

The COVID-19 pandemic has forced the South African government to rely more heavily on social grants in order to offset the negative income shocks experienced by poor households and individuals. To this end, existing grant payments were temporarily increased in the latter half of 2020, and a new COVID-19 Social Relief of Distress (SRD) Grant was introduced to cover unemployed individuals who currently fall outside the pre-existing social assistance net. Using direct cash transfers as a way to quickly reach the poor in this manner is made possible by a relatively well-developed grant system in South Africa that has been rapidly expanded over the last two decades. The number of people receiving grants increased from just 2.4 million in 1998 to reach 18 million people by mid-2020 – equivalent to almost one in every three South Africans (SASSA, 2020). Factoring in those who received the temporary SRD Grant increases the total number of recipients to almost 24 million. Evidence suggests that the increased grant amounts, and the new SRD Grant, are pro-poor in their coverage and have helped mitigate some of the negative impacts of the pandemic for vulnerable households (Bhorat & Köhler, 2020). However, it remains unclear how long the SRD Grant will last (it was recently extended beyond the January 2021 deadline), and to what extent further grant payments are affordable as the effects of the pandemic continue into 2021.

Aside from existing budgetary constraints, the ability of the social grant system to effectively reach poor South Africans depends most critically on targeting. At present, almost all social grants in the country rely on a relatively simple means test as a targeting device, where this determines who is poor and deserving of assistance. Available evidence suggests that, in general, this has led to social grant spending being relatively well targeted towards the poor (Moore & Seekings, 2019). However, the negative impacts of COVID-19 have necessitated a reconsideration of poverty and vulnerability, at least in the short term, as previously non-poor South Africans experience severe income shocks, and in many cases, a permanent loss of their livelihoods (Bhorat, Oosthuizen & Stanwix, 2020). In addition, the current means test approach is not perfect. For example, work by Delany and Jehoma (2016) shows, in the case of the Child Support Grant (CSG), that 18% of those eligible to receive the grant do not receive it. An issue of central concern then is whether the current means testing approach is sufficient to ensure that the poor can access social grants. Following from this are considerations about alternative ways of identifying the poor, and the accompanying costs of different targeting thresholds. Each of these topics is discussed in this paper.

This paper begins, in section 6.2, by describing the key problem to be addressed, and then more clearly defining two specific research questions in section 6.3. Before conducting their own empirical analysis, the authors provide context for this work by briefly reviewing the literature on social grants in South Africa in section 6.4. This section summarises the largely positive impacts that cash transfers have had on a range of measurable socio-economic factors over the last two decades. Section 6.5 introduces the data used in the analysis and explains the analysts' approach. Section 6.6 contains the bulk of the analytical work and is divided into four subsections. The section begins, in section 6.6.1, by providing an overview of the current social grant system, focusing on coverage and the means tests that are currently applied for each grant. Section 6.6.2 examines the receipt of grants and tests how different poverty lines reveal either inclusion or exclusion errors concerning current grant coverage. Section 6.6.3 looks at how the social protection system has been used to reach vulnerable groups in response to the negative effects of COVID-19. Finally, section 6.6.4 discusses alternative targeting mechanisms and offers a short case study of alternative means testing options to reflect on the application of such targeting mechanisms in South Africa. The paper concludes with section 6.7.

6.2 The problem

Critical to the performance of any social assistance system is the requirement that individuals and households who qualify for assistance should be able to access it. At the same time, from a system-wide perspective of value for money, the access of non-poor individuals and households to such assistance should be restricted. However, in reality, there are a number of imperfect targeting methods that can be deployed to reach the poor, each with varying levels of efficacy. The primary way in which access to grants is controlled in South Africa is through the application of a means test that sets a threshold for income, and for certain grants, an asset threshold. For each grant, individuals qualify if they are below the relevant threshold. Currently, almost all grants in South Africa are means tested; the exceptions are the Foster Care Grant (FCG), the Care Dependency Grant and the COVID-19 SRD Grant.

In addition to the regulatory requirements set out in the law, the accurate implementation of a means test is essential both to ensure that the poor can access social grants and to limit leakages to the non-poor. However, implementing the means testing of grants has implications for the overall cost of administering the system due to the administrative burden it imposes – where more complex means testing regimes are more expensive. This fact, in combination with a situation of relatively high rates of grant coverage in South Africa, has in the past led to calls to scrap the existing means tests entirely. Having no means testing would be ideal if it were only the eligible poor who collected grants. However, given that this is unlikely, and considering the constrained state of the country's fiscus, scrapping means testing is arguably not feasible at present, as it would significantly expand coverage. This outlines the main problem referred to above, and is the focus of this paper – how to ensure efficient means testing that includes the poor, excludes the non-poor and does not pose an excessive administrative burden. This paper reflects on South Africa's current means testing regime considering this problem.

6.3 Research questions/objectives

The concerns raised concerning effective targeting give rise to two main research questions in the South African case. Firstly, to what extent do the current means tests ensure that individuals and households most vulnerable to poverty can access the grant system? Secondly, are there alternative, more efficient ways to identify the most vulnerable individuals and households, and what are the financial implications of such alternatives?

These two questions are addressed, in turn, after a short review of the South African literature on social grants in section 6.4.

6.4 Literature review

In line with broad trends in the Global South, there has been an exponential growth in social protection and cash transfer policies in Africa since the early 2000s, with close to 50 new programmes introduced on the continent (World Bank, 2018; UNDP 2019). In South Africa, social protection has expanded significantly since 1994, with cash grants becoming the cornerstone of redistributive policy intervention in the country. At the household level, close to two-thirds of the country's population now resides in households where at least one person is a grant recipient. This has been further expanded with the introduction of the SRD Grant. The current system of permanent grants primarily tries to ensure that the elderly, the disabled and those looking after children receive a cash transfer of some form. Total spending on grants amounts to approximately 3.4% of South Africa's gross domestic product (GDP) (SASSA, 2020). In addition, by January 2021, approximately R16 billion had been spent on the temporary SRD Grant since May 2020 – approaching 10% of the annual expenditure on permanent social grants (South African Government, 2021).

From a macroeconomic perspective, the goal of these cash transfers is to reduce both poverty and inequality. There is evidence to suggest that this has been achieved to varying degrees over the last two decades. The existing grants are consistently found to reduce poverty and, depending on the methodology, to be – at worst – neutral in terms of inequality. The implementation of social grants has either reduced income inequality or appeared to have a marginal or insignificant effect on reducing inequality. Income inequality does not increase in any scenario, regardless of the methodology used, when analysing the effects of grant implementation (Samson et al., 2004; Leibbrandt, Woolard, Finn & Argent, 2010; Van der Berg, 2009; Bhorat & Köhler, 2020; Bhorat et al., 2020). The positive poverty effects are particularly large for measures such as the poverty gap, which attaches greater weight to the poorest individuals or households, suggesting that they are critical lifelines for the very poorest households. In terms of inequality, Inchauste, Lustig, Maboshe, Purfield and Woolard (2015) find that grants reduced the Gini coefficient from 0.750 to 0.694 in 2010/11, which is high relative to comparator countries. Grant-receiving households experience an increase in basic services such as water and sanitation, electricity and education, as well as increases in asset accumulation. There also appear to have been beneficial impacts in terms of multidimensional inequality (Pasha, 2016).

Beyond the effects that grants have had at an economy-wide level, a growing social science literature finds that grant payments have had a wide range of positive socio-economic impacts at both the household and individual level. Evidence points to positive impacts of social grant receipt on nutrition (Waidler & Devereux, 2019), education (Standish-White & Finn, 2015), health outcomes (Case & Paxson, 2001), labour supply (Ardington, Case & Hosegood, 2009; Eyal & Woolard, 2013) and fertility (Rosenberg et al., 2015). Social grants also encourage increased productive activities by providing some support in the pursuit of livelihood activities (Nnaeme, Patel & Plagerson, 2020; Neves et al., 2009). The CSG, in particular, has led to measurable improvements in a range of spheres, including school enrolment, attendance and performance (Case, Hosegood & Lund, 2005), mental health (Eyal & Burns, 2019; Plagerson, Patel, Hockfeld & Ulriksen, 2019), caregiver engagement in activities associated with children's wellbeing, and women's empowerment in financial decision making (Patel, Knijn & Van Wel, 2015). Other studies specifically focused on children identify both educational and nutritional benefits of the CSG (Heinrich, Hoddinott & Samson, 2017) and make findings that relate to the enhanced dignity of the elderly and young mothers who receive the grant (Sagner & Mtati, 1999; Surender, Noble, Wright & Ntshongwana, 2010). There is mixed evidence of labour supply disincentive effects arising from grant receipt, where most work finds either positive or no significant effects, but some work suggests that participation and job search can decline with grant receipt (Ranchhod, 2009; Ardington et al., 2009; Woolard & Leibbrandt, 2013).

Overall, the targeting of existing grants to the poor appears to be relatively effective, at least in the period before the COVID-19 pandemic. Indeed, this research provides updated evidence to support this view. Prior fiscal incidence estimates indicate, for example, that 76% of government spending on social grants is received by the poorest 40% of the population (Bhorat & Cassim, 2014). In addition, Bhorat and Cassim (2013) show that, between 2005 and 2010, social grant income kept real household incomes relatively stable across the distribution over time – emphasising that, without grants, real household income would have declined for households in the lower quintiles of the distribution.

Turning to the more recent past, over the last year, the grant system has been a key route through which government has been able to address some of the negative effects of the COVID-19 pandemic and associated lockdown (Bhorat et al., 2020; Bhorat & Köhler, 2020). For example, the new SRD Grant was successful in reaching a large and previously unreached category of people who were not in receipt of a social grant (SASSA, 2020). This speaks to a major gap in South Africa's permanent social protection system, where there is very little provision for the growing cohort of unemployed individuals of working age. While the SRD Grant specifies some access restrictions in an attempt to target the uncovered, unemployed, working-age poor, it was not set up with a means test and thus has relatively vast coverage across the income distribution. However, evidence suggests that this extended coverage did not come at a huge cost to the poorest households in terms of targeting. In theory, individuals in households higher up the income distribution were covered by the grant to a larger extent than is the case with the CSG, for example.

However, as shown below, data from the National Income Dynamics Study (NIDS)/ Coronavirus Rapid Mobile (CRAM) surveys reveal that, in October 2020, almost 80% of the SRD Grant take-up was among those in households in quintiles 1 to 3. Moreover, as Bhorat et al. (2020) show, the COVID-19 crisis has directly affected many individuals and households who would previously not have been considered poor.

From the existing evidence, it is clear that social grants have had a wide range of positive impacts in South Africa, and have also been a critical source of relief during the COVID-19 pandemic. However, the social and economic challenges that persist as a result of the COVID-19 crisis are not likely to disappear in the short term and are likely to deepen structural unemployment, with some jobs being lost permanently. The demand for cash transfers to support the poorest households is thus likely to increase. However, given the state's budget constraints, and without a more broad-based economic recovery, social assistance alone can only have a limited effect on poverty and inequality, and cannot stand in for inclusive economic growth that brings more people into productive employment. As such, the accurate targeting of existing and planned social protection measures remains crucial to ensure that those in need can access state support.

The recent temporary expansion of social assistance in response to the pandemic may also create new challenges in managing the termination of grants at some point. If the SRD Grant is to be seen as a precursor to some form of Basic Income Grant (BIG), the planning and costing of such a policy should be assessed with urgency. There may be scope to introduce income protection geared toward the working-age unemployed, if not a universal basic income grant. Naturally, the affordability of such policy options is critical to consider, and establishing the likely distributional effects of the different proposals and detailed cost-benefit analyses would aid policy engagement and decision making.

6.5 Data and methodology

To examine whether South Africa's current system of means-tested social grants effectively targets vulnerable individuals and households, an empirical analysis of grant receipt and vulnerability was conducted that relies primarily on the latest wave of data from the NIDS. The NIDS is South Africa's first longitudinal, individual, nationally representative household survey. Beginning in 2008, it is conducted approximately every two years and has followed the same individuals over five waves, the most recent wave being in 2017.

The survey consists of individual and household questionnaires and includes a wide range of demographic and socio-economic variables relating to poverty and wellbeing, grant receipt, household composition, health, education, migration and economic activity, to name a few. The NIDS began with a sample of approximately 28 000 individuals in 7 300 households, and 73% of individuals who were interviewed in Wave 1 were successfully re-interviewed in 2017. Although one would prefer to make use of more recent data, NIDS Wave 5 (2017) is the latest representative, individual dataset, which contains detailed information on grant receipt, and household income and wealth – both of which are required for the purposes of this analysis.

The analysis of data on social grants, household income and household size in the NIDS also relies on several money-metric poverty lines published by both the World Bank and Statistics South Africa (StatsSA), which are used to identify individuals in what are classified as ‘poor’ and ‘non-poor’ households. For these money-metric lines, both absolute and relative measures are included. Once poor individuals have been distinguished from non-poor individuals using different measures, the distribution of grant coverage can be analysed for those classified as poor in each case, and compared to actual grant receipt among eligible individuals, as stipulated by the existing means tests. Put differently, the analysis will check to see how well covered the poor are by the current grant system, and how this changes when different poverty measures are used. This then provides a sense of the targeting efficacy of the existing means-tested grant system. Throughout the analysis, the relevant post-stratification survey weights are employed to account for non-random attrition, non-response, and survey design.²³

6.6 Analysis and findings

6.6.1 An overview of grant receipt and poverty in South Africa

At the time of South Africa’s transition from apartheid in 1994, the country’s social protection system was already relatively well developed. The origins of the system date back to the early 20th century, although in the pre-democratic period, it existed primarily to benefit individuals classified as ‘white’, and to a lesser extent those classified as ‘coloured’ (Woolard, Harttgen & Klasen, 2011). Thus, although many of South Africa’s contemporary social protection programmes were introduced before 1994, social assistance largely served as a safety net for relatively poor ‘white’ individuals, with only rudimentary benefits for other groups. Benefits were lowest for ‘black’ individuals, who also faced more stringent means tests to qualify. These discriminatory provisions were abolished with the 1992 Social Assistance Act and later, following the recommendations of the Lund Committee in 1996 and the Taylor Committee in the early 2000s, a more comprehensive social protection system was introduced (Woolard et al., 2011). Figure 6.1 presents the evolution of social grant receipt in South Africa between 2009 and 2018: a period of rapid expansion. The total number of grants distributed grew by 38% over this period, from approximately 13 million in 2009 to just under 18 million in 2018. The reach of this system in household terms is even more impressive – in 2018, 36.5 million individuals lived in a household where at least one member received a social grant.²⁴

The basic structure of South Africa’s social protection system comprises two key components: Firstly, social assistance, which seeks to protect the poor with in-kind or cash transfers (commonly known as social grants); and secondly, social insurance, which seeks to protect individuals against adverse events such as unemployment or workplace injury.

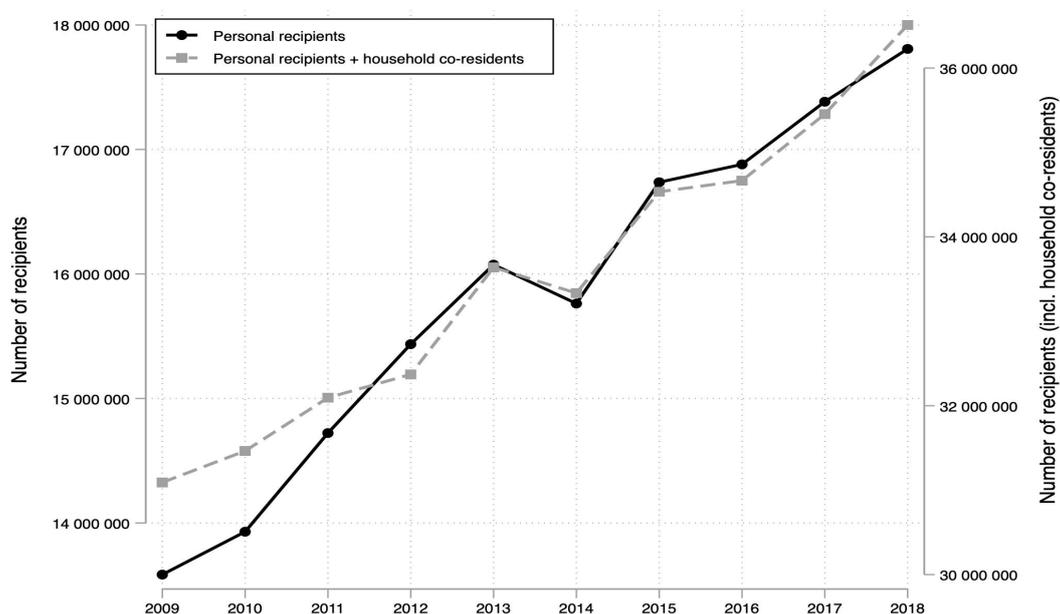
²³ The interested reader is referred to Daniels, Ingle and Brophy (2020) for more information pertaining to the NIDS survey design.

²⁴ Calculated using the estimated number of recipients and co-residents as per the 2018 General Household Survey and Statistics South Africa’s mid-year population estimate of 57.73 million people in 2018.

This analysis exclusively encompasses social assistance programmes in South Africa that consist of tax-financed, unconditional, means-tested grants. Social assistance provided through public works is not considered under this analysis.

All social grants in South Africa, except for the FCG, the Grant-in-aid, and the SRD Grant, are means tested. In other words, the income and wealth of the person applying for social assistance are evaluated to determine whether they are below the stipulated threshold and thus eligible for receipt. To provide more granular detail about the number of grant recipients and which grants drove the aggregate expansion identified in Figure 6.1, the total number of grants is examined, disaggregated by grant type, over the last decade (see Table 6.1).

Figure 6.1: Number of grant recipients in South Africa: 2009–2018



Source: Commission’s own calculations; Stats SA (2017)

Notes: [1] All estimates are weighted using relevant sampling weights. [2] Personal recipients of any social grant are included.

The CSG is the largest grant in the system, accounting for 71% of total grants distributed in 2019/20. About 13 million CSGs are distributed monthly to 7.2 million primary caregivers on behalf of their eligible children – 98% of whom are women (SASSA, 2020). As of June 2020, 64.2% of children in South Africa had a caregiver that received a CSG on their behalf.²⁵ The Grant’s large growth in take-up over time is mostly attributable to the gradual increase in the age eligibility threshold, and a less stringent means test.

²⁵ Based on data from SASSA (2020) of nearly 13 million CSGs distributed, and Stats SA’s 2020 mid-year population estimate of just under 20 million children under the age of 18 years.

The Older Persons' Grant (OPG, formerly the Old Age Pension) and Disability Grant²⁶ (DG) are the second- and third-largest grants in terms of coverage, collectively accounting for just over one in every four recipients. The grant amounts for the OPG and DG are also more than four times larger than the CSG.

Table 6.1: Number of social grants distributed by grant type, 2009/10 versus 2019/20

	2009/10			2019/20			Growth in recipients (%)
	Monthly amount (nominal rands)	Number of grants (000's)	Percentage of total	Monthly amount (nominal rands)	Number of grants (000's)	Percentage of total	
Child Support Grant	240	9 381	68.08	440	12 777	71.00	36.20
Older Persons' Grant*	1 010	2 491	18.08	1 860	3 655	20.31	46.73
Disability Grant	1 010	1 299	9.43	1 860	1 058	5.88	-18.55
Foster Care Grant	680	489	3.55	1 040	350	1.94	-28.43
Care Dependency Grant	1 010	119	0.86	1 860	155	0.86	30.25
Total		13 779	100.00		17 996	100.00	30.60

Source: Bhorat and Köhler (2020).

Notes: [1] * Includes War Veterans' Grant recipients whose grants amounted to R1 880 in 2019/20 and R1 030 in 2009/2010; for the 2019/20 financial year, the monthly amount refers to that for individuals between 60 and 75 years of age, and the Older Persons' Grant is R1 880 for individuals over 75 years of age. [2] Recipients per grant may not add up to the total number of recipients due to rounding. [3] Grant-in-aid and SRD Grant recipients are excluded here.

Table 6.2: Means test thresholds of social grants in South Africa by grant type

Social grant	Amount (2020 rands per month)	Income means test (2020 rands per annum)		Assets means test (2020 rands)	
		Single	Married	Single	Married
Child Support Grant	450	54 000	108 000	NA	
Older Persons' Grant	1 860	86 280	172 560	1 227 600	2 455 200
Disability Grant	1 860	86 280	172 560	1 227 600	2 455 200
Foster Care Grant	1 040	NA		NA	
Care Dependency Grant	1 860	223 200	446 400	NA	
Grant-in-aid	450	NA		NA	
War Veterans' Grant	1 880	86 280	172 560	1 227 600	2 455 200

Source: Commission's own compilation; SASSA (2020)

Notes: [1] Grant data as of October 2020. [2] Table excludes the COVID-19 SRD Grant, which, according to the eligibility criteria, would have an income-based means test of R0 and no applicable asset-based test.

²⁶ This is currently the only grant intended for working-age adults.

As the literature shows, spending on social grants in South Africa is relatively well targeted towards the poor, a fact that can largely be attributed to the use of means testing as a targeting device (Van der Berg, 2014). The means test thresholds vary by grant type and marital status. Table 6.2 presents the details of these means tests for each grant, as of 2020/21.

In addition to income-based means tests, three grants – the OPG, the DG, and the War Veterans' Grant – are also subject to an asset-based means test that determines eligibility. The threshold amounts for a given means test differ for married couples and individuals, where the threshold for married individuals is simply twice the threshold for a single person for a given grant. For example, if one disregards other relevant eligibility criteria, a single individual applying to receive a CSG of R450 per month will be eligible if their income does not exceed R54 000 per year or R4 500 per month. This amount will be doubled if they are married.

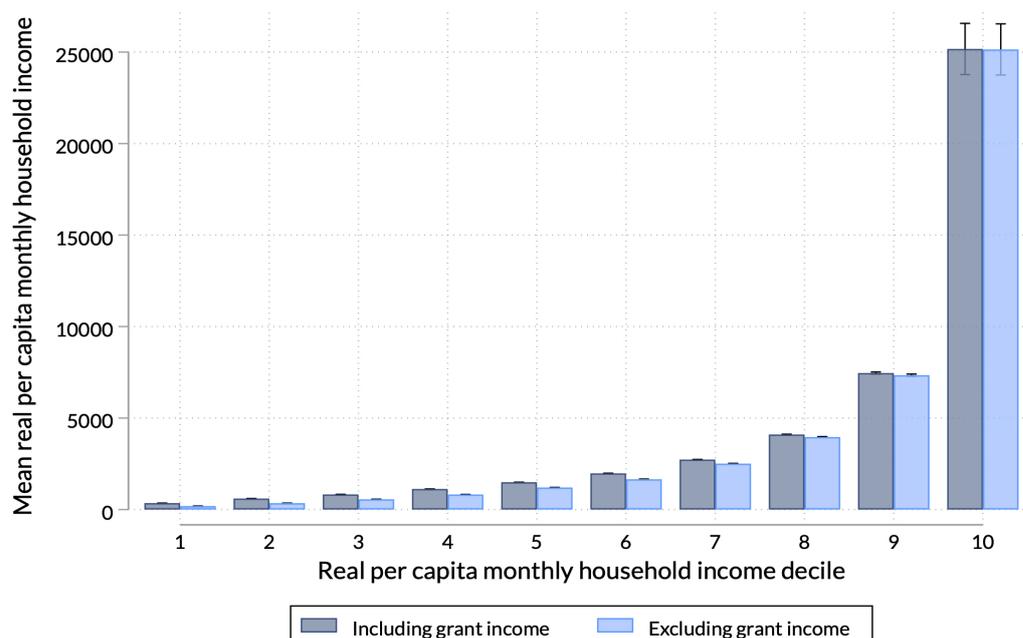
6.6.2 Grant receipt and vulnerability in South Africa

Against the basic background of the grant system in South Africa explained above, grant receipt and poverty will be examined to assess how well the existing means tests cover those identified as poor, i.e. whether those who are classified as poor, according to various poverty measures, are covered by the grant system. Figure 6.2 shows the distribution of household income in South Africa, adjusted for inflation, and expressed in April 2020 rands. The figure highlights two familiar characteristics of the South African income distribution: firstly, that it exhibits extreme income inequality; and secondly, that the majority of households earn very little. For example, about 70% of households have a per-capita monthly income that is below the national minimum wage for a single person (R3 500).

In 2017, the average household in the richest decile had an income of over R25 000 per person per month. These households are thus nearly 30 times richer than households in the poorest 50% of the distribution, where the average household income is just R880 per person per month. This income inequality can be measured more definitively using other indicators. For example, this distribution of per-capita household income has a Gini coefficient of 0.66, which is among the highest in the world. Income inequality is also more apparent towards the top of the distribution – one sees that the incomes of households at the 90th percentile are about 22.5 times larger than those at the 10th percentile, and 6.5 times larger than that of median-income households. By contrast, the incomes of households in the middle of the distribution are only 0.29 times larger than those at the 10th percentile. This suggests that vulnerability extends high up the distribution and is not necessarily concentrated among the poorest deciles.

Moreover, it is clear that social grants contribute a significantly larger share of household income among poorer households – evidence of progressive targeting – as indicated by the difference between household income including and excluding grant income. Among the poorest 10% of households, the average household has a per-capita household income of R352 including grant income, but only R90 when grant income is excluded – a difference of R261. For the richest 10%, this difference is only R29. In other words, for the poorest 10% of households, 74% of household income is accounted for by social grants, in contrast to grants accounting for just 0.1% of household income for the richest 10% of households.

Figure 6.2: Distribution of real per-capita monthly household income, 2017



Source: Commission’s calculations; NIDS Wave 5 (2017)

Notes: [1] All estimates are weighted using relevant post-stratification sampling weight. [2] After-tax monthly household income data with full imputations used. [3] Household income is inflated to April 2020 rands. [4] Household income including grant income is inclusive of income from employment, social grants, social insurance, investment income and remittances. [5] Household members are weighted equally and are not adjusted using equivalence scales. [6] A 95% confidence interval is presented as capped spikes.

Given that income vulnerability is so widespread, one would expect to observe high estimates of poverty. To assess poverty levels, Figure 6.3 plots a cumulative density function of per-capita monthly household income, and measures how many people earn below a variety of accepted poverty lines. Put another way, data on income is used to plot the cumulative proportion of individuals, and to order them from the poorest to the richest along the x-axis. Six different money-metric poverty lines are then used to see how many people fall below a given poverty line to gain a broad picture of poverty levels in South Africa. Three of these are international lines used by the World Bank, and three are poverty lines used by Stats SA to measure poverty in South Africa. Specifically, the poverty lines included for this exercise are the World Bank’s extreme poverty line,²⁷ the lower middle-income (LMI)²⁸ and upper middle-income (UMI) poverty lines,²⁹ and Stats SA’s food poverty line (FPL), lower-bound poverty line (LBPL) and upper-bound poverty line (UBPL)³⁰. Using Stats SA’s FPL, which is the lowest rand amount and is the furthest to the left in Figure 6.3, it is estimated that 26.7% of the population would be regarded as poor, where household income excludes grant income.

²⁷ \$1.90 per person per day (p.p.p.d.) equivalent to R850 per person per month (p.p.p.m.) in April 2020 rands.

²⁸ \$3.20 p.p.p.d. equivalent to about R1 430 p.p.p.m. in April 2020 rands.

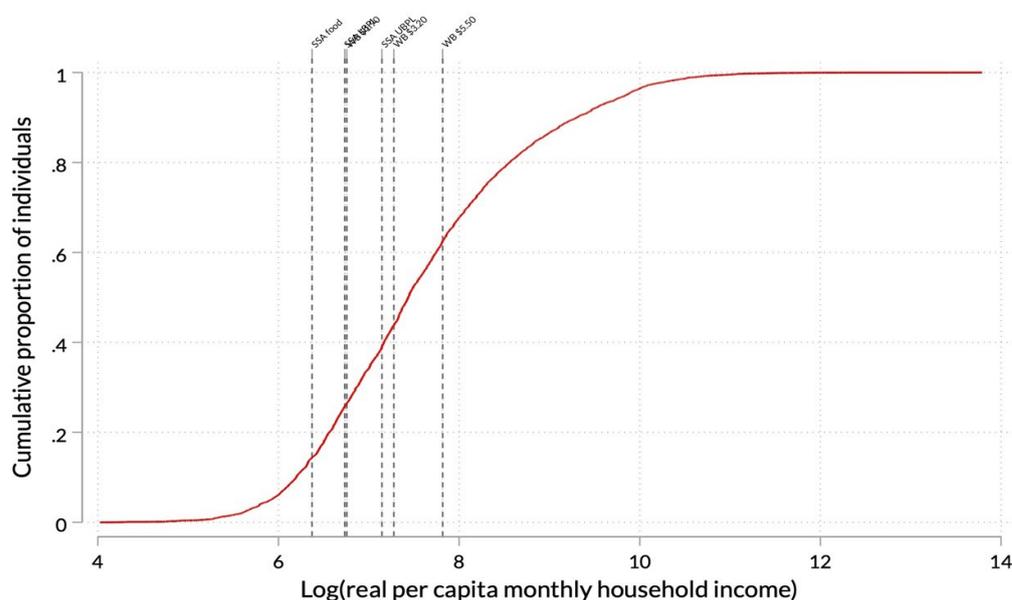
²⁹ \$5.50 p.p.p.d. equivalent to R2 458 p.p.p.m. in April 2020 rands.

³⁰ Equivalent to R585 p.p.p.m., R840 p.p.p.m. and R1 268 p.p.p.m., all in April 2020 rands.

This estimate reduces to 14.3% when grant income is included, which suggests that grants have a poverty-reducing effect of more than 46%. Put differently, nearly 7 million more people would be classified as poor under the FPL if their households did not receive any grant income. Indeed, the observed differences in poverty rates using household income inclusive and exclusive of grant income are significant, regardless of the poverty line used.

If one excludes grant income, one could estimate that between 26.7% and 35.7% of the population (between 15.1 and 20.2 million people) would be impoverished using the three most conservative (the lowest) poverty lines: the World Bank’s extreme poverty line and Stats SA’s FPL and LBPL, which range from R585 to R850 per person per month (p.p.p.m.). The ‘mid-line’ poverty estimates, which are based on Stats SA’s UBPL and the World Bank’s LMI poverty line of R1 268 to R1 430 p.p.p.m., suggest that about one in every two people (equivalent to 26.5 to 28.5 million people) would be poor. Using the highest poverty line – the World Bank’s UMI poverty line – one could estimate that 64% of the South African population live on less than R2 458 p.p.p.m. and would thus be considered poor. This latter poverty line is nearly equal to the per-capita household income of the average household in decile 7, again highlighting the extent of vulnerability across the distribution. It is worth noting here that the lowest grant means test, for the CSG, is R4 500 per month. This makes it clear that the current means-testing system does not exclude anyone who is income poor, even according to the highest poverty line selected here.

Figure 6.3: Cumulative density function of real per-capita monthly household income in 2017, against several poverty lines

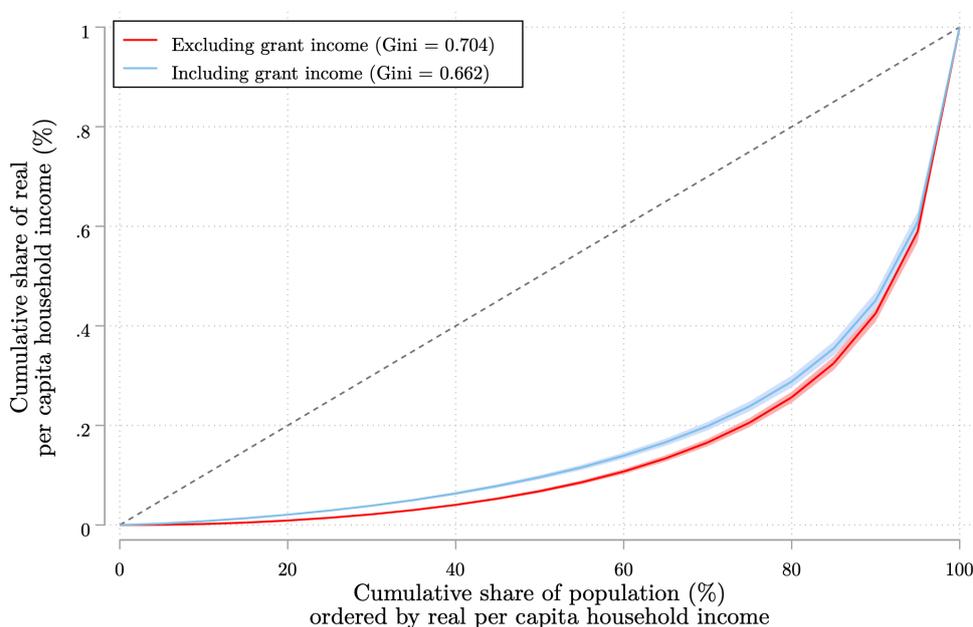


Source: Commission’s own calculations; NIDS Wave 5 (2017)

Notes: [1] All estimates are weighted using relevant post-stratification sampling weight. [2] After-tax monthly household income data with full imputations used. [3] Household income is inflated to April 2020 rands. [4] Household income is inclusive of income from employment, social grants, social insurance, investment income and remittances. [5] Household members are weighted equally and not adjusted using equivalence scales.

The significant effects of grant receipt on poverty reduction observed above are accompanied by positive effects concerning inequality reduction. In Figure 6.4, Lorenz curves are used to measure how grant income influences inequality across the distribution. The figure plots the cumulative share of household income, including and excluding grant income, against the cumulative population share arranged from poorest to richest. When grant income is excluded from household incomes, a Gini coefficient of 0.704 is estimated. This reduces to 0.662 when grant income is included. This is suggestive of an inequality-reducing effect of grant income of approximately 6% using the Gini coefficient measure, which is substantial. Despite such a significant effect, it should still be noted that, even after accounting for the distribution of grants, income inequality remains extremely high.

Figure 6.4: Lorenz curves of per-capita monthly household income, with and without grant income



Source: Commission’s own calculations; NIDS Wave 5 (2017)

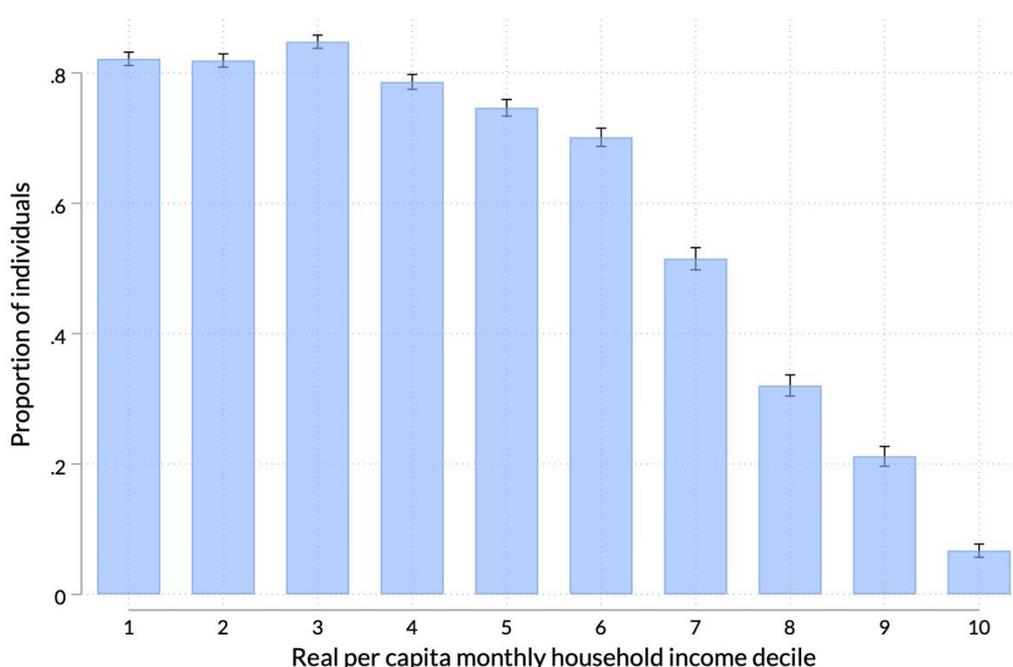
Notes: [1] All estimates are weighted using relevant post-stratification sampling weight. [2] After-tax monthly household income data with full imputations used. [3] Household income is inflated to April 2020 rands. [4] Household income is inclusive of income from employment, social grants (for one case), social insurance, investment income and remittances. [5] Household members are weighted equally and not adjusted using equivalence scales.

The overall estimates of poverty, depending on the chosen line, range widely from the lowest estimate of 26.7% to the highest estimate of 64.3% for the total population. There is no clear rule on which poverty line should be selected, but each provides guidance according to its own set of considerations. The study’s interest, however, is not exclusively on measuring poverty, but on examining grant receipt across the household income distribution, and comparing this to the various poverty estimates given above.

This will provide insight into how well the poor are covered by social grants, on average. The expectation is that grant receipt should be most concentrated among the poorest households, given that targeting is relatively pro-poor.

To begin examining this, household grant receipt is plotted across the income distribution in Figure 6.5. The distribution of receipt confirms that, indeed, grant coverage in South Africa remains pro-poor. It is estimated that, in total, 58.4% of individuals (or 32.9 million people) either receive a grant personally or co-reside with a grant recipient. Looking at this by household income level, approximately 80% of individuals who live in the poorest half of households either receive a grant personally or co-reside with a recipient. This is equivalent to 23.3 million people, or over 40% of the population. In contrast, just 6.5% of individuals in the richest 10% of households (or 365 000 people) co-reside with a grant recipient or receive a grant themselves. Aggregate grant receipt is therefore disproportionately weighted toward poorer households.

Figure 6.5: Distribution of household social grant receipt across the household income distribution, 2017



Source: Commission’s own calculations; NIDS Wave 5 (2017)

Notes: [1] All estimates are weighted using relevant post-stratification sampling weight. [2] A 95% confidence interval is presented as capped spikes.

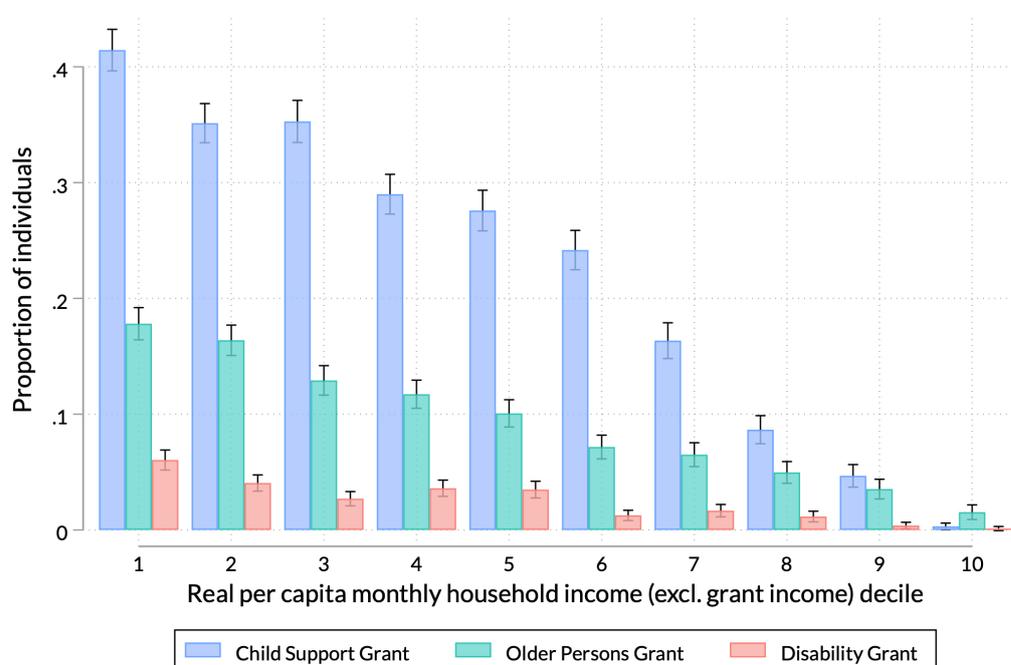
The targeting efficacy of social grants – i.e. how pro-poor social grant spending is – is, however, likely to vary by grant type, given differences in the means test thresholds, eligibility criteria and monthly grant amounts. To provide a more disaggregated picture, Figure 6.6 looks at personal grant receipt across the household income distribution by grant type.³¹

³¹ For the CSG, the study presents the distribution of recipients across the distribution with respect to recipients (primary caregivers) who receive the grant on behalf of the eligible child (beneficiary). The weighted NIDS Wave 5 data indicates that, in 2017, there were about 7.3 million CSG recipients and 11.7 million beneficiaries, in line with administrative data in the same year.

For brevity, the study focuses on the three largest grants, chosen according to the number of grants distributed in 2019/20: the CSG, with 12.8 million grants distributed monthly, the OPG, with 3.7 million grants distributed monthly, and the DG, with 1.1 million grants distributed monthly. These three grants collectively account for approximately 97% of all grants distributed. What is important here is that household income is measured excluding income received from grants.

According to Figure 6.6, it is clear that the CSG is the largest and most pro-poor grant, with 40% of individuals (primary caregivers) in the poorest 10% of households reporting receipt on behalf of a child or children. This figure falls to 28% for households in Decile 5, and just 0.4% for the richest 10% of households. Overall, one finds that 72% of CSG recipients are based in the poorest half of households, where income does not include grant receipt.

Figure 6.6: Distribution of personal grant receipt across the household income distribution, by grant type



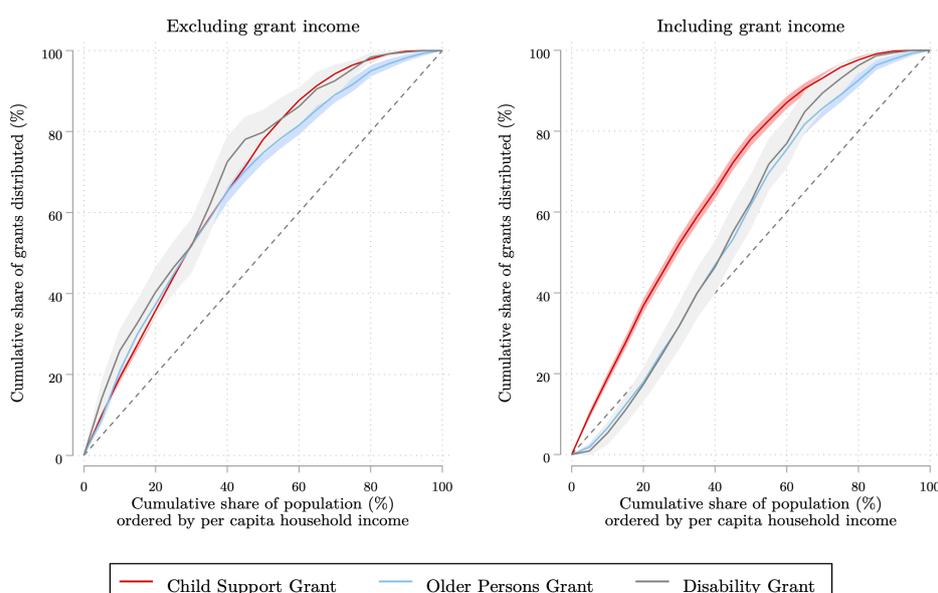
Source: Commission’s own calculations; NIDS Wave 5 (2017)

Notes: [1] All estimates are weighted using relevant post-stratification sampling weight. [2] A 95% confidence interval is presented as capped spikes. [3] The CSG receipt refers to receipt by a primary caregiver who receives the grant on behalf of the child/children.

By comparison, both the OPG and DG are relatively less pro-poor, but still notably progressive. Nearly one in every five adults (18%) in the poorest 10% of households receive the OPG, in contrast to 1.6% in the richest 10% of households. Notably, 73% of age-eligible individuals (those older than 60 years) receive the OPG, and 71% of the 2.9 million recipients in 2017 were in the poorest 50% of households, with just 2% in the richest 10%. It should be noted that a greater number of individuals towards the middle of the distribution are eligible for the OPG and DG, as opposed to the CSG, due to their respectively higher qualifying means test thresholds, thus individuals who are slightly better off are eligible. Specifically, the income thresholds of the OPG and DG are 60% higher than those of the CSG, which is a significant difference.

It is also useful to examine the relative progressivity of each grant through the use of concentration curves. Figure 6.7 plots the cumulative share of grants distributed against the population, arranged from poorest to richest using per-capita household income by grant type. These curves are estimated using household income, both including and excluding grant income. In the left panel, it is clear that the levels of progressivity of all three grants are very similar, i.e. they are all pro-poor. Grant receipt among individuals in poorer households exceeds their population share. Once grant income is included in household incomes, as in the right panel of Figure 6.7, it is apparent that the CSG is the most progressive grant. As noted above, about 80% of CSG recipients live in the poorest 50% of households. The OPG and DG are still pro-poor, but less so than the CSG. For instance, about 80% of OPG and DG recipients live in the poorest 60% of households. Comparing the left and right panels in Figure 6.7, the observed rightwards shift in the OPG and DG concentration curves can be explained by the large sizes of the transfers relative to the CSG, which pushes individuals up the household income distribution upon receipt.

Figure 6.7: Concentration curves of expenditure on social grants, by grant type in 2017



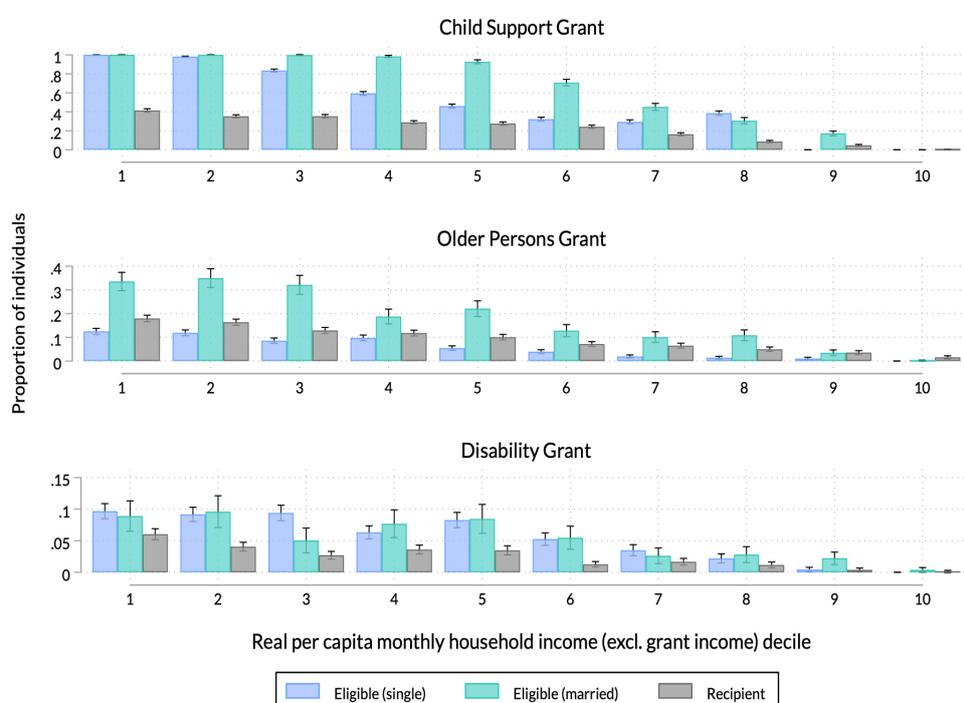
Source: Commission’s own calculations; NIDS Wave 5 (2017)

Notes: [1] All estimates are weighted using relevant post-stratification sampling weight. [2] Shaded regions represent 95% confidence intervals. [3] The CSG receipt here refers to receipt by a primary caregiver who receives the grant on behalf of the child/children.

Although the study observed that grant receipt is concentrated among poorer households, it has yet to carefully consider the distribution of eligibility. Figure 6.8 measures how eligibility for the three grants of interest varies (for both single and married individuals), alongside actual grant receipt, across the pre-grant household income distribution. For simplicity, an individual is defined as eligible for a given grant if their per-capita pre-grant household income does not exceed the relevant grant’s means test threshold, which itself varies by the individual’s marital status. It should thus be noted that not all relevant eligibility criteria are accounted for here, so the eligibility estimates should be interpreted as upper-bound estimates.

It is axiomatic that eligibility is highest towards the bottom of the distribution. Particularly high levels of eligibility are observed for the CSG, which is not unexpected given the grant’s low means test threshold. In terms of grant receipt, irrespective of the grant type, it is clear that eligibility exceeds receipt, which suggests that the means tests are functioning. Put differently, individuals at the upper end of the income distribution, where eligibility levels are low, do not appear to be receiving large shares of grant income. A large gap can also be observed between eligibility and receipt in the lower-income deciles, suggesting that some individuals who are eligible for a given grant do not currently receive it. In terms of targeting, what such high levels of eligibility reveal is that, overall, the likelihood of inclusion errors in the grant system is very low. Eligibility levels exceed levels of receipt across the distribution for all grants.

Figure 6.8: Social grant eligibility versus receipt across the pre-grant household income distribution by grant type, 2017



Source: Commission’s own calculations; NIDS Wave 5 (2017)

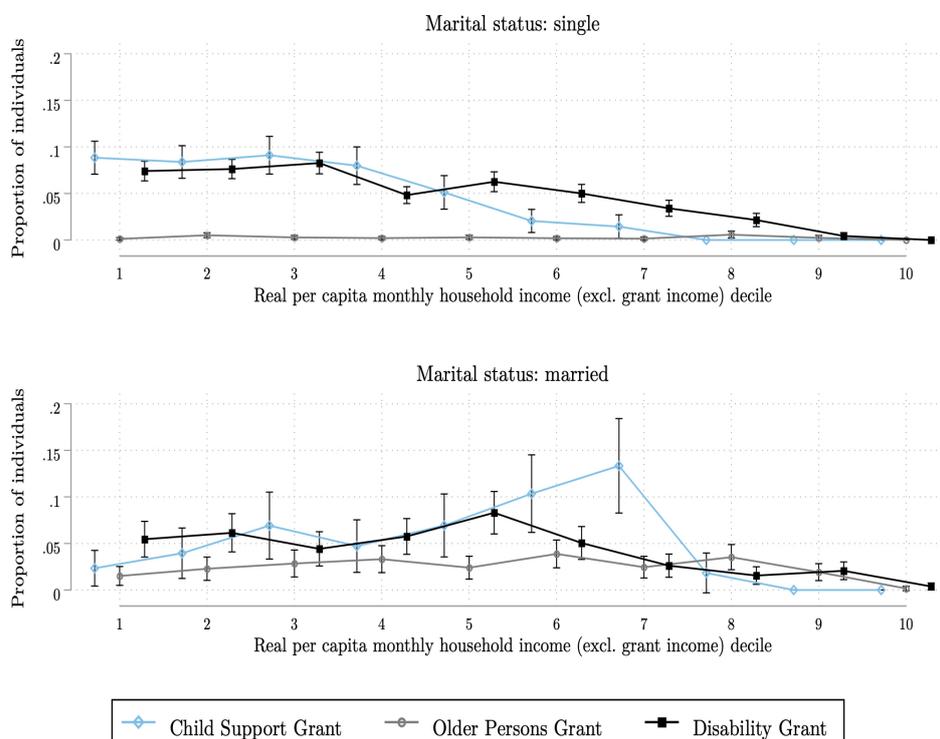
Figure 6.8 can give an impression of the number of individuals who are eligible to receive a given grant, but do not currently receive one. However, the estimates above consider eligibility and receipt separately. In Figure 6.9, estimates are presented of the extent of this form of ‘exclusion error’ across the household income distribution by grant type. To be clear, given that the current grant means tests in South Africa are above even the highest poverty line used here, there are no individuals who would be classified as poor, but who are ineligible to receive a grant based on their income. As such, exclusion is explored in the context of being eligible, but still not receiving a grant, which points to a range of other issues that may prevent individuals from registering and receiving grants, despite qualifying for them. Figure 6.9 allows one to see, at each decile of the income distribution, how many people are eligible to receive a given grant as opposed to how many people receive the grant in question.

On aggregate, a relatively low level of exclusion error is found for the CSG and OPG, but higher rates are found for the DG. These estimates should, however, be seen as upper bounds, and the study expands on the likelihood of measurement error for the OPG and DG.

Specifically, the study estimates that just under 400 000 single individuals, and 150 000 married individuals, are eligible to receive the CSG on behalf of their child(ren), but do not receive it. Roughly then, if one assumes that those who already receive the grant are eligible, approximately 13.3 million people are eligible for the CSG. Of these, 96% currently receive the CSG and 4% do not. For the OPG, it is estimated that 75 000 single individuals and 235 000 married individuals are eligible, but excluded. This is relative to the 3.9 million people who currently receive the grant, which equates to a rate of exclusion error of under 8%. In the case of the DG, it is estimated that approximately 1.2 million single individuals and 340 000 married individuals are eligible for the DG, but do not receive it. Given that there were just over one million DG recipients in 2020, this suggests that over 50% of those eligible to receive the DG do not receive it. Moreover, the extent of error for the DG among single individuals appears to be regressive; i.e. it is highest among those in poorer households.

However, it is important to note that these estimates are subject to measurement error given the limitations in the available data, where this is especially the case for the DG. For both the OPG and the DG, in addition to the income means test, there is an asset means test, which the study is unable to account for. Thus, some proportion of those eligible based on their income level may not be eligible if their asset wealth is accounted for. Furthermore, for various reasons, there may be discrepancies between those who report a disability in the survey data and those who have been certified as having a disability by a medical doctor. As such, the level of exclusion error estimated above should be interpreted with caution. Put differently, there are likely to be many individuals who appear to be eligible for a given grant in the survey data, but using the criteria applied here, are not eligible in reality.

Figure 6.9: Exclusion error across the household income distribution, by grant type and marital status



Source: Commission’s own calculations; NIDS Wave 5 (2017)

Notes: [1] All estimates are weighted using relevant post-stratification sampling weight. [2] A 95% confidence interval is presented as capped spikes. [3] Exclusion error refers to being eligible to receive the grant, but not reporting receipt. [4] Eligibility, in general, refers to individuals who have per-capita pre-grant household incomes less than a given grant’s means test threshold for either single or married applicants. [5] Eligibility for the OPG is restricted to individuals at least 60 years old; that of the DG to individuals who report having a disability; and that of the CSG to individuals who report having biological children 18 years or younger living with them.

The study now turns to examine grant receipt among the poor more directly, where the poverty lines introduced above are used as a measure of targeting efficacy. This allows one to more clearly assess the extent to which current grant coverage overlaps with measured poverty levels, and thus identify the levels of inclusion or exclusion error under South Africa’s current targeting regime; i.e. the study examines how many of those who receive grants are classified as poor under a given poverty line, and whether there are people who are poor, but are not eligible for a grant.

Table 6.3 does this by presenting both absolute and relative poverty measures alongside grant receipt estimates for each of the three largest grants. Several observations emerge from the data here.

Table 6.3: Estimates of poverty and grant receipt, by poverty line

		World Bank			FPL	Stats SA	UPBL
		Extreme poverty line (\$1.90 p.p.p.d.)	LMI poverty line (\$3.20 p.p.p.d.)	UMI poverty line (\$5.50 p.p.p.d.)	(R585 p.p.p.m.)	LBPL (R840 p.p.p.m.)	(R1 268 p.p.p.m.)
Poor	Absolute	20 200 039	28 475 172	36 363 596	15 093 663	19 938 996	26 472 972
	As a percentage of the South African population	35.74	50.38	64.34	26.70	35.28	46.84
CSG recipients	Number of poor	7 065 818	9 225 696	10 783 283	5 514 802	6 993 641	8 754 485
	As a percentage of all recipients	60.20	78.61	91.88	46.99	59.59	74.59
OPG recipients	Number of poor	1 664 466	2 174 988	2 500 784	1 295 607	1 636 253	2 034 501
	As a percentage of all recipients	54.64	71.40	82.09	42.53	53.71	66.79
DG recipients	Number of poor	419 828	622 303	689 950	361 227	418 628	584 972
	As a percentage of all recipients	52.87	78.37	86.89	45.49	52.72	73.67

Source: Commission's own calculations; NIDS Wave 5 (2017)

Notes: [1] All estimates are weighted using relevant post-stratification sampling weight. [2] The CSG recipients refers to the recipient children. [3] Pre-grant per-capita household income is used.

Firstly, it is clear that the poverty line that one selects leads to very different conclusions about the adequacy of grant coverage, and the level of inclusion or exclusion error. For example, if one uses the three most conservative (or lowest) poverty lines (the World Bank's extreme poverty line and Stats SA's FPL and LBPL), one finds that between 47 and 60% of CSG recipients are regarded as living in poor households (before receiving their grant income). The implication of this is that between 40 and 53% of CSG recipients are classified as non-poor according to the three lowest poverty lines. This suggests that several grant recipients are not poor according to these low poverty lines. If the World Bank's UMI poverty line is used, however, 92% of CSG recipients are classified as poor. It is important to note that even this upper-bound poverty line should not be seen as providing a decent level of living, and equates to approximately R1 750 per month. According to the higher poverty lines, the CSG is relatively well targeted to the poor.

Secondly, although both the OPG and DG have higher income eligibility thresholds, one observes relatively high rates of receipt among the poor, even when using the conservative poverty lines. Between 43 and 55% of recipients are found to be living in poor households, where income is measured before grant receipt. Higher rates of receipt are observed using higher poverty lines – with over 80% of recipients living in poor households if the World Bank's UMI is used as a benchmark. Finally, what the analysis in Table 6.3 shows is that the majority of grant recipients in the country are classified as poor and that this proportion rises to 82, 87 and 92% for the OPG, DG and CSG, respectively, when the World Bank's UMI poverty line is used.

Certainly, the benchmark for means testing should not be linked directly to one of the poverty lines included here, but they provide a useful guide that suggests that South Africa's grant system is unlikely to have any problems of including non-eligible individuals. As suggested in Figure 6.8, many eligible individuals do not currently receive a grant, and the gap between eligibility and receipt appears to be largest at the lowest levels of household income distribution.

6.6.3 The role of social assistance during the COVID-19 crisis

In response to the COVID-19 pandemic, and aligned with other governments around the world, South Africa introduced a package of socio-economic relief measures, amounting to approximately R500 billion, or 10% of GDP. To provide targeted income relief to vulnerable households, R50 billion was allocated to expand the social grants system. Analysis using pre-crisis survey data suggested that, in the absence of such targeted interventions, the extreme poverty rate among vulnerable households was likely to triple.³² The grant expansions were initially introduced for six months, from May to October 2020, with the amount of all existing grants increased, and a special COVID-19 SRD Grant of R350 introduced.

Bhorat et al. (2020) show that the addition of the SRD Grant had the potential to reach 10 million eligible individuals, implying that, in theory, 36 million individuals (approximately 63% of the South African population) could be reached by a cash transfer of some kind. Indeed, as of mid-October 2020, 18.5 million COVID-19 grants were paid out to six million previously unreached individuals (Baskaran et al., 2020). This rapid growth in the grant system in six months exceeds the growth observed in the previous decade. This section briefly reviews how social protection was used during 2020 as a way to channel funds to poor households, and the nature of the changes. In particular, the coverage and the types of households that benefitted are examined.

6.6.3.1 Social assistance

The South African government expanded social assistance in response to the COVID-19 crisis by increasing the amounts of all existing grants and introducing the new COVID-19 SRD Grant. Before the onset of the COVID-19 pandemic, South Africa's social assistance system presumed that prime-aged, able-bodied individuals would be able to support themselves through the labour market, and they have therefore been excluded from receiving social assistance (Ferguson, 2015). However, such a view neglects the widespread, structural unemployment that plagues South Africa (Bassier et al., 2021). This hole in the country's social safety net was partially addressed through the introduction of the new COVID-19 SRD Grant – the first grant in South Africa that specifically targets unemployed adults, with existing grants predominantly targeting the disabled, elderly and children in low-income households.

³² <https://theconversation.com/south-africa-can-and-should-top-up-child-support-grants-to-avoid-a-humanitarian-crisis-135222>.

Table 6.4 collates the suite of social grants and tracks how they were increased from May 2020. All existing grants were increased by R250 per month, which is a relative increase of between 13 and 24%, depending on the initial grant amount. This increase remained in place for six months – from May to October 2020. The one exception to the standard increase was the CSG, which was increased by R300 per child for May 2020, and then by R500 per caregiver (regardless of the number of eligible children) from June 2020. Separate from these grants, the COVID-19 SRD Grant was set at R350 per person and aimed at unemployed people who did not receive any other form of government assistance. It was later extended to January 2021, and then further to April 2021. By December 2020, the grant had brought millions of previously unreachable individuals – mostly non-employed, young men – into the system, representing a substantial reach in a relatively short amount of time. Collectively with other grants, the social assistance system directly supported just under 40% of the South African population.

Table 6.4: Changes to South Africa’s social grants: May to October 2020

Grant	Pre-COVID-19 amount (rand per grant per month)	Absolute (rand per grant per month, unless indicated otherwise) and relative (percentage) increase		COVID-19 amount (rand per grant per month, unless indicated otherwise)	
		May	June–October	May	June–October
Older Persons’ Grant*	1 860	250 (13.44%)	250 (13.44%)	2 110	2 110
War Veterans’ grant	1 880	250 (13.30%)	250 (13.30%)	2 130	2 130
Disability Grant	1 860	250 (13.44%)	250 (13.44%)	2 110	2 110
Care Dependency Grant	860	250 (13.44%)	250 (13.44%)	2 110	2 110
Foster Child Grant	1 040	250 (24.04%)	250 (24.04%)	1 290	1 290
Child Support Grant	440	300 (68.18%)	500 per caregiver	740	440 per grant + 500 per caregiver
COVID-19 SRD Grant	NA	NA	NA	350	350

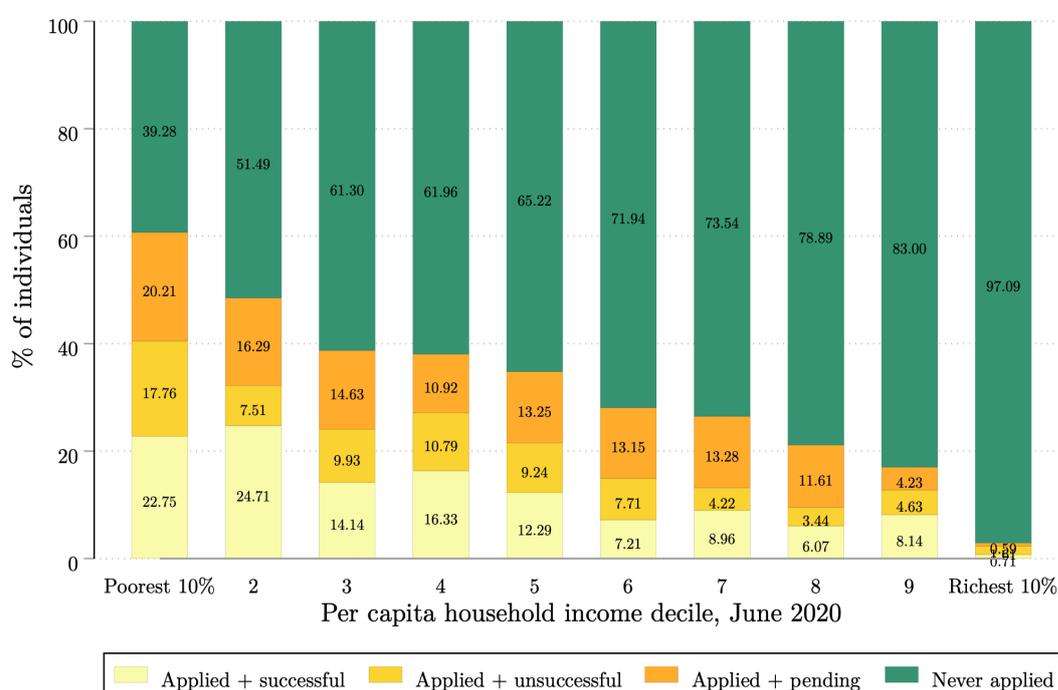
Source: Bhorat and Köhler (2020)

Note: *The OPG amount of R1 860 is for people aged 60–75 years; it increases to R1 880 for people older than 75.

Given the extent of vulnerability across the household income distribution, many people were expected to apply for the COVID-19 SRD Grant. Figure 6.10 shows the distribution of applications for, and receipt of, the grant in October 2020 across the household income distribution. It is estimated that, in November/December 2020, of the 11.9 million individuals who reported applying for the grant, over 6 million (51%) were successful. The remaining 5.9 million individuals either report a pending (1.5 million) or rejected (4.4 million) application. However, both the application and receipt of the grant were relatively pro-poor. Most of the people who applied for the grant and were successful are in the middle and lower parts of the household income distribution. Put differently, conditional on applying, 23% of individuals in the poorest 10% of households were successful, in contrast to 0.71% in the richest decile.

Pending applications do not vary considerably across the distribution, and nearly all individuals in the richest decile (97%) never even applied, in contrast to 40% of those in the poorest decile. In both absolute and relative terms, the distribution of the COVID-19 Grant has been progressive. However, many eligible people did not receive it. Of the estimated 6.5 million eligible non-recipients in June 2020, nearly half live in the poorest third of households (Bhorat & Köhler, 2020).

Figure 6.10: COVID-19 SRD Grant application outcome, by household income decile: October 2020



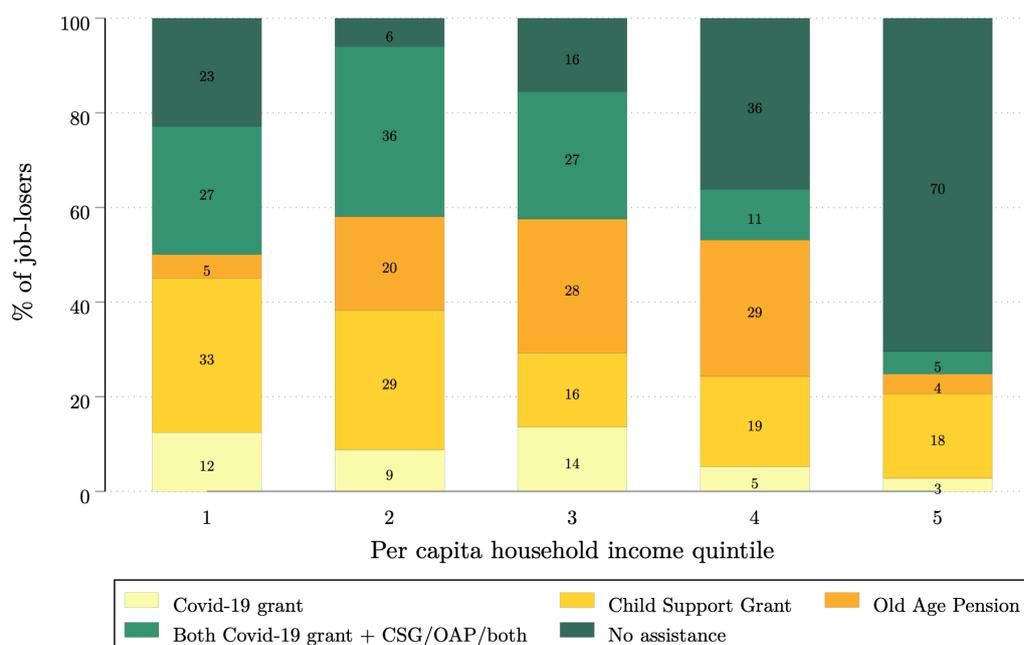
Source: Commission’s own calculations; NIDS-CRAM Waves 2 and 3 (2020)

It is useful then to examine how well the social grant system was able to compensate those individuals who have been made worse off by the COVID-19 pandemic and the measures taken to contain it. Perhaps the most direct way to assess this is to look at individuals who lost their jobs after the second quarter of 2020, and to what extent they had access to some form of grant relief – noting that all grant payments had been increased and that the SRD Grant had been introduced. Figure 6.11 investigates the distribution of social assistance (grant) receipt across the household income distribution for job-losers at the household level.³³ About 80% of job-losers (70% of all adults) lived in a household that received some form of social assistance in October 2020, and this support appears relatively progressive. Nearly 80% of job-losers in the poorest 20% of households received support, in contrast to 30% of those in the richest 20%. Among those job-losers in the poorest households, support came largely through the COVID-19 Grant and the CSG. A third of these individuals lived in a household that received a CSG.

³³ Job-losers are defined as those who were employed in February 2020 (pre-lockdown), but not in October 2020 (during lockdown).

However, a further 27% lived in a household that received a combination of the COVID-19 Grant and the CSG or OPG, or both, and a further 12% lived in a household that received a COVID-19 Grant. Importantly, within the sample of those who lost their jobs, some groups can be classified as more vulnerable – where this takes into account the burden of the job loss they had to bear. In relative terms, social assistance coverage appears to have been better for women, those in less-skilled employment, those earning lower incomes and people in rural areas.

Figure 6.11: Household social assistance coverage among job losers: October 2020



Source: Commission’s own calculations; NIDS-CRAM Waves 1, 2 and 3 (2020)

The introduction of the COVID-19 Grant appears to have significantly reduced the prevalence of poverty and the degree of household income inequality. To explore poverty and inequality effects here, use is made of fiscal incidence analysis (FIA), which is typically used to examine the distributional impacts of taxes and transfers. Essentially, in this case, FIA consists of allocating public spending (cash transfers in this case) to individuals so that one can compare incomes excluding the transfer with incomes including the transfer – subject to simplifying assumptions.³⁴ Due to these assumptions, the poverty and inequality effects provided here may be biased to some extent and are thus treated as tentative and descriptive in nature.

³⁴ An important assumption of this approach is that, in the counterfactual scenario of no COVID-19 Grant receipt, households would exhibit their reported household incomes less their income from the COVID-19 Grant. Of course, this need not be the case, given that households may have received incomes from other sources in the absence of COVID-19 Grant income. Additionally, because household income in the NIDS-CRAM is derived from a one-shot question, it is likely under-reported, as discussed in section 3.4. Subtracting COVID-19 Grant income may be artificially large. In this case, the difference between actual and non-COVID-19 grant household income may be overstated; as would the poverty-reducing effect (Jain et al., 2020).

As shown in Table 6.5, the COVID-19 Grant is found to have played a significant role in reducing poverty, particularly among the poorest individuals. Specifically, using Stats SA’s FPL, the grant is estimated to have reduced poverty by 2 percentage points or 5.3%. This is in line with the findings of Jain et al. (2020), where a similar methodology is employed. When using higher poverty lines, the poverty-reducing effect remains negative, but expectedly becomes smaller, reflecting the progressivity of the grant. Considering household income inequality, one finds that the grant reduced inequality by between 1.3 and 6.3%, depending on the inequality measure. Despite these observed positive effects on both poverty and inequality, it is important to note that both outcomes remain high, regardless of the inequality measure or poverty line used.

Table 6.5: Ex ante poverty and inequality effects of the COVID-19 Grant, June 2020

	Household income, excluding the COVID-19 Grant	Household income, including the COVID-19 grant	Change in inequality or poverty (percentage)
Inequality measures			
<i>Gini Coefficient</i>	0.693	0.684	-1.282
<i>Theil Index</i>	1.036	1.010	-2.447
<i>Atkinson Index</i>	0.634	0.591	-6.726
Poverty measures			
<i>Stats SA FPL (%)</i>	38.430	36.380	-5.334
<i>Stats SA LBPL (%)</i>	50.040	49.250	-1.579
<i>Stats SA UBPL (%)</i>	62.010	61.570	-0.710

Source: Commission’s own calculations; NIDS-CRAM Wave 2 (2020)

Notes: [1] Estimates are weighted using computed bracket weights. [2] Per capita, household income and poverty lines are inflated to January 2021 rands. [3] Poverty measures refer to the percentage of individuals who live in households with per-capita household incomes less than the stipulated poverty line. [4] FPL of R598,74 p.p.p.m., LBPL of R859,72 p.p.p.m., UBPL of R1 297,77 p.p.p.m. [5] Inequality aversion parameter of the Atkinson index = 1.

In other analyses not shown here (Bhorat & Köhler, 2020), this study additionally shows that the COVID-19 Grant was relatively well targeted, with close to 60% of recipients being non-employed, and the remainder mostly being informally employed. Moreover, it shows that the progressivity of the grant is similar to that of the CSG – the grant with the lowest income means test. This latter finding is in line with the findings of the study’s FIA, which suggest that the grant reduced poverty by 5.3% among the poorest households, and reduced household income inequality by 1.3 to 6.3%, depending on the measure.

Overall, the evidence here suggests that the COVID-19 Grant has been an important, effective means of providing progressive income relief to the unemployed, in addition to supporting the informally employed who were disproportionately affected by the pandemic. Together with the temporary top-ups, the COVID-19 Grant has been channelled into households that, for the most part, were most in need. This is supported by Bhorat and Köhler (2020), who show that the COVID-19 SRD Grant helped to mitigate a rise in poverty. Depending on the fiscus and the trajectory of the pandemic and the labour market, policymakers ought to consider further extending the availability of the COVID-19 Grant in the short or long term. Such an extension could either be temporarily put in place conditional on the recovery of the labour market, or permanently made part of the country’s social assistance system as a means of filling the hole in the safety net and providing regular support to the transient and chronically unemployed.

6.6.4 Examining alternative means-testing systems

Leading on from the analysis of South Africa's grant system and the efficacy of its targeting mechanisms, the study looks at several alternative options in this section. In an ideal scenario, social grants would be able to achieve perfect beneficiary targeting, where, when taking the poverty line as a benchmark, only the poor receive transfers, and no one that is poor is excluded from receiving transfers. There would also be perfect transfer targeting, where the transfer budget wholly goes to the poor, and the poor receive the exact difference between their income and the poverty line (Coady & Le, 2020). However, in reality, several imperfect targeting methods are deployed to reach the poor with varying levels of efficacy. Coady, Grosh and Hoddinott (2004) explore six types of targeting mechanisms that can be used. This study expands on these to place South Africa's system in a broader context.

Broadly, the six different types of targeting can be classified as follows: categorical targeting, geographical targeting, means tests, proxy means tests, community-based targeting and self-targeting. Each of these mechanisms is explored in Table 6.6 – how the mechanism is deployed, the advantages and disadvantages, examples of countries that have used such mechanisms, and for some, how much it could cost if implemented in South Africa. In practice, a combination of the mechanisms described in Table 6.6 is deployed by a country to allocate social grants, where each approach will have varying coverage rates and administrative cost burdens attached to them. In general, the more complex the targeting approach and the means-testing requirements, the higher the administrative cost burden becomes.

Table 6.6: Grant-targeting mechanisms

Mechanism	Approach	Advantages	Disadvantages	Examples	For example, if done in South Africa
Categorical targeting	Benefits are given conditionally on belonging to a specific category (i.e. age or gender). If the category targeting mechanism is deployed without any targeting parameters then the transfer is universal rather than poverty-targeted.	Easy to administer Useful as a first-level targeting measure	Inclusion and exclusion errors	Old Age Pension, Lesotho Disability Pension, Namibia	All children aged 0–18 in South Africa (R450 per month): R8.9 billion All adults aged 60+ in South Africa (R450 per month): R2.4 billion
Geographical targeting	Transfers are allocated to regions identified as the poorest within a country using an indicator(s) that are associated with a high level of poverty such as consumption measures or literacy rates.	Easy to administer Useful as a first-level targeting measure	Inclusion and exclusion errors Can encourage migration	Chipata Cash Transfer, Zambia (urban)	Poorest provinces: Eastern Cape (R450 per person): R3 billion Limpopo (R450 per person): R2.7 billion KwaZulu-Natal (R450 per person): R5.1 billion
Means test	Transfers are allocated based on an income assessment of a household or individual by an official. This requires documental and verifiable information on income through tax records, wage information from employers or financial information from banks. This is more difficult to do with high rates of informal labour.	Focused on the poor Reduces inclusion errors	Very costly and difficult to administer Requires regular and frequent monitoring Administrative compliance results in exclusion errors Possible stigma	Child Support Grant, South Africa	Current: income and asset-based (see cost and coverage rates in the report)

Mechanism	Approach	Advantages	Disadvantages	Examples	For example, if done in South Africa
Proxy means test	Similar to means tests, proxy means tests use observable household characteristics that are highly correlated with poverty to calculate a score for households' economic situation, rather than income. Proxies can include quality of housing, ownership of durable goods, education level, etc.	Focused on the poor and vulnerable Reduces inclusion and exclusion errors	Difficult to construct valid proxy indicators Introduces perverse incentives to meet proxy criteria Costly and difficult to administer	BEAM, Zimbabwe PAM, Zambia INAS, Mozambique	Cost dependent on selected proxy means test
Community-based targeting	A group of members or a community leader decides on the eligibility of a programme. This mechanism leverages social capital, given that local actors have more information at a lower cost than grant administrators.	Reflects local understanding of poverty and vulnerability	Large inclusion and exclusion errors Perpetuates local patronage structure and gender bias Can be divisive	Kalomo Cash Transfer, Zambia Social Cash Transfer Programme, Malawi	Cost and coverage depending on the eligibility criteria set out by community leaders
Self-targeting	Although this approach is open to all, it uses strong incentives to discourage use by the non-poor. For example, public works programmes that use self-targeting have a work requirement with wages that are below the market wage for unskilled labour.	Lower administrative costs Can be linked to skills development and income generation Can generate improved infrastructure (i.e. public works)	High exclusion errors (for all who cannot participate) Potential bias against women Opportunity costs to participation Stigma	MASAF Public Works, Malawi Zibambele Programme, South Africa	Varies by type of scheme

Source: Coady et al. (2004); Houssou and Zeller (2011)

Looking at how other middle-income countries have used some of the targeting mechanisms listed here can offer insight into whether some alternative approaches could be tested in South Africa to improve coverage of the poor and reduce leakages. As noted above, many countries use more than one targeting method – an analysis of 186 social transfer programmes by Dodlova, Giolbas and Lay (2018) showed that 60% of programmes globally relied on multiple targeting methods. Means-based testing as a targeting strategy is already established in South Africa, and at present, removing this to allow for self-targeting is unlikely to be feasible given the country’s fiscal constraints. Vietnam is used as a case study to examine targeting alternatives.

6.6.4.1 The case of Vietnam³⁵

In Vietnam, poor households are defined as those who have per-capita income below a given income poverty line. The national income poverty line differs by geographic area, and over the 2011–2015 period, it was set at VND400 000 and VND500 000 per person per month for rural and urban areas, respectively. Interestingly, the country also defines what is called a ‘near poor’ poverty line, which is equal to VND520 000 and VND650 000 per person per month, again for rural and urban areas, respectively. One is classified as ‘near poor’ if income is above the poverty line, but below the near-poor line. The country’s 2010 poverty census reports the national poverty rate to be 14.2%, while the national rate of ‘near poor’ households is 7.5%.

In 2010, Vietnam was using a relatively complex means-testing system to guide grant allocations. This system comprised a four-step process, run by the Ministry of Labour, Invalid and Social Affairs (MOLISA). The process relied on a multi-step survey process in which local interviewers had to ask interviewees questions covering 78 items that measured wealth based on a range of assets, including housing, land, livestock, health, education and household composition. In the first targeting step, a total score was computed based on the answers to these survey questions. Households whose score was above a given threshold were defined as ‘surely non-poor’, and those whose score was below the threshold were defined as ‘surely poor’. In the second step, income data was collected through a simple two-page questionnaire. Households who had a per-capita income below the poverty line were defined as poor. After this, a final list of poor households was compiled by drawing up a list of households identified as ‘surely poor’ in the first step, and households with a per-capita income below the poverty line in the second step. In the third step, the list of poor households was discussed at village meetings, after which the list of poor and near-poor households was finalised. Finally, an additional questionnaire was deployed to collect information on various characteristics of the poor and near-poor households.

³⁵ This section draws primarily on Nguyen and Lo (2016).

The complexity of this questionnaire meant that it was burdensome and costly to administer. In addition, the estimated accuracy of the questionnaire was low – follow-up work suggested that, of every 100 households identified as income poor, only 54 were correctly identified through the proxy means testing procedure.

The leakage rate was thus 45% (out of every 100 households identified as poor through the MOLISA list, 45 were incorrectly identified). This approach had several key flaws. Firstly, the initial questionnaire, which aimed to identify poor households through a range of questions about assets and household possessions, was overly complicated. Second, although the income questionnaire was very simple, and asked for aggregate income from key activities, there was a larger measurement error for poor households who earned income from many irregular sources. Third, because households were aware of the objective of the survey, some non-poor households were induced to report lower incomes to be covered by the welfare programme. This highlights the problems that can arise from a multi-faceted and administratively complex approach to means testing.

In 2015, in light of these problems with its existing approach and in an attempt to improve targeting, MOLISA, in collaboration with the World Bank and the General Statistics Office of Vietnam, revised its means-testing approach. For the 2016–2020 period, a combination of income and multidimensional poverty measurements were used to identify eligibility from a revised survey instrument. In this approach, households were defined as poor, and near-poor, based on simplified income poverty and multidimensional poverty lines. Taken together, these measures were used to target the country's poverty reduction programmes, and community and village meetings were still held to verify the findings. Follow-up work suggested that the income data collected through the new questionnaire yielded a coverage rate of 73.7% or a leakage rate of 26.3%.

Operationally, households in Vietnam were categorised in the following way:

- Income poverty lines were again set for both urban and rural areas, and income data was collected using a detailed questionnaire.
- The multidimensional poverty index (MPI) comprised five dimensions: health, education, housing, water, sanitation and access to information. To measure the level of deprivation in each case, a 'social service score' was calculated using the following 10 sub-indicators: having health insurance, using health services, the education degree of adults, the school enrolment of children, housing quality, living areas, drinking water, hygienic latrines, use of information services and access to information. These proxy indicators were selected on the basis that they are strongly correlated with per-capita income, and because they are easy to collect data on. Each indicator receives a score of 10. A household with access to all 10 areas would have a maximum score of 100. A household is categorised as lacking access to social services if they are deprived of a minimum of three indicators. This means that a household is flagged as multidimensionally poor if their social service score is below 30.

Based on the above, households are then confirmed as poor, and thus eligible for support, if they meet one of the following two criteria:

- They have income that is below the income poverty line.
- They have income above the income poverty line, but below the near-poverty line, and a service score below 30.

This eligibility selection decision is shown in Table 6.7 below.

Table 6.7: Income and multidimensional poverty line used for targeting

Income poverty line	Social service score <30	Social service score >30
At or below the income poverty line	Poor	Poor
Between the income poverty line and the income near-poverty line	Poor	Near poor
Above the income near-poverty line	Non-poor	Non-poor

Source: Government of Vietnam (2015)

One of the key benefits of proxy means testing over direct means testing is that the latter can be limited by weak administrative capacity and/or a high share of informal labour – where documenting and verifying income and asset data can be time-consuming and complex (Dodlova et al., 2018). Thus, there can be large variations in the accuracy of means testing.

However, proxy means testing is largely only as effective as its implementation and can be onerous. In 2011, using data from Bangladesh, Indonesia, Rwanda and Sri Lanka, the Australian Agency for International Development assessed the accuracy of proxy means testing methodologies across various social assistance regimes. The authors found that exclusion and inclusion errors in targeting arose when coverage rates were larger, and in some cases reached up to 70%. This means that eligible households could have a very small chance of being selected, which can frame the proxy means-testing system as more of a lottery. The use of multiple targeting mechanisms can help improve outcomes, as in the case of Vietnam, where households were assessed for both income poverty and multidimensional poverty, and the lists were verified at the local level.

In South Africa, inclusion errors are unlikely, but means-testing alone can prevent grants from reaching those who need them. For example, an analysis by Delany and Jehoma (2016) found that nearly 18% of income-eligible children (1.8 million) are not accessing the CSG in South Africa. When investigating the underlying reasons for this, they found that several factors contributed to exclusion:

- There was confusion among potential recipients around the means test and the income threshold. A common reason provided by income-eligible caregivers for not accessing the grant was the incorrect belief that they were ineligible due to being employed or earning too much.
- There appears to be a pervasive challenge in securing the required documentation for the application, including identity documents and birth certificates. The costs and challenges associated with securing these documents can cause applicants to give up on the process. Orphan children are more likely to lack appropriate documentation or lose access to the grant when their caregiver passes away.
- There are a range of administrative costs involved in gaining access to the grant for poor households that extend to travel costs required to apply for the grant.
- There is a general lack of awareness of the application process and what it requires.

In South Africa, the CSG is a key avenue for subsidising children's basic costs, such as food and school fees. Considering a non-means-test approach to ensure that caregivers receive these funds may help reduce the associated challenges. This, in turn, could improve issues such as non-attendance of school and stunting. Galasso and Wagstaff (2018) estimated the cost of childhood stunting to be 9 to 10% of GDP per capita for countries in Africa and Asia.

Instead of targeting social grants by measuring a single aggregate welfare indicator such as income or assets, proxy means testing, which relies on indicators that are strongly correlated with welfare and are more easily measured, may be preferable. Widely used proxy indicators include the demographic variables of household members, characteristics of housing conditions, and ownership of basic durables and assets. As in the case of Vietnam, each characteristic can be given a numerical weight, and an overall score is calculated by totalling the products of the weights and characteristics. Households with an estimated score below a pre-determined threshold are defined as poor, and are thus eligible for support.

6.6.4.2 Programme examples from southern Africa

To provide some comparative insight on social assistance programmes from other countries in southern Africa, and the alternative targeting approaches used in different cases, three examples are briefly summarised. The first is Zimbabwe's Basic Education Assistance Module (BEAM), which is aimed at providing support to young children. The second is Lesotho's Child Grants Programme, which is an unconditional cash transfer. The last example is Malawi's Social Cash Transfer Programme. While they do not provide any definitive answers, these examples give a brief insight into alternative options chosen by other countries where, like South Africa, the need for assistance is large, and the fiscal space for such programmes is limited.

Zimbabwe's Basic Education Assistance Module

The Government of Zimbabwe established the Basic Education Assistance Module (BEAM) in 2001 as part of the Enhanced Social Protection Programme. It was a poverty alleviation mechanism created to reduce the number of children who dropped out of school and to reduce the number of children who never attended school due to economic hardships. It provided funding for those who could not afford school fees, such as orphans and vulnerable children. It utilised a community-based targeting mechanism that allowed community participation in the selection of the neediest children. This was a contrast to the previous government education assistance approach where targeted beneficiaries had to individually approach the Ministry of Public Service, Labour and Social Welfare to receive assistance (Mutasa, 2015). Although research has shown that bottom-up, participatory approaches to development are more effective in the alleviation of poverty, BEAM has experienced many challenges in this regard. One major problem has been limited access to information on the module by beneficiaries, and inadequate participation in beneficiary selection. These problems are fundamental to the targeting approach. In addition, the funds dispersed via the programme have been insufficient to cover some basic school costs, including books and uniforms, which sometimes exceed tuition. Other challenges include the erratic disbursement of funds and a lack of transparency in beneficiary selection, which can invalidate the approach (Mutasa, 2015).

Lesotho's Child Grants Programme

The Lesotho Child Grants Programme (CGP) is an unconditional social cash transfer programme that is targeted at poor and vulnerable households. It utilises categorical targeting, in which benefits are given conditionally on belonging to a specific category or identifiable sub-group. Similar to BEAM, the goal of the CGP is to improve the living standards of orphans and vulnerable children to reduce malnutrition, improve health and wellbeing, and increase school enrolment. Eligible households are selected through a combination of proxy means testing and community-based targeting, and also require registration on the National Information System for Social Assistance. The programme is run by the Ministry of Social Development, with financial support from donor partners, including the European Commission, and with technical assistance from the United Nations Children's Fund (Unicef). Households receive a quarterly transfer indexed to their number of children, ranging from M360 for households with one or two children, M600 for households with three to four children, and M750 for households with five children or more. When the CGP was first developed by the European Commission and Unicef, the pilot was entirely funded by donor partners. At present, the Government of Lesotho covers the entirety of costs for the transfers and about 70% of the administrative costs.

Malawi's Social Cash Transfer Programme

Malawi's Social Cash Transfer Programme (SCTP) is a social transfer programme designed to reduce poverty, hunger and starvation among the ultra-poor. It also aims to increase levels of school enrolment and attendance for children living in recipient households.

It serves as an experiment that generates information on the feasibility, costs and benefits, and indirect impacts of a cash transfer scheme, as part of the broader Malawian social protection programme (Miller, Tsoka & Reichert, 2011). Ultra-poor households were defined simply as those households in the lowest expenditure quintile and below the national ‘ultra-poverty line’, which is defined as having only one meal a day and no valuable assets. Labour-constrained households were also eligible. These are defined as those that have no able-bodied household member in the age group 19–64 who is fit for work, or when one member is a caretaker to more than three dependents. The transfer sum is calculated based on the number of dependents a recipient has.

Since August 2020, the programme had reached approximately 283 000 households and 1 195 000 individuals – or approximately 7% of the total population. Although transfer amounts vary by household size and number of school-aged children, the average household transfer was relatively low, at MK 6 400 per household per month (approximately US\$8).

6.7 Concluding remarks and recommendations

The role that social assistance plays in South Africa is significant both in terms of its coverage and, as the literature suggests, its positive impact on households and individuals. The COVID-19 crisis has resulted in adjustments to the social assistance package offered by the state, with temporary grant top-ups used to assist poor households, and the introduction of the SRD Grant for those previously not receiving any form of assistance. Here, the support offered for the unemployed and informal workers via the SRD Grant appears to have had positive impacts on welfare, but has also raised questions about the viability of a more permanent grant of this type. It is noted that, at present, the fiscal sustainability of such an option remains under-researched.

Grant coverage has grown rapidly since 2009. By 2020, approximately 18 million South Africans received grant income. This rises by another six million if the SRD Grant is included. Such coverage remains progressive, with the majority of those receiving grants occupying lower deciles in the household income distribution. It is clear that income vulnerability in South Africa remains widespread, with even households in Decile 7 of the income distribution earning a monthly per-capita income that is below the national minimum wage.

To qualify to receive a grant, one has to earn below a certain income level, and for several grants, one can also not own assets above a certain value. However, even the lowest income means test (R4 500 per month for the CSG) is above the highest poverty line used in the analysis. This confirms that, within the categories of potential grant recipients, according to the standard money-metric measures, no individual that is classified as poor is excluded from receiving a grant based on their income level. Thus, one does not find any exclusion errors in South Africa’s grant system in the usual sense, where a means test prevents those who are poor from accessing a grant income. There are, however, many working-age individuals who are poor and are not covered by a permanent social grant. This is further evidenced by the large take-up of the COVID-19 SRD Grant.

Concerning both the pre-existing grants and the SRD Grant, coverage is found to be very progressive, where the vast majority of recipients are in the lower portions of the household income distribution. It is estimated that around 80% of individuals who live in the poorest half of the income distribution either receive a grant personally or co-reside with a recipient. It is also shown that, without a grant income, both the poverty rate and the inequality rate would be significantly higher. This suggests that the current means-testing regime works well in so far as it does not include large numbers of the non-poor.

To examine this more carefully, one should consider the overlap between poverty and grant receipt, which shows that most grant recipients are classified as income poor. Six different poverty lines are used to do this, which range from R585 per month to R2 458 per month. For context, the CSG and Grant-in-aid are the smallest grants, at just R450 per month, while all other grants are above R1 000 per month, with the OPG at R1 860 per month. When using the World Bank's UMI poverty line, the percentage of grant recipients who are classified as poor rises above 80% for both the OPG and the DG, and above 90% for the CSG. Put differently, levels of inclusion error appear to be relatively low.

Regarding coverage and exclusion, it is observed that, overall, a large number of individuals classified as poor currently do not receive any grant income, but the majority of these are working-age individuals who are not eligible for any of the existing grants. It was observed that, among those who are eligible for a grant, there was a gap between eligibility and receipt. The number of individuals who qualify for the CSG, the OPG, and the DG, but who do not currently receive any grant income, varies both according to grant type and across the income distribution. The estimates cannot fully account for eligibility, given data constraints, but one can observe relatively low numbers of eligible non-recipients for the CSG, slightly higher levels for the OPG, and substantial levels for the DG. The reasons for this gap are not clear, but this observation is in line with previous work on the subject.

In response to the COVID-19 pandemic, the grant system was used as a way to channel additional funds to poor households and mitigate some of the negative economic impacts. In this regard, one finds that, overall, the grant system was relatively successful at targeting those who were placed in precarious positions as a result of the pandemic. Considering job loss as a proxy for COVID-19-induced welfare loss, the data shows that, in total, 80% of those who lost their jobs in 2020 had access to some form of grant income via their households. The temporary top-ups would thus have been channelled into households that, for the most part, were most in need. This is supported by Bhorat and Köhler (2020) who show that the SRD Grant helped to mitigate a rise in poverty. These results are hopeful in that they highlight the potential of social protection policies to respond to national challenges, and how the architecture of South Africa's grant system makes this possible.

In terms of alternative targeting mechanisms, a brief overview was provided of common approaches and the case of Vietnam was discussed, where a combination of income and multidimensional poverty measures were used to identify eligibility. The use of such a system would, in the South African case, introduce a new level of complexity in terms of assessing eligibility at the individual level. It would also require a considerably more complicated administrative process to identify and verify eligible recipients, which is likely to be more costly than the current approach. Given that the existing mean-testing system does not appear to include a significant number of non-eligible recipients, it is suggested that there is no obvious reason to adopt a more complex targeting approach to more accurately identify the poor, and ostensibly limit grant access to a greater extent. The study also examined other examples from southern Africa; notably Zimbabwe, Lesotho and Malawi. While each programme has its unique benefits, coverage rates remain low (7% in Malawi, despite half of its population living below the poverty line), information asymmetry is common, and administrative costs can be high.

To conclude, it is noted that concentrating simply on unconditional social assistance as a way to solve the crisis of poverty in South Africa is not a sustainable approach. On the one hand, growing cash transfers at the expense of non-monetary forms of social provision, including social development, health, education and basic services, could be counterproductive. On the other hand, expanded growth and employment levels are required for sustainable welfare improvements. With regard to expanding the existing social grant system to include a Basic Income Grant in some form, it can be debated how far social rights and redistribution should go in the context of South Africa's existing institutional and growth constraints. Ultimately, some realism and innovative thinking is needed to connect what is desired and what is possible.

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Chapter 7

Food security and fiscal policy



Chapter 7: Food security and fiscal policy

Prof Johane Dikgang and Dr Dambala Gelo Kutel

7.1 Introduction

The COVID-19 pandemic is a health and human crisis that threatens the food security and nutrition of millions of people around the world. Hundreds of millions of people were already suffering from hunger and malnutrition prior to the pandemic and, unless immediate action is taken, we could see a global food emergency (UN, 2020). The pandemic has spread rapidly and extensively around the world since late 2019, and has had profound impacts on food security and nutrition. The unfolding crisis has affected food systems and has threatened people's access to food via multiple dynamics. We have not only witnessed a major disruption to food supply chains in the wake of lockdown levels, triggered by the global health crisis, but also a major global economic slowdown (FAO, 2020).

Issues of household meals and nutrition security have obtained growing global attention because the impact of climate change and hard economic conditions places new and extra strain on food systems (Stats SA, 2019). A record by means of the Food and Agriculture Organisation (FAO) (in collaboration with the International Food Policy Research Institute (IFPRI) (2017) warned that the world is not heading in the right direction to get rid of starvation by 2030 as anticipated in the Sustainable Development Goals (SDGs). Recent evidence suggests that approximately 821 million people in the world were undernourished in 2017; the same number as in 2010 (FAO, IFAD, Unicef, WFP & WHO, 2018). The situation deteriorated significantly in sub-Saharan Africa, where the number of undernourished people increased from 195 million in 2014 to 237 million in 2017, with 6.8 million in South Africa, dropping from 13.5 million in 2002. Furthermore, the Global Hunger Index (GHI) showed that 52 out of 119 nations had GHI rankings rating them as having 'extreme', 'alarming' or 'extremely alarming' starvation in the same 12 months (FAO, 2017)

The South African government has made significant efforts to foster food security and to cultivate global indicators on food security to observe improvements in various organs of the state. This was shown with the development of an interministerial National Food Security and Nutrition Plan by the authorities of South Africa, coordinated by The Presidency. Additionally, the National Development Plan (NDP) acknowledges agricultural productivity and rural development amid the vital priorities to create employment and financial boom, to lower poverty and to address food security in South Africa (Stats SA, 2019). Through these efforts, the share of the populace that was food insecure dropped from 31.6 million in 2006 to 27.3 million in 2011.

However, it increased to 30.4 million in 2015, the major reason being the long-lasting impact of the global financial crisis on the African continent (Stats SA, 2018). According to Ngema, Sibanda and Musemwa (2018), the country has a tradition of evidence-based choice-making. Grounded within the findings of countrywide surveys, there is little evidence to signify that the national sustainability food security programmes that have been carried out have yielded successful results. Again, the authorities do not do justice to information dissemination by no longer supplying the public with distinctive reviews about these programmes.

South Africa is commonly perceived to be food secure, either in relation to generating sufficient staple food or in its capability to import sufficient and nutritional meals for its populace (FAO, 2017). While there is sufficient food available for everybody in South Africa through food produced domestically and food imports, Mkhawani et al. (2016) argue that households' means to access food remains an obstacle to some families due to high income inequality levels. High unemployment levels exacerbate the situation. According to the Quarterly Labour Force Survey (QLFS), the unemployment rate stood at 28.14% in the last quarter of 2019. The COVID-19 pandemic has further aggravated the accessibility to food with an increase in unemployment to around 30.1% in the second quarter of 2020. In addition, small traders were not going to work, remaining without a source of income, relying only on the Unemployment Insurance Fund (UIF), which was around R350 a month, far below the poverty line of R810, by April 2019.

The current decade (2011 to 2021) has been an economic roller-coaster for South Africa, driven by a combination of worldwide and domestic factors, including a low and an anaemic economic boom, persevering unemployment levels, higher consumer prices as seen by rising inflation, coupled with low commodity prices, decreased investment levels, greater family dependency on credit and coverage uncertainty, as reported by Stats SA (2019). This has made food security, mainly affordability and accessibility, a greater challenge at the household level since fewer families were involved in agricultural activities, and at national level due to import restrictions, which were a result of the COVID-19 lockdown.

To attain food security, there is a need to always have adequate quantities of appropriate food. The United States Agency for International Development (USAID) defines food security as a state in which every person always has bodily and economic access to sufficient meals to meet their dietary requirements for a productive and healthy life. Hence, the South African Government's Bill of Rights, section 27(1)(b) of the South African Constitution, Act No. 108 of 1996, states that everyone has a right to have access to enough food. In addition, people want to have sufficient income or a different way of being able to buy or trade for food. Furthermore, Stats SA (2018) indicated that many South African families are not capable of buying food, mainly due to constrained income-generating possibilities. This is mainly dominant in rural areas that mostly rely on government grants as a source of income. The World Health Organisation (WHO) declared COVID-19 a pandemic in March 2020. This led governments around the world to take unprecedented measures to contain the spread of the virus.

The COVID-19 pandemic has come at overwhelming health and economic costs to many countries, including South Africa. In response to the WHO, governments implemented various degrees of lockdown policies. Inevitably, these measures caused a sharp reduction of activity, a fall in employment and income, and an increase in poverty and inequality. According to Hirvonen, De Brauw and Abate (2021) and Laborde, Martin, Swinnen and Vos (2020), international humanitarian organisations expressed concern about the potential for increases in food insecurity due to the pandemic.

Food prices rose almost immediately following the spread of the outbreak of the COVID-19 pandemic (Torero, 2020), and as a result, there has been increased concern that poverty and food insecurity will rise, and that the nutritional status of low-income households and vulnerable groups will fall, as the pandemic continues (Laborde et al., 2020). In April 2020, the World Food Programme made projections that the number of acutely food insecure people in the world could double by the end of 2020 without concerted action (World Food Programme, 2020).

Like most countries, South Africa was hit by this pandemic at the beginning of March 2020. COVID-19 delivered a significant shock to the already structurally troubled economy. In effect, the pandemic, in combination with the policies adopted to mitigate it, reinforced the existing structural inequality and poverty.

Like the rest the world, in the absence of vaccines and pharmaceutical interventions, South Africa had to adopt social distancing in the form of a nationwide lockdown as the only instrument available to mitigate the effects of the pandemic on its population. Through successive lockdown levels, its policymakers tried to balance the positive health gains of the distancing measures against their economic costs, especially the burdens imposed on low-income and food-insecure households. Many observers report that the South African lockdown measures imposed large economic costs with negative implications for the factor distribution of income (Arndt et al., 2020).

Inter alia, the lockdown was expected to present an enormous, real income shock, with its consequent effects undermining the food security of households with low levels of educational attainment and a high dependence on labour income. Although total income for low-income households is significantly insulated by government transfer payments, it is not clear whether these transfer policies insulated the households from food security reversals, considering such rapid and severe shocks imposed by COVID-19. For the most part, social protection programmes span interventions that respond to seasonal and regional supply shocks, such as the Productive Safety Net (PSN) programme in Ethiopia (World Bank, 2018), productive asset transfers in Rwanda and India, or multi-faceted ‘graduation packages’ that tackle the causes of economic and social exclusion (Banerjee et al., 2015).

Burgeoning literature exists on the effects of social transfer and the shocks on household food security. Barrientos and Hulme (2016), the World Bank (2018) and Hidrobo, Hoddinott, Kumar and Olivier (2018) have ascertained the effect of social transfers on the consumption of households that cannot afford to meet their subsistence needs. Another class of literature that investigated the impacts of macroeconomic shocks on household food consumption or insecurity includes that of Galasso and Ravallion (2004), while other authors cite refugee and protracted crises (Brück et al., 2019; Valli, Peterman & Hidrobo, 2019) and natural disasters (Skoufias, 2003). Still, there exists a strand of literature that focuses on the response to supply shocks, such as food shortages, famines and droughts (Sen, 1986; Gilligan & Hoddinott, 2007; Aker, Boumnijel, McClelland & Tierney, 2011; Asfaw et al., 2017).

In this report, COVID-19 and its response policies are considered as a major shock to food security. The COVID-19 pandemic led to a wider set of events, which ranged from a rapid rise in the share of the population infected by a widespread sickness with a positive and non-trivial probability of death (especially for the elderly and those with co-morbidities) to public health policies designed to contain the pandemic (see Arndt et al., 2020). South Africa, like many other countries, used cash transfers as a means of providing financial support to poorer and more vulnerable households in response to the pandemic. However, the lack of a detailed, verifiable and legally enforceable database that forms part of the country's tax and welfare systems makes targeting very difficult.

Nonetheless, these public health policies, which were deployed in response to the pandemic, have far-reaching consequences of constraining economic activities and attendant income flow. These policy shocks are expected to be large enough to drive many households into food insecurity, especially in the absence of countervailing policies such as social protection. Inter alia, the COVID-19 lockdown measures can spur food insecurity owing to the associated shock to households' income rather than through a supply shock such as would occur in the case of a drought (food price hike). However, there is good reason to believe that the COVID-19 lockdown is likely to amplify existing food securities at the household level induced by variabilities in climate, which vary widely across provinces, and by rural-urban divides.³⁶ This report sets out to evaluate the effect of the COVID-19 lockdown policy on household food security. Although food security incidents existed in pre-lockdown South Africa, extant literature of social protection confirm that the Child Support Grant (CSG) and Older Persons' Grant (OPG) have been important elements to bolster household income and mitigate the risk of falling into a poverty trap. However, food security incidents were still pervasive in some contexts, suggesting that these grants were not adequate for some to mitigate food shortages.

³⁶ Although South Africa produces an adequate supply of food and is considered food secure at the national level, this outcome has not translated into food security at the household level (Hendriks, 2014; Hendriks, 2005; Altman, Hart & Jacobs, 2009). Recent statistics suggest that only 45.7% of South Africans are food secure; 26% are food insecure and 28.3% are at a risk of hunger (Hendriks, 2014).

Using recent survey data of 2018, Wills, Kika-Mistry and Kotze (2020) confirmed that about 21% of all households had run out of money for food purchases in the preceding 12 months, 14% had skipped any meal in the preceding 12 months due to inadequacy of money to purchase food, and the rate of either an adult or a child going hungry in the preceding 12 months stood at 14%. Moreover, this study added that, in terms of an indicator of depth of food poverty, 5% of households had skipped any meals for five days in the preceding 30 days.

7.2 The problem

The Living Conditions Survey (LCS) is part of Stats SA's household survey programme and affords certain facts on a household's living conditions, in addition to their income and expenditure styles. The survey, which was carried out in 2014 and 2015, suggests both the poverty headcounts and the percentage of poverty for every province in 2015. The provinces with the highest headcount of individual poverty are Limpopo (67.5%), the Eastern Cape (67.3%), KwaZulu-Natal (60.7%) and North West (59.6%). More than half of the population in these four provinces was residing in poverty. Gauteng and the Western Cape had the bottom share of adults residing in poverty at 29.3% and 33.2%, respectively. From the poverty statistics, one can deduce that black Africans and coloured people had the highest poverty rate in comparison to other population groups. Of those less privileged races, the women-headed families accounted for about 52.5%. The Western Cape reported the highest percentage of female-headed households suffering from hunger at about 17.4%, followed by KwaZulu-Natal with about 15.6%, with the lowest being Limpopo with about 3.8% (Stats SA, 2018). An indistinguishable pattern is observed when looking at child hunger. This enables one to analyse the variances across province, gender and race.

There are various ways in which the COVID-19 pandemic may result in increased food insecurity in low- and middle-income countries. Restrictions on movement may have had the largest early negative impact on food security (Bené, 2020; Resnick, 2020). Devereux, Bené and Hoddinott (2020) argue that disruptions to food systems from the pandemic, both related to the food production side (i.e. production and processing) and to the demand side (i.e. economic, and physical access to food), could adversely affect food security. Informal markets may be disrupted to a greater extent than formal markets. Of particular concern on the demand side is the way value chains function within countries (Reardon, Bellemare & Zilberman, 2020). If value chains are disrupted, prices for disrupted chains are likely to adjust upwards. However, if value chains quickly find ways to be resilient to the pandemic, then the shock of movement restrictions, which weigh most heavily early in the pandemic, may not have longer-term effects on prices (Reardon & Swinnen, 2020).

As the COVID-19 pandemic progresses, there is a need to contain the virus and avoid a food security crisis, as this will hurt the most vulnerable in society: the poor. Larborde et al. (2020) argue that, although no major food shortages have emerged yet, agricultural and food markets are facing disruptions because of labour shortages created by restrictions on the movement of people and shifts in food demand resulting from the closure of restaurants and schools, as well as from income losses.

Export restrictions imposed by some countries have disrupted trade flows for staple foods such as wheat and rice. The pandemic is impacting on all four pillars of food security: availability (whether the supply of food is adequate), access (whether people can obtain the food they need), utilisation (whether people have enough intake of nutrients) and stability (whether people can always access food). COVID-19 is most directly and severely impacting on access to food, even though impacts are also felt through disruptions in availability, shifts in consumer demand towards cheaper, less nutritious foods and food price instability.

The COVID-19 pandemic is likely to result in even more food shortages in South Africa, mostly affecting low-income households. Considering that South Africa is a highly unequal society and that the poor are the majority, COVID-19 can revise gains made by government to increase food security. The poor are usually characterised by low skills and job insecurities, and therefore business closures due to COVID-19 restrictions, especially in the manufacturing and industry sectors, which is their biggest employer. This is likely to see their income declining significantly, which, in turn, will worsen their food security. As a result, it is plausible that their poverty may worsen significantly, and, by default, also their food security.

Labour with low education levels (mainly made up of poorer and more vulnerable households) is much more strongly affected than labour with secondary or tertiary levels of education. It is therefore not surprising that households with low levels of educational attainment and high dependence on labour income would experience an enormous, real income shock that would clearly jeopardise the food security of their households. In South Africa, the total incomes for low-income households are significantly insulated by government transfer payments (Arndt et al., 2020). However, this study is not at the household level, so it remains unclear how the poor are affected by COVID-19 in South Africa. This gap is filled by this study.

According to Pereira and Oliveira (2020), the COVID-19 pandemic may result in drastic increases in poverty and food insecurity levels, resulting from the absence of or weak political, economic and social interventions to maintain jobs, as well as compromised food production and distribution chains and constrained access to healthy foods in different regions around the world, particularly in poorer regions, where social and economic inequality was already historically high. The pandemic heightened and uncovered the vulnerability of poor populations.

COVID-19-related shocks to employment, working hours, earnings and food security among low-wage and vulnerable workers worsened the already high levels of poverty and inequality in South Africa. For this reason, an estimation of the magnitude of welfare loss for the poor and vulnerable is critical, something this study attempts to do, although it only focuses on the extent of food insecurity of this group.

7.3 Research questions/objectives

Considering the above, this study will shed light on the food insecurity consequences of the COVID-19 pandemic shocks by doing the following:

- i. Ascertaining how the COVID-19 pandemic has affected food security in South Africa (access, utilisation, availability and stability)
- ii. Quantifying the effectiveness of fiscal policy (and Intergovernmental Fiscal Relations (IGFR) instruments in particular) in redressing the food insecurity challenge
- iii. Evaluating the adaptability of fiscal policy (and IGFR instruments in particular) to address the challenges of food insecurity and vulnerability for both urban and rural households

The specific objectives of the research are as follows:

- Analyse the food security situation in the country
- Evaluate the COVID-19 lockdown policies on household food security
- Evaluate the effectiveness and responsiveness of fiscal policy (and IGFR instruments in particular) in addressing the challenges of food insecurity
- Make recommendations on how the IGFR instruments can be adapted to address the challenges of food insecurity and vulnerability for both urban and rural households

7.4 Literature review

While several studies have assessed the potential impacts of the pandemic on global and national economic indicators, such as global poverty, government expenditure, General Domestic Product (GDP) growth, budget deficits and employment (ILO, 2020; Nicola et al., 2020; Sumner, Hoy & Ortiz-Juarez, 2020; UN-Habitat & WFP, 2020; World Bank, 2020), there is limited information on how lockdown policies associated with the pandemic are meant to mitigate the virus, or how they will affect individuals at the household level. The economic effects of such a pandemic disproportionately impact on members of society, depending on their socio-economic status, livelihood strategies and access to markets. It is thus vital to gain a better understanding of the household-level impacts and government support mechanisms that can ensure income smoothing (Kansiime et al., 2021).

Ceballos, Kannan and Kramer (2020) and Harris et al. (2020) assessed the impacts of COVID-19 and related restrictions on smallholder farmers in India and reported a large degree of heterogeneity among the impacts of COVID-19 responses on agricultural activity, income and food security. A study of a representative sample of households in Addis Ababa, looking at both food security and food consumption during the pandemic, found that, despite subjective income measures, suggesting that a large proportion of households have been exposed to job loss or reduced income, food consumption and household dietary diversity had remained largely unchanged or had increased slightly by August 2020.

The study used data from a survey conducted in August and September 2019. It found some changes in the composition of food consumption. However, they were not related to shocks found in previous telephonic surveys conducted with the same households.

The results therefore suggested that the types of subjective questions about income typically being asked in COVID-19 telephonic surveys may not appropriately reflect the magnitude of such shocks. They also imply, at least indirectly, that the aggregate food value chains have been resilient to the shock associated with the pandemic (Hirvonen et al., 2021).

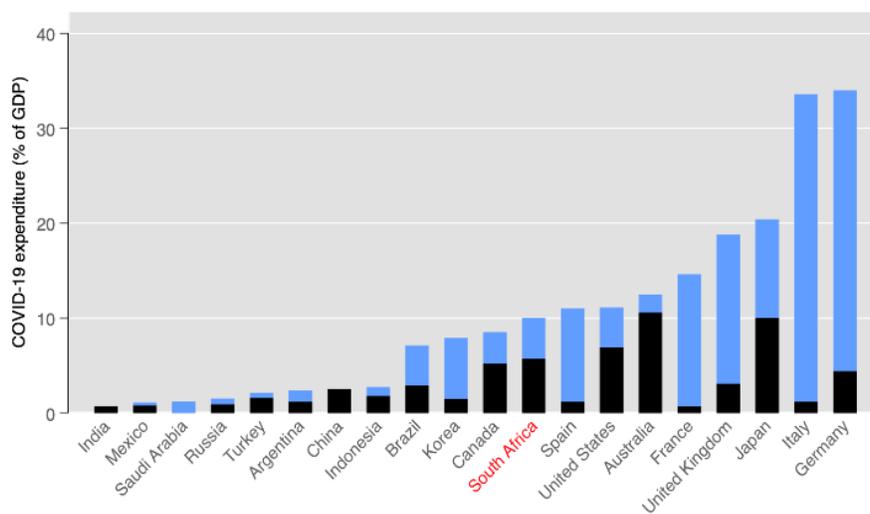
An assessment of the impact of the COVID-19 pandemic on household income and food security in two East African countries (Kenya and Uganda), using online survey data from 442 respondents, found that more than two-thirds of the sample experienced income shocks due to the COVID-19 crisis. Food security and dietary quality deteriorated, as measured by the food insecurity experience scale and the frequency of the consumption of nutritionally rich foods. The proportion of food-insecure respondents rose by approximately 38% and 44% in Kenya and Uganda, respectively. It was also found that, in both countries, the regular consumption of fruit decreased by about 30% during the COVID-19 pandemic, compared to the period prior to the pandemic. Estimation results showed that income-poor households and those dependent on a labour income were more vulnerable to income shock and had poorer food consumption during the COVID-19 pandemic compared to other respondent categories. As a result, they were more likely to employ food-based coping strategies compared to those pursuing alternative livelihoods, who generally relied on savings. Farmers were less likely to experience worsened food security compared to other respondent categories, which depended to a great extent on market sources for food. In both countries, participation in national social security schemes was less likely to be effective in mitigating respondents' income shock during the COVID-19 period. Conversely, membership in savings and loan groups was positively correlated with a smaller likelihood of suffering income shocks and a reduction in food consumption (Kansiime et al., 2021).

The lockdown measures that South Africa implemented as a mitigation measure against COVID-19 have negative implications for the factor distribution of income. Reductions in hours worked by labourers with at most a primary school education exceed 40%, while workers with a tertiary education suffered a significantly smaller, but still very large reduction of about 26% in hours worked. Based on these results, households with low levels of educational attainment and a high dependence on labour income would experience a significant real income shock that would clearly compromise their food security. This effect comes about under the assumptions of very mild direct impacts on food production, no effect on food prices, and no effect on food distribution channels. The effect is mainly the result of the lockdown restriction policies imposed by the South African government to contain the COVID-19 pandemic with a relatively small additional effect due to the policies imposed by other countries and their implications on demand for South African exports. In South Africa, total incomes for low-income households are significantly insulated by government transfer payments in the form of grants.

As a result of these transfer payments, the incomes of low-income households are protected, at least to some degree. The continuation of these payments during the crisis is critical to maintaining food security among low-income households (Arndt et al., 2020).

Considering expected welfare loss in South Africa following COVID-19, President Cyril Ramaphosa announced government’s Economic Reconstruction and Recovery Plan (ERRP) to restore the South African economy following the devastation caused by the pandemic. The COVID-19 stimulus package, originally announced on 21 April 2020, amounted to approximately \$26 billion, (10% of GDP) (see Figure 7.1). As a share of GDP, South Africa’s package represents the largest in the emerging markets; notably larger than several high-income countries, including South Korea and Canada. Even when one only looks at government’s “above-the-line” expenditure, South Africa is spending enormous amounts of money to get the country back on its feet (Bhorat & Kohler, 2020a).

Figure 7.1: COVID-19 stimulus expenditure, by country (percentage of GDP)



Source: Bhorat and Kohler (2020a)

Approximately 90% of the stimulus package was allocated to additional health support, assistance to municipalities for the provision of basic services, wage protection through the UIF, further income support through the tax system, financial support for small and informal businesses, and – the largest component – the credit guarantee scheme.

Notably, about 10%, or \$3.2 billion, was allocated to social assistance, including an expansion of cash transfers or social grants at both the intensive (increasing the amount of every existing social grant) and extensive (introducing a new, special COVID-19 Social Relief of Distress (SRD) Grant) margins for six months from May to October 2020. The President’s October announcement included a further extension of the availability of the COVID-19 Grant, with a reach of around 4.2 million previously unreached individuals in just four months (equivalent to the growth of the grants system in the last 10 years) and subsequent poverty-reducing effects (Bhorat & Kohler, 2020b).

Bhorat and Kohler (2020b) demonstrated that the distribution of the COVID-19 Grant has been relatively pro-poor. For every grant recipient in the richest quintile of households, more than five other recipients live in the poorest quintile. The study found that, conditional on applying, certain individuals are more likely than others to be successful in their applications. Despite the grant's progressivity, studies showed that the extent of under-coverage is regressive. This is illustrated by the 'per child' CSG top-up, which is more pro-poor than the 'per caregiver' top-up, although only marginally. This is key, considering that the cost of the chosen policy was estimated to be substantially cheaper than a six-month 'per child' top-up. Considering alternative post-October policies, an extension of the current grant policy package may be preferable to a Basic Income Grant (BIG) or special Public Works Programme, although the researchers caution that more analysis is required. Although studies undertaken in South Africa, such as the one above, show the reach of government transfer programmes to mitigate the impact of COVID-19, the effectiveness of such interventions in vulnerable and low-income households on measures such as food security remains unclear. This is something that this study will shed light on.

This study furthermore adds to a growing number of studies on the impact of the COVID-19 pandemic by investigating its implications for food security in South Africa, while assessing the usefulness of fiscal instruments to mitigate the impact of COVID-19 on the poor. This study joins a few data-driven studies undertaken in sub-Saharan Africa, such as the study in Kenya and Uganda. Unlike the study of Kansiime et al. (2021), which used a small sample of less than 500 respondents, this study uses a much bigger sample (10 000 respondents) with national coverage, which is representative of the country. Furthermore, instead of using cross-sectional data like Kansiime et al. (2021) and most of the current studies in the literature, panel data is used, consisting of two waves, so as to give a better assessment of the impact of COVID-19, especially on the poor, with the exception of Hirvonen et al. (2021), although their sample is relatively smaller and not representative of the country. The other contribution of this study to the broader literature is the use of the double-selection logit and double-selection Poisson lasso models to account for model uncertainty surrounding variable selection.

7.5 Methodology

In this study, exogenous variation was exploited in individuals' employment status to estimate the causal effects of COVID-19-induced job loss on household and child food insecurity outcomes. To be specific, it was observed that the COVID-19 pandemic and the consequent nationwide lockdown presented a unique natural experiment as the source of unemployment is very likely to be exogenous to the individual (Posel, Ovenubi & Kollamparambil, 2021). Moreover, the causal effects of alternative social grants are estimated, including the CSG, OPG and COVID-19 Grant, together with the rollout of each of these grants, which involves natural experiments. Both traditional logit and Poisson models have been applied.

Many researchers in the social sciences have theoretical questions that entail count variables. A count variable is a variable that takes on discrete values (0, 1, 2, 3, . . .), capturing the number of occurrences of an event at a particular point in time. A count variable can only take on positive integer values or zero because an event cannot occur a negative number of times. There are numerous examples of the use of count variables in the social sciences, such as in economics, psychology and the behavioural sciences. Clinical and health psychologists have modelled the number of depressive symptoms that a child exhibits (Computerised Diagnostic Interview Schedule for Children) (National Institute of Mental Health, 1997), the number of alcoholic drinks consumed per day (Armeli et al., 2005), the number of readmissions to alcohol detoxification programmes a person undertakes (Shanahan et al., 2005) and the number of cigarettes smoked by adolescents (Siddiqui, Mott, Anderson & Flay, 1999). Sociologists have modelled the number of complaints made by citizens to their local law enforcement office (Worrall, 2002) and the number of accidents occurring at intersections (Chin & Quddus, 2003). Psychologists interested in personality assessment have also modelled the number of disciplinary incidents reported among a group of prison inmates (Walters, 2007).

Poisson regression is a member of a family known as the generalised linear models (GLiM) (see Dobson, 2002; Fahrmeir & Tutz, 2001; Fox, 2008; McCullagh & Nelder, 1989) for use with many different types of error structures and dependent variables. The GLiM family of models can provide accurate results for data sets with binary, ordered categorical, count and time to failure (or success) dependent variables. The GLiM introduces two major modifications to the ordinary least squares (OLS) framework. First, it allows transformations of the predicted outcome, which can linearise a potentially non-linear relationship between the dependent variable and the predictors. This modification implies that the predicted scores can be in a different metric (unit of measurement) than the observed dependent variable scores (Coxe, West & Aiken, 2009).

In the Poisson regression model, the observed scores are counts, and the predicted scores are the natural logarithms of the counts. In GLiM, there is a special transformation function called the link function that relates the metric of the predicted scores to the metric of the observed criterion scores. In Poisson regression, the link function is the natural log (i.e. \log_e or \ln). Second, the GLiM is flexible in error structure. The error structure describes the conditional distribution of the errors around the predicted value. The OLS regression assumes a conditional normal error structure, whereas GLiM allows for a different other error structure. The foundation for Poisson regression is the Poisson distribution, which is used to represent the distribution of errors. The Poisson distribution is a member of a set of probability distributions called the exponential family. For all distributions in the exponential family, the height of the probability curve for a specific value of Y , called the probability density, contains an exponential function (i.e. the constant $e = 2.718+$ raised to a power). The normal distribution is a familiar member of the exponential family.

The equation for the normal distribution is as follows (Coxe et al., 2009):

$$f(y|\mu, \sigma^2) = \frac{1}{\sqrt{2\pi}\sigma} e^{-(y-\mu)^2/2\sigma^2} \quad (7.1)$$

According to Coxe et al., 2009, the probability density or height of the normal distribution depends on two parameters: the mean μ and the variance σ^2 . These two independent parameters completely specify the normal distribution. The Poisson distribution differs from the normal distribution in several ways that make the Poisson distribution more attractive for representing the properties of count data. First, the Poisson distribution is a discrete distribution that only takes on a probability value for non-negative integers. This characteristic of the Poisson distribution makes it an excellent choice for modelling count outcomes, which only take on integer values of 0 or greater. The probability mass function for the Poisson distribution is as follows:

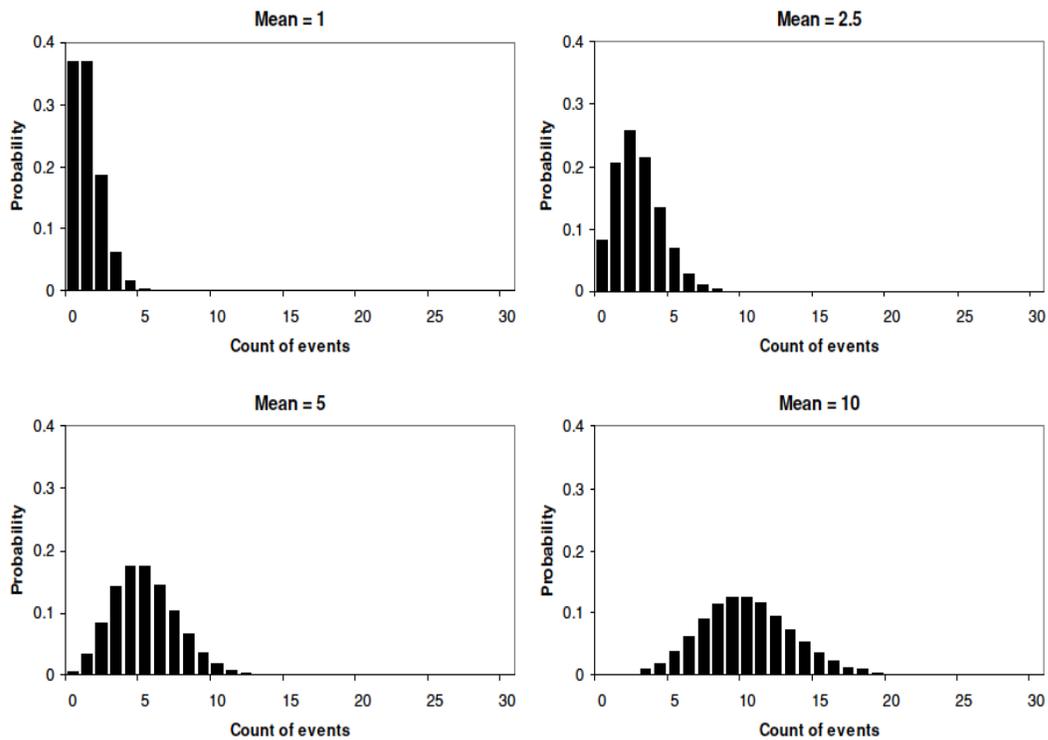
$$P(Y = y|\mu) = \frac{\mu^y}{y!} e^{-\mu} \quad (7.2)$$

Equation 7.2 gives the probability of observing a given value, y , of variable Y that is distributed as a Poisson distribution with parameter μ . The $y!$ is y factorial = $y(y-1)(y-2)\dots(2)(1)$. For the count variable, Y , the “number of disciplinary incidents in a prison group” (Walters, 2007), μ , is the arithmetic mean number of incidents that occur in a specific time interval. The Poisson distribution would yield the probability of 0, 1, 2, . . . incidents, given the mean μ of the distribution. In contrast, the normal distribution is continuous and takes on all possible values, from negative infinity to positive infinity and not just zero and positive integers.

The probability of a specific count also depends on the variance of the number of counts. In fact, the Poisson distribution is specified by only one parameter, μ . The parameter μ defines both the mean and the variance of the distribution; both the mean and variance equal μ . That the mean and variance are equal will often be useful in modelling count outcomes, which typically display increasing variance with increases in the mean. In contrast, the normal distribution requires two independent parameters to be identified – the mean parameter μ and the variance parameter σ^2 (Coxe et al., 2009).

The Poisson distribution increasingly resembles the normal distribution as the expected mean value becomes larger. As a rule of thumb, a Poisson distribution with an expected value greater than 10 approaches a normal distribution in shape and symmetry. However, the Poisson distribution is still discrete and has a single parameter that describes both the mean and the variance. Figure 7.2 shows the probability of each number of events for several different values of μ . Notice how the distributions with very low means are right skewed and asymmetric; the distribution with a mean of 10 appears nearly symmetric. The variances of distributions with higher means are larger (Coxe et al., 2009).

Figure 7.2: Poisson distribution with different values of the mean parameter



Coxe et al. (2009)

Source:

Poisson regression is a GLiM with a Poisson distribution error structure and the natural log (ln) link function. The Poisson regression model can be depicted as follows:

$$\ln(\hat{\mu}) = b_0 + b_1X_1 + b_2X_2 + \dots + b_pX_p \tag{7.3}$$

where $\hat{\mu}$ is the predicted count on the outcome variable given the specific values on the predictors X_1, X_2, \dots, X_p . Recall that ln refers to the natural logarithm, b_0 is the intercept, and b_1 is the regression coefficient for the first predictor, X_1 . The use of GLiM with the Poisson error structure resolves the major problems with applying OLS regression to count outcomes: non-constant variance of the errors and non-normal conditional distribution of errors (Coxe et al., 2009).

Equation 7.3 looks very much like an OLS regression equation. There is a linear relationship between each predictor and the predicted score, just as in OLS regression. What differs from OLS regression is that the predicted score is not itself a count, but rather the natural logarithm of the count. Thus, it is said that Poisson regression is “linear in the logarithm”. It turns out that all types of regression analysis subsumed under the GLiM model have this same property – there is a form of the regression equation that is linear. For those familiar with logistic regression, there is a form of the logistic regression equation that is linear; specifically, logistic regression is “linear in the logit”, as follows (Coxe et al., 2009):

$$\text{logit}(\hat{\pi}) = \ln \frac{\hat{\pi}}{1-\hat{\pi}} = b_0 + b_1X_1 + b_2X_2 + \dots + b_pX_p \quad (7.4)$$

where $\hat{\pi}$ is the predicted probability of being a case.

The regression coefficients of these linear equations are simple and easy to interpret given familiarity with OLS regression coefficients. These linear equations, however, have the disadvantage that the predicted scores are not in the same metric as the observed dependent variable scores; rather, the predicted scores are in a less familiar transformed metric. For Poisson regression, the transformed metric is the natural logarithm of counts rather than the counts themselves. Assuming a conditional Poisson error distribution also means that the residuals of a Poisson regression model are assumed to be conditionally Poisson distributed rather than normally distributed as in an OLS regression. A discrete distribution such as the Poisson distribution will represent the discrete nature of the residuals that must occur with a discrete outcome. Otherwise stated, because the observed values are counts, the residuals may take on only a limited set of values (Coxe et al., 2009).

However, while one can perform series of specifications tests to select among alternative panel data models that better fit the data, there is no guarantee that the results of these tests would help one select controls that are most relevant. To overcome these uncertainties, the regularised linear regression method of machine learning was applied.

Machine learning algorithms can model non-linearity as well as the potentially complex interactions among predictors. One type of machine learning algorithm is the ensemble learning machine based on decision trees. Bagging, also known as bootstrap aggregation, repeatedly draws separate subsets from the full training dataset (Chen et al., 2019).

Random Forest (RF) (Breiman and Cutler, 2010) adds an additional layer of randomness to bagging by forcing each split to consider only a randomly chosen subset of candidate predictors, instead of the full set. Instead of building independent trees using bootstrapped samples, the generalised boosted machine (GBM) (Ridgeway, Southworth & Unit, 2013) grows trees sequentially: each tree is fit onto the residuals of the given model. Other types of machine learning algorithms include the support vector regression (SVR) algorithm (Friedman et al., 2001; Meyer,, Dimitriadou, Hornik, Weingessel and Leisch, 2017).

This uses kernel functions to enlarge the feature space and produces non-linear boundaries by constructing a linear boundary in a transformed high-dimensional feature space; the kernel-based regularised least squares (KRLS) (Ferwerda, Hainmueller & Hazlett, 2017; Hazlett & Hainmueller, 2017) algorithm, whose kernel function measures the similarity between covariates, while the regularisation imposes a preference for a smoother function; and the artificial neural network (ANN) (Ripley, Venables & Ripley, 2016) algorithm, which consists of interconnected ‘neurons’ (representing predictors) in layers that can account for possible non-linearities and interactions.

Specifically, drawing on recent advances in statistics and econometrics, the two-step method of least absolute shrinkage and selection (lasso) regression of logit and Poisson models is used following Belloni, Chernozhukov and Hansen (2014) and Chernozhukov, Hansen and Spindler (2015) as a practical solution to the problem of variable/model selection. These approaches were applied to Equation 7.5:

$$Y_i = \beta_0 + \beta_1 T_i + \beta_2 grant + \beta_2 T_i * grant + \beta_3 X_i + \epsilon_i \quad (7.5)$$

Where Y_i is food security outcome, T_i is a dummy that takes value 1 if individual i lost a job or was furloughed and X_i is a vector of control covariates. Exogenous variation in T_i and due to their corresponding natural experiments means that neither of them is correlated with the error term, ϵ_i , suggesting that an estimation of 1 yields an estimate of the causal parameters of these variables.

7.6 Analysis and findings

7.6.1 Data

Data from the last wave of the National Income Dynamics Study (NIDS) and the first wave of the NIDS-Coronavirus Rapid Mobile Survey (CRAM) will be used. This is a nationally representative survey that targeted 10 000 South Africans. Its sampling design followed a two-stage stratified cluster sampling. The first wave of this data was collected between 7 May and 27 June 2020 (during the third and fourth stages of the nationwide lockdown) and the second wave between 13 July and 13 August 2020 (during the advanced third stage of the lockdown). The third wave of NIDS-CRAM is currently being completed. The survey covers income and employment, household welfare (various expenditures), grant receipt, and knowledge and behaviour related to COVID-19.

In terms of food security/insecurity, the survey included the following questions that capture information on the qualitative and quantitative measures of food insecurity:

- In the month of June, did your household run out of money to buy food?
- In the last seven days, has anyone in your household gone hungry because there wasn't enough food?
- How often did they do hungry? (Options: Never; 1 or 2 days; 3 or 4 days; almost every day; every day)
- In the past seven days, has any child in your household gone hungry because there wasn't enough food?
- How often did they do hungry? (Options: Never; 1 or 2 days; 3 or 4 days; almost every day; every day)

Responses to these questions will be used to develop a measure of household insecurity, which includes information on whether a household faced hunger, the frequency of hunger, and the duration of hunger. Other variables were also prepared that are expected to be correlates of food security/insecurity apart from the COVID-19 policy shock.

7.6.2 Descriptive statistics

The descriptive statistics of the study sample follows. As alluded to above, this research is aimed at investigating the effects of employment status on household and individual food security outcomes during COVID-19.

Moreover, the researchers sought to ascertain whether that relationship interacted with alternative social protection grants, such as the CSG, OPG and COVID-19 Grant. Table 7.1 presents descriptive statistics of variables of the analysis sample. The sample comprises all the adults who were employed in the month before the COVID-19 lockdown came into effect. Following Posel et al. (2021), the study distinguishes between those employed in February 2020 and April 2020, adults who were working and earning a non-zero income, adults who were not working, but were still earning an income (and therefore most likely on paid leave), and adults who were neither working nor earning an income, but who stated that they had a job to return to (they were refer to in the research as furloughed).

Table 7.1: Descriptive statistics of the analysis sample

<i>Variables</i>	<i>Description of variables</i>	<i>Mean</i>	<i>Standard deviation</i>
Food insecurity			
child_hunger	Child gone hungry in the last seven days	0.151	0.005
Hunger frequency	Frequency of hunger incidence to the household	2.921	0.026
Anyone hunger	Anyone; adult or child gone hungry in the last seven days	0.469	0.0059
food_money	Household ran out of money to buy food in April	0.470	0.0059
Employment			
workingW1	An individual was working	0.2771	0.0053
paidleaveW1	An individual was on paid leave	0.0922	0.0034
furloughW1	An individual was furloughed	0.0706	0.0030
unemployed	An individual lost job due to lockdown	0.253	0.0059
employed	A combination of those working and on paid leave	0.2716	0.0052
Social grants			
grant	Receipt of any grant (yes = 1; no = 0)	0.1793	0.0045
hh_csg	Living with household receiving a CSG (yes = 1; no = 0)	0.519	0.0059
hh_opg	Living with household receiving a CSG (yes = 1; no = 0)	0.3203	0.0055
csg	Receipt of a CSG (yes = 1; no = 0)	0.0581	0.0027
opg	Receipt of an OPG (yes = 1; no = 0)	0.0856	0.0033
c19_grant	Receipt of a COVID-19 Grant (yes = 1; no = 0)	0.0063	0.0788
csg_unemp	Lost job and received a CSG (yes = 1; no = 0)	0.0357	0.0022
opg_unemp	Lost job and received an OPG (yes = 1; no = 0)	0.0785	0.0031
c19_grant_unemp	Lost job and received a COVID-19 Grant (yes = 1; no = 0)	0.0042	0.0007
Other covariates			
w1_female	Gender (female = 1; male = 0)	0.530	0.0059
urban1	Rural	0.1407	0.0041
urban2	Urban	0.824	0.0045
urban3	Farm	0.0355	0.0022
race1	African	0.7843	0.0049
race2	Coloured	0.0958	0.0035
race3	Asian	0.0241	0.0018
race4	White	0.0956	.00349
Observations (n)		7,073	7,073

The descriptive analysis of the data suggests that a quarter (25%) of adults reported that their household had lost a job since lockdown came into effect in South Africa on 27 March 2020. Moreover, it can be seen that 47% reported that their household ran out of money to buy food; 47% reported that someone in the household had gone hungry in the preceding seven days; and 15% reported that a child had gone hungry in the preceding seven days. Households had encountered these incidents at least twice before the date of the survey. However, these incidents are context-specific. The additional descriptive statistics show that the prevalence of child hunger is 17.9 percentage points in rural areas compared to 14.3 percentage points in urban settings; the average frequency of encountering hunger is 2.85 in a rural area compared to 2.941 in an urban area; and the prevalence of adult hunger is 51.6 percentage points in rural areas compared to 45.9 percentage points in urban areas.

In addition to the urban-rural divide, the researchers also estimated the distribution of these incidents across different grant receipts. They found that child hunger is 14.2 percentage points in rural areas among those receiving a CSG, compared to 26.4 percentage points in urban areas; the frequency of hunger is 2.92 among rural CSG recipients, compared to 2.86 in urban areas; and adult hunger is 46.2 among rural CSG recipients compared to 59.6 percentage points in their urban counterparts. Child hunger is 14.8 percentage points among OPG recipients compared to 17.5 among non-recipients of the OPG; the frequency of hunger is 2.91 among recipients of the OPG compared to 2.95 among non-recipients; and adult hunger is 46.8 percentage points among recipients of the OPG compared to 49.1 among non-recipients.

7.6.3 Estimation

Following a description of the nature of the sample data, the results of the analysis are presented. Logit and Poisson models were employed, respectively, for binary and count food security variables to estimate the effect of COVID-19-induced job loss, furlough and the receipt of various social grants on household and individual food insecurity measures taken during COVID-19. In testing for heterogeneity of the job loss effects, and thereby evaluating the effectiveness of social grant policies (the CSG, OPG and the COVID-19 Grant), the researchers also estimated the effect of the interacted term between job loss variables with the receipt of each of these grants. They also added controls for gender, location (living in a metropolitan municipal area) and province of residence during lockdown and the race of the study unit. Table 7.2 and Table 7.3 present the detailed estimation results.

As expected, job loss is a significant cause of food insecurity, regardless of food security measures considered. In the baseline models (see Table 7.2), it was found that incidents of child hunger were 5.63 percentage points higher in households that had lost a job (a main source of household income) relative to households that had not lost a job. Households that had experienced job losses were also 12.7 percentage points more likely to have run out of money to buy food in April 2020 following the COVID-19 lockdown. Likewise, households that faced furlough were 12 percentage points more likely to run out of money to buy food in April 2020 than those that did not face furlough.

Table 7.2: Marginal effect estimates of logit and Poisson food security models

Variable	child_hunger	household_hunger	hunger-frequency
lost job	0.0563*** (3.092)	0.127*** (5.993)	-0.0507 (-0.535)
furloughed	0.0292 (0.903)	0.120*** (2.853)	0.0473 (0.277)
lost_job*csg	-0.0759** (-2.521)	-0.0473 (-0.663)	0.216 (0.646)
lost_job*opg	0.147 (1.543)	-0.0446 (-0.521)	0.776** (2.020)
csg	0.178*** (2.721)	0.119** (2.007)	-0.214 (-0.796)
opg	-0.0816** (-2.096)	0.0161 (0.188)	-0.476* (-1.884)
c19_grant	-0.103*** (-3.377)	0.127 (0.994)	-0.872*** (-2.937)
living_in opg-hh	-0.0197 (-1.207)	-0.00195 (-0.0956)	-0.0585 (-0.644)
w1_female	0.0133 (0.822)	0.0261 (1.166)	0.0262 (0.335)
urban2	-0.0221 (-1.305)	-0.0284 (-1.119)	0.0481 (0.497)
urban3	-0.0332 (-1.350)	0.0140 (0.253)	-0.303 (-1.347)
race1	0.142*** (5.021)	0.301*** (7.760)	-0.106 (-0.205)
race2	0.155 (1.573)	0.348*** (7.484)	-0.141 (-0.269)
race3	-0.0172 (-0.214)	0.287*** (3.691)	-0.285 (-0.594)
Observations	5,495	6,814	1,745

t-statistics in parentheses: *** p < 0.01; ** p < 0.05; * p < 0.1

Regarding the effects of social grants, one finds a statistically significant coefficient of CSG receipt for both child and household hunger. This is not surprising as CSG-receiving households are the poorest (lying in in the lowest income deciles) (Arndt et al., 2020). It is worth noting that, in addition to the CSG, these households are also largely reliant on labour income (a wage or salary). The descriptive analysis of the NIDS data suggests that, in 2018, about 57 grant-receiving households had at least one employed household member. Arndt et al. (2020) observed that employed persons of grant-receiving households work in low- to medium-skilled jobs or occupations/industries, which are low-paying and more susceptible to the hardest brunt of the lockdown.

It follows that the chance of job losses for these households during lockdown appears to loom larger than in households not working in such occupations/industries. Notwithstanding, it was found that receipt of a CSG by a household that had lost a job during lockdown reduces the incidence of child hunger by 7.59 percentage points. Unlike the receipt of a CSG, the estimates show that the OPG and COVID-19 Grant protected households from the shock of food insecurity. Specifically, it was found that the receipt of an OPG reduces the incidence of child hunger by 8.16 percentage points and the recurrence of household hunger by 47.6 percentage points. However, household hunger is 77.6 percentage points more likely to recur among households that received an OPG and have lost a job. It was also found that the COVID-19 Grant reduces child hunger and the recurrence of household hunger by 10.3 and 87.2 percentage points, respectively.

Table 7.3: Lasso (machine learning) marginal effect estimates of food security

Variable	child_hunger	household_hunger frequency	
unemployed	0.289** (2.237)	0.284*** (3.257)	0.0780** (2.383)
furloughW1	0.142 (0.792)	0.314** (2.566)	0.101** (2.144)
csg_unemp	0.170 (0.688)	-0.137 (-0.701)	-0.0250 (-0.391)
opg_unemp	-0.0974 (-0.236)	-0.596** (-2.180)	0.0989 (1.257)
hh_opg	-0.0693 (-0.867)	-0.173*** (-3.023)	-0.00951 (-0.462)
c19_grant	-0.12.4*** (-32.03)	0.395 (0.531)	0.302*** (11.50)
csg_opg	-0.778** (-2.079)	-0.231 (-0.829)	-0.0650 (-0.909)
Observations	5,462	6,776	1,730

Robust z-statistics in parentheses: *** p < 0.01; ** p < 0.05; * p < 0.1

Although economic theory, as well as existing social sciences literature, may suggest a set of variables in the probit and Poisson models implemented thus far, they do not generally identify exactly which variables are important or the functional form with which variables should enter the model. As alluded to in the previous section, the researchers employed the lasso methods to account for model uncertainty surrounding variable selection. Table 7.3 presents an estimate of double-selection logit and double-selection Poisson lasso models.

As can be seen, many covariates included in the previous model could not survive model selection (penalisation). Moreover, it can be seen that estimates of the lasso models are different from those obtained from traditional logit and Poisson models, both in terms of their magnitude and precisions.

As such, these estimates are considered more correct to report the finding than the results presented earlier. It was found that job loss caused an increase in child hunger by 28.9 percentage points, the likelihood of running out of money for food purchases by 28.4 percentage points and the recurrence of household hunger by 7.8 percentage points. Likewise, job furlough caused an increase in the likelihood of running out of money for food purchases by 31.4 percentage points and the recurrence of household hunger by 10.1 percentage points.

In terms of social grant policies, the effect of the receipt of a CSG is not statistically significant when conditioned on job loss, suggesting that this instrument does not bode well to protect households against the food insecurity shock. However, the results show that the OPG reduced the likelihood of running out of money for food purchases by 59.6 percentage points among households that experienced job losses. An individual living in an OPG-receiving household is 17.3 percentage points less likely to experience a shortage of money for food purchases. The COVID-19 Grant reduces child hunger by 12.3 percentage points. Finally, it was found that a combination of a CSG and an OPG reduces the incidence of child hunger by 77.8 percentage points, suggesting that increasing the social grant affords the highest protection against the food insecurity shock.

7.7 Concluding remarks and recommendations

The COVID-19 crisis has resulted in lower incomes and higher prices for some foods, putting food beyond the reach of the poor and most vulnerable. This unfortunately undermines the right to food and jeopardises efforts to meet SDG 2: Zero hunger. The situation is fluid and dynamic, characterised by a high degree of uncertainty. A significant number of South Africans were already suffering from hunger before the virus hit and, unless immediate action is taken, we could see a countrywide food emergency with impacts expected to continue through 2021 and into 2022.

In the longer term, the combined effects of COVID-19, as well as corresponding mitigation measures and the emerging global recession, could, without large-scale coordinated action, disrupt the functioning of food systems. Such disruption can result in consequences for health and nutrition of a severity and scale never before seen in this country, which can reverse years of developmental gains.

Many observers confirmed that the South Africa COVID-19 lockdown measures have resulted in large economic costs with negative implications for the factor distribution of income (Arndt et al., 2020). Inter alia, the lockdown was expected to present an enormous, real income shock, with the consequent effects of undermining food security among households with low levels of educational attainment and a high dependence on labour income, as it caused massive job losses. Being an exogenous force, this shock serves as a natural experiment to evaluate the effects of job loss on individual and household food insecurity.

The consequent exogenous variation of individual employment regimes took a unique form, characterised by outright layoffs, retaining jobs to return to, but for the duration of the lockdown, not working or earning an income (furloughed) (Posel et al., 2021), or retaining jobs with pay throughout the lockdown period. Thus, poverty and food insecurity may increase as the threat of COVID-19 spreads. The emergence of COVID-19 in highly unequal countries such as South Africa and Brazil (see Ribeiro-Silva et al., 2020) further explained the massive discrepancy between different social realities that coexist in the country, rekindling discussions about food and nutrition security.

Using this unique natural experiment, the researchers showed that households of adults who had been employed prior to the lockdown and those who had lost their jobs during lockdown or whose jobs were furloughed were more vulnerable to food insecurity both at household and child levels. It was also found that, while the OPG and COVID-19 Grant proved more effective in protecting households from the food insecurity shock, a combination of the CSG and the OPG affords the highest protection against this shock.

Social grant targeting: Although South Africa provides a plethora of social assistance to protect the poor from downside welfare shocks, the findings underscore the need to carefully target those who are hit the hardest through job loss due to the covariate shock of the COVID-19 lockdown. As argued earlier, cash transfer programmes, such as the one rolled out by the South African government in response to the COVID-19 pandemic, provide important financial support to the poor and the vulnerable. Although any government response to crises will be imperfectly targeted, with vital inclusion and exclusion errors, in economic and public health crises, the benefits from improving targeting can be enormous. During pandemics such as COVID-19, the government relies on expanding social assistance initiatives, even if their targeting is not perfect.

Social grant expansion: Although social packages in South Africa target poor households, they are not necessarily designed to mitigate job loss or income shocks. They can be made more generous in this time of crisis, and be extended to new beneficiaries, which requires both information on potential beneficiaries and the payment infrastructure to reach them. The study's findings show that combining the CSG and OPG provides the highest form of protection against the food insecurity shock relative to their separate effects; particularly to mitigate child hunger. This highlights the need to expand the existing social grant assistance.

Efficiency social grant administration: While transfer policies such as social protection grants accrue significant opportunity costs in terms of forgoing other public services, such costs loom even greater when the inefficiencies are associated with the rollout of such programmes. An elite capture and the recent slow rollout of the COVID-19 SRD Grant, largely due to limited administrative capacity and an inability to determine eligibility, are cases in point. Overcoming these hurdles and thereby attaining the rollout efficiencies provide an important avenue to expand the social grant and target resources to vulnerable groups.

However, the potential for mistargeting programme funds is high and there were many claims of those who were left out. A poorly administered transfer programme has the potential to adversely impact on the intended target group in a way that extends far beyond purely the financial costs.

Based on the findings in this study, the Financial and Fiscal Commission makes the following recommendations:

- 1. The Department of Social Development should involve local governments and non-profit organisations to collect better information on those unmet needs and deliver improved targeted assistance during pandemic times such as COVID-19.*
- 2. The Department of Social Development should use information of new beneficiaries to create a more comprehensive, updated government registry, as this can be used for future social programmes.*
- 3. The Department of Social Development should expand social assistance to increase coverage of vulnerable populations.*
- 4. National Treasury should consider fiscal and monetary incentives during COVID-19, such as lifting value-added tax (VAT), duties and other taxes on food businesses, or extending concession loans or loan guarantee facilities to food companies.*
- 5. The Department of Agriculture, Forestry and Fisheries should use food reserves optimally and target them appropriately. For example, they can release food reserves (i.e. grain) when prices spike. The Department of Basic Education should continue with school feeding programmes during COVID-19.*

7.8 References

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Chapter 8

Water and sanitation access, distribution efficiencies and tariff setting in South Africa



Chapter 8:

Water and sanitation access, distribution efficiencies and tariff setting in South Africa

Prof Johane Dikgang and Mr Isaiah Magambo

8.1 Introduction

Prior to COVID-19, the global water sector was impacted by five major trends: climate change, which has led to an increase in extreme floods and droughts, challenging the resilience of water and sanitation systems; an increasing proportion of people living in areas facing water stress, which increases supply vulnerabilities; rapid urbanisation, which strains existing water resources and ecosystems; the emergence of megacities, which adds the challenge of extending water and sanitation services to about 1 billion people living in informal settlements not served by water networks; and aging infrastructure, which has increased pressure to accelerate investments in more advanced markets, following decades of underinvestment (Butler, Pilotto & Mutambatsere, 2021). These trends have also emerged in South Africa, with water droughts being more pronounced in large cities such as Cape Town, which came close to Day Zero.

The ongoing COVID-19 pandemic brings forth the urgency of ensuring improved access to safe drinking water and improved sanitation as it is critical for effective COVID-19 preventive measures such as hand washing, sanitation and overall public health. Washing hands with soap and water is one of the most effective measures against COVID-19, yet a significant proportion of the population does not have access to clean and safe drinking water. The public health crisis has also brought to light the urgency of recognising the need for efficiency within the water and sanitation sector, more investments to maintain and expand water and sanitation infrastructure, and fiscal instruments to deal with shocks in the sector.

The pandemic has impacted several sectors of the economy. In the water sector, it led to a change in demand for water: the demand for residential water increased, while the demand for non-residential water decreased. The net effect of the COVID-19 pandemic on total water demand varies from community to community. Certainly, the poor in society suffer the most. Providing water and sanitation services in the context of the COVID-19 pandemic, water scarcity, climate change, high poverty and high inequality, as is the case in South Africa, is a difficult balancing task for the water service authorities (WSAs) and water service providers (WSPs). Nonetheless, well-designed policy instruments, such as water tariff structures that incorporate the principles of fairness, equity, affordability, cost recovery, efficiency, sustainability and political feasibility, could go a long way towards providing good-quality water services in acceptable quantities, and equitably for all South Africans.

This paper is structured in a way that the next sections look at the problem statement, followed by the research objectives and the literature review, the methodology, findings and concluding remarks, and finally the policy recommendations.

8.2 The problem

Water and sanitation distribution has several challenges, including the ‘coverage’ of water and sanitation provision, the unreliability of water services, poor maintenance, and water loss and leakages, leading to non-revenue water ranging between 30% of input water in South Africa (DWS, 2016). To improve water supply and serve more consumers (preferably from low-income areas, which often remain unserved), the capacities of water supply systems must be increased. Very often, the necessary increase can be achieved through water loss reduction and investing in new infrastructure and technology, which will increase water supply. The growing water demand must also be reduced by using technology, pricing and behavioural approaches.

In governing water demand, like any economic commodity, three approaches are mainly used: the commanding approach (regulation), the market-based approach (price and incentives) and the mixed approach, where both regulation and incentives are applied. In most cases, the commanding approach has been challenged for not being economically efficient. In theory, a price should be designed to reflect the scarcity, and to nudge consumers into a rational behaviour change (that may lead to a reduction in demand and improvements in environmental quality) in a more efficient way compared to the commanding approach.

Moreover, the pricing approach has several additional or ancillary benefits, such as creating a permanent incentive for technological innovation, stimulating the efficient allocation of water resources, raising revenues to maintain and upgrade the provision of water services, and promoting water use efficiency. Due to these benefits, the pricing approach has been widely accepted and adopted by water authorities as the pricing policy tool to govern water demand (Delacámara et al., 2013). The pricing tool has been viewed as a conservation tool in improving the conservation effort, not only as a cost recovering instrument (Maggioni, 2015). During the last few decades, numerous international organisations have emphasised the role of the pricing policy as a tool to achieve the objectives of efficiency, environmental sustainability and cost-recovery in the management of water resources (Lopez-Nicolas et al., 2017; Rogers, De Silva & Bhatia, 2002).

In addition, there is currently a debate on how to fund the water sector. Investment in water and sanitation are often ‘lumpy’ and require high capital investments. Many countries seek out the private sector to modernise and expand their water and sanitation infrastructure and/or to improve the efficiency of the water system.

8.3 Research questions/objectives

The main objective of this paper is to conduct a comprehensive and systematic investigation on the impact of COVID-19 on access to water and sanitation. Based on the findings, fiscal policy measures will be recommended that will ensure a faster and more sustainable recovery of the economy following the outbreak of COVID-19. Many people still do not have access to reliable water and sanitation services, which has widened with the outbreak of the pandemic.

The specific objectives of the research are as follows:

- i. Scrutinise the water and sanitation access (quality, quantity, reliability) challenges in South Africa
- ii. Evaluate water and sanitation distribution inefficiencies and investigate alternative technologies that municipalities can leverage upon to improve water and sanitation provision efficiencies
- iii. Investigate the cost reflectiveness of the water pricing models in municipalities
- iv. Investigate how the private sector can be incentivised to play a part in the water and sanitation provision value chain
- v. Assess Intergovernmental Fiscal Relations (IGFR) instruments that can be adapted to address challenges (such as maintenance) in the water and sanitation provision value chain

This study has five objectives that deal with heterogeneous issues based on the type of problems or questions asked, as well as the methodologies used to approach them. The objectives can be treated as independent sections; hence we will present each as a separate section.

8.4 Literature review

8.4.1 Water and sanitation access literature

The relationship between urbanicity (the rural-urban environment) and wealth status on access to water and sanitation services in sub-Saharan Africa is well documented. A study of a pooled regression analysis of the compositional and contextual factors that systematically vary with regard to access to water and sanitation services over a 25-year period in 15 countries across sub-Saharan Africa found that overall, substantial improvements have been made in providing access to improved water sources in sub-Saharan Africa from 1990 to 2015, unlike access to sanitation facilities over the same period (Armah et al., 2018).

Inadequate access to water continues to be a serious problem at many South African schools. The main finding relates to the heavy physical burden of carrying water imposed on girls and not boys, and gender stereotyping resulting from the inculcation at a very early age that there are forms of labour that are only appropriate for females. The study concluded that it was clear that inadequate access to water is not gender neutral in its consequences. In particular, the data reveals that inadequate access to water and sanitation significantly diminished learning opportunities for girls at the school (Devnarain & Matthias, 2011).

According to Wrisdale, Mokoena, Mudau and Geere (2017), environmental, political, socio-economic, and attitudinal factors were identified as impacting on water access and occupation in South Africa. They argued that supply systems must enable people to easily access more water than is essential for survival (the lifeline threshold is currently 6 kℓ), so that people can participate in meaningful and productive occupations. Hence, access to water and sanitation should be considered part of an occupational right.

The COVID-19 pandemic has once again demonstrated the importance of access to adequate quantities of safe water and sanitation in public health. In the current COVID-19 pandemic, an early warning wastewater system has been proposed as a solution for COVID-19 surveillance, and a potentially important public health strategy to combat the disease. This short communication on wastewater surveillance in sub-Saharan Africa highlights challenges, opportunities and alternatives considered in the local context (Street, Malema, Mahlangeni & Mathee, 2020).

In the USA, informational murals and handwashing stations were used to increase access to sanitation among people experiencing homelessness during the COVID-19 pandemic (Ha et al., 2020). The impact of this intervention is yet to be determined. Water, sanitation and hygiene (WASH) practices emerged as a critical component of controlling and preventing the spread of the COVID-19 pandemic. A study in rural Odisha, India, found that most respondents (86%, N = 104) reported a change in their handwashing practice and/or use of soap due to COVID-19 or the related government lockdown. These improved handwashing practices remained in place a few months after the pandemic began and were often described as a new consistent practice after additional daily actions (such as returning home), suggesting new habit formation. However, there was minimal change in latrine use and child faeces management practices because of the pandemic. The study also highlighted the importance of ensuring communities have adequate WASH infrastructure to enable the practice of safe behaviour and strengthen resilience during a large-scale health crisis (Bauza et al., 2021). Although considerable concern has been expressed about the impact of COVID-19 on access to water and sanitation, little is known about the magnitude of the impact. This study is an attempt to shed light on the impact of the pandemic on access to safe drinking water and sanitation in South Africa.

8.4.2 Efficiency analysis literature review

A vast number of efficiency studies have made use of the non-parametric data envelopment analysis (DEA) methodology (see Romano & Guerrini, 2011; Romano et al., 2017; Molinos-Senante et al., 2018). An investigation of the operative cost efficiency scores of 43 Italian water utility companies found that ownership affected efficiency scores with public water utilities having higher efficiency scores than private water utilities (Romano & Guerrini, 2011). The results indicate the likelihood that ownership, size and location are determinants of efficiency. However, the study did not employ a methodology to enable the determination of each external factor's contribution towards the estimated efficiency scores.

A South African study found that there are more efficient urban water utilities than rural water utilities (Brettenny & Sharp, 2018). The study did not pool the rural and urban utilities' efficiency analysis, which would have allowed for comparison. The study did not provide estimations of the determinants of the efficiency scores. García-Valiñas and Muñiz (2007) found that including the exogenous input rainfall resulted in efficiency levels of Spanish water utilities comparable to global findings. However, the study did not estimate the determinants of efficiency due to the limited methodology used.

An efficiency analysis of 53 water utilities in Australia found 17 utilities to be operating on the frontier and thus efficient, but when the estimates are corrected for bias using the bootstrap technique, the number of efficient utilities falls to seven (Ananda, 2014). The study was limited to urban water utilities in Australia and did not consider whether the location of a water utility in a rural jurisdiction could affect the scores. The bias-corrected efficiency scores and the determinants of efficiency for 23 Chilean water and sewerage companies concluded that non-revenue water loss is, to a large extent, an endogenous environmental variable, and thus managers and policymakers can increase efficiency significantly by putting measures in place to reduce water loss (Molinos-Senante et al., 2018). However, the study did not consider the potential effects of location (urban vs rural) on water utilities' efficiency.

Most studies that used the non-parametric conventional DEA model were conducted internationally, with a few exceptions in South Africa. Samkange, Mahabir and Dikgang (2019) found that there are significant differences between the rankings and efficiency scores generated by the conventional DEA model compared to the double-bootstrap DEA model, for both urban and rural samples. Murwirapachena, Mahabir, Mulwa and Dikgang (2019) compared the various approaches used in terms of whether they produced estimates that are consistent in identifying the best and worst water utilities, as well as the overall ranking of firms in terms of their efficiency levels to make policymakers aware of the implications of the various efficiency methods.

8.4.3 Tariff setting literature: with an emphasis on cost reflectiveness

The design of municipal water tariffs requires balancing multiple criteria such as financial self-sufficiency for the WSP, equity among customers, and economic efficiency for society. A modelling framework that was developed to analyse how alternative municipal water tariff designs affect these three criteria found that increasing block tariffs (IBTs) perform poorly in terms of targeting subsidies to low-income households, regardless of the magnitude of financial subsidies that a utility receives from national government. When cost recovery is low, the distribution of subsidies under this tariff structure is even worse if the correlation between water uses and household income is high. IBTs introduce price distortions that induce economic efficiency losses. However, study demonstrated that these welfare losses are relatively small, especially when households respond to average prices (Nauges & Whittington, 2017). Even in high-income countries, relatively few water utilities achieve 100% cost recovery (Reynaud, 2016).

The fundamental question in unequal societies such as South Africa is what should come first, cost-reflective tariffs or pro-poor tariffs. There is a trade-off between pro-poor tariff policies and cost-reflective tariffs. This question remains unclear in South Africa. Mgwele, Girma and Dikgang (2021) argue that, in South Africa, affordability of basic services such as water remains high on the agenda as the increasing financial cost of basic service provision can impede the realisation of equal access to safe and clean potable water. The process of utilities setting water tariff rates is therefore a very complex undertaking. Utilities cannot only pursue economic efficiency when setting tariffs, but must also take social goals such as equity (access and affordability), sustainability and the political economy into consideration. Hence, to ensure the provision of basic water services, especially to low-income poor households, accurate assessment of affordability is critical. In South Africa, the IBT pricing structure is believed to help municipalities achieve some of the multiple goals of water service provision, such as cost recovery, revenue efficiency, equity and affordability. In practice, however, there has been little empirical evidence to quantify the efficiency of IBTs in simultaneously achieving even some of these goals. In this regard, this part of the analysis is an attempt to shed light on the cost reflectiveness of water pricing models by South African WSPs.

8.4.4 Private sector involvement

Achieving universal access to safe and affordable drinking water, along with adequate sanitation (Sustainable Development Goal (SDG) 6), is essential to improve people's livelihoods and the environment. In South Africa, it remains a huge challenge, however. Although 92% of households have access to improved drinking water, only 83% have access to basic sanitation facilities. That means that almost 17% (2 969 199 households in South Africa) lack sanitation services. Some households do not have proper toilets. Facilities such as bucket toilets are used by 1% of households, and open defecation by another 1% of households. Moreover, wastewater is often discharged into rivers or seas without treatment.

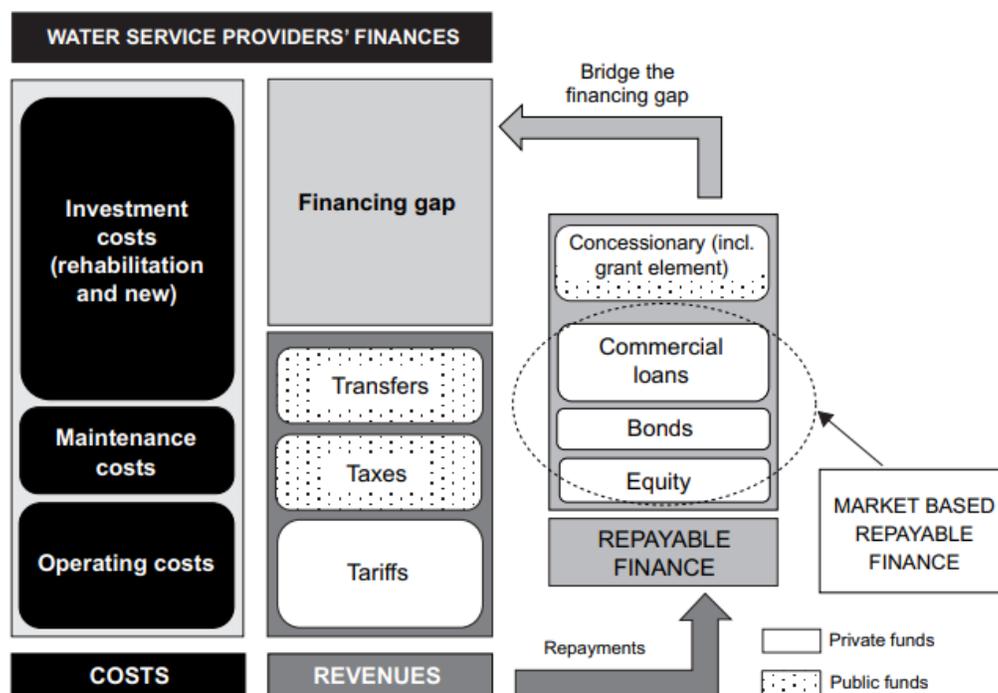
In addition to challenges in the country related to access to water and sanitation, the incomplete and ageing water and sanitation infrastructure systems are facing stress from increasing consumption, leakages, theft and extreme weather events, which affect the quantity and quality of water, and the distribution networks that supply it. The dilemma is how to pay for water and sanitation investments, and whether local, municipal or national governments will have the financing to invest in and achieve SDG 6. A large part of the financial investments in water and sanitation come from public sources. Public sector funds are mainly from local or municipal governments and have not sufficiently covered the needs of growing populations or improved the performance of existing water utilities.

Two organisations are involved in water and sanitation services management in South Africa: the Department of Water and Sanitation (DWS) and the municipalities (water supply authorities). DWS is primarily responsible for the development and implementation of policy that governs the water sector. The municipalities supply water and sanitation to consumers (households, businesses and industries) and operate wastewater collection and treatment systems.

Thus, most of the country’s water services infrastructure is managed by the municipalities, except for the bulk services provided by the water boards. The direct involvement of privately owned companies in the operation of water services in South Africa has been limited to date.

Physical investment in water and sanitation, such as major network expansions and new wastewater treatment facilities, are capital intensive with high upfront costs and long payback periods, repaid in local currencies. Investments require long-term financing (long maturities), preferably with ample grace periods, to accommodate long construction schedules, and in local currency to minimise foreign exchange risks. The water and sanitation sector has historically relied on public funding to meet its investment needs. Municipal or local governments, regional or provincial governments and national government – through taxes, transfers, tariffs and user fees – are the main funders of water and sanitation infrastructure. In South Africa, government-owned agencies (WSAs) are responsible for the supply of drinking water and the treatment of wastewater. In general, the water sector’s financing options are summarised and presented in Figure 8.1.

Figure 8.1: Financing framework for water and sanitation investments



Source: OECD (2010)

The supply of funds (revenue) depends on tariffs (charged to the users), taxes and transfers (government sources). The demand for water and sanitation investment exceeds the supply of funding sources. Taxes and user fees cannot cover the investment needs. The financing gap needs to be filled from private sector sources. In many developing countries, the water sector’s cash flow does not meet the mark of financial sustainability for either service provision or sector development.

In South Africa, this study revealed that only 51 out of 112 (46%) WSAs could recover the cost from the revenue they collect. The governments of developing countries (including South Africa) are constrained by the total amount of funds they can raise through taxes, and budgetary resources compete for many worthwhile programmes in all sectors. Governments complement their own resources with official development assistance (ODA), and, when available, from domestic and international private sector resources. Governments often receive multilateral and bilateral development financing that is typically channelled through the recipient countries' Ministry of Finance in the form of loans, often at concessional rates, or as grants.

Water and sanitation infrastructure is ultimately paid for by one, or a combination, of the following parties: users through tariffs or charges, taxpayers through local and national taxes, or aid donors through ODA. Traditionally, the largest funding sources are from local sources, primarily the local and municipal government coffers, and, to some extent, from user fees. Public and ODA funding combined do not adequately cover the needs related to water, and especially sanitation. Countries need to tap into new sources of finance to meet the growing demand by expanding opportunities for private investment.

8.4.5 Fiscal instruments: literature review

An investigation of whether, and how, the devolution of revenue-raising responsibilities to Côte d'Ivoire's municipalities' enhanced access to public services and contribution to reducing poverty concluded that increased local revenue positively affects access to public services and reduces poverty. However, there is evidence that revenue decentralisation has a more robust effect on access to public service than on poverty. This effect seems to work mainly by enhancing access to education more than enhancing access to health, water and sanitation services. Moreover, it was found that municipalities are more likely to improve access to public services in less ethnically diverse localities and in urban zones (Sanogo, 2019).

A key issue facing US water utilities is that, while costs are generally fixed and increasing over time, the revenue is typically variable and has generally been decreasing or dampening over time, making it harder to maintain fiscal sustainability. The study found that decreases in demand and increases in costs are the two primary driving forces. Rate increases cannot be named as a determinant of fiscal unsustainability because of the inelastic nature of water demand. Finally, the study also highlighted strategies for US water utilities to improve their fiscal sustainability (Ali, Wang, Himmelberger & Thacher, 2021).

Many emerging markets were already showing signs of over-indebtedness before the COVID-19 crisis and the costs associated with the pandemic will only increase the demand for resources, including public debt. Macroeconomic stability must be anchored in sustainable paths of public and external debt, and countries will need to consider this in coordination with ongoing initiatives by the Group of Twenty (G20) countries, the International Monetary Fund (IMF) and others to ensure debt sustainability and transparency in exploring facilities to support water utilities in the COVID-19 crisis financially (World Bank, 2020).

8.5 Methodology

8.5.1 Descriptive analysis: access to water and sanitation

The goal is to identify and describe trends and variation in access to water and sanitation within the South African population following the outbreak of the COVID-19 pandemic. Although the aim is not to estimate causal effects, by creating new measures of key phenomena and describing samples, the descriptive approach adopted in this study is critical in the scientific process involved in general and social science research. Descriptive analysis identifies patterns in data to answer questions about who, what, where, when and to what extent.

The approach used seeks to understand access to water and sanitation from a systems perspective, which embraces access as a single metric. With the single dimension analysis, different attributes (such as access, type of water source or sanitation facility, distance, interruption of service, and rating or perception) are analysed separately. Data collected mainly from the 2019 General Household Survey (Stats SA, 2019), 2020 Labour Force Survey (Stats SA, 2020) and the first two waves of the National Income Dynamic Study (NIDS) (2020) was used in the analysis. The analytical approach entails using various descriptive statistics on water and sanitation access, such as frequencies and graphs using the STATA and ArcGIS programs.

8.5.2 Efficiency analysis

This study uses a double-bootstrap DEA model with a truncated regression (see Simar and Wilson, 2007), which is a non-parametric approach. This model allows for the estimation of bias-corrected efficiency scores and the identification of drivers of efficiency in the water sector. All the water utilities included in the analysis are decision-making units that convert a set of identical inputs to identical outputs. The relative efficiency of each firm or unit is estimated by comparing the volume of its inputs and outputs in relation to the other firms being analysed. The DEA models are either input- or output-oriented, depending on the specific nature of the industry being investigated. This study employs the use of an input-oriented model, which employs variable returns to scale (VRS). An input-oriented model is preferable to an output-oriented model as WSAs must meet predetermined consumer demand. Efficiency would thus mean a reduction in the number of inputs used to produce the same level of outputs (see Romano & Guerrini, 2011).

The double-bootstrap DEA allows for the estimation of bias-corrected efficiency scores in the first bootstrap stage. This allows for statistical inferences and hypothesis testing to be done. The second bootstrap, or the double-bootstrap stage, identifies the determinants of the efficiency scores found in the first stage by applying statistical tests to the efficiency scores obtained in the first stage to determine whether there are significant differences between the efficiency scores of units clustered according to factors that may affect efficiency (Molinos-Senante et al., 2018).

Algorithm 2 of the double-bootstrap DEA model proposed by Simar and Wilson (2007) is used in this study, just as in previous studies (Zhang, Lundgren and Zhou, 2016; Molinos-Senante, Donoso, Sala-Garrido and Villegas, 2018). The following equations summarise steps of the model:

- Estimate DEA input, biased-efficiency scores θ_j for all WSAs in the sample by using the following information:

Given $j = 1, 2, \dots, N$ units (WSAs in this study)

Each WSA uses a vector of M inputs $x_j = (x_{1j}, x_{2j}, \dots, x_{Mj})$ to produce a vector of S outputs $y_j = (y_{1j}, y_{2j}, \dots, y_{Sj})$

The input-oriented DEA model is represented as below:

$$\begin{aligned}
 & \text{Min } \theta_j \text{ s. t.} \\
 & \sum_{j=1}^N \lambda_j x_{ij} \leq \theta_j x_{i0} \quad 1 \leq i \leq M \\
 & \sum_{j=1}^N \lambda_j y_{rj} \geq y_{r0} \quad 1 \leq r \leq S \\
 & \lambda_j \geq 0 \quad 1 \leq j \leq N
 \end{aligned} \tag{8.1}$$

Where,

- θ_j represents efficiency of the WSA being evaluated. It is efficient if $\theta_j = 1$ and inefficient if $\theta_j > 1$.
 - M is the number of inputs used
 - S is the number of outputs generated
 - N is the number of WSAs in the sample
 - λ_j is a set of variables representing the weighting of each WSA evaluated in the determination of the efficient frontier
- Run a truncated maximum likelihood estimation to regress θ against a set of independent variables:

$$z_j, \theta_j = z_j \beta + \varepsilon_j$$
 and provide an estimation of β of the coefficient vector β and estimate $\hat{\sigma}_\varepsilon$ of σ_ε , the standard deviation of the error term ε_j .
 - For each WSA j ($j = 1, 2, \dots, N$), duplicate the following four steps B_1 times to obtain a set of B_1 bootstrap estimates θ_{jb} for $b=1, \dots, B_1$
 - Generate the residual error ε_j from the normal distribution $N(0, \sigma_\varepsilon^2)$
 - Compute $\theta_j^* = z_j \beta + \varepsilon_j$

- Generate a pseudo data set (x_j^*, y_j^*) where $x_j^* = x_j$ and $(y_j^* = y_j \left(\frac{j}{\theta_j}\right))$
- Using the pseudo data set (x_j^*, y_j^*) and (1), estimate the pseudo-efficiency estimates θ_j^*
- Calculate the bias-corrected estimator θ_j for each WSA j ($j = 1, 2, \dots, N$) using the bootstrap estimator or the bias b_j
 Where, $\theta_j = \theta_j - b_j$ and $b_j = \left(\frac{1}{B_1} \sum_{b=1}^{B_1} \widehat{\theta}_{jb}^*\right) - \theta_j$
- Use truncated maximum likelihood estimation to regress θ_j on the explanatory variables z_j and provide an estimate for β^* for β and an estimate for $\hat{\sigma}^*$ for σ_ε .
- Repeat the following three steps B_2 times to obtain a set of B_2 pairs of bootstrap estimates $(\hat{\beta}_j^{**}, \hat{\sigma}_j^{**})$ for $b = 1, \dots, B_2$.
 - Generate the residual error from the normal distribution $N(0, \hat{\sigma}^{*2})$
 - Calculate $\widehat{\theta}_j^{**} = z_j \beta^* + \varepsilon_j$
 - Use truncated maximum likelihood estimation to regress $\widehat{\theta}_j^{**}$ on the explanatory variables z_j and provide an estimate β^{**} for β and an estimate $\hat{\sigma}^{**}$ for σ_ε .

8.5.3 Method for cost reflectiveness

Setting prices or tariffs requires considerations of financial sustainability of the supplier, especially in covering the costs of production (a breakeven analysis). To achieve this objective, the study analysed the cost recovery ratio of different WSAs.

Cost recovery ratio is the ratio of fare revenue to total operating costs and is a key indicator of financial performance. It may most conveniently be expressed as a percentage. Typical cost recovery ratios for a profitable business operation lie between 110% and 115%. This method can estimate a cost recovery ratio for water services based exclusively on the standard accounting information contained in WSP datasets. There is no precedent for the application of an estimated cost recovery ratio. This investigation may be considered a step in the right direction as far as getting researchers in South Africa to start paying attention to this important issue. This is a standard and replicable estimation of the ratio. The future adoption of the methodology in South Africa could suppose a significant tool for a better application of the cost recovery principle.

8.5.4 Systematic literature review as a research method: private sector incentives and the use of fiscal instruments

This approach is suitable when one is interested in doing investigations of the “what is it and when should we use it” type. Systematic reviews have foremost been developed within medical science to synthesise research findings in a systematic, transparent and reproducible way, and have been referred to as the gold standard among reviews (see Davis, Mengersen, Bennett & Mazerolle, 2014).

Despite all the advantages of this method, its use has not been overly prevalent in social sciences. However, it is on the rise in business (Snyder, 2019; Snyder et al., 2016; Verlegh & Steenkamp, 1999).

A systematic review can be explained as a research method and process for identifying and critically appraising relevant research, as well as for collecting and analysing data from said research (Moher, Liberati, Tetzlaff & Altman, 2009). The aim of a systematic review is to identify all empirical evidence that fits the pre-specified inclusion criteria to answer a particular research question or hypothesis. By using explicit and systematic methods when reviewing articles and all available evidence, bias can be minimised, thus providing reliable findings from which conclusions can be drawn and decisions made (Moher et al., 2009).

What is the potential contribution of a systematic review? There are several advantages and potential contributions of conducting a systematic review. For example, one can determine whether an effect is constant across studies and discover what future studies should be conducted to demonstrate the effect. Techniques can also be used to discover which study-level or sample characteristics influence the phenomenon being studied, such as whether studies conducted in one cultural context show significantly different results from those conducted in other cultural contexts (Davis et al., 2014).

8.6 Analysis and findings

8.6.1 Access to water and sanitation

8.6.1.1 Definitions

The World Health Organisation (WHO) specifies that the quantity of safe water required per person per day is 20 to 40 litres. In South Africa, the DWS has set the minimum quantity at 25 litres per person per day, and the minimum cartage distance at 200 m (Stats SA, 2015). Moreover, Statistics South Africa (Stats SA) (2015) has defined access to water according to two categories based on access to drinking water. Table 8.1 provides this classification.

Table 8.1: Access to water

“Improved drinking water” refers to:	“Unimproved drinking water” refers to:
Piped water into dwelling, yard or plot	Unprotected dug well
Public tap or standpipe	Unprotected spring
Tube well or borehole	Cart with small tank or drum
Protected dug well	Tanker truck
Protected spring	Surface water (river, dam, lake, pond, stream, canal, irrigation channel)
Rainwater collection	Bottled water

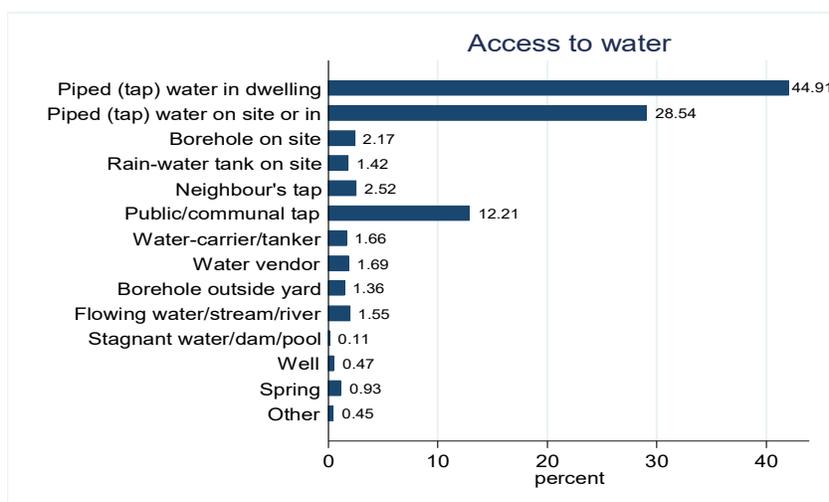
Stats SA (2015; 2017)

Therefore, in light of the above definition, access to water will be analysed based on the water access classifications. The importance of water and sanitation demands a better understanding of the extent of access and the quality of this water and sanitation. Currently, available statistics underestimate the lack of access to services, as the emphasis has been mostly on quantity (number of households), while ignoring the quality of the services. To eradicate the gaps in providing these services, it is crucial to understand the current state of affairs. Hence, this analysis goes beyond looking only at the number of households using a particular water source or toilet facility, and delves deeper by assessing the different types of access.

8.6.1.2 Access to water

The categorisation of water sources or sanitation facilities adopted in this project is based on the criteria used by Stats SA (2017), which is broadly based on the methodology of the WHO’s Joint Monitoring Programme for Water Supply and Sanitation, which classifies improved and unimproved sources or facilities. Improved water sources are those that are properly constructed, which, when used properly, protect the water from outside contamination. Importantly, the WHO’s Joint Monitoring Programme considers protected wells, springs and rainwater collection to be properly protected from contamination and includes these as improved sources. The breakdown of households with access to improved water sources (usage access³⁷), according to number of households per water source, is given in Figure 8.2.

Figure 8.2: Main sources of drinking water used by households



Source: Stats SA (2019)

³⁷ Usage access is used in this project to refer to a household having access to a particular water source or toilet facility, regardless of the quality of access (i.e. not considering distance, location, sharing or interruption). This is to distinguish it from overall access, which is used to refer to access to water or sanitation services evaluated across several access dimensions.

Based on data from the General Household Survey of 2019, there were about 17.163 million households in South Africa in 2019. Figure 8.2 shows that tap water is the most common source of drinking water among households, accounting for use by approximately 73% of households in South Africa, with water inside their dwellings accounting for use by 45% of households, which amounts to 7.71 million households. Although households’ access to water has generally improved, 3.1% of households still had to fetch water from rivers, streams, stagnant water pools, dams, wells and springs in 2019. Table 8.2 illustrates access to water during the ongoing COVID-19 pandemic.

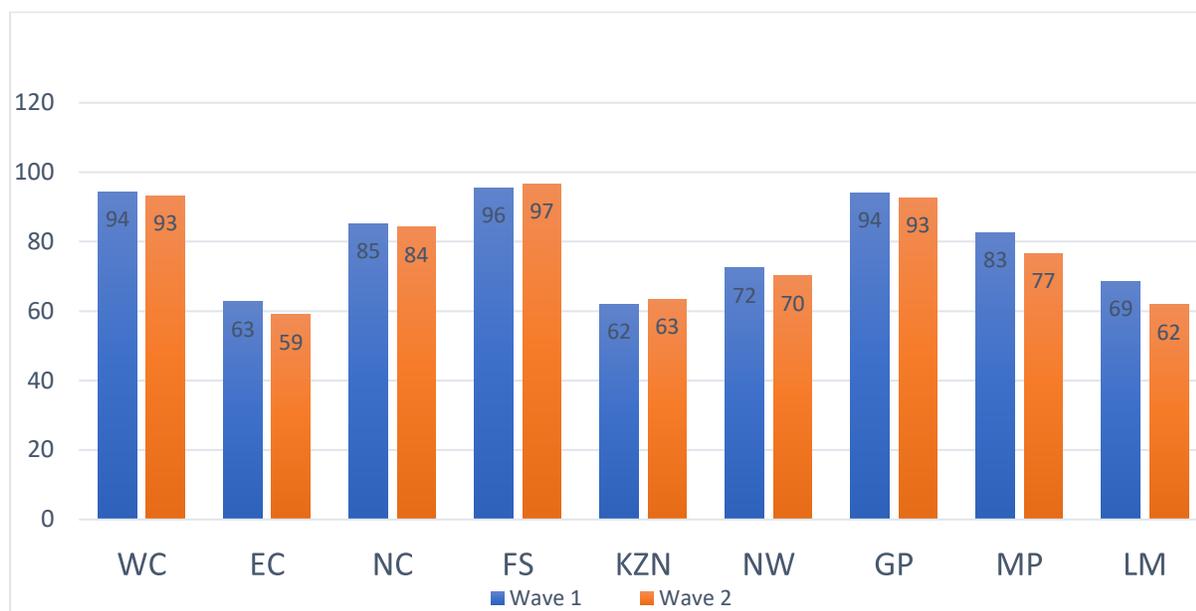
Table 8.2: Access to tap or piped water during the COVID-19 period

Piped or tap water inside dwelling, house or in a yard?	Wave 1		Wave 2	
	Frequency	Percentage	Frequency	Percentage
Refused	5	0.079	1	0.02
Yes	4.311	75.95	4.218	74.31
No	1.36	23.96	1.457	25.67
Total	5.676	100.00	5.676	100.00

Data collected in the first two waves³⁸ of the NIDS-Coronavirus Rapid Mobile (CRAM) study during COVID-19 shows that access to tap or piped water in a yard has been declining. At a national level, total access declined from 76% in the first wave to 74% in the second wave, as shown in Table 8.2. Furthermore, the researchers analysed access to tap or piped water during COVID-19 according to provinces. The findings are illustrated in Figure 8.3.

³⁸ The researchers used the NIDS-CRAM 2020 dataset since it tracks the same person over time, thus provides more robust differences.

Figure 8.3: Access to tap or piped water during COVID-19 by provinces



Source: Commission’s calculations based on NIDS-CRAM 2020 dataset; Stats SA (2020)

Figure 8.3 shows that the most significant decline in access to tap or piped water during COVID-19 was experienced in Limpopo by 7%, Mpumalanga by 6% and the Eastern Cape by 4%. These are the country’s more rural provinces, suggesting that access is disproportionately impacted in rural areas. However, some provinces experienced an increase, including the Free State and KwaZulu-Natal by 1%. The reasons for some households not accessing in-yard water over the same year could be attributed, among others, to a change in employment status, as illustrated in Table 8.3, and change in household income, as depicted in Table 8.4.

Table 8.3: Change in employment status during COVID-19

Employment status	Quarter 2	Quarter 3
Employed	33.7	34.83
Unemployed	10.13	15.3
Discouraged job seeker	5.83	6.32
Other not economically active	50.34	43.55
Total (percentage)	100	100
Total population	42 543 486	427 23 796

Table 8.3 shows that the number of unemployed populations increased by 5% in 2020, which would subsequently affect household income, as shown in Table 8.4:

Table 8.4: Change in income status during COVID-19

Variable	Observed	Mean	Standard deviation	Minimum	Maximum
Total household income in June (Wave 2)	5.671	3190.968	8323.728	-9	230 000
Total household income in April (Wave 1)	5.670	3262.37	9781.169	-9	400 000

Source: Commission’s calculations based on NIDS-CRAM 2020 dataset; Stats SA (2020)

As shown in Table 8.4, the average household income decreased from R3 262,70 to R3 190,90 per month. The decrease in income would affect household affordability, which impacts negatively on affordability.

8.6.1.3 Access to sanitation

For sanitation, Stats SA (2017) used the WHO’s Joint Monitoring Programme guidelines, which consider improved sanitation facilities that prevent human contact with faeces. Stats SA (2015; 2017) distinguishes between two categories of sanitation access, as provided in Table 8.5.

Table 8.5: Sanitation access

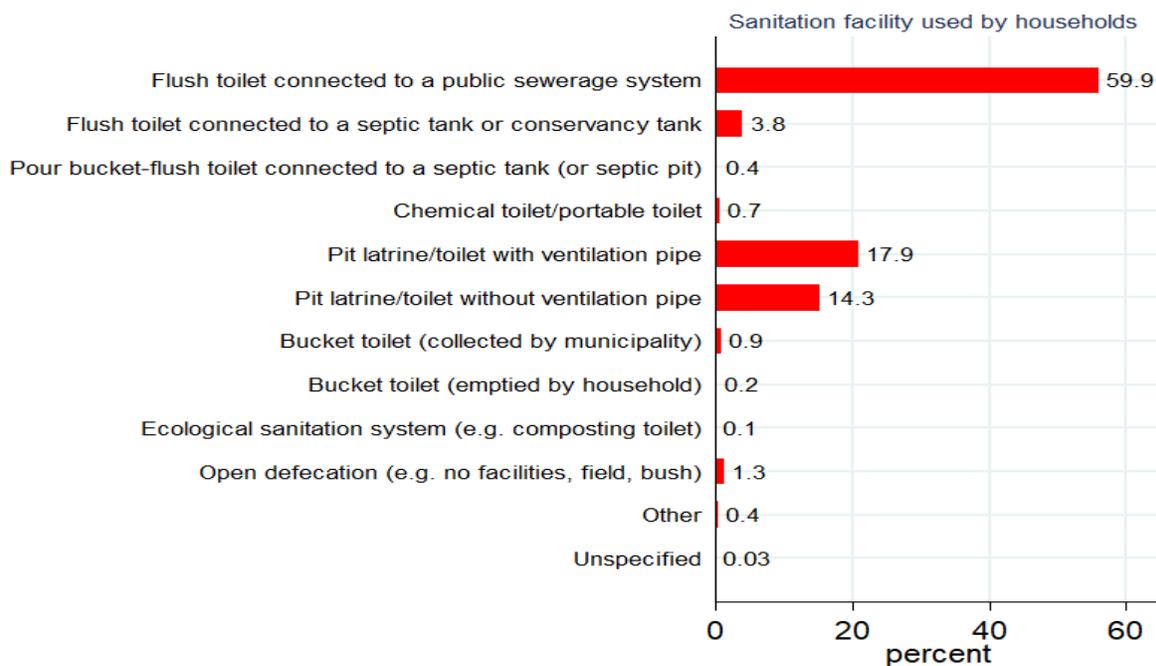
“Improved sanitation” refers to:	Unimproved sanitation” refers to:
Flush or pour-flush	Flush or pour-flush to elsewhere (not to piped sewer system, septic tank or pit latrine)
Piped sewer system	Pit latrine without slab/open pit
Septic tank	Bucket
Pit latrine	Hanging toilet or hanging latrine
Ventilated improved pit (VIP) latrine	Shared facilities of any type
Pit latrine with slab	No facilities – bush or field
Composting toilet	

Stats SA (2015; 2017)

Sanitation access demands a better understanding of the extent and quality of access. Currently, available statistics underestimate the lack of access to services, as the emphasis has mostly been on quantity (the number of households), while ignoring the quality of services. To eradicate the gaps in providing these services, it is crucial to understand the current state of affairs. Hence, this analysis goes beyond looking only at the number of households using a particular toilet facility, and delves deeper by assessing the different types of access.

The analysis started by assessing the main types of sanitation facilities used by households, and then determining whether the source or facility had improved. The results are presented in Table 8.4.

Figure 8.4: Main source of sanitation facility



Source: Stats SA (2019)

The results in Figure 8.4 show that, in South Africa, 60% of households use flush toilets connected to a public sewage system. Moreover, other common toilet facilities include a pit latrine with a ventilation pipe, which is used by 18% of households and a pit latrine or toilet without a ventilation pipe, which is used by 14% of households. However, some households do not have proper toilets, so bucket toilets and open defecation are used by 1% of households, respectively. The picture that emerges here is one of a significant number of South African households being without access to safe sanitation. This analysis is broken down by province and the results are provided in Table 8.6.

Table 8.6: Type of toilet facility by province

Type of toilet facility	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpumalanga	Limpopo	Total
Flush toilet connected to a public sewage system	92.2	42.3	60.3	70.2	44.7	39.6	84.8	37.2	18.5	60.0
Flush toilet connected to a septic tank	2.1	2.7	10.3	2.8	5.3	9.6	1.2	5.4	5.8	3.8
Pour bucket flush toilet	0.1	0.5	0.3	1.7	0.4	0.0	0.3	0.1	0.5	0.4
Chemical toilet/portable toilet	1.6	0.2	0.0	0.1	0.4	0.1	1.2	0.1	0.1	0.7
Pit latrine/toilet with ventilation pipe	0.1	41.9	12.3	7.4	30.5	19.5	3.7	21.0	38.5	17.9
Improved	96.1	87.7	83.2	82.3	81.4	68.9	91.1	63.9	63.4	82.7
Pit latrine/toilet without ventilation pipe	0.3	6.9	7.8	13.6	16.2	28.6	6.5	33.9	34.4	14.3
Bucket toilet (by municipality)	2.1	0.5	0.9	1.3	0.1	0.0	1.6	0.1	0.1	0.9
Bucket toilet (by household)	0.7	0.0	0.2	1.0	0.1	0.0	0.2	0.0	0.0	0.2
Ecological sanitation system	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1
Open defecation	0.4	4.1	4.9	1.0	1.3	2.2	0.1	1.8	1.7	1.3
Other	0.3	0.6	1.9	0.7	0.9	0.2	0.2	0.3	0.4	0.4
Unspecified	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Unimproved	3.9	12.1	15.9	17.6	18.6	31.1	8.9	36.0	36.6	17.3
Total (%)	100	100	100	100	100	100	100	100	100	100
Total households (000)	1 933	1 703	350	922	2 985	1 248	5 072	1 332	1 620	17 163

Source: Stats SA (2019)

The most common toilet facility in the Western Cape and Gauteng is a flush toilet connected to a public sewage system, which is used by 92.2% and 84.8% of households, respectively. The results in Table 8.6 indicate that, countrywide, 82.7% of households have access to improved toilet facilities, with a backlog of 17.3% without improved toilet facilities. In the Western Cape, 96.1% of households have improved toilet facilities, followed by Gauteng with 91%. Other provinces with percentages above the national average include the Eastern Cape and the Northern Cape. The remainder of the provinces have a percentage below the national average, with Limpopo at the bottom with 63.4% of households with improved toilet facilities.

Table 8.7: Type of toilet facility by metro

Type of toilet facility	Metro	Non-metro	Total
Flush toilet connected to a public sewage system	84.1	40.2	60.0
Flush toilet connected to a septic tank	1.4	5.8	3.8
Pour bucket flush toilet	0.2	0.5	0.4
Chemical toilet/portable toilet	1.2	0.3	0.7
Pit latrine/toilet with ventilation pipe	4.2	29.1	17.9
Improved	91.1	75.8	82.7

Type of toilet facility	Metro	Non-metro	Total
Pit latrine/toilet without ventilation pipe	6.0	21.1	14.3
Bucket toilet (by municipality)	1.7	0.2	0.9
Bucket toilet (by household)	0.2	0.2	0.2
Ecological sanitation system	0.1	0.0	0.1
Open defecation	0.4	2.1	1.3
Other	0.4	0.5	0.4
Unspecified	0.1	0.0	0.0
Unimproved	8.9	24.2	17.3
Total	100	100	100
Total households (000)	7 725	9 438	17 163

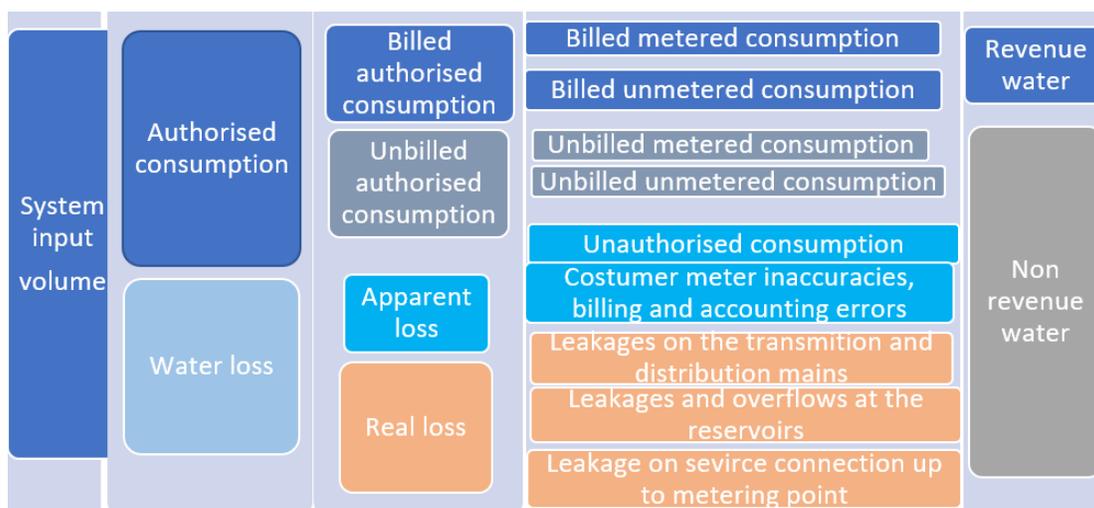
Source: Stats SA (2019)

The picture that emerges is that of bigger municipalities doing relatively better than smaller municipalities. The metros are characterised by improved sanitation access. A large component of the non-metros are rural municipalities, so the backlogs reflected in Table 8.7 signal sanitation backlogs in rural municipalities, which are expected to be higher than the figure shown for that category. Unfortunately, the data did not allow the analysts to disaggregate that further. What is even more unfortunate is the unavailability of data on access to sanitation during the ongoing COVID-19 pandemic.

8.6.2 Water and sanitation efficiency analysis

The WSAs have a mandate to provide water at affordable tariffs. However, evidence reveals that some of them can barely cover their operational costs through their revenue, due to low tariffs, among other reasons. Corruption, slackness and ineptitude have been evident in South African municipalities, with some even failing to efficiently provide basic services (Van der Westhuizen & Dollery, 2009). The diagram in Figure 8.5 highlights the distribution aspects and sources of inefficiencies in the provision of water services.

Figure 8.5: Depiction of a system input volume



Source: Stats SA (2019)

Water distribution starts with accumulating water in the reservoirs and, in some cases, the input volume suppliers are private companies such as Rand Water in South Africa. Some municipalities purchase their water in bulk and fill their reservoirs. The amount of input volume determines how much water should be distributed to the customers or consumers. However, not all water from the input (reservoirs) reaches the customers or consumers. Some water gets lost in the process. Water loss can be divided into two aspects: apparent loss and real loss.

Apparent loss is attributed to unauthorised consumption (such as illegal connections), customers' meter inaccuracies, and billing and accounting errors. Real loss relates to the ageing of infrastructure and maintenance issues, which result in leakages on the transmission and distribution mains, leakages and overflow at the reservoirs, and leakages between the service connection and the metering point. These two types of water loss contribute to the non-revenue water component, as does unbilled, authorised consumptions, both in terms of unbilled metered consumption and unbilled, unmetered consumption (these are legal connections, but without meters, which are thus unbilled). Real loss represents complete loss of water as it does not get to the intended consumer at all, while apparent loss and the unbilled, authorised consumption component allows water to get to the consumer, but they do not pay for it. Thus, the WSA only collects revenue for billed, authorised consumption.

As argued earlier, not all the 257 municipalities are WSAs or WSPs. Of the 152 WSAs, the efficiency of 84 WSPs was evaluated using 2018 data due to data constraints. The research sample consists of 36 urban and 44 rural WSPs. Table 8.8 provides a statistical summary of the sample data used in this study to compute the efficiency of WSAs in South Africa.

Table 8.8: Descriptive statistics for selected water operational variables

Variable type	Variable	Observed	Mean	Standard deviation	Minimum	Maximum
Output	Water distributed	84	2.31e+07	5.61e+07	220606	3.11e+08
Input	Labour	84	2070.833	4915.057	146	27184
	Operating costs	84	4.11e+08	1.16e+09	1322662	7.35e+09
	Network length	84	12501.19	100282.1	55.15686	920328.6
Determinants	Non-revenue water	84	1.44e+07	2.98e+07	127400	1.92e+08
	Customer density	80	91096.73	184220.6	2065	872578
	Location: urban	84	.4285714	.4978439	0	1

The statistics shows that, on average, non-revenue water, as a percentage of system input volume, amounts to 34%. While other WSAs perform significantly well with only 3%, some WSAs perform relatively poorly in terms of non-revenue water, as a percentage of system input, accounting to 83%. There is high standard deviation from the mean. This implies that the variable is mostly likely not normal and there is a wide dispersion between the different WSAs in the metro as opposed to non-metro areas, or in the urban as opposed to the rural areas. This can also be seen in the huge range illustrated by the differences between the minimum and maximum values. The huge discrepancies observed in the data suggests that the decision-making units (DMUs) (the WSAs) should be analysed according to category in order to make fair comparisons.

According to the biased efficiency scores (see Appendix 1 for the full sample), 16 urban and four rural WSAs were among the top 20 most efficient WSAs in 2018. The City of Johannesburg and Ekurhuleni metros, and the Emfuleni and Newcastle local municipalities were among the top 20 most efficient urban WSAs for 2018. The Dr JS Moroka, Kou-Kamma, Ugu and Mantsopa municipalities were among the top 20 most efficient rural WSAs in 2018. Given the fact that the municipalities differ between rural and urban, the analysis was done for the subsamples (urban and rural: refer to Appendix 1 for the results). Table 8.9 lists the results of the efficiency descriptive statistics.

Table 8.9: Summary statistics of the bias-corrected efficiency score

Groups	Observed	Mean	Standard deviation	Minimum	Maximum
Whole sample	80	2.020858	0.8930791	1.077569	4.686464
Urban	36	1.609104	0.5739152	1.096011	3.346317
Rural	44	1.89209	0.8242816	1.216108	4.302514

The average bias-corrected efficiency score of the overall sample is 2.021. This means that an average WSA can decrease its inputs by 49% to perform as efficiently as the benchmarked WSA while maintaining the same level of output. The urban sample performed better than its rural counterpart, as its mean is 1.609, which implies that it can decrease its inputs by 39% compared to the benchmarked WSA, while maintaining the same level of output.

Moreover, its standard deviation is smaller, showing that most of the WSAs in urban areas perform relatively close to the mean. The mean of 1.892 in the rural sample implies that its efficiency is 46%, thus it can decrease its inputs by 47% and still deliver the same level of output. This has implications in terms of economies of scale, whereby an urban WSA has a comparative advantage over its rural counterpart. Many smaller municipalities do not have the necessary economies of scale, skills and specialisation to efficiently and effectively provide a water services function.

Empirical studies have shown that inefficiencies in water supply are, to a large extent, due to non-water revenue, water losses due to poor maintenance, inaccurate or incomplete billing and water theft, and decreased water supply due to climate change and water scarcity.

8.6.3 Cost recovery rate

The results³⁹ show that the average cost recovery rate for WSAs is 87%, which indicates that most of the municipalities can generate enough revenue to cover their operating expenditure. The results show that, out of the 112 WSAs (municipalities), only 51 (46%) could cover their operating expenditure from their revenue.

Table 8.10: Overall cost recovery rate

Variable	Observed	Mean	Standard deviation	Minimum	Maximum
Water operating expenditure	112	3.08e+08	1.02e+09	1322662	7.35E+09
Water revenue	112	3.07e+08	8.86e+08	2027324	6.56E+09
Cost recovery rate	112	86.91852	40.7595	4.515483	192.5802

Moreover, the standard deviation shows that there is huge dispersion in the WSAs, as shown by the range, whereby the poorest performing WSA can only recover 25% of its operating expenditure from the revenue it collects, while the best performing WSA can collect revenue almost double (192%) its operating expenditure. These results are further presented in Table 8.11 based on the category of municipality.

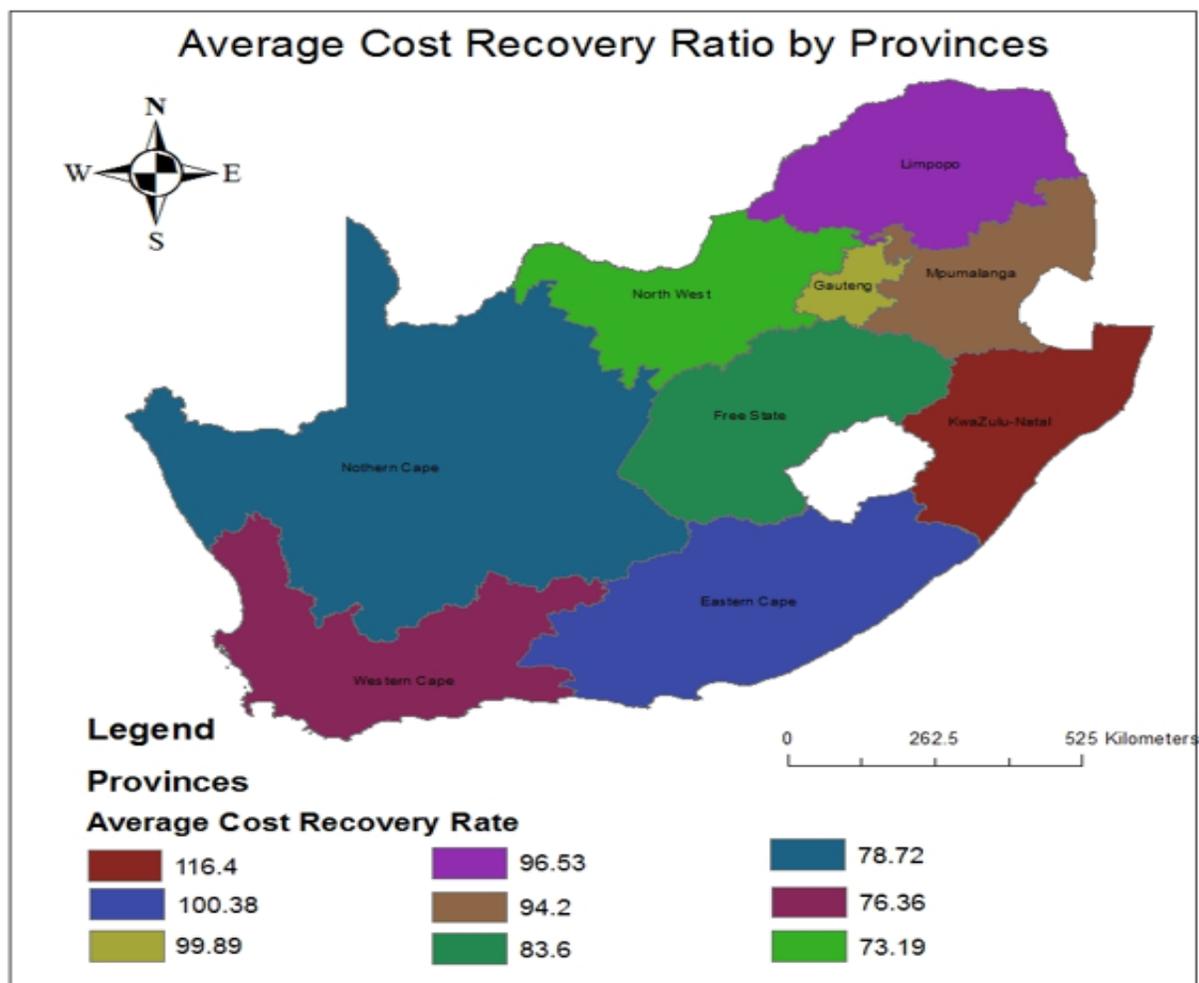
³⁹ The results should be interpreted with caution as the sample was based on the availability of data and is not based on the sampling procedure, thus, the results may differ if the full population of WSAs was obtained or a systematic sampling procedure considered.

Table 8.11: Summary of overall cost recovery rate by category of municipality

Category	Variable	Observed	Mean	Standard deviation	Minimum	Maximum
A	Water operating expenditure	8	3.18E+09	2.45E+09	5.97E+08	7.35E+09
	Water revenue	8	2.82E+09	2.02E+09	5.11E+08	6.56E+09
	Cost recovery rate	8	108.8223	28.58679	66.50274	161.961
B1	Water operating expenditure	15	2.39E+08	1.96E+08	2.07E+07	6.91E+08
	Water revenue	15	4.07E+08	3.81E+08	7.85E+07	1.63E+09
	Cost recovery rate	15	73.11412	43.5754	4.515483	140.9717
B2	Water operating expenditure	14	8.49E+07	7.38E+07	1.20E+07	2.67E+08
	Water revenue	14	1.20E+08	9.39E+07	1.79E+07	3.22E+08
	Cost recovery rate	14	70.96575	20.99796	29.85882	104.7337
B3	Water operating expenditure	64	2.81E+07	3.73E+07	1322662	2.49E+08
	Water revenue	64	3.27E+07	3.91E+07	2027324	2.86E+08
	Cost recovery rate	64	85.49082	42.64535	5.946436	192.5802
B4	Water operating expenditure	3	1.44E+08	7.29E+07	6.27E+07	2.03E+08
	Water revenue	3	1.03E+08	4.45E+07	5.43E+07	1.42E+08
	Cost recovery rate	3	136.1183	18.08126	115.5944	149.6982
C2	Water operating expenditure	8	2.54E+08	1.63E+08	5.37E+07	5.15E+08
	Water revenue	8	2.09E+08	9.09E+07	8.00E+07	3.16E+08
	Cost recovery rate	8	111.787	34.94081	52.69112	165.9337

The results show that a large city (Category A), on average, could only recover its costs by 109%. However, there are cities that are doing less with a cost recovery rate of 67%, while other large metros can collect up to 162% of their operating costs. The municipalities in the middle category (B1–B3), on average, could only cover their costs by 70–85%, while the small municipalities (B4 and C2) could cover their costs by 136% and 112%, respectively. These results are not conclusive on whether economies of scale really matter as far as the cost recovery ratio is concerned. The study further breaks the results up by province. The results are presented in the map in Figure 8.6.

Figure 8.6: Summary of average cost recovery rate by province



The map in Figure 8.6 indicates that, on average, the WSAs in KwaZulu-Natal (116%), Eastern Cape (100%) and Gauteng (99%) could cover their operating costs from their revenue. Moreover, at province level, the averages are still promising since the poorest performing province, on average, can recover its costs by at least 73%.

In a nutshell, setting water tariffs or pricing is a complex issue in the sector due to its multiple objectives: cost recovery, economic efficiency, environmental conservation, equity and affordability. However, increasing water tariffs may not be politically feasible. Other options to increase water revenue exist. These include, among others, reducing non-revenue water, reducing non-labour costs, increasing efficiency and increasing consumer coverage, which will reduce the unit costs.

8.6.4 Private sector participation

The major problems facing the South African water and sanitation sector are inefficient operations, lack of capacity in spending allocated budgets, unclear management structures and a long-term decline in capital expenditure.

It has long been argued that private investment will bring good fiscal control and efficient structures and will improve water service delivery. However, there may be trade-offs between this improved economic efficiency and the necessity to pursue more egalitarian social outcomes. Private business can potentially address challenges faced by the water sector in South Africa in terms of service delivery. From a public sector point of view, the private sector can contribute valuable technical and managerial skills, and enhance operational efficiencies, while the private sector can earn annuity income with the right investments in this sector. However, the social aspects of water cannot be escaped. Especially in a country like South Africa, there are significant inequalities in terms of access to water and sanitation (Chetty & Luiz, 2014).

Public-private partnerships (PPPs) offer the South African water sector an opportunity to access private capital and skills to build or upgrade, operate and manage public water and sanitation infrastructure services that are provided and run by the WSPs. Access to private finance can speed up the provision of public water services, where WSPs face budgetary constraints. However, the water sector attracts the least investment flows, well below other infrastructure sectors.

Compared to the other infrastructure sectors, water and sanitation projects are differentiated by their unique characteristics. The PPPs for the water sector present complex and integrated partnerships across the public and private sectors. These partnerships often involve several million to billions of dollars for a project, commit a range of local and national WSPs to responsibilities for up to 40 years in project length, and involve private water operators or developers, as well as design and construction firms in the financing, planning, operation and maintenance of water facilities (KPMG, 2011; Rouse, 2014; Nickson & Vargas, 2002).

The water sector in developing countries has witnessed partnership arrangements of this nature since the 1990s (Marin, 2009), owing to the fiscal constraints that drive governments to tap into private finance to meet their ever-increasing water and sector investment requirements (Rouse, 2014; Meng, Zhao & Shen, 2011; World Bank, 2006) and receive potential returns for private water operators (Hall, Lovina & De la Motte, 2005).

Developing countries are a poor performer in terms of water utility efficiency. This is exemplified by the annual value of the water sector's inefficiency in Ghana, which is estimated at US\$103 million. The inefficiency arises from overstaffing (US\$7 million), under-collection (US\$2 million), low budget execution (US\$1 million), below-cost pricing (US\$46 million) and distribution losses (US\$47 million) (Foster & Briceno-Garmendia, 2009). Hence, prospects for efficiency improvement and innovation in public water utilities have been cited as a major reason why governments pursue water PPPs (Bayliss, 2014; Hall & Lobina, 2009). Water utility performance has been found to improve under private management and/or ownership.

In addition, PPP contracting in water services is politically and socially sensitive. The projects introduce increased tariffs for water and sanitation services, where, particularly, they were kept below costs or generously subsidised by governments (Harris, Kooy & Jalloh, 2012; Harris, 2003; Dinar, 2000).

Increased tariffs are frequently implemented in water and sanitation projects under private management and are seen as a business arrangement for private benefit at the expense of public benefit (Bayliss, 2014). The PPPs in water services become more controversial with the involvement of foreign water companies. This is often cited as a reason for public resistance to water PPPs. Ghana's PPP process in the water sector was opposed and delayed by the public despite support from multilateral development banks and the government. Primary reasons included the perception that international water companies would lay off staff of the public water utility, and a lack of confidence in the capability and integrity of water utilities or operators from foreign countries (Ameyaw & Chan, 2013).

The World Bank's infrastructure project database indicates the following generic PPP types and sub-types:

- **Concession:** The sector's assets remain under public ownership, but the private party obtains exclusive usage rights over all assets and has complete functional responsibility for the operation, maintenance and investment during the concession period (Rees, 1998). Between 2002 and 2014, the concession model attracted 234 projects, including 150 rehabilitate-operate-transfer (ROT) projects, 81 build-rehabilitate-operate-transfer (BROT) projects and three rehabilitate-lease-transfer (RLT) projects.
- **Greenfield projects:** These projects attract private finance to build major water facilities. A total of 288 projects reached financial closure between 2002 and 2014, including 276 build-operate-transfer (BOT) variants and 12 build-own-operate (BOO) projects.
- **Divestiture:** This involves the transfer of ownership of all or part of the sector's assets, and partial or complete responsibility for operation, maintenance, revenue generation and capital investment to the private party. Only 14 projects have been awarded over the 12-year period: two under full divestiture and 12 under partial divestiture.
- **Management and lease contracts:** These are typically used to improve performance and governance in existing water utilities. They have attracted 89 projects between 2002 and 2014, with 62 under management and 27 under lease.

Refer to Rees (1998) for a discussion of the above forms of PPP.

It has been argued that private sector participation (PSP) in water provision would, among other things, help the poor access services at an affordable price. However, experiences with PSP worldwide suggest that there is a significant conflict between social development, public health, environmental concerns and poverty reduction, on the one hand, and the private sector's motive of maximising profits, on the other (Prasad, 2006).

Recent developments indicate that large multinational organisations are not interested in low-income countries where there is limited commercial viability for water supply operations (Global Water Intelligence, 2005). Prasad (2006) argues that the policy of PSP in water supply is economically flawed and politically difficult. Despite signs of decreased PSP in water services, its main proponents have repackaged the concept, and are relaunching it as a PPP.

China has emerged as one of the world's most active markets for PPPs in the water and sanitation sector, while the pace of such developments around the world has slowed in recent years. It is vital to understand the dynamics of developing PPP projects in the Chinese water sector (Qian, House, Wu & Wu, 2019) and to empirically investigate whether lessons from these experiences can be applied to the South African water sector. Lessons can also be learnt where such initiatives have failed elsewhere. To date, there is little or no robust econometric evidence on the effects of water privatisation in South Africa.

8.6.5 The usefulness of IGFR instruments

To become more effective in financing interventions for water services and water security, governments, ODA suppliers and private sector investors could consider the following recommendations, adapted from good practice in developed economies. The ultimate objectives are to de-risk potential investment deals and lower transaction costs for the investor.

Financial risk mitigating measures can be explored to make projects more attractive, such as contingent subordinated guarantees to better share risk, a facility to cover debt service default risk emanating from regulatory changes, a counterparty risk cover facility, and a refinancing facility to allow commercial banks to extend the tenor of their loans – with water projects often demanding tenors of up to 30 years, which is commonly longer than for loans in the energy sector or in industry (GIF, 2016).

Blended finance is increasingly recognised as an important innovative tool, where concessional finance is applied ('structured' into a deal), specifically to help lower risk profiles and transaction costs with the aim of facilitating the entry of commercial finance for development purposes. Several financial and development institutions are actively piloting different arrangements to use concessional funds to crowd in commercial funds.

The OECD has outlined five principles for blended finance:

- Anchor blended finance to a development rationale
- Design blended finance to increase the mobilisation of commercial finance, e.g. by deploying blended finance to address market failures, while minimising the use of concessions
- Tailor blended finance to local context
- Focus on effective partnering for blended finance, e.g. by allocating risks in a targeted, balanced and sustainable manner
- Monitor blended finance for transparency and financial and development results.

Instruments include insurance and guarantee systems to transfer part of the risks from the investing partners to a guarantor. Examples are the Guarantee Portfolio of the Swedish International Development Agency (SIDA) with specialised instruments (SIDA, 2018), and the Philippine Water Revolving Fund with guarantees provided by the Japan International Cooperation Agency (JICA) (2018).

Pioneering institutions are the Multilateral Investment Guarantee Agency (MIGA) that insures foreign direct investment against losses related to currency inconvertibility and transfer restrictions, expropriation, war, civil disturbance, terrorism and sabotage, breach of contract and the non-honouring of financial obligations. Nonetheless, MIGA has had few transactions for water thus far. The International Finance Corporation (IFC) also offers guarantees, such as one for the bond issued by the Mexican municipality of Tlalnepantla de Baz for a local water conservation project. Here, the IFC provided a partial credit guarantee that allowed the bond to obtain a better credit rating, higher than that of the municipality itself (World Bank, 2016). Currently, many donor agencies are engaged in developing guarantee-like systems.

Intermediary institutions can be designed to better connect the interests and capabilities of the water and financing industries. Intermediary agencies can pool specialised knowledge on finance supply and investment projects.

As transpires from the above, the financial industry and the water sector are separate epistemic communities with different languages, interests and procedures. Intermediaries have been functioning in richer economies for several decades, such as the Netherlands Water Boards Bank (NWB Waterbank), Aquafin (Belgium), the Agencies de l'eau (river basin-based Water Agencies, France) and the United States Environmental Protection Agency (US EPA). They possess intricate knowledge of both the water sector and its financing demands, and of the capital markets. The governance system and incorporation of these institutions differs, depending on the administrative structure and needs of the country.

However, they help pool the financing requests for their clients' different projects, i.e. water utilities, municipalities and water boards, sometimes packaging small-scale investments into larger vehicles and ensuring quality control. On the supply side, they also pool financial resources, e.g. combining public funds or income from tariffs with funds attracted from banks and institutional investors. This pooling (syndication) helps mitigate the risk profiles of individual investments. It also helps to upscale operations, thus lowering transaction costs.

In emerging markets and developing economies (EMDEs), such intermediary institutions are still rare, but are gaining traction. Examples are the Philippine Water Revolving Fund (JICA, 2018) and the Kenya Pooled Water Fund (WFF, 2018). The latter has been initiated by the Water Financing Facility and is supported by the Kenyan National Treasury, the Kenya Market Trust, the United States Agency for International Development (USAID), SIDA and others.

The first pooled bond of about US\$20 million equivalent is expected to be issued in 2019, drawing local currency from Kenyan pension funds and other local investors with a long tenor to support the selected ‘bankable’ water supply and sanitation projects of eight Kenyan water service providers that were assessed to be creditworthy. The international financiers provide guarantees and subordinate ‘first-loss’ debt, as well as grant funding for technical support prior to and after the transaction. For every 10 million in donor grant funding, the WFF feels it can raise an indicated 100 million in local capital. However, it places high value on the proper screening of borrowers and projects, and on the continuous technical assistance and capacity development of the borrower. While this may not be considered a fully commercial proposition, it shows the way towards a potentially competitive sustainable arrangement.

Debt in the local currency denomination may prove superior to dependence on international markets using denominations in strong currencies, even considering the comparatively high interest rates prevailing in local markets. The World Bank (UNICEF, 2017) compared the net present value of borrowing in low-interest strong currency versus high-interest local currency and found that local currency often has the advantage due to the likely depreciation of the local currency against the stronger currency. International markets also go through cycles of tightening and of fluctuating interest and exchange rates. Such fluctuations may push vulnerable borrowers into default. In addition, local financiers may be more familiar with local conditions and its regulatory climate. The Philippine Water Revolving Fund (JICA, 2018), the Water Financing Facility (WFF, 2018) and others are therefore arranging their capital demand in local currency.

The development of institutional capacity (the ‘capacity to act’) is a systemic requirement for development in the water sector. However, the financing community and its regulators are also dependent on reliable data and information and require the institutional capacity to utilise this information and translate it into effective decision-making. Institutional capacity development is also known as knowledge management in the corporate sector (Alaerts & Kaspersma, 2009).

It typically implies a knowledge transfer process, as well as a (more political) agreement to engage in a change process for the institution, i.e. for the utility, ministry, department, company or sector (Sewilam & Alaerts, 2012). The capacity development process is preferably laid out in a realistic implementation strategy based on a gap analysis between the available and the desired capacity. Instruments for individual capacity development include education, training, peer learning, mentoring and experiential learning. At the level of institutions such as organisations and the whole sector, knowledge can be acquired, shared and developed through educating and training the individual staff, but also through institutional tools such as twinning arrangements, communities of practice, dedicated formal and informal networks, internal knowledge management procedures and targets to make sure staff share and build on knowledge and human resource management. Generally, water sector agencies should be supported more intensively with technical assistance to allow them to prepare more bankable proposals.

Finally, the focal area of enhancing the creditworthiness of water supply utilities can be addressed by taking simple straightforward steps. Service providers (WSAs or WSPs) are expected to cover their operating and maintenance costs and create a basic surplus (assumed as having cash revenues exceeding costs by at least 20%), which is a requirement for access to commercial credit (World Bank, 2017). Full creditworthiness is more likely to occur when the provider recovers at least 150% of the operating costs.

The steps involve the measures to cut costs and bolster revenue (rendering high utilities financially viable) without raising tariffs. Among others, this includes increasing the water bills' collection rate, reducing non-labour costs, reducing non-revenue water and increasing the consumer density to capitalise on economies of scale associated with per unit cost decreases.

8.7 Concluding remarks and recommendations

Water availability is finite over South Africa, which requires controlled usage due to rapid population growth, urbanisation, uneven population distribution and a growing economy. Domestic water usage is one of the major consumptive uses of water, which not only uses the precious water resource, but also imparts considerable environmental effects. Controlling domestic water usage can help reduce water consumption and protect the environment. For this purpose, water conservation can go a long way in preserving this precious water resource. A comprehensive plan is needed that accounts for water demand, supply, system loss, pricing strategies, and groundwater level and per capita water consumption in South Africa. The Commission is suggesting an integrated, sustainable water demand management approach, which incorporates optimum pricing, ground and surface water regulation, water conservation, sustainable water consumption and a smaller water footprint to ease groundwater depletion.

Water pricing (i.e. tariffs) has evolved significantly in the past decades. This evolution is increasingly linked to demanding requirements, or objectives that WSPs must achieve (e.g. stricter water quality standards and infrastructure maintenance levels, cost recovery and social concerns, such as equity and environmental protection). Considering how useful water tariffs can be, there is increased scrutiny on how water utilities prioritise them. The design of municipal water tariffs requires balancing multiple criteria such as financial self-sufficiency for the WSP, equity among customers (access) and economic efficiency for society. This paper has focused on the last two objectives, although the context is different. The Commission is interested in determining access to safe drinking water and sanitation, as well as the cost reflectiveness of the tariff in a COVID-19 environment.

The realisation of the scale, magnitude and complexity of the water and sanitation problem has compelled the South African government to increase its resolve to face the challenge. This challenge (i.e. the disparities in access to water and sanitation) is recognised internationally, hence the attempts of SDG 6 to achieve universal and equitable access to improved drinking water and sanitation for all by 2030.

Although the South African government has done relatively well in addressing this challenge, it is important to track inequalities in access to drinking water and sanitation, particularly during economic shocks such as COVID-19, to assess progress with regard to universal coverage under these challenging economic times.

The ongoing COVID-19 pandemic and economic crises that emerged in 2020 have only highlighted the need to better understand and address the impacts of access to safe drinking water and sanitation services. The pandemic may potentially reverse the gains made since 1994.

Moreover, access to water and sanitation is a key determinant for infectious disease control and prevention; thus, limited access creates a challenge for transmission control. COVID-19 resulted in a slight decrease (2%) in access to safe and clean drinking water in South Africa.

In the context of the COVID-19 pandemic, many WSPs may have been slow in responding to residential piped water infrastructure failures. Loss in employment by households reduced the ability of households to resolve piped water infrastructure problems. The result is that the poorest received the COVID-19 shock on top of existing major water and sanitation service deficits, which points to a potentially overwhelming burden to contain the virus. There is a need to implement crisis emergency measures to enhance access to water and sanitation.

The WSPs need tailored support that is focused on transferring capacity to the organisation that will rely on internal capacities. Supporting increased internal capacities requires a focus on internal performance evaluation and improvement planning, support for financial systems and ring-fencing, support for improvement plan and project development, and linking these with financing.

Closing the water sector infrastructure gap will require billions of rands in investment for each year up to 2030, in addition to the cost of maintaining and upgrading the existing networks. Investments in access expansion may decline during COVID-19. The operations of WSPs are typically funded by customer receipts (water tariffs and once-off connection charges), grants and taxes. Tariffs are set to achieve equitable access, thus at levels that are insufficient to recover operating costs. Therefore, WSPs require support from other sources, usually the government's budget. Additional revenue pressures come from inefficient operations such as high non-revenue water (leakages, water theft and uncollected revenues), which are significant in South Africa. Capital expenditure is mostly funded by the national government. Considering funding gaps and budget constraints from government, borrowing and public financing with private capital is required.

It is reasonable to expect new capital projects to be delayed as WSPs prioritise their operating expenditure and emergency response due to COVID-19. One can therefore expect declines in capital expenditure in the water sector in the short term, after which WSPs may resume at pre-crisis levels. It is currently unclear by how much the water and sanitation capital expenditure will decline and how long it will take to return to pre-COVID-19 investment levels.

Moreover, municipalities have indicated that it will take them at least until 2023 to return to the pre-COVID-19 level, and one can therefore expect them to defer investments. This will lead to downscaled or reduced water provision. COVID-19 has reinforced the importance of access to safe and reliable water and sanitation services. National Treasury, through an economic stimulus, should mitigate the impact of deferred investments and declining revenues to fund capital expenditure, at least until municipalities (WSPs) return to their pre-COVID-19 environment. It is hoped that investments in strategic projects such as the Lesotho Highlands Water Project will not be delayed due to COVID-19 as that can result in water insecurity in South Africa. Perhaps government should also look at reported instances where some municipalities in the Free State get water directly from the Lesotho Highlands Water Project. However, these municipalities end up paying relatively more as it puts an additional burden on them.

The World Bank's Private Participation in Infrastructure database implies that the rate of development of PPPs in water provision and sewer services has slowed significantly as the number of new projects reaching financial closure has declined drastically since 2007, when the growth of PPPs in the water sector peaked (Qian et al., 2019). Some scholars considered the downward pattern to be a signal that water provision and sanitation is too essential to public and environmental health to be left to the private sector, but industry and sector commentary has pointed to increased investor scepticism following the high-profile cancellations of PPP projects in Latin America and South-East Asia (Gleick, Wolff, Chalecki & Reyes, 2002; Scanlon, Cassar & Nemes, 2004).

In contrast, China has seen a massive proliferation of PPPs in the water sector since 2000, although the number of PPP projects reaching financial closure has also been off from its peak in 2007. The development of water PPPs in the last two decades has turned China into one of the few bright spots for such projects globally. Between 2008 and 2018, there were 267 PPP projects in the water sector in China, accounting for nearly two-thirds of the total number of such projects globally. The rapid expansion of PPPs in the water sector in China, particularly against the backdrop of the downward trend globally, raises several fundamental issues of paramount importance to the future development of PPP as a policy option for many developing countries (Qian et al., 2019), such as South Africa. Can the path of development of water PPPs in China be replicated in South Africa? What are their key drivers and main challenges? What lessons can be learnt from China's success? And what are the policy implications for the South African water sector?

One of the key questions in the debate on the regulation of water supply is the establishment of independent water regulatory agencies, and whether they will make a difference. South Africa already has the National Energy Regulator of South Africa (Nersa) as an 'independent' energy regulator. Debates are ongoing about whether there is a need for a similar independent regulator in the water sector to set tariffs for the water sector.

While the marginal transaction costs of having an independent regulator, together with the political salience of water, significantly outweigh the marginal benefits, there is little incentive for government to establish an independent water regulatory agency. This hypothesis concerning why there is no progress for the establishment of an independent water regulator requires further testing. This is also true around the world, where the establishment of water regulators is more the exception than the rule. Debates about the type of reforms that are needed to make the water sector more efficient include consolidating the water boards and having one water entity responsible for this task. However, some have cautioned against such consolidation in light of the failure of state enterprises such as South African Airways and Eskom. Failure of the same magnitude in the case of one WSP for the country would be catastrophic given the unique nature of water provision.

The Financial and Fiscal Commission makes the following recommendations:

- 1. Municipalities (i.e. the South African Local Government Association) should reach an agreement with National Treasury to defer water/sanitation bills for the poorest, postpone tariff adjustments, and donate water tanks to informal settlements for the duration of the Declaration of a National State of Disaster.*
- 2. The Department of Water and Sanitation should establish a benchmarking of WSPs using performance indicators (infrastructure, socio-political and financial).*
- 3. National Treasury should ensure that water and sanitation projects also form part of the economic stimulus to help mitigate the impact of the COVID-19 crisis.*
- 4. National Treasury, the Department of Water and Sanitation and the municipalities should systematically develop water investment by structuring mechanisms to de-risk private investments. However, long-term sustainability depends on the capacity of WSPs, governance mechanisms to safeguard corruption, and the private sector's ability to manage both higher-level government demands and possible public opposition.*
- 5. National Treasury should ring-fence the Opex and Capex grants. This will help close the gap between what municipalities want and what private investors want.*

8.8 References

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8.9 Appendices

8.9.1 Appendix 1: Bias-corrected efficiency scores for rural and urban WSAs

Table A1: Bias-corrected efficiency scores for rural and urban WSAs (full sample)

Municipality	dmu	category	urban1	Efficiency scores	Rank
City of Johannesburg	JHB	A	1	1.0767901	1
City of Ekurhuleni	EKU	A	1	1.1067655	2
Dr JS Moroka	MP316	B4	0	1.1480135	3
Emfuleni	GT421	B1	1	1.148186	4
Newcastle	KZN252	B1	1	1.1637697	5
City of Tshwane	TSH	A	1	1.182234	6
Breede Valley	WC025	B2	1	1.1894674	7
uMhlathuze	KZN282	B1	1	1.1915914	8
City of Cape Town	CPT	A	1	1.1948934	9
Kou-Kamma	EC109	B3	0	1.1985155	10
Ugu District Municipality	DC21	C	0	1.2001184	11
Metsimaholo	FS204	B2	1	1.2261052	12
Emalahleni	MP312	B1	1	1.2313848	13
Midvaal	GT422	B2	1	1.2407082	14
Mantsopa	FS196	B3	0	1.2448289	15
eThekweni	ETH	A	1	1.2503994	16
Rustenburg	NW373	B1	1	1.2636673	17
Sol Plaatjie	NC091	B1	1	1.27082	18
Mogale City	GT481	B1	1	1.2781732	19
Saldanha Bay	WC014	B2	1	1.2809004	20
Kai Garib	NC082	B3	0	1.3278692	21
Drakenstein	WC023	B1	1	1.346804	22
Mogalakwena	LIM367	B2	1	1.3696074	23
Thembelihle	NC076	B3	0	1.3777103	24
iLembe District Municipality	DC29	C	0	1.3840574	25
Siyathemba	NC077	B3	0	1.4360292	26
Polokwane	LIM354	B1	1	1.4503541	27
Sundays River Valley	EC106	B3	0	1.4523932	28
Kheis	NC084	B3	0	1.4528693	29
Richtersveld	NC061	B3	0	1.4531434	30
Khâi-Ma	NC067	B3	0	1.4566255	31
Lephalale	LIM362	B3	0	1.4628828	32
Karoo Hoogland	NC066	B3	0	1.4671352	33

Municipality	dmu	category	urban1	Efficiency scores	Rank
Mangaung	MAN	A	1	1.4967616	34
uThukela District Municipality	DC23	C	0	1.5076072	35
Tsantsabane	NC085	B3	0	1.561728	36
Stellenbosch	WC024	B1	1	1.5909902	37
Matjhabeng	FS184	B1	1	1.5921621	38
Steve Tshwete	MP313	B1	1	1.611537	39
Tswelopele	FS183	B3	0	1.6255425	40
Nelson Mandela Bay	NMA	A	1	1.7002724	41
Govan Mbeki	MP307	B1	1	1.7169917	42
Moqhaka	FS201	B2	1	1.798288	43
Buffalo City	BUF	A	1	1.8139596	44
Mafube	FS205	B3	0	1.8360463	45
Matzikama	WC011	B3	0	1.9139316	46
Witzenberg	WC022	B3	0	1.9597176	47
Swartland	WC015	B3	0	1.9618406	48
Msunduzi	KZN225	B1	1	1.9658498	49
Swellendam	WC034	B3	0	1.9725865	50
Theewaterskloof	WC031	B3	0	2.0584512	51
Langeberg	WC026	B3	0	2.0643497	52
Ndlambe	EC105	B3	0	2.1173913	53
Ngwathe	FS203	B3	0	2.1473956	54
Cape Agulhas	WC033	B3	0	2.2230029	55
Lesedi	GT423	B3	0	2.2611547	56
Setsoto	FS191	B3	0	2.3193848	57
Overstrand	WC032	B2	1	2.3702192	58
George	WC044	B1	1	2.5185959	59
Bergrivier	WC013	B3	0	2.5611811	60
Emthanjeni	NC073	B3	0	2.5684929	61
Mossel Bay	WC043	B2	1	2.6516821	62
Letsemeng	FS161	B3	0	2.7010777	63
Umsobomvu	NC072	B3	0	2.7467248	64
Nama Khoi	NC062	B3	0	2.9248712	65
Msukaligwa	MP302	B2	1	2.9872775	66
Blue Crane Route	EC102	B3	0	3.0128992	67
Kouga	EC108	B3	0	3.0479219	68
Joe Gqabi District Municipality	DC14	C2	0	3.0814326	69
Knysna	WC048	B2	1	3.2355101	70
Merafong City	GT484	B2	1	3.3443518	71
Cederberg	WC012	B3	0	3.378103	72

Municipality	dmu	category	urban1	Efficiency scores	Rank
Dikgatlong	NC092	B3	0	3.4058199	73
Dihlabeng	FS192	B2	1	3.4601638	74
Beaufort West	WC053	B3	0	3.5118427	75
Hantam	NC065	B3	0	3.5132101	76
Kopanong	FS162	B3	0	3.9114377	77
Makana	EC104	B2	1	4.2944384	78
Bitou	WC047	B3	0	4.5493498	79
Amathole District Municipality	DC12	C2	0	4.687387	80

Table A2: Bias-corrected efficiency scores for urban service authorities

Municipality	dmu	category	urban1	Efficiency scores	Rank
City of Ekurhuleni	EKU	A	1	1.0981032	1
City of Johannesburg	JHB	A	1	1.0984114	2
City of Tshwane	TSH	A	1	1.1337856	3
Emfuleni	GT421	B1	1	1.1494639	4
City of Cape Town	CPT	A	1	1.1691866	5
uMhlathuze	KZN282	B1	1	1.1760203	6
Metsimaholo	FS204	B2	1	1.1904283	7
Newcastle	KZN252	B1	1	1.1908561	8
eThekweni	ETH	A	1	1.2283475	9
Emalahleni	MP312	B1	1	1.2703732	10
Rustenburg	NW373	B1	1	1.2764488	11
Sol Plaatjie	NC091	B1	1	1.2892064	12
Mogale City	GT481	B1	1	1.2934691	13
Breede Valley	WC025	B2	1	1.3261575	14
Midvaal	GT422	B2	1	1.3320428	15
Saldanha Bay	WC014	B2	1	1.3373513	16
Mogalakwena	LIM367	B2	1	1.3439382	17
Makana	EC104	B2	1	1.3452764	18
Drakenstein	WC023	B1	1	1.3561308	19
Polokwane	LIM354	B1	1	1.445011	20
Moqhaka	FS201	B2	1	1.4504262	21
Mangaung	MAN	A	1	1.4845074	22
Matjhabeng	FS184	B1	1	1.575407	23
Steve Tshwete	MP313	B1	1	1.6225867	24
Stellenbosch	WC024	B1	1	1.6268947	25
Nelson Mandela Bay	NMA	A	1	1.6643951	26

Municipality	dmu	category	urban1	Efficiency scores	Rank
Msukaligwa	MP302	B2	1	1.6695491	27
Govan Mbeki	MP307	B1	1	1.7066178	28
Buffalo City	BUF	A	1	1.7884822	29
Msunduzi	KZN225	B1	1	1.9699676	30
Knysna	WC048	B2	1	2.1406755	31
Overstrand	WC032	B2	1	2.441535	32
George	WC044	B1	1	2.5536652	33
Mossel Bay	WC043	B2	1	2.5932925	34
Merafong City	GT484	B2	1	3.2589879	35
Dihlabeng	FS192	B2	1	3.335886	36

Table A3: Bias-corrected efficiency scores for rural water service authorities

Municipality	dmu	category	Urban 1	Efficiency scores	Rank
Langeberg	WC026	B3	0	1.2147915	1
Tsantsabane	NC085	B3	0	1.2390628	2
Ngwathe	FS203	B3	0	1.2476196	3
Kou-Kamma	EC109	B3	0	1.2489544	4
Ugu District Municipality	DC21	C	0	1.2573292	5
Tswelopele	FS183	B3	0	1.2592125	6
Matzikama	WC011	B3	0	1.2635241	7
Dr JS Moroka	MP316	B4	0	1.2648077	8
Mantsopa	FS196	B3	0	1.281458	9
Siyathemba	NC077	B3	0	1.2869087	10
Mafube	FS205	B3	0	1.3081195	11
uThukela District Municipality	DC23	C	0	1.3104004	12
Lephalale	LIM362	B3	0	1.3106078	13
Thembelihle	NC076	B3	0	1.3500776	14
Witzenberg	WC022	B3	0	1.3511	15
!Kai !Garib	NC082	B3	0	1.3692607	16
Sundays River Valley	EC106	B3	0	1.3704029	17
Richtersveld	NC061	B3	0	1.3914303	18
!Kheis	NC084	B3	0	1.3924587	19
Khâi-Ma	NC067	B3	0	1.3925452	20
Karoo Hoogland	NC066	B3	0	1.4008154	21
Swartland	WC015	B3	0	1.4169191	22
iLembe District Municipality	DC29	C	0	1.4248103	23

Municipality	dmu	category	Urban 1	Efficiency scores	Rank
Ndlambe	EC105	B3	0	1.4690627	24
Theewaterskloof	WC031	B3	0	1.6149291	25
Lesedi	GT423	B3	0	1.6415327	26
Bergrivier	WC013	B3	0	1.7214631	27
Kouga	EC108	B3	0	1.7730346	28
Emthanjeni	NC073	B3	0	1.8597962	29
Setsoto	FS191	B3	0	1.9057235	30
Cape Agulhas	WC033	B3	0	1.9484656	31
Swellendam	WC034	B3	0	1.9868217	32
Umsobomvu	NC072	B3	0	2.0526469	33
Letsemeng	FS161	B3	0	2.6015368	34
Nama Khoi	NC062	B3	0	2.65748	35
Cederberg	WC012	B3	0	2.6677051	36
Blue Crane Route	EC102	B3	0	2.7558868	37
Dikgatlong	NC092	B3	0	2.9620314	38
Joe Gqabi District Municipality	DC14	C2	0	3.1036067	39
Hantam	NC065	B3	0	3.1364508	40
Beaufort West	WC053	B3	0	3.5394347	41
Kopanong	FS162	B3	0	3.6249926	42
Bitou	WC047	B3	0	3.6729288	43
Amathole District Municipality	DC12	C2	0	4.2838497	44

Chapter 9

The role of intergovernmental oversight and support in avoiding a section 139 intervention



Chapter 9:

The role of intergovernmental oversight and support in avoiding a section 139 intervention

FFC Research

9.1 Introduction and problem statement

The Constitution of South Africa establishes three spheres of government in the form of national government, nine provincial governments and 257 local governments. The Constitution assigns key service delivery responsibilities to each sphere, with local government being largely responsible for the delivery of key basic services in the form of water, sanitation, energy and refuse removal. While it recognises each sphere as “distinctive, interdependent and interrelated”, the Constitution also promotes the principle of cooperative governance. As part of this cooperative governance framework, the Constitution formalises an oversight and support role for national and, particularly, provincial government over local government towards the achievement of its constitutional mandate. The Intergovernmental Relations Framework (IGRF) Act of 2005 gives further effect to the principles of cooperative governance. The purpose of the Act, as set out in clause 4, is to provide a “framework for the national government, provincial governments and local governments to facilitate coordination in the implementation of policy and legislation, including coherent government, effective provision of services, monitoring implementation of policy and legislation and realisation of national priorities”.

This oversight and support role is realised through a range of clauses in the Constitution. Firstly, section 155(6) and Section 155(7) outline the need for intergovernmental monitoring, in essence creating a framework of regulation and monitoring of local government performance. Secondly, section 154(1) of the Constitution extends the need for monitoring by obligating national and provincial government to support municipalities to build the necessary capacity to perform their constitutional duties and functions. The culmination of these clauses ensures that the performance of local government in achieving its mandate is appropriately regulated and monitored in order to ensure support to municipalities when there are challenges with performance. Section 139 of the Constitution allows for provincial intervention in municipalities where there is a gross failure to perform such duties and functions, i.e. total performance failure. To reiterate, the Constitution embeds an oversight and support role to national and provincial government over local government within the system of cooperative governance to ensure that municipalities meet their service delivery obligations to communities.

The vision of the Constitution resulted in various pieces of supporting legislation that outline the nature of the oversight and support required from national and provincial government. Since the establishment of a consolidated local government sphere in 2000, national and provincial government oversight and support to local government have been a patchwork of initiatives, ranging from the regulation of municipal activities and various monitoring mechanisms to non-financial and financial support, the latter of which includes capacity-building conditional grants. All these methods were intended to build sufficient capacity in local government to ensure that they fulfil the constitutional obligations and avoid gross failures that could lead to a section 139 intervention. During this period, these various initiatives and mechanisms of national and provincial oversight were intended to be anchored around national programmes to improve local government performance. These measures are presented in Table 9.1.

The success of these national initiatives is questionable, at best, given that a proper evaluation of previous programmes was often not undertaken prior to new initiatives being introduced. Therefore, it is difficult to say why certain national initiatives were replaced with others, or whether incumbent national programmes are the product continuations of successes and lessons learnt from preceding initiatives. Furthermore, it is also unclear to what extent these national flagship local government development programmes inform or guide the implementation of oversight and support initiatives and mechanisms currently in the system. For example, one does not see any introduction of new grants or practices that accompany the introduction of a national initiative or fundamental changes to existing grants or practices.⁴⁰

Table 9.1: National measures to improve local government performance

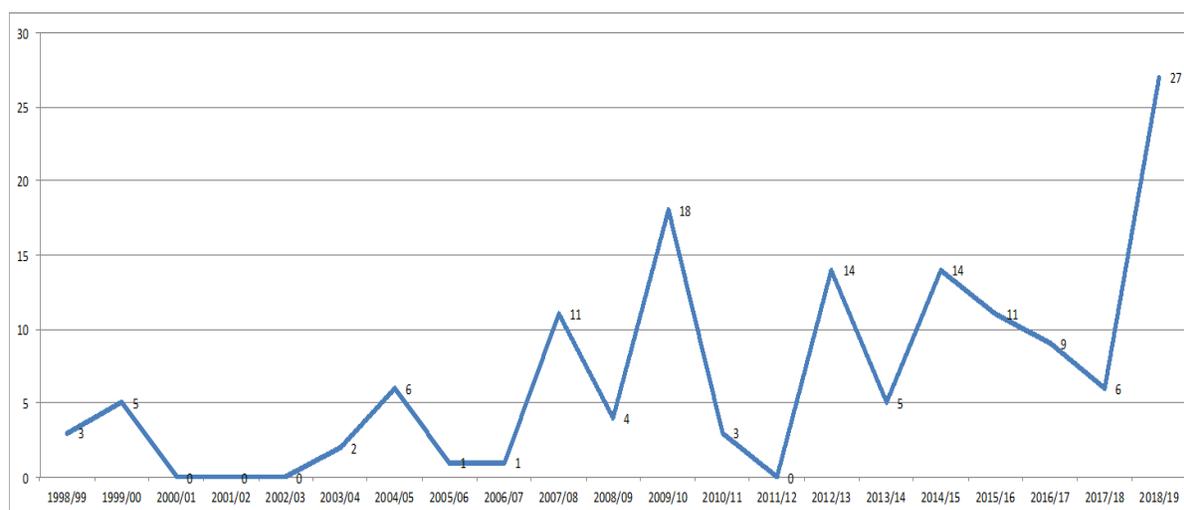
Measures	Description
Project Viability	Established in 1995 with the aim of discouraging a culture of non-payment for services in communities.
Project Consolidate	Launched in 2004 with the intention of building capacity in 140 ailing municipalities.
Siyenza Manje Programme	Commencing in 2006, the scope of the programme was to strengthen engineering, project management and financial management capacity.
Local Government Turnaround Strategy	Introduced in 2010, it had numerous focus areas, including the significant reduction of infrastructure backlogs, ensuring access to basic service for all citizens, and reducing unfavourable audit outcomes.

⁴⁰ To appropriately qualify this statement, it is not that there are no changes in certain aspects of the oversight or support framework. For example, the Municipal Systems Improvement Grant (MSIG) Framework was adjusted to implement the Back to Basics Programme from 2014, and then the District Development Model (DDM) in 2020.

Measures	Description
Back to Basics Programme	Established in 2014, it was aimed at getting the basics right in five priority areas: basic services to create decent living conditions, good governance, public participation, financial management and institutional capacity
District Development Model (DDM)	President Cyril Ramaphosa initiated the DDM in his 2019 Budget Speech. The model consists of a process by which joint and collaborative planning is undertaken at local, district and metropolitan level by all three spheres of governance, resulting in a single, strategically focused One-Plan, One-Budget for each of the 44 districts and eight metropolitan geographic spaces in the country, in which the district is seen as the ‘landing strip’.

Notwithstanding these various oversight and support mechanisms and national programmes, municipalities around the country have been plagued by deep-rooted capacity challenges that have resulted in consistent service delivery failures. These service delivery failures manifest in perennial service delivery protests by communities, gross financial mismanagement and several dysfunctional municipalities that are in a consistent state of financial distress. In addition, section 139 interventions in municipalities are common. This is an indication of gross failure at municipal level. Figure 9.1 shows the extent of section 139 interventions in municipalities from 1998 to 2019.

Figure 9.1: Number of section 139 interventions per year from 1998/99 to 2018/19



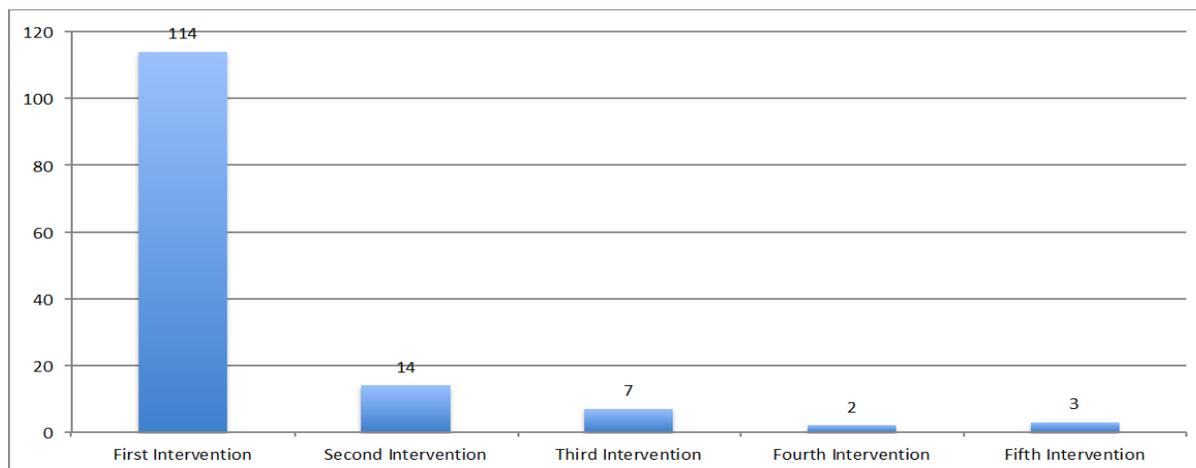
Source: Ledger and Rampedi (2019)

Note: Includes all actual and attempted interventions, including those set aside

This includes three municipalities that required five interventions. Multiple interventions suggest that no long-term capacity is being built in the municipalities that underwent section 139 interventions. Interestingly, Ledger & Rampedi (2019) confirm that there is a direct relationship between the success of a section 139 intervention and the financial and operating state of the municipality prior to intervention, i.e. “the worse the state of the municipality prior to intervention...the less likely it is to be able to return to a stable financial and operating position” (Ledger & Rampedi, 2019:13).

The dire state of some municipalities prior to intervention brings into question the effectiveness of the oversight and support initiatives of national and provincial government as part of their responsibility to help build a local government sphere that is capable of managing its affairs and carrying out its constitutionally mandated functions.

Figure 9.2: Number of multiple section 139 interventions



Source: Ledger and Rampedi (2019)

The oversight and support framework offered to local government is complex and ranges from regulation, statutory and non-statutory monitoring,⁴¹ and non-financial and financial support. Several such methods enter and exit the system on an ad hoc basis, with very little evaluation of their successes or failures. In addition, a section 139 intervention should be the final step in an entire framework that includes oversight and support, with prior monitoring and support required to ensure municipalities do not reach a stage of gross dysfunction and failure. Assuming that the implementation of a section 139 intervention is an indicator of gross dysfunction and failure, the persistence of such interventions indicated in Figure 9.1 and Figure 9.2 brings into question the effectiveness of the preceding oversight and support framework to build local government capacity and to identify and solve municipal challenges prior to an institutional or financial collapse.

⁴¹ Statutory monitoring would consist of monitoring through reporting or other mechanisms that are contained in legislation. An example of this would be the Municipal Finance Management Act (MFMA)'s section 71 financial reporting requirements. Consequently, non-statutory monitoring would include any monitoring or reporting requirement not specified in legislation or ad hoc requests. An example of this would be monitoring the implementation of municipal indigent policies through the collection of data via the non-financial census of municipalities, implemented by Statistics South Africa (Stats SA).

9.2 Research objectives

Against this backdrop, a comprehensive assessment and critical analysis of all the elements of the oversight and support framework prior to a section 139 intervention is required to ascertain the integrity and effectiveness of the framework, as envisioned in the Constitution. This research focuses specifically on the oversight and support framework, as it pertains to the effectiveness of (statutory and non-statutory) monitoring and (financial and non-financial) support initiatives in improving local government's financial performance and building long-term capacity in efforts to prevent gross financial dysfunction and failure in municipalities. While the focus of this paper is on financial management, it is acknowledged that other aspects of municipal operations, such as governance and institutional issues, contribute equally to local government failure.

The research aims to achieve the following objectives:

- i. Outline the oversight and support framework applied to local government in terms of municipal financial management and performance
- ii. Ascertain whether the current elements of the oversight and support framework have improved short- and long-term financial performance in local government
- iii. Identify the challenges and bottlenecks within the current framework that potentially inhibits its success and impact

9.3 Contextualising oversight and support by national and provincial governments over municipalities

The oversight and support framework implemented in respect of local government in South Africa is unique in its application, relative to other countries. As such, it is important to formulate a conceptual framework of oversight and support that applies to the South African context.

9.3.1 A note on concepts: Supervision versus oversight

Section 40(1) of the Constitution of South Africa establishes three spheres of government as “distinctive, interdependent and interrelated”. Many researchers view this clause as highlighting the autonomy of the spheres of government (Moeti & Khalo, 2007; Schwella, 2016). Furthermore, the explicit emphasis on cooperative governance in the Constitution is an indication of respect afforded to the ‘distinctive’ nature and integrity of local government, which is further entrenched by the clear division of powers and functions across spheres and the exercising of local government’s “legislative and executive authority in its area”, in accordance with section 155 of the Constitution. Consequently, the White Paper on Local Government describes local government as “a sphere of government in its own right, and is no longer a function of national and provincial government” (RSA, 1998).

While the autonomy⁴² of local government is implicitly emphasised in the Constitution, section 139 of the Constitution provides insight into specific instances where local government authority and autonomy can be limited (Moeti & Khalo, 2007). Given this, it can be argued that the prescripts of the Constitution intend to balance a degree of subnational autonomy with intervention features through a system of cooperative governance. It is therefore important to place the monitoring and support functions of national and provincial government over local government within the nature of the South African state implicitly captured in the Constitution.

During the Certification of the Constitution of South Africa⁴³, the constitutional vision for local government was captured as “a structure for (local government) that, on the one hand, reveals a concern for the autonomy and integrity of (local government) and prescribes a hands-off relationship between (local government) and other levels of government and, on the other, acknowledges the requirement that higher levels of government monitor (local government) functioning and intervene where such functioning is deficient or defective in a manner that compromises this autonomy.”⁴⁴ The oversight and support of local government by national and provincial government is thus contextualised as necessary to ensure that poor performance does not compromise local government expressing its autonomy within its constitutional duty towards its citizens. Therefore, it places an obligation on national and provincial government to ensure support to municipalities and build capacity where necessary.

The final Constitution placed oversight and support within the context of cooperative governance, where the Constitution promotes “an integrated system of government in which both national and (local) governments are deeply implicated in each other’s functioning” (Schwella, 2016:77). However, some authors consider this oversight as ‘intergovernmental supervision’ with national and provincial government acting as a ‘superior authority’ over local government that is distinctive from cooperative governance (Reyneke, 2012). While acknowledging this view, it can also be argued that the vision of the Constitution promotes an ideal of cooperation between spheres to ensure autonomy and effective service delivery, and subsequently mandates national and provincial spheres of government, in the first instance, to oversee and support municipalities and, where this does not work, to intervene.

⁴² To reiterate, autonomy in this case can be defined within the context that local government has a *distinct* function, but operates in a manner that it is *interrelated and interdependent* with and on the national and provincial spheres of government. In other words, cooperative government operates in the spirit of ‘trust and good faith’, noting the obligation by national and provincial government to support local government to enable it to execute its functions.

⁴³ The Certification of the Constitution was a process that attempted to confirm whether the proposed (draft) Constitution adhered to the constitutional principles established in schedule 4 of the Interim Constitution of the country. This process formed an integral part of the processes towards the adoption of the new Constitution of South Africa.

⁴⁴ Ex parte Chairperson of the Constitutional Assembly: in re Certification of the Constitution of the Republic of South Africa 1996(4) SA 744 (CC) para 373.

However, all these aspects need to occur against the backdrop of cooperative governance. As such, it is the position of this analysis that the term ‘intergovernmental oversight and support’ better captures the cooperative nature of its intended application within the intergovernmental system; as opposed to ‘supervision’, which implies a hierarchical relationship. The notion behind the obligation of national and provincial government to support local government is driven by the concept of decentralisation, where higher levels of government are better placed to identify and remedy common and exogenous challenges that may impact on sub-national governments.

9.3.2 The process of oversight and support

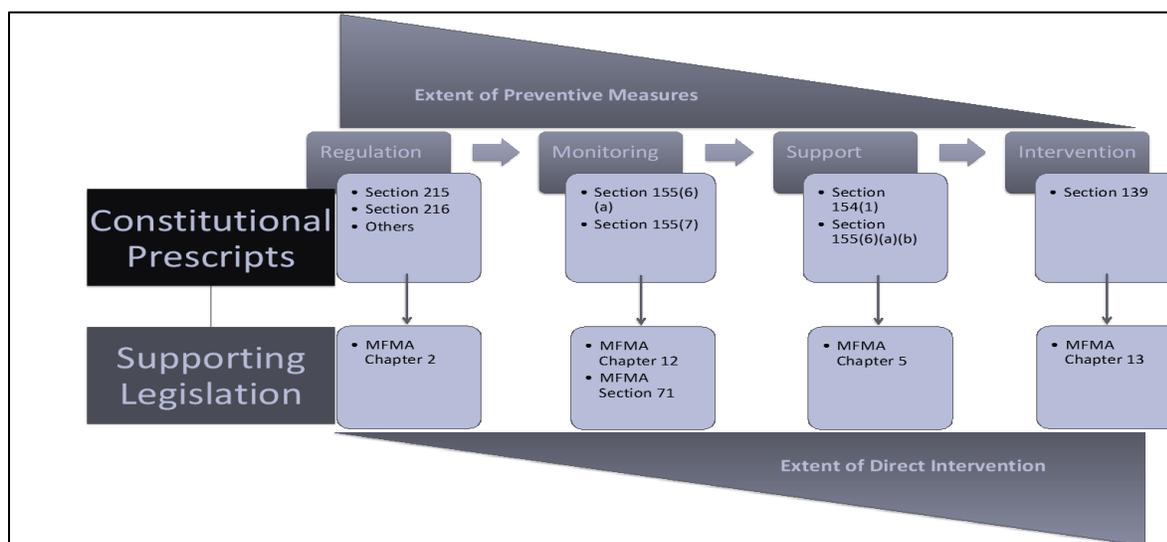
The oversight and support responsibility of national and provincial government is realised through a range of clauses in the Constitution that embeds and balances the notion of oversight and autonomy of each sphere within a flexible framework of cooperative governance. In essence, local government autonomy is protected to the extent that service delivery and the vision of government are achieved. In instances where this is not the case, cooperation and support from another sphere serves as the first and preferred means to improve performance and assist local government in realising the exercise of its constitutional functions. The Constitution only suggests intervention as a last resort to empower national (and provincial) government to ensure that the obligations of government are achieved and to realise progressive improvement of service delivery to citizens.

The oversight and support framework, and the emphasis of additional support for local government from other spheres, recognises that municipalities are likely more susceptible to economic and social challenges experienced in the country. These challenges can be due to the legacy of apartheid, as well as other natural, technological and environmental factors, that resulted in asymmetric development across different areas of the country. This has resulted in varying operating contexts and levels of capacity across the local government landscape. Furthermore, municipalities are also most susceptible to economic shocks and the impacts of other social pressures on their operating environment, such as inequitable education and health outcomes across the country. Therefore, this oversight role recognises the potential constraints at a local government level and proposes a framework to ensure that local government is capacitated to fulfil its obligations (in accordance with section 154(1) of the Constitution).

The overall objective of oversight and support is to ensure that municipalities do not fail in their duties towards their respective communities. However, as depicted in Figure 9.3, oversight and support do not occur in isolation. On the one hand, it is informed by regulation, and on the other it can determine whether or not more active intervention, via section 139 of the Constitution, is required. While the process is primarily sequential, there is considerable feedback between processes in that lessons learnt from a subsequent component can be used to improve previous components. For example, during the process of monitoring, one can find issues with the regulatory framework that warrants a potentially amendment to improve the overall framework. Looking at the oversight and support framework in more detail, the following two points should be noted:

- Oversight or monitoring is informed by regulations that prescribe the municipal operating framework. Regulations and legislation articulate what municipalities are compelled to do. This is the entry or the reference point for monitoring – regulations and legislation delineate what must be monitored. The key point of monitoring is to identify and diagnose potential problems and challenges that can lead to failure.
- Following oversight is support. Support should be activated when a problem is diagnosed or an opportunity is observed through monitoring activities. Support can take the form of capacity building through skills development, technical support and/or conditional grants. If oversight, through monitoring and support, is not effective in alleviating or solving the performance challenges experienced by a municipality, and failure or breakdown in service delivery occurs, the next step available to government is intervention via section 139 of the Constitution.

Figure 9.3: The process of the oversight and support framework



Source: Commission

9.4 Background to oversight, support and performance in South African municipalities

9.4.1 Legislative background

This paper critically assesses the oversight and support framework implemented by national and provincial government on local government’s financial management and performance. This section expands on the Municipal Finance Management Act (MFMA), which is the key piece of supporting legislation that outlines the country’s oversight and support framework when it comes to municipal financial management. Table 9.2 provides further details on the MFMA’s oversight and support stipulations.

Table 9.2: The Municipal Finance Management Act’s supervisory framework

Clause	Detail
<p>Chapter 2 concerns the functions of National Treasury, as well as the provincial treasuries, in terms of the oversight of local government financial management.</p>	<ul style="list-style-type: none"> • The MFMA requires National Treasury to enforce compliance with the measures established in terms of section 216(1) of the Constitution (which relates to the establishment and implementation of generally recognised accounting practices, uniform expenditure classifications and uniform treasury norms and standards). • Section 5(2) permits National Treasury to monitor the budgets of municipalities (to establish whether they are consistent with government’s fiscal and macroeconomic policy), to implement municipal budgets, including their expenditure, revenue collection and borrowing, and to ensure that municipalities and municipal entities comply with the MFMA, any applicable standards of generally recognised accounting practice and uniform expenditure and revenue classification systems. • National Treasury may investigate any system of financial management and internal control in any municipality or municipal entity and recommend improvements. • Where municipalities or municipal entities are in breach of the MFMA, National Treasury can take appropriate steps, including the stopping of funds to a municipality (in line with section 216(2) of the Constitution). • Provincial treasuries are required to assist National Treasury in enforcing compliance with the measures established in terms of section 216(1) of the Constitution and those established by National Treasury in terms of the MFMA. In order to fulfil this duty, provincial treasuries must monitor municipal compliance with the MFMA, the preparation of municipal budgets, the monthly outcome of municipal budgets and the submission of any reports submitted in terms of the MFMA. The provincial treasuries may assist municipalities with budget preparation, and may take steps if a municipality is in breach of the MFMA. • Provincial treasuries must submit all information provided to it by municipalities to National Treasury on a quarterly basis or when requested.
<p>Chapter 5 relates generally to cooperative government and comprises numerous topics, including capacity building, national and provincial allocations to municipalities, the stopping of funds</p>	<p><i>With respect to capacity building:</i></p> <ul style="list-style-type: none"> • National and provincial treasuries must assist municipalities to build efficient, effective and transparent financial management capacity. • In its monitoring of municipal finances, the MFMA requires provincial treasuries to share the results of such monitoring and, where improvements can be made, alert municipalities to emerging areas of concern. Provinces may also assist municipalities in addressing any issues.

Clause	Detail
<p>and equitable share allocations to municipalities, the monitoring of prices and payments for bulk resources.</p>	<p><i>Strengthening cooperative governance:</i></p> <ul style="list-style-type: none"> • National and provincial departments must promptly meet any financial obligation to a municipality. • National and provincial departments must inform National Treasury and/or the provincial treasuries of all proposed municipal allocations over the Medium-term Expenditure Framework (MTEF) period. This will assist in ensuring budget predictability and certainty. • Municipalities must provide relevant budgetary and other information to national and provincial organs of state and any other municipalities. They must also promptly meet all financial commitments to any other sphere of government and any municipality. <p><i>Monitoring of prices and payment for bulk resources:</i></p> <ul style="list-style-type: none"> • National Treasury must monitor the pricing structure for the supply of electricity, water or any other bulk resources that may be prescribed to municipalities for the provision of municipal services, as well as payments made by municipalities for bulk resources. • Each organ of state that provides such bulk resources to a municipality must furnish National Treasury with a written statement setting out, for each municipality, the amount to be paid by the municipality for bulk resources for that month, and for the financial year, as well as the arrears owing and the age profile of such arrears, and any action taken to recover the arrears. • Before the pricing structure of any bulk resource can be increased, National Treasury and the South African Local Government Association (SALGA) must be consulted, and such intention must be tabled with Parliament and must include how the comments, if any, of National Treasury and SALGA were considered.
<p>Chapter 12 covers financial reporting and auditing.</p>	<p>To a large extent, this chapter provides detailed information on the required contents of municipal annual reports and annual financial statements, as well as other disclosures that must be made.</p> <ul style="list-style-type: none"> • Chapter 12 requires the provincial Members of the Executive Council (MECs) for local government to assess the annual financial statements of a municipality, as well as audit reports on such statements, and how the municipality has responded to any issues and whether the responses are adequate. • The MEC for local government in a province must monitor whether municipalities comply with the submission of annual reports/oversight reports to the provincial legislature within the specified timeframe. • In cases where a municipality fails to submit financial statements to the Auditor-General, the provincial executive may intervene in terms of section 139 of the Constitution, or National Treasury or the relevant provincial treasury may take appropriate steps as permitted by the MFMA.

Clause	Detail
<p>Chapter 13 concerns the resolution of financial problems and provides details on the different types of provincial interventions (discretionary and mandatory).</p>	<ul style="list-style-type: none"> • The legislation requires an MEC for local government, upon becoming aware of a financial problem in a municipality, to consult the mayor, assess the seriousness of the problem and the municipality’s response to it and determine whether an intervention in terms of section 139 of the Constitution is required. • If the assessment reveals that an intervention in terms of section 139 is required, sections 137 and 136 of this Act prescribe the steps to be undertaken. These steps are specific to a serious financial problem. The MEC of local government must submit to the municipality in question and the Cabinet member responsible for local government their assessment of the seriousness of the problem, as well as whether a financial recovery plan is required. Section 138 of the MFMA sets out the precise criteria that need to be met when determining the seriousness of a financial problem facing a municipality in the case of a discretionary intervention. • Chapter 13 also spells out what process must be followed when a municipality faces a crisis in its financial affairs, especially concerning what steps the provincial executive must implement (which includes requests to the Municipal Financial Recovery Service and consulting the mayor to obtain cooperation to implement a recovery plan). Section 140 of the MFMA sets out the criteria for determining a serious or persistent material breach of financial commitments. • Chapter 13 provides detail on the criteria that a financial recovery plan must fulfil, the process for approving it and how it should be implemented. It also provides guidance on how often a provincial intervention must be reviewed and how it must be terminated. • Finally, Chapter 13 provides the conditions under which national interventions must occur.

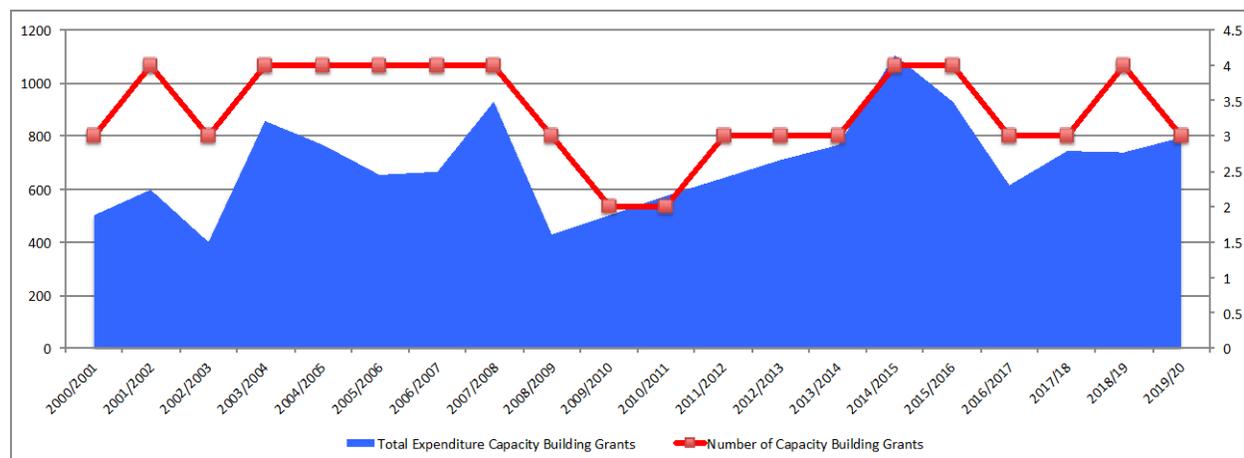
Source: RSA (2004)

9.4.2 Financial support: Evolution of capacity-building grants

Since the consolidation of municipalities and the subsequent inception of local government in 2000, capacity-building grants were incorporated into the system to support municipalities. Having recognised the asymmetric financial, institutional and human capacity across municipalities, such grants were necessary to facilitate the restructuring of municipalities and support the formal development of local government in various areas of the country, where none had existed previously. Capacity-building grants form part of the support framework that is implemented by national and local government. It should be considered as the financial sub-component of support, complementing the non-financial support like skills development and direct technical support.

Figure 9.4 shows the evolution of the capacity-building grants in local government’s fiscal framework from 2000/01 to 2019/20, in terms of the total allocations for capacity building and the total number of capacity-building grants in the system.⁴⁵

Figure 9.4: Evolution of capacity-building grants, 2000-2020 (R’ million)



Source: Division of Revenue (2000–2020)

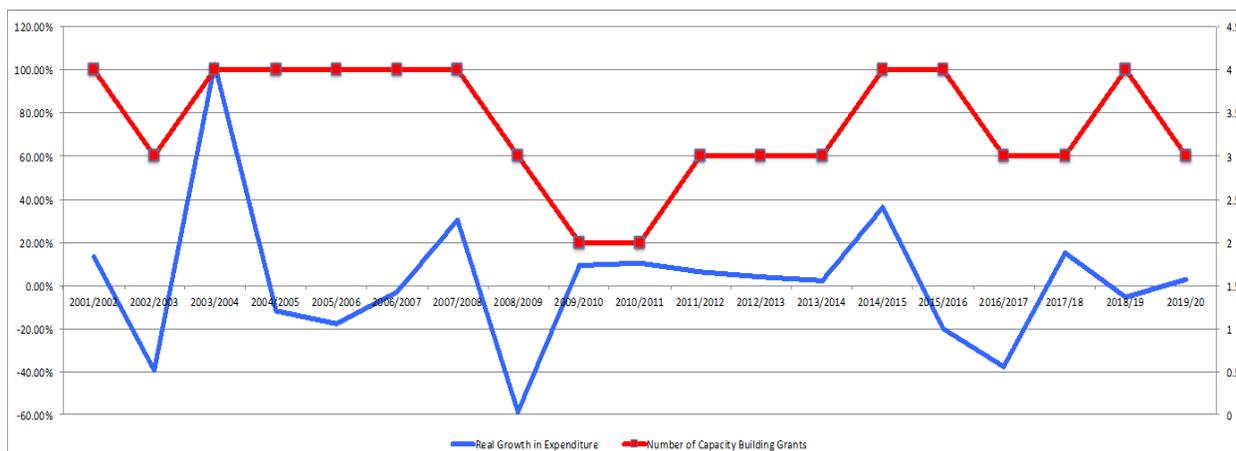
Note: The direct and indirect components of some grants are counted as separate grants in this analysis.

Between 2000 and 2020, approximately R14 billion was spent on various capacity-building grants in the local government fiscal framework. The total expenditure for capacity building reached a peak in 2014/15, where just over R1.1 billion was spent. This corresponds with the highest number of capacity-building grants in the system, i.e. four.

Figure 9.5 shows the real growth of total capacity building grant expenditure relative to the number of grants over the same period. Accounting for the introduction of new grants, which may overestimate the growth rates, there was a considerable real increase in expenditures in 2007/08. The large increases in 2003/04 and 2014/15 were largely driven by the introduction of new grants. Real growth was largely low and even negative from 2014/15 onwards, apart from 2017/18, when there was a substantial injection into the Financial Management Grant (FMG).

⁴⁵ This analysis uses a narrow definition of capacity-building grants, i.e. grants that are specifically meant to directly fund capacity-building initiatives under the assumption that such capacity does not exist or is lacking in order to undertake a function(s). It is acknowledged that other financial support includes indirect capacity building, but these are not included in this definition. This would include grants related to the Cities Support Programme, as an example.

Figure 9.5: Real growth in total capacity-building grant expenditure

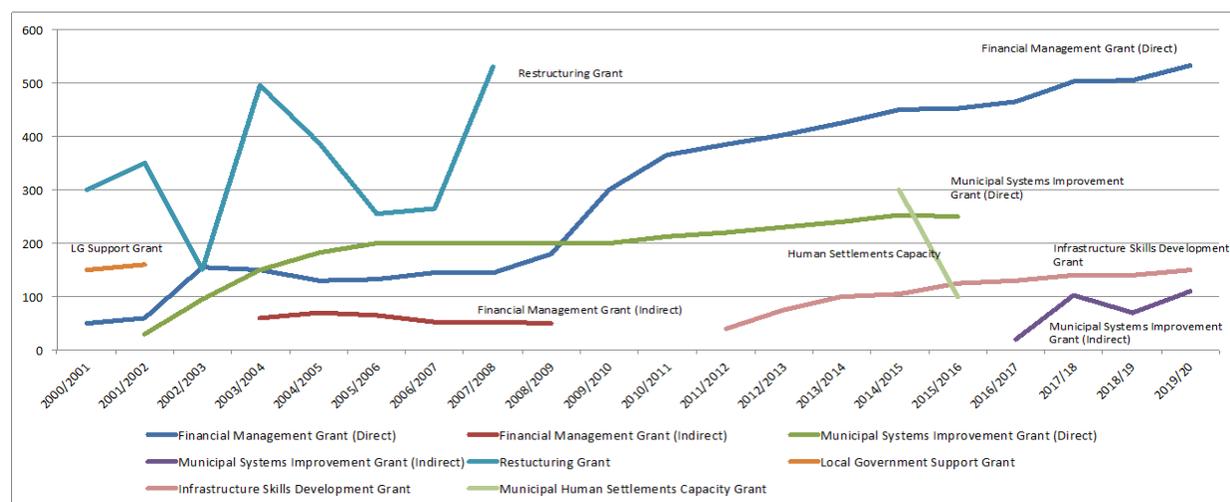


Source: Division of Revenue (2000–2020)

Note: The direct and indirect components of some grants are counted as separate grants in this analysis.

Building from the analysis above, Figure 9.6 shows the allocations per capacity-building grant from 2000/01 to 2019/20. In total, there were eight strictly defined capacity-building grants in the system during this period, ranging from a minimum of two to a maximum of four per year. Of these, the FMG and the Municipal Systems Improvement Grant (MSIG) were the only grants consistently allocated throughout the period. From 2000/01 to 2007/08, the Local Government Restructuring Grant, distributed by National Treasury, was the largest capacity-building grant. This grant was a demand-driven grant that funded the restructuring of financial, institutional and developmental initiatives. The grant was phased into local government’s equitable share in 2008/09. The MSIG was larger than the FMG from 2003/04 to 2008/09, after which there was relatively larger growth in the FMG, making it the largest capacity-building grant at present.

Figure 9.6: Trends in capacity-building grants (R' million)



Source: Division of Revenue (2000–2020)

Note: The direct and indirect components of some grants are counted as separate grants in this analysis.

Table 9.3 provides details of the different grants in the local government fiscal framework from 2000/01 to 2019/20, including a non-exhaustive list of some of their changes over the period.

Table 9.3: Description of capacity-building grants from 2000 to 2020

Grant	Description	Department	Inception date	Termination date	Changes
Financial Management Grant	Funds the modernisation of financial management systems in municipalities	National Treasury	2000*	Ongoing	Indirect component was phased out in 2009/10.
Municipal Systems Improvement Grant	Funds the stabilisation of municipal governance systems	Department of Cooperative Governance and Traditional Affairs	2001/02	Ongoing	Initially funded the implementation of the Municipal Systems Act. Funded the implementation of the Back to Basics Initiative in 2014. Converted to an indirect grant in 2016/17. Funded the DDM from 2019.

Grant	Description	Department	Inception date	Termination date	Changes
Municipal Restructuring Grant	A demand-driven grant that funded the restructuring of financial, institutional and developmental initiatives	National Treasury	2000*	Phased into the local government equitable share in 2008/09	
Local Government Support Grant	Funded municipal structural adjustment programmes to improve medium-term finances.	Department of Cooperative Governance and Traditional Affairs (formerly the Department of Provincial and Local Government)	2000*	No further allocations from 2002/03	
Municipal Human Settlements Capacity Grant	Funds capacity for the development of human settlements in the metropolitan municipalities	Department of Human Settlements	2014/15	No further allocations from 2016/17	
Infrastructure Skills Development Grant	Funds the development of human capacity within municipalities by providing them with access to a pool of professionals with technical skills in the area of infrastructure development around municipal functions through the use of interns	National Treasury	2011/12	Ongoing	

* Restricted to the analysis period

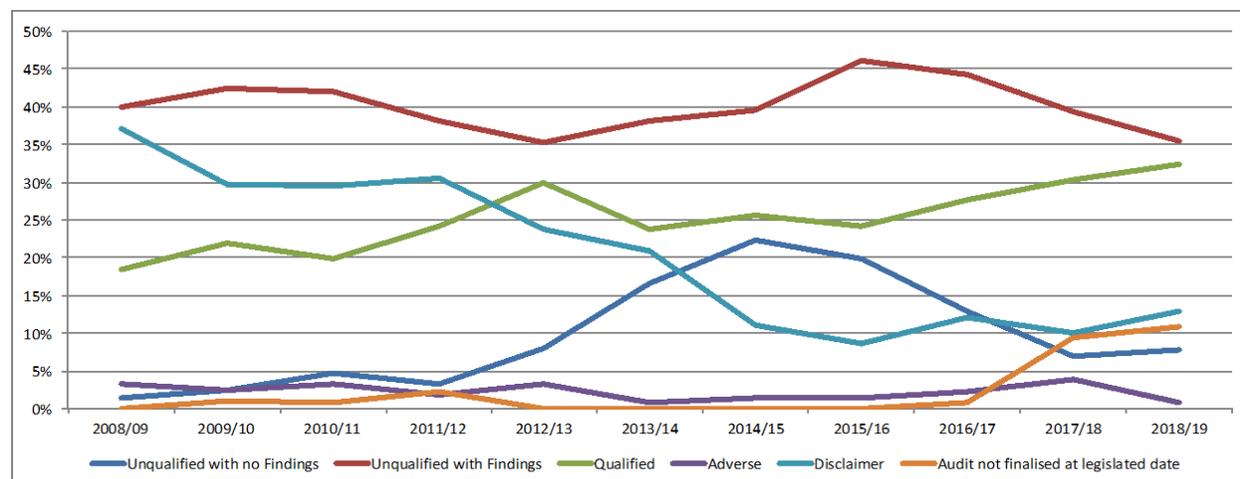
Note: Does not include all specific changes to grant frameworks.

9.4.3 Assessment of current performance

The discussions thus far provided details of the oversight and support framework that guides municipal financial management and supports the improved financial performance of municipalities. However, since the establishment of a consolidated local government in 2000, municipalities have displayed several examples of poor financial management and gross financial misconduct that has ultimately compromised the long-term financial sustainability of municipalities.

This section illustrates trends in some of the financial performance measures of local government. In general, it illustrates that financial performance has not improved considerably in local government, despite the comprehensive oversight and support framework. There are various measures of financial performance. Figure 9.7 shows the different audit outcomes of the country’s municipalities from 2008/09 to 2018/19. An unqualified audit opinion with no findings is essentially the benchmark of prudent financial management and municipal operating performance. While there was an increase in unqualified audit opinions without findings across local government between 2012/13 and 2016/17, with a peak in 2014/15 (22%), most of the country’s municipalities, in excess of 80%, receive audit opinions with varying degrees of findings. This ranges from disclaimer audit opinions to unqualified with findings opinions. While there is a positive trend in the reduction in disclaimer audit opinions, in general, prudent financial management remains a challenge in municipalities.

Figure 9.7: Audit outcomes from 2008/09 to 2018/19

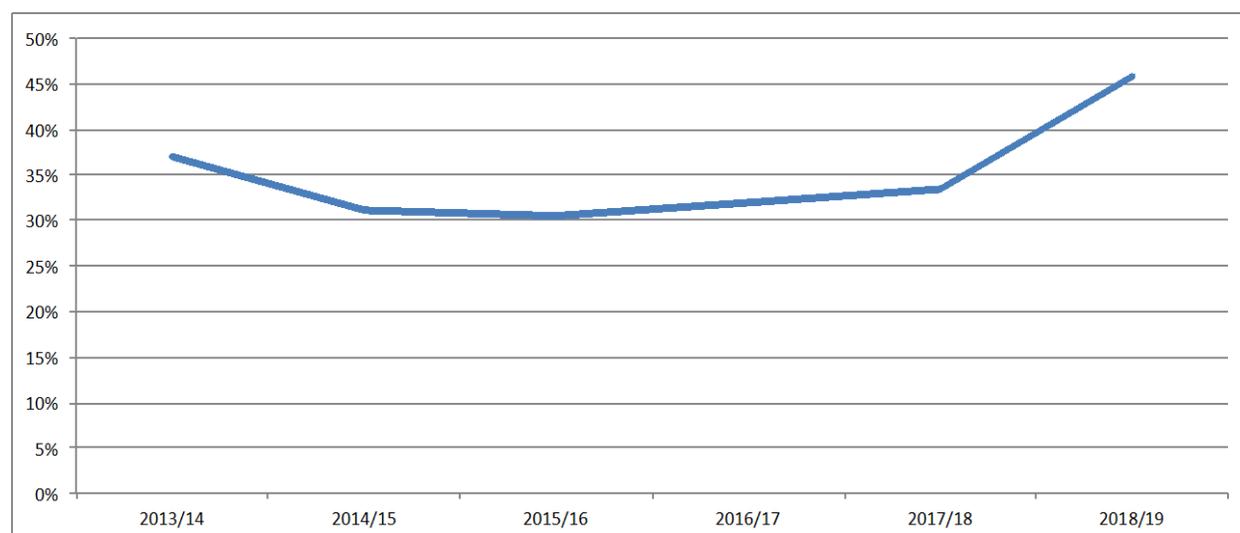


Source: Auditor-General of South Africa

Figure 9.8 shows the percentage of municipalities with unfunded budgets, i.e. municipalities that operate negative cash balances after taking their expenditure obligations and revenue forecasts into account. It is a matter of concern that over 40% of municipalities in the country passed unfunded budgets.

Over 45% of municipalities adopted unfunded budgets from 2013/14 to 2015/16. This number increased to over 50% in 2017/18 and 2018/19. These budgets are passed and implemented by municipalities, regardless of their unfunded status. Implementing an unfunded budget can result in perennial cash flow problems in the form of consistent budget deficits. This would result in the municipality being unable to fund its obligations in the long term. While national and provincial treasuries monitor the implementation of municipal budgets, the trends above suggest that there could be a lack of subsequent support or remedial measures to assist municipalities with unfunded budgets. Alternatively, there could be fundamental problems within a municipality that negates the effectiveness of the support or recommendations provided by national and/or provincial government.

Figure 9.8: Percentage of municipalities with unfunded budgets from 2013/14 to 2018/19



Source: National Treasury (2019)

Note: Analysis for adopted budgets excludes a portion of municipalities where no assessment was undertaken.

9.5 Methodology

The proposed methodology uses a combination of quantitative and qualitative analysis. The goal of the quantitative analysis is to provide descriptive statistics on the evolution of the oversight and support framework in local government, with particular focus on an analysis of municipal capacity-building grants. The qualitative analysis took the form of a case study analysis of the oversight and support framework applied in four provinces.

The qualitative analysis attempts to achieve the following:

- Undertake a high-level audit of the current national and provincial initiatives being implemented
- Determine how the national and provincial departments' initiatives and programmes conform with legislative requirements
- Understand when each initiative was introduced and the goals of such initiatives

- Determine whether such initiatives had achievable goals within certain timeframes
- Determine whether the initiative is well designed to identify failure or to act on failure
- Determine the role the initiative plays in building capacity and providing support to municipalities
- Determine whether the initiative is a diagnostic measure or a support measure. If it is diagnostic, what steps are being taken after the initiative has identified a problem and is subsequent support provided to address the problem
- Determine the system failures in the municipality
- Determine whether grants or support programmes are targeted to these issues
- Determine municipal experiences with national and provincial support
- Determine municipal experience with capacity-building grants

Ideally, a well-designed oversight and support framework should follow the process outlined in Figure 9.3 towards long-term local government capacity and no formal intervention (section 139 intervention) should be necessary. If this process is not followed and if a monitoring mechanism is not followed by support, it is likely that long-term capacity will not be achieved.

9.6 Presentation of findings

9.6.1 Quantitative analysis

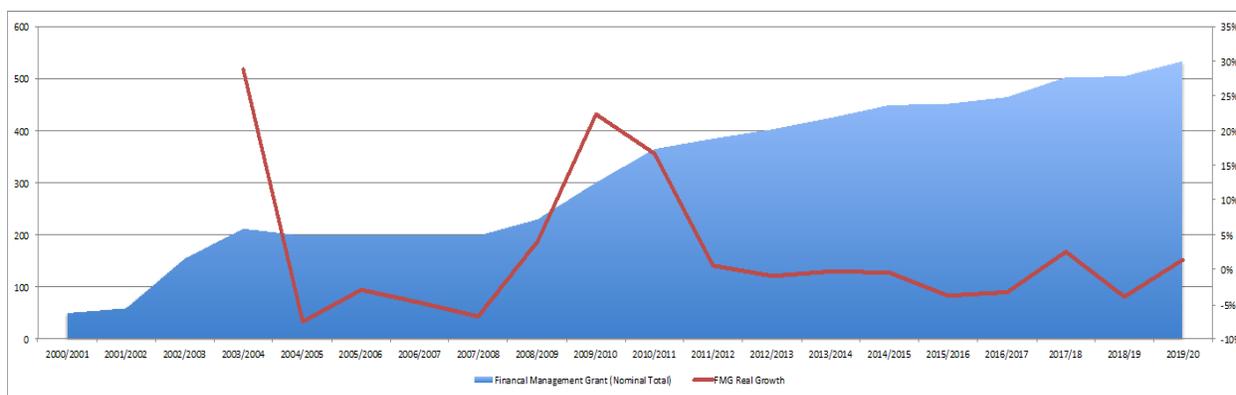
As mentioned above, capacity-building grants form a sub-component of the support component of the oversight and support framework (see Figure 9.3). One of the objectives of monitoring local government performance is to identify challenges faced by municipalities so that concomitant support can be provided. This support can be both financial and non-financial. In terms of the former, financial support takes the form of capacity-building grants that intend to fund solutions in areas within a municipality that hinder its performance. There are currently three conditional grants that directly assist in building capacity: the FMG, MSIG and the Infrastructure Skills Development Grant. Given that this report focuses on financial management capacity, the subsequent analysis focuses on trends in the FMG.

While the MSIG also supports issues of financial management, either directly or indirectly, the conversion of this grant to an indirect grant voids a detailed municipal analysis, as municipalities do not receive these funds directly. It should, however, be noted that, in its Annual Submission for the 2016/17 Division of Revenue, the Financial and Fiscal Commission (FFC) focused specifically on the performance of indirect grants and found that not only did these types of grants not perform well in terms of funds being spent, but there were concerns around the issue of municipal accountability where municipalities did not feel ‘part’ of the initiative and spending on it. This then diluted municipal accountability when it came to outcomes related to spending. Moreover, it is unclear whether the change in the classification of the MSIG from a direct to an indirect grant was informed by an evaluation of the performance and challenges of the grant.

Figure 9.9 shows the nominal expenditure on the FMG from 2000/01 to 2019/20, as well as the real growth in expenditure. There were huge injections into the FMG in 2002/03 and 2003/04, resulting in a 136% and 29% real increase in allocations, respectively⁴⁶.

Following this, the grant experienced a real decline in allocations from 2004/05 to 2007/08. Again, there was a substantial real injection in the grant in 2009/10 and 2010/11, followed again by real declines and zero growth since then. Recent trends suggest that the grant is being sacrificed in the face of government’s fiscal consolidation effort. Furthermore, it is difficult to determine whether the large injections in the grant in specific years were a result of policy changes to the grant or whether the grant benefitted from additional funds in the overall fiscal framework.

Figure 9.9: Nominal expenditure and real growth in the Financial Management Grant from 2000/01 to 2019/20 (R’ million)



Source: Division of Revenue (2000–2020)

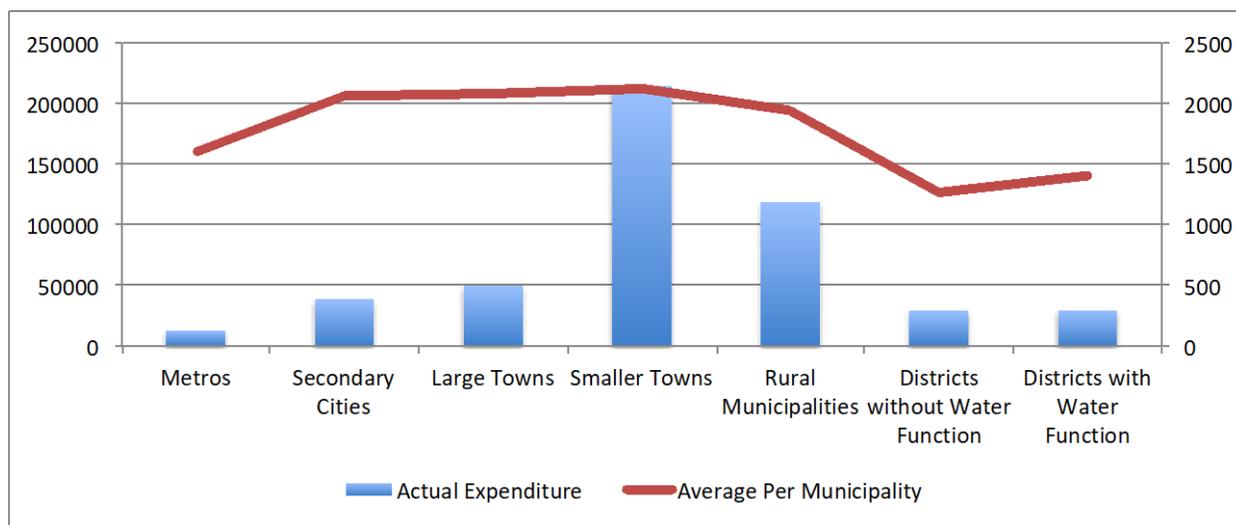
Note: The analysis includes both direct and indirect components of the grant from 2003/04 to 2008/09

Figure 9.10 illustrates the total spending per type of municipality and the average spending per municipality within each municipal category. Firstly, smaller towns receive the highest allocations in absolute terms, followed by rural municipalities. This is due to these categories having the highest number of municipalities, respectively. Given this, it is important to account for the number of municipalities in each category. When taking the number of municipalities into account, smaller municipalities receive the highest per municipal allocation, followed by larger towns and secondary cities. One can notice this by the peak in the red line over the smaller municipalities. District municipalities without a water service function receive the lowest per municipal allocation, followed by their water-authorised counterparts and then metropolitan municipalities.

⁴⁶ This large anomaly has been removed from the graph, as it distorts the trend. As such, the real trend starts from the 2004/05 financial year.

As these differences are not substantial, this analysis suggests that the FMG does not recognise the need for capacity support in its allocations, but rather attempts to equally allocate funds across the different types of municipalities. Alternatively, the grant could now be more focused on intern uptake and the chances of such interns being absorbed into a municipality, which could explain why metros have a higher average allocation than district municipalities.

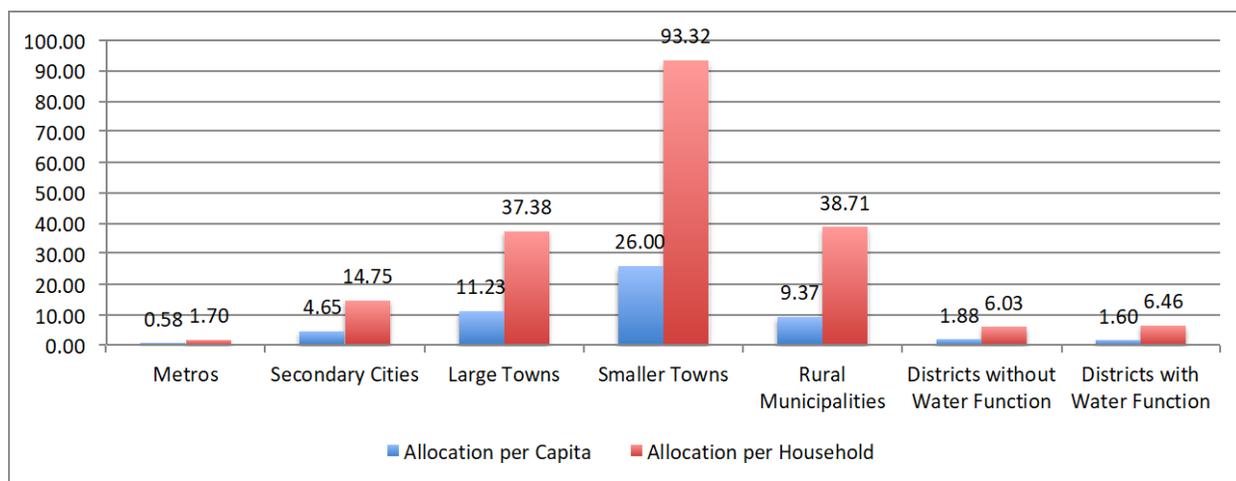
Figure 9.10: Total and average allocation per municipality in 2017/18 (R' thousands)



Source: Division of Revenue (2017)

Figure 9.11 extends the analysis above to look at FMG allocations per capita and per household. While it is important to point out that the FMG is not a population or services-determined grant, the analysis in Figure 9.11 provides a sense of the relative sizes of the municipalities that benefit from the grant and the greater financial burden placed on such municipalities due to a larger population and households. Again, smaller municipalities benefit relatively more from the FMG relative to other municipalities. Such municipalities receive more than double that of a rural municipality per household allocation. Again, it is unknown whether these municipalities have been determined to have a greater need for such a grant.

Figure 9.11: Allocations per capita and per household in 2017/18 (rands)



Source: Division of Revenue (2017)

9.6.2 Qualitative analysis

This section summarises the findings of the qualitative analysis, which consisted of case study analysis of the oversight and support framework applied in five provinces. The qualitative analysis attempted to garner the current extent of the oversight and support mechanisms applied by national and provincial governments, and to ascertain the experiences of various role-players with the provinces. The latter would include the designers of the framework (national government), the implementers of the framework (provincial government) and the beneficiaries of the framework (local government).

As part of the qualitative methodology, the study used five provinces as case studies: the Eastern Cape, KwaZulu-Natal, Limpopo, North West and the Western Cape. Interactions with the national and provincial treasury departments were prioritised, given that the study focused on the financial aspects of the oversight and support framework. However, interaction also took place with the national Department of Cooperative Governance and Traditional Affairs (CoGTA) and its provincial equivalent departments in the identified provinces.

What follows is a summary and analysis of the key themes and findings that emerged from the case study analysis and engagements with the selected national departments, provincial departments and municipalities. Table 9.4 shows the national departments, provincial departments and municipalities with which engagement took place.

Table 9.4: Outline of engagements with national, provincial and local government stakeholders

National departments/stakeholders	Provincial departments	Municipalities
National Treasury, Chief Directorate: Local Government Budget Analysis	Eastern Cape	
Department of Cooperative Governance and Traditional Affairs, Municipal Transfers and Municipal Systems Improvement Grant	Eastern Cape Provincial Treasury	Nelson Mandela Bay, Amathole, Alfred Nzo, Buffalo City, Umzimvumbu, Amahlati, Mquma, Mbashe and Mbizana
South African Local Government Association	Eastern Cape Department of Cooperative Governance and Traditional Affairs	
	KwaZulu-Natal	
	KwaZulu-Natal Provincial Treasury	Municipalities were approached in this province, but none accepted the invitation
	KwaZulu-Natal Department of Cooperative Governance and Traditional Affairs	
	Limpopo	
		Elias Motsoaledi, Capricorn, Tzaneen
	North West	
	North West Provincial Treasury	Madibeng, Mafikeng, Ngaka Modiri, Moretele, Kenneth Kaunda, JB Marks, Moses Kotane, Rustenburg, Kagiso Molopo, City of Matlosana, Moretele, Naledi and Mamusa
	Western Cape	
Western Cape Provincial Treasury	Cape Winelands, Overstrand, Prince Albert, West Coast, Drakenstein	
Western Cape Department of Local Government		

Requests were sent to National Treasury’s MFMA Unit and the units responsible for monitoring and evaluation in the Department of Cooperative Governance and Traditional Affairs, but these invitations were not taken up.

9.6.2.1 Quantity of monitoring and reporting requirements

One of the key objectives of the qualitative analysis was to determine the extent of the monitoring undertaken and support offered by both national and provincial government. During the engagements, it became apparent that these initiatives were quite extensive, cutting across all aspects of municipal operations and management.

Table 9.5 provides a high-level description of some of the monitoring and reporting requirements of national and provincial governments for a typical municipality in the Western Cape.

Table 9.5: Monitoring and reporting requirements for a typical municipality in the Western Cape

	Statutory reporting requirement			Non-statutory reporting requirement (Ad hoc requests)			Comments
	Nature of request	Department requesting information	How often data is requested	Nature of request	Department requesting information		How often data is requested
1.	<ul style="list-style-type: none"> Section 71 (monthly) Section 52 (quarterly) Municipal budgets 	National Treasury	<ul style="list-style-type: none"> Monthly Quarterly Draft Medium-term Revenue and Expenditure Framework Budget Final Budget Mid-year Review Adjustment Budget All other statutory adjustment budgets 				
2.	Government Debt Template	Western Cape Government	Monthly				
3.	Free Basic Services		Monthly	Back to Basics reporting	Department of Cooperative Government and Traditional Affairs (CoGTA)		
4.	Non-financial census questionnaire of the previous financial year	Statistics SA	Annually				
5.	Summary age analysis	Western Cape Government	Monthly	Section 5(4) of the MFMA			
6.				<ul style="list-style-type: none"> Municipal Infrastructure Grant (MIG) monthly and 	Department of Provincial and Local Government (DPLG)/CoGTA	Monthly/as and when needed	<ul style="list-style-type: none"> Site visits to monitor project progress Monthly MIG coordination meeting to

	Statutory reporting requirement			Non-statutory reporting requirement (Ad hoc requests)			Comments
	Nature of request	Department requesting information	How often data is requested	Nature of request	Department requesting information		How often data is requested
				quarterly reports <ul style="list-style-type: none"> • MIG annual reports • Detailed project implementation plans 			discuss MIG expenditure and project progress <ul style="list-style-type: none"> • Project appraisals to approve MIG projects for registration • Ad-hoc meetings to discuss progress
7.	MIG	DPLG/CoGTA	Monthly/quarterly and annually				
8.	National Treasury quarterly Service Delivery and Budget Implementation Plan (SDBIP) report	Western Cape Provincial Treasury and National Treasury	Quarterly				
9.	National Energy Regulator of South Africa (Nersa)	Nersa	Annually				Licenses and tariffs
10.	Integrated National Electrification Programme (INEP)	Department of Mineral Resources and Energy	Monthly/quarterly				Send progress on INEP spending
11.	Service Delivery and Budget Implementation Plan	Council	Monthly				
12.	Risk report	Council	Monthly/quarterly				Report on risks in directorate
13.	Small-scale Embedded Generation (SSEG) data	Western Cape Government	Quarterly				Report on SSEG applications received and approved, as well as installed capacity
14.	Back to Basics	CoGTA	Monthly				
15.	National Treasury quarterly report section 71	National Treasury	Quarterly				National Treasury SDBIP quarterly performance section 71

	Statutory reporting requirement			Non-statutory reporting requirement (Ad hoc requests)			Comments
	Nature of request	Department requesting information	How often data is requested	Nature of request	Department requesting information		How often data is requested
16.	Statistical information (A1 Schedule – Municipal Standard Chart of Accounts)	Provincial treasuries and National Treasury	Annually				
17.	Annual report	Council	Annually				
18.	Integrated Development Plan	Council	Annually				
19.	Data Management Platform	Provincial treasuries and National Treasury	Monthly				
20.	Non-financial census of municipalities	Statistics South Africa	Annually				
21				Circular 105 COVID-19 procurement reporting	National Treasury Provincial treasuries	Monthly	All procurement transactions related to the emergency procurement for COVID-19 personal protective equipment (PPE) items, fabric masks, as well as other goods, works or services that were procured to prevent an escalation of the national state of disaster.
22				National Treasury Joint Meeting reporting requirements – unauthorised, irregular or fruitless and wasteful expenditure	Provincial Treasury	Quarterly	Reporting of unauthorised, irregular or fruitless and wasteful expenditure.
23				National Treasury Joint Meeting reporting	Provincial Treasury	Quarterly	Reporting on supply chain management processes.

	Statutory reporting requirement			Non-statutory reporting requirement (Ad hoc requests)			Comments
	Nature of request	Department requesting information	How often data is requested	Nature of request	Department requesting information		How often data is requested
				requirements – supply chain management			
24				National Treasury Joint Meeting reporting requirements – Accounting	Provincial Treasury	Quarterly	Reporting on the status of the audit.
25	Reporting of Construction Industry Development Board (CIDB) tenders	CIDB	Within 15 working days after the Bid Adjudication Committee awarded the tender.				Register each and every construction project above R200 000 on e-Tender.
26	Register of projects	CIDB	On conclusion of projects				Reporting of progress on CIDB projects
27				Report to National Treasury on contracts awarded above R100 000	National Treasury	Monthly	Report to National Treasury on contracts awarded above R100 000 within 15 days of the end of the month.
28				Report to Provincial Treasury on contracts awarded above R100 000	Provincial Treasury	Monthly	Report to Provincial Treasury on contracts awarded above R100 000 within 15 days of the end of the month.
29				Local content reporting	Department of Trade, Industry and Competition	Monthly	Reporting of tenders subject to the requirements of local content.
30				Local content reporting	Provincial Treasury	Within five days of advertising	Reporting of tenders subject to the requirements of local content.
31				Registration of awards above	National Treasury	Monthly	Reporting of awards above R200 000 on

	Statutory reporting requirement			Non-statutory reporting requirement (Ad hoc requests)			Comments
	Nature of request	Department requesting information	How often data is requested	Nature of request	Department requesting information		How often data is requested
				R200 000 on e-Tender			e-Tender to National Treasury.
32	Reporting of unauthorised, irregular or fruitless and wasteful expenditure.	Mayor, MEC for Local Government and the Auditor-General.	Quarterly				The reporting of unauthorised, irregular or fruitless and wasteful expenditure in accordance with the requirements of section 32 of the MFMA.
33	Contracts having future budgetary implications	Public National Treasury Provincial Treasury	At least 60 days before Council approval				Make public and solicit views and recommendations from National Treasury and Provincial Treasury.
34	Approval of tenders not awarded	Auditor-General National Treasury Provincial Treasury	Ad hoc				Reasons for deviating
35	Amendment of supply chain management policies	National Treasury Provincial Treasury	Ad hoc				Any deviation from the guideline standard
36	Unsolicited bids – requesting comments from National Treasury and Provincial Treasury	National Treasury Provincial Treasury	Ad hoc				Written comments received from the public and comments from unsolicited bidder to be submitted for comments to National Treasury and Provincial Treasury.
37	Unsolicited bids – rejection of recommendations made by National	Auditor-General National Treasury Provincial Treasury	Within seven days of the decision of the award				Reasons for rejecting such recommendations.

	Statutory reporting requirement			Non-statutory reporting requirement (Ad hoc requests)			Comments
	Nature of request	Department requesting information	How often data is requested	Nature of request	Department requesting information		How often data is requested
	Treasury or Provincial Treasury						
38	Combating abuse of supply chain management	National Treasury Provincial Treasury	Ad hoc				Inform in writing of any action taken in terms of Supply Chain Management (SCM) Regulation 38.
39	Inducements, rewards, gifts and favours.	National Treasury	Promptly				Any alleged contravention of accepting inducements, gifts, rewards or favours, in terms of SCM Regulation 47(1).
40				Procurement Plan	Provincial Treasury	Upon request by Provincial Treasury	Approved procurement plan containing all planned procurement for the financial year for goods/services with a value above R200 000.
41	Construction projects – arbitration and litigation	CIDB	Within one calendar month from the starting date of the arbitration or litigation date.				Notify the CIDB of any arbitration or litigation in terms of contracts that have been registered on e-Tender.
42	Construction projects – financial support for emerging enterprises	CIDB	Ad hoc				Notify the CIDB of the nature of financial or management support for awards of contracts to emerging enterprises with contractor grading lower than required.
43				Confirm/assist with asset register	Western Cape Government: Transport and Public Works (Immovable Asset Management)	Annually	Reconcile properties on their asset register with the South African Municipal Resource System. Send spreadsheet, invoices and deed searches to request/receive payment

	Statutory reporting requirement			Non-statutory reporting requirement (Ad hoc requests)			Comments
	Nature of request	Department requesting information	How often data is requested	Nature of request	Department requesting information		How often data is requested
							of outstanding debt on government and provincial municipal accounts.
44				Municipal Property Rates Act (MPRA) Any challenges/problems experienced during COVID-19 because of Deeds Office closures	Western Cape Government: Municipal Support and Capacity Building	Quarterly	All municipalities are afforded the opportunity to provide input regarding the MPRA. Challenges to be reported to the national office of CoGTA. Any issues experienced with the Deeds Office were also taken further by the Department on our behalf.

The details provided in Table 9.5 show a very extensive and possibly burdensome amount of monitoring and reporting requirements placed on municipalities. This raises the question as to the rationale of many of these requirements and the subsequent benefits of implementing such regulations or informing the support framework. It is also clear that there is a substantive degree of duplication in terms of some of the information being requested.

9.6.2.2 Supervision versus oversight

The narrative and key argument across this paper is that the oversight and support provided to local government should be implemented within the spirit of cooperative governance, with obligatory support provided to local government being key in ensuring that municipalities are capacitated to deliver on their mandate and realise their autonomy. However, the oversight and support prescripts in the Constitution can create the notion of a supervision framework that promotes a paternalistic view from national and provincial government when engaging with local government. To reiterate, the Certification of the Constitution confirmed the vision of local government as “a structure for (local government) that, on the one hand, reveals a concern for the autonomy and integrity of (local government) and prescribes a hands-off relationship between (local government) and other levels of government and, on the other, acknowledges the requirement that higher levels of government monitor (local government) functioning and intervene where such functioning is deficient or defective in a manner that compromises this autonomy.”

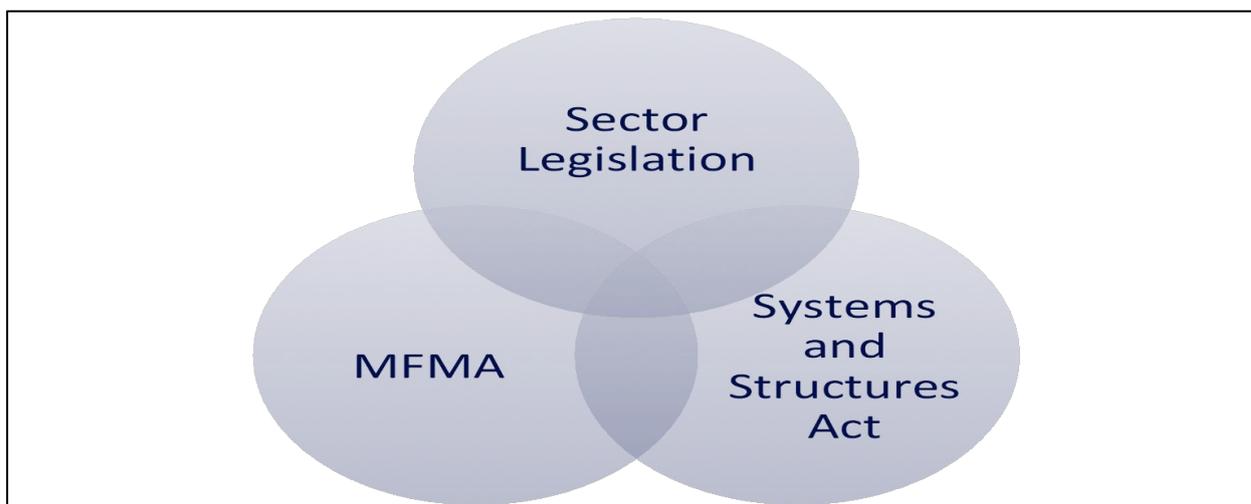
Therefore, a balance is required between implementing intergovernmental oversight and support, while respecting the autonomy of local government. As outlined above, the role of the oversight framework is to assist municipalities in realising their autonomy and constitutionally mandated service delivery responsibilities through a process where regulation, monitoring and support should be done in cooperation with local government. While this occurs to some degree, there are instances where regulations and monitoring is imposed on local government without proper consultation and input from the sphere that is impacted by such regulation.

The prescripts of the Constitution clearly and explicitly promote a system of cooperation as the basis for interaction between spheres. The notion of intervention is provided for in section 139, but this is a provision of last resort and is not there to penalise, but to protect municipalities from performance and service delivery failures. While national and provincial government have the constitutional mandate to prescribe legislation and regulation to provide the framework within which local government should operate, it was found that consultation and coordination can be improved between national, provincial and local government when implementing new regulations and reforms.

9.6.2.3 Legislative duplication exacerbates duplication of intergovernmental oversight and activities within municipalities

Government departments operate according to their respective legislative mandates. With respect to the specific roles and responsibilities regarding financial management-related intergovernmental oversight and support of municipalities, key legislation has given rise to duplication of efforts.

Figure 9.12: Legislative duplication of mandates



The primary pieces of legislation that outline roles and responsibilities related to financial management are the Constitution (RSA, 1996), the Municipal Systems Act, which was promulgated in 2000, and the Municipal Finance Management Act (MFMA), which was enacted in 2004. The custodian of the Municipal Systems Act is the minister responsible for local government (CoGTA), while the custodian of the MFMA is the Minister of Finance (National Treasury). To varying degrees, both pieces of legislation speak to municipal tariffs, revenue and expenditure management, yet reporting lines are different. This could inadvertently affect the reporting burden that municipalities experience. A further example of an inherent, but unforeseen misalignment within the legislation that relates to, for example, section 131(2), which requires that:

The MEC for local government in the province must:

- a) assess all annual financial statements of municipalities in the province, the audit reports on such statements and any responses of municipalities to such audit reports, and determine whether municipalities have adequately addressed any issues raised by the Auditor-General in audit reports; and*
- b) report to the provincial legislature any omission by a municipality to adequately address those issues within 60 days.*

In addition, certain sector-specific legislations, such as the Water Services Act, also refer to certain financial issues, such as tariff setting and the development of norms and standards for tariff setting.

This finding was one of the justifications for the review of regulatory, compliance and reporting burdens imposed on local government by legislation, undertaken by the South African Law Reform Commission in 2019, where it was acknowledged by the then Minister of Cooperative Governance that “the relevant provisions of the different pieces of legislation are sometimes duplicated and, at other times, contradictory” (South African Law Reform Commission, 2019:1).

9.6.2.4 Asymmetry of capacity and extent of municipal oversight and support across provinces

The implementation of the oversight framework differs considerably across provinces. In some provinces, efforts are better coordinated and there is a better working relationship between the provincial government and the municipality, i.e. the ethos of cooperative governance is better applied in certain provinces vis-à-vis others. This results in a relatively stronger oversight framework implemented in some provinces relative to others. This presents itself in the form of succinct and efficient monitoring, and better support directly related to such monitoring. Therefore, these provinces are in a better position to assist their respective municipalities, improving overall outcomes and performance.

While the precise nature of the support offered by provinces differs, most of them offer variations of the following:

- Training
- Advice and recommendations
- Provincial workshops/intergovernmental fora for best practice and information sharing
- Technical advisors through the Municipal Financial Improvement Programme (MFIP)
- Councillor training

Furthermore, the effectiveness of the support mechanisms offered in provinces differs, possibly indicating varying capacity across provinces to design and implement appropriate and effective support measures. This also applies to intergovernmental forums, as per the Intergovernmental Relations Framework Act, that exist at the provincial and district levels, where the functionality of such forums in terms of their extent, mandate and effectiveness differs across the provinces.

9.6.2.5 More regulation or less regulation?

Local government in South Africa remains a sphere that is in consistent evolution towards a level of maturity that would result in an efficient and effective sphere of government, both in the political and services delivery sense. Given this current nature of local government, there are essentially two views around the role of regulations in the system.

On the one hand, it is argued that a sphere that is prone to poor performance due to administrative capacity constraints and political immaturity should be highly regulated to control improper behaviour, impose performance standards and minimise inefficiencies towards the achievement of improved performance and service delivery.

On the other hand, a local government sphere that is inundated with procedures and controls could create an environment that makes it impossible to adhere to the extent of such regulations. In other words, due to the inherent capacity constraints, municipalities will never be able to adhere to the excessive and complicated regulations and procedures placed on them. This is further exacerbated by the fact that adherence to such regulations becomes a measure of performance. It is the view of this research that basic regulations that establish and entrench a system of prudent financial management are a necessity and add value. However excessive regulations tend to either elicit compliance for the sake of compliance, which is not sustainable or, those municipalities that are just unable to comply (due to human capacity and financial resources), end up being continuously penalised. A useful approach would be to take a differentiated approach to regulation whereby those that can, comply, and those that are unable to, are capacitated to a point where they are able to be compliant.

9.6.2.6 Asymmetric accountability

While the Constitution respects the autonomy of each sphere of government, a series of checks and balances is placed on the performance of municipalities through various channels of accountability. The strength of an oversight framework depends on equilibrium across various channels of accountability in terms of its strength to ensure effective performance. Disequilibrium across the accountability framework results in certain forms of oversight being less effective than others, as decisions are skewed towards areas of greater accountability. This also impacts on the receptiveness of municipalities towards monitoring and support initiatives that are implemented by other spheres of government.

Related to the above, a challenge raised in all stakeholder consultations relates to a lack of substantive oversight and accountability by municipal councils. Municipal councils play a central role in a municipality and are the main decision-making structure. Together with the administration, municipal councils play a central role in determining a municipality's performance.

While not discounting the prevalence of weak national and provincial monitoring and support by national and provincial governments or the impact that an inefficient municipal administration plays in hampering the performance of a municipality, numerous stakeholders emphasised the role that councils play in, for example, endorsing unfunded budgets or not heeding the advice and recommendations provided by national and provincial stakeholders when they alert them to potential risks and what can be done to mitigate such risks.

9.6.2.7 Placing oversight and support within the process of regulation and intervention

Intergovernmental oversight and support of municipalities should ideally be linked to regulation, which informs oversight, and intervention, which results when oversight and support fails. All these components should be interlinked. For example, when new regulations are introduced and have elements that municipalities need to adhere to, monitoring activities should not only be extended to pick up compliance, but the results of such monitoring should feed into the capacity-building initiatives that are established.

Likewise, to ensure improved synergy, coordination and a common vision, the entire pipeline of intergovernmental support needs to be considered; it should not be viewed in a silo-like fashion, as movement in one component should have a knock-on effect on the other components.

9.6.2.8 Coordination and pooling of resources aimed at monitoring and building capacity within municipalities

While each individual stakeholder across the continuum of oversight and support spectrum implements an array of initiatives and programmes to oversee and strengthen municipalities, very little substantive coordination exists. As a result, municipalities have to comply with the monitoring requirements of various departments, and they have to participate in an array of capacity building initiatives that are spearheaded by different departments and spheres. Not only is this not an efficient way of utilising existing scarce financial and human resources, but it can lead to duplication and therefore dilute the value of the money that is being spent. Table 9.6 illustrates some potential areas of duplication.

Table 9.6: Areas of duplication

Tariff setting	Revenue management and credit control	Financial management and systems
Municipal Systems Act	Municipal Finance Management Act	Municipal Finance Management Act
Electricity Regulation Act	Municipal Systems Act	Municipal Systems Act
Water Services Act		

Consideration should be given to pooling resources horizontally (across departments) and vertically (across spheres) so as to achieve greater coordination and impact. Monitoring and capacity-building initiatives should also be implemented by a ‘lead department’, as per the legislative authority for such a mandate, and supported by other departments.

An important area that must be resolved prior to pooling resources to ensure greater coordination and impact is for the key stakeholders responsible for intergovernmental oversight and the support of municipalities to agree on a common framework and indicators that will be used to distinguish functional municipalities from those that are struggling.

9.6.2.9 The importance of evaluating monitoring, capacity building and section 139 interventions in closing and improving the intergovernmental oversight and support loop

As much as reports of the Auditor-General contain critically relevant performance information regarding municipalities, there is also a need to ensure that monitoring, capacity building and section 139 interventions are evaluated with a view to determining what works or what does not. As noted by the Department of Planning, Monitoring and Evaluation (DPME), “evaluation is a time-bound and periodic exercise that seeks to provide credible and useful information to answer specific questions to guide decision making by staff, managers and policymakers.

Evaluations may assess relevance, efficiency, effectiveness, impact and sustainability” (DPME, 2007:2). As highlighted in the definition, evaluations can provide invaluable information to practitioners and policymakers and should be automatically included in any public programme where public resources such as time and money are expended.

9.6.2.10 An assessment of the costs and benefits of the elements of the oversight and support framework

The White Paper on Local Government and supporting legislation are very clear on the role of national and provincial government towards local government with regard to regulation, monitoring and support.

In accordance with the White Paper on Local Government, national government should do the following:

- Provide a legislative framework for local government
- Provide a framework for municipal capacity-building and support municipalities
- Develop an overall framework for monitoring and oversight to ensure the necessary levels of compatibility, uniformity and consistency across local government

The role of the provincial government is captured as follows:

- An intergovernmental role that ensures the establishment of forums and processes and promotes horizontal cooperation and coordination between municipalities in a province
- A regulatory role to oversee the effective performance of municipalities in carrying out their constitutional functions
- An institutional development and capacity-building role
- An intervention role

Section 105(1) of the Municipal System Act requires the MEC for Local Government to establish clear mechanisms, processes and procedures to monitor municipal performance and assess the support requirements to strengthen municipal capacity. Section 105(3) requires the MEC for Local Government to undertake the following when exercising section 105(1):

- Rely, as far as possible, on annual reports
- Make responsible requests to municipalities for additional information, taking the following into account:
 - The administrative burden on municipalities to furnish such information
 - The cost involved
 - Existing performance monitoring mechanisms, systems and processes

While it is well acknowledged that the development of new legislation and regulations require a resource (cost) assessment for the potential impacts on municipalities (and national/provincial departments), it is also important that a similar assessment be undertaken for oversight/monitoring activities, in accordance with the requirements of section 105(3) of the Municipal Systems Act.

Furthermore, non-legislative monitoring and support initiatives are implemented with a cost in terms of time, effort and funds for both municipalities and the implementing department, but with no clear concomitant benefit from the use of these resources. It is important that a cost/benefit analysis be undertaken for current and new oversight/monitoring initiatives. This further emphasises the need for an evaluation framework across the oversight and support framework.

9.7 Conclusion and recommendations

In South Africa, the intergovernmental oversight and support provided to municipalities takes place within a flexible system of cooperative government that respects the distinctive, interdependent and interrelated nature of each of the three spheres of government. This system of cooperative government, in recognition of the potential for any sphere (in this case municipalities) to fall short of its constitutional mandate, makes provision for regulation, monitoring, support and – more intrusive – intervention. The constitutional provisions of these components aim to incentivise governments to achieve their ultimate mandate of the prudent stewardship of public resources to ensure the provision of quality services to citizens. This research identifies various aspects, which serve to hamper the effectiveness of the current framework, which, if working optimally, would be a central cog in strengthening local government performance, and helping to avoid more stringent, direct section 139 interventions. The analysis acknowledges the value being added by national and provincial governments in their monitoring and support of municipalities. This was strongly acknowledged by the majority of municipal stakeholders that were interacted with. There are, however, structural weaknesses in the intergovernmental oversight and support framework and its implementation that dilute even greater impact. It is these aspects that the recommendations that follow, aim to address.

1. *As part of National Treasury's review of capacity-building grants, the Commission would like to recommend that financial support to build capacity and institutional systems (such as the FMG and MSIG):*
 - *should be disproportionately directed at lesser-resourced, poorer and more rural municipalities;*
 - *every effort must be made to ensure that capacity-building efforts are comprehensively consulted with and agreed to with a municipality;*
 - *capacity-building efforts should either be linked to a municipality-specific diagnosis of capacity challenges or deficits, or should be specifically aimed at addressing challenges picked up through intergovernmental monitoring; and*
 - *should consider the consolidation of all capacity-building grants into one financial flow that is specifically linked to overall intergovernmental 'support' of municipalities. This will assist in reducing the administrative and reporting burden placed on both grant-administrating departments and grant-receiving municipalities, and will further assist in streamlining the overall conditional grant framework.*

The FMG and MSIG are critical for building financial management-related human capital capacity and systems. These are particularly important in the case of rural municipalities, which struggle with attracting and retaining skills. Furthermore, the Commission acknowledges and welcomes the review of capacity-building grants being spearheaded by National Treasury.

2. *The Minister of Cooperative Governance and Traditional Affairs, in enacting the provisions of section 105(3) of the Municipal Systems Act, should implement mechanisms to undertake a critical evaluation of the impact of the regulations, and monitoring and support provided to local government, with an emphasis on the explicit cost-benefit analyses when new legislation, regulations, monitoring and/or support initiatives are introduced across the supervisory framework. The cost-benefit analysis should do the following:*

- *Assess not only the outcomes/performance related to the oversight and support framework (e.g. whether there are more funded budgets), but also whether monitoring and support is provided in the most efficient and effective manner (i.e. minimising the burden placed on municipalities).*
- *Consider the DPME, which is based at the Presidency, for this role. Such evaluations should be undertaken periodically with larger reviews every five years.*

Conducting regular evaluations will assist government to pick up inefficiencies in resources and approach before much time, effort and resources have been spent on a selected plan of action.

3. *Given that the current monitoring and support framework is applied uniformly across local government, government should reconsider its current approach to explore the principle of a differentiated method to municipalities when it comes to financial and non-financial reporting requirements, overall monitoring and support.*

A differentiated approach would ensure that the varying capacities of municipalities are taken into consideration and should lessen the reporting burden placed on smaller, poorly resourced municipalities. It will also ensure that challenges unique to specific types of municipalities are explicitly considered in the support framework.

4. *The Minister of Finance should ensure that provincial treasuries are effectively capacitated to undertake their oversight and support role of local government in terms of financial management. In addition, government should consider developing a common framework to guide provinces in their oversight and support role towards the delivery of basic services.*

This can contribute to ensuring a more consistent application of this provincial government responsibility across the country. The establishment of a central coordinating structure, as proposed in Recommendation 1 above, could assist and contribute to a common framework and understanding.

5. *Government should review specific legislation that results in a duplication of the supervisory and regulatory roles of national and provincial government departments.*

Particular pieces of legislation that require review include areas within the MFMA, the Municipal Systems Act, the Municipal Structures Act and sector legislation. Such areas should be clarified so that the mandates of specific departments are clear. In areas where this cannot be effectively achieved, legislation should be amended to clarify and delineate the roles and responsibilities of different stakeholders so as to avoid duplication and ensure alignment with the strategic expertise and focus of respective departments.

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Chapter 10

Leadership, management and governance for sustainable public service delivery



Chapter 10:

Leadership, management and governance for sustainable public service delivery

Thando Ngozo and Sabelo Mtantato

10.1 Introduction and background

The success or failure of the response to the COVID-19 pandemic is determined, among other things, by the leadership style and approach used by leaders to deal with the crisis. The response to the pandemic warrants a specific type of leadership, decision making and action. It needs innovative and collaborative leadership, in particular, by public leaders to curtail its spread. Public leadership is an integral part of effective public governance and entails governmental and societal approaches that are vital to mobilise actions effectively, efficiently, economically, and ethically at all levels of government, and with the participation of all stakeholders.

The response to the COVID-19 pandemic requires leaders, and specifically public leaders, to think creatively. Public leaders should take responsibility and be accountable in their response to the pandemic. However, dealing with a converged crisis, in which economic, social, practical and political crises have global implications, is a complex undertaking. Bhalla (2020) identifies and analyses various leadership styles that are required to make decisions. However, in dealing with the COVID-19 crisis, just as in the case of the delivery of services in the public sector, the choice of an appropriate leadership style is not obvious. Adaptive leadership, which embraces the strengths of leadership approaches borrowed from transformational, transactional, autocratic, democratic and servant leadership models, appears to be the most suitable when dealing with a converged crisis like COVID-19, as is indeed the case with most of the service delivery challenges in the public sector.

The pandemic has affected different places at different times in different phases and during different waves. It is reminiscent of a forest fire, which can be stopped in some places, but not in others, where it may keep burning as long as there is wood to fuel it. In such a situation, leadership must provide advanced planning and preparation, as well as central design and strategy, to take the necessary action. Moreover, leadership has to assume a coordinating role for crisis management. A pandemic such as COVID-19 requires leadership, particularly public leadership, throughout various disciplines to work collectively in implementing common objectives, strategies and plans of action to formulate and propagate public health guidelines, organise and employ medical and health personnel, and supply equipment where it is most required. This collective process is susceptible to conflict. Some of these stakeholders could pursue their own interests that are contrary to the common objective.

Strong leadership is therefore required to resolve such conflicting objectives and encourage the different public agents to advance the common objective. Strong central leadership is critical for a sound national strategy to combat COVID-19.

In South Africa, the response of the country's leadership to the COVID-19 pandemic was acclaimed as outstanding in its implementation of non-pharmaceutical interventions to curtail the spread of the COVID-19 pandemic. President Cyril Ramaphosa was applauded extensively for demonstrating decisive leadership, bolstered by the Minister of Health, Dr Zweli Mkhize, to prevent the transmission of the virus by acting quickly and implementing a hard lockdown. However, the non-adherence to some of the lockdown measures translated into a continued increase in infections, resulting in the country being placed among the ten countries in the world with the most COVID-19 cases in July 2020. This somehow tainted the good leadership that was associated with the initial response to the pandemic. The leadership requirements required to respond to the COVID-19 pandemic are similar to those needed to accelerate routine service delivery, such as the delivery of infrastructure, which is the subject of this paper.

A critical objective of the public service is to deliver services to all South Africans in an efficient, equitable and sustainable manner that contributes to the progressive realisation of citizens' socio-economic rights, as enshrined in the Constitution. Service delivery performance in the public service could either be inhibited or accelerated, depending on how well its leadership and governance framework is aligned to its policy objectives. The stronger and more suitable the leadership and governance framework, the more likely the public service will be to achieve its service delivery outcomes. The National Development Plan (NDP) identified tensions in the political-administrative interface, an instability of administrative leadership, skills deficits, the erosion of accountability and authority, poor organisational design and low staff morale as factors hindering service delivery. According to the NDP, weak managerial capacity and a lack of leadership prevent these issues from being addressed. Since South Africa, like other countries in the world, experienced the start of the COVID-19 pandemic early in 2020, the need for good governance and strong leadership escalated to ensure the efficient implementation of government's response plan to the pandemic. The response plan not only provided for socio-economic relief measures, but also for the delivery of key infrastructure, which included the delivery and preparation of quarantine centres, emergency shelters and health facilities, as well as addressing matters relating to water infrastructure and services. The importance of good leadership, good governance and accountability during COVID-19 is exacerbated by the fact that key decisions and the approval of processes needed to be made very quickly. This, however, also created an environment within which the abuse of processes and systems could occur.

Accountability is another vital aspect of good leadership and governance. The Auditor-General of South Africa (AGSA), in releasing the municipal audit results for the 2017/18 financial year, noted that the state of deteriorating audit outcomes shows that various local government role-players have been slow in implementing their audit recommendations, and in many instances, have even disregarded them. This resulted in accountability for financial and performance management worsening in most municipalities.

According to the AGSA, the current governance relapses that beset local government could only be rectified if its leadership were to lead the drive towards wholesale clean administration in the public sector. This challenge is not limited to the local government sector. The AGSA's Public Finance Management Act (PFMA) 2018/19 consolidated general report on national and provincial audit outcomes (AGSA, 2019) also reflected on disappointing audit results.

Furthermore, the AGSA, in its report on municipal audit outcomes in 2017/18 raised concern that municipalities lack accountability for finances and that accountability should trigger service delivery. Lack of discipline results in irregular expenditure and service delivery failures. In that report, the AGSA also indicated that irregular municipal expenditure had ballooned by more than 50%, and that this could be attributed to the lack of internal controls and accountability. If there are no punitive actions for wrongdoing (being held accountable for failure to comply with legislation or internal controls), one of the consequences is that irregular expenditure may continue unabated.

Given this background, the study analyses various interrelated factors, such as public leadership, good governance and accountability, in as far as they relate to big and complex infrastructure projects and how these factors hamper the effectiveness of the public service.

10.1.1 Problem statement

The delivery of services to society, particularly among previously disadvantaged communities is not being achieved at the desired pace in South Africa. While the public service has committed itself to addressing the inequalities of service provision, many provinces and municipalities are confronted with extensive service backlogs. In spite of noble endeavours to improve service delivery, huge discrepancies are still evident.

While the fiscus is constrained, in some instances, financial resources that are made available to address service delivery and infrastructure backlogs are not utilised optimally. This is evident from the high number of planned and implemented projects that remain incomplete or not completed on time. This could be attributed to poor governance and quality of leadership, among other things.

To improve service delivery performance, it is critical that the public service espouses an appropriate and effective leadership and governance framework. In adopting a leadership and governance framework, it is vital to explore the attributes of different approaches

10.1.2 Objectives of the study

The objective of the study are as follows:

- Critically analyse the impact of leadership, management, governance and intergovernmental relations in sustainable service delivery using two catalytic human settlement projects as case studies: Duncan Village in the Eastern Cape and Greater Cornubia in KwaZulu-Natal.

- In addition to these two case studies, the Giyani Bulk Water Project in Limpopo will also be used to provide some insights on leadership and governance issues. It is, however, important to note that, unlike the two catalytic housing projects, no interviews were conducted in respect of the Giyani Bulk Water Project. The analysis of the Giyani Bulk Water Project therefore relied on secondary information, but still provides very useful insights.
- Assess how lack of accountability has resulted in repeated non-compliance with regulations and internal controls. In this case, using the audit outcomes of the Department of Human Settlements, Water and Sanitation (DHSWS).

10.2 Literature review

10.2.1 Western leadership theories

Western leadership theories can be categorised into three main groups: leadership traits, situational theories and social dynamics theories.

10.2.1.1 Leadership traits

The trait theories dominated the 1920s and 1930s. They were premised on the hypothesis that successful leaders have certain traits, such as drive, self-confidence, intelligence, adaptability, assertiveness and emotional stability (Yukl, 2010). The trait theories are often referred to as the ‘great man’ approach to leadership because it postulates that leaders have particular characteristics or traits that enable them to emerge as leaders. These theories have not succeeded in establishing the parameters of these traits, thus opening a leeway for the development of a broader range of theories (Nahavandi, 2009).

10.2.1.2 Situational theories

The situational theories were pioneered by Fiedler (1967), as well as Hersey and Blanchard (1977). In contrast to the trait theories, situational and contingency theories contend that there is no one best way to lead people; rather, different situations require alternative types of leadership orientations. The situational theorists proposed two leadership continuums: task-centred behaviour and relationship-oriented behaviour (Nahavandi, 2009; Yukl, 2010). According to these theorists, task-centred leaders perceive their obligation as overseeing their subordinates and telling them what to do, how to do it, and when and where to do it. Relationship-oriented leaders, on the other hand, concentrate on the social and emotional needs of their colleagues and subordinates (Avolio, Walumbwa & Weber, 2009).

10.2.1.3 Social dynamics theories

The latest leadership theories that have emerged focus on the relationship between leaders and followers, and encompass transactional and transformational leadership, team leadership and servant leadership. Burns (1978) argues that transactional leadership happens when one person initiates contact with others in exchange for something valuable. According to Burns (1978), transactional leadership is premised on the exchange of favours that occur between leaders and followers, and the reward or punishment of good or poor performance.

Transformational leadership is based on the importance of inspiring people to a common purpose through self-reinforcing behaviours that followers achieve by successfully completing a task and receiving intrinsic rewards. This theory perceives transformational leaders as role models that are capable of motivating and inspiring their followers by identifying opportunities, providing meaning, and clearly articulating a strong vision for the future (Oke, Munshi & Walumba, 2009).

Team leadership is premised on the dynamics of leading within groups. This theory is associated with relationship-centred behaviour (Norhouse, 2004). It perceives leadership as central to facilitating the team's dynamics in order to improve team effectiveness. DuBrin (2000) argues that the most effective strategy for a team leader is to promote the attitude that working together effectively is an expected standard of conduct.

Servant leadership, as described by Greenleaf (1991), is largely informed by the willingness to serve. This theory postulates that serving comes first, followed by an aspiration to lead that is brought about by conscious choice. The servant leadership theory perceives leadership as stewardship; serving followers in such a way that they contribute to the fulfilment of one's organisational goals (Farling, Stone & Winston, 1999).

It is worth noting that these Anglo-American leadership theories have enriched the conceptualisation and understanding of leadership in the West. However, they are not culturally neutral and not universal as they represent a one-sided perspective of the world reminiscent of the colonial era (Blunt & Jones, 1997; Jaya, 2001; Jones, 2006). This necessitates a contextualised understanding of leadership in Africa.

10.2.2 Leadership in Africa

The research on leadership in Africa covers numerous themes, rendering it difficult to come up with a distinctly African theory of leadership. This literature review is therefore both a descriptive diachronic analysis of the literature, and a synchronic analysis.

10.2.2.1 Leadership styles

Mazrui (1969) is one of the first authors to make a solid contribution to African leadership styles. Mazrui (1969) identifies four categories of African leaders: intimidatory leaders, patriarchal leaders, leaders of reconciliation and leaders of mobilisation. According to Mazrui (1969), an intimidatory leader uses coercion to assert his authority. A patriarchal leader is either permissive, preferring to withdraw from involvement in the affairs of the nation and dominate the scene from a god-like position in the background, or interventionist, determining the direction of national change. Mazrui (1969) further postulates that a reconciliation leader depends on the effectiveness or qualities of tactical accommodation and a capacity to discover areas of compromise between otherwise antagonistic viewpoints. A leader of mobilisation, according to Mazrui (1969), relies more on ideological factors than do the other three kinds of leaders, and requires personal charismatic qualities to influence his followers.

The suppositions of Mazrui (1969) about the different types of leaders are in line with the work of Burns (1978) on political leadership. Whereas the research of Burns (1978) strongly influenced the development of transformational leadership theory (Yukl, 2010), Mazrui's work influenced general leadership theory in the African context.

In contrast to the inductive approach of Mazrui (1969), Klinghoffer (1973) and Kofele-Kale (1978) applied existing theory to the phenomenon of leadership in Africa. Klinghoffer (1973) utilised the concept of charismatic leadership and argued that charismatic leaders in Africa arose because of fragile and weak institutions. Kofele-Kale (1978) went further to modify the existing theory in the light of African political realities. He identified instrumental leadership as the major problem facing leadership in Africa and contrasted it with what he termed 'societal leadership'. According to Kofele-Kale (1978), an instrumental leader uses power and influence, primarily to pursue private goals, and only secondarily to further community objectives. In other words, considerations of the self are of paramount importance over the aggregate interests of society. Kofele-Kale (1978) provides a number of sociological explanations for instrumental leadership. According to Kofele-Kale (1978), a societal leader is a public person first, and only secondarily a private person, thus subordinating narrow privatistic goals for broader community goals regarding objectives. Power and influence are only important to the extent that they can be effectively harnessed for the solution of human problems.

Le Vine (1977) approaches the identification of African leadership styles from a different perspective than those adopted by Klinghoffer (1973) and Kofele-Kale (1978). He proposes that African leadership styles should be analysed in terms of three elements in their respective political environments. According to Le Vine (1977), in the first instance, the role, style and image of African political leaders should be balanced between the expression of a leader's personality and their response to the complex of pressures attending and impinging upon their role. Secondly, he argues that African leaders adopt role images that affect both them and their followers to induce submission, acquiescence or support, as well as to satisfy their own role cognitions. Thirdly, he identifies significant differences between pre-independence and post-independence leadership, arguing that, whereas African political styles before independence tended to reflect the constraints imposed on them by European expectations of role performance in European-generated institutions, those that followed independence tended to reflect the extent to which these constraints were loosened, or rejected entirely.

10.2.2.2 Traditional leadership

Miller and Skinner (1968) were among the first researchers to examine traditional leadership in post-independence Africa. Their work was a fairly comprehensive attempt to address the complex issue of previously co-opted traditional leaders in Africa's new democracies. They identify three forms of syncretistic leadership: alliance, coercion and mutual hostility. According to Miller and Skinner (1968), alliance occurs when communication between the traditional leader and the modernising agent is established, and the traditional leader translates the desires of the modernising agent to the people. These authors define coercion as the bureaucratic pressure that the traditional leader applies to gain partial cooperation.

Mutual hostility, according to Miller and Skinner (1968), is when the relationship between the two leadership groups has broken down and syncretistic leadership is non-existent. While their conceptualisation of syncretistic leadership has not resonated with a large number of theorists, their problematisation of traditional leadership and their analysis of the tension with eventually deliberative democracy has remained valid.

LiPuma and Koelble (2009) address traditional leadership from the perspective of the role of traditional leaders in South Africa. Their work is a key contribution to research on traditional leadership in African democracies. Their central question is whether or not traditional leadership can, in fact, constitute a potentially indigenous form of participatory deliberative democracy. They synthesise research on the role of traditional leaders in Africa by highlighting two characteristics of traditional leadership in post-colonial societies: firstly, the character of leadership in response to changing political landscapes, including those that predate colonialism; and secondly, traditional leadership as deeply decentralised and thus open to local interpretation in its conception and institutionalisation. After investigating the phenomenon of traditional leadership in South Africa, they conclude that current conditions are likely to entrench autocracy, patrimony and despotism, and if left without citizen education, will not lead to the reformation of the institution and the creation of oversight and accountability.

Their conclusion is discordant with the contributions of Lutabingwa, Sabela and Mbatha (2006) and Fokwang (2005). According to Lutabingwa et al. (2006), traditional systems of governance have democratic traditions and are in the process of converging with multiparty democracy through changes such as elected Indunas. They also refer to the Bafokeng, where ‘the Kgosi’, the most senior person in the community, carries out the will of the people, political representation at multiple levels of local government, even a system for electing village representatives to the Council. Lutabingwa, et al. (2006) and Fokwang (2005) conclude that the shared local governance of elected officials and traditional leaders is possible and preferable.

The literature also examines the issue of legitimacy of traditional leadership in post-colonial Africa. Samatar (1997) postulates that the legitimacy of traditional leaders can only be adequately understood when the role of traditional leaders in colonial regimes is taken into account. According to Samatar (1997), the difference between the colonial leadership structures institutionalised in Botswana and Somalia illustrate this point. Samatar (1997) demonstrates how Botswana’s monarchical social structure was captured by colonial powers. Pre-colonial Somalia, on the other hand, had a cooperative and network-based social structure, based on the household, shared religion and kingship. Somali chieftainship was created by colonialists and resulted in quasi-traditional leaders that derived their authority from the resources and coercive power of the colonialists (Samatar, 1997).

10.2.2.3 Political leadership

A vast body of literature examined illegitimate forms of political leadership. Most authors, implicitly or explicitly, concur that authoritarian leadership constitute illegitimate forms of political leadership.

Examples include Blunt and Jones (1997), Clark (1994), Gramby-Sobukwe (2005), Kebonang (2005), Sheik-Abid (1981) and Wai (1979). Some authors use individual African leaders to illustrate this point, such as Idi Amin in Uganda. These authors include Gupta (1972), Obiakor (2004) and Tindigarukayo (1988). Others, such as Kofele-Kale (1978), use Mobutu Sese Seko of the Congo to illustrate this point. Legitimate political leadership, on the other hand, is largely associated with electoral, participatory and, in some instances, deliberative democracy. Such authors include Bakhari (2003), Clark (1994), Dashwood (2002), Frank (1981), Gray and McPherson (2001), LiPuma and Koelble (2009) and Rotberg (2009).

In the South African context, it is worth noting that, during apartheid, autocratic leadership dominated, whereas, post-apartheid, democratic leadership took root. During apartheid, autocratic leadership, as conceptualised by White and Lippitt (1960), was dominant. According to these authors, autocratic leadership implies a high degree of control by the leaders. White and Lippitt (1960) also conceptualised democratic leadership, which dominated post-apartheid leadership, as group participation, discussion and group decisions encouraged by the leader.

White and Lippitt (1960) identified the autocratic leader with the authoritarian leader. They are supported by other authors who placed the autocratic leader and the authoritarian leader in the same category without distinguishing between them (Anderson, 1959; Bass, 1990; Bell, 1965; Kunter, 1965; Stogdill, 1974). Even though the definitions of autocratic, authoritarian and undemocratic leadership differ in literature, coerciveness, control and directiveness remain as the common characteristics of these leadership styles, as was the case during apartheid. The integral characteristic of democratic leadership is participation, as has been the case in post-apartheid South Africa.

Over several decades, control and participation have been defined as the main characteristics of autocratic and democratic leadership styles, respectively. While participation is a core function of democratic leadership (Luthar, 1996), directive control and a top-down style, with a heavy emphasis on command and control, are the main characteristics of autocratic leadership.

At the project management leadership level, political infighting and related clashes between the political and management components in government in South Africa have adversely affected service delivery (Masuku & Jili, 2019). The public sector in an African context has always been deemed to be political in nature, and South Africa is no exception (Booyesen 2012; Cameron 2003; 2010; De Visser 2010). On a more practical and realistic level, challenges have also been experienced relative to the political-administrative interface in the different spheres of government.

The proponents of the political bureaucratic model argue that elected office-bearers have a mandate to manage and control the public service. This means that there is no difference between politics and administration, and between party and state. However, Koma and Modumo (2016) argue that administrative components should be free from politicisation because services in the public sector should be equitably rendered and not furnished only to individuals who have a partisan interest.

Mafunisa (2003) also argues that the politicised bureaucratic model gives politicians the power to determine how bureaucracy operates in the public sector. Politicians are dominant and lead the administration under the politicised bureaucratic model. Tshishonga (2014) asserts that, in South Africa, the politicised model is anchored in the deployment policy adopted by the African National Congress (ANC), which insists on recruitment from within the party and that potential recruits are made to understand and accept the basic policies and programmes of the party.

10.2.3 Ethics and leadership

Aronson (2009) defines ethics as the study of standards for determining what behaviour is good and bad or right and wrong. He postulates that morality, on the other hand, is largely concerned with the effects of actions on other people. According to Aronson (2009), the application of this definition to leadership means that ethical leadership consists of two basic elements: firstly, ethical leaders must act and make decisions in an ethical manner; secondly, ethical leadership must be reflected in the manner in which leaders interact with people daily, in their attitudes, and the manner in which they lead their organisations.

Ethical leadership is a style that seeks to motivate ethical behaviour in followers through the display of the thoughts, values, attitudes and good behaviour of leaders (Martinez, Ruiz & Ruiz, 2011). According to these authors, when a leader displays morally good behaviour and is also a good person, many followers will emulate this behaviour, which will contribute to an ethical organisation.

There are two leadership styles that involve ethical theories. Transformational leadership influences followers through the sharing of a collective vision and by motivating them to look past their personal interests for the benefit of the organisation benefits. This theory is premised on the hypothesis that people are obliged to help others with no expectation of personal gain, thus promoting a positive effect on the ethical organisational climate, and promotes values such as honesty, loyalty and fairness (Groves & LaRocca, 2011). Transactional leadership, on the other hand, influences followers by controlling their behaviour, rewarding approved behaviour and improving performance by correcting problems using corrective actions (Groves & LaRocca, 2011).

Ethics in government leadership is the main ingredient of good governance, and ethical leaders play a crucial role in effective public service delivery. The moral credibility of individual leaders plays a significant role in decisions made by government leaders (Groves & LaRocca, 2011).

10.2.4 Accountability and good governance

International literature identifies various definitions and descriptions of accountability. The literature has examined accountability as a medical, accounting or legal concept, a virtue, and as a social or institutional arrangement. In the public sector context, the literature identifies various types of accountability, including political, legal, ministerial, democratic, bureaucratic, parliamentary and social accountability. In practice, accountability is a number of terms such as answerability, transparency, visibility, controllability, responsibility or responsiveness. In essence, accountability is perceived as basically providing an account.

Accountability is, in many respects, perceived as the hallmark of modern democratic governance (Bovens, 2005). Finn (1994) argues that the entrustment of public power to others means that there is an important and overarching constitutional principle that those entrusted with public power are accountable to the public for the exercise of their trust. Barnes and Gill (2000) agree and postulate that public trust in the public sector is correlated to the level of confidence the public has in the public sector. Finn (1994) continues to argue that being accountable to the public is an obligation applicable to public office bearers and a burden placed on the public sector when it accepts responsibility for exercising powers on behalf of the public.

These postulations are crucial in explaining accountability as a relationship with the public in a representative democracy. This has important implications for the interaction between the public sector and the public. The public can therefore measure the trustworthiness of the public sector at any time that it interacts with it (Thomas & Min, 2013.) However, O’Neill (2013), cautions that judging trustworthiness could be difficult and more subjective than competence, reliability and honesty. It is well established in literature that public accountability emanates from a trust relationship between the public sector and the public. It is essentially about the public sector reflecting its competence, reliability and honesty in a manner that enables the public to measure its trustworthiness in utilising public funds and resources. This description of public accountability provides a more citizen-centred perspective of public sector accountability in a representative democracy.

In this regard, public accountability is a means to an end rather than an end in itself. Greiling (2014) explains that public accountability is an instrument that signals competence and organisational trustworthiness. The manner in which the public sector interacts with the public is a function of multiple factors, including the form of democracy, the way the public sector is organised and managed, and – importantly – the make-up and expectations of the public (Mulgan, 1997). Stewart (1994) argue that public accountability requires many channels by which accounts are given and received, and a clear line by which those who exercise collective choice are held to account. Finn (1994) postulates that there are various avenues through which public accountability can be established indirectly, such as Parliament and the Auditor-General, and through superiors or peers. Indirect avenues use representatives of the public to hold the public sector accountable. Direct public accountability can take place through avenues such as general government elections, referenda, social media, special interest group scrutiny, consultation and complaints processes.

10.2.5 Leadership in public service

Leadership is one of the key factors in the life of the organisation, including the public sector. Public managers across all managerial levels and spheres of government are confronted with a dual responsibility of leading and managing. The public sector is under continuous pressure to improve service delivery and to address the diverse needs of a heterogeneous society. Therefore, there is a growing demand for public sector leaders to carry out managerial and leadership tasks, and to deliver a fundamental process of change, restructuring, process improvement and transformation.

Auriacombe (2014) argues that the ability to acquire and apply that knowledge also varies as a function of overall intelligence, charisma and other innate personal characteristics. Whereas leadership skills can be developed, public institutions are also required to meet their future leadership needs by ensuring, through recruiting and selection processes, that a sufficient proportion of new appointments have high leadership potential (Auriacombe, 2014). According to Auriacombe (2014), public sector leaders must be developed to demonstrate versatility and adaptability to change, professionalism and exemplary ethical conduct, technical and tactical proficiency, excellent communication skills, the ability to build cohesive teams, analytical problem-solving skills, the willingness to seize initiative, the independence and confidence to operate with minimum guidance, and the insight and foresight of a visionary.

Public sector leaders are confronted with highly dynamic socio-economic and political realities that are different from those faced by private sector leaders. They account to elected political leaders and operate within different governance structures from those of the private sector. Public sector leadership and accountability is therefore different from that of the private sector, primarily because public services are funded by the taxpayer, following political priorities and decisions. Consequently, public leaders do not enjoy the freedom to budget for all the service demands of the people. This is contrary to the private sector leaders who can often justify extra spending if it generates extra revenue (Nkwana, 2014). Leadership in government is challenged from different areas and levels. Firstly, the dynamics of the environment in which public leaders operate, generally does not support good leadership. The inflexible structures, bureaucracy, legislative limitations and organisational culture of the public restrict the application of true leadership. Effective leadership entails sufficient freedom to lead, support and inspiration from others within and beyond departmental parameters, defining and communicating radical goals and achieving them by unconventional means. This type of risk taking and leadership taking tends to be discouraged in the public sector (Nkwana, 2014).

The large number of service delivery protests in South Africa is in many ways a reflection of the failure of public leadership across the national, provincial and local sphere to deliver service effectively and efficiently to its citizenry (Tirivangasi & Mugambiwa, 2016). Siddle and Koelble (2012) note that South Africans are reminded almost daily of incompetence, corruption and the collapse of service delivery. Chapter 10 of the Constitution, section 195(a), also established the key principles of a representative, transparent and responsible public service (Kotze & Van der Walt, 2003).

These principles were meant to redirect the post-apartheid public service by breaking away from the discriminatory, racialised and disconnected apartheid government. Despite service delivery being a chief priority, intense challenges that confront the public service are still apparent. The dominant issues kindling the service delivery protests are unethical conduct, financial mismanagement, maladministration and weak municipal governance (Powell, n.d.).

10.2.5.1 The leadership and management of big infrastructure projects

The literature defines big infrastructure projects according to the perspectives of investment, operations and the economy, respectively (Flyvbjerg, 2014; Brookes and Locatelli, 2015; Mišić and Radujković, 2015).

The operations perspective entails implementation timeframes and socio-economic and environmental impacts, among other things (Brookes & Locatelli, 2015). The economic perspective concentrates on the contextual issues that impinge on a project (Locatelli, Littau, Brookes & Mancini, 2014). Haidar and Ellis (2010) differentiate big infrastructure projects from other projects by size and the degree of complexity involved. There are other metrics, such as budget and schedule thresholds, which are also vital characteristics of big infrastructure projects. However, the literature defines them as primarily arbitrary and not universally applicable across different settings (Brookes & Locatelli, 2015).

Johnson and Mulder (2016) also identified additional characteristics that differentiate big infrastructure projects from ordinary projects, these include, among others, long implementation periods, multiple and diverse stakeholders, novel technology and high social and political significance. The interaction among these diverse attributes has been identified by the literature as one of the key sources of big infrastructure project complexity (OMEGA Centre, 2012).

10.2.5.2 Processes and competences for managing complexity

The literature attributes the failure of big infrastructure projects to some of the gaps in traditional project management approaches, tools and processes (Johnson & Mulder, 2016). Applying the Pareto principle, 80% of big infrastructure project failure is a result of human factors, in general, and project management-related processes, in particular (Shenhar, 2011). Given that big infrastructure projects are complex, the literature suggests that they require unique approaches and delivery models (Johnson & Mulder, 2016). Nyarirangwe and Babatunde (2016) propose the delicate balancing of administrative, enabling and adaptive leadership models, in line with the levels of complexity involved for big infrastructure projects to be successfully implemented. They conceptualised this balancing process under the complexity-leadership alignment model. The literature also links the complexity of big infrastructure projects with their size through the size-complexity matrix framework that has been used to determine the required delivery competences and processes (The Standish Group, 2012).

Consequently, the literature calls for a distinction between competences and processes required to implement big infrastructure projects and those commonly found in traditional project management (Australian Constructors Association, 2015). Johnson and Mulder (2016) argue that such competences and processes should be adaptable and emergent, so that they are able to meet the unique features of complex adaptive systems. They are supported by Flyvbjerg (2014) who likens the competences and processes required to deliver big infrastructure projects to the need for a jumbo jet pilot's licence.

According to Flyvbjerg (2014), implementing big infrastructure projects using traditional management competences and processes is like attempting to fly a jumbo jet using a motor vehicle driver's licence, translating into the widely reported failures.

10.2.6 Corruption on big infrastructure projects

The literature has examined corruption on big infrastructure projects.

Tanzi and Davoodi (1998) investigate the link between corruption and poor quality of the scope delivered. Gillanders (2014) shows that regions with higher corruption than the national average tend to have worse infrastructure than others. Van de Graaf and Sovacool (2014) demonstrate that corruption can be a source of project failure, especially in highly corrupt countries. Ma and Xu (2009) identify two major acts of corruption: to unlawfully obtain the contract during the bidding and/or tender stage, and to raise prices or reduce the quality of engineering standards during construction.

Corruption affects the performance of big infrastructure projects, leading to the delivery of works with limited social benefit, poor economic returns and over cost (Wells, 2014), as well as building poor quality infrastructure in the wrong place. Corruption affects the quality of the project, starting from project preparation, and continues during its implementation with further major acts of corruption (Wells, 2014). It delays delivery times and increases infrastructure costs.

10.3 Methodology

The overriding aim of this study is to provide qualitative information on the relationships between leadership, management, governance, intergovernmental relations and service delivery.

This broad aim of the study has two components:

- Address the service delivery challenges related to intergovernmental relations, as well as leadership and governance
- Address the issue of accountability

10.3.1 Intergovernmental relations, leadership and governance challenges – catalytic housing project case studies and Giyani Bulk Water Project

The first component of the study seeks to undertake an analysis of the impact of leadership and governance on service delivery, as well as how the current intergovernmental relations system affects efficient and effective planning, and the implementation of infrastructure projects.

The study adopts the qualitative approach in the form of a case study. In this context, the human settlement sector was selected. The sector is implementing a number of human settlement projects, including catalytic housing projects. The rationale behind choosing the DHSWS as a case study is because housing delivery is a concurrent national and provincial competency, but is delivered by municipalities. For the purposes of this study, two catalytic housing projects were selected:

- **Greater Cornubia in KwaZulu-Natal:** The eThekweni Metro aimed to deliver 25 000 housing opportunities, with 600 units already completed. Its implementation reflects a good partnership between government and the private sector (Tongaat Hulett Sugar).
- **Duncan Village in the Eastern Cape:** The Buffalo City Metro expected to deliver 21 235 housing opportunities. It experienced a number of challenges, which resulted in court interventions, among other things.

The rationale for these two catalytic housing projects is premised on their divergent performance. The Greater Cornubia project is relatively well implemented and is expected to be regarded as a best practice case study, whereas Duncan Village is experiencing a number of implementation challenges and is expected to expose service delivery challenges related to intergovernmental relations, as well as leadership and governance. Information-gathering methods entailed interviews with the DHSWS, the Housing Development Agency (HDA) and with municipal officials of the eThekweni and Buffalo City metros. Furthermore, content document analysis was conducted with respect to these projects.

The Giyani Bulk Water Project was selected on the basis of it being one of the big (infrastructure) water projects that was intended to be completed in 2018/19, and was expected to make a big difference in the lives of the residents of 55 villages in Giyani, Limpopo. The project was not completed on time, which resulted in cost escalations. While the plan was to also have engagements in the form of interviews with relevant officials and project managers (just as in the case of the catalytic housing projects), challenges were encountered, and these planned engagements did not materialise. However, key lessons could be learnt from information gathered through secondary sources which confirmed that leadership and managerial challenges were encountered during the implementation of the project.

10.3.2 Accountability

One of the consequences of the lack of or ineffective accountability is that irregular expenditure may continue unabated if there are no punitive actions for wrongdoing (being held accountable for failure to comply with legislation or internal controls). In this case, the study used the audit outcomes of the Department of Water and Sanitation from 2014/15 to 2018/19 to determine whether there had been an increase or decrease in irregular expenditure. This is in line with the AGSA's report, which indicated that municipal irregular expenditure had ballooned by more than 50%. This could be attributed to a lack of internal controls and accountability.

10.4 Profile of the catalytic housing projects and Giyani Bulk Water Project

10.4.1 Duncan Village catalytic housing project

Duncan Village is located in Buffalo City Metro in the Eastern Cape. This catalytic housing project is expected to deliver 7 714 sites, 7 551 single residential units and seven social housing units over a period of five to ten years.

The implementation of Duncan Village exhibits a lack of involvement and communication with the community, beneficiaries, private sector and key stakeholders, as well as a lack of proper coordination and communication between the municipality and the province.

The project has been faced with a number of challenges as a result of a non-consultative leadership style and decision making, and these challenges resulted in delays and the intervention of the judicial system. Lack of adequate consultation, for example, led to the appointment of two service providers to implement the same project in Duncan Village (one appointed by the HDA and the other one by the Buffalo City Metro). Some of the challenges could not be resolved until legal arbitration had taken place. This illustrates how non-consultative leadership and decision-making result in working in silos with serious implications for actual infrastructure delivery and inefficiencies as funding is diverted to litigation.

One of the municipalities in the case study expressed that, in some cases, they are not properly consulted by the provinces or national government to be part of key decisions, including the appointment of service providers (contractors). This indicates that, while actual infrastructure project delivery occurs within the space of municipalities, there is insufficient consultation with municipalities. Insufficient consultation with municipalities implies that even communities and actual beneficiaries are not sufficiently involved in the implementation of infrastructure projects, but the same municipalities are expected to monitor the delivery process, while beneficiaries are expected to accept the infrastructure that is delivered (which may not meet their needs). For a catalytic project (this may also apply to other infrastructure-related projects) to be successful, sufficient consultation should take place, including the appointment of a Community Liaison Officer to facilitate engagement between the contractors and the community.

10.4.2 Greater Cornubia catalytic housing project

The Greater Cornubia project is a greenfield housing development in KwaZulu-Natal, in the north of Durban. The project is a mixed-use and mixed-income development, and the first in KwaZulu-Natal that maximises economic opportunities by incorporating some 408 ha of land for industrial and commercial bulk use. This includes the private investment in the Cornubia business and industrial estate, a business and retail hub and the N2 business estate. The project is expected to deliver approximately 57 707 housing opportunities with a variety of housing options to a wide range of income groups. Both government and the private sector will provide rental stock, gap market housing,⁴⁷ the ownership of serviced stands, and subsidised units.

⁴⁷ Gap housing refers to those households that are earning above the higher band of the housing subsidy ceiling, and therefore do not qualify for fully subsidised housing, but they are not earning high enough to afford their own housing or through the mortgage lending stream within financial institutions and banks. These households earn between R3 500 and R15 000 per month.

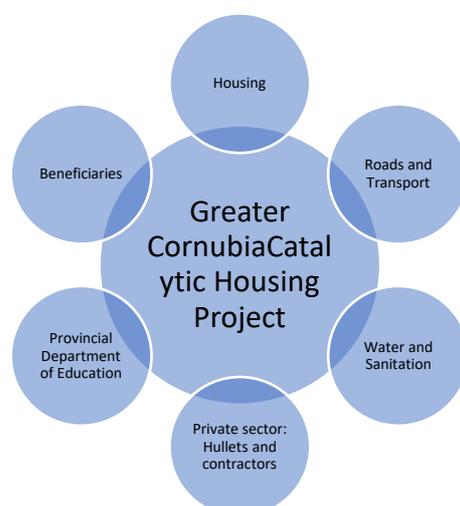
The key private sector development partnership opportunity is with Tongaat Hulett Developments. The project is in the implementation stage, with Phase 1 of the project under construction. Some 583 units were completed by the end of December 2015. The Cornubia industrial and business estate is serviced, and some industries are already operational and providing job opportunities. The retail park is under construction. The detail planning for Phase 2 has commenced.

The Greater Cornubia catalytic housing project has shown the success of a consultative leadership style. The project, implemented by the eThekweni Metro from the conceptual and planning stage, involved a number of stakeholders over and above the intended beneficiaries. The project is led by the eThekweni Metro, working closely with the provincial and national departments of Human Settlements and the HDA. The project is characterised by an intensive consultation process between different departments within the municipality, including human settlements, roads and storm water. External stakeholders that contributed to the success of the project include Tongaat Hulett, which contributed land previously used for the production of sugar cane.

At national level, the South African National Roads Agency Limited (SANRAL) was consulted to ensure that the interchange was properly constructed and in line with expected traffic volumes. Consultation also took place at provincial level to ensure proper road infrastructure planning, funding and provision. As schools would be required for the children of beneficiaries of the housing project, intensive engagements were also conducted with the provincial Department of Education. Planning included land allocated for early childhood development centres. Consultations were also conducted with the intended beneficiaries to ensure that the housing units delivered catered for their needs. In the process, it was identified that some of the intended beneficiaries were living with disabilities, so the project managers reviewed the architectural plans to ensure that this group of beneficiaries was catered for, including ensuring that these they would be allocated units located on the ground floor.

Figure 10.1 illustrates some of the key stakeholders consulted who were involved in the project.

Figure 10.1: Key stakeholder engagement in the Cornubia catalytic housing project



10.4.3 Giyani Bulk Water Project

The Greater Giyani Local Municipality consists of approximately 250 000 people, half of which are of working age, but unemployed; most have an income of less than R800 per month. In 2011, almost 70% were reported to be indigent.

Household water for this municipality initially came from boreholes with limited capacity and a small local dam. More water is available in the Nandoni Dam, which is 45 km away from the interior of the municipality. When a drought hit the area in 2009, water supply challenges were aggravated, and the DHSWS initiated an emergency programme to bring water from the Nandoni Dam to the local Giyani water works. In 2011, the Mopani District Municipality, which is responsible for the region, reported that Giyani had enough water for basic services, but that it did not yet have piped water in all the villages. The project was conceptualised as an emergency intervention to restore and supply clean water to the 55 villages in Giyani. The project was initially scheduled to be completed during 2018/19, but remained incomplete by 2021/22 due to a number of supply chain irregularities, among other things. Costs have escalated substantially.

10.5 Analysis and findings

10.5.1 Key findings on the implementation of catalytic housing projects

With respect to the catalytic housing case studies, findings revealed the following:

Unfunded business plans: All catalytic housing projects are developed and approved according to determined requirements through various processes, including the approval of developed business plans by the municipalities, as well as by provincial and national government. A key challenge, however, is that these approved business plans are often not properly costed. This finding is aligned with the literature on the leadership and management of big infrastructure projects, which distinguishes the metrics of catalytic housing projects such as budget as one of the key sources of big infrastructure project complexity to warrant specialised project management and leadership (Brookes & Locatelli, 2015).

Lack of dedicated and adequate funding to implement projects: Catalytic projects are funded by the provincial government through the Human Settlements Development Grant (HSDG) and by the metros through the Urban Settlements Development Grant (USDG). Within the HSDG, provinces have the discretion to make allocations to catalytic housing projects. Similarly, metros also enjoy discretion on making allocations to catalytic housing projects from the USDG. Although catalytic projects are determined and agreed at Ministerial and Member of the Executive Council (MINMEC) level, divergent provincial and municipal priorities in housing projects could exist, resulting in inadequate funding for catalytic projects, which hampers the attainment of targeted housing units within the targeted timeframes.

The allocation of the HSDG to provinces means that, in some cases, municipalities are in the dark regarding funding for catalytic projects. This is further exacerbated by the slow process of accrediting municipalities with housing functions at Level 2 and Level 3.

This ensures that, in the main, the flow of HSDG funding is from national government to the provinces, rather than directly to the municipalities. One of the municipalities interviewed indicated that its Level 2 accreditation had been revoked, reflecting a regression in its status and its ability to receive and manage housing funding. Interaction with the municipalities and the HDA revealed that, given the difficulties in accessing funding for catalytic and other housing projects, municipalities resort to utilising their own budgets, on the understanding that they will be refunded by the provinces. However, this hardly ever materialises. This finding confirms the literature reflections on public sector leadership, which postulate that leadership in the public sector is confronted by the challenge of improving service delivery to meet the diverse needs of a heterogeneous constituency (Nkwana, 2014). It is also aligned with the literature on the complexity of implementing big infrastructure projects (Haidar & Ellis, 2010).

Intergovernmental coordination in the implementation of projects: The wide range of role-players in the implementation of catalytic projects includes, among others, role-players in the human settlements, roads and transport, and water and sanitation sectors. These stakeholders have divergent priorities in terms of infrastructure plans and sources of funding. The HDA is mandated with the project management of catalytic projects. However, due to the lack of capacity in several municipalities, the DHSWS decided to expand the HDA's mandate to include implementation. This effectively results in both the HDA and the municipalities becoming implementers of catalytic housing projects. Tensions between municipalities and the HDA are therefore inevitable. Engagements with municipalities revealed that, in instances where they are not implementors of a catalytic housing project, they are not properly consulted on key decisions, including the appointment of service providers (contractors), even though the project is implemented within their jurisdiction. Poor intergovernmental coordination delays project implementation. A case in point is the Duncan Village catalytic housing project, where two service providers were appointed (by the HDA and by the municipality, respectively) for the same project. This resulted in massive delays in the implementation of the project and costly legal action. This finding is in line with the situational theories of leadership when task-centred leaders (provincial leadership in this case) perceive their obligation as overseeing their subordinates (municipalities in this case) and telling them what to do, how to do it, and when and where to do it. It is also aligned with the theory of authoritarian leadership, which, according to the literature, is an illegitimate form of political leadership (Blunt & Jones, 1997).

Political interference: The interviews with municipalities accentuated instances of political interference in the implementation of catalytic housing projects. One of the municipalities narrated an occurrence where a province appointed a contractor justified as being a political instruction from higher political principals. Municipal officials are unable to challenge political instructions, no matter how disruptive they may be, in the implementation of catalytic housing projects. Furthermore, political factions within political parties play themselves out in the implementation of catalytic housing projects, given party political dynamics. One of the municipalities in the case study indicated that tensions between the mayor (who belonged to a particular faction of the political party governing the municipality) and Members of the Executive Council (MECs) (aligned to another faction) contributed to a delay in the implementation of a catalytic housing project.

This finding is in line with the literature on political leadership in the South African context, which asserts that political infighting and related clashes between the political and management components of government adversely affect service delivery (Masuku & Jili, 2019).

Absence of policies and regulations: The presence of policies and pieces of key legislation plays a key role in resolving several issues. The absence of policies and clear regulatory frameworks means that the adjudication of issues pertinent to the implementation of catalytic projects is left to the judicial system⁴⁸. This implies that the Judiciary instructs the Executive on what is to be done on policy matters that could easily have been resolved through policy and legislation. This finding is in line with the literature on leadership in the public sector, which postulates that there is a growing demand for public sector leaders to carry out managerial and leadership tasks, and to deliver a fundamental process of change, restructuring, process improvement and transformation (Nkwana, 2014).

Lack of availability of land: In urban settings or in metropolitan areas, one of the major constraints hampering the implementation of catalytic housing projects is the unavailability of developable and suitably located land. This is primarily driven by urbanisation and the influx of individuals from within and outside South Africa, resulting in a mushrooming of informal settlements. While qualifying informal settlement dwellers could be accommodated through the provision of housing opportunities, the bigger challenge is with respect to those who do not qualify. Municipalities must also find alternate ways to accommodate non-qualifying informal settlement dwellers. In some instances, once a municipality has identified land for a catalytic housing project, individuals are quick to invade that land and construct squatter camps, expecting to be provided with alternative accommodation and housing units once a housing project is completed. Interviews with municipal officials revealed that law enforcement is failing to assist municipalities in dealing decisively with land invasions. While the South African Police Service (SAPS) can enforce court orders, these are only enforceable in its physical presence.

10.5.2 Key findings on the Giyani Water Services Project

Supply chain irregularities and project delays: The DHSWS used the regional bulk infrastructure grant to fund the project and appointed the Mopani District Municipality to implement it. In 2010, a service provider was appointed to build the Nandoni pipeline. However, the appointed service provider was only formed after it had secured the tender. In essence, this meant that this service provider did not exist before the tender was issued, and it had no employees, assets or income. Consequently, the award was legally contested by an unsuccessful bidder. In 2012, the court ordered the contract to be cancelled, citing fraud by the municipality.

⁴⁸ See the case of Duncan Village.

A series of appeals ensued, resulting in a decision that was only confirmed two years later, in 2014, resulting in a two-year delay in the implementation of the project. This shows a lack of technical leadership as it relates to supply chain management issues. This finding is in line with the predictions of the literature on corruption on big infrastructure projects which state that corruption affects the performance of big infrastructure projects, resulting in the delivery of works with limited social benefit, delays in delivery times and increases in infrastructure costs.

Poor political leadership: The series of appeals culminated in an order by the Supreme Court of Appeal the DHSWS must determine the extent of the work necessary to perform remedial work to complete the construction of the pipeline and other works for the purposes of publishing a tender. However, the then Minister of Human Settlements, Water and Sanitation directed Lepelle Northern Water (Lepelle) to act as her implementing agent in violation of the Supreme Court order, which required a tender for the remediation and completion of the works. The Minister further instructed Lepelle to appoint a service provider, which was done without issuing a tender as per the court order. Consequently, the service providers that were appointed by Lepelle to complete the project, instead, initiated other interventions that were outside the scope of the project. These interventions included rehabilitating boreholes and building emergency reservoirs, reticulation systems and new water treatment facilities. All these project scope creeps were done without proper technical planning, budgeting or procurement processes. This non-compliance with a court order, not only demonstrate poor political leadership, but also has cost implications, given that it could result in further legal contestations and project delays. This finding confirms the postulations by the literature on political leadership in the South African context, which assert that administrative components should be free from politicisation, and that the politicised bureaucratic model gives politicians the power to determine how bureaucracy in the public sector operates, thus making politicians dominant and leading the administration under the politicised bureaucratic model. It also reflects a lack of accountability of the political and administrative leadership.

Escalation of project costs: The Giyani Water Services Project was initially costed at R247 million. During the 2016/17 audit, AGSA investigated the project, and found that R2.5 billion had already been spent, and that this was projected to increase to R2.8 billion. The AGSA found that the contractors had been irregularly appointed, and that many of their claims were clearly false (AGSA, 2017b). So, an incident of tender fraud, as detailed above, triggered a frenzy of mismanagement and major corruption, resulting in a massive escalation of project costs. There is potential for further cost escalation because the project is ongoing and has not yet been completed. This finding is aligned with the literature on the leadership and management of big infrastructure projects. It identifies the metrics of big infrastructure projects, including budget as one of the key elements of big infrastructure project complexity.

10.5.3 Findings on leadership style and the effectiveness of infrastructure projects and accountability

Leadership style and the effectiveness of infrastructure projects: The style of leadership does not only determine the success or failure of an infrastructure project, but also the effectiveness and relevance of the infrastructure project being delivered.

Dictatorship would entail implementing an infrastructure project in a community and for the intended beneficiaries without involving those communities and intended beneficiaries, but expecting the beneficiaries to accept and be satisfied with the infrastructure delivered and provided to them. This has been common in infrastructure delivery in South Africa with respect to housing delivery for quite some time during the apartheid regime. democracy. Even during the early years of democracy, the South African government continued to follow the apartheid housing delivery patterns as housing units were delivered on the periphery of the cities and without involving the intended housing beneficiaries. Therefore, while the government has delivered housing units, a number of those units are on the outskirts of the cities and have resulted in unhappy beneficiaries who continue to spend a significant portion of their disposable income on transport as those houses are located far from areas of economic opportunity.

The delivery of infrastructure without involving the intended beneficiaries results in ineffective or inappropriate and irrelevant infrastructure. In some instances, the delivery of infrastructure without involving the communities and beneficiaries has huge cost implications for the government and fiscus, for example, delivering housing units on the outskirts of cities requires public transport subsidies to assist commuters. The better solution could probably have been the delivery of cheaper rental housing units closer to areas of economic opportunity. This would only have been known by involving, engaging and consulting with communities and beneficiaries. It is, however, important to note that over and above community involvement, other key issues in the delivery of housing infrastructure include the housing policy, integrated planning and funding.

A consultative leadership style includes thorough consultation at various levels, from the planning process through to implementation. Everyone who will be part of the project, its beneficiaries and those directly or indirectly affected by the project, should not be excluded through all the stages of the project. Consultative leadership includes meeting with the community in which an infrastructure project will be located, talking to people of that community and with the intended beneficiaries. For example, for a municipality or province to implement a housing project within a particular community, engagements would be required with the citizens of the locality in which that project will be situated, as well as those who would directly benefit from the project itself: the beneficiaries who would be allocated houses upon completion of the project. In fact, consultative leadership would go as far as involving all other key stakeholders, such as the private sector and departments other than the key implementing department.

The two catalytic housing projects used as a case study – Duncan Village in the Eastern Cape (Buffalo City Metro) and Greater Cornubia in KwaZulu-Natal (eThekweni Metro) confirmed that the style of leadership and decision making is key to the successful implementation of infrastructure projects.

There are a number of role-players in the implementation of a catalytic project. Apart from the community in which the project is located and the direct beneficiaries (who would be allocated housing units upon completion), other key stakeholders or sectors include stakeholders in the human settlements (national and provincial), roads and transport, water and sanitation, health and education sectors. The private sector is also a key stakeholder as, in some instances, land is not owned by the government or by municipalities.

The implementation of the Duncan Village catalytic housing project reflects the autocratic leadership that dominated the apartheid era in South Africa. The implementation of this project is characterised by a high degree of control, coerciveness and directiveness by political leaders, thus reflecting the common characteristics of an autocratic leadership style. In contrast, the implementation of the Greater Cornubia catalytic housing project reflects the democratic leadership style that dominated post-apartheid leadership. The implementation of this project is characterised by participation, discussion, and group decisions by all stakeholders, thus reflecting the major features of the democratic leadership style.

Leaders' accountability to citizens: In terms of the Municipal Systems Act, Act No. 32 of 2000, all municipalities must develop an Integrated Development Plan (IDP) as a method to plan future development in their areas. IDPs are planning approaches for municipalities that intensively involve municipalities and their citizens to find the best developmental solutions, informed by the communities' existing conditions, challenges and resources to achieve long-term development.

While the IDP sets out the process to be followed, including community participation after it has been approved and adopted, there is generally a lack of ongoing accountability from executives or leadership (the Mayor, councillors and municipal managers). The Executive and municipality should set annual targets with respect to development and service delivery. As part of accountability to the public/citizens, mayors and municipal managers must revert back to communities on an annual basis to account for the determined targets and what has or has not been achieved.

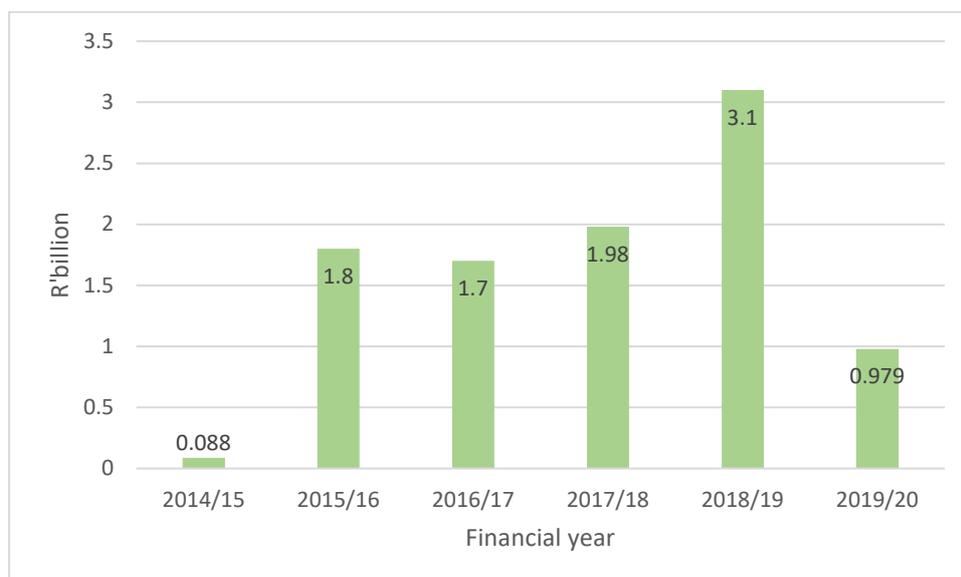
The leadership of the Greater Cornubia catalytic project adhered to this accountability policy framework, which resulted in the successful implementation of the project. However, the leadership of the Duncan Village catalytic project did not adhere to the accountability policy framework, and the project was consequently poorly implemented.

10.5.4 Irregular spending by the Department of Water and Sanitation

Irregular expenditure is expenditure that was not incurred in the manner prescribed by legislation. Such expenditure does not necessarily mean that money has been wasted or that fraud has been committed. It is an indicator of non-compliance with the process that needs to be investigated by management to determine whether it was an unintended error, due to negligence or done with the intention to work against the requirements of legislation.

Irregular expenditure for the Department of Water and Sanitation increased from R88 million in 2014/15 to R3.1 billion in 2018/19, as reflected in Figure 10.2. There was an improvement in 2019/20 as irregular and fruitless expenditure was just under R1 billion (979 million). While irregular and fruitless expenditure decreased in 2019/20 compared to 2018/19, a matter of concern is the fact that there is a recurrence of similar issues, including the extension of contracts not approved by delegated officials and irregularities in tender processes.

Figure 10.2: Irregular expenditure by the Department of Human Settlements, Water and Sanitation, 2014/15 to 2019/20



Source: AGSA (2015; 2016; 2017a; 2018; 2019; 2020)

10.5.5 Infrastructure delivery and progressive realisation of socio-economic rights

The delivery of key and basic infrastructure improves access to basic services and contributes to the progressive realisation of socio-economic rights, e.g. the right to adequate housing, which is one of the key basic human rights enshrined in the Constitution of the Republic of South Africa. The right to adequate housing is interlinked with other rights, including the right to sanitation and water. Therefore, when government fails to deliver the necessary basic infrastructure, such as housing and water infrastructure, as a result of poor leadership and governance in key sectors, it infringes on the progressive realisation of socio-economic rights.

10.6 Conclusion and recommendations

While the fiscus is constrained, financial resources made available to address service and infrastructure backlogs are not optimally utilised in some instances. Moreover, some projects are not properly planned and implemented, and therefore remain incomplete or are not completed on time, resulting in cost overruns due to various reasons, including weak leadership with respect to project planning, implementation and accountability.

Delays in the completion of infrastructure projects and cost overruns have implications for the progressive realisation of rights to basic services. This implies that ineffective leadership contributes negatively to the progressive realisation of citizens' right to basic services, and deprives citizens of these services. It is therefore key that leadership in different levels of government should always strive for the progressive realisation of rights to basic services. In essence, leadership is a key component of the progressive realisation of the right to basic services, together with other aspects, including financial and other resources. Therefore, the progressive realisation of the right to basic services is more detailed and beyond the scope of this paper, and is an area that should be considered for future research.

Findings from the study revealed, among other things, a lack of dedicated and adequate funding, a lack of intergovernmental coordination, political interference and poor political leadership, the absence of policies and regulations, supply chain irregularities and project delays, and an escalation of project costs. These findings largely confirm the literature review predictions on the different domains of leadership. Another key determinant of the failure or success of an infrastructure project is the leadership style. Findings from the study show that a consultative or democratic style of leadership resulted in the successful implementation of the Greater Cornubia catalytic housing project. However, the Duncan Village catalytic housing project was poorly implemented because it adopted the authoritarian leadership style. These conclusions are aligned with the theories of leadership as articulated in the literature review.

With respect to the Giyani Bulk Water Project, leadership and governance challenges included poor political leadership and interference, as well as failure to comply with supply chain regulations, which resulted in delays in project completion and escalated costs. The increasing rand value of irregular expenditure in audit outcomes of the DHSWS (2014/15 to 2018/19) confirms that little or no efforts are made to implement the AGSA's recommendations if there are no punitive actions for wrongdoing, which also implies lack of consequence management. Lack of consequence management is evident as there is a recurrence of similar issues, which include the extension of contracts not approved by delegated officials and irregularities in tender processes in 2019/20, even though irregular and fruitless expenditure has been reduced in rand value.

In line with these findings, the Commission makes the following recommendations:

- 1. Roles and responsibilities within the leadership hierarchy which encompass the political, executive, administrative and technical levels within the various spheres of government, should be delineated. This will ensure that those who make strategic leadership decisions do not interfere with the management, financial and/or technical aspects of the implementation of infrastructure projects.*

This will ensure that those who make strategic leadership decisions do not interfere with the technical aspects related to the implementation of infrastructure projects.

- 2. Policies and regulations that guide the implementation of infrastructure projects should be developed and/or reviewed. In addition, commitment to compliance with legislation and policy frameworks must be formalised with all participants in an infrastructure project prior to the commencement of the project, with consequences for compliance failures clearly set out. This will ensure that policies and clear regulatory frameworks are in place to avoid judiciary involvement and pronouncing on what should be done on policy matters that could have been easily resolved through policy and legislation.*

This will ensure that policies and clear regulatory frameworks are in place to avoid judiciary involvement and pronouncing on what should be done on policy matters that could easily have been resolved through policy and legislation.

- 3. An intergovernmental coordination policy framework should be developed and/or strengthened that will clearly define how the coordination of infrastructure projects should be managed vertically and horizontally. The intergovernmental relations arrangement clearly defines how the three spheres of government should work together in the implementation of a number of mandates, including infrastructure delivery, but is silent on how coordination between these spheres should be managed.*

This will ensure that there are proper coordination mechanisms in the implementation of infrastructure projects.

- 4. Consequence management legislation should be strengthened and strictly enforced. That will ensure that all public office bearers are held legally and personally responsible when they transgress supply chain management policies in the implementation of infrastructure projects. The implementation of infrastructure projects, among other things, shows noncompliance with supply chain management policies, which results in a number of challenges that encompass project cost overruns, court interventions and project delays. Therefore, in alignment with the Public Audit Amendment Act of 2018 which seeks to make provision for the Auditor-General to take remedial action, ensure that losses suffered by the state are recovered, where possible, and refer certain suspected material irregularities for investigation.*

This will ensure that losses suffered by the state are recovered, where possible, and that certain suspected material irregularities are referred for investigation.

- 5. There is a need to move towards a more consultative and citizen-centred infrastructure delivery approach and to improve accountability to communities.*

This will ensure that communities and individuals who are intended beneficiaries are always involved in infrastructure delivery and that the infrastructure that is delivered will meet beneficiaries' needs and expectations.

10.7 References

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