FINANCIAL
AND FISCAL
COMMISSION

Submission for the 2019/20 Division of Revenue

For an Equitable Sharing of National Revenue

31 May 2018

Financial and Fiscal Commission
Montrose Place (2nd Floor), Bekker Street
Waterfall Park, Vorna Valley, Midrand.
Private Bag X69, Halfway House 1685
www.ffc.co.za
Tel: +27 11 207 2300
Fax: +27 86 589 1038

Contents

List of figures

List of tables

Acronyms

BAU	Business as usual
BBBEE	Broad-based black economic empowerment
CMA	Catchment management area
COE	Compensation of employees
COGTA	Cooperative Government and Traditional Affairs
DBSA	Development Bank of Southern Africa
DEA	Data envelope analysis
DORB	Division of Revenue Bill
DPW	Department of Public Works
DHET	Department of Higher Education and Training
DWS	Department of Water and Sanitation
EIG	Education Infrastructure Grant
FFC	Financial and Fiscal Commission
FLISP	Finance Linked Individual Subsidy Programme
FTE	Full time equivalent
GDP	Gross Domestic Product
GIS	Geographic Information System
GMM	Generalised method of moments
GoSA	Government of South Africa
HFRG	Health Facility Revitalisation Grant
HSDG	Human Settlements Development Grant
IA	Implementing Agent
IDMS	Integrated delivery management system
IDT	Independent Development Trust
IGFR	Intergovernmental fiscal relations
IMF	International Monetary Fund
IPMP	Integrated Programme Management Plan
IUDF	Integrated Urban Development Framework
LES	Local Government Equitable Share
MDG	Millennium Development Goals
MIG	Municipal Infrastructure Grant
MTBPS	Medium Term Budget Policy Statement
MTEF	Medium Term Expenditure Framework
NDP	National Development Plan
NHI	National Health Insurance
NWA	National Water Act
NWRS	National Water Resource Plan
NWSMP	National Water and Sanitation Master Plan
O&M	Operations and maintenance
OECD	Organisation for Economic Cooperation and Development
OLS	Ordinary least squares
OSD	Occupation specific dispensation
PED	Provincial education departments
PES	Provincial Equitable Share
PFMA	Public Finance Management Act
PRMG	Provincial Road Maintenance Grant
RBIG	Rural Basic Infrastructure Grant
SALGA	South African Local Government Association

SDG	Sustainable Development Goal
SIPDM	Standard for infrastructure procurement and delivery
SPLUMA	Spatial Planning and Land Use Management Act
TCTA	Trans-Caledon Tunnel Authority
TVET	Technical and vocational education and training
VAT	Value added tax
UAMP	User Asset Management Plan
WSA	Water Services Act
WSDP	Water Services Development Plan
WSIG	Water Services Infrastructure Grant

Foreword

Recently, President Ramaphosa on behalf of government, raised hopes that policy certainty on its growth, development and transformation interventions would be accomplished. The commitment is to restore sound corporate governance practices at state-owned enterprises, tackle corruption and improve efficiency of spending. While the country has experienced slight recovery in economic performance since the second quarter of 2017, growth performance remains low. This low growth is exacerbated by the declining performance of the main drivers of national revenue, resulting in the most significant revenue shortfalls since the post-1994 period. In 2016/17, the government registered a revenue gap of R30.7 billion, and in 2017/18 the shortfall increased to R48.2 billion. In the absence of higher growth and substantial revenue under collection, government has implemented a programme of measured fiscal consolidation aimed at narrowing the budget deficit and stabilising public debt levels. This is achieved through tax policy measures to raise additional revenue. On the expenditure side, government has reduced expenditure ceilings through cuts in the operating budgets of national departments as well as lower transfers to public entities and sub-national governments. As a result of the fiscal consolidation measures, resources available for sharing among different spheres of government have been substantially reduced.

The continued deterioration of tax buoyancy weakens the effectiveness of the tax system in supporting the objective of ensuring sustainable fiscal policy. If the *status quo* continues, and revenue and expenditure continue deteriorating, *per capita* economic growth will continue to decline. These developments endanger the prospect of addressing the national development goals of eradicating pervasive poverty, reducing inequality and unemployment in line with the National Development Plan. The 2019/20 Financial and Fiscal Commission's submission is about the difficulties of sustaining equitable economic growth in the face of a constrained fiscal environment. Under the theme of *Re-engineering the intergovernmental fiscal relations system for national development in a fiscally constrained environment,* focus is on an extensive review of the performance and effectiveness of current intergovernmental fiscal instruments. This submission recommends how fiscal instruments can be re-engineered to better address the eradication of poverty and thereby the reduce inequality.

Based on the FFC's unique constitutional mandate our view is that the focus should be on those intergovernmental fiscal instruments that speed up economic growth and fight poverty, inequality and unemployment, without further compromising public finances that are severely constrained. Proposed interventions to improve the existing revenue sharing arrangements include changes to conditional and indirect grants, addressing incentive structures, improved governance and operational arrangements in response to fiscal shocks, and reconsideration of the degree of centralisation of government funds and functions. Finally, the structural and operational problems facing the water sector are analysed in the context of fiscal constraints, and proposals are made for administrative and management interventions to eliminate wastage and to stem the continued deterioration in service delivery.

This *Submission for the 2019/20 Division of Revenue* is made in terms of Section 214(1) of the Constitution of the Republic of South Africa, 1998 (Act No. 108 of 1996), Section 9 of the Intergovernmental Fiscal Relations Act, 1997 (Act No. 97 of 1997) and Section 4(4c) of the Money Bills Amendment Procedure and Related Matters Act, 2009 (Act No. 9 of 2009).

We, the undersigned, hereby submit the Financial and Fiscal Commission's recommendations for the 2019/20 Division of Revenue in accordance with the obligations placed on us by the Constitution of the Republic of South Africa.

For and on behalf of the Commission

Professor Daniel Plaatjies
Chairperson

Dr Sibongile Muthwa
Deputy Chairperson

Mr Kenny Fihla
Dr Krish Kumar (Term ended February 2018)
Mr Sipho Lubisi
Professor Gilingwe Mayende
Professor Aubrey Mokadi (Term commenced 1 April 2018)
Mr Gladstone Nkomfe (Term commenced 1 April 2018)
Professor Nico Steytler

Dr Kay Brown
Chief Executive Officer

Date: 31 May 2018

Executive Summary

The *2019/20 Annual Submission for the Division of Revenue* is about the difficulties of sustaining equitable economic growth and development in South Africa in the face of fiscal constraints. This is illustrated in studies founded on fiscal policy analysis carried out by the Financial and Fiscal Commission (FFC or the Commission hereafter). The fiscal constraints brought about by persistently low economic growth experienced in the country since the onset of the great recession in 2009 have deteriorated further since 2013 and constrain the fiscal space, and, importantly, measures to protect frontline service delivery for the most vulnerable.

The core fiscal objective that underpins the 2018/19 Budget is to improve the deficit targets announced in the October 2017 Medium Term Budget Policy Statement. Given the prevailing weak economic growth and lower than expected revenue collection, fiscal constraints are compounded by the need to fund pressing new priorities such as higher education and training. Government implemented a programme of measured fiscal consolidation aimed at narrowing the budget deficit and stabilising public debt levels through tax policy measures to raise additional revenue (notably the VAT increase) and, on the expenditure side, by lowering expenditure ceilings through reducing the operating budgets of national departments as well as decreasing transfers to public entities and sub-national governments.

In particular, infrastructure grants have been targeted for reduced funding over the 2018 Medium Term Expenditure Framework (MTEF) period. As motivation for the cuts, government cited previous underspending and the relative ease with which planned provincial projects can be delayed or rescheduled. In its submission on the 2018 Division of Revenue Bill, the Commission argued that while the cuts are understandable and unavoidable in terms for fiscal consolidation and to stave off threats of a sovereign credit downgrade, reductions to conditional grants do not appear to follow any clear pattern, save that they fall disproportionately on grants of bigger monetary value. The Commission called for a more rigorous analysis of the performance of each grant before it is reduced, as well as continual monitoring and evaluation of the effects of the cuts. Grants play a key role in decreasing historical backlogs and achieving constitutional imperatives. Some transferring departments do not report comprehensively on the performance status of its grants. According to the Auditor-General (2017), the department of public works did not report on the number of work opportunities created by the expanded public works programme, and the indicator and target were also not included in the 2016/17 annual performance plan. Furthermore, the Auditor-General (2016) identified weakness in the performance management of some of the grants, citing that some departments did not monitor and actively manage the project delivery and finances. Poor monitoring and management of the performance of grants has negative implications on the reliability of the performance information that departments report and planning[1]. Under the theme of *Re-engineering the intergovernmental fiscal relations system for national development in a fiscally constrained environment,* this submission continues with the theme of the 2018/19 Division of Revenue submission with similar assessments of other areas of public finance issues. It reviews the effectiveness and performance of the current

[1]Auditor General of South Africa (AGSA) .2016. Consolidated General Reports on National and Provincial Audit Outcome. PP 53 and 55. Available: http://www.agsa.co.za/Reporting/PFMAReports/PFMA2015-2016.aspx; Auditor General of South Africa (AGSA).2017. Consolidated General Reports on National and Provincial Audit Outcome. PP 28. Available: http://www.agsa.co.za/Reporting/PFMAReports/PFMA2015-2016.aspx

intergovernmental fiscal relations (IGFR) system, and makes recommendations to re-engineer current fiscal instruments, incentives and measures to address challenges that may be preventing the achievement of the NDP's objectives.

Given that annual real gross domestic product (GDP) growth over the last ten years has been consistently low, and that the current realities are rising public debt and under-collection of revenue, the NDP's objectives could be considered too ambitious. Nevertheless, it is conceivable that South Africa can rid itself of poverty and inequality, with the proviso that this must be achieved at an affordable cost to the country. The basic premise of this submission set out in chapter 1 and elaborated in detail in the remainder of the chapters, is that 'business as usual' policies and interventions will fail to achieve the poverty and inequality reduction targets set for 2030. Instead, the focus should be on re-engineering IGFR instruments and incentives for interventions aimed at poverty and inequality reduction without further compromising public finances. This message is also at the heart of the recommendations made. With such goals, at least three overarching tasks will be faced:

- First, is the need to understand the country's economic challenges and address them directly.
- Second, is the need to establish a balanced fiscal position that can be sustained over the long term, and
- Third, is the need to sharpen the efficiency of all government activity so that residents receive the best possible value for money from the taxes they pay.

The submission contains six chapters. Chapter 1 deals extensively with past performance and future prospects of the economy at national and subnational levels, as well as how linkages with fiscal constraints place new limitations on equitable sharing and policy formation. Greater detail is included in the remaining substantive chapters that focus on the anatomy of the fiscal crisis and implications for intergovernmental fiscal instruments across provinces and municipalities (chapters 2-6).

Chapter 2 provides empirical evidence to support the observation in recent years of heightened intergovernmental conflict over the distribution of fiscal resources or expenditure responsibilities. While revenue shortfalls have been recorded in recent years due to low economic growth, transfers have also experienced cuts as part of the fiscal consolidation measures. The chapter highlights the potential for increased centralisation (vertical control) of both administrative and funding instruments in the wake of fiscal constraints. While undoubtedly reflecting the impact of prevailing economic conditions, national government has been recentralising functions and increasing the share of earmarked conditional grants over which it has control. The major question addressed is whether recentralisation poses a credible avenue for ensuring better value for money and improved service delivery during this period of heightened fiscal constraints. Using multiple research techniques, including case studies on fiscal and administrative recentralisation, the research finds that national government is not necessarily better at delivering sub-national services than sub-national government. The chapter therefore recommends that government should not unilaterally increase the role of national government, and that the nature and design of intergovernmental fiscal instruments should be aimed at improving service delivery in the attainment of national priorities, rather than as tools to support consolidation efforts during times of fiscal stress. The chapter further recommends that when recentralising a function is necessary, a differentiated approach is needed.

In light of the ongoing fiscal constraint, chapter 3 assesses the extent to which provinces are able to adjust their health care services in a deteriorating fiscal situation and whether the intergovernmental fiscal instruments are responsive to a protracted provincial fiscal constraint. Provinces play a crucial role in the delivery of health care. However, the resources required to facilitate delivery are under severe strain due to a mismatch in resources and growing expenditure needs. Like other areas of public service provision, health transfer allocations are not growing in tandem with health care needs. Successive years of under-resourcing have resulted in serious budget strain with grave implications for health delivery outputs. The chapter finds that institutional arrangements prevent provinces from making discretionary fiscal adjustments. Discretionary expenditure adjustments are subject to strict fiscal rules. Budget adjustments flow directly from national government, through altering the composition and rate of growth in transfers to provinces and by imposing non-fiscal adjustment measures – which are rarely implemented. In selected cases, provinces use accounting accruals and reduce delivery outputs to manage current expenditure pressures. However, the existence of provincial fiscal strain is not justified by incidents of fiscal imprudence and operational mismanagement in provinces. In the context of a constrained fiscal environment, the chapter concludes that provinces should use non-fiscal adjustments to drive budget efficiency before proposals for additional revenue are considered.

Chapter 4 addresses the impact for municipalities of rebalancing by reducing intergovernmental transfers in a fiscally constrained space. The issue faced is whether this facilitates reduced dependency and innovation in revenue autonomy, or whether it worsens service delivery functions and regional disparities. This is important because municipalities are expected to use their assigned fiscal functions as the main tool to address significant historical inequities in the distribution of, and access to socio-economic infrastructure and resources. Using a unique and rich public finance dataset on municipalities, the findings show reduced dependency on transfers as main drivers of expenditure and revenue for municipalities in the metropolitan areas and secondary cities. For smaller and rural municipalities, transfers significantly correlate with the financing of capital and operating budgets. In a fiscally constrained environment, it is imperative to balance the need to enhance fiscal autonomy through reduced transfers on the one hand, with the stimulus that conditional grants provide for funding capital expenditure in fiscally vulnerable municipalities. A differentiated approach is recommended.

Chapter 5 looks at how conditional grants, the framework and general environment can be re-engineered during this period of austerity to address inherent challenges. Conditional grants play an important part in addressing inequalities and obligations of the Constitution. However, the chapter proposes ways in which provincial governments can achieve the same level of infrastructure delivery with less money, for example, by reducing waste and eliminating fiscal misappropriation. The study's findings suggest that widespread inefficiencies in infrastructure delivery across the three main infrastructure sectors of health, education and road maintenance exist. To address these inefficiencies, it calls for strengthened oversight over consultants and contractors. In addition, holding the implementing agent accountable for funds spent on infrastructure projects will more closely align to the objectives of the sector department. The findings show that opportunities for fiscal misappropriation are evident during the procurement and implementation stages.

Chapter 6 outlines the current regulatory structure and the implications of fiscal constraints in respect of water challenges. Providing water services is one of the most important social and economic functions of local government. The Constitution mandates municipalities to exercise

this responsibility and empowers national government to regulate and guide municipal performance of the functions. Since 1994, considerable progress has been made in achieving the social objectives of expanding water service infrastructure and ensuring that affordability does not prevent people from accessing basic water services. However, while water supply infrastructure reaches 95 per cent of the population, its reliability is declining. Fiscal constraints may be aggravating this. The chapter considers the performance of the sector and the factors that have influenced it, with focus on the performance of inter-governmental financial instruments. It then makes recommendations for interventions that could help to improve sector performance.

Recommendations

Below are the recommendations of the Commission for the 2019/20 Division of Revenue.

Chapter 2: Recentralisation – Implications for service delivery and intergovernmental fiscal relations
Recommendations:

1) *The Commission recommends that government not automatically resort to increasing the role of national government in the current constrained fiscal environment in which resources are limited, since historical performance data does not generally support that doing so leads to improved performance.*

   This argument is based on case-studies of
   1) the performance of earmarked conditional grants, and
   2) the impact of recentralisation on the efficiency and performance of technical and vocational education training (TVET) colleges.

   Government could improve the quality of service delivery and achievement of national socio-economic objectives through adequate training of sub-national government implementers, and/or changing the manner of delivery rather than changing the location of a function.

2) *The Commission recommends developing and strengthening control measures other than earmarked conditional grant funding to improve service delivery and attainment of specific priority outcomes. The control measures should be underpinned by tighter monitoring and reporting of sub-national governments on the use of grant funding and associated outcomes of such spending. National Treasury should ensure that decisive action such as withholding of funds is taken by national sector departments as soon as cases where grant funding is inefficiently and/or ineffectively spent have been detected.*

   Government must continually assess the impact of different funding instruments on service delivery performance. For example, with respect to earmarked conditional grant funding, analysis shows that they currently perform poorly and are thus not a suitable avenue for achieving improved service delivery. Introducing rigidity in earmarked conditional grants does not result in better performance.

3) *The Commission recommends that government implement a targeted approach to reforms to ensure that sub-national governments previously lacking in capabilities and funding do not continue to be disadvantaged. The Commission also recommends that a differentiated*

approach to recentralising a function, in which function shifts are piloted and assessed, is adopted.

This will avoid unnecessary disruption and the high cost of readjustment of a function across the board. Ideally government should focus on weakness in performance and on addressing these before applying a blanket approach which may inadvertently have a negative effect on good performers.

4) *The Commission recommends that government conduct a detailed cost benefit analysis prior to recentralisation and ensure close alignment between policy goals, and funding and institutional capacity.*

   In the absence of sufficient and sustainable funding and institutional capabilities to translate policy into actions and meet outcome targets, targeting some of these achievements is meaningless.

Chapter 3: Provincial fiscal adjustment mechanisms in times of protracted fiscal constraints – case of the health sector
Recommendations:

1) *The Commission recommends that national and provincial treasuries should develop a framework or criteria for determining serious financial strain, with oversight by provincial legislation. Such a framework should have clear measurable financial and non-financial factors that can be monitored, reported and used to trigger automatic fiscal adjustment.*

   This should be developed in collaboration with the national and provincial departments of health. In this regard,
   a) Section 6 of the Public Finance Management Act, 1999 (Act No. 29 of 1999) (PFMA) should set explicit criteria for determining serious financial problems. Such criteria should include clear measurable factors of what constitutes persistent material breach or inability to fulfil executive obligations (similar to section 136 of the Local Government: Municipal Finance Management Act, 2003 (Act No. 56 of 2003) (MFMA).
   b) Provincial treasuries should monitor and disclose key fiscal health indicators at provincial department level where prolonged deviation from expected or healthy fiscal trajectory, as defined by the PFMA, triggers automatic intervention that is mandated and overseen by provincial legislature.
   c) Provincial departments of health should develop the health information management system to trigger effective interventions and adjustments. This should be achieved by introducing capabilities to report and monitor service delivery blockages in health facilities.

2) *The FFC recommends that National Treasury and the Department of Health, through the respective Ministers, allocate part of the 2019/18 MTEF health infrastructure allocation to gradually set off expenditure accruals that have arisen from unavoidable demands for which allocated budgets have been depleted.*

   Such a provision should be considered for provinces whose accruals have surpassed the national maximum threshold/guideline of 2 per cent of the total budget and should be subject to provinces committing to a fiscal performance improvement plan, enforcement of

tighter budget and operational controls at health facilities, and central procurement for strategic inputs.

3) *The Commission recommends that the Minister of Finance, through the National Treasury, should ensure that the framework for health infrastructure conditional grants (Health Facility Revitalisation Grant and National Health Insurance (non-personnel component)) accommodate flexibility during periods of protracted fiscal constraint so that provinces can re-orientate their available capital allocations towards maintenance.*

   This is particularly the case where individual infrastructure grants allocations are insufficient to achieve timely completion of projects. Provincial health departments should consider allocating at least 70 per cent of health infrastructure grants towards operations and maintenance.

Chapter 4: Incentive effects of intergovernmental grants: Evidence from municipalities
Recommendations:

1) *The Commission recommends that the Minister of Finance, through National Treasury, gives municipalities (particularly those in small towns and mostly rural municipalities (categories B3 and B4)) greater flexibility in the use of grants to encourage innovative approaches to resolving local problems.*

   Budget 2018 envisages strong allocations in equitable share allocations alongside significant declines in conditional grants. For mainly rural municipalities, such reductions should be balanced against the important stimulus provided by conditional grants for funding capital expenditure. In a fiscally constrained environment in which conditional grant allocations are expected to fall, municipalities should be assisted to use reduced grant amounts efficiently. Such flexibility could be introduced through a phased in conversion of categorical grants into the block grant framework. Alternatively, a similar approach to the newly introduced Integrated Urban Development Grant can be extended to most resource-vulnerable rural municipalities. Conversion of categorical grants to block grants will require that national funding of identified priority programmes via municipalities be accompanied by local government maintaining a level of spending effort.

2) *The Commission recommends that a fiscal capacity component be introduced to the equitable share formula to make it more efficient and incentivising. The component should incorporate two aspects:*
   a. *Recognising the revenue-raising effort of municipalities, and*
   b. *Capturing the redistributive element of addressing horizontal imbalances.*

   In using the equitable share formula as the main conduit for transfers to local governments, it should be noted that the current structure of the local government equitable share accounts for the fiscal capacity of municipalities through a revenue adjustment factor. This is biased in favour of jurisdictions with limited potential to raise revenues. The recommended fiscal component will ensure that the formula adheres to its principle of ensuring equity according to socio-economic circumstances. A revenue-raising effort that is a composite measure of the extent to which municipalities collect from their legislated/mandated local tax/revenue bases should be introduced. This will

complement the current local government equitable share formula in which fiscal capacity assessment is based on the potential to collect revenues. The potential is influenced by a jurisdiction's wealth base, available revenue sources, demand for local services and tax limitation measures. To incentivise revenue efforts, the formula will be required to give a higher weighting to the effort indicator.

Chapter 5: Assessing efficiency of key provincial infrastructure programmes: The case of education, health and public transport
Recommendations:

1) *The Commission recommends that the national sector departments of Education, Health and Public Transport develop clear performance evaluation frameworks for the provincial infrastructure grants under their control.*

   These should contain well-defined key performance indicators that can be tracked consistently across project cycle stages for all provinces, and include cost benchmarks. This evaluation framework should be added to the conditional grants framework in the Division of Revenue Bill, and should be used as part of the assessment for performance-based infrastructure incentives for which provinces can qualify should they show key performance improvements over time. Such a framework should include key performance indicators based on quality, cost and time, the measurement of these performance indicators, data collection, and roles and responsibilities.

2) *The Commission recommends that national sector departments of Education, Health and Public Transport include greater scrutiny of variation orders when the value of these rises above acceptable levels of the project cost.*

   This will reduce the risk of fiscal misappropriation. The criteria for assessing variation orders should be based on the principles of ethical conduct, accountability, value for money and cost effectiveness. In addition, the frameworks for infrastructure grants to provinces should require provincial treasuries to conduct an independent third party review of tenders awarded by implementing agents. The Ministers of Public works and Health, Education and Transport (through their respective national sector departments) should conduct a review of human resource capacity requirements for provincial sector departments and provincial departments of public works. FFC's research has found that the scarcity of adequate infrastructure procurement skills and built environment professionals is potentially the biggest factor driving inefficiencies in infrastructure delivery at provincial level.

3) *The Commission recommends that the Minister of Finance, through National Treasury, set and publish the criteria to be measured in monitoring and evaluating infrastructure grants. The assessment criteria regarding infrastructure cuts should also be published.*

Chapter 6: Assessing the effectiveness of intergovernmental fiscal relations instruments in addressing water challenges
Recommendations:

1) *The Commission recommends that:*

a) *A review of basic norms and standards for water services and the associated Local Government Equitable Share (LES) be undertaken by the Department of Water and Sanitation (DWS).*

The current IGFR system incentivises over-provision of infrastructure without providing for the related operating and maintenance costs. The Rural Basic Infrastructure Grant (RBIG) "supplements the financing of the social component of regional bulk water and sanitation" which provides "the bulk infrastructure needed to provide reticulated water and sanitation services to individual households". The Water Services Infrastructure Grant (WSIG) has similar provisions.

In municipalities in which service levels provided are higher than the basic, the LES is not adequate to fund ongoing operating and maintenance (O&M), contributing to unsustainable operations and service failures. Such a review must consider the desirability of increasing service levels and the fiscal capacity for this. Regardless of the outcome, individual household supplies should always be integrated into a metering and billing system from the outset to enable effective management of overall systems.

b) *Clearer statements of grant objectives to achieve defined basic service levels or sustainability of services are established by the DWS.*

Poorly defined grant objectives allow substantial deviations from policy in the allocation of funds. For instance, the RBIG is mandated to "refurbish, upgrade and replace ageing water and sanitation infrastructure". The WSIG may support "municipalities in implementing water conservation and water demand management". However, these activities should be part of normal operational management and maintenance. This loose conditionality allows sub-optimal investments that are not clearly related to policy goals.

In the first instance, the grant should be conditional on the recipient municipality supplying a statement of the service levels to be provided and the division of funding between basic minimum and higher service levels. In the latter case, the grant should be conditional on the recipient municipality undertaking specific activities that will lead to greater physical and financial sustainability. This should include demonstration that there is adequate budget and institutional capacity for the ongoing operation and maintenance of the relevant service and clear outcomes.

c) *Municipalities indicate what standards they intend to provide and how their capital and operational costs are to be funded. This should be done through their Water Services Development Plans (WSDPs).*

Municipalities are providing water services to a standard higher than the regulated basic minimum levels, incurring operating costs that are not covered by equitable share allocations, tariff revenues or other sources. While the cost of water for water-borne sanitation is considered in the LES, the costs of wastewater treatment are not provided for. Where water-borne sanitation is supplied, this must be adequately provided for in the overall water services tariff and/or grant revenue.

d) *The Department of Water and Sanitation, in collaboration with the Department of Cooperative Governance and Traditional Affairs (COGTA) and National Treasury, lead a view of the basic standards established in terms of section 9 regulations, in order to set standards that are both feasible and sustainable.*

The regulated basic minimum standards are no longer acceptable in many communities, leading to pressure on municipalities to invest in higher levels of service for which there is inadequate funding. This leads to poor operational management, inadequate maintenance and deteriorating quality of services in terms of availability, reliability and safety. In the case of sanitation, it also leads to negative environmental impacts due to the failure to treat wastewater adequately.

e) *The allocation of conditional grants be made conditional on the employment of appropriately qualified staff with commensurate mandates.*

Municipalities do not have the required skills to plan, manage and operate their water services. According to a variety of surveys, the skills required are increasingly available.

2) *The Commission recommends that stronger conditions be attached to financial transfers to ensure compliance and that funds allocated are properly spent for the purposes indicated. Grant funding should be withheld from municipalities that do not have the necessary measures to monitor and control water consumption, or which do not meet criteria or have valid abstraction licences. Similar procedures must be applied for water-borne sanitation projects.*

Many municipalities, particularly in poorer communities, do not pursue cost recovery for services provided at a higher level than basic. As a result, the quality of service provided is very poor, inadequate funds are available for operation and maintenance, and infrastructure system failures are high. The IGFR system provides no incentive to rectify these problems. Further financial transfers are likely to aggravate the problem, increasing the financial and management burden on municipalities which will in turn undermine already fragile operations. It is irresponsible to continue to provide funding in such circumstances.

Municipalities that fail to manage water efficiently, resulting in substantial physical losses and unmonitored and uncontrolled usage, seek to build additional infrastructure to increase the volume of water that they abstract and cater for the shortfall in availability. They also seek to provide water for water-borne sanitation without adequate provision for wastewater treatment. The objective of this recommendation should be to ensure that available funds are used to benefit consumers and not wasted. This approach should be reinforced by the Minister of DWS, who should must continue to set limits on water abstraction, linked to the achievement of efficiency targets.

3) *The Commission recommends that roles be clarified, and support provided in the following ways:*

a) *By involving relevant municipalities in the planning and costing of projects by the Department of Water and Sanitation or water boards in order to confirm*

their support for the proposed projects and their willingness to pay the appropriate tariff for the supply. [2]

Investments in bulk supply by DWS and water boards commit municipalities to the tariffs based on the project costs, in terms of Water Resource Pricing Policy. Over-investment without the concurrence of municipalities, may create undesired financial obligations for them. Instruments to achieve this would include Water Services Development Plans (WSDPs), water board planning processes, catchment management strategies, project finance take-off agreements etc. Institutional arrangements must include effective involvement of local government in water board planning, establishment of catchment management areas, as well as formal take-off arrangements with DWS[3].

b) *By clarifying the role of provincial COGTAs and scrutinising their performance. An alternative network of water service providers should be established, to intervene when municipalities fail to perform, accompanied by better coordinated and more effective sanctions against municipalities that fail to comply.*

Poor coordination between National Treasury, COGTA and DWS leads to weak oversight of municipal performance. Provincial COGTA Departments play a very limited role. Failure to enforce compliance with policy and loan conditionality allows other problems to emerge. Provinces often fail to intervene in failed municipalities because no alternative service provision channel is available. More effective performance of oversight responsibilities would be facilitated by formalisation of roles and responsibilities between the relevant departments.

c) *By ensuring that the Minister of Water and Sanitation complies with the statutory obligation (WSA section 67) to provide information on the performance of water services to the public. In the event of non-compliance, oversight agencies such as Parliament must intervene, with external agencies to compel compliance.*

Inadequate information is available about access, reliability, safety and affordability of water services at the level of individual municipalities. Municipalities fail to collect and/or report relevant information. The decision by DWS to discontinue publication of the Blue Drop, Green Drop and No Drop reports has further weakened the information base. Municipalities have a statutory duty in terms of s.10 of the Norms and Standards for Tariffs to report on the financial performance of their water services which must be enforced as a condition for financial support.

d) *By the DWS providing support to achieve safe water. The resumption of Blue Drop reporting by DWS and associated monitoring and support to*

[2] At present, this is a Ministerial discretion: Norms and Standards for bulk water services supplied by BulkWSP or Regional Bulk Water Utilities to other WSIs V3, (Support document on the pricing strategy for water use charges for raw water 2016).

[3] Unlike ESKOM, most DWS investment projects have clearly identified local stakeholders, rather than an overarching national client base.

municipalities is critical. Conditional grants should only be available to municipalities that can show that there is a feasible programme to achieve compliance with standards.

Water supplies in many communities do not meet standards for potable water. The extent of this problem is difficult to determine since, as noted above, the DWS no longer publishes the results of the Blue Drop reports. South Africa will have to report on this, since it is now an element of the SDGs. Effective response depends on knowledge of the scale and nature of the problem.

e) *By COGTA and NT continuing efforts with sector departments such as DWS to enhance the quality of municipal reporting, with an emphasis on coordinating reporting requirements so that they become an integral part of overall administrative processes. Conditional grant funding should be subject to compliance with this reporting since its absence is a primary indicator that grants are not likely to be effectively and efficiently used.*

The proliferation of reporting requirements from different agencies imposes a serious burden on municipalities, leading to failure to collect and report performance data in a coherent format. The information required should be available in municipal organisations through normal administrative reporting procedures.

f) *By requiring municipalities to report on relevant indicators as a condition of funding. These should include the reduction of bulk water supplies required as well as revenue increases. Non-revenue water reduction must be used as a catalyst to improve service management.*

A substantial proportion of water that is treated and supplied into water distribution infrastructure is physically lost before it reaches users. A further significant proportion of what is supplied reaches users but is not accounted for and users are not billed for its supply. Despite national prioritisation of the need to reduce non-revenue water, little progress has been made overall. The problem of non-revenue water is understood at both a political and community level. Effective action to reduce losses requires broad interventions in asset-management, operations and financial management.

4) *The Commission recommends that the IGFR system shift to incentivising sustainable operations and maintenance and introduce a dimension of outcome-based support for higher levels of service.*

The original goal of providing basic minimum service infrastructure has almost been achieved but the quality of services (see Chapter 6) actually provided is declining. The review of norms and standards must consider the future goals of the water sector and, in particular, how the SDG goal of 'safely managed' services is to be supported. Rather than introducing complex assessment procedures, outcome-based support may be more appropriate. This could be used to complement, as a condition, continued project-focused support for whatever higher levels of service may be adopted as the new 'basic minimum'.

Chapter 1: Re-engineering the Intergovernmental Fiscal Relations System

1.1 Introduction

South Africa's fiscal space[4] is narrowing. Since the 2008/09 global economic and financial crisis, economic recovery has been slow and exacerbated by the economy's inability to create jobs and by other factors, such as recent credit downgrades[5]. These factors, combined with the narrowing fiscal space, have culminated in a fiscal constraint whereby fiscal deficits and/or public debt ratios are much larger than is perceived to be optimal for macroeconomic management and fiscal sustainability, but not yet large enough to cause a fiscal crisis.

In the midst of low growth, successive budgets have pushed out the dates on which the size of the budget deficit as a percentage of gross domestic product (GDP) will diminish, which in turn has resulted in a pushing out of the dates at which the public debt to GDP ratio will plateau, leading to an increasing public debt to GDP ratio. The latter is resulting in funds critically needed for development, becoming increasingly tied up in interest payments. On the fiscal side, the main reasons are revenue under-collection, narrow tax bases and overextended government structures, in terms of their funding level. In a constrained fiscal environment, budget outcomes often become more uncertain.

Against this backdrop of prolonged slower than anticipated economic growth, a subsequent decline in revenue collection and a widening deficit, the budget stability that previously characterised South African budgets can no longer be taken for granted. To illustrate this point, prevailing economic conditions have meant that government's approach to moderating expenditure has not thus far seen a significant improvement in the budget balance. The slowdown of fiscal consolidation since 2009 has meant that South Africa will be unlikely to achieve -3 per cent budget balance as a percentage of GDP over the medium term.

These factors were aptly demonstrated during the tabling of the 2018/19 Budget. With a tight fiscal framework came the need to cut and reprioritise spending on infrastructure grants, even more than in the past over the 2018 Medium Term Expenditure Framework (MTEF) period. The resulting unstable fiscal framework is compromising sub-national governments. This is so because the success of the country's intergovernmental fiscal relations system has been built on the twin pillars of buoyant revenue collection and a stable spending framework.

While South Africa made significant achievements in dealing with the scourge of poverty, the country still faces many challenges, with persistent poverty levels among vulnerable groups

[4] Fiscal space can be defined as the financial resources available to a government for policy initiatives through the budget and related decisions (Schick, 2009, p 2).

[5] Rating agencies Fitch and Standard & Poor have assigned South Africa to "junk" status. The agencies have flagged three concerns: weak growth prospects, question marks over the country's commitment to fiscal consolidation and the risks that guarantees to ailing state-owned enterprises could be called. Moody's is the only one of the three major rating agencies that has South Africa's foreign currency and rand denominated debt at investment grade with an announcement made on 23 March 2018 re-affirming this *status quo*.

including women and children, as well as inequality which remains high partly due to high unemployment levels and low labour force participation rates (Statistics South Africa , 2015). These trends are not in line with the National Development Plan (NDP) and the Sustainable Development Goals (SDGs).

The NDP and SDGs objectives display broad convergence between the global and national development frameworks related to the 5Ps of people, prosperity, peace, planet and partnerships (Dhlamini, 2017). However, the degree of convergence is relatively lower or absent in certain areas. Such areas include SDG 2 (food security and sustainable agriculture), SDG 9 (resilient infrastructure and inclusive sustainable industrialisation) and SDG 12 (sustainable consumption and production) which have lower degrees of convergence. SDG 5 (gender equality and women empowerment) has very little or no convergence (Dhlamini, 2017).

According to Statistics South Africa (2015), South Africa has struggled with the triple challenges of unemployment, poverty and inequality over the past two decades. Some progress in poverty reduction for some categories of poverty has been made. For example, multidimensional poverty[6] declined between 2001 and 2016, falling significantly from 17.9 per cent to 8 per cent between 2001 and 2011, and then to 7 per cent in 2016 (Statistics South Africa, 2017). This decline is attributed to the impact of the social wage which includes:

- social grants
- provision of free basic electricity, sanitation and water to poor households
- reconstruction and development programme housing
- no-fee paying schools, and
- free primary healthcare (Statistics South Africa, 2017).

However, Statistics South Africa (2017) asserts that, despite the decline in multidimensional poverty, individual money metric poverty worsened between 2011 and 2015. The decline is the result of a combination of reasons, including rising unemployment levels, stagnant economic growth, rising prices and an unstable policy environment. Poverty, as measured by the upper-bound poverty line of R992 per person per month in 2015 prices, declined from 66.6 per cent of the population in 2006 to 53.2 per cent in 2011, before rising to 55.5 per cent in 2015 (Statistics South Africa, 2017). The food poverty line measure of poverty[7] has been fluctuating. It increased from 28.4 per cent of the population in 2006 to 33.5 per cent in 2009 and declined to 21.4 per cent in 2011 before rising again to 25.4 per cent in 2015 (Statistics South Africa, 2017).

The country's unemployment problem is the major challenge to realising universal poverty reduction (Statistics South Africa, 2015). It is difficult to see how South Africa will achieve SDG1 (reducing poverty) and SDG2 (ending hunger), given its attainment of only three of the nine Millennium Development Goal (MDG) indicators demonstrating progress towards achieving poverty and hunger reductions, coupled with the worsening of poverty between 2011 and 2015. The heightened fiscal constraint severely limits measures to protect frontline service

[6] Unlike poverty measures that incorporate only one factor (usually income), a multidimensional poverty measure incorporates several factors constituting poor's experience of deprivation such as for example poor health, lack of education, inadequate living standard, lack of income, disempowerment, poor quality of work and threat from violence.

[7] Statistics South Africa defines the food poverty line as "the rand value below which individuals are unable to purchase or consume enough food to supply them with the minimum per-capita-per-day energy requirement for adequate health" (Statistics South Africa, 2017).

delivery for the most vulnerable today and in future years. If the *status quo* is maintained and revenues and expenditures continue deteriorating, *per capita* GDP will continue to decline as it has for the last two years, with no realistic prospect of addressing the national development goals. Further action is thus needed to pursue South Africa's pursuit of inclusive growth. The research and recommendations of this submission contribute to informed decision making and action.

With the above in mind, this submission is about the difficulties of sustaining equitable economic growth in the face of a constrained fiscal environment. Under the theme of *Re-engineering the IGFR system for national development in a fiscally constrained environment,* the focus is on an extensive review of the performance and effectiveness of current intergovernmental fiscal relations (IGFR) instruments and recommending how the instruments could be re-engineered to better address challenges of ending poverty and reducing inequality, which are the overarching goals of the NDP.

This year's submission should not be viewed in isolation. It is a natural progression of the Commission's long term research agenda that put assessment and evaluation of the effectiveness of IGFR instruments and related measures in addressing outcomes of the NDP at the centre under the banner *The intergovernmental fiscal relations system and national development in South Africa*. Under this broad banner, a decision was taken to sequence the work in stages. Starting in 2015, the theme was '*Responding to South Africa's Infrastructure Challenge'* informed by the well-established idea that governments should invest in public infrastructure to support production and trade (and thus growth and development). The submission pointed out that South Africa's challenges hinder the effective use of resources for development associated with shortages in economic and social infrastructure. Government is expected to be the main player in closing these deficits, through enabling public policy, complemented by private investment and innovation. Investment – in (capital) equipment and in new (technological and managerial) ideas – is a crucial engine of growth. Investing in capital allows firms to incorporate new technologies and reorganise production processes according to global best practice. Fostering a supportive environment for investment and innovation it was argued, was therefore central to having a dynamic and productive economy. Given these challenges and the importance of public infrastructure for national development and regional performance, there is a pressing need to get public infrastructure right using IGFR instruments.

Subsequently, the theme for the 2016 submission was *"The intergovernmental fiscal relations system and rural development in South Africa"*, reflecting the demographic, economic and political importance of rural areas. The aim was to provide a comprehensive review of the IGFR instruments, and their reform for more effective rural growth and development. Rural development is a complex process and requires optimal coordination among the institutions and departments involved. The overriding fiscal policy question concerned the coordination and adequacy of resources. Coordination was seen as crucial given the multiple players involved in the rural space. Clear functional assignments[8] should inform the vertical and horizontal split in the division of revenue in order to improve the focus, targeting and outputs of the grants. Coordination was also needed at both local level and between national and subnational governments, to integrate sectoral approaches, to involve private partners, and to achieve the appropriate geographic scale.

[8] For proposals to improve IGR coordination, refer to FFC (Financial and Fiscal Commission). 2016. *Submission for the Division of Revenue, 2017/18.* Midrand: FFC.

Adequate service delivery is both technical and political, and at the centre of the debate is the tension between the "politics of affection" (as enshrined in the Constitution) and issues of affordability or efficiency. Perhaps the most challenging aspect of rural development and IGFR is ensuring that provinces and municipalities are well funded, through own revenues and transfers from the centre. The principle of supporting the poorer regions or provinces through grants or special projects is generally well-supported, but there is no agreed method of determining poverty levels and related needs among regions. In fact, given the meagre sources of provincial own taxes, grants from the national government are often the only revenue available. Provinces and rural local municipalities with little access to own revenue are also the poorest in terms of access to modern services and therefore dependent on the centre. The size of the overall transfer pool for "a defined rural development strategy" is important in determining the ability of sub-national governments to deliver on the rural development mandate. Under-funded transfers will clearly limit the ability of provincial and local governments to meet their responsibilities for rural development programmes.

For 2017, the theme was "*The intergovernmental fiscal relations system and urban development in South Africa"*, thereby completing the coverage after having dealt with rural areas. In South Africa, urban economies play a significant role in development and economic growth. South African cities may contribute significantly to the economy, but they face serious challenges to sustainable and inclusive regional development. The Submission explored what national and subnational governments might do to harness the economic possibilities of rapidly expanding cities. To do so it argued, intergovernmental fiscal relations and structures need to be strengthened and, where antiquated, completely overhauled[9].

1.2 Economic and fiscal outlook

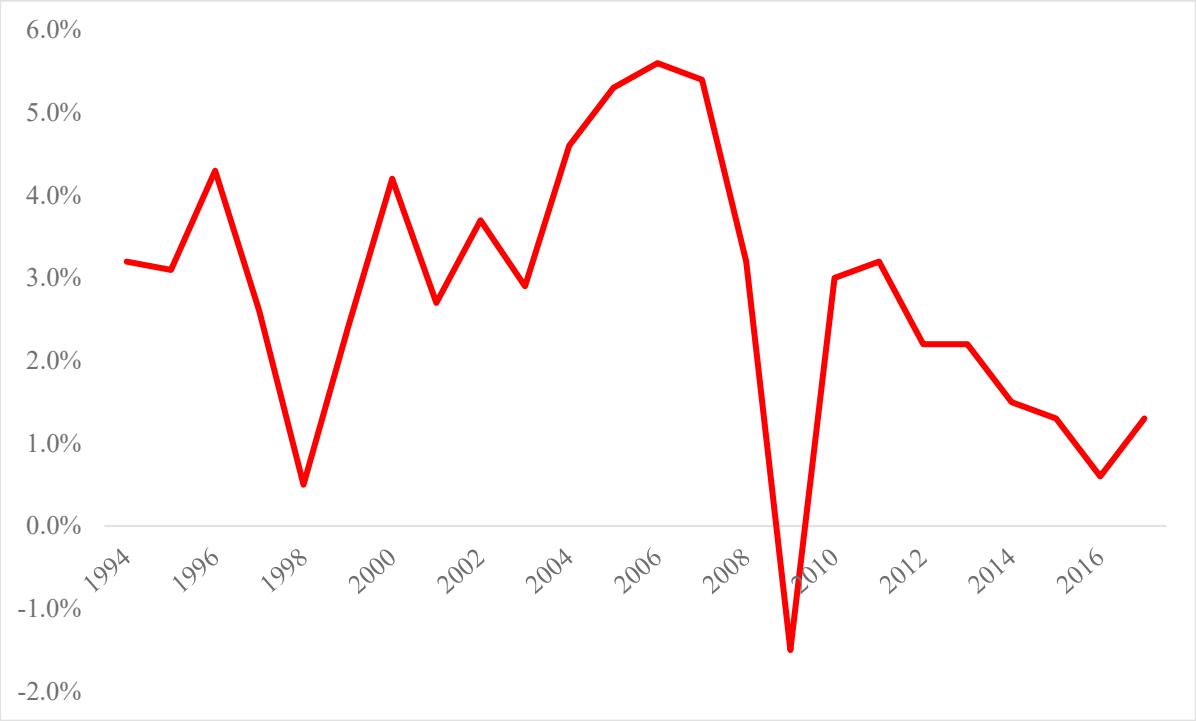
This section describes the economic context in which the current submission is contextualised. It begins by documenting the macroeconomic outlook followed by a fiscal analysis that sets the context on the rest of the chapters in this submission.

1.2.1 The economic outlook

The South African economy has performed poorly for an extended period. From 1990 to 1992, the economy experienced negative growth, the culmination of increased domestic protests and industrial action, international sanctions and slow export demand from major trading partners. Figure 1 shows economic growth since the democratic election of 1994. The economy began to improve, growing by a modest 1.2 per cent in 1993, followed by four years of 3-4 per cent growth. In 1998, the economy grew by only 0.5 per cent because of the international Asian financial crisis and high domestic interest rates that were instituted to combat exchange rate speculation. Between 1998 and 2008, the economy achieved robust growth rates: from 2004 to 2007 growth rates were above 4.5 per cent, reaching 5.6 per cent in 2006 and 2007.

[9] For more detail on the recommendations, refer to FFC (Financial and Fiscal Commission). 2017. *Submission for the Division of Revenue, 2018/19.* Midrand: FFC.

Figure 1. Real GDP annual growth, 1994–2017

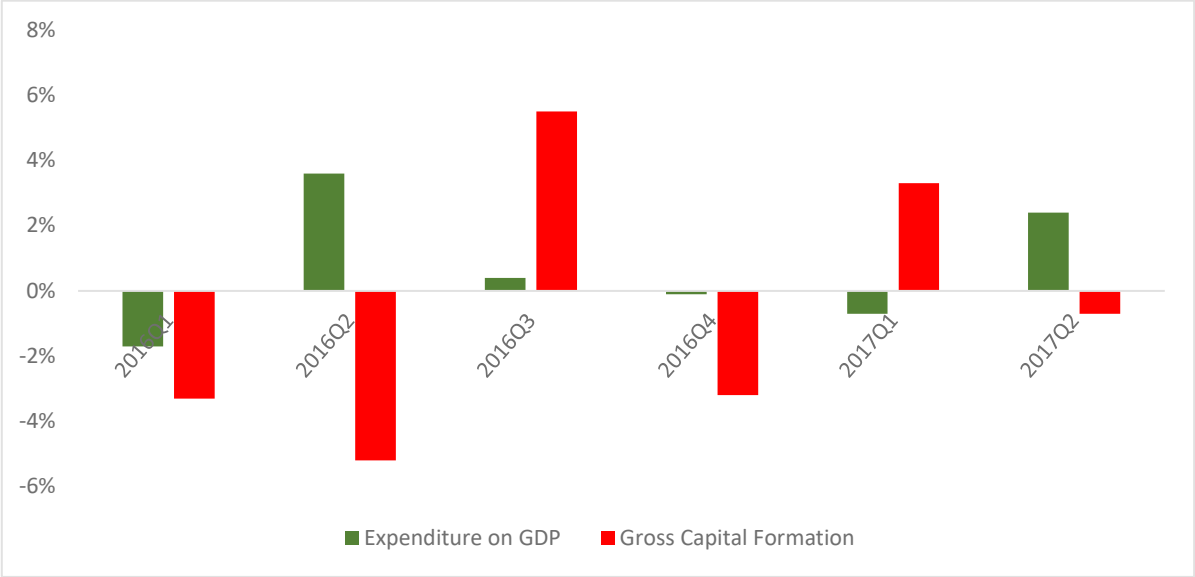


Source: FFC calculations based on South African Reserve Bank data

Since the 2008 financial crisis, the country has failed to reach the pre-crisis growth rates of 4 to 5 per cent. The trend in economic performance since the first quarter of 2016 has suggested general weakness in the levels of overall demand[10]. Subsequently, South Africa's productive sectors have grappled with low capacity utilisation rates, an outcome that has limited the need to expand existing production lines. The net effect has been an environment in which weak appetite for private investment coexists with low domestic savings with which to finance additional investment. Given the high capital intensity of the economy, a large fraction of the savings is allocated to maintaining existing capital stock. This left little savings for new investments. Figure 2shows that the contribution of gross capital formation between the first quarter of 2016 and the second quarter of 2017 has been negative for the better part of the period as a result of the above factors.

[10] Well illustrated in FFC (Financial and Fiscal Commission). 2017. *Submission for the Division of Revenue, 2018/19*. Midrand: FFC.

Figure 2. Quarterly gross capital formation, 2016Q1–2017Q2



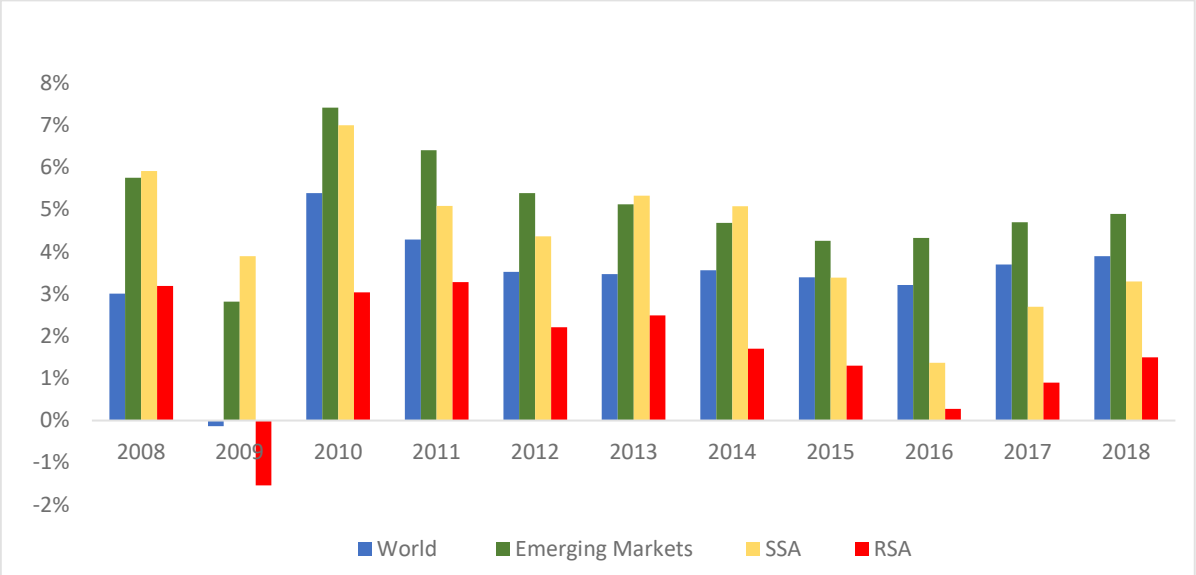
Source: Statistics South Africa (2017), Gross domestic product: Second quarter 2017

South Africa's current account deficit narrowed from 5 per cent of GDP in the first quarter of 2016 to 2.4 per cent of GDP in the second quarter of 2017. The trade balance was the main driver in the reduction of the current account deficit. It remained positive between February and July 2017 and reached a high of R10.6 billion in June. Exports rose by 4.4 per cent year-on-year between January and July 2017, compared to 2.2 per cent growth in imports owing to the more favourable terms of trade, a consequence of both higher commodity prices and a stronger rand. Overall the narrowing current account deficit reduces vulnerability to international capital flows. However, a major concern is that the financial account remains characterised by weak foreign direct investment and is dominated by portfolio investment. Without a significant reversal in the country's growth trajectory, further downgrades by ratings agencies could result in more capital outflows. This could place additional pressure on the rand and bond yields, thus guaranteeing that the current account deficit will remain a major source of external vulnerability.

Some encouragement has come from most recent figures released that confirm a significant improvement in economic growth in 2017. GDP growth for 2017 increased to 1.3 per cent from an upwardly revised 0.6 per cent in 2016 (previously reported as 0.3 per cent). The proximate factors that have contributed to an overall increase in growth appear to be the recovery in the agricultural sector from drought conditions, coupled with the benefits of increased disposable income from lower than anticipated inflation associated with a stronger rand exchange rate, as well as improved commodity prices globally. Notwithstanding the recovery in GDP, economic performance remains relatively muted in the face of positive developments in the world economy. The global cyclical upswing that started in mid-2016 has continued to strengthen on the back of accelerating growth across the world's advanced economies (Germany, United States, Japan, Canada and Europe), as well as emerging powerhouses in Asia (India, China and Korea). The reversal in global economic performance has prompted optimism that the cyclical pickup will stimulate output. It is also expected to provide opportunities for countries to overcome the lingering effects of the 2008 financial crises and embark on macroeconomic initiatives aimed at enhancing productivity and welfare improving structural reforms. Despite more favourable commodity export prices and strong recovery by the agricultural sector from the crippling drought of 2015-2016, Figure 3 shows an inability to leverage on interlinkages

with a growing global economy. This has meant that South Africa's growth has lagged behind those of its emerging market peers. It is also expected to be below the trend for sub-Saharan Africa, where increasing mineral output stemming from rising commodity prices, slowing inflation and conditions favourable to financing of infrastructure initiatives are expected to improve GDP growth to 3.3 per cent in 2018.

Figure 3. South Africa's relative growth performance, 2008–2016



Source: FFC calculations based on International Monetary Fund World Economic Outlook Database

Economic growth remains too low to generate sufficient employment opportunities. Since 2016, 818 000 people have entered the labour force, but only 141 000 additional jobs have been created. This means that only 17.24 per cent of additional jobs were created for the new entrants into the labour force. In 2017, 201 000 people entered the labour force, but only 102 000 additional jobs were created. The unemployment rate accelerated to a 14-year peak of 27.7 per cent in the first half of 2017 before decelerating marginally to 26.7 per cent. There are currently 5.8 million people unemployed. Employment creation thus remains elusive, unresponsive to both fiscal interventions and economic upswings as in Figure 4.

Figure 4. Unemployment rate and changes in public and private employment, 2000–2017

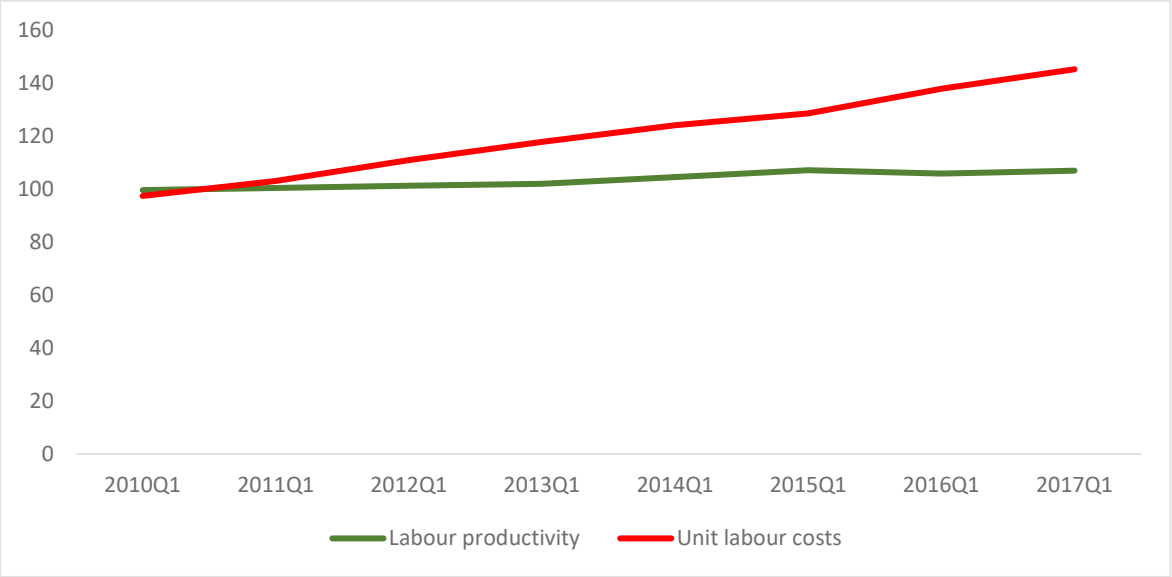
Source: FFC calculations based on regional explorer database by Global Insight

Living costs in the country are relatively high. This means that wages need to be above a certain level to be attractive for workers. Skills shortages also mean that skilled and productive labour demand higher wages. Furthermore, the collective bargaining system results in higher wages for unionised workers, which means that wages are growing faster than productivity in many sectors[11]. A high wage means that a high unit cost of labour, which in turn impacts negatively on employment.

Productivity growth in the non-agricultural sectors increased from 97.4 in the first quarter of 2011 to 106.9 in the first quarter of 2017. This means that South Africa is producing more output per employed person. As a result of high wage growth over this period, the unit labour cost increased more in quarter-to-quarter and seasonally adjusted terms than labour productivity, from 97.4 in the first quarter of 2011 to 145.2 in the first quarter of 2017 (see Figure 5).

[11] FFC (Financial and Fiscal Commission). 2017. *Submission for the Division of Revenue, 2018/19.* Midrand: FFC.

Figure 5. Quarterly labour productivity and unit labour costs indices, 2011Q1-2017Q2



Source: South African Reserve Bank, 2017

Government has initiated various employment programmes such as the Jobs Fund, Expanded Public Works Programme and Employment Tax Incentive Programme. However, for these programmes to be value-adding, they need to be closely monitored, and their performance assessed against objectives so they can improve and also become more cost-effective. Evaluating and continually improving the performance of entrepreneurship, training, and active labour market programmes would also assist in addressing unemployment.

The economic outlook in 2018 is thus one in which South Africa needs to balance ongoing efforts of fiscal consolidation without stifling the country's fragile recovery. Changes in the executive arm of government, together with a commitment to restoring sound corporate governance practices at state-owned enterprises, tackling corruption and improving efficiency of spending as well as addressing other structural weaknesses, is expected to provide a moderate upswing in economic activity.

1.2.2 The fiscal outlook

Until recently, government had achieved significant prudent fiscal management. Fiscal policy faced many challenges at the advent of democratically-elected government in 1994, including a relatively high public debt to GDP ratio and a high budget deficit that curtailed the ability of the government to democratise its expenditure and support development. Prior to the global economic crisis, fiscal policy was successfully implemented. The public debt-to-GDP ratio fell from nearly 50 per cent in 1994 to 45 per cent in 1995, the result of excessive expenditure by the Apartheid government to finance its homelands project. From 1996 government took measures that prevented further increases in the debt level and only in 2000 started to reduce the debt level as a percentage of GDP. By 2008, government surpluses and low deficits had brought the debt level materially down to less than 24 per cent. However, the international financial crisis in 2008 and its local economic impact meant that the percentage to GDP inevitably increased, as deficits were incurred. Unlike most developing countries, South Africa was able to take a countercyclical stance during the global financial crisis, thanks to prudent

fiscal and monetary management during periods of growth.[12] The substantial expenditure programmes for infrastructure for the World Cup 2010 provided further stimulus. Initially, it had been assumed that the 2008 financial crisis was just a normal economic downturn, rather than a great recession. This assumption proved to be incorrect. South Africa, however, failed to implement measures to adjust to this unfolding scenario. This led to rising budget deficits and the public debt-to-GDP ratio increased from 23 per cent in 2008 to 45.5 per cent in 2016. Fiscal adjustment was therefore required to stabilise the public debt dynamic.

In the face of global economic headwinds, the fiscal position was such that the countercyclical approach had run its course. The structural budget deficit could no longer be reduced through a cyclical upturn in revenues. For the first time, an aggregate expenditure was set as a ceiling in 2014. The 2015/16 Budget announced the implementation of various measures aimed at narrowing the budget deficit, stabilising debt and rebuilding fiscal space. A fiscal reform package consisting of a lower expenditure ceiling and higher taxes was expected to reduce the deficit from an estimated 3.9 per cent of GDP in 2014/15 to 2.5 per cent by 2017/18. Net debt was projected to stabilise at 43.7 per cent of GDP in 2017/18.

By the end of the 2018 MTEF period, net loan debt will amount to R3.03 trillion which is equivalent to 52.2 per cent of GDP. Table 1 illustrates total national government loan debt along with its real projected growth over the 2018 MTEF period. The bulk of debt, 90 per cent of gross loan debt, is funded through domestic loans which are projected to grow by a real annual average of 3.0 per cent between 2018/19 and 2020/21. The fastest growing component of government debt is foreign-denominated loans which are expected to grow by a real annual average of 6.6 per cent over the 2018 MTEF period.

[12] A countercyclical stance is when government's policies work against the economic cycles, i.e. when the economy is in an upswing, government policies are aimed at cooling down the economy; when the economy is in a downturn, government policies are aimed at stimulating the economy. In the case of South Africa, fiscal reserves built up during periods of growth meant the government had money to spend in order to stimulate the economy.

Table 1. Total national government debt, 2016/17-2020/21

End of period	2016/17	2017/18	2018/19	2019/20	2020/21	Real annual average growth over 2018 MTEF
R 'billion	Outcome	Estimate	Medium-term estimates			
Domestic loans	2 020	2 286	2 502	2 712	2 940	3.0%
Short-term	277	310	324	347	377	1.1%
Long-term	1 743	1 976	2 178	2 365	2 563	3.3%
Foreign loans	213	220	269	271	310	6.6%
Gross loan debt	2 233	2 506	2 771	2 983	3 250	3.3%
Less: National Revenue Fund bank balances	-225	-221	-244	-215	-220	-5.0%
Net loan debt	2 008	2 285	2 527	2 768	3 030	4.1%
As percentage of GDP:						
Gross loan debt	50.7	53.3	55.1	55.3	56.0	
Net loan debt	45.6	48.6	50.3	51.4	52.2	

Source: 2018 Budget Review, National Treasury

Table 2 shows the consolidated government fiscal framework. Over the next three years (2018/19, 2019/20 and 2020/21), it indicates a consolidated revenue target of R4.837 trillion relative to projected expenditure of R5.416 trillion. Over the 2018 MTEF period, revenue is expected to show strong real growth of 4.5 per cent in 2018/19, before levelling out to 2.3 per cent in 2019/20 and 2.2 per cent in 2020/21. In response to revenue collection shortfalls and additional spending pressures, various adjustments have been made to tax policy measures in a bid to boost revenue and realise the projected 4.5 per cent growth level predicted for 2018/19. Proposed tax policy adjustments are expected to raise R36 billion in additional revenue in 2018/19 with the main feature of the adjustments being a one percentage point increase in value added tax (VAT) from 14 per cent to 15 per cent.

Table 2. Consolidated fiscal framework, 2014/15-2020/21

R 'billion/percentage of GDP	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
	Outcome			Revised	Medium Term Estimates		
Revenue	1 095.3	1 215.3	1 285.7	1 353.6	1 490.7	1 609.7	1 736.9
	28.3%	29.5%	29.2%	28.8%	29.7%	29.9%	29.9%
Expenditure	1 235.0	1 366.3	1 441.8	1 558.0	1 671.2	1 803.0	1 941.9
	31.9%	33.1%	32.7%	33.2%	33.3%	33.4%	33.4%
Non-interest expenditure	1 113.6	1 227.8	1 285.0	1 387.6	1 483.4	1 596.9	1 718.0
	28.8%	29.8%	29.2%	29.5%	29.5%	29.6%	29.6%
Debt service costs	109.6	121.4	136.3	153.4	169.3	187.6	206.4
	3.0%	3.1%	3.3%	3.5%	3.6%	3.7%	3.7%
Budget balance	-139.7	-151.0	-156.1	-204.3	-180.5	-193.3	-205.0
	-3.6%	-3.7%	-3.5%	-4.3%	-3.6%	-3.6%	-3.5%
Primary balance	-25.8	-13.2	-5.9	5.5	20.3	45.7	60.6
	-0.7%	-0.3%	-0.1%	0.1%	0.4%	0.9%	1.1%

Source: 2018 Budget Review, National Treasury

On the expenditure side, while real growth in expenditure is expected to slow down dramatically from 5.8 per cent in 2017/18 to 1.7 per cent in 2018/19, growth is expected to recover to the 2 per cent range over the outer years (2019/20 and 2020/21) of the 2018 MTEF period. As previously referred to, growth in expenditure is driven by strong real increases in debt service costs projected to grow by a real annual average of 4.6 per cent over the period. Growth in non-interest spending, which comprises funding to the three spheres of government for delivery of basic services, shadows the overall expenditure trend in that it slows significantly in 2018/19 from 5.7 per cent in 2017/18 to 1.4 per cent, before strengthening to the 2 per cent range over the outer two years (2019/20 and 2020/21) of the 2018 MTEF period. Slowing down growth in non-interest expenditure to 1.4 per cent is achieved through an array of baseline reduction and expenditure cuts which have seen significant reductions in infrastructure spending through conditional grants to sub-national governments. Priority spending programmes such as basic education, public health care, social protection and community development will continue to drive expenditure over the 2018 MTEF period. From a functional perspective the fastest growing item apart from interest payments, will be post-school education and training (PSET) and this is directly as a result of the additional funding that will go to the National Student Financial Aid Scheme in respect of fee-free higher education and training which will be phased in, starting with fee exemptions for households earning below R350 000 per annum in 2018.

Exacerbated by poor revenue collection performance, the deficit widened to 4.3 per cent of GDP in 2017/18, significantly overshooting Budget 2017 projections of a deficit of 3.1 per cent of GDP. At the time of the 2017 Medium Term Budget Policy Statement (MTBPS), projections were that the deficit would remain at an elevated level of 3.9 per cent of GDP throughout the 2018 MTEF period. Budget 2018 suggests a stronger emphasis on fiscal consolidation efforts that should see the narrowing of the deficit through reigning in expenditure and tax policy adjustments. Projections are that the deficit will be reduced to 3.6 per cent of GDP in 2018/19 and further to 3.5 per cent of GDP by the end of the 2018 MTEF period in 2020/21.

Table 3 summarises the division of non-interest expenditure allocations amongst the three spheres of government by comparing allocations at the time of the 2017 MTBPS versus the 2018 budget. Anticipation of muted economic growth, the shortfall in revenue collection and importantly, the post-MTBPS pronouncement on fee-free higher education and training for households earning below R350 000 per annum has meant that the 2018 MTEF division of revenue amongst the three spheres varies to that which was estimated at the time of the 2017 MTBPS. After accounting for national debt, estimated receipts of R4.274 trillion are available to share amongst the three spheres over the next three years of the 2018 MTEF.

Table 3. Division of revenue over 2018 MTEF period

	Total 2018/19-2020/21 (R 'billion)		Real annual average growth rate	
	2017 MTBPS	2018 Budget	2017 MTBPS	2018 Budget
National departments	2 045.8	2 051.1	0.9%	1.5%
Provincial allocations	1 857.4	1 840.3	1.6%	1.3%
Equitable share	1 522.1	1 517.7	1.6%	1.5%
Conditional grants	335.4	322.4	1.8%	0.4%
Local government allocations	397.0	382.9	2.6%	1.9%
Equitable share	207.4	207.4	4.1%	5.2%
General fuel levy sharing with metropolitan municipalities	39.7	39.7	0.4%	0.4%
Conditional grants	149.9	135.9	1.1%	-2.3%
Total	4 300.3	4 274.3	1.4%	1.4%

Source: FFC calculations, 2017 MTBPS, 2018 Budget Review.

Despite the strained fiscal environment and cuts to total provincial and local government allocations, there is real, albeit marginal, growth in the resources allocated to the three spheres. On the whole, there has been a clear prioritisation of funding to municipalities. On aggregate, allocations to the local government sphere will grow by a real annual average of 1.9 per cent over the 2018 MTEF period, while slower growth is projected in the cases of the national and provincial spheres of government. These spheres are projected to grow by a real annual average of 1.3 per cent and 1.5 per cent respectively.

Over the 2018 MTEF period, conditional grant allocations to provinces and municipalities will bear the burden of government's need to cut and reprioritise spending. Conditional grant cuts to both provinces and municipalities are most severe in 2018/19 and are projected towards the end of the 2018 MTEF period (2020/21). In the case of provinces, conditional grant transfers will decline by 1.3 per cent in 2018/19, thereafter growing by 0.3 per cent and 2.1 per cent in 2019/20 and 2020/21 respectively. In the case of municipalities, the reductions are more severe: in 2018/19 and 2019/20, local government conditional grants will decline by 5.8 per cent and 2.0 per cent respectively, before recovering to grow marginally by 1 per cent in 2020/21. While the need for consolidation and expenditure moderation is understood from the context of prevailing fiscal constraint, it is of concern that the composition of expenditure reductions disproportionately affects capital transfers. These are essential in laying the foundation for future growth. An indiscriminate cut in capital spending is likely to result in delays in project implementation, and reinforce infrastructure and access backlogs, compromising not only

today's service delivery, but also future service delivery as it is not possible to 'sweat' assets indefinitely.

Tax collection is falling behind. This will make it difficult to achieve collection target set out in the 2017 Budget. The 2017 MTBPS projected a consolidated government revenue shortfall of R50.8 billion compared to the February 2017 Budget estimate for 2017/18. This was the largest expected revenue under-collection since 2009. The shortfall could be attributed to slowdowns in all the main tax components suggesting that both technical (economic slowdown) and behavioural (non-compliance, e.g., avoidance) factors were at play.

The 2018 Budget projects a revenue shortfall of R48.2 billion in 2017/18. A combination of expenditure cuts discussed above and revenue increases is expected to plug the revenue shortfall. An increase in the VAT rate, limited personal income tax bracket adjustments and other revenue raising measures are expected to raise R36 billion, while the MTBPS baseline expenditure will be reduced by R26 billion. Worryingly, the revenue shortfalls are expected to extend to the outer years of the MTEF period, with gross tax revenue projected to fall short of the 2017 Budget estimates by R84.3 billion in 2018/19 and by R106 billion in 2019/20. The projections are an indication of a deceleration in tax buoyancy and, importantly, in tax elasticity (responsiveness of tax revenue to changes in GDP).

South Africa has long enjoyed a tax-paying culture. The country has largely benefitted from a compliant culture built up over many years and which translated into higher compliance aligned with organisational improvements at South African Revenue Services. However, some evidence suggests that corruption and wasteful expenditure in the public sector have eroded taxpayer morality and resulted in slippage in compliance. Table 4 shows the number of taxpayers liable to submit tax returns against the number that actually did so. This means that there has been a slippage in compliance from 86.9 per cent in 2012 to 75.4 per cent in 2016. The World Bank and PWC's paying taxes reports show that South Africa's overall ranking on the ease of tax compliance has slipped from 19 in 2015 to 46 in 2018. In respect of time to complete a company income tax audit (31.6 weeks), the country falls short of regional and global averages (21.8 weeks and 27.3 weeks respectively).

Table 4. Taxpayers liable to submit returns and compliance 2012/13-2015/16

Year	2012/13	2012/13	2013/14	2014/15	2015/16
Number of taxpayers liable to submit returns (millions)	5.9 million	6.5 million	6.6 million	6.6 million	6.3 million
Number of taxpayers that did submit returns (millions)	5.1 million	5.2 million	4.9 million	4.8 million	4.8 million
Percentage compliance of population (%)	86.9%	79.8%	74.9%	71.9%	75.4%

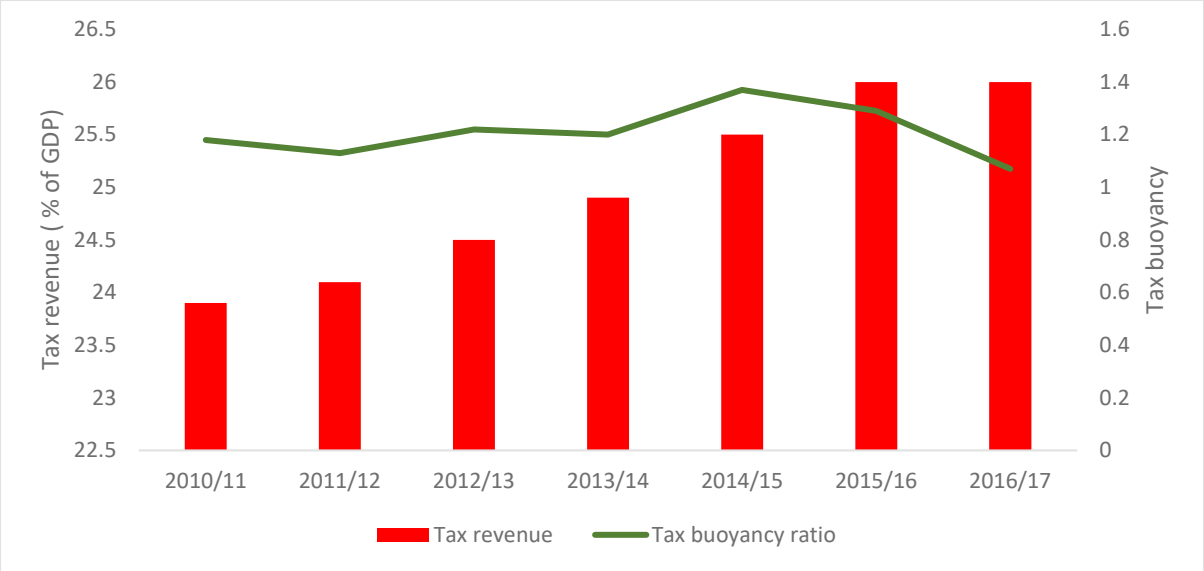
Source: South African Revenue Services

In terms of behavioural patterns, high penalty rates do not have a significant difference from those of low penalty rates in respect of taxpayers' behavioural responses to audits and penalties as non-compliance deterrent measures. The effectiveness of the deterrence policy is highly dependent on the frequency of audits and the tax authority's ability to detect underreporting.

Tax buoyancy, which is an indicator of sensitivity of tax revenues to changes in economic growth, has fallen from a peak of 1.37 in 2014/15 to 1.07 which is below the long-term average of 1.08 in 2016/17. As an important indicator of tax revenue performance, the decelerating tax

buoyancy ratio means that the sluggish economic growth is impacting negatively on tax performance. The tax-to-GDP ratio is an important indicator to measure the tax effort of government. The South African tax-to-GDP ratio showed a gradual upward trend from 23.9 per cent in 2010/11 to 26 per cent in 2015/16. However, it stagnated and remained at 26 per cent in 2016/17 as shown in Figure 6 below. This means that tax effort is also now being affected by sluggish growth.

Figure 6. Tax revenue as a percentage of GDP and tax buoyancy ratios, 2010/11–2016/17



Source: FFC calculations based on Statistics South Africa, 2017.

The 2018 Budget proposes revenue measures that are expected to raise R36 billion in 2018/19. The largest contribution is R22.9 billion from the one percentage point increase in VAT. In addition, R6.8 billion will be raised from lower-than-inflation increases to the personal income tax rebates and brackets, certain wealth taxes, fuel levy and 'sin' taxes.

Given the magnitude of the revenue shortfalls and circumstances the South African economy finds itself in, the necessity to increase VAT is understandable from two main perspectives.

- First, results of previous research based on an economic impact analysis study carried out at the Commission (also Mabugu et al 2015) showed that a promising avenue for tax change is higher consumption taxes coexisting with a progressive income tax system, combined with more welfare transfers. The study showed that higher consumption taxes have the potential to make the tax system more efficient and to encourage savings and investment (as opposed to consumption). Higher consumption taxes have often been resisted because they will raise the tax incidence on the poor. However, this is completely reversed in the proposal by redirecting the raised VAT revenues to poor households. This finding has important implications for current discussions on 2018 Budget tax policy, suggesting that the potential for poverty reduction is more pronounced when VAT revenues are redirected, or what government has termed pro-poor allocations on the expenditure side of the budget to increase the social wage (e.g. through social grants). This would cushion the impact of a VAT increase on low income groups, along with a continued regime of zero rating which is, by and large, well targeted.
- Second, to rating agencies, a VAT increase would also be considered as a signal of structural reform.

More broadly, a range of tax-base-broadening measures, together with structural reforms aimed at enhancing economic growth, will still be required to plug the revenue shortfalls. For example, both internationally and domestically, increasing inequality has focused the policy debate on wealth taxes. For South Africa, this could take the form of initiating discussion around a land tax and/or property tax over and above the regime currently in place. Given that the Davis Tax Committee has called for public submissions on increasing existing wealth taxes such as estate duty and property taxes, as well as the possible introduction of a new wealth tax instrument, Budget 2018 could have made announcements in respect of future wealth taxes. This increases policy certainty. Citizenry trust is also strengthened when measures for public discussion are announced in advance. Finally, Parliament is in the process of considering the Carbon Tax Bill. Similar to the sugar tax (health levy), the carbon tax is primarily aimed at effecting behaviour change. Progressively varying the combination of taxes to support economic growth, while concurrently supporting fiscal sustainability, will be a more sustainable way of plugging revenue shortfalls. The only sustainable solution is to broaden the tax base.

1.3 Socio-economic impact and moving towards 2030

As previously stated, disparities between and within regions remain in South Africa, despite efforts and interventions to narrow the gaps. Sizeable differences in income and other wellbeing indicators between regions remain. Income disparities also remain within regions. The highly unequal society that has emerged makes the issue of redistribution for equity compelling. Although the country has policies to facilitate the redistribution of wealth, there is a general feeling that this has not proceeded at a pace that allows for the reduction in inequality required. These sentiments have emerged as hotly contested pronouncements on the nationalisation of mines, land redistribution (including debates on land expropriation without compensation) and a general agreement that broad-based black economic empowerment is yet to achieve its goals with respect to equity in employment, ownership and management control of business entities. This has recently emerged with demands for *'radical economic transformation'*, a term first used in the Medium Term Strategic Framework adopted by government in 2014 to guide the work of this current administration to signal an intensification and acceleration of the economic transformation process.

At the broader strategic level, and cognisant of prevailing fiscal constraints, three options define the realm of space available to the policy maker to re-engineer the system to eliminate poverty and reduce inequality:

- "do nothing" scenario
- gradualism with experimentation, and
- "big bang" or "bang bang" approach.

This section contextualises the socio-economic setting and then, based on a quantitative model, assesses changes in the aggregate consumption expenditure level and distributions across the population (inequality) to achieving the National Development Plan or Sustainable Development Goals on poverty and hunger by 2030. The quantitative approach defines the milestones for South Africa to halve poverty and end hunger by 2030 as set by the SDGs and NDP (Agénor et al, 2002; Decaluwé et al, 2012). Innovation on the analytical front allows a more realistic assessment of the targets for the income growth and distribution across the population to achieving the SDG's targets on poverty and hunger (Ravallion, 2004, 2007).

The micro-macro framework is used to implement two simulation scenarios: Business as usual (BAU) and SDGs. The BAU scenario is built on the recent trend of the *per capita* final consumption expenditure and income inequality, and the changes in urban and rural demographic and urbanisation patterns. The SDGs scenario upholds the demographic and urbanisation targets and uses the SDGs on poverty and hunger to assess the implied changes required in expenditure growth and income inequality. "Income" and "consumption expenditure" are used interchangeably.

Urban and rural demographic and urbanisation patterns are captured by the micro model. South Africa's total population is estimated at 55.0 million in 2015 and projected to be 69.3 million by 2030 (Table 5).[13] Between 2015 and 2030, population will therefore increase by 26.0 per cent, i.e. an annual rate of 1.6 per cent. The urban population will increase more than the rural population, i.e. 39.1 per cent (annual rate of 2.3 per cent) and 1.8 per cent (annual rate of 0.1 per cent) respectively. Consequently, the urbanisation rate increases from 65 per cent in 2015 to 72 per cent by 2030, i.e. an increase of 9.9 per cent between 2015 and 2030.

Table 5. Population growth and urbanisation

	Total population			Proportion of population in urban areas
	South Africa	**Urban**	**Rural**	
2015	55 011 977	35 648 311	19 363 666	0.648
2030	69 288 037	49 573 849	19 714 188	0.715
Change (%)	26.0	39.1	1.8	9.9

Source: United Nations (2017)

1.3.1 Business as usual scenario

Data from Statistics South Africa (Table 6) show a stagnation of the *per capita* final consumption expenditure between 2011 and 2016. Income inequality has not changed significantly between 2010 and 2015 with Gini indexes of 0.70 and 0.68 respectively (Statistics South Africa, 2017). Thus, the BAU scenario projects this current trend of the economy in terms of expenditure growth and income inequality, and the change in urbanisation to assess the poverty and hunger outcomes.

[13] The urban and rural population growth rates, and the urbanisation rate used are informed by the world population prospects and the world urbanisation prospects of the United Nations Department of Economic and Social Affairs.

Table 6. Percentage change in GDP and final consumption expenditure, 2012 – 2016

Year	GDP growth	Household final consumption expenditure	*Per capita* final consumption expenditure
2012	2.5	3.7	2.3
2013	2.8	2.0	0.5
2014	1.5	0.7	-0.9
2015	1.2	1.7	0.1
2016	0.5	0.8	-0.7
Average 2012-2016	1.7	1.8	0.2

Source: *FFC calculations based on Statistics South Africa (2017)*

Under the BAU scenario, the proportion of the population below the poverty line of R992 per month is projected to increase slightly from 55.2 per cent in 2015 to 56.1 per cent by 2030 (Table 7). The absolute number of poor people is expected to increase substantially between 2015 and 2030 with the population growth. Thus, the goal of halving poverty between 2015 and 2030 will not be met under the current trend of the economy as captured in the BAU scenario. In the same vein, extreme poverty and hunger will not be eliminated by 2030 as 23.6 per cent of the population will still be living below the income threshold of R441 per month.

Table 7. Results of the business as usual scenario

Year	2015	2030	Percentage change
Per capita expenditure (rand)	30 565	31 723	3.8
Gini index	0.673	0.683	1.5
Poverty index	0.552	0.561	1.6
Hunger index	0.231	0.236	2.2

Source: *FFC calculations and Statistics South Africa (2017).*
Note: *Poverty Line = R992 per person per month in 2015 prices (upper-bound poverty line). Food Poverty Line = R441 per person per month in 2015 prices*

1.3.2 Sustainable Development Goals scenario

Table 8 presents the initial poverty and hunger measures and the SDGs targets for South Africa. As discussed earlier, the poverty headcount ratio is estimated at 55.5 per cent in 2015 (Statistics South Africa, 2017). By 2030, the proportion of poor, i.e. the population below the income threshold of R992 per month, should be less than 27.7 per cent. The proportion of the population below the food poverty line of R441 per month is estimated at 25.2 per cent (Statistics South Africa, 2017). By 2030, South Africa should have lifted everyone out of hunger.

Table 8. Poverty and hunger reduction targets

	Base year 2015	Sustainable Development Goal target 2030	Change (%)
Poverty line	0.555	0.277	-50.0
Food poverty line	0.252	0.0	-100.0

***Source**: Statistics South Africa (2017). **Note**: Poverty Line = R992 per person per month in 2015 prices (Upper-Bound poverty line). Food Poverty Line = R441 per person per month in 2015 prices*

The SDGs on poverty and hunger are achieved with an increase in *per capita* final consumption expenditure of 46.5 per cent between 2015 and 2030 (Table 9). This implies an annual increase of 2.6 per cent in *per capita* consumption expenditure. When population growth is accounted for, household final consumption expenditure target is set at 4.2 per cent on average annually.

Table 9. Targets of the Sustainable Development Goals scenario

Year	2015	2030	Percentage change
Poverty index	55.2	27.5	-50.0
Hunger index	23.1	0.0	-100.0
Income (rand)	30 565	44 778	46.5
Gini Index	67.3	51.3	-23.8

Source: FFC calculations based on model simulation results (2018)

The expenditure growth target must be coupled with a decline in income inequality. The Gini index declines to 0.513 by 2030 from an estimated value of 0.673 in 2015. Although the income growth strategy is important to reduce hunger, income redistribution appears to be a key component of inequality reduction strategy and hunger elimination. The expenditure increase by 4.2 per cent on average annually will not be sufficient to lift everybody above the income threshold of R441 per month by 2030 to end hunger by 2030 unless accompanied by measures to extend social assistance to 10 per cent of the population (i.e. nearly 7 million people) (Table 10). Both rural and urban areas are targeted for the social assistance with a focus on the following six areas: rural Limpopo, rural and urban KwaZulu/Natal, rural and urban Eastern Cape, and urban Gauteng.

Table 10. Number of assisted persons

Province	Urban	Rural	Total
Western Cape	253 771	64 100	317 871
Eastern Cape	491 462	894 376	1 385 838
Northern Cape	119 063	10 347	129 410
Free State	281 061	69 460	350 521
KwaZulu/Natal	524 597	1 357 482	1 882 079
North West	181 638	386 901	568 539
Gauteng	614 971	3 259	618 230
Mpumalanga	162 578	333 409	495 987
Limpopo	66 614	1 120 113	1 186 727
South Africa	2 695 755	4 239 447	6 935 202

***Source**: FFC calculations based on model simulation results (2018)*

An annual economy-wide growth rate of 4.5 per cent on average is required to meet the SDGs consumption expenditure target (Table 11). In other words, current growth performance of 2.0 per cent must more than double between 2015 and 2030 to achieve the SDGs on poverty and hunger. There are several routes that South Africa can take to meet the economic growth target. Here, we investigate the private investment level required to support required SDGs growth rates. The target for private investment growth needs to be set at 5.7 per cent annually, nearly twice the growth rate under the BAU scenario (Table 11).

Table 11. GDP and investment targets

	Business as usual	Sustainable Development Goals
GDP	2.0	4.5
Investment	3.0	5.7

Source: FFC calculations based on model simulation results (2018)

The income inequality target is investigated through the spatial perspective of income growth and distribution. Table 12 displays changes in consumption expenditure for the SDG scenario relative to the BAU scenario for the nine provinces and by residential area, i.e. urban and rural. It shows the need for greater emphasis on rural areas to achieve the SDGs on poverty and hunger. Thus, we refer to the following five geographical areas as SDGs-focused areas: rural Eastern Cape, rural Limpopo, rural Mpumalanga, rural KwaZulu/Natal, and rural Northern Cape.

Table 12. Percentage change in consumption expenditure by province, by residential area

Province	Urban	Rural
Western Cape	21.2	48.1
Eastern Cape	66.6	148.5
Northern Cape	69.5	90.9
Free State	62.4	37.0
KwaZulu/Natal	42.3	105.2
North West	58.0	49.2
Gauteng	14.2	-12.0
Mpumalanga	39.1	110.0
Limpopo	34.1	129.1

Source: FFC calculations based on model simulation results (2018)

We pay attention to the relationship between expenditure growth and employment and earning opportunities by skill category in the SDGs-focused areas. Changes in expected wage rates are computed and compared for the five skill categories of labour covered by the study. The results show that, with increased expenditure, skilled (workers with Certificate and Diploma) and highly skilled (workers with Degree and Postgraduate diploma) labour markets offer better employment and earning opportunities in all SDGs-focused areas except Northern Cape (Table 13).

Table 13. Annual change in expected wage rate, Sustainable Development Goals scenario

SDGs focused areas	Unskilled	Low Skilled	Semi-Skilled	Skilled	High Skilled
Rural Eastern Cape	6.1	6.2	6.1	7.4	7.4
Rural Northern Cape	14.2	15.5	16.5	14.7	17.8
Rural KwaZulu/Natal	2.5	2.7	2.8	4.0	4.4
Rural Mpumalanga	4.2	3.8	4.2	5.5	6.3
Rural Limpopo	3.6	3.9	3.8	4.7	5.5

Source: *FFC calculations from the simulation results (2017).*
Note: *Unskilled (No schooling and less than Grade 1); Lower skilled (Grade 1 to 7); Medium skilled (Grade 8 to 12); Skilled (Certificate and diploma); and High Skilled (Degree and Postgraduate diploma)*

Households in the SDGs-focused areas rely primarily on unskilled, low and medium skilled labour employment and earning (Table 14). Thus, skill development programmes across the SDGs-focused areas are likely to contribute to meeting the income inequality target.

Table 14. Percentage distribution of income by category for rural areas

Province	Unskilled, low- and medium skilled labour	Skilled and high skilled labour	Capital and transfers	Total
Western Cape	59	34	7	100
Eastern Cape	54	31	15	100
Northern Cape	46	45	9	100
Free State	33	23	44	100
KwaZulu/Natal	55	28	17	100
North West	56	17	26	100
Gauteng	40	45	15	100
Mpumalanga	60	29	11	100
Limpopo	58	32	9	100

***Source**: FFC calculations from the 2011 Income and Expenditure Survey.*

1.4 Summary

Chapter 1 set out data on both the macroeconomic impact of the constrained economic environment and the associated implications for public finances, as well as socio-economic outcomes of poverty and inequality. Until recently, government has exercised prudent fiscal management. Fiscal choices have resulted in positive growth rates, improved welfare and standards of living, and expanded access to bulk economic infrastructure. In contrast to these positive signs, the persistence of major shortfalls in infrastructure is of concern. The period also witnessed growing uncertainties linked to stagnant economic growth, high and persistent income inequalities and poverty levels, as well as rapid changes in the political landscape (see following chapters). These uncertainties, coupled with the severe fiscal constraints faced by the economy, pose challenges that will be a test of whether the momentum created will support the new sustainable development agenda. They will also be a test of whether action will be taken to improve the lives of millions of people who continue to be ravaged by poverty, inequality and joblessness.

The basic message of this chapter, set out synthetically in the simulations, is that continuing with 'business as usual' policies and interventions will not meet the poverty and inequality reduction targets set for 2030. Instead, more than ever before, the focus should be on speeding up economic growth and fighting poverty and unequal access to opportunities without further compromising public finances that are severely constrained. The current GDP growth of 2.0 per cent must be accelerated to 4.5 per cent between 2015 and 2030 to achieve the SDGs on poverty and hunger. An average annual increase of domestic and private investment by 5.7 per cent is required to meet the economic growth target. Five rural areas (SDGs focused areas) are identified for intervention to reduce income inequality in South Africa: rural Eastern Cape, rural Limpopo, rural Mpumalanga, rural KwaZulu/Natal, and rural Northern Cape. The analysis shows skilled and highly skilled labour markets offering better employment and earning opportunities in the SDGs focused areas. Skills development programmes in these areas are thus likely to contribute towards meeting the SDGs on poverty and hunger by 2030.

Chapter 2: Recentralisation – Implications for Service Delivery and Intergovernmental Fiscal Relations

2.1 Introduction

According to Dickovick (2011a), numerous Latin American and sub-Saharan African countries that previously embarked on extensive decentralisation processes seem to have reached a turning point where devolved powers and functions are being overturned in what is referred to as recentralisation.

There are three types of recentralisation: political, fiscal and administrative (Dickovick, 2011b). Political recentralisation involves reducing the right of authorities in a sub-national jurisdiction to govern via independent elections. Fiscal and administrative recentralisation, on the other hand, entails reduced autonomy over fiscal resources and expenditures respectively.

According to literature on recentralisation, it is common for countries to reverse processes of decentralisation and embark on centralisation during times of economic crisis. As noted by Lopez-Murcia (2015:3), the existence of an economic crisis is the main determinant of recentralisation in developing and emerging economies such as Peru, Argentina, Brazil and Russia.

Recentralisation in South Africa raises various public finance related concerns. It runs contrary to the spirit and principles underpinning the multilevel system of government that has been established. While persistent poor performance of sub-national government, especially local governments, are cause for concern, section 154 of the Constitution enjoins the national sphere to assume a primary role in building the capacity of sub-national government, specifically municipalities, to carry out their mandate (The Constitution, 1996). Similarly, in respect of sections 100 and 139 interventions, these interventions are regarded as temporary in nature and limited to correcting the performance of sub-national government.

In South Africa, in which the principle of "funds follow function" is embraced, the relocation of functions is accompanied by definite fiscal implications for the government sphere gaining as well as the one losing the function. Due to the fact that most functions at sub-national level are funded via the discretionary equitable share (in combination with other forms of funding), sub-national governments tend to understate actual spending on a function so as to mitigate the negative impact of large funding reductions.

South Africa is experiencing an economic crisis. Growth has been, and is projected to remain, muted. This has precipitated significant fiscal consolidation and a drive to ensure value for money and more efficient spending across government. In this constrained economic environment, recentralisation is likely, premised on the national sphere being better able to deliver services within a limited resource envelope.

Looking back to the global financial crisis of 2007/08 and its aftermath, an expansion in the role and control of the national sphere was evident. Following the onset of the global financial crisis in 2007/08, the proportion of conditional grants relative to equitable share grants increased from 16 per cent of total intergovernmental transfers in 2007/08, to 23 per cent by 2012/13. Real growth in conditional grants also significantly outstripped real growth in block grants, where allocations to conditional grants grew by a real average of 15.6 per cent over the period 2009/10 to 2012/13, while real average growth in block grant allocations grew by 3.8 per cent over the same period. This implies stringent and stricter financial and fiscal control by national government. The extent to which a block grant such as the provincial equitable share (PES) can be discretionary is questionable if one considers that often the transfer of these resources come with conditions on how it should be spent to meet norms and standards.

In addition to the reduction in the expenditure autonomy of sub-national governments several shifts of functions from sub-national government to the national sphere have taken place. Examples include:

- The shifting of the social security grants from provinces to the South Africa Social Security Agency in 2006,
- The relocation of responsibility for technical and vocational education and training (TVET) and adult basic education and training from the nine provincial education departments to the national Department of Higher Education and Training (DHET) in 2012
- The 2006 abolition of the regional services council (RSC) levy at local government level which was replaced with the centrally collected fuel levy in 2009/10
- The shifting of the National Health Laboratory Services to the national Department of Health in 2015 and
- The ongoing reorganisation of the public health care system, largely run by provincial health departments, into a national health insurance scheme.

If the expansion of national government's footprint occurred together with upscaled sub-national capacity and improved, more cost efficient, service delivery, then a larger role for the national sphere may be justified. In terms of the impact of recentralisation reforms, research findings are inconclusive and therefore, it depends on the country context and manner in which recentralisation takes place.

It is common for countries to reverse processes of decentralisation and embark on centralisation during times of economic crisis. This appears to be the case in South Africa. Key questions that need to be answered are:

- is recentralisation the solution for South Africa during times of financial constraints?
- what are its implications for South Africa?
- is recentralisation cause for concern from a fiscal, service delivery and broader, intergovernmental system-wide perspective?
- is the dominant role assumed by the national sphere due to national government being better able to ensure performance relative to its sub-national counterparts?
- does recentralisation pose a credible avenue for ensuring better value for money and improved service delivery during this period of financial and fiscal constraint?

The objectives of this research are to:

- analyse the fiscal and service delivery implications of fiscal and administrative recentralisation

- assess whether the national sphere performance, in terms of service delivery and spending performance, is qualitatively better to that of subnational government, and if so,
- determine whether recentralisation provides an avenue for ensuring better value for money in a fiscal constrained environment.

2.2 Research methods

The research employed multiple techniques to fulfil its objectives. In particular, case-studies of recentralisation that generated broad lessons applicable to the public sector. With respect to fiscal recentralisation, the use and performance of earmarked conditional grants were assessed. In the case of administrative recentralisation, TVET colleges were analysed.

2.2.1 Case study: Financial recentralisation of earmarked conditional grants

With respect to the financial recentralisation case study, an assessment of financial and non-financial performance data was undertaken. The data chosen was determined by when an earmarked grant was introduced. In certain instances, data goes back to 2009/10. For the purposes of this study, earmarked funding in the human settlements sector and the Human Settlements Development Grant (HSDG) was emphasised. An assessment of the performance of specific programmes in the HSDG was conducted to ascertain whether recentralisation through the use of earmarked conditional grants has resulted in a discernible improvement in service delivery. To complement the quantitative analysis as well as to gain a greater understanding of the dominant institutional issues that have arisen as a result of recentralisation, interactions with relevant stakeholders were also undertaken.

2.2.2 Case study: Administrative recentralisation of TVET colleges

In this case study, a before and after analysis was used to identify how the performance of colleges have changed as a result of the function being relocated from sub-national to national government. Through the use of performance data, the analysis investigated the institutional and educational performance outcomes of the fifty public TVET colleges before and after the recentralisation of the function. The study focused on 2013 and 2015 to reflect the period prior to and post the recentralisation of the function. While recentralisation reform was legislated in 2012, the transfer of the function came into effect only in April 2015. 2013 and 2015 are thus appropriate proxies of the period prior to and post the recentralisation of the function. The study used outcome indicators relating to efficiency and the quality of the teaching and learning process.

With respect to assessing institutional performance or how efficiently TVET colleges use resources, the study employed a two-stage methodological approach.

- In the first stage, the non-parametric data envelopment analysis (DEA) technique was used to measure the technical efficiency of TVET colleges that is whether or not TVET colleges are optimally using their inputs to maximise outputs. Under the assumption of variable returns to scale, an input-orientated DEA was used to estimate the efficiency scores for a sample of fifty urban and rural TVET colleges.

In the second stage, a cross-section Tobit regression model was used to identify the factors that have an influence on the estimated efficiency scores for the period before and after the recentralisation of the function.

According to Kinara (2014), the size of TVET institution has a marginal effect on its efficiency. Its location also has a significant impact on efficiency, particularly if it is in an urban area. Furthermore, recurrent and development expenditure negatively influences the efficiency of a TVET institution (Kinara, 2014).

With respect to evaluating the effect of recentralisation on the educational performance of TVET colleges, the study followed a similar approach to the before-treatment/after-treatment research design without a control group that was reviewed in Meyer (1995) and Duleep and Liu's (2016) papers.

According to Zhang (2009), Webber and Ehrenberg (2010), Agasisti (2011) and Webber (2012), graduation rates are influenced by institutional expenditure such as on student services, academic support, research and instructional expenditure. However, the impact on graduation rates differs across the various categories of institutional expenditure, and the relationship between expenditure and educational performance is not necessarily linear across various education systems. For example, it is possible to achieve high graduation rates with few resources.

To complement the quantitative analysis, questionnaires were sent to officials from the South African College Principal Organisation and the DHET.

2.3 Findings and discussion

This section summarises the findings according to financial recentralisation as well as administrative recentralisation.

2.3.1 Financial recentralisation

The first finding from the analysis relates to the change in the way the government has broadly responded to instances of fiscal stress, with specific focus on the period between the 2007/08 global financial crisis and the current outlook for the 2018 Medium Term Expenditure Framework (MTEF). The difference in the responses are illustrated in Table 15andFigure 7.

Table 15 illustrates the proportional composition of intergovernmental transfers while Figure 8 shows the real year-on-year growth in conditional grants relative to block grants. Together these diagrams illustrate the growing emphasis placed on conditional grants relative to block grants at the onset of the global financial crisis of 2007/08 and for a few years following. The proportional allocation to conditional grants relative to block grants peaks at 26.5 per cent in 2011/12 but fails to return to the 15-16 per cent pre-crisis range. It is interesting to note that while the current economic climate (2018 MTEF period) is muted, government has not used the same approach of reducing block grants relative to conditional grants. However, on average, over the whole period 2002/03 up to the 2020/21 projections, conditional grants illustrate stronger real growth relative to block grants. More specifically, conditional grants grow by a real annual average of 7 per cent relative to the 4.2 per cent growth in block grants. Notwithstanding the strong real growth in conditional grant funding, it should be noted that block grants such as the PES are earmarked for particular programmes and/or projects identified by national government[14]. Earmarking pockets of PES funding for national priorities

[14] In respect of the 2018 MTEF period, pockets of funding channeled through the PES are earmarked, for example, for prevention and intervention programmes to combat women and child abuse and wage inflation.

implies reduced discretion for provinces as they cannot fully decide where and how to utilise this discretionary pool of funding.

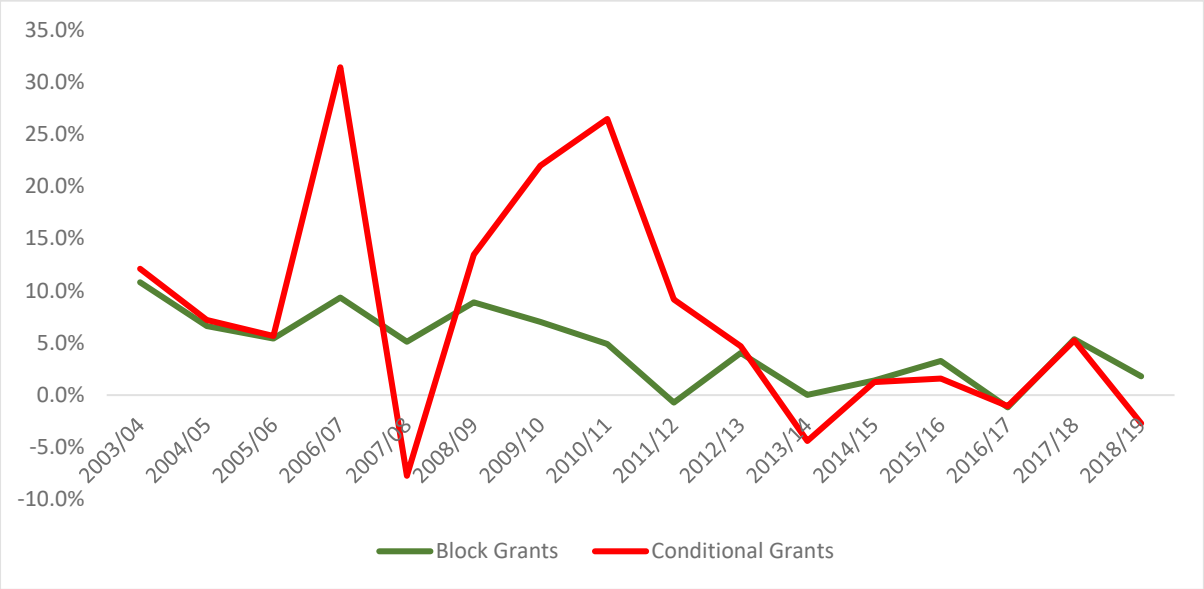
A deeper assessment of Figure 7, specifically on the real year-on-year growth in period 2008/09 to 2012/13 relative to period 2017/18 to 2020/21, reveals insight into government's responses during periods of fiscal constraint. In the latter period, block grants grew by a real average of 2.8 per cent, while conditional grants show a marginal real average growth of 1 per cent. With respect to the 2018 MTEF period, there has been an interesting increase in the number of earmarked conditional grants. While conditional grants are not being significantly increased, pockets of funding in existing grants are being ring-fenced with more stringent conditions. This means that a less robust recentralisation is being applied.

Table 15. Proportion of block grants to conditional grants, 2003/04-2017/18

%	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18
BGs	85	85	85	85	82	84	83	82	79	77	77	78	78	78	78	78
CGs	15	15	15	15	18	16	17	18	21	23	23	22	22	22	22	22

Source: National Treasury, Budget Review (2006-2017a)

Figure 7. Real growth in block grants and conditional grants, 2003/4-2019/20



Source: National Treasury, Budget Reviews (2006-2018)

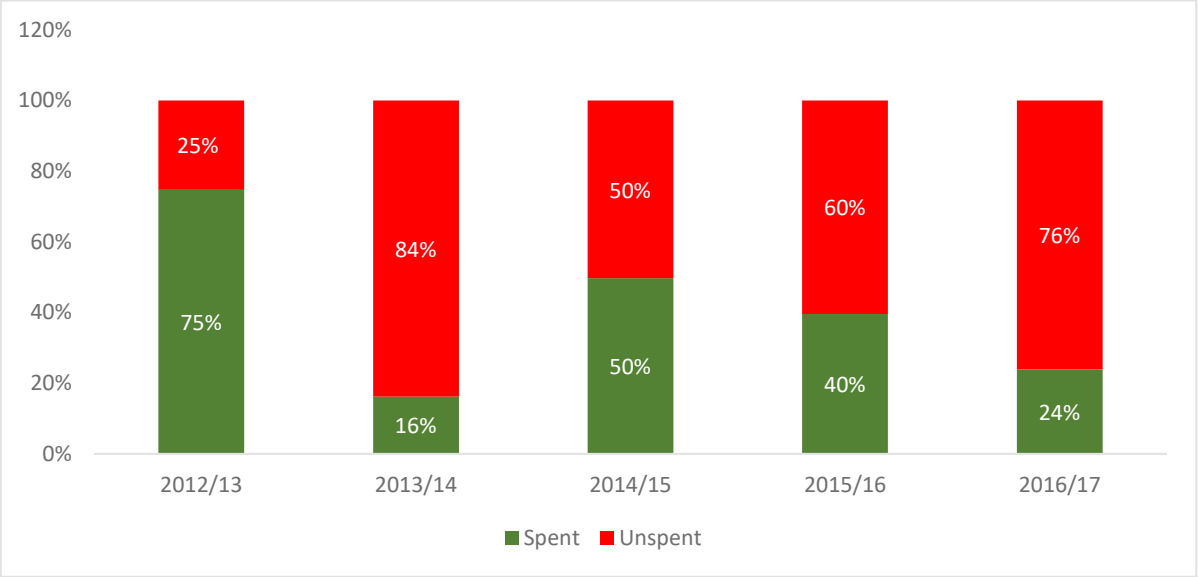
An assessment of earmarked conditional grant funding in the human settlements sector is used to further understand the dynamics of financial recentralisation. Generally, the use of earmarked conditional grant funding has increased in recent years, but this increase has been particularly marked in this sector. The human settlements sector is responsible for the provision of different subsidised housing products (ranging from fully subsidised housing opportunities to where households contribute some funding) to different income groups (earning from R0 up to R15 000 per month). These housing opportunities are mainly funded through a conditional grant – the HSDG. Previously the HSDG was mainly utilised as a block grant in the human settlements sector to fund any housing-related projects. However, in recent years there has been an increasing number of ring-fenced or earmarked funding pockets within the HSDG. This means that provinces and municipalities effectively cannot use a certain proportion of the grant

to undertake housing development projects as they see fit, but rather have to undertake specific programmes as identified by the national sphere/national government. Prior to 2012/13, there was only one earmarked fund in the HSDG (FLISP). This number has increased to four in 2018/19 (FLISP, Upgrading of Informal Settlements in Mining Towns, Funding Earmarked for Title Deeds Restoration and Provincial Emergency Housing). An increase in the number of earmarked funds within the human settlements sector reduces the funding available from the HSDG that could be used by provinces at their discretion for their own unique housing delivery needs and purposes. Two earmarked conditional grants in the HSDG were assessed in this study, namely, the FLISP and the Upgrading of Informal Settlements in Mining Towns.

The next finding relates to earmarked conditional grants. The analysis indicates that these grants perform poorly from both financial, spending and service delivery points of view. As illustrated in Figure 8, a common trend across the nine provinces since 2012/13 has been underspending of allocated funding which went up to as much as 83 per cent in 2013/14 and remained at 76.1 per cent in 2016/17.

Part of the HSDG is earmarked for the implementation of FLISP. A major challenge for FLISP in the past arose as a result of each province having to determine how much to allocate for the programme. In several provinces, resources were inconsistently allocated for this programme. Underspending of allocated funding, which increased to 83 per cent in 2013/14 and has remained high at 76.1 per cent in 2016/17, has been common in provinces since 2012/13.

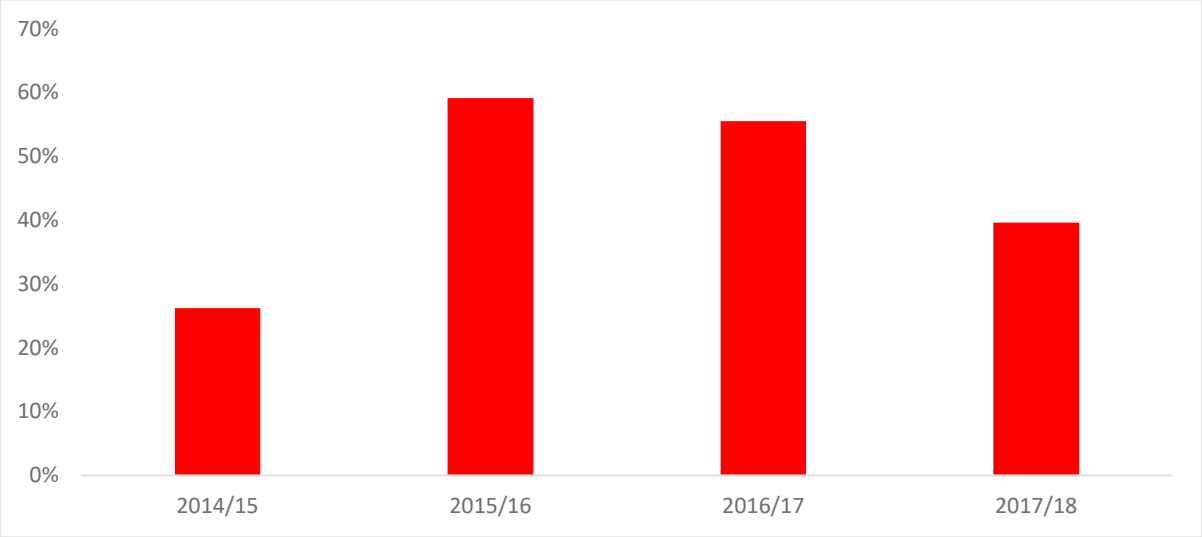
Figure 8. Proportional spending performance of the FLISP, 2012/13-2016/17



Source: FFC calculations using National Department of Human Settlements database (2012-2016)

A similar trend exists in respect of the earmarked funding for informal settlements in mining towns. Financially, this earmarked grant has performed poorly over the past four years (Figure 9). This poor performance is illustrated by the grant's highest expenditure since inception in 2014/15, of only 59 per cent of the allocation in 2015/16.

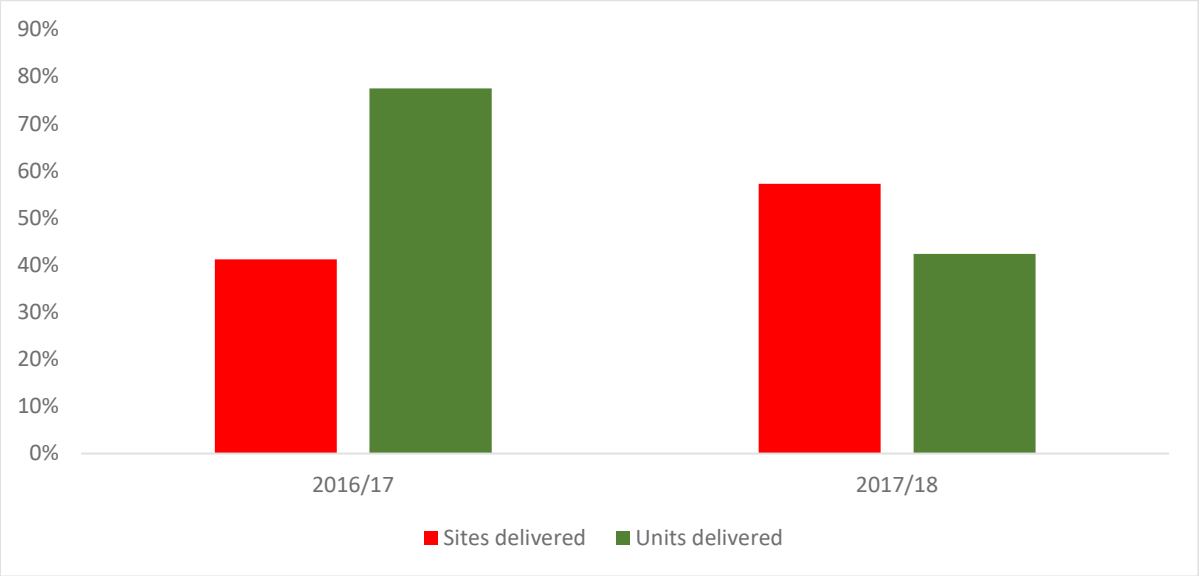
Figure 9. Spending performance of upgrading of informal settlements in mining towns grant, 2014/15 – 2017/18



Source: FFC calculations using national Department of Human Settlements database (2014-2017)

With respect to the non-financial performance, data is not available for earlier periods where sites and units delivered could be compared. However, such data is available for 2016/17 and 2017/18 (up to December 2017). Analysis of non-financial performance with respect to sites and units for funding earmarked for the upgrading of informal settlements in mining towns shows that performance is similarly poor on both sites and units as illustrated in Figure 10. This shows that only 41 per cent and 77.5 per cent of targeted sites and units were upgraded in 2016/17 respectively.

Figure 10. Informal settlements sites and units delivered



Source: FFC calculations using national Department of Human Settlements database (2016-2017).

2.3.2 Administrative recentralisation

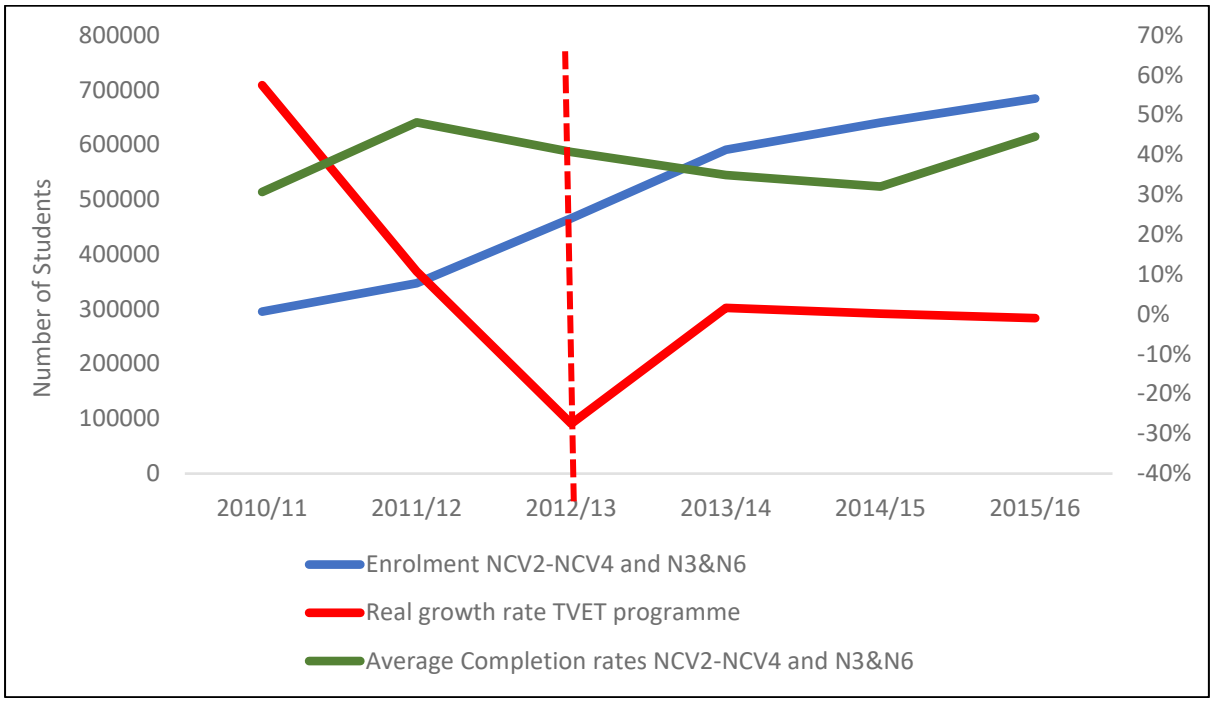
In respect of administrative recentralisation, the analysis examined how the recentralisation impacted on TVET college efficiency and performance. Schedule 4A of the Constitution assigns all levels of education, except tertiary education, to provinces (The Constitution, 1996). While TVET colleges were a national competence, TVET (formerly Further Education and Training (FET)) colleges they were overseen by the nine provincial education departments until 2012. The colleges were funded via the provincial equitable share (PES) allocation. A province has substantial discretion in distributing the PES resource envelope across various functions. As a result, TVET colleges were funded and managed differently across the provinces, leading to inequalities in funding. This, combined with generally poor or non-existent costing of functions, made it difficult to ascertain true costs of delivering functions and services. In turn, this presents challenges when trying to determine whether all necessary funding has followed a function when it is shifted as required by the *FFC function shift manual*.

The first finding is that a misalignment exists between the policy aspirations attached to TVET colleges and the resources allocated, in terms of funding and institutional capabilities, to achieve ambitious policy goals. One of the key reasons underpinning the recentralisation of the colleges' function was not about the national sphere expanding its control but rather about trying to implement a uniform funding and management approach equally to all TVET colleges. More broadly, the reason was to develop an integrated post-school education and training sector to signal a renewed emphasis and priority attached to TVETs and the important role that they play in growing skills. South Africa's long term development plan (the National Development Plan) set ambitious targets for TVET colleges to meet by 2030. It includes improving the graduation rate for the National Certificate Vocational (NCV)[15] programme to 75 per cent and producing 30 000 artisans per year (National Planning Commission 2011). As illustrated in Figure 12, the significant increase in college enrolments since 2010 has not been matched by real growth in college funding. While performance in terms of completion rates has improved slightly, the quality of graduates being produced by TVET colleges is still cause for concern.

It is important that government ensure closer alignment between adopted policy priorities and the funding and institutional resources available to implement such priorities. This observation is based on TVET-related targets set out in the NDP and the context facing colleges as outlined in Figure 11. From a resources point of view, it appears that marginal growth in funding is hampering achievement of targets. From an institutional perspective it also does not appear that TVET colleges are all equally in a position to absorb big increases in the numbers of students and ensure that all such college entrants will develop into high quality graduates. In the context of a subdued economic outlook that will negatively affect the amount of government spending available, it is unlikely that funding for TVET colleges will be prioritised in the near future. The consequence of the perpetuation of underfunding in the colleges sector is that the country's skills base runs the risk of not being developed adequately or in a way that reduces the mismatch between the skills needed in the labour market and the skills of available workers.

[15] The National Certificate Vocational (or NCV) consists of four levels (from NCV 1 to NCV4) and is equivalent to Grades 9, 10, 11 and 12.

Figure 11. Performance of TVET Colleges prior and post recentralisation

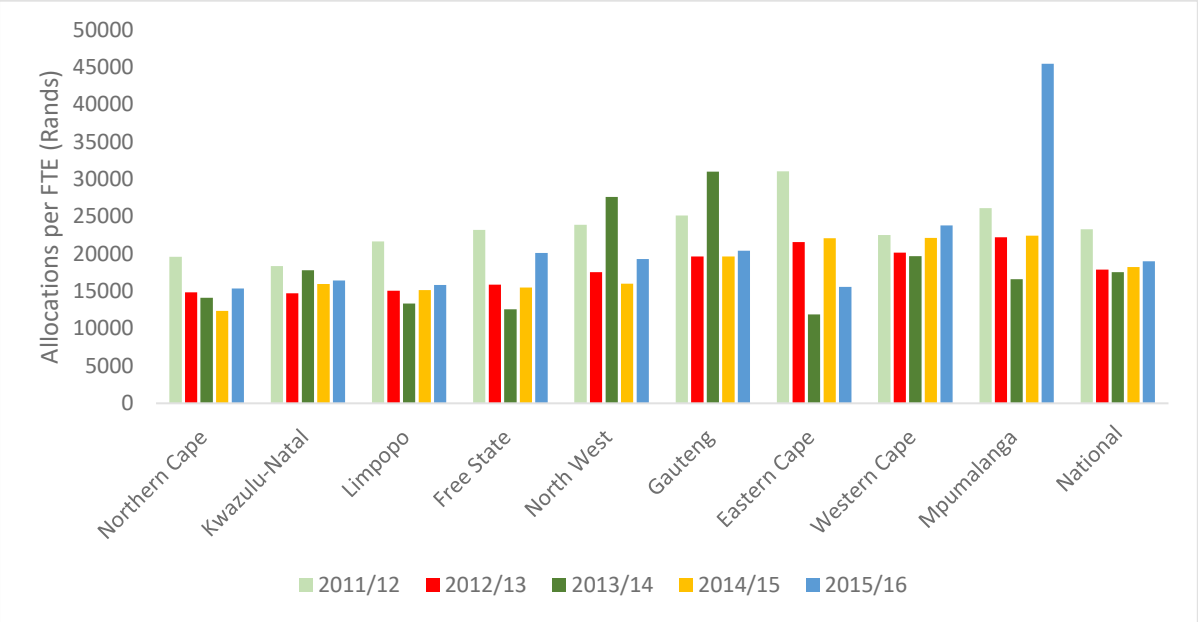


Source: FFC calculations using DHET (2010-2011, 2013a, 2013b, 2014 2015a, 2015b, 2015c, 2017) database.

The second finding arising from the case study of TVET colleges concerns prevailing inequalities in terms of funding allocations per full time equivalent (FTE)[16]. Prior to the recentralisation of the colleges function, TVET colleges in certain provinces (Gauteng, Western Cape, Mpumalanga and Eastern Cape) were regarded as relatively better funded than colleges in other provinces (Northern Cape, KwaZulu/Natal, Limpopo, Free State and North West), which were categorised as underfunded. Figure 12 illustrates the funding allocation per FTE across the nine provinces for 2011/12 to 2015/16. The figure shows that apart from colleges located in the Western Cape and Mpumalanga, colleges across all other provinces experienced a decline in allocations per FTE between 2011/12 and 2015/16. In particular, allocations per FTE for the period 2012/13-2015/16 never exceeded those of 2011/12 for the majority of colleges located in previously underfunded provinces. These allocations reflect the perpetuation of past underfunding. Furthermore, for the majority of colleges located in previously underfunded provinces, allocations per FTE remain below the national average. However, for provinces that previously had appropriate budgets allocated to their colleges, allocations per FTE remain above the national average. In general, allocations per FTE for colleges that are located in previously better funded provinces tend to be higher than those of previously underfunded provinces for the period under review. This suggests that, despite recentralisation, inequities in the allocations across the provinces remain.

[16] FTE is a measurement unit that indicates the workload of a student, in a manner that makes workloads comparable across different contexts.

Figure 12. Allocations per full time equivalent student by province, 2011/12-2015/16



Source: FFC calculations using DHET (2011, 2013a, 2014 2015a, 2017) database.

The third finding relates to the impact of the recentralisation reform on the efficiency of the TVET colleges. Unsurprisingly, the majority of the top ten colleges (assessed in terms of completion rates and efficiency scores) are located in provinces that previously had better funded budgets, while the bottom ten consists mostly of colleges that are located in previously underfunded provinces. Of the top ten most efficient colleges, the majority were efficient prior to the function being moved to the national sphere and remained so post this taking place. Others either experienced a decline in their efficiency scores or an improvement in their efficiency scores. However, this was not on a large enough scale to regard them as efficient. For the bottom ten colleges, only one college was regarded as efficient. Close to 50 per cent of the bottom ten colleges became efficient post the function being moved to the national sphere.

With respect to the determinants of TVET college efficiency, the Tobit regression found that in the period prior to recentralisation, the size of the institution negatively impacted on efficiency. This result is to be expected especially in cases where colleges experienced limited increases in their budget allocations in the context of rising enrolment rates. In the period post recentralisation, when the DHET assumed responsibility, the extent to which the funding of colleges is equitable and adequate is the main driver of efficiency and positively impacts on the efficiency of colleges. This finding reiterates that the issue of equitable funding across all TVET colleges remains a challenge that affects institutional performance.

The final finding relates to the effect of the recentralisation reform on the performance of TVET colleges, as measured by completion rates. The results indicate that the location of the function influences the educational performance of TVET colleges irrespective of whether or not the college was previously underfunded. In particular, recentralisation of the function is associated with an increase in completion rates. This result is consistent with some of the interventions that the national DHET has initiated as a way of addressing the challenges of inadequate capacity to offer new programmes and qualifications faced by many colleges. These interventions include the implementation of lecturer development programmes and ensuring curriculum support through the development of a national framework for curriculum review.

2.4 Summary

Economic crises and fiscally constrained environments necessitate changes in the intergovernmental fiscal relations and administration of some functions and responsibilities for different spheres of government. Central to these changes is the fiscal and administrative recentralisation which has been implemented in South Africa. This chapter sought to investigate whether recentralisation poses a credible avenue for ensuring better value for money and improved service delivery during the current period of financial and fiscal constraints. Two case studies of key examples of recentralisation were used to generate broad lessons applicable to the public sector.

With respect to fiscal recentralisation, the use and performance of earmarked conditional grants were assessed. In the case of administrative recentralisation, TVET colleges were analysed. The analysis shows that over the full period reviewed (2002/03 to 2020/21) conditional grants grew at a stronger rate than discretionary block grants. However, during periods of fiscal constraints, this was not necessarily the case. For example, during the period post the 2007/08 financial crisis, in accordance with international literature, conditional grant funding increased dramatically, while block grants grew more moderately. Conversely, over the current fiscally constrained period, the opposite occurred, with real growth in block grants strengthening relative to real growth in conditional grants. Notable, is the increase in earmarked conditional grant funding which refers to ring-fencing and more stringent conditions being applied to pockets of funding in existing conditional grants. This represents a less robust approach to recentralisation than would be evident with simply increasing the number of conditional grants relative to block grants.

The main result emerging from the two case studies is that national government does not necessarily perform better at service delivery compared to sub-national government. This brings into question the rationale behind recentralisation. Poor spending and service delivery performance of earmarked conditional grants is evidence of this, making them an unsuitable avenue for achieving improved service delivery.

Second, with respect to administrative recentralisation, a blanket approach is unsuitable as results show that some colleges that were efficient prior to recentralisation saw a decline in levels of efficiency post the reform.

Third, the analysis indicates a negative impact on the achievement of policy goals in situations where recentralisation occurs in the midst of a misalignment between policy aspirations, the resources allocated and institutional capabilities.

2.5 Recommendations

1) *The Commission recommends that executive branch not automatically resort to increasing the role of national government in the current constrained fiscal environment in which resources are limited, since historical performance data does not generally support that doing so leads to improved performance.*

   This argument is based on case-studies of
   1) the performance of earmarked conditional grants, and
   2) the impact of recentralisation on the efficiency and performance of TVET colleges.

Government could improve the quality of service delivery and achievement of national socio-economic objectives through adequate training of sub-national government implementers, and/or changing the manner of delivery rather than changing the location of a function.

2) *The Commission recommends that the National Treasury together with relevant line departments develop and strengthen control measures other than earmarked conditional grant funding to improve service delivery and attainment of specific priority outcomes. The control measures should be underpinned by tighter monitoring and reporting of sub-national governments on the use of grant funding and associated outcomes of such spending. National Treasury should ensure that decisive action such as withholding of funds is taken by national sector departments as soon as cases where grant funding is inefficiently and/or ineffectively spent have been detected.*

   Government must continually assess the impact of different funding instruments on service delivery performance. For example, with respect to earmarked conditional grant funding, analysis shows that they currently perform poorly and are thus not a suitable avenue for achieving improved service delivery. Introducing rigidity in earmarked conditional grants does not result in better performance.

3) *The Commission recommends that government implement a targeted approach to reforms to ensure that sub-national governments previously lacking in capabilities and funding do not continue to be disadvantaged. The Commission also recommends that a differentiated approach to recentralising a function, in which function shifts are piloted and assessed, is adopted.*

   This will avoid unnecessary disruption and the high cost of readjustment of a function across the board. Ideally government should focus on weakness in performance and on addressing these before applying a blanket approach which may inadvertently have a negative effect on good performers.

4) *The Commission recommends that government conduct a detailed cost benefit analysis prior to recentralisation and ensure close alignment between policy goals, and funding and institutional capacity.*

   In the absence of sufficient and sustainable funding and institutional capabilities to translate policy into actions and meet outcome targets, achievement of some targets is meaningless.

Chapter 3: Provincial Fiscal Adjustment Mechanisms in Times of Protracted Fiscal Constraints – Case of the Health Sector

3.1 Introduction

Chapter 3 of this publication examines how the sustainability of government fiscal balances remains an important goal of fiscal policy in federal and unitary multilevel governments. An introductory discussion looks at the adjustments needed during periods of economic turbulence and fiscal shock and the tools that governments use to achieve sustained fiscal balance. This is followed by a review of the institutions needed to implement such adjustments. Then follows a case study of health care services in South Africa and reviews the measures adopted by provinces to address budget strain in such services.

In some countries, increased concerns of sub-national budgetary slippages during economic downturns have resulted in calls for tighter controls and better coordination of national and sub-national policies (Spahn, 2012). In many other countries, sub-national governments have been granted the discretion to pursue stability through a range of fiscal adjustment strategies.

Economic turbulence is often accompanied by fiscal shocks, meaning temporary or continuous disruption of government spending priorities. These cannot be rectified through normal first order incremental adjustments to existing policy programmes. The strategic approach to improving shock-induced fiscal instability may therefore need to incorporate second order adjustments (significant changes in policy programme) and third order adjustments, comprising fundamental changes to key policies and budget priorities.

Three policy questions are important for fiscal adjustment:

- What are key determinants of fiscal adjustment?
- What constitutes an appropriate mix of discretionary fiscal policy to bring about adjustment or the fiscal flows through which adjustment occurs? and
- What constitutes a successful fiscal adjustment?

A large body of literature identifies poor economic performance, large public debt and deficits as the main triggers of fiscal consolidation (Kodolov and Hale, 2016, Kumar et al, 2007, Barrios and Martinez, 2012). The resulting fiscal risks (deviations from a sustainable budget outcome) prompt sub-national governments into taking self-imposed corrective actions. Alternatively, the national government may impose numerical rules, especially in cases in which the "soft budget constraint" problem is pervasive. However, adjustments may not always arise from cyclical fluctuations. Exceptions may emerge from

- far-reaching shifts in demographic patterns (growth, migration and ageing)
- technological changes
- disease prevalence
- historical episodes of fiscal imprudence

- persistent downturns in key industrial activity resulting in significant erosion of the sub-national revenue base.

There are no hard and fast rules on what constitutes an effective mix of fiscal adjustment instruments. Government may use a combination of various adjustment tools depending on the origin and the severity of the fiscal crisis and political considerations. In pursuing sustainable fiscal balance, government effectively faces three broad policy options. First order measures comprise a mix of expenditure and revenue base adjustments. On the expenditure side, these measures involve general or targeted reduction in selected expenditure programmes, particularly infrastructure,while protecting core services by maintaining spending near the inflation rate. Revenue measures comprise general or targeted tax increases to finance the budget gap. In exceptional cases, the measures may include an increase in debt finance if the fiscal crisis encountered is not a result of excessive borrowing. First order measures may be insufficient to address chronic fiscal shocks (Kumar, 2007; Kodolov and Hale 2016), thus creating the need for second and third order interventions.

Such interventions are focused on fundamental changes or "big fixes" to the expenditure and revenue base, rather than marginal deviations to the existing budget. Second and third order fiscal adjustment may entail termination of existing expenditure programmes and adoption of structural reforms (in the areas of personnel, taxation or social security, among others). These interventions require budget implementers to conduct strategic and expenditure reviews, providing early signals to the markets and the public on the need to depart from a business as usual trajectory. While the big fix adjustments correspondingly occur through the expenditure and revenue-based budget components, what matters for these interventions is the magnitude of the effects on the targeted fiscal outcomes (Kodolov and Hale 2016).

Ordinarily, the anticipated outcome from a discretionary fiscal adjustment process is improvement in cyclically-adjusted primary balance. The standard measure of success focuses on the decline in debt-to-GDP ratio in a specified period. This is based on the overwhelming view that fiscal adjustments arise from a combination of deteriorating fiscal balance and rising public debt levels. If the debt-to-GDP ratio declines by five percentage points over three years following the commencement of consolidation, an episode of fiscal adjustment is regarded as successful (Derby, 2005, Kumar 2007 and (Alesina and Ardagna 2013). This formulation is, however, not applicable to government spheres with fiscal rigidities, as is the case with provinces in South Africa. Fiscally subordinate sub-national governments primarily resort to what Vammale and Hulbert (2013) describe as veneer fiscal adjustment instruments to accomplish fiscal sustainability, which essentially reflect a notional budget balance with accumulated service delivery deficit.

Most countries with centralised fiscal systems are increasingly aware of the fiscal difficulties faced by sub-national governments and the ensuing adverse effects on the quality and quantity of services. In such cases, sub-national adjustment efforts are often complemented by transitory discretionary measures. These comprise a myriad of interventions ranging from increasing sub-national grants to stabilising budget and finance investments, easing approval and disbursement procedures, increasing the sub-national tax space, simplifying balanced budget rules, and tightening intergovernmental coordination (OECD, 2010). A common view in the literature is that these interventions soften the budget constraint of sub-national governments and may therefore undermine overall consolidation objectives (Bird and Tassonyi 2003).

3.2 Institutional arrangements underpinning provincial fiscal adjustment

Fiscal adjustments do not occur in a vacuum. There is a need for several well-functioning fiscal institutions to put into effect and support adjustment decisions and the related processes. Key among the required institutions for achieving sustainable fiscal adjustment include the legislative framework, budget and revenue management structures, and inter-governmental relations coordination mechanism (IMF, 2006).

The South African legislative framework includes the Constitution, the Public Finance Management Act (PFMA), Division of Revenue Act and the Appropriations Act. Together, these provide for a range of procedural and numerical fiscal rules pertaining to provincial fiscal adjustment. Procedural rules seek to promote transparency and accountability in the execution of sub-national budgets, through monitoring and reporting of fiscal outcomes. Chapter 13 of the Constitution and section 215(3) set out the broader adjustment framework with requirements for expenditure, revenue, borrowing and deficit estimates. Section 228 lays out options and restrictions on revenue collection. The thrust of the other enabling legislations mentioned above focus on mitigating fiscal risk through tighter controls. Section 31 of the PFMA empowers provinces to table an adjustment budget that caters for unforeseen and unavoidable expenditure (subject to available funds), shifting of funds between budget votes and line items through virement processes, and the use of savings to defray over-spending and roll-over of unspent funds. This adjustment process is subject to approval processes overseen by the National Treasury.[17]

South African legislation does not set explicit debt or deficit limits. However, the IMF (2006) notes that the presence of independent fiscal authorities can serve as alternatives to numerical rules in depolitisising fiscal decisions. In this regard budget credibility in South Africa improved markedly because of strong fiscal institutions obviating the need for numerical rules. The only noticeable numerical rule relates to a limited allowance provided in the PFMA for shifting up to 8 per cent of underspent budget programme to defray overspending in another programme in the same budget vote (National Treasury, 2014). The Ministry of Finance, and by extension provincial finance executives, are also legislatively empowered to set expenditure ceilings which can be updated annually. This facility can and should be used by provinces in their day-to-day management.

Similarly, provinces are not bound by explicit balanced budget rules, but instead by the legal impediments curtailing overspending of the allocated budgets. Such spending is deemed "unauthorised" and is legally punishable and treated as a direct charge against department future budget allocation unless processes for regularising or defraying are successfully effected.

In broad terms, the institutional framework underpinning provincial fiscal adjustment is not specifically geared towards addressing fiscal vulnerabilities stemming from emerging fiscal pressures i.e. declining revenues, rising expenditure needs. Instead the overall objective of fiscal responsibility laws is to impose durable fiscal discipline and processes for promoting budget transparency and accountability. The laws attempt to impose varying degrees of constraints on provincial discretionary fiscal policy but, at the same time, inadvertently reinforce rigidities in the capacity of provinces to respond to vulnerable fiscal position. By

[17] The primary instrument that managers should use to keep their budgets flexible and responsible is virement, whereas these s31 adjustments are after the fact. For a discussion about virement, please refer to Guidelines on Unauthorised Spending (National Treasury, 2014)

fixing fiscal adjustment mechanisms, fiscal responsibility laws inadvertently undermine long term budget sustainability especially if the fiscal problems are structural. For example, the infrastructure grant spending limitations could prolong the programme of eradicating backlogs in priority areas resulting in hefty future cost requirements for replacement or refurbishment.

As already indicated, section 228 of the Constitution restricts provinces from imposing taxes on the key tax handles other than a surcharge on personal income tax. This also requires the concurrence of national government and fiscal space.

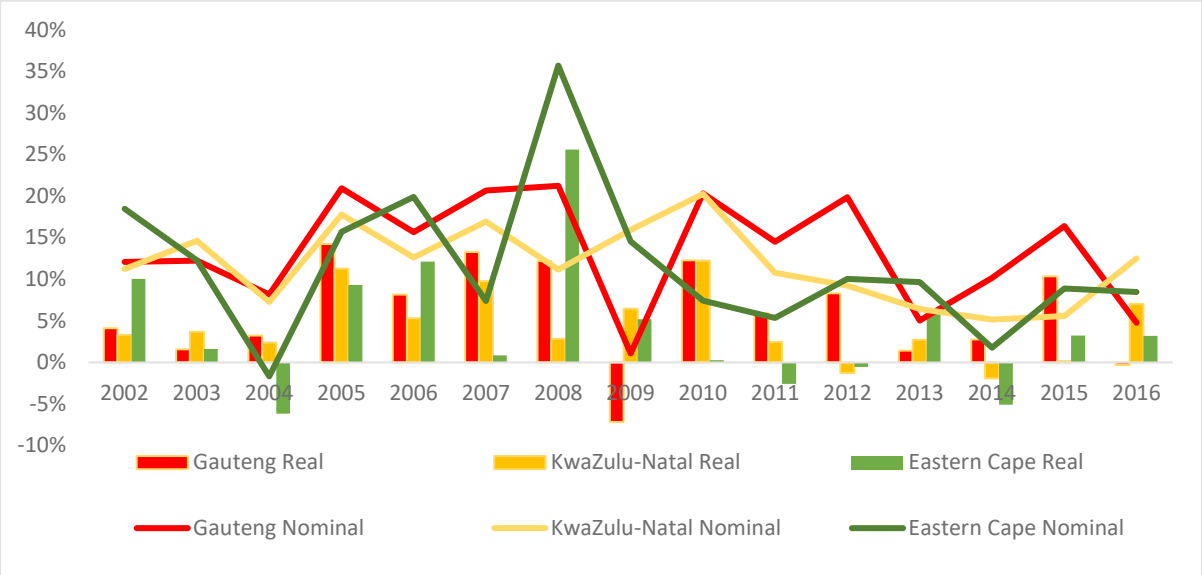
3.3 South Africa's provincial fiscal constraints in health care

Provinces play a crucial role in the delivery of primary health care. Health allocations account for 30 to 35 per cent of total provincial budgets and are seemingly under severe pressure as a result of the rapidly growing demands and the less than adequate growth in transfers, mainly due to the fiscal constraints of the current economic situation. As a result of these, health facilities have a shortage of medical equipment and clinical professionals. The National Department of Health estimates that the current health budget is underfunded by as much as R13 billion in 2018 and this shortfall accumulates annually due to slow growth in transfers. Health transfers are growing at a nominal average rate of 6 per cent in comparison to an 8 per cent annual growth in personnel costs and other key health related inputs (medication, food, buildings and technology). When factors such as dilapidated infrastructure and shortage of medical equipment are taken into account the shortfall estimates grow even larger. Albeit due to circumstantial (ie fiscal constraints) rather than intentional causes, the ongoing pressure on health infrastructure and equipment budget is exacerbated by the national fiscal consolidation objectives. These have resulted in budget cuts to selected health conditional grants. Health infrastructure grants have been reduced by 14 per cent in 2018 over a three-year cycle (National Department of Health, 2017; National Treasury, 2018)

Provincial health budgets are slowly declining, in the context of shortages in medical equipment and medical consumables, healthcare professionals and the deteriorating[18] levels of healthcare. Figure 13 shows that the rate of growth in provincial allocations has been on a declining trajectory since the 2008 financial crisis. The tight fiscal environment places health care delivery under severe pressure while provinces lack the means to respond to the ongoing strain. Rigid and context specific intergovernmental fiscal arrangements also limit the ability of provinces to make the necessary budget adjustments.

[18] As highlighted by incidents of patients sleeping on the floor, medical stock run-outs, long queues and waiting list and legal claims for negligence.

Figure 13. Provincial equitable share real and nominal growth rates



Source: FFC calculations from National Treasury database

A number of important policy questions arise from:

- the absence of fiscal levers to increase own revenue
- the limited discretion to adjust current and capital spending, and
- the near absence in latitude to amend the size and structure of national transfers.

The questions are:

- What is the nature of the fiscal variables used by provinces to respond to protracted fiscal strain?
- How responsive are provincial fiscal transfers to actual or anticipated fiscal or delivery crises? and
- What is the optimal provincial fiscal framework model required to facilitate smooth adaptation to a deteriorating fiscal situation such as one South Africa currently confronts?

In answering these questions, the chapter first discusses the legislative and institutional arrangements that affect fiscal adjustment mechanism at the provincial level. Second, it illustrates the practical manifestation of these arrangements on budget outcomes. Third, an empirical estimation of fiscal shock is provided and the budgetary channels through which the shock is transmitted using pooled ordinary least squares (OLS) is assessed. Lastly, the fiscal and non-fiscal measures adopted by selected provincial health departments to respond to ongoing budget strain are illustrated through case studies.

3.4 Research methods

The methodology selected for the study is threefold.

- The first stage is a trend analysis of provincial fiscal performance, with particular focus on audit performance and manifestation of fiscal strain under a rigid fiscal system. The aim of this assessment is to provide insight on the impact of a centralised fiscal framework on provincial budgetary outcomes and on the trajectory of provincial

fiscal balance. This includes how imbalances are cleared. Analysis of expenditure provides an indication of how the various spending components have been adjusted over time and the sources of fiscal pressure. The components of interest are personnel, capital, and goods and services. This section focuses on three provinces (Gauteng, KwaZulu-Natal and Eastern Cape) for illustrative purposes.

- The second stage is an empirical estimate of provincial fiscal adjustment instruments and channels. The aim is to find the variables through which provinces respond to a revenue shock and increase in demand, as well as the channels through which this shock is transmitted to budgets. Given the limitations of provincial discretionary fiscal instruments, we provide estimates of different fiscal and non-fiscal variables that affect provincial budget revenue shock or budget balance (see Table 39 in Appendix for description of variables).
- Lastly, a case study analysis was undertaken of various provincial health departments and treasuries, the national Department of Health and the National Treasury on measures used by provinces to manage fiscal strain. The aim of the case studies is to gain a qualitative understanding of the non-fiscal measures used by provinces in responding to fiscal strain.

3.5 Findings and discussion

3.5.1 Fiscal strain with poor fiscal performance

Table 15 indicates the fiscal performance of the nine provincial health departments using the four key indicators of audit performance assessments: accrued, unauthorised, irregular and fruitless expenditure. As can be seen, two of the three provinces (Gauteng and KwaZulu-Natal) under review have high levels of accrued, unauthorised, irregular and fruitless expenditure, reflecting poor levels of fiscal performance. Accrued expenditure is a delay of payment and is arguably the most telling indicator of financial wellness. Although poor audit or financial management outcomes do not necessarily indicate fiscal strain, part of the budget pressure could arise from such financial deviations.

The effects of financial mismanagement on fiscal stress became evident in 2011 when health departments in Gauteng and Limpopo were placed under national administration in terms of section 100 of the Constitution. The circumstances that led to the intervention included disregard for supply chain and asset management processes, late payment of suppliers, weak cash flow management, human resources deficiencies and poor expenditure management and budget controls (FFC, 2012). The ensuing budget pressure reflected large accumulated unauthorised spending and accruals and low cash reserves to meet recurrent obligations. Financial management problems in Gauteng health department continued for several years after the end of national intervention, culminating with another intervention in 2017 by the premier of the province. The level of poor fiscal performance depicted in Table 16 makes for a weak argument for the existence of fiscal strain and the need for fiscal adjustment. High levels of fiscal mismanagement suggest that budgets that would have otherwise been used to meet shortfalls are misappropriated or misallocated.

Table 16. Provincial financial management outcomes, 2016

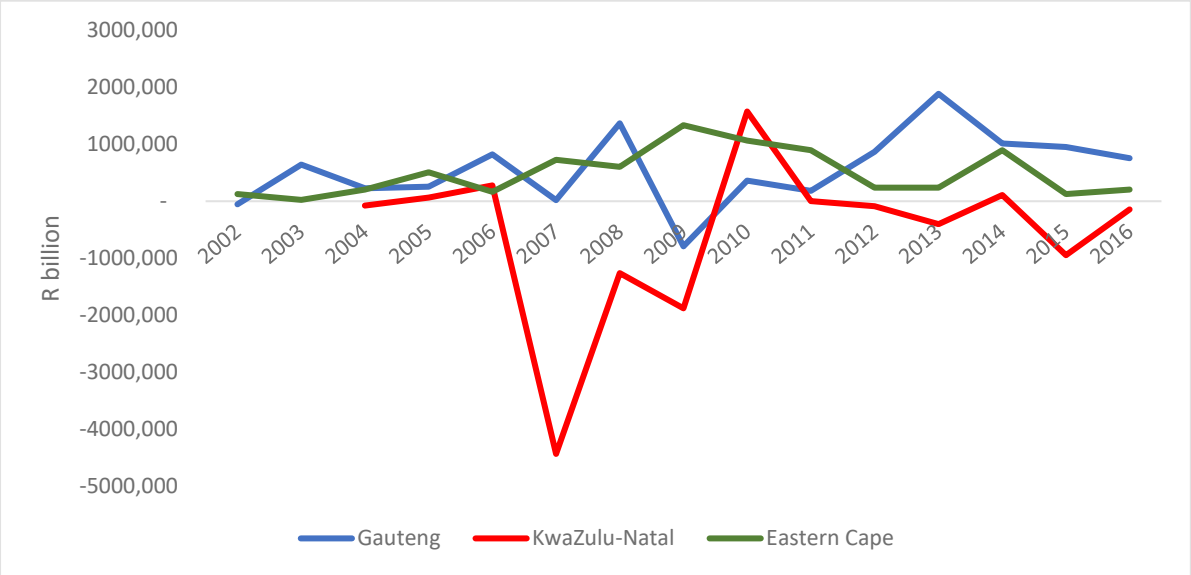
Province	Accruals	% of total	Unauthorised expenditure	% of total	Irregular expenditure	Fruitless expenditure	% of total
Eastern Cape	1 342 245	13%	91 449	3%	180 680	34 292	4%
Free State	373 799	4%	31 814	1%	316 094	10 339	1%
Gauteng	4 772 791	46%	1 337 304	44%	6 934 443	422 628	52%
KwaZulu/Natal	1 207 297	12%	490 027	16%	4 327 490	8 980	1%
Limpopo	775 563	7%	222 381	7%	1 520 922	162 335	20%
Mpumalanga	405 099	4%	200 706	7%	5 168 480	13 934	2%
Northern Cape	588 738	6%	329 646	11%	5 100 722	46 240	6%
North West	656 993	6%	358 425	12%	5 724 637	110 605	14%
Western Cape	234 412	2%	-	0%	71 351	133	0%
Total	10 356 937		3 061 752		29 344819	809 486	

Source: FFC calculations from National Treasury database

3.5.2 Manifestation of fiscal strain under a rigid institutional structure

As discussed earlier, it is difficult to assess fiscal adjustment from a context of a traditional primary balance (or debt to GDP ratio) in South Africa owing to the inherent fiscal rigidities imposed by intergovernmental fiscal arrangements. The following set of figures shows the potential implications of the set institutional fiscal framework on provincial fiscal outcomes using provincial budget balance and earmarked spending as variables of interest. Figure 14 shows the trajectory of provincial budget balance from 2002 to 2016. The balance appears to fluctuate moderately above the accepted threshold of zero, indicating positive cash balances or underspending at the end of financial years. A near zero budget balance and positive cash balances dispel the possibility for existence of fiscal pressure – at least from a context of the budget. KwaZulu/Natal health department is an exception with a 3 per cent average overspending or negative budget balance which may reflect either fiscal strain or poor budget control.

Figure 14. Provincial health budget balance, 2002-2016

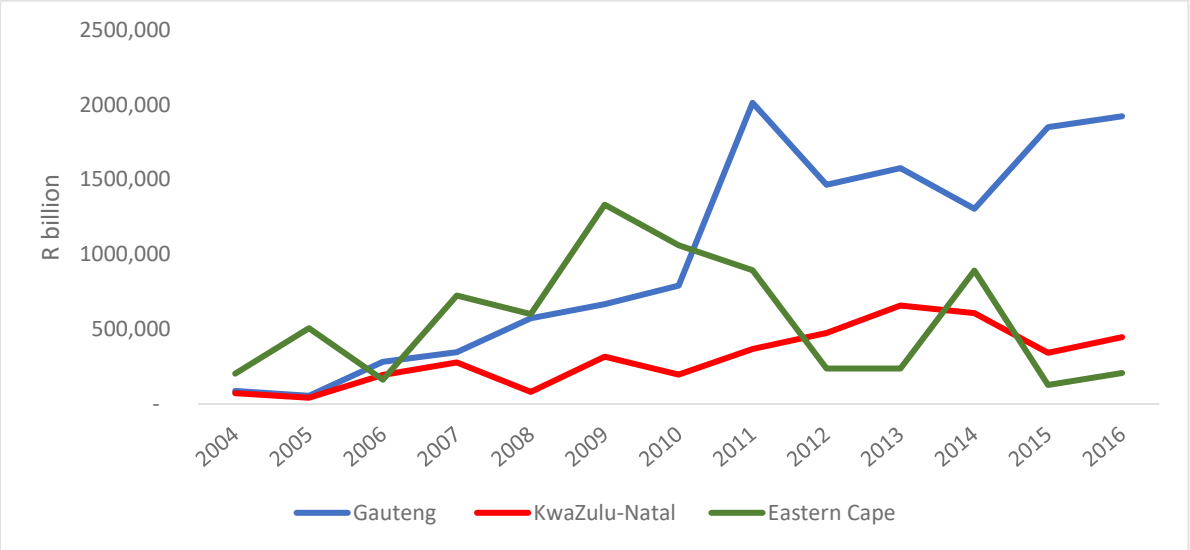


Source: FFC calculations from National Treasury database

Despite maintaining positive or minimum acceptable budget balances, provinces use accruals that tend to conceal the negative budget balances or cover expenses for which the budgeted allocation is depleted. Figure 15 depicts accruals and other mechanisms as adjustment mechanisms. When confronted with constitutional obligations to provide patient care, hospital managers indicated that they often feel compelled to process purchase orders of medical supplies even when budgets have run out. This results in accumulation of unpaid services which are recorded as accrued expenses rather than overspending. Accruals signify two possibilities for provinces. On the one hand it may be a practical manifestation of financial mismanagement in that provinces commit their allocations in advance without having backing cash to offset the expenditure within current year allocations. On the other hand, it could be a signal of pressure to address pressing delivery needs for which the allocated budgets are insufficient. The national Department of Health indicates that accruals in the health sector are unavoidable because patients have to be treated when they present themselves at various health facilities, irrespective of budget availability. Health facilities commit to unfunded spending to minimise medical legal claims[19], which have become a contingent liability and budget risk in the health sector. As seen from Table 16, accruals in the Gauteng provincial health department have been increasing rapidly. At the end of 2016/17, accumulated accruals in all provinces were R23.4 billion. Of this, R13.8 billion was attributable to the health sector (and R7 billion to the Gauteng provincial health department).

[19] Medical legal claims were estimated at R54 billion in 2017

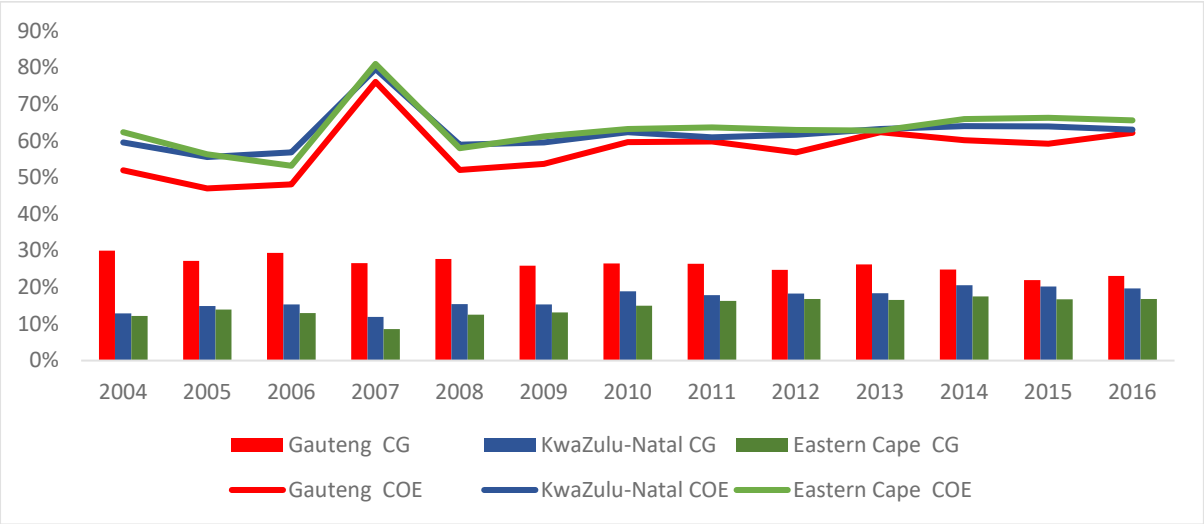
Figure 15. Provincial health expenditure accruals, 2004-2016



Source: FFC culations from National Treasury database

The portion over which provincial health departments command full autonomy is declining. This partly explains why artificial expenditure variables such as accruals are used. As seen from Figure 16, earmarked spending[20] constitutes at least 80 per cent of total provincial health budgets. The scope for provinces to use the only plausible expenditure side adjustment variables is reduced by limited expenditure discretion. This is reinforced by legislative requirements for compliance with national spending priorities.

Figure 16. Provincial health earmarked spending, 2004-2016



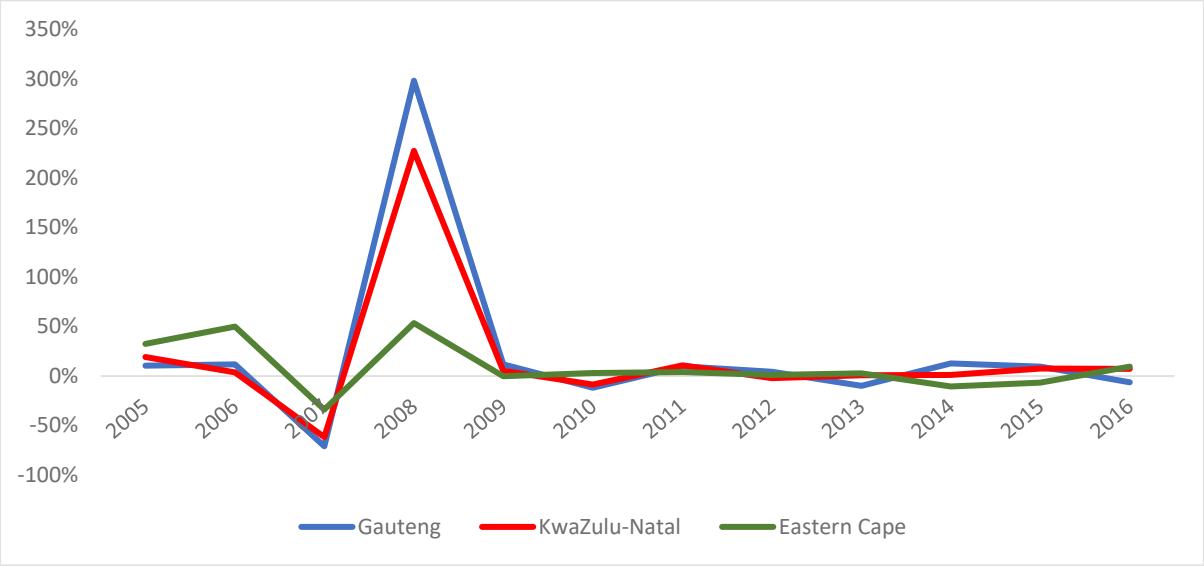
Source: FFC calculations from National Treasury database

Provincial health departments can apply discretionary fiscal adjustment over the little discretionary spending available to them in response to their unique fiscal conditions and preferences. The adjustment occurs through annual prioritisation of various expenditure components and alterations of annual growth rates to baseline allocations. As seen from Figure 17 and Figure 18, the adjustments take place on capital budget, rather than on the goods and

[20] Compensation of employees (COE) and conditional grant spending

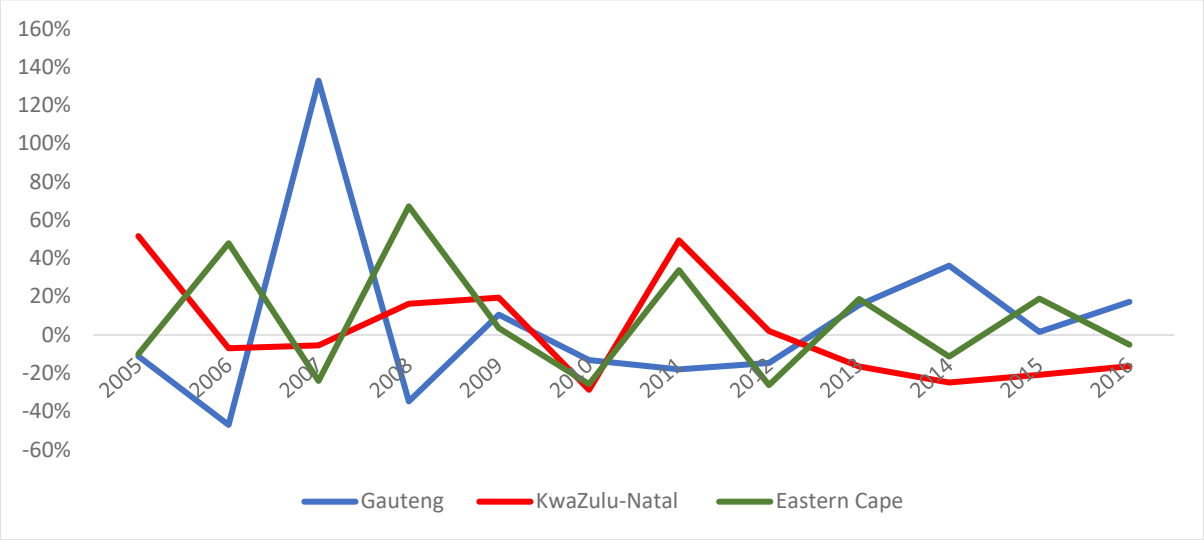
services budget. This is consistent with theory. The goods and services budget growth trend is flat in comparison to the capital spending trend, which displays an inconsistent growth pattern. It is, however, unclear if the fiscal episodes of downfall in capital spending/allocations coincide with the incidents of fiscal pressure or not. It is plausible that the down swings in capital spending trends are associated with the prevailing phenomenon of underspending on infrastructure.[21]

Figure 17. Real growth in provincial health goods and services, 2005-2016



Source: FFC calculations from National Treasury database

Figure 18. Real growth in capital allocations growth pattern, 2005-2016



Source: FFC calculations from National Treasury database

[21] It should be noted that provinces have managed personnel costs well by keeping numbers down (National Treasury, 2018)

3.5.3 Nationally channelled budget adjustments

Most of the adjustments which take place on expenditure are not discretionary as they are generally channelled through national transfers to provinces. Table 17 illustrates this point. A lengthy period of fiscal expansion is depicted until 2014/15 when national fiscal consolidation intensified. This is shown by the baseline changes to the allocations. Baseline additions and reductions are indirect provincial budget adjustments channelled through national transfers to implement new policies or redirect spending trajectory on existing programmes. The national government tends to influence provincial budget adjustment by varying the size of additions to baseline allocations between discretionary transfer (PES) and conditional grants. As seen from Table 17, provinces are shielded by stronger overall growth in transfers even under protracted national consolidation episodes. The respective share of each province's PES allocation increases by a much higher proportion during periods of consolidation than during periods of fiscal expansion. Note the reductions to baseline from 2015/16 in comparison to total additions to the PES and conditional grants. For the 2018/19 budget the PES baseline, which includes health allocations, has been reduced by R4.7 billion while health conditional grants are reduced by a total of R1.34 billion.[22] Despite these budget cuts, the total health allocations grew at an average of 7.3 per cent over the 2018 Medium Term Expenditure Framework (MTEF). The extent of the cushion provided by strong growth in national transfers removes the need for provinces to initiate discretionary adjustments. However, it could be argued that the level of protection to the budget is insufficient given the demands on health care. This does not, however, totally remove the need for adjustments, and is not to say that budget cuts do not affect service delivery negatively or heighten the fiscal pressure.

Table 17. Annual changes to provincial baseline allocations

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
	R 'millions							
Baseline changes to PES	13 209	9 507	4 038	3 060	2 738	(4 400)	(1 500)	(500)
Conditional grant							(2 051)	(1 257)
Total additions PES	29 923	27 519	20 564	28 515	24 896	20 205	28 026	30 632
Total additions CG	8 416	7 552	5 994	1 150	5 375	3 530	3 661	7 683

Source: National Treasury, 2010 - 2017

3.5.4 Determinants of revenue shock and budget balance

Tables 40 and 41 (see Appendix) depict results of the empirical analysis to ascertain the budget variables through which provinces channel fiscal strain. Although the results cannot be used to draw definitive conclusions as they lack statistical significance, they suggest that total spending and transfers are positively related to revenue shocks. This in turn implies that expenditure is increasing at a faster rate than revenue. Unlike the above fiscal performance overview, the empirical results are based on data from seven provinces over a six-year period ending 2016. The sample has been extended to address problems associated with degrees of freedom on the

[22] It is important to note here that these are not real cuts to budgets relative to previous period, but only cuts in the planned increases

model. Table 40 evaluates the sources of provincial fiscal strain from a context of total expenditure, own revenue and transfers. Interestingly, both population and unemployment do not seem to impose a huge burden on revenue shock given the negative coefficients.

Table 41 (see Appendix) shows the determinants of budget balance. The results indicate that a percentage increase in compensation of employees resulted in a 5.5 per cent decline in budget balance. These results are in line with the prevailing perceptions and earlier discussion which suggest that personnel costs are the biggest driver of provincial fiscal strain. Counter intuitively, capital spending has a positive and statistically significant effect on budget balance. This could mean that provinces are using capital spending as a primary variable to balance the budget. Goods and services spending as well as provincial transfers are positively and negatively related to budget balance respectively, albeit without statistical significance. (See the random effects coefficients and read together with variable description in Table 39).

3.5.5 Managing fiscal strain through fiscal and non-fiscal measures: Case studies

Debates continue about whether provinces genuinely experience fiscal strain on the one hand, or are able to identify the real source of their budgetary pressures and respond accordingly with available fiscal and non-fiscal levers on the other. The national and provincial health departments argue that health finances are indeed under a serious strain from rising expenditure needs (including disease burden), cost pressures and the non-responsive national transfer allocations. Health budgets are growing at less than the rate of inflation, while health inputs costs are increasing at an annual average rate of 8 per cent and more. For some provinces, such as Gauteng, Limpopo, Mpumalanga and the Free State, the pressure on the budget is exacerbated by the phenomenon of internal and external migration. Gauteng health department is owed R160 million in health bills by people from other countries. Provincial officials interviewed expressed the view that un-costed national policy directives, such as “test and treat”, also compound fiscal strain on them.

For national and provincial treasuries, improving expenditure management, rather than increasing health transfers, is the most effective way of making the adjustments required to address provincial fiscal strain. Such management is also referred to as “third order” adjustments. As shown earlier in section 3.5.1, provincial fiscal strain co-exists with poor levels of fiscal management. According to the National Treasury, poor management of human resources, financial systems, procurement and infrastructure are the key challenges straining provincial health budgets (National Treasury, 2017). Examples of poor management include making incorrect appointments to positions, issuing large tenders for non-essential equipment, duplicating medical tests, and poor workmanship in the construction of new infrastructure (see Table 18).

The health sector has introduced cross-cutting fiscal and non-fiscal measures, straddling human resources, financial management, procurement and infrastructure, to respond to the ongoing budget strain and budget efficiency concerns from the treasuries (see Table 18). Some of the measures are new while others have been in the pipeline and have yet to produce the desired outcome because of implementation delays. For the 2018 Budget, the national Department of Health recommended that provinces stop development of new infrastructure and instead focus on maintenance. This recommendation is, however, not accompanied by supporting changes to planning processes and conditions underpinning implementation of conditional grants. Gauteng province has frozen capital projects to the value of R7 billion rand in 2018. Some provinces continue to build new health facilities, thereby putting pressure on future operational

budgets. Similarly, the department has issued a guideline for provinces to discontinue the Cuban doctor training programme and rather focus on preparing for the 5 000 or so graduates who will need job placements on return. The guideline is intended to minimise cost pressures on the personnel spending and the risk of being unable to absorb the much needed new clinical staff.

Table 18. Health sector measures to enhance budget efficiency

Focus area	Proposed measures				
Human Resource Interventions	Strict management of committed overtime for clinical staff	Transfer head office staff to facilities	Create lean management structures	Halt the Cuba doctor training programme	
Financial Management interventions	Establish medico legal units to promote mediation on legal claims	Improve audit outcomes and reduce accruals	Undertake comprehensive health budget review	Reduce variation orders	
Procurement/ Supply chain interventions	Central health strategic sourcing on selected supplies - with price ceilings	Adoption of transversal contracts	Electronic gate keeping for laboratory services	Expansion of the Centralised Chronic Medication Dispensing and Distribution (CCMDD)	
Infrastructure interventions	Freezing capital projects	Introduce a 2-year equipment and facilities maintenance plan	Introduce a Home Affairs integrated patient and records management information system	Strengthen project monitoring and evaluation through service delivery district visits	Standardise infrastructure designs

Source: Department of Health, 2017

3.5.6 Reducing delivery outputs as an adjustment of last resort

Government departments frequently alter delivery outputs through budget reprioritisation when confronted with immense budget pressure. Reducing health delivery outcomes not only constitutes a violation of human rights but also a litigation risk.

There is, however, insufficient evidence to suggest that health delivery outcomes have been scaled down as a result of the purported fiscal strain. On the contrary, recent evidence show that health outcomes on key indicators such as life expectancy, infant mortality and HIV/AIDS treatment are improving (Department of Health, 2017).

Nevertheless, sporadic incidents exist of cuts in delivery outputs, where such reductions do not seem to affect the outcomes materially. These instances include the staffing of department with interns, nurses carrying out administrative functions, delaying payments to National Health Laboratory Services (owed R6 billion in 2017) and other suppliers as a strategy to manage cash flow problems. Other methods include reducing intake of nursing bursary recipients, transporting coffins using inappropriate vehicles, delaying maintenance on

oncology equipment, and food supply stock-outs. In some cases, the latter led to clinicians buying patients food from their personal resources.

Two incidents stand out as cases where budget strain is purported to have been the cause of damaging reductions in service delivery. In 2009 and 2013, Mpumalanga, Limpopo and Free State provinces ran short of HIV/AIDS medication supplies, resulting in partial and interrupted treatments of patients. The Department of Health, however, found that medical stock out was caused by poor inventory control and communication between health facilities, depots and suppliers. The Minister of Health has since declared medical procurement as a non-negotiable budget line item and directed provinces to source supplies through the central procurement system.

In 2016 the Gauteng Department of Health attributed the Life Esidimeni tragedy to budget pressure. Over 140 of 1 300 mental health patients died after having been transferred from a contracted private hospital to various unlicensed and unqualified non-governmental organisations (Office of Health Ombudsman, 2016). Patients were purportedly transferred from the private hospital to contain costs and align the budget to province-wide consolidation requirements. Subsequent reports and inquiries into the tragedy led by the Office of Health Ombudsman and by former Chief Justice Moseneke have since come to the conclusion that the department budget reprioritisation was at fault, as treatment was cheaper at the private hospital (R320 per patient per day) than in public psychiatric hospital (R1 000 per patient per day) to which the majority of the patients were transferred. It would seem that the department intended to pass the burden of the treatment cost onto NGOs since they were allocated R112 per patient per day. This debacle reflects recurring management inadequacy in the Gauteng Department of Health rather than a budget strain.

3.5.7 Recentralisation (NHI) as potential remedy for provincial fiscal strain

Notwithstanding the delay in empirical results on provincial responses to fiscal strain, this study makes no definitive inference to the existence of a “passing the buck” – i.e. national government passing the burden of fiscal consolidation to provincial health departments - phenomenon. The provincial equitable share allocation as a key health funding instrument continues to grow at a real average growth rate of 1.3 per cent per annum and in line with allocations to other spheres. According to provinces, this rate of growth in the allocations reinforces budget strain because it is misaligned to growing demands. Given the mixed results over the validity of this claim and the evident rigidities on provincial fiscal adjustment, it is instructive to assess if the proposals for nationalising health funding, through the National Health Insurance (NHI) fund, can minimise health budget strains or improve its responsiveness.

The NHI envisages the separation of the funding and delivery of health care in which national government will control a pool of health funds from which to purchase health care services from contracted public and private health care providers. Many details about the ultimate institutional delivery model of NHI are not yet available. However, it can be safely assumed that provinces will be completely cushioned from external budget pressures, because funding or payments are directly allocated to the units of delivery (clinics and hospitals). The fiscal strain that is currently experienced by provinces will thus be transferred to contracted providers. Under the NHI, and through the use of fee-for-services payment mechanism and standardised health packages, national government will be able to establish the existence of fiscal strain and to redirect resources to where health demands are the highest.

At this stage, it remains unclear whether health care delivery will be most efficient when paid for by national government and delivered by contracted providers, or when delivered by provinces through national transfers. The previous chapter provides evidence of recentralisation as a key national intervention during periods of fiscal restraint. The chapter also argues for a differentiated approach to recentralisation and a focus on addressing underlying causes of fiscal strain or inefficiency instead of resorting to blanket recentralisation.

3.6 Summary

This chapter set out to examine the responsiveness of intergovernmental fiscal instruments to the ongoing fiscal strain experienced by the provincial health departments in South Africa. Health care delivery is undergoing serious delivery strain as a result of mismatch between resources allocated and growing expenditure. The situation is exacerbated by poor fiscal management characterised by spending inefficiencies across the entire health care delivery system.

Under normal circumstances, the strenuous fiscal position in which provincial health departments find themselves should trigger discretionary fiscal adjustments to return to budget balance and maintain service delivery levels. However, fiscal adjustment instruments available to provinces are limited. Intergovernmental fiscal arrangements limit the scope for using borrowing and revenue-based measures to fill the budget gap stemming from a constraint fiscal environment. Provinces can only use limited expenditure side adjustment measures. A sizeable proportion of provincial revenue is made up of earmarked national transfers. This hampers the ability of provinces to adjust spending priorities in line with a deteriorating fiscal position.

The chapter finds little evidence of an impaired provincial fiscal position, assessed from a context of budget balance, which could necessitate fiscal adjustment. This is a result of strict enforcement of budget rules to prevent provinces from overshooting their budget. However, provinces appear to use imprudent accounting practices such as expenditure accruals to conceal negative budget balance and to plug the fiscal gaps. With the high expenditure adjustment rigidities, provinces tend to rely on capital spending to smooth the budget balance, notwithstanding the fact that infrastructure constitutes just under 5 per cent of total health spending.

The overall picture emerging from this chapter is that the major provincial fiscal adjustments tend to cascade from the centre through the cuts or additions made to the transfers. National transfer allocations to provinces have experienced moderate reductions since 2014 as part of budget consolidation. The reduction signals at the centre have not ignited similar reaction at the level of provinces, partly due to the transfer allocation mechanisms and the prevalence of non-discretionary spending. The allocations have had to be accompanied by National Treasury Instructions to freeze staff appointments and budget cuts on selected expenditure line items.

The case studies reveal two conflicting positions over the provincial health sector fiscal strain and the approaches required to correct the pressure. Both national government and the provinces agree that the health sector is under resourced but differ as regards the source of the pressure and how the various intergovernmental fiscal instruments should respond. Provinces attribute the source of their fiscal strain to inadequate transfers and propose additional budget as a requisite adjustment factor. In the absence of additional revenue, provinces resort to cutting health delivery outputs, albeit in a limited manner given the risks of litigation. The national government is of the view that revenue adjustment measures should be preceded by efforts to

improve management and spending efficiencies (personnel and procurement) in the health department. Many of these management improvement reforms are not forthcoming, and, as a result, provinces fall into cycles of mismanagement triggered by budget difficulties.

3.7 Recommendations

1) *The Commission recommends that national and provincial treasuries should develop a framework or criteria for determining serious financial strain with oversight by provincial legislation. Such a framework should have clear measurable financial and non-financial factors that can be monitored, reported and used to trigger automatic fiscal adjustment.*

   This should be developed in collaboration with the national and provincial departments of health. In this regard,
   - Section 6 of the Public Finance Management Act, 1999 (Act No. 29 of 1999) (PFMA) should set explicit criteria for determining serious financial problems. Such criteria should include clear measurable factors of what constitutes persistent material breach or inability to fulfil executive obligations (similar to section 136 of the Local Government: Municipal Finance Management Act, 2003 (Act No. 56 of 2003) (MFMA).
   - Provincial treasuries should monitor and disclose key fiscal health indicators at provincial department level where prolonged deviation from expected or healthy fiscal trajectory, as defined by the PFMA, triggers automatic intervention that is mandated and overseen by provincial legislature.
   - Provincial departments of health should develop the health information management system to trigger effective interventions and adjustments. This should be achieved by introducing capabilities to report and monitor service delivery blockages in health facilities.

2) *The FFC recommends that National Treasury and the Department of Health, through the respective Ministers, allocate part of the 2019/18 MTEF health infrastructure allocation to gradually set off expenditure accruals that have arisen from unavoidable demands for which allocated budgets have been depleted.*

   Such a provision should be considered for provinces whose accruals have surpassed the national maximum threshold/guideline of 2 per cent of the total budget and should be subject to provinces committing to a fiscal performance improvement plan, enforcement of tighter budget and operational controls at health facilities, and central procurement for strategic inputs.

3) *The Commission recommends that the Minister of Finance, through the National Treasury, should ensure that the framework for health infrastructure conditional grants (Health Facility Revitalisation Grant and National Health Insurance (non-personnel component)) accommodate flexibility during periods of protracted fiscal constraint so that provinces can re-orientate their available capital allocations towards maintenance.*

   This is particularly the case where individual infrastructure grants allocations are insufficient to achieve timely completion of projects. Provincial health departments should consider allocating at least 70 per cent of health infrastructure grants towards operations and maintenance.

Chapter 4: Incentive Effects of Intergovernmental Grants: Evidence from Municipalities

4.1 Introduction

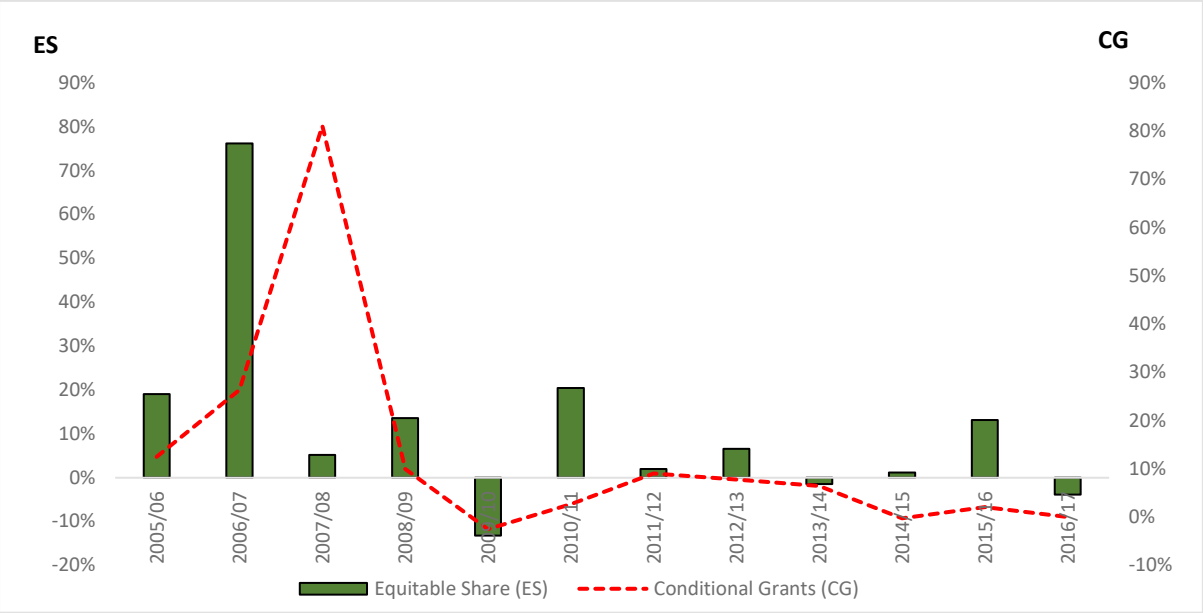
This chapter provides empirical evidence on the incentives for municipalities of the two types of transfers they receive:

- unconditional transfer allocated (shared) according to a formula, and
- conditional transfer allocated on a discretionary basis.

The impact of reducing intergovernmental transfers in a fiscally constrained space is important for South Africa. Whether this leads to reduced dependency and innovation in revenue autonomy on the one hand, or has a negative effect on service delivery functions and regional disparities on the other, is a critical consideration. In South Africa, municipalities are expected to use assigned fiscal functions as the main tool to address historical inequities in the distribution of and access to socio-economic infrastructure and resources.

As noted in previous chapters, South Africa's economic growth after the 2008 global financial crisis has steadily weakened, leading to a period of fiscal consolidation. As a result of these measures, R14 billion, mainly in direct local government grant allocations, will be cut from national transfers to local government over the 2018 medium term (National Treasury, 2018). These reductions are significant in a context of sustained decline in the real growth of intergovernmental transfers relative to the period prior to 2009 (Figure 19).

Figure 19. Real intergovernmental transfers growth to local government, 2005/06-2016/17



Source: FFC calculations and National Treasury Budget Review (various years).

4.2 Competing views of the long-term effects of lowering intergovernmental transfers to local government

Introducing consolidation measures has generated debate around the possible long-term effects of lowering both the overall envelope and growth of intergovernmental transfers to local government. The debate is centred on two competing views about the budgetary influence of transfers.

- The first view argues that equalising transfers that are negatively or weakly positively correlated with local revenue collection reduces local government incentive to enhance local economic development. Increased reliance on central or intergovernmental transfers compromises local government's autonomy to set policies according to local preferences, while at the same time promoting overreach by national government in local decision-making processes. Local governments that are dependent on transfers tend to be less accountable to citizens, less efficient in levying taxes and less capable in providing public goods (Weingast, 2009; Bird, 2010). In the long run, grant transfers that are inversely related to the tax base or to some measure of local revenue raising capacity will create an incentive for the recipient government to modify its tax and fiscal policies. These will be done in ways that allow it to receive larger equalisation transfers, or that prevent it from losing them (Brun and El Khdari, 2016). Such distortionary behaviours that reflect grant-driven "crowd-out" or "crowd-in" effects can negatively impact the efficiency of fiscal decentralisation. This is the case when grant-dependent sub-national units have weak incentives to be fiscally accountable (Rodden *et al*., 2003). Reduced intergovernmental transfers may therefore encourage officials in poorer municipalities to innovate and adopt effective policies. These innovations could enhance fiscal efforts to exploit available (or assigned) tax bases and attract growth. This will benefit the socio-economic well-being of local citizens without relying on centrally designed redistribution programmes (Qian and Weingast, 1997).
- The contrary view applies to smaller and mainly rural municipalities. Inadequate revenue bases and failure to take into account full expenditure needs of functions have a negative impact on the delivery of critical socio-economic services. Many South African municipalities face the challenge of allocating relatively small budgets towards the provision of public services to either towns, cities spread over vast areas, or jurisdictions whose population has a high demand for public services. Additionally, beyond the main metropolitan areas and secondary cities, the need by mainly rural municipalities to provide services to jurisdictions of low population densities and limited revenue raising capacity is further stretched. Deep-rooted frustration with the perceived poor state of service delivery in the core functions of municipalities has become an underlying theme of often violent protests across municipalities in many parts of the country.[23] Overcoming such challenges require that fiscal constraints on resource vulnerable municipalities do not result in worsening interregional disparities, or undermine efforts of local administrations and institutions to adequately and timeously address the needs of local citizens.

Debates around the funding mechanism for sub-national spheres, especially municipalities in the local government sphere, have sought to examine the efficiency of intergovernmental

[23] A recent multilevel government initiative assessing municipal protests between 2012 and 2014 showed that service delivery and accessibility was the main motivating factor behind the majority of protests (49.6 per cent), followed by employment opportunities (42.1 per cent) and roads and maintenance of public facilities (39.7 per cent). The initiative was led by the South African Local Government Association.

grants. In the view of organised local government, inadequate revenue resources have hindered the developmental role of municipalities. Implicit to these contrasting viewpoints is the question of whether the structure of grant transfer system, which assures municipalities an equitable share of revenues, has adversely impacted revenue raising efforts and how such efforts enhance accountability of local authorities to residents on how such resources are used.

For the purposes of this chapter, it should be noted that the Department of Cooperative Governance and Traditional Affairs (COGTA) has developed an analytical tool to classify municipalities based on their spatial characteristics. Category B municipalities are classified into categories B1 – emerging cities, B2 – large towns, B3 – small towns and B4 – mostly rural municipalities. The definitions and characteristics are as follows:

Table 19. Classification of municipalities

Class	Characteristics
Category A	All metropolitan municipalities
Category B1	Previously referred to as 'Secondary' cities, now referred to as 'Emerging' Cities: All local municipalities referred to as secondary cities
Category B2	Large towns. All local municipalities with an urban core. These municipalities have large urban dwelling populations, but the size of their populations vary hugely.
Category B3	Small towns. Municipalities without a large town as a core urban settlement. Typically they have relatively small populations, of which a significant proportion is urban and based in one or small towns. Rural areas in this category are characterised by the presence of commercial farms because these local economies are largely agriculture-based. The existence of such important rural areas and agriculture sector explains why they are included in the analysis of rural municipalities.
Category B4	Mostly rural. Municipalities that contain no more than one or two small towns and are characterised by communal land tenure and villages or scattered groups of dwellings and are typically located in former homelands.

Source: Department of Cooperative Governance and Traditional Affairs

4.3 Research methods[24]

Empirical studies in the literature rely on the theoretical framework developed by Lewis (2005) to understand the fiscal behaviour of municipalities. The model starts with a utility equation from the internally-consistent budget model proposed by Gramlich (1991). Within this framework, local governments are assumed to act as benevolent dictators seeking to maximise their utility which is defined to consist of three objectives, namely

- implementing a fiscal agenda aimed at raising the levels of after-tax income of its residents
- increasing local public spending relative to the needs of local citizens, and
- increasing its own savings.

Achieving these competing objectives is subject to a budget constraint comprising intergovernmental transfers.

[24] Note: For detail of formulas and equations, please refer to the Appendix.

Intuitively, the mechanism of local government behaviour is outlined in a budget model with the following hypotheses:

- When an increase in intergovernmental transfers rise, local governments raise spending, reduce taxes and increase public savings by an amount equivalent to the additional intergovernmental transfers
- If average personal income of residents grows, then own-source revenue can be expected to increase by some amount with local governments using the supplementary funds to augment expenditure and savings
- If local needs become greater, then local governments increase spending and pay for that increase by raising taxes or by reducing public savings than they otherwise would (Lewis, 2005).

The data employed in the empirical analysis covers the period 2003 to 2015 and includes observations for local municipalities, which consists of 213 jurisdictions. The revenue variables consist of own-revenues generated from user charges for "trading services" (i.e. electricity, water, sanitation, and solid waste removal), and the two main categories of intergovernmental transfers – local government equitable share (LES) allocations and conditional grants, respectively. To account for the expenditure function of municipalities, total spending by municipalities is disaggregated into its two broad components of capital and operating expenditures. Both revenue and expenditure variables are sourced from the local government database maintained by National Treasury.

Personal income is proxied by regional output as measured by municipal gross value added *per capita*. In respect of the socio-economic conditions of a municipality, the needs are proxied by a municipality's population size, its share of residents living below the food poverty line, the extent of human capital, and the extent of urbanisation within its jurisdiction. All economic and fiscal variables are measured in *per capita* terms.

Disparities in population size, income distribution, revenue base as well as varying degrees in the levels of urbanisation and administrative capacity mean that the actual distribution of responsibilities and revenue collection differs widely within and across types of local governments. As Bahl and Smoke (2003) note, some municipalities, especially those situated in large urban areas, take responsibility for a significant range of functions and services. On the other hand, smaller local governments, particularly (but not exclusively) in rural areas provide few services independently.

4.4 Findings and discussion

4.4.1 Impact of conditional and unconditional transfers on local revenues

For metropolitan municipalities (Category A), Table 20 provides the estimation results of the impact of total intergovernmental transfers on local own-source revenues and on the two categories of spending – capital and operating expenditures respectively. For each of the three models, the table provides the estimated parameters of the independent variables, the relevant *t*-statistics, and an indication of the statistical significance of the estimated coefficients.

Table 20. Impact of conditional and unconditional transfers on metropolitan municipalities' (category A) own revenue and expenditure

	Total municipal own revenues (Rand *per capita)*		Total capital expenditure (Rand *per capita)*		Total operating expenditure (Rand *per capita)*	
	Coefficient	***t-statistic***	***Coefficient***	**t-statistic**	***Coefficient***	**t-statistic**
Total conditional grants (Rand *per capita)*	0.564	4.26***	1.58	3.25***	0.57	0.92
Total unconditional grants (Rand *per capita)*	0.11	0.28	-11.35	4.30***	-4.47	2.68***
Gross value *per capita*	0.24	0.22	11.71	2.33**	3.08	0.80
Poverty rate per municipality (%)	-0.03	0.02	14.85	3.18***	6.63	1.94**
Total municipal population	0.07	0.27	3.31	3.38***	1.29	1.85*
Share of population resident in an urban area (%)	-1.27	0.36	17.33	2.06**	1.89	0.27
No. of observations	84		84		84	
No. of groups	7		7		7	
No. of instruments	10		10		10	
Arellano-Bond statistic (Prob > z)	0.997		0.949		0.369	
Sargen test statistic (Prob > Chi^2)	0.762		0.000		0.054	

Source: FFC calculations
*Note: The symbols ***, ** and * denote a coefficient is statistically significant at the 1%, 5% and 10% levels, respectively. All variables are expressed as logarithms*

The estimated coefficients show the marginal impact of a 1 per cent increase in the explanatory variables on *per capita* own-revenue as well as capital and operating expenditures *per capita*. The results show that a 1 per cent increase in conditional grants *per capita* will raise *per capita* own revenue by 0.56 per cent. This effect is statistically significant at the 1 per cent level. While an increase in unconditional grants does cause higher levels of own-revenues, its impact is not statistically significant.

From the second column of Table 21, the results show that an increase in both conditional and unconditional grant allocations to metropolitan municipalities have significant effects on capital spending per resident. However, while a 1 per cent increase in conditional grants raises capital expenditure by 1.58 per cent a similar increase in unconditional grants has a negative impact as it reduces *per capita* capital expenditures by 11 per cent. The variables capturing the needs of metropolitan municipalities are all positive and statistically significant. This suggests that rising personal incomes, higher levels of poverty, increased population size and urbanisation tend to spur spending on capital goods.

Similar conclusions are reached in the case of operating expenditures. From column 3, a 1 per cent increase in equitable share allocations reduce *per capita* operating expenditure by 4.5 per

cent, while a similar percentage increase in poverty rate and population size will cause consumption spending to rise 6.6 per cent and 1.3 per cent respectively.

Table 21. Impact of conditional and unconditional transfers on emerging cities' (Category B1) own revenue and expenditure

	Total municipal own revenues (Rand *per capita)*		Total capital expenditure (Rand *per capita)*		Total operating expenditure (Rand *per capita)*	
	Coefficient	***t-statistic***	***Coefficient***	**t-statistic**	***Coefficient***	**t-statistic**
Total conditional grants (Rand *per capita)*	0.208	1.24	0.22	1.60	0.09	0.65
Total unconditional grants (Rand *per capita)*	1.52	3.35***	0.04	0.09	-1.27	2.43**
Gross value *per capita*	-0.26	0.62	0.96	2.61**	1.29	3.47***
Poverty rate per municipality (%)	-0.74	1.32	1.32	2.35**	2.27	4.04***
Total municipal population	-0.59	2.63***	0.05	0.18	0.35	1.55
Share of population resident in an urban area (%)	-0.23	0.68	0.19	0.55	-0.57	1.63
No. of observations	234		84		84	
No. of groups	20		20		20	
No. of instruments	64		64		64	
Arellano-Bond statistic (Prob > z)	0.023		0.915		0.699	
Sargen test statistic (Prob > Chi^2)	0.156		0.998		0.059	

Source: FFC calculations
*Note: The symbols ***, ** and * denote a coefficient is statistically significant at the 1%, 5% and 10% levels, respectively. All variables are expressed as logarithms*

Table 22 shows the regression output for emerging cities (category B1). The results indicate that increased *per capita* transfers incentivise higher own revenues and capital expenditure per resident. However, this positive relationship is only statistically significant for the effect of unconditional allocations on own revenue *per capita* for jurisdictions covering large/secondary cities. Increased *per capita* equitable share allocations by 1 per cent will result in a 1.27 per cent decline in municipal *per capita* spending on operational items. For emerging cities (category B1), increased *per capita* incomes of residents and higher poverty rates induce higher *per capita* funding of capital and operational expenditures, while a 1 per cent increase in municipal population size lowers own revenues by 0.6 per cent

Table 22. Impact of conditional and unconditional transfers on large towns' (category B2) own revenue and expenditure

	Total municipal own revenues (Rand *per capita)*		Total capital expenditure (Rand *per capita)*		Total operating expenditure (Rand *per capita)*	
	Coefficient	***t-statistic***	***Coefficient***	**t-statistic**	***Coefficient***	**t-statistic**
Total conditional grants (Rand *per capita)*	0.003	0.01	-3.60	6.03***	-4.12	6.56***
Total unconditional grants (Rand *per capita)*	2.61	3.42**	12.18	10.68***	9.24	6.53***
Gross value *per capita*	-0.24	0.54	-5.21	7.68***	-4.23	6.46***
Poverty rate per municipality (%)	-1.42	2.91**	-5.31	6.40***	-0.37	0.28
Total municipal population	-1.25	3.62***	-5.51	9.90***	-3.81	5.32***
Share of population resident in an urban area (%)	-1.44	3.22***	-4.71	7.57***	-4.98	7.69***
No. of observations	265		265		265	
No. of groups	23		23		23	
No. of instruments	10		10		10	
Arellano-Bond statistic (Prob > z)	0.061		0.048		0.305	
Sargen test statistic (Prob > Chi^2)	0.00		0.00		0.00	

Source: FFC calculations
*Note: The symbols ***, ** and * denote a coefficient is statistically significant at the 1%, 5% and 10% levels, respectively. All variables are expressed as logarithms*

For the 23 large town (category B2) municipalities, unconditional transfers results in statistically significant increases to own revenues, capital expenditure and the financing of municipal operations (Table 23). A 1 per cent increase in equitable share allocations will raise the *per capita* own revenue and expenditure components of municipal budgets by 2.61 per cent, 12.18 per cent and 9.24 per cent respectively. On the other hand, rising conditional grant transfers result in reduced expenditures on capital and operating items. Municipal needs relating to the poverty rate, municipal size and urbanisation rate are negative and statistically significant drivers of own revenues and the different components of municipal expenditure.

Table 23. Impact of conditional and unconditional transfers on small towns' (category B3) own revenue and expenditure

	Total municipal own revenues (Rand *per capita)*		Total capital expenditure (Rand *per capita)*		Total operating expenditure (Rand *per capita)*	
	Coefficient	***t-statistic***	***Coefficient***	**t-statistic**	***Coefficient***	**t-statistic**
Total conditional grants (Rand *per capita)*	-0.04	0.31	0.26	2.75**	0.11	1.72*
Total unconditional grants (Rand *per capita)*	2.01	9.55**	1.17	4.27***	0.56	2.80**
Gross value *per capita*	0.96	0.54	0.43	2.22**	0.27	1.54
Poverty rate per municipality (%)	-0.78	3.70***	-0.46	1.65**	0.30	1.63*
Total municipal population	0.44	2.90**	0.41	3.88***	0.10	0.81
Share of population resident in an urban area (%)	-0.33	3.01**	-0.24	2.64**	0.55	3.12**
No. of observations	1124		265		265	
No. of groups	104		104		104	
No. of instruments	64		64		64	
Arellano-Bond statistic (Prob > z)	0.027		0.359		0.309	
Sargen test statistic (Prob > Chi^2)	0.000		0.00		0.00	

Source: FFC calculations
*Note: The symbols ***, ** and * denote a coefficient is statistically significant at the 1%, 5% and 10% levels, respectively. All variables are expressed as logarithms*

The results in Table 24 indicate that unconditional transfers have a positive and significant effect on own-revenue collection and the levels of expenditure in small town (category B3) municipalities. Likewise, increases in conditional grants result in higher levels of capital and operational expenditures. The estimated effects on municipal spending appear to be larger for increases to equitable share transfers relative to conditional grants. The results also show that rising *per capita* incomes have a positive and statistically significant effect on capital expenditure. A 1 per cent increase in municipal population size is expected to induce a statistically significant 0.4 per cent increase in both *per capita* own-revenue and capital expenditures. Finally, higher levels of food poverty and urbanisation of small town municipalities have a negative impact on own-revenue and capital expenditure. On the other hand, a 1 per cent increase in either variable is expected to crowd in operating expenditure by 0.3 per cent and 0.6 per cent respectively.

Table 24. Impact of conditional and unconditional transfers on mostly rural municipalities (category B4) own revenue and expenditure

	Total municipal own revenues (Rand *per capita)*		Total capital expenditure (Rand *per capita)*		Total operating expenditure (Rand *per capita)*	
	Coefficient	***t-statistic***	***Coefficient***	**t-statistic**	***Coefficient***	**t-statistic**
Total conditional grants (Rand *per capita)*	-0.13	0.69	-1.68	2.18**	-1.54	2.03**
Total unconditional grants (Rand *per capita)*	1.70	9.55**	7.91	5.38***	8.10	5.24***
Gross value *per capita*	0.63	2.59**	-1.65	1.11	-1.61	0.96
Poverty rate per municipality (%)	-0.40	0.75	1.86	0.50	2.01	0.52
Total municipal population	0.12	0.76	-3.34	6.07***	-3.35	5.94***
Share of population resident in an urban area (%)	-0.10	1.26	0.14	0.33	0.23	0.52
No. of observations	642		265		265	
No. of groups	58		58		58	
No. of instruments	11		64		64	
Arellano-Bond statistic (Prob > z)	0.679		0.671		0.348	
Sargen test statistic (Prob > Chi^2)	0.550		0.00		0.00	

Source: FFC calculations.
*Note: The symbols ***, ** and * denote a coefficient is statistically significant at the 1%, 5% and 10% levels, respectively. All variables are expressed as logarithms*

Table 25 shows the estimation results for mostly rural municipalities (category B4). The estimated coefficients show that an increase in equitable share allocations to the most rural municipalities has a positive impact on own revenues and the different components of municipal expenditure. More substantively, a 1 per cent increase in unconditional transfers is expected to raise own-revenues by 1.7 per cent. Unconditional transfers are also crucial to municipal spending, as a 1 per cent increase in this variable is expected to expand municipal capital and operating outlay per resident by 8 per cent. On the other hand, conditional grants tend to lower municipal *per capita* expenditures. More specifically, a 1 per cent increase in *per capita* conditional grant allocations will cause an almost 2 per cent decrease in *per capita* municipal expenses on capital and operational items.

4.5 Summary

Using public finance dataset on South Africa's municipalities, this chapter has examined the responsiveness of municipal expenditures and revenues to the main intergovernmental transfers. The main findings of the empirical analysis can be summarised as follows:

- For metropolitan municipalities (category A), conditional grant transfer provides incentives for own-revenues of metropolitan municipalities. It also generates

increased funding of capital outlays. On the other hand, increased unconditional grants are associated with lower capital and operating expenditures.

- For emerging cities (category B1), equitable share allocations are positively correlated with own revenues while unconditional grant transfers negatively impact operating expenditure.
- For large towns (category B2), unconditional grants benefit municipal own revenues and expenditure *per capita*, but conditional grant allocations induce lower *per capita* outlays on capital and operational goods.
- For small towns (category B3) municipalities, unconditional grants are beneficial for own revenue and different components of municipal spending, while conditional grants incentivise municipalities to raise *per capita* spending on capital and operational goods and services
- For mostly rural municipalities (category B4), unconditional grants are beneficial for own revenue raising and different components of municipal spending, while conditional grants tend to lower capital expenditure.

The findings highlight the role of intergovernmental transfers as a critical component of total revenues used by municipalities in funding their assigned expenditure functions. These transfers are especially important for mainly rural local governments lacking both the internal capacity and tax base to generate an adequate level of own revenues. Such municipalities are financially weak and unable to attract qualified staff or purchase equipment necessary for implementing technical aspects of budgets and raising capacity to collect taxes and fees. Across all municipal types, local governments rely on financial transfers from national government to fund their provision of mandated public services, which, in turn, raises the levels of local revenues through promoting voluntary tax compliance.

In terms of expenditure, the corollary of the empirical findings is that they serve as an indicator of the relative extent to which municipal expenditures are dependent on grant types.

- For metropolitan municipalities (category A) – which generate the bulk (over 70 per cent) total revenue from own sources - the results suggest that relative to unconditional grants, such municipalities are more dependent on conditional grants in financing their capital and operating budgets. This suggests that own revenues and conditional grants are drivers of capital and operating expenditure.
- For jurisdictions classified as emerging cities (category B1), there is reduced dependency on increasing levels of unconditional transfers as a source of funding operating costs.
- With increased intergovernmental transfers, the capital and operating budgets of large towns (category B2) become more dependent on unconditional grants and less dependent on conditional grants.
- For small towns (category B3), higher levels of both conditional and unconditional transfers are associated with increased capital and operating expenditures.
- Category mostly rural municipalities (category B4) will tend to depend more on rising unconditional transfers as a source of funds directed at capital and operating expenditure.

In an environment of slow economic growth and efforts to consolidate public finances, the reliance on intergovernmental grant transfers in the financing of capital and operating budgets of municipalities is a welcome development. This is particularly so for metropolitan municipalities, emerging cities and large towns (categories A, B1 and B2) that generate a significant share of revenues from own sources. However, for mainly rural municipalities

classified as small towns and mostly rural municipalities (categories B3 and B4), transfers play a key role in their budgets and hence the need to focus efforts on ensuring efficient use of funds and overcoming the capacity challenges that have driven grant underspending in these two categories of municipalities.

In terms of revenue, conditional grants incentivise higher levels of own-revenues in metropolitan municipalities (category A), while for emerging cities, large towns, small towns and mostly rural municipalities (categories B1-B4), higher unconditional grant allocations are positive incentives for own revenue collections.

4.6 Recommendations:

1) *The Commission recommends that the Minister of Finance, through National Treasury, gives municipalities (particularly those in small towns and mostly rural municipalities (categories B3 and B4) greater flexibility in the use of grants to encourage innovative approaches to resolving local problems.*

   Budget 2018 envisages strong allocations in equitable share allocations alongside significant declines in conditional grants. For mainly rural municipalities, such reductions should be balanced against the important stimulus provided by conditional grants for funding capital expenditure. In a fiscally constrained environment in which conditional grant allocations are expected to fall, municipalities should be assisted to use reduced grant amounts efficiently. Such flexibility could be introduced through a phased in conversion of categorical grants into the block grant framework. Alternatively, a similar approach to the newly introduced Integrated Urban Development Grant can be extended to most resource-vulnerable rural municipalities. Conversion of categorical grants to block grants will require that national funding of identified priority programmes via municipalities be accompanied by local government maintaining a level of spending effort.

2) *The Commission recommends that a fiscal capacity component be introduced to the equitable share formula to make it more efficient and incentivising. The component should incorporate two aspects:*
   - Recognising the revenue-raising effort of municipalities, and
   - Capturing the redistributive element of addressing horizontal imbalances.

   In using the equitable share formula as the main conduit for transfers to local governments, it should be noted that the current structure of the local government equitable share accounts for the fiscal capacity of municipalities through a revenue adjustment factor. This is biased in favour of jurisdictions with limited potential to raise revenues. The recommended fiscal component will ensure that the formula adheres to its principle of ensuring equity according to socio-economic circumstances. A revenue-raising effort that is a composite measure of the extent to which municipalities collect from their legislated/mandated local tax/revenue bases should be introduced. This will complement the current local government equitable share formula in which fiscal capacity assessment is based on the potential to collect revenues. The potential is influenced by a jurisdiction's wealth base, available revenue sources, demand for local services and tax limitation measures. To incentivise revenue efforts, the formula will be required to give a higher weighting to the effort indicator.

Chapter 5: Assessing Efficiency of Key Provincial Infrastructure Programmes: The Case of Education, Health and Public Transport

5.1 Introduction

In its 2016/17 Division of Revenue Submission, the Financial and Fiscal Commission (FFC) argued that the successful delivery of infrastructure projects is critical for service delivery and economic growth (FFC 2015). Delivery of infrastructure projects, however, is suboptimal, typically characterised by cost overruns, low productivity and poor quality (Emuze and Swallwood 2012). Government's ability to leverage infrastructure as a policy instrument to reduce poverty, inequality and unemployment, and to generate growth is undermined by ineffective delivery of infrastructure projects. These are often the result of poor planning, weak procurement processes, corruption, and insufficient governance and oversight.

Subdued economic growth and lower than anticipated revenue collection has resulted in a constrained fiscal environment. This has led government to pay increased attention to internal weaknesses, such as inefficiencies, waste and corruption, to improve the spending performance of the fiscus and stabilise public debt. In particular, government has focused on improving the returns on public investments in infrastructure projects as these are typically large and consume a considerable portion of the procurement budget. In addition, unique characteristics of the infrastructure sector make it vulnerable to waste and inefficiencies (Transparency International 2005). For example, different levels of official approval make oversight difficult, the general uniqueness of projects makes the accurate estimation of the true projects costs complicated, opportunities exist for delays and overruns, and poor quality of work is easy to conceal.

Since the seminal paper by Aschauer (1989), many researchers have confirmed the positive relationship between infrastructure investment and economic growth, in spite of the varying strength of this relationship. In addition, good infrastructure leads to improved human welfare and is critical for the attainment of some human development goals (Fourie 2007). However, infrastructure expansion on its own is unlikely to achieve economic development objectives. Critically, infrastructure delivery should be efficient and effective to increase the growth dividend and reap human development returns. A recent study has found that the most efficient countries get twice the growth return for their public investment on infrastructure compared to the least efficient countries (IMF 2015). Inefficiencies arising from fiscal impropriety increase income inequality and poverty (Gupta et al. 1998) and lower economic growth (Mauro, 1995).

Government infrastructure is largely financed by conditional grants disbursed to provincial and local government. The grants fund important socio-economic infrastructure that is essential for the provision of basic services to communities and expanding access to health and education. However, provincial infrastructure spending may not always be optimally used. In addition, within an environment of fiscal constraints, government reduction and reprioritisation of spending frequently targets conditional grants related to infrastructure.

Over the 2018 Medium Term Expenditure Framework (MTEF), cuts to the Education Infrastructure Grant (EIG) were R3.47 billion in 2018/19 and R3.8 billion in 2019/20, while the baseline reductions to the Health Facility Revitalisation Grant (HFRG) were R100 million in 2018/19 and R200 million in 2019/20. The Provincial Roads and Maintenance Grant (PRMG) also face cuts of R1.2 billion over the next two years. In its submission on the 2018 Division of Revenue Bill, the FFC noted that government trimming of conditional grants have not been made according to any specific blueprint, except that they have been made to bigger value grants. The Commission therefore recommended that a more in-depth investigation of each grant be made prior to it being reduced. Grants are important in addressing inequalities in South Africa and in fulfilling constitutional requirements to provide service delivery.

This chapter addresses crucial questions in respect of infrastructure in the education, health and transport sectors:

- In the prevailing fiscal context, how can provincial governments achieve the same level of infrastructure delivery with less money?
- Is it possible that government can maintain existing levels of infrastructure delivery with more efficient use of funds, achieved by reducing waste and eliminating fiscal misappropriation?

The chapter is in line with the recommendations made by the FFC in its submission on the 2018 Division of Revenue Bill. The reduction of backlogs in these sectors in the context of fiscal constraints will depend on the optimal use of resources. Should widespread waste, inefficiency and corruption prevail, government's long-term objectives of addressing poverty and inequality through infrastructure development could be compromised.

The specific objectives of the research are the following:

- Assess the efficiency of provincial infrastructure projects funded through education, health and transport conditional grants
- Examine the main causes of inefficiencies in provincial infrastructure projects, with the focus being specifically on the procurement and implementation phases of the infrastructure project cycle, and
- Propose fiscal and non-fiscal measures that could minimise the potential for inefficiencies in provincial infrastructure programmes and shut down windows of opportunity for public officials to engage in fiscal misappropriation.

5.2 Research methods

This study employs a multi-pronged approach:

- Budget analyses of key provincial infrastructure programmes in the health, education and transport sectors are conducted to assess the efficiencies of these programmes. Ideally, data envelope analysis (DEA) statistical technique should be adopted to investigate service delivery efficiencies. To employ this method requires well-defined input and output measures. For provincial infrastructure delivery, input data with respect to expenditures are easily accessible but well-defined outputs that are comparable across provinces and in a province are not available. This is because provinces do not report on output information at project level in any standardised manner. Despite this drawback, the budget analysis technique adopted, complemented by the qualitative study and questionnaire administered, provide clues to the extent of inefficiencies in provincial infrastructure.

- The questionnaire administered examines the key reasons for inefficiencies in provincial infrastructure programmes. Consistent with the findings by Gupta et al. (2014), the survey questions concentrate on the selection and implementation phases of the infrastructure project cycle. The sample frame comprises 209 building contractors in eight of South Africa's nine provinces ranging in size and experience[25]. The survey instrument was administered through a web-based platform to ensure the complete anonymity of respondents and cost effectiveness. Questions pertaining to the frequency of different types of inefficiencies were included, as well as questions to gauge respondents' perception and direct experience of fiscal misappropriation. The third component of the methodology is interviews. These were conducted with key stakeholders at provincial departments of education. Three case study provinces were selected (Western Cape, Free State and Limpopo). Their procurement and implementation phases are assessed based on the conceptual framework employed by Klitgaard (1995) to evaluate potential incentives for fiscal misappropriation in educational infrastructure projects. Findings from these case studies are complemented by interviews with provincial treasuries, the national Department of Education and the National Treasury.

5.3 Findings and discussion

5.3.1 Intergovernmental delivery of provincial infrastructure

Provincial governments are mainly responsible for investing in and maintaining infrastructure related to their core mandate as outlined in schedule 4 of the Constitution. These infrastructure programmes typically concern health, education, housing and road maintenance. Smaller infrastructure programmes associated with tourism, sports facilities and agriculture are the responsibility of the provinces as well.

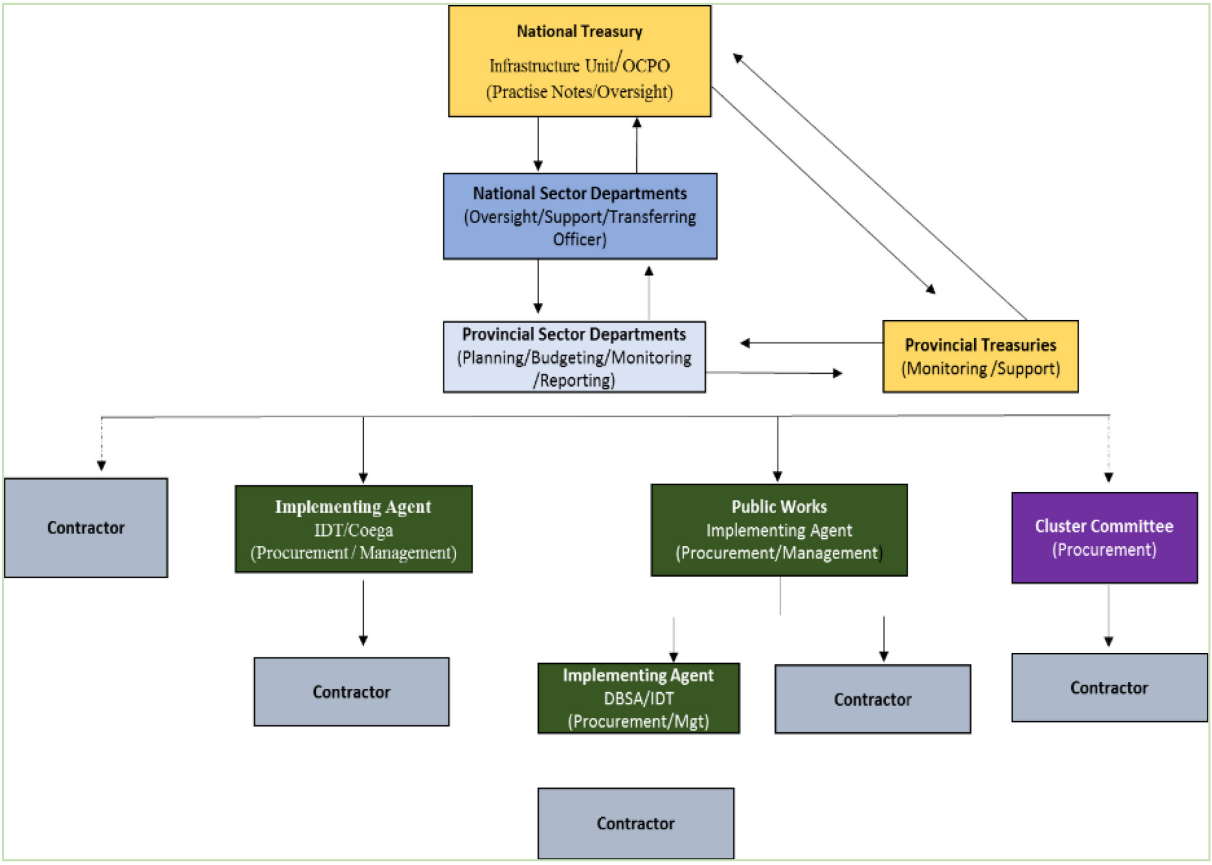
Provinces fund these key infrastructure programmes through conditional grants received from national government. As depicted in Figure 20, national sector departments act as the transferring entities and play a crucial role in ensuring that provincial governments implement their infrastructure programmes in accordance with national norms and standards. This oversight role also extends to providing provincial departments with technical support should this be required. National Treasury issues instruction notes on planning, procurement and implementation of infrastructure delivery with the aim of achieving value for money and cost efficiencies. Provincial treasuries assist provincial sector departments to implement these instruction notes and monitor infrastructure delivery in the province.

Infrastructure delivery at provincial level consists of several configurations. In a few instances, sector departments procure service providers and deliver infrastructure projects directly, but in most cases, the provincial public works departments (DPWs) is the sole implementing agent (IA) allowed by provincial executive authorities. Given the high volume of infrastructure projects, provincial education, health and roads departments are often hamstrung by delays in project execution by DPWs. The DPWs also outsource projects to IAs such as Development Bank of South Africa (DBSA) or Independent Development Trust (IDT), which adds further complexities to the accountability cycle.

[25] The study could not find any building contractors with a website presence from the North West province.

In cases where sector departments procure service providers directly, projects are generally small in nature and typically relate to maintenance work or minor upgrades. This arrangement allows sector departments to exercise direct control over contractors and the procurement process has a shorter turnaround time. To reduce the delivery burden on DPW, sector departments in some provinces are permitted to use other IAs. However, this arrangement comes with its own challenges, particularly with respect to government procurement processes that may not be followed. Sector departments may also fail to exercise proper oversight over these IAs. Nevertheless, by having more than one IA, sector departments achieve a faster throughput and are more likely to achieve their delivery goals. In Free State, all projects under R10 million are procured through a cluster committee consisting of several sector departments. Members of these committees are appointed by the respective Heads of Department (HODs). The committees appoint contractors who report to sector departments. The cluster committees fast track framework agreements[26] so that small to medium-sized infrastructure projects can be initiated in a shorter turnaround time.

Figure 20. Infrastructure delivery framework for provincial infrastructure



Source: FFC

In recent years, national government has increasingly taken on the implementation of the infrastructure function on behalf of provinces. This is evident from the rapid increase in indirect grants from 3.9 per cent in 2011/12 to 8.9 per cent in 2016/17. This rise is underpinned by an assumption that the spending performance by national government in delivering infrastructure

[26] A framework agreement is an agreement with suppliers to establish terms governing contracts that may be awarded during the life of the agreement. In other words, it is a general term for agreements that set out terms and conditions for making specific purchases (National Treasury, 2016)

is better than that of provinces. This assumption is challenged by a study conducted by the FFC in 2015 which found that infrastructure direct grants to provinces outperformed indirect grants (FFC 2015).

5.3.2 Policy reforms to improve provincial infrastructure delivery efficiency

In order to improve infrastructure delivery, government has implemented ongoing reforms to remove bottlenecks in the system that are slowing down infrastructure delivery at subnational level and contributing to unspent funds being returned to the fiscus. One such reform rolled out to provinces and local government was the Integrated Delivery Management System (IDMS) introduced by National Treasury in 2012. The IDMS is a comprehensive infrastructure management system that focuses on achieving value for money and improving efficiencies in the planning, budgeting, procurement, delivery and maintenance of infrastructure projects. Whilst the IDMS took infrastructure management to another level, it assumes that provincial sector departments have a certain level of internal capacity and skills, which is not necessarily the case. In addition, infrastructure procurement was still being done through the normal procurement system in which infrastructure projects, irrespective of their volume, were treated as stand-alone items. This implies that if a sector department had to undertake 200 infrastructure projects, each project had to go through a separate tender process resulting in the awarding of 200 contracts, each of which has to be separately managed.

To improve procurement efficiencies, National Treasury released the Standard for Infrastructure Procurement and Delivery Management (SIPDM) in 2016. This Standard separates procurement of infrastructure from the rigid process of procuring ordinary goods and services and allows projects to be packaged in larger volumes, thereby improving efficiencies. The SIPDM also incorporates gateway reviews at each stage of the lifecycle and requires departments to examine issues around value for money, construction design and omissions, particularly prior to sending out the tender document. By enforcing a review at various strategic stages of the project life cycle, sector departments reduce costly errors or omissions that could return in the form of variation orders at escalated cost at some stage as contractors, who are already appointed, have an incentive to over-charge government for any omissions in the project design. The SIPDM also introduces management contractors that oversee more than one infrastructure project in a geographical location, thereby introducing efficiencies in the system.

Despite these innovative reforms, sector departments have been slow in adopting them, seemingly because of a shortage of capable personnel. Problems are therefore still widespread in infrastructure delivery, particularly with respect to procurement and the implementation of infrastructure projects.

5.4 Provincial infrastructure allocations and spending efficiency

Table 25 illustrates that funding across all three conditional grants will decline in real terms over the period 2017/18 to 2020/21. However, given the tight fiscal framework and the need to reprioritise spending, government has targeted infrastructure grants to reduce funding over the 2018 MTEF period. Government has motivated these cuts in terms of previous underspending patterns and the relative ease with which planned provincial projects can be delayed or rescheduled. Should conditional grant funding for infrastructure increase in the future, funding would probably still be lower than in the absence of these cuts, unless conditional grant funding

for infrastructure increase is at a pace that compensates for baseline reductions. This is because the baselines for the infrastructure grants have probably been reduced.

The funding cuts affect most provinces, especially with respect to the Health Facility Revitalisation Grant and the Education Infrastructure Grant. In the case of the former, the variation in cuts across provinces is much larger than the latter. Most provinces will therefore either have to delay projects or find ways to reduce inefficiencies in the system. There is a general concern that the significant backlogs that already exist in provinces will increase, impacting on government's ability to address poverty and inequality. Improvements in efficiencies, if they are realised, will have the advantage of strengthening the relationship between health and education spending, thereby enhancing the impact on economic growth and inequality. This is confirmed by More and Aye (2017) in their study on the impact of education and health expenditure on growth and inequality in South Africa.

Table 25. Annual average real growth of key provincial infrastructure grants

Province	Annual average real growth					
	Provincial roads maintenance		Health facility revitalisation		Education infrastructure	
	2012/13 – 2016/17	2017/18 – 2020/21	2012/13 – 2016/17	2017/18 – 2020/21	2012/13 – 2016/17	2017/18 – 2020/21
Eastern Cape	0%	-1%	-2%	-5%	-1%	-5%
Free State	25%	3%	-19%	-3%	2%	-6%
Gauteng	-2%	4%	9%	-1%	11%	-5%
KwaZulu/Natal	7%	9%	11%	-3%	4%	-6%
Limpopo	9%	0%	-9%	2%	-7%	-1%
Mpumalanga	5%	-5%	-14%	1%	3%	-5%
Northern Cape	21%	8%	-4%	-10%	4%	-6%
North West	8%	1%	-6%	-3%	8%	-6%
Western Cape	10%	-5%	-20%	-8%	11%	-8%
Total	**3%**	**-3%**	**-9%**	**-1%**	**5%**	**-2%**

Source: FFC calculations and National Treasury Database; Division of Revenue Bill (2017, 2018)

Government strategy of cutting infrastructure grants in 2018/19 targeted the incentive (unallocated) component of infrastructure grants. However, in 2019/20 cuts amounting to R1.78 billion are also effected against the provincial allocation of the three infrastructure grants (Table 26). The rationale for reducing the baseline allocations to provinces in 2019/20 rather than in 2018/19 is to allow provinces sufficient time to factor these cuts into their infrastructure plans. Nevertheless, reductions to the incentive component of the grants in 2018/19 will still have a significant impact on provincial infrastructure delivery even though they are discretionary in nature. Some provinces would typically use the incentive funding and use it all on maintenance expenditure as there is no earmarked funding besides the PRMG that is earmarked solely for maintenance spending. The main reasons for low maintenance budgets are

- absence of life-cycle costing
- asset registers not regularly updated, and

- backlogs not properly estimated.

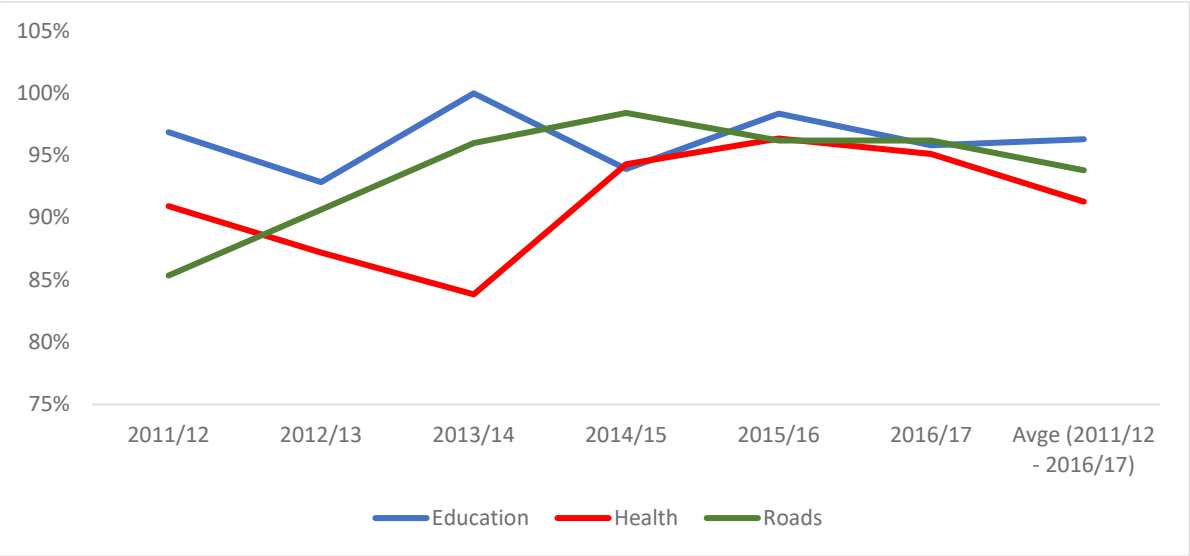
Table 26. Changes to conditional grants in the 2018 National Budget

	2018/19 FY			2019/20 FY		
Additions/ deductions (R'000)	**Provincial Allocation**	**Not allocated**	**Total Additions/ deductions**	**Provincial allocation**	**Not allocated**	**Total additions/ deductions**
Education Infrastructure Grant	368 581	-3 840 408	-3 471 827	-899 999	-2 927 048	-3 827 047
Health Facility Revitalisation Grant	514 743	-614 743	-100 000	-179 217	-20 783	-200 000
Provincial Roads Maintenance Grant	502 183	-1 002 183	-500 000	-700 000	-	-700 000
Total	**1 385 507**	**-5 457 334**	**-4 071 827**	**-1 779 216**	**-2 947 831**	**-4 727 047**

Source: FFC calculations, 2017 DORB and 2018 DORB

Table 27 and Figure 21 show the spending performance for the three infrastructure grants. Provinces consistently underspent across all three provincial infrastructure grants, although the extent of underspending declined since 2011/12. This improvement in spending was a result of reductions in allocations rather than greater spending abilities by provinces. Provincial spending on the HFRG is lowest among the three infrastructure grants, with only 91 per cent of the total provincial allocations having been spent on average over the six-year period. Provinces that have consistently underspent across all three grants are Free State, Limpopo and North West. The evidence suggests that the real challenge is limited capacity to spend the budgets. This is despite the fact that insufficient funds to deal with the historical backlogs in health and education are being allocated.

Figure 21. Spending performance of key infrastructure grants, 2011-2016/17



Source: FFC calculations and National Treasury database

Table 27. Provincial spending percentage on infrastructure grants, 2011/12-2016/17 average

Province	Education Infrastructure Grant	Health Facility Revitalisation Grant	Provincial Roads Maintenance Grant
Eastern Cape	95%	96%	98%
Free State	87%	86%	91%
Gauteng	100%	84%	87%
KwaZulu/Natal	100%	100%	96%
Limpopo	95%	87%	90%
Mpumalanga	101%	89%	100%
Northern Cape	96%	92%	100%
North West	94%	96%	78%
Western Cape	97%	92%	100%
All provinces	**96%**	**91%**	**94%**

Source: FFC calculations and National Treasury database

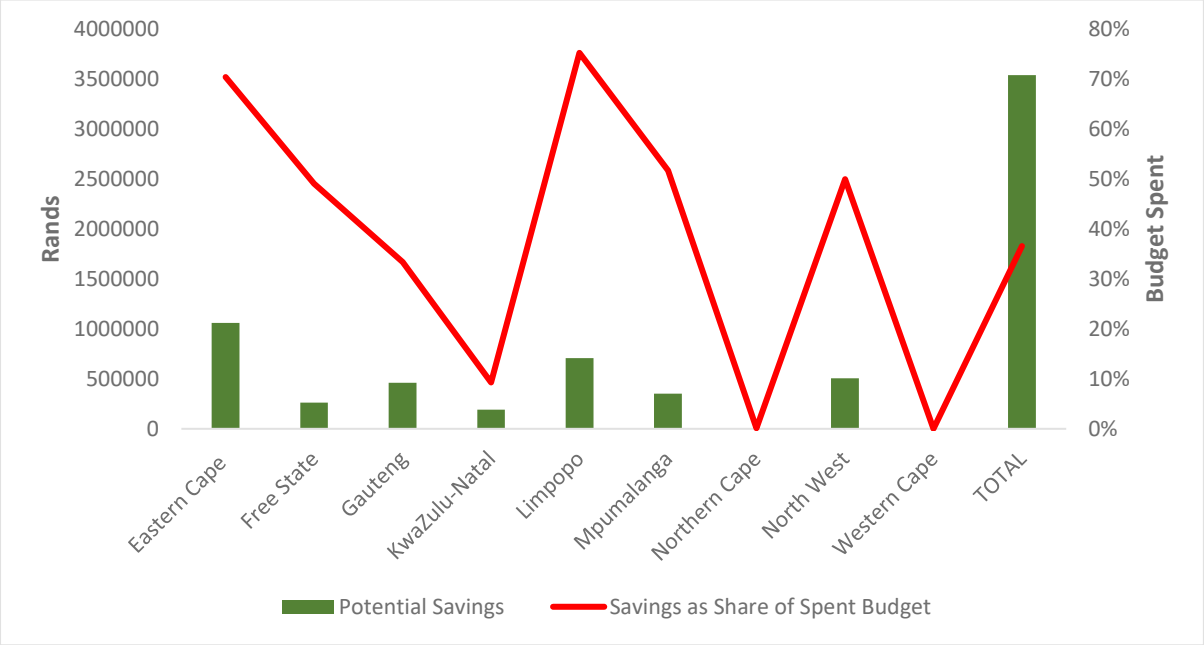
Figure 22 compares the budgets spent against the performance targets achieved for the EIG. Typically, if provinces plan properly, 100 per cent spending on departmental budgets should equate to achieving 100 per cent of its output targets. However, wide discrepancies exist between the share of the budgets spent in relation to the output targets achieved. A typical example is the case of the Eastern Cape provincial education department (PED) which spent 100 per cent of its budget in 2016/17 but only achieved 30 per cent of its target with respect to the building of schools. These trends suggest very low value for money for government from the EIG.

Figure 22. Proportional provincial spending and service delivery on Education Infrastructure Grant, 2016/17

Source: FFC calculations and National Treasury database

If provinces had spent their grants in line with the actual targets achieved, their potential savings would have been R3.6 billion (Figure 23). This calculation assumes a standard cost across all infrastructure projects, which may not be realistic. Even if there are some inaccuracies with respect to costing assumptions, the quantum of the potential saving points to rampant inefficiencies in the provincial delivery of education infrastructure projects.

Figure 23. Potential provincial savings on Education Infrastructure Grant, 2016/17



Source: FFC calculations and National Treasury database

Provinces are responsible for the outputs of resealing and rehabilitation of roads. Table 28 compares the costs per kilometre for the nine provinces. The figures in Table 28 show significant cost variations between the provinces. The cost per kilometre for resealing and rehabilitation is the highest in the Eastern Cape province. Even if provincial cost variations are at play, the highly inflated costs per kilometre for these two outputs in the Eastern Cape suggest significant inefficiencies.

Given the extent of the cost variation across provinces, however, these figures should be treated with caution. While provinces are reporting cost estimations against arguably the same outputs, the huge fluctuations across provinces may suggest the outputs in Table 28 are not defined in a consistent manner. Even so, the Eastern Cape would still need to justify the amount being spent on resealing and rehabilitation of roads as its cost estimates exceed any reasonable benchmarks. Data from the in-year monitoring system managed by the National Treasury reveal that variation orders of R1.9 billion in 2016/17 were incurred for road maintenance in the Eastern Cape.

Table 28. Road Maintenance Grant performance indicators

Province	2016/17	
	Resealing	Rehabilitation
	Cost per km (R '000)	Cost per km (R '000)
Eastern Cape	40 502	149 452
Free State	1 943	6 459
Gauteng	n/a	n/a
KwaZulu/Natal	n/a	n/a
Limpopo	n/a	n/a
Mpumalanga	258	2 314
Northern Cape	239	8 814
North West	2 966	50876
Western Cape	387	97 500

Source: FFC calculations and national Department of Transport

5.5 Corruption and inefficiencies in infrastructure delivery

A total of 209 infrastructure delivery contractors in eight provinces were sampled. 72 responses were received, which is a response rate of approximately 35 per cent. Respondents are represented from eight provinces, with the highest responses received from the Western Cape (29 per cent), KwaZulu/Natal (25 per cent), and Gauteng (20.8 per cent).

Approximately 89 per cent of the contractor companies are small (5-19 staff) to medium (20–99) sized. In addition, approximately 44 per cent of contractor companies have been in operation for a period of 5-10 years, and 37.5 per cent have operated for more than 10 years. The top manager in 40 per cent of contractor companies has between 6 and 10 years' experience, while the top manager in 33 per cent of companies has acquired 11 to 20 years' experience. The sample data in Table 29 therefore suggests that most contractor companies are well established in the infrastructure sector.

Table 29. Sample characteristics of infrastructure delivery contractors

Contractor Size	Respondents (%)	Years in operation	Respondents (%)	Years of experience of top manager	Respondents (%)
Micro	5.5%	**Less than 1 yr.**	0	**Less than 1 yr.**	1%
Small	42%	**1-4 yrs.**	18%	**1-5 yrs.**	19.5%
Medium	47%	**5-10 yrs.**	44.5%	**6-10 yrs.**	40%
Large	4%	**More than 10 yrs.**	37.5%	**11 – 20 yrs.**	33%
Don't know	1.5			**More than 20yrs**	1.5%

Source: FFC calculations

Out of the total respondents, approximately 90 per cent tendered for government infrastructure projects (Table 30). Projects tendered for ranged from school infrastructure projects (37.5 per cent), followed by roads (32.8 per cent) and hospitals (26.5 per cent). The average tender values

for 39 per cent of contractors were medium sized, ranging from R5 million to R15 million in value whilst the average tender values for 31 per cent of contractors were large projects with a contract value of more than R15 million. A large proportion of contractors (28 per cent) also tendered for small projects with an average contract value of between R1 million and R5 million. Overall, the majority of respondents (90 per cent) submitted bids for provincial infrastructure projects spread across the three main sectors of education, health and roads. Bids submitted for projects varied in size.

Table 30. Infrastructure projects and contractor size

Projects	Respondents (%)	Average size of tenders	Respondents (%)
Schools	37.5%	**Micro (Less than or equal R1m)**	1.5%
Clinics	3%	**Small (<R1m and less or equal R5m)**	28%
Hospitals	26.5%	**Medium (<R5m and less or equal R15m)**	39%
Roads	32.8%	**Large (<R15m)**	31%

Source: FFC calculations

One of the biggest inefficiencies in infrastructure projects are time overruns, since the longer projects take to complete, the greater the costs of labour, consulting fees, rental on machinery and equipment, and interest payments.

With respect to the survey findings, 47 per cent of respondents reported that 20-50 per cent of infrastructure projects are affected by time overruns, while 22 per cent of respondents estimated that 50-80 per cent of infrastructure projects experience time overruns (Table 31). Time overruns tend to affect all contractor companies irrespective of their years of operation, although contractor companies in existence for longer report time overruns for a larger percentage of projects.

Table 31. Proportion of projects affected by time overruns

	Proportion of project affected by time overruns				
Contractor years of operation	**Less than**	**20-50%**	**50-80%**	**80-100%**	**Total**
1-4	4 33.33%	7 58.33%	1 8.33%	0 0.00%	12 100.00%
5-10	7 24.14%	15 51.72%	5 17.24%	2 6.90%	29 100.00%
More than 10	5 18.52%	10 37.04%	9 33.33%	3 1.11%	27 100.00%
Total	16 23.53%	32 47.06%	15 22.06%	5 7.35%	68 100.00%

Source: FFC calculations

The biggest source of time overrun risk factors are cash flow problems which account for 67 per cent of all cases. A typical example is when a department plans its cash projections poorly and full expends funds to pay contractors. The department can either negotiate with the contractor to continue working until funds become available or allow contractors to interrupt work. In such cases, contractors may claim standing costs that could be more costly than if the department had borrowed funds to pay them on time. Cash flow problems tend to affect small

to medium sized companies more, while large companies (staff greater than 100) appear to be less affected by this problem (See Table 32). Other factors that affect cost overruns are delays in government approvals (14.5 per cent), additions to project scope (10 per cent) and third party delays (7 per cent).

Table 32. Critical time overrun risk factors

	The most critical time overrun risk factor					
No. of employees in the contractor organisation	**Delays in Government Approvals**	**Additional work beyond scope of project**	**Cash flow problems**	**Delay in variation orders**	**Third party delays**	**Total**
Less than 5	2 50.00%	1 25.00%	1 25.00%	0 0.00%	0 0.00%	4 100%
5-19	4 13.33%	2 6.67%	21 70.00%	0 0.00%	3 10.0%	30 100.00%
20-99	3 9.68%	2 6.45%	23 74.19%	1 3.23%	2 6.45%	31 100.00%
More than 100	1 33.33%	2 66.67%	0 0.00%	0 0.00%	0 0.00%	3 100.00
Don't know	0 0.00%	0 0.00%	1 100.00%	0 0.00%	0 0.00%	1 100.00%
Total	10 14.49%	7 10.14%	46 66.67%	1 1.45%	5 7.25%	69 100.00%

Source: FFC

When asked whether the tender process is open and transparent, 91 per cent of respondents either disagreed or disagreed strongly. In addition, 57 per cent of respondents either agreed or strongly agreed that corruption is most prevalent during the procurement and tendering phase of the project cycle. The perception that the tender process lacks transparency and that corruption may be present could increase the number of appeals and litigation cases against government. Currently, the department may simply ignore a bidder if an unsuccessful bidder wants to appeal, as the PFMA regulations do not have a clearly defined process to allow a bidder to appeal the outcome of a bid process. One recent exception is KwaZulu/Natal which published a practice note on a bid appeals process and appointed a bid appeals tribunal to handle disputes in order to avoid costly court cases.

When asked what the size of the informal payment or inducement is that contractors have to pay to secure a government contract, only 14.5 per cent of the respondents said there were no such payments (Table 33). Approximately 76 per cent of respondents reported that payments are made to secure government contracts ranging from less than 3 per cent to more than 12 per cent of the contract value.

Of the payments made to secure a government contract, the largest proportion of respondents (44 per cent) reported that 3-6 per cent of the value of the contract is paid. The responses are fairly evenly spread across the value of the contracts although contractors tendering for smaller projects in the region of R1 million to R5 million in value generally tend to pay a higher

percentage of the contract value in relation to projects with a higher contract value, although there are a few notable exceptions.

Table 33. Percentage of contract value reportedly paid as a gift or inducement

	Percentage of contract value paid as a gift or inducement						
Average size of the contract	**No payment**	**Less than 3%**	**3-6%**	**7-12%**	**More than 12%**	**Don't know**	**Total**
Less than or equal to R1 million	1 100.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	1 100.00%
More than R1 million & less than or equal to R5 million	5 27.78%	4 22.22%	2 11.11%	5 27.78%	1 5.56%	1 5.56%	18 100.00%
More than R5 million & less than or equal to R15 million	2 8.33%	7 29.17%	12 50.00%	1 4.17%	2 8.33%	0 0.00%	24 100.00%
More than R15 million	1 5.00%	3 15.00%	14 70.00%	2 10.00%	0 0.00%	0 0.00%	20 100.00%
Total	9 14.29%	14 22.22%	28 44.44%	8 12.70%	3 4.76%	1 1.59%	63 100.00%

Source: FFC

Respondents were asked what elements of the business environment poses the greatest obstacle in the business environment (Table 34). The largest proportion of respondents (41 per cent) reported government corruption. Other obstacles reported by contractors include a lack of access to finance (25.7 per cent) followed by time constraints (18.6 per cent).

Table 34. Elements of business environment posing greatest obstacle

Greatest obstacles	Frequency	Per cent	Cum
Access to finance	18	25.71	25.71
Inadequate skilled workforce	3	4.29	30.00
Government corruption	29	41.43	71.43
Time constraints	13	18.57	90.00
Collusion	1	1.43	91.43
Payment on time	6	8.57	100.00
Total	70	100.00	

Source: FFC calculations

5.6 Summary

The findings in this section are based on three case study departments in the provincial education sector (i.e. Western Cape, Free State and Limpopo). Findings emerging from these case studies were supplemented by interviews conducted with provincial treasuries, the

National Treasury and the national Department of Basic Education. Studies show that fiscal misappropriation is commonly associated with the planning, budgeting, procurement and implementation stages of the infrastructure life cycle. The focus of this assessment is therefore on these stages. The operations and maintenance stages are not covered in this assessment.

Infrastructure planning in PEDs require the identification of infrastructure needs. This is done through the Geographic Information System (GIS) system, needs assessment undertaken, or head office receiving the information from district officials. Prioritised projects and indicative budgets are then published in the department's ten-year User Asset Management Plan (UAMP) and the Integrated Programme Management Plan (IPMP), which is a three-year plan linked to the MTEF. In cases where departments rely solely on the discretion of the district office to determine infrastructure needs and prioritisation, this may create an incentive for suboptimal projects to be selected.

PEDs budget for infrastructure projects in the planning phase. This is because indicative costs of infrastructure projects are included in the UAMP and then repeated during the feasibility stage of the project cycle. The DPWs and other IAs rely heavily on consultants to design and cost infrastructure projects. The remuneration of these consultants is based on a percentage of the total project costs. This can create an incentive for the consultants to increase the project scope and complexity, since their remuneration is directly tied to the value of the project.

With respect to the procurement stage, PEDs provide the implementing agent with a project brief that contains the indicative budget and non-technical information about the infrastructure project. The IA then takes responsibility for the entire procurement process aided by consultants. Given the large volumes of infrastructure projects, sector departments do not have the capacity to sit on all these bid committees. The lack of proper oversight by sector departments, in addition to the absence of independent third party reviews of tenders awarded, means that IAs may be enticed to collude with bidders during the bidding process.

The IA appoints consultants to manage the delivery of infrastructure projects, including the signoff of deliverables and the go-ahead for invoices to be processed. In addition, the IA appoints a principle agent among the consultants who is tasked with overseeing the infrastructure project. A key problem during the implementation stage is the remoteness of some sites. Principle agents typically visit these sites every two to four weeks. Contractors can therefore be tempted to use inferior materials and conceal defects, as there is no permanent oversight at the site. When the principle agent takes decisions with little scrutiny from the IA, he/she may be induced to request a commission from the contractor in exchange for signing off on variation orders. Measures to reduce incentives for fiscal misappropriation will require a change in the way consultants are paid to align their salaries with outputs delivered. The contracts of consultants should incentivise completion of projects on time and within budget. In addition, the DPWs and other IAs should be held jointly responsible by the Auditor-General and provincial legislatures for the spending on infrastructure budgets. Sector departments should also be capacitated with built environment and infrastructure procurement skills to ensure there is better oversight over the procurement and delivery of infrastructure projects. The infrastructure grants framework should include provisions for provincial treasuries to conduct independent third party reviews of tenders awarded. In addition, grant frameworks should require scrutiny of variation orders above a certain acceptable level of the project value. Finally, providing permanent oversight at the work site or more regular oversight can significantly reduce wastage in the system as defects will better monitored and the contractor will less likely to use inferior products.

Table 35. The infrastructure cycle and opportunities for fiscal misappropriation

Infrastructure project phase	Overview	Challenges	Opportunities for fiscal misappropriation	Solutions to opportunities for fiscal misappropriate
Planning	To ascertain infrastructure needs, provinces use GIS (WC) and/or consult district officials (FS, Limp). District offices also play an instrumental role in the prioritisation of projects. Sector departments are required to compile a User Asset Management Plan (10yr plan) and an Integrated Programme Management Plan (IPMP) which is a three-year plan linked to the MTEF	Acquiring land for new schools can take between 5-10 yrs in the WC. In Limpopo, needs are constantly changing and deviating from the UAMP. Despite reforms introduced by the NT, the principle of cost effectiveness is still missing from the infrastructure planning stage.	Suboptimal project selection in cases where district officials are solely responsible for identifying project needs and prioritisation without objective way of verifying information.	Introduce GIS system that maps schools, enrolment numbers, classroom utilisation rates and new housing developments.
Budgeting	Provinces provide cost estimations of projects in their UAMP. Consultants appointed by the IA or cluster committee also compile a bill of quantities before projects go out to tender.	Some projects halted due to infrastructure budget cuts in the 2018 DORB. Constant challenge between maintenance vs new infrastructure as maintenance backlogs substantial. Some provinces like Limpopo have over-committed budgets and have a 3-yr backlog of incomplete projects.	When consultants appointed by the IA are paid a percentage of the contract value, there is an incentive for consultants to increase project scope and complexity, especially if architect consultant is paid a commission by the other consultants for the design.	Change the way consultants are paid to align with outputs delivered. Create correct incentives in consultant contracts such as on time delivery and costs.
Procurement	In most instances, the procurement process for infrastructure projects are undertaken by the IA such as DPW, IDT, DBSA, etc. rather than by the sector department. In the case of FS, cluster committees evaluate and adjudicate projects below R10 million. The sector department is expected to provide the IA with a strategic brief and the IA will appoint consultants to design and manage the project implementation.	The procurement process takes a long time due to the volume of projects being dealt with by DPW and other IAs and the lack of capacity at DPW. Not enough contractors are tendering for infrastructure projects in provinces such as the WC. In many instances, IA are not following proper procurement processes. IAs over-reliant on consultants to do technical work, yet high rate of omissions in project design and sometimes incorrect designs sent out in tender document. Infrastructure procurement skills lacking in sector departments.	Third party reviews of infrastructure tenders awarded are largely absent, creating incentives for IAs to collude with bidders. Rival bidders may be disqualified on non-material grounds to allow preferred bidder to be awarded contract. The separation of the sector department from the procurement process creates the incentive to bloat costs because the IA is not responsible to the AG for reporting on project costs.	Sector departments should be capacitated with infrastructure procurement and built environment skills and sit on bid evaluation committees. The AG and provincial legislatures should hold DPW and other implementing agents jointly accountable for funds spent on infrastructure projects. Provincial treasuries should conduct independent third party assessment of tenders awarded.
Implementation	The IA appoints consultants to manage the infrastructure project. Typically the architect consultant is appointed as the principle agent and is in charge of the overall management of the project. The consultants are also responsible for the signoff of deliverables and issuing instructions for payment. The IA will verify these claims before paying contractor or sending the invoice to the sector department for payment.	Mistakes and poor quality of workmanship often not picked-up because there is no permanent onsite oversight. Incompetent contractors appointed but IA will not cancel contract because the process of appointing new contractor too time consuming. When contracts are terminated, costly and time-consuming process to reappoint new contractor.	When unsuccessful bidders appeal bid outcome, unsuccessful bidders may be incentivised in some way to withdraw appeal in order for the project to move on. Given authority to sign off on the project, the consultant appointed as the project manager may agree to a commission for signing off on variation orders. Lack of onsite supervision, incentivises contractors to use inferior materials and conceal defects.	Include a condition in the Infrastructure Grants Framework that requires scrutiny of variation orders above a certain acceptable percentage of project value. Provide more resources for permanent or more regular onsite oversight. Implement consequence management in cases where consultants or contractors are found to breach the law.

Source: FFC calculations

5.7 Recommendations

1) *The Commission recommends that the national sector departments of Education, Health and Public Transport develop clear performance evaluation frameworks for the provincial infrastructure grants under their control.*

   These should contain well-defined key performance indicators that can be tracked consistently across project cycle stages for all provinces, and include cost benchmarks. This evaluation framework should be added to the conditional grants framework in the Division of Revenue Bill, and should be used as part of the assessment for performance-based infrastructure incentives for which provinces can qualify should they show key performance improvements over time. Such a framework should include key performance indicators based on quality, cost and time, the measurement of these performance indicators, data collection, and roles and responsibilities.

2) *The Commission recommends that national sector departments of Education, Health and Public Transport include greater scrutiny of variation orders when the value of these rises above acceptable levels of the project cost.*

   This will reduce the risk of fiscal misappropriation. The criteria for assessing variation orders should be based on the principles of ethical conduct, accountability, value for money and cost effectiveness. In addition, the frameworks for infrastructure grants to provinces should require provincial treasuries to conduct an independent third party review of tenders awarded by IAs. The Ministers of Public works and Health, Education and Transport (through their respective national sector departments) should conduct a review of human resource capacity requirements for provincial sector departments and provincial departments of public works. FFC's research has found that the scarcity of adequate infrastructure procurement skills and built environment professionals is potentially the biggest factor driving inefficiencies in infrastructure delivery at provincial level.

3) *The Commission recommends that the Minister of Finance, through National Treasury, set and publish the criteria to be measured in monitoring and evaluating infrastructure grants. The assessment criteria regarding infrastructure cuts should also be published.*

Chapter 6: Assessing the Effectiveness of Intergovernmental Fiscal Relations Instruments in Addressing Water Challenges

6.1 Introduction

This chapter reviews the effectiveness of current intergovernmental fiscal relations (IGFR) arrangements in addressing the challenges of achieving water security, which is the overarching goal of national water management. The chapter will consider how fiscal instruments and other measures introduced through the IGFR framework could help to achieve the National Development Plan (NDP)'s goal of ensuring that "all South Africans will have affordable, reliable access to sufficient safe water and hygienic sanitation".

An overview of the water sector is followed by a review of the performance of the water services sector specifically. Fiscal constraints will pose a challenge to municipalities which, in many cases, may seek to compensate for poor management of their current infrastructure by making new investments. Challenges are discussed and areas in which the IGFR instruments might assist are considered.

6.1.1 Water security as a South African goal in the context of the global SDGs

Water security is a widely used goal for water management. This is defined as "the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies" (Grey & Sadoff, 2007).

This definition suggests that societies will determine acceptable standards of water quantity, quality and availability to meet their needs, and that this may change over time. Water security has been adopted in the NDP as well as the draft National Water and Sanitation Master Plan (NWSMP) of the Department of Water and Sanitation (DWS) (DWS 2018).

The benchmark of water security is reinforced by the Sustainable Development Goals (SDGs) to which South Africa has committed (see discussion in chapter 1). These aim to "ensure availability and sustainable management of water and sanitation for all". The first two targets that address water services specify that both water supply and sanitation shall be safely managed. This means that the effective functioning and use of water services and not simply infrastructure availability will be assessed.

6.2 Context and state of water services

6.2.1 The water sector: resources and services

Water resource management and the provision of water services are two related but distinct activities. Resource management deals with water in rivers, lakes, and underground. It is concerned with protecting it, making it available to users, and regulating its use. The provision of water services is just one of many water uses. It takes the water from the resource, treats it to make it safe, distributes it through pipe networks to communities of users and then collects wastewater in sewers before treating it and returning it to the environment.

In most countries, including South Africa, the management of the natural resource and the provision of water services are dealt with by different organisations. Water resources are managed on a variety of levels, from internationally shared rivers to local sources. This is usually coordinated by national governments in complex systems of "network governance" (Woodhouse and Muller, 2017) which seek to balance social, economic and environmental interests amongst different water users. South African legislation provides for the establishment of catchment management agencies (CMAs) to allow decentralised monitoring, planning, allocation, and management of water resources. Water service provision is a different and much narrower activity, typically undertaken by individual municipalities or regional utilities. Since water services impact on the natural resource (both by abstraction and by the discharge of wastewaters), these water uses are regulated by the water resource manager.

6.2.2 Institutional framework

In South Africa's water sector, the national Department of Water and Sanitation (DWS) manages the water resource while municipalities manage the provision of water services. In addition, the DWS, together with National Treasury (NT) and the Department of Cooperative Governance and Traditional Affairs (COGTA), maintains regulatory oversight of municipal service provision. Subsidiary institutions include water boards, which provide regional bulk water services and the Trans-Caledon Tunnel Authority (TCTA), which implements large economic water resource projects off-budget.

6.2.3 Constitutional framework

The legal framework for the provision of water services and the management of water resources derives from the 1996 Constitution. The Bill of Rights provides for "the right to have access to …. sufficient food and water" and for the state "to achieve the progressive realisation of each of these rights". (section 27) It also provides for "the right to an environment that is not harmful to their health and well-being" as well as to environmental protection to "secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development." (section 24)

The institutional framework for water services provision is covered by the sections dealing with the objects, duties, powers, functions and organisation of local government (sections 152, 153 and 156). The regulatory and oversight responsibilities of national (and provincial) governments are spelt out in section 155(7).

6.2.4 Legislation and regulations

The distinction between service provision, a local government competence, and natural resource management a national competence is reflected in the sector's legislation. The Water Services Act, 1997 (Act No. 108 of 1997) (WSA), which governs water supply and sanitation services, was passed by Parliament as a s.76 Bill, requiring the assent of the NCOP as well as the National Assembly. The National Water Act, 1998 (Act No. 36 of 1998) (NWA), which governs the management and use of water resources, was passed by the National Assembly as a s.75, national, bill. In addition to these sector-specific laws, the provision of water services is governed by generic municipal legislation promulgated by COGTA and National Treasury.

The WSA gives the Minister the power to set compulsory norms and standards for the provision of services (section 9), for tariffs to be charged for those services (section 10), with the concurrence of the Minister of Finance, and to make grants and loans and make regulations concerning the financial feasibility of services. The NWA requires the Minister to establish a National Water Resource Strategy (NWRS) (section 5) setting out water resource investment priorities and prescribing a pricing strategy (section 56) and determining how water resource tariffs will be calculated and which users will pay what share of the costs.

Compulsory national standards give effect to the constitutional right to water. They also guide the calculation of the Local Government Equitable Share (LES) and the design of IGFR instruments. If individual municipalities provide higher levels of service, this must be done at their own cost, (according to 2014 DWS policy principles) until "the development of norms, standards and potential financial mechanism for providing these higher levels". Revisions proposed in 2017 to the 2001 norms and standards to reflect subsequent experience following an earlier policy review (DWS 2014. "National Water Policy Review (NWPR): Approved Water Policy Positions") did not meet the requirements for statutory regulations.

Norms and standards for water services tariffs provide the regulatory mechanism through which affordability and equity can be addressed. They also ensure the physical and financial sustainability of services more generally, as spelt out in the WSA (section 10.3). These standards are the foundation for the free basic water policy, which seeks to ensure that minimum basic and affordable services can be provided to all residents of a municipal area.

Finally, the 2007 pricing strategy for raw water use sets charges for bulk water used to provide water services, similar to Eskom's price for bulk electricity. However, unlike electricity, the price of raw water varies dramatically across regions, from 21c/kl to R18.80/kl. Water service providers have an obligation to understand and influence decisions that determine these tariffs. However, they often agree to projects to make additional water available without understanding their financial implications. Even when public (budgetary) funding is used for "social" projects, local governments and their non-indigent service users are still expected to pay for their operation and maintenance (O&M) and depreciation. These costs can be substantial. Where DWS pursues projects without a formal commitment to pay, it is creating the risk – and often the likelihood – of a default by the municipality concerned. This has important implications for the design and implementation of IGFR instruments.

6.2.5 The state of water services in South Africa

Despite the comprehensive policy and institutional framework, there is well-founded concern about the state of water services in South Africa. Even where water supply infrastructure is in

place, the reliability of supplies is declining, and the safety of water can no longer be assured in many municipalities. Sanitation provision is often unsatisfactory, even where it nominally meets basic minimum standards, and wastewater treatment failures result in serious water pollution.

Many of these problems are due to poor municipal management. But the reliability of the bulk water supplies is also failing or at risk, even in major metropolitan municipalities. In many small towns and rural areas, water supplies are unreliable, with communities often going weeks without water. Even when water is provided, it often fails to meet health standards. High levels of "non-revenue water[27]" reduce incentives for efficient use. Water supply failures also cause water-borne sanitation systems to fail.

It has become more difficult to track service performance since DWS stopped publishing annual reports on drinking water quality, wastewater treatment and water losses, although it is obliged to do so by the WSA. However, data from other sources provides a reasonably accurate perspective.

Access to water services

Access to water services has two elements:

- Is the service available to the household concerned?
- Can the household afford it?

Current figures suggest that 96 per cent of South African households have access to water supply infrastructure that provides a supply that meets basic minimum standards. The majority of these - 81.2 per cent - have access to piped water in the house or to the stand. In the metro municipalities, the figure rises to 88.8 per cent. Only in the more rural provinces of Limpopo, North West, Eastern Cape and KwaZulu/Natal do more than 20 per cent of households get water from public taps and water tankers.

Sanitation provision has seen a steady increase in the proportion of households with access to improved sanitation facilities. However, the absolute number that do not meet the basic minimum (RDP) standard has remained approximately constant. This has been driven by population growth and a reduction in household size. Statistics South Africa reported (2015 and 2016) that 63 per cent of households had a flush toilet while a further 16.6 per cent had an improved toilet (VIP) that met basic minimum standards, leaving just over 20 per cent of the population with sanitation below minimum standards. Again, more than 30 per cent of households in rural parts of Limpopo, North West, KwaZulu/Natal and Mpumalanga have inadequate sanitation.

[27] Non-revenue water is water that has been produced and is "lost" before it reaches the customer. Losses can be real losses (through leaks, sometimes also referred to as physical losses) or apparent losses (for example through theft or metering inaccuracies).

Table 36. Provincial sanitation backlogs, 2017

Province	Total households	No. of households below RDP level	% households below RDP level
Eastern Cape	1 807 050	416 391	23.0
Free State	969 199	190 802	19.7
Gauteng	5 153 011	469 836	9.12
KwaZulu/Natal	2 963 154	1 018 736	34.4
Limpopo	1 652 306	793 557	48.0
Mpumalanga	1 283 056	494 165	38.5
North West	1 288 454	431 003	33.5
Northern Cape	362 527	68 168	18.8
Western Cape	1 992 998	84 143	4.22
Total	17 471 755	3 966 801	22.7

Source: Department of Water and Sanitation

Affordability of providing water

Affordability of water is less easy to assess than physical access. Government's policy of providing free basic water supplies, introduced in 2001, meant that affordability should not be a barrier to access. The section 10 tariff regulations allowed several alternative approaches for municipalities in deciding how to achieve this mandatory goal (Department of Water Affairs, 2002). It did not prescribe them, however:

- A stepped tariff in which a first step of 6 000 litres of water per household per month was free. This was convenient for large urban municipalities with sufficient high consumption users, to cross-subsidise the free allocation. Although the subsidy went beyond the target group, this approach was simple and promoted social solidarity and conservation.
- Providing free water from certain sources, principally public standpipes, was also simple and fair if it was true that households able to afford a household connection could also afford to pay for water.
- Providing free water only to households registered as indigent was attractive for smaller urban municipalities with limited capacity for cross-subsidisation but where it was easier to identify households that qualified for support. However, indigent systems may exclude eligible households due to administrative failures, official abuse, and stigma. (Muller 2008)

From 2005 to 2015, households paying for water declined from 61.9 per cent to 43.9 per cent (Statistics South Africa 2015). The largest annual drop - from 67.3 per cent in 2008 to 49.4 per cent - occurred in 2009. Even in metro areas, payment rates fell to just 54.3 per cent in 2015.

Since 59 per cent of South African households fall below the income threshold used in the LES calculation formula (GoSA 2018), free basic water supplies appear to be appropriately targeted and affordability should not constrain access. However, a significant number of households not paying for water have a higher than basic level of service and should therefore be contributing to the costs of their services. This payment profile thus contributes to the financial challenges facing municipal service providers.

The trend during the current period of fiscal strain is for municipalities to provide free basic water to indigent households only. This serves to reduce the benefits flowing to non-poor households. But there are also demands for increased free basic allocations which have added to costs and aggravated fiscal pressures. In the absence of better data, it is not possible to estimate how many poor people have been excluded or how many households are not paying for the higher services levels that they use.

Reliability of water supply

In 2017, 95 per cent of households have access to water supply infrastructure, while only 85 per cent have access to functional infrastructure and only 65 per cent to reliably functioning infrastructure (DWS 2017). Unreliable services do not meet the basic minimum standards prescribed in regulations.

The standard for reliability is that "no consumer is without a supply for more than seven full days in any year". Many communities go without public water supply for weeks and months at a time, particularly in hot weather when consumption rises. The challenge is particularly acute in rural areas. In 21 districts with a C2 category, with a population of around 17 million people, 64 per cent have infrastructure that meets basic minimum standards but only 36 per cent had a reliable supply in 2017.

While reliability problems are often attributed to aging infrastructure and under-investment, they are more often due to poor management, as illustrated by the reported high levels of failure of new projects funded by the Municipal Infrastructure Grant (MIG). These failures are due to poor maintenance or to the absence of control over water use, leading to high use in some areas, while users in other areas are deprived.

Safety of water quality

Water supplies in South Africa's larger cities are of good quality and safe to drink but this is not the case in smaller towns and rural areas. DWS reports that 5.3 million households (35 per cent) do not have access to safe drinking water (DWS 2017b). Systematic evaluations of water safety have not been published since the 2014 Blue Drop report was released. This report noted "a distinct sudden lapse in drinking water service provision" (DWS 2015). In 2014, even some smaller cities, notably Mangaung, Buffalo City and Nelson Mandela Bay Metro, fell outside the top 40 municipalities and below the "good" rating.

The safety and reliability of sanitation is less easy to determine than that of water supply. Safety depends on utilisation as well as physical infrastructure. The hygienic safety of shared household sanitation facilities in dense urban informal settlements is a problem that must be addressed through urban development rather than sanitation specific investments.

Financial viability of water services

The Constitution and legislation require that local government services provision should be financially sustainable, considering user payments, grants and other revenue. This goal has seldom been achieved and there is growing concern about the financial viability of water services. Assessing this is difficult since few municipalities comply with the WSA requirement to maintain ring-fenced accounts for their water services.

The total debt owed by municipalities to the Water Boards as at 30 September 2017 was R6.5 billion. Approximately 80 per cent of that was >120 days outstanding (not realistically collectable) while municipalities also owed R10.7 billion to DWS (Parliamentary Monitoring Group, 2017a). A proposal for a mechanism to offset these debts is that equitable share allocations be withheld. (Parliamentary Monitoring Group, 2017b).

The overall debt of municipalities was R43 billion, of which water board debt was R6.8 billion, bulk electricity (R16 billion) and other trade creditors (R11.9 billion). Major urban areas such as Matjhabeng (Welkom), Mangaung, Mafikeng and Mbombela all owed over R100 million each. According to National Treasury, "Municipal debt continues to grow, exacerbated by the culture of non-payment". Total debt owed to municipalities (June 2017) was R128.4 billion, which is greater than their total grant allocation of R111 billion. Of this, R83 billion was owed by households with commercial debt standing at R27 billion and debt due by other organs of state at R7.4 billion (Parliamentary Monitoring Group, 2018). But the debts also reflect cost pressures from bulk services providers. The South African Cities Network notes that "…. increases in bulk tariffs for electricity and water, which are controlled by national government, are driving most of the recent increase in municipal bills" (South African Cities Network, 2016).

The DWS is also experiencing a financial crisis with the Auditor-General and the chairman of the Standing Committee on Public Accounts declaring the Department to be effectively bankrupt. This is relevant to the current review because DWS operations affect the viability of water services through wasteful and unnecessary expenditure as well as supply failures.

6.3 Financial framework for the provision of water services

6.3.1 Policy

Many of the costs of water management, including water services, are covered by the users of the resource and services. Municipalities are expected to fund the costs of providing water services using their own revenues, loans and transfers from national government. However, some actions to achieve goals are funded publicly, while municipalities are instructed to give priority to providing basic services. The framework for fiscal transfers, based on the Constitution, is provided in the annual Division of Revenue Act, which outlines the available grants and procedures for managing them.

6.3.2 Instruments

The specific IGFR instruments include:

- The Local Government Equitable Share (LES), which supports municipalities in, among others, their water services provision. This is designed to comply with the specific Constitutional directive that the calculation of local government's share of revenue must ensure that "municipalities are able to provide basic services and perform the functions allocated to them" (section 214).

In addition, the current inter-governmental financial system provides for several water-related conditional grants which are detailed in the annual Division of Revenue Acts (e.g. GoSA 2018). These include:

- The Municipal Infrastructure Grant (MIG) whose goal is to "subsidise the capital costs of providing basic services to poor households". A more specific purpose of the MIG

is primarily to provide specific capital finance for eradicating basic municipal infrastructure backlogs for poor households, microenterprises and social institutions servicing poor communities.

- The Regional Bulk Infrastructure Grant (RBIG) whose goal is to "facilitate achievement of targets for access to bulk water and sanitation through successful execution and implementation of bulk projects of regional significance". The specific purpose of the RBIG is:
  - To develop new, refurbish, upgrade and replace ageing water and sanitation infrastructure of regional significance that connects water resources to infrastructure serving extensive areas across municipal boundaries or large regional bulk infrastructure serving numerous communities over a large area within a municipality, and
  - To implement bulk infrastructure with a potential of addressing water conservation and water demand management (WC/WDM) projects or facilitate and contribute to the implementation of local WC/WDM projects that will directly impact on bulk infrastructure requirements.
- The Water Services Infrastructure Grant (WSIG) whose goal is "to assist water services authorities to reduce water and sanitation backlogs"[28] . The specific purpose of the WSIG includes a wide range of activities, from planning and implementation of projects to reducing backlogs, providing interim, intermediate infrastructure, supporting water conservation and demand management projects, bucket eradication in formal residential areas, and drought relief projects.

COGTA is the transferring department for the LES and MIG, while DWS transfers the other grants. In addition, the NWA also allows the Minister of DWS to give financial assistance for specific purposes. This provision has been used primarily to support resource-poor farmers as well as for small grants to promote rainwater harvesting for household use.

The quanta and trends in these grants between 2015/16 and 2020/2 are set out in the table below. They show

- nominal year-on-year increases but real declines
- a trend for a greater proportion of funds to be allocated directly to municipalities rather than for allocations in kind projects implemented by the national DWS, and
- that the LES allocation calculated for O&M is a relatively high proportion (8 per cent) of estimated basic needs related capital investment.

However, without detailed studies of specific municipalities, the extent to which funds for both investment and O&M are applied to the purpose for which they are allocated cannot be evaluated.

[28] "The water services infrastructure grant has been created through the merger of the municipal water infrastructure grant, the water services operating subsidy grant, and the rural household infrastructure grant. This grant aims to accelerate the delivery of clean water and sanitation facilities to communities that do not have access to basic water services." (GoSA – DoRA 2016)

Table 37. Principal water related grants, 2015/16-2020/21

		R'000 2015/16	R'000 2016/17	R'000 2017/18	R'000 2018/19	R'000 2019/20	R'000 2020/21
MIG		14 955 762	14 914 028	15 981 252	15 287 685	15 733 731	16 599 086
	water comp	4 486 729	4 474 208	4 794 376	4 586 306	4 720 119	4 979 726
RBIG *[29]		0	1 850 000	1 865 000	1 957 000	2 066 360	2 180 005
	forward estimates		5 323 602	4 854 782			
RBIG-ptB**		4 858 000	3 478 829	2 773 559	2 880 922	3 037 295	3 204 346
	forward estimates		3 479 000	2 806 279			
WSIG-ptA	***	1 853 114	2 844 982	3 329 464	3 481 056	3 669 319	3 870 972
	forward estimates		1 511 545	3 729 864			
WSIG-ptB	***	1 834 456	311 545	587 122	608 175	642 233	677 556
	forward estimates			587 122			
Total water-related		**13 032 299**	**12 959 564**	**13 349 521**	**13 513 459**	**14 135 326**	**14 912 605**
Annual change %			-1%	3%	1%	5%	5%
LG Equitable Share					62 731 845	68 973 465	75 683 326
Water items					26 030 000	28619903	31 404 097.5
% of LGES					41%	41%	41%
LGES as % of annual capital grants					193%	202%	211%
*LGES as % of 'basic needs' capital installed *****					7%	8%	8%
Direct grants		6 339 843	9 169 190	9 988 840	10 024 362	10 455 798	11 030 703
Percentage of total		**49%**	**71%**	**75%**	**74%**	**74%**	**74%**
In-kind		6 692 456	3 790 374	3 360 681	3 489 097	3 679 528	3 881 902
Percentage of total		**51%**	**29%**	**25%**	**26%**	**26%**	**26%**

Source: FFC calculations based on National Treasury Division of Revenue Act data

A number of other conditional grants make a small contribution to both water resources related activities in environment and agriculture as well as to the provision of water services at municipal level.[30]

[29] * Specific purpose allocations to municipalities
** PtB = allocations in kind
*** Incorporated RHIG and ops subsidy in 2016
**** Muni capital installed for basic and R7 billion each per 50 districts

[30] Public works grants, such as the EPWP integrated grant for provinces which incentivises provincial departments to use labour-intensive methods in infrastructure, environmental and other projects. R1.3 billion is allocated over the 2018/2020 MTEF period. R246.9 million is allocated to a related programme, the land care programme grant for poverty relief and infrastructure development, which aims to improve productivity and the sustainable use of natural resources. Specific environmental grants serve similar purposes. The Environmental Protection and Infrastructure Programme identifies, plans and implements projects under the EPWP through the use of labour intensive methods and empowers small, medium and micro enterprises (SMMEs) during project implementation processes. This includes the working for water programme which receives approximately R1 billion a year. In addition, the Natural Resource Management Programme addresses water resource management, biological diversity and the functioning of natural systems promotes livelihood opportunities for the people employed.

6.3.3 Outcomes

The equitable share allocation and conditional grants have enabled poorer municipalities to address their water services goals to develop and operate the infrastructure required to provide basic minimum water services. Fiscal transfers through this system have underpinned the progress that has been made in expanding services to date.

However, this progress is now slowing. DWS and the South African Local Government Association acknowledge that the proportion of households with safe and reliable water supplies is declining. Meanwhile, National Treasury has reported that progress in reducing physical service backlogs is slowing even as allocations for infrastructure increase. Overall, in terms of water security and the SDG's safe and reliable service goals, current spending is associated with decline, and not progress (Table 38).

Table 38. Number and percentage change of households with access to services

	2001-2011	2001-2011	2011-2016	2011-2016
Electricity	4 427 127	57%	3 085 170	25%
Water	4 218 878	52%	1 769 242	14%
Refuse	4 248215	68%	1 526 018	15%
Sanitation	3 187 490	45%	3 236 805	31%

Source: Parliamentary Monitoring Group, 2017a

This suggests in turn that the current IGFR instruments for water services may no longer be fit for purpose. The most pressing problem is now the functionality failures which are driving the overall decline in access to safe and reliable services.

While most of these findings focus on water supply, many also apply to sanitation. Sanitation provision addresses a complex set of issues related to the acceptability, technical, and financial feasibility of household sanitation solutions in different types of community. In many cases, these require a policy response that reflects the specific challenges posed by different types of human settlements and the changing structure of households. Since sanitation is household based, communities with smaller households require more sanitation facilities. However, the availability of water for water-borne sanitation facilities is a further complicating factor for both sub-sectors.

6.4 Discussion

This review suggests that there is a wide range of issues to be addressed if the overall goal of water security and the more focused objective of ensuring that all South Africans have access to at least a basic minimum service is to be achieved. The challenge is to make a structured analysis of the situation, and then to consider what useful IGFR interventions could be made.

The primary challenge for both water supply and sanitation services is the financial (and physical) sustainability of services. The failure to properly operate and maintain the infrastructure on which services depend is a matter for serious concern. So too is the evidence that, for a variety of reasons, much of the expenditure incurred is not cost effective or is used to address secondary goals at the expense of constitutionally mandated priorities. There appear to be incentives to over-invest in infrastructure at the expense of operations. In the current

climate of fiscal constraint, it is therefore appropriate to review the goals, structure and performance of the system of IGFR transfers.

The experience of practitioners illustrates the diversity of the challenges. Questioned about the performance of the IGFR, one practitioner with extensive field experience commented:

> "The incentives driving capex spend are large and deeply embedded in the construction, consulting and 'tenderpreneurship' industries, lubricated by a completely corrupted procurement process. Infrastructure projects have become a means to channel funds to political ends. Capex is therefore being pursued to the point where government borrowing limits are maxed out.
>
> "In addition to the capex incentives, another driver of consumption *per capita* is the 60 litres *per capita* per day allowed for RBIG funding in rural and peri-urban service areas. DWS uses (the water board) as its agent for bulk water capex projects and for bulk water O&M. (Some boards') revenue depends on the amount spent on capex and the volume of bulk water delivered to municipalities. Capex and bulk volumes delivered are therefore maximised by various means.
>
> "The CAPEX and OMEX affordability of municipalities and their users is not taken into account possibly because they are completely subsidised. However equitable share is not ring fenced to subsidise infrastructure O&M.
>
> "Competent technical directors in municipalities have left office or have given up because tender evaluation and adjudication committees ignore engineer's recommendations and appoint who the politicians want. Technical O&M staff are underpaid and overworked and leave municipal employment. Equitable share is thereby increasingly spent on salaries of the swelling ranks of non-technical employees."

As this commentary illustrates, the performance of the IGFR for water must be addressed at several levels:

- Technical, considering both the determination of the structure and the quantum of the grants concerned and questions such as whether it is possible to have a general set of grants that are applicable to the diversity of contexts in which water services are provided
- Institutional, considering the capacities of municipalities to plan, implement and operate water services on a sustainable basis.
- Financial, considering the impact of specific issues on the financial status of municipal water services
- Strategic, considering the intent and resulting design of the grant and the administrative system supporting it, and
- Compliance, considering whether the system provides incentives and checks to ensure that projects are implemented in accordance with the rules and guided by their intent.

6.4.1 Technical performance issues

The conditional grant system was developed at a time when the priority was the expansion of coverage by water services, up to at least a basic minimum standard. The focus was thus on providing grants to municipalities for the necessary capital projects, notably in communities where there were no formal services.

With the expansion of coverage, the focus has now moved to functionality and sustainability of the services with some municipalities seeking to increase service standards. This has functional, institutional and financial dimensions. In this context, issues that have arisen include:

- Standards to which grant-funded projects have been built (often higher than basic)
- Coordination between bulk supply projects (funded under RBIG) and local reticulation projects (funded by the MIG and WSIG)
- Cost-effectiveness of the projects chosen
- Adequacy of provisions for O&M, including refurbishment (in LES calculations), and
- Whether appropriate amounts have been allocated from the LES for intended purposes.

A specific set of challenges has arisen in relation to sanitation where the approach to funding for the provision for construction of sewage reticulation and treatment infrastructure and its subsequent operation needs to be investigated in greater detail.

The need for ongoing refurbishment of water services systems is not adequately addressed. It should be part of routine operation and maintenance, funded from the relevant budget and revenue. However, refurbishment works are often treated as new capital projects, to be funded by grants.

6.4.2 Institutional and financial issues

A primary reason for the financial deficits experienced by municipalities in their provision of water services is that LES funds earmarked for water services are diverted to other purposes. National Treasury has highlighted that "bloated municipal organisational structures strains the municipal budgets" and that this "did not result in higher service delivery expenditure" (National Treasury 2017).

This growing personnel expenditure is often not associated with institutional capability. In practice, available funds are often sub-optimally spent because municipalities lack qualified staff and rely on external service providers for activities that should be undertaken internally. Supply chain mismanagement and corruption further reduce the quantum of allocations that is effectively spent. In part, this is because of weak oversight of grants. Amongst the risks to the grant system identified by National Treasury are:

- Grant evaluations are not undertaken as required by Division of Revenue Act
- Expenditure and non-financial information is not monitored in accordance with the framework for the grant, and
- Policies and procedures to guide RBIG and WSIG are not sufficiently implemented. (National Treasury 2018).

Revenue collection is also a serious problem. It is evident that there is wide-scale provision of services above the basic minimum level without the revenue collection that should accompany it. This places further pressure on the financial viability of the services. The absence of the data that would be derived from a metering and collection system further impedes effective operational management since it is difficult to manage what is not measured.

While affordability is not currently a critical issue, this is due more to the absence of payment for water rather than to well targeted and implemented policies. The reliance on administrative

"indigent registers" to achieve affordability will create affordability challenges for the wider community, if implemented together with a requirement that other households must pay for their services. Managing this challenge will require strengthened institutional capacity.

6.4.3 Strategic issues relating to the intent and design of the grant system

In relation to physical access to water supply, infrastructure provision for water supply has almost reached the limits of what is required to support present basic minimum standards and costs for this are rapidly increasingly. For sanitation, the primary constraints relate to the urban development context which cannot be addressed by sanitation investments alone. Since the grant system was initially designed to support the rapid rollout of infrastructure for service provision, this suggests that a review of the purpose and structure of grants is required. Programmes to reduce non-revenue water (leaks and unauthorised unpaid consumption) require the establishment of sound technical and financial administration that can guide improvements in operational management.

At present, it would appear that there are incentives to over invest, and invest wastefully in part because municipalities do not consider the impact on their O&M budgets. This is occurring despite the evident failure to fund O&M, including ongoing refurbishment, adequately in most municipalities.

A specific issue is the lack of alignment between DWS and water boards, which invest in water resource developments and regional infrastructure, and municipal objectives. While practical challenges of coordination between bulk service provision and local reticulation can be overcome organisationally, the different incentives need to be aligned. At present, there are perverse incentives[31] to over-invest in bulk supplies at the expense of effective O&M.

6.4.4 Compliance issues

The best designed grant system will not work if its implementation is not informed and guided by its overall goals. This will be compounded if its rules are not obeyed and the system is deliberately abused to achieve aberrant or deviant objectives.

There is evidence that the transfers made under the IGFR system are often not used for the purposes or following the procedures that were intended for them. As National Treasury pointed out in a recent presentation to Parliament (National Treasury 2017)

> "Municipalities are expected to use the equitable share to subsidise or fund the provision of municipal services to poor households: The equitable share
>
> - cannot fund municipalities for lack of revenue raising efforts, and
> - does not accommodate operational inefficiencies and financial mismanagement."

During the current reviews by Parliament and financial agencies, National Treasury reported that that conditional grant oversight was not being effectively conducted, specifically that "grant evaluations (are) not undertaken as required by the Division of Revenue Act" and that "expenditure and non-financial information (is) not monitored in accordance with the framework for the grant" (National Treasury 2018).

[31] A *perverse incentive* is an incentive that has an unintended and undesirable result which is contrary to the interests of the incentive makers. Perverse incentives are a type of negative unintended consequence.

Critical issues have arisen around the infrastructure development which supports bulk water supply. The current audit and investigation processes in DWS are finding substantial cost inflation due to inefficiencies, poor execution, and corruption. The implication for users of the water projects concerned is that their bulk water costs will have been substantially inflated, contributing to above-inflation increases. This is because the methodology for the calculation of tariffs is based on the initial cost of the infrastructure concerned. In this context, sub-optimal investments create liabilities rather than assets.

This is not to say that municipalities are not also responsible for many of their financial challenges. As a senior COGTA official stated to Parliament: "The root cause of the financial problems in municipalities is poor governance. The first problem that resulted in financial management challenges in municipalities is governance, that's what we need to fix and we would not have financial problems." He suggested that, as a start, the separation of administration from the political body in municipalities will begin to solve a lot of governance and financial management problems (Parliament 2017).

These perspectives suggest that a review of the IGFR system to improve the performance of the water services sector must be linked to a broader strategy to address the ongoing challenge of improving governance at both national and municipal level. It is notable that the influence of and actions taken by provincial administrations has not been particularly evident in this review. However, in terms of the Constitution, the primary responsibility for municipal oversight lies with the provinces. Given the poor outcomes, the roles and performance of this sphere clearly needs to be reviewed. At the least, by its position as an intermediary in the process, it complicates the process of national oversight of the local use of transferred funds and regulatory compliance more generally.

6.5 Summary

The current climate of fiscal constraint obliges government to act strategically to achieve its policy goals in relation to water services and its broader commitment to achieving the SDGs. In particular, it must prioritise its investment and operational funding support to local government to ensure maximum impact and the sustainability of the services that are provided.

To this end, conditional grant funding should only be made available where it can be demonstrated that projects will be physically and financially sustainable. This will require greater attention to and oversight of the governance, financial management, staffing and operational arrangements at municipal level.

6.6 Recommendations

1) *The Commission recommends that:*

   a) *A review of basic norms and standards for water services and the associated Local Government Equitable Share (LES) be undertaken by the Department of Water and Sanitation (DWS).*

      The current IGFR system incentivises over-provision of infrastructure without providing for the related operating and maintenance costs. The Rural Basic Infrastructure Grant (RBIG) "supplements the financing of the social component

of regional bulk water and sanitation" which provides "the bulk infrastructure needed to provide reticulated water and sanitation services to individual households". The Water Services Infrastructure Grant (WSIG) has similar provisions.

In municipalities in which service levels provided are higher than the basic, the LES is not adequate to fund ongoing operating and maintenance (O&M), contributing to unsustainable operations and service failures. Such a review must consider the desirability of increasing service levels and the fiscal capacity for this. Regardless of the outcome, individual household supplies should always be integrated into a metering and billing system from the outset to enable effective management of overall systems.

b) *Clearer statements of grant objectives to achieve defined basic service levels or sustainability of services are established by the DWS.*

Poorly defined grant objectives allow substantial deviations from policy in the allocation of funds. For instance, the RBIG is mandated to "refurbish, upgrade and replace ageing water and sanitation infrastructure". The WSIG may support "municipalities in implementing water conservation and water demand management". However, these activities should be part of normal operational management and maintenance. This loose conditionality allows sub-optimal investments that are not clearly related to policy goals.

In the first instance, the grant should be conditional on the recipient municipality supplying a statement of the service levels to be provided and the division of funding between basic minimum and higher service levels. In the latter case, the grant should be conditional on the recipient municipality undertaking specific activities that will lead to greater physical and financial sustainability. This should include demonstration that there is adequate budget and institutional capacity for the ongoing operation and maintenance of the relevant service and clear outcomes.

c) *Municipalities indicate what standards they intend to provide and how their capital and operational costs are to be funded. This should be done through their Water Services Development Plans (WSDPs).*

Municipalities are providing water services to a standard higher than the regulated basic minimum levels, incurring operating costs that are not covered by equitable share allocations, tariff revenues or other sources. While the cost of water for water-borne sanitation is considered in the LES, the costs of wastewater treatment are not provided for. Where water-borne sanitation is supplied, this must be adequately provided for in the overall water services tariff and/or grant revenue.

The regulated basic minimum standards are no longer acceptable in many communities, leading to pressure on municipalities to invest in higher levels of service for which there is inadequate funding. This leads to poor operational management, inadequate maintenance and deteriorating quality of services in terms of availability, reliability and safety. In the case of sanitation, it also leads to negative environmental impacts due to the failure to treat wastewater adequately.

d) *The allocation of grants be made conditional on the employment of appropriately qualified staff with commensurate mandates.*

Municipalities do not have the required skills to plan, manage and operate their water services. According to a variety of surveys, the skills required are increasingly available.

2) *The Commission recommends that stronger conditions be attached to financial transfers to ensure compliance and that funds allocated are properly spent for the purposes indicated. Grant funding should be withheld from municipalities that do not have the necessary measures to monitor and control water consumption, or which do not meet criteria or have valid abstraction licences. Similar procedures must be applied for water-borne sanitation projects.*

Many municipalities, particularly in poorer communities, do not pursue cost recovery for services provided at a higher level than basic. As a result, the quality of service provided is very poor, inadequate funds are available for operation and maintenance, and infrastructure system failures are high. The IGFR system provides no incentive to rectify these problems. Further financial transfers are likely to aggravate the problem, increasing the financial and management burden on municipalities which will in turn undermine already fragile operations. It is irresponsible to continue to provide funding in such circumstances.

Municipalities that fail to manage water efficiently, resulting in substantial physical losses and unmonitored and uncontrolled usage, seek to build additional infrastructure to increase the volume of water that they abstract and cater for the shortfall in availability. They also seek to provide water for water-borne sanitation without adequate provision for wastewater treatment. The objective of this recommendation should be to ensure that available funds are used to benefit consumers and not wasted. This approach should be reinforced by the Minister of DWS, who should must continue to set limits on water abstraction, linked to the achievement of efficiency targets.

3) *The Commission recommends that roles be clarified, and support provided in the following ways:*

a) *By involving relevant municipalities in the planning and costing of projects by the Department of Water and Sanitation or water boards in order to confirm their support for the proposed projects and their willingness to pay the appropriate tariff for the supply.* [32]

Investments in bulk supply by DWS and water boards commit municipalities to the tariffs based on the project costs, in terms of Water Resource Pricing Policy. Over-investment without the concurrence of municipalities, may create undesired financial obligations for them. Instruments to achieve this would include Water Services Development Plans (WSDPs), water board planning processes, catchment management strategies, project finance take-off agreements etc. Institutional arrangements must include effective involvement

[32] At present, this is a Ministerial discretion: Norms and Standards for bulk water services supplied by BulkWSP or Regional Bulk Water Utilities to other WSIs V3, (Support document on the pricing strategy for water use charges for raw water 2016).

of local government in water board planning, establishment of catchment management areas, as well as formal take-off arrangements with DWS[33].

b) *An alternative network of water service providers should be established, to intervene when municipalities fail to perform, accompanied by better coordinated and more effective sanctions against municipalities that fail to comply.*

Provinces often fail to intervene in failed municipalities because no alternative service provision channel is available. More effective performance of oversight responsibilities would be facilitated by formalisation of roles and responsibilities between the relevant departments.

c) *By ensuring that the Minister of Water and Sanitation complies with the statutory obligation (WSA section 67) to provide information on the performance of water services to the public. In the event of non-compliance, oversight agencies such as Parliament must intervene, with external agencies to compel compliance.*

Inadequate information is available about access, reliability, safety and affordability of water services at the level of individual municipalities. Municipalities fail to collect and/or report relevant information. The decision by DWS to discontinue publication of the Blue Drop, Green Drop and No Drop reports has further weakened the information base. Municipalities have a statutory duty in terms of s.10 of the Norms and Standards for Tariffs to report on the financial performance of their water services which must be enforced as a condition for financial support.

d) *Conditional grants should only be available to municipalities that can show that there is a feasible programme to achieve compliance with standards.*

e) *By COGTA and NT continuing efforts with sector departments such as DWS to enhance the quality of municipal reporting, with an emphasis on coordinating reporting requirements so that they become an integral part of overall administrative processes. Conditional grant funding should be subject to compliance with this reporting since its absence is a primary indicator that grants are not likely to be effectively and efficiently used.*

The proliferation of reporting requirements from different agencies imposes a serious burden on municipalities, leading to failure to collect and report performance data in a coherent format. The information required should be available in municipal organisations through normal administrative reporting procedures.

f) *By requiring municipalities to report on relevant indicators as a condition of funding. These should include the reduction of bulk water supplies required as*

[33] Unlike ESKOM, most DWS investment projects have clearly identified local stakeholders, rather than an overarching national client base.

well as revenue increases. Non-revenue water reduction must be used as a catalyst to improve service management.

A substantial proportion of water that is treated and supplied into water distribution infrastructure is physically lost before it reaches users. A further significant proportion of what is supplied reaches users but is not accounted for and users are not billed for its supply. Despite national prioritisation of the need to reduce non-revenue water, little progress has been made overall. The problem of non-revenue water is understood at both a political and community level. Effective action to reduce losses requires broad interventions in asset-management, operations and financial management.

4) *The Commission recommends that the IGFR system shift to incentivising sustainable operations and maintenance and introduce a dimension of outcome-based support for higher levels of service.*

The original goal of providing basic minimum service infrastructure has almost been achieved but the quality of services (see Chapter 6) actually provided is declining. The review of norms and standards must consider the future goals of the water sector and, in particular, how the SDG goal of 'safely managed' services is to be supported. Rather than introducing complex assessment procedures, outcome-based support may be more appropriate. This could be used to complement, as a condition, continued project-focused support for whatever higher levels of service may be adopted as the new 'basic minimum'.

Appendix

Tables and equation for Chapter 3

Given the limitations of provincial discretionary fiscal instruments, we estimate two equations using a pooled OLS regression specified below. These equations provide estimates of different fiscal and non-fiscal variables that affect provincial budget revenue shock or budget balance.

1) $$Revshock_t = \beta_0 + \sum_{i=1}^{p} \beta_i \ \Delta Pex_{t-i} + \sum_{i=1}^{p} \beta_2 \ \Delta Powrev_{t-i} + \sum_{i=1}^{p} \beta_3 \ \Delta PnTrans_{t-i} + \sum_{i=1}^{p} \beta_4 \ \Delta Ppop_{t-i} \sum_{i=1}^{p} \beta_5 \ \Delta PGRP_{t-i} + \sum_{i=1}^{p} \beta_6 \ \Delta Pune_{t-i} \ \mu_{i,t}$$

2) $$BB_t = \beta_0 + \sum_{i=1}^{p} \beta_1 \ \Delta Pcoex_{t-i} + \sum_{i=1}^{p} \beta_2 \ \Delta Pgserv_{t-i} + \sum_{i=1}^{p} \beta_3 \ \Delta Pcaps_{t-i} + \sum_{i=1}^{p} \beta_4 \ \Delta Ptrans_{t-i} \sum_{i=1}^{p} \beta_5 \ \Delta Ppop_{t-i} + \sum_{i=1}^{p} \beta_6 \ \Delta PGRP_{t-i} + \sum_{i=1}^{p} \beta_7 \ \Delta Pune_{t-i} + \mu_{i,t}$$

Table 39. Regression variable names, literature and data sources

Variable	Description	Literature	Source
Revshock	Provincial revenue shock $\frac{Rev_t - Rev_{t-1}}{Rev_{t-1}}$	Rattso, 1999	National Treasury financial database
BB	Budget balance $\frac{Rev_t - Spending_t}{Spending_t}$	Tellier and Imbeau, 2004.	National Treasury financial database
ΔPex	Change in total provincial spending	Esteller-Moré, et al. 2017	National Treasury financial database
$\Delta Powrev$	Change in total provincial own revenue	Esteller-Moré, et al. 2017	National Treasury financial database
$\Delta PnTrans$	Change in total national transfers to provinces (current and capital)	Tellier and Imbeau, 2004; Schaltegger, 2009.	National Treasury financial database
$\Delta Pcoex$	Change in provincial personnel spending	Esteller-Moré, et al. 2017	National Treasury financial database
$\Delta Pgserv$	Change in provincial goods and services spending	Esteller-Moré, et al. 2017	National Treasury financial database
$\Delta Pcaps$	Change in provincial capital spending	Esteller-Moré, et al. 2017	National Treasury financial database
$\Delta Ptrans$	Change in intra provincial transfers		National Treasury financial database
$\Delta Pune$	Change in unemployment	Tellier and Imbeau, 2004;	Statistics South Africa
$\Delta PGRP$	Change in Gross regional product	Tellier and Imbeau, 2004;	Reserve Bank
$\Delta Ppop$	Change in population		Statistics South Africa

Source: FFC calculations

Table 40. Determinants of revenue shock

Dependent variable: Revshock	Random effects		Random Effects-includes time dummies		Random effects-robust	
	Coefficient	*Std. error*	*Coefficient*	*Std. error*	*Coefficient*	*Std. error*
Pex(t-i)	0.1894749	0.2324447	0.1763677	0.2635473	0.1894749	0.3357393
Powrev(t-i)	-0.0566355	0.069938	-0.047523	0.0791816	-0.0566355	0.1005791
PnTrans(t-i)	0.3524745	0.4857744	0.1548486	0.5725295	0.3524745	0.4532234
Ppop(t-i)	-4.656721	3.942635	-4.558155	3.70612	-4.656721	3.731411
PGRP(t-i)	0.0699888	1.162346	-0.1729476	1.238538	0.0699888	0.8898215
Pune(t-i)	-0.251154	0.198356	-0.2506721	0.1879475	-0.251154	0.1887791
Year=2012 (reference year)						
Year =2013			-0.0441008	0.0856272		
Year =2014			0.0296565	0.0909356		
Year =2015			-.1550429*	0.0899917		
Year =2016			0.0080346	0.0879743		
Constant	0.1454068	0.1129275	0.2099125	0.1688248	.1454068**	0.0673127
R^2	0.1133		0.3565		0.1133	
Observations	35		35		35	
Prob>F	0.73378		0.207552		0.0000656	
* p<0.10, **	p<0.05,	*** p<0.010				

Source: FFC calculations

Table 41. Determinants of budget balance

Dependent variable: Budget Balance	Random effects		Random Effects-includes time dummies		Random effects-robust	
	Coefficient	*Std. error*	*Coefficient*	*Std. error*	*Coefficient*	*Std. error*
Pcoex(t-i)	-5.581536***	2.091532	-4.658296**	2.092784	-5.581536	3.779919
Pserv(t-i)	1.55342	1.844071	0.1942352	1.844213	1.55342	1.914864
Pcaps(t-i)	1.896982***	0.5073017	2.165202***	0.4846769	1.896982	1.163663
Ptrans(t-i)	-0.0821955	0.5488383	-0.090922	0.5574801	-0.0821955	0.3107581
Ppop(t-i)	21.36955	27.25744	22.04746	25.00528	21.36955	13.1119
PGRP(t-i)	22.78421***	6.296561	21.99372***	6.40231	22.78421***	8.27061
Pune(t-i)	1.154017	1.434475	0.9406001	1.319715	1.154017	0.8274116
Year = 2012 (reference year)						
Year =2013			0.5838441	0.4732363		
Year =2014			1.3278***	0.4618363		
Year =2015			0.3606445	0.4984763		
Year =2016			0.4782488	0.5318198		
Constant	-1.756378***	0.6389067	-2.240484***	0.78098	-1.756378***	0.6057731
R^2	0.582		0.7015		0.582	
Observations	35		35		35	
Prob>F	3.63E-06		1.15E-07		.	
* p<0.10, **	p<0.05,	*** p<0.010				

Source: FFC calculations

Model and equations for Chapter 4

Gramlich's (1991) utility equation is specified as:

$$U = U(u_i, u_2, u_3) \quad (1)$$

where:

$$u_1 = Exp - N \quad (1a)$$

$$u_2 = Y - OWN \quad (1b)$$

$$u_3 = Surp \quad (1c)$$

In Eqs.(1a) – (1c), *Exp* denotes local government spending, *N* is a measure of (exogenous) local needs, *Y* represents (exogenous) average personal incomes of residents within the local government, *OWN* is local own-source revenues, and Surp is local government operating surplus (or deficit).

More formally, the constrained objectives can be expressed as:

$$Max \sum_{t=1}^{3} \beta_t \ln u_t \text{ s.t. } X = RS + G \quad (2)$$

where the utility is a Stone-Geary type function, X is local government revenues derived from two types of intergovernmental transfers – from tax and revenue sharing with higher levels of government (*RS*) and centrally/nationally allocated funds (*G*). Eq.(2) can be set as a Lagrangean function, with partial derivatives of the endogenous variables of such a function yielding a system of three equations that define behaviour of local government across three fiscal dimensions – expenditure, taxation and operating/budget surplus (or deficit). These three equations are specified as:

$$Exp_{it} = \beta_1 X_{it} + \beta_2 Y_{it} + \beta_3 N_{it} + \varepsilon_{it} \quad (3a)$$

$$-OWN_{it} = \beta_4 X_{it} + \beta_5 Y_{it} + \beta_6 N_{it} + \varepsilon_{it} \quad (3b)$$

$$Surp_{it} = \beta_7 X_{it} + \beta_8 Y_{it} + \beta_9 N_{it} + \varepsilon_{it} \quad (3c)$$

where the variables are as defined in set of equations in (1) and (2) above, with the subscripts *i* and *t* representing the ith local government and time, respectively. The variable OWN is negatively signed in Eq.(3b). This is to ensure that the 'adding up' condition – the sum of the left-hand side variables is equal in value to the budget constraint, is satisfied (Lewis and Smoke, 2017).

Within the system of local government accounts, total local government spending must equal total government revenue. The budget constraint in Eq.(2) thus implies that intergovernmental transfers (X) will be correlated with the error terms in the systems of equations specified in Eq.(3). In this case, causality may run in both directions – from the left hand variables (EXP, OWN and Surp) to transfers (X) and vice-versa. In addition, that there may exist municipality–specific effects such as geography and demographics that influence budgets across municipalities, but due to unobservability, are excluded from the set of explanatory variables included in Eqs.(3a) – (3c). Failure to consider such effects may bias estimates and render results obtained from ordinary least squares estimations invalid.

To solve the endogeneity problem and overcome the possible correlation of time-invariant municipal characteristics with the explanatory variables, the models of Eqs. (3a) – (3c) are estimated using the systems Generalized Method of Moments (sys-GMM) technique. Sys-GMM address the endogeneity issue as it is an instrumental variable approach that also has the

advantage of being a relevant framework for estimating models with short time dimension (*T*) and a larger unit (*N* i.e. municipality) dimension. In this study, we utilize a panel data set with T = 15 and N = 213 and the time dimension = 15 (*N =22*). In equation terms, the basic sys-GMM model is specified as:

$$y_{it} = \beta_1 \mathbf{w}_{it} + \beta_2 \mathbf{x}_{it} + \nu_i + \varepsilon_{it} \quad (4)$$

where w is a vector of endogenous variables; x is a vector of exogenous variables while the time-invariant country characteristics (fixed effects) are contained in the error term consisting of unobserved country-specific effects, v_i, and the observation-specific errors, ε_{it}, *i* and *t*.

Given that South Africa's municipalities do not operate surpluses, the application of the sys-GMM is limited to the versions of the model outlined in Eqs.(3a) and (3b). For both equations, this study follows the approach of Lewis and Smoke (2005) and estimates models in which intergovernmental transfers are endogenous determinants of municipal own-revenues and expenditures. Accordingly, estimation of both Eq.(3a) and Eq.(3b) distinguishes between unconditional and conditional intergovernmental transfers. In addition, estimation of Eq.(3a) uses the two main types of expenditures – capital and operating, as the dependent variables.

Personal income (*Y*) is proxied by regional output (as measured by municipal gross value added) per capita. The equitable share formula used in allocating unconditional transfer funds across resources as well as conditional grants directed at programs of national priority are underpinned by the socio-economic conditions of a municipality. Thus, the needs variables specified in the budget model in Eqs. (3) and (4) are proxied by a municipality's population size, its share of residents living below the food poverty line, the extent of human capital, and the extent of urbanisation within its jurisdiction. All economic and fiscal variables are measured in per capita terms. Table 19 provides the names and definitions of variables used in the empirical analysis.

Table 42. Variable names and definitions for empirical model

Variables	Definition
Dependent variables	
EXPPC	Total government expenditure (Rand per capita)
OWNPC	Total municipal own revenues (Rand per capita)
Explanatory variables	
CGRANTPC	Total conditional grants (Rand per capita)
UGRANTPC	Total unconditional grants (Rand per capita)
CAPEXPC	Total capital expenditure (Rand per capita)
OPEXPC	Total operating expenditure (Rand per capita)
POVRATE	Poverty rate per municipality (%)
URBAN	Share of population resident in an urban area (%)
Other instruments	
YPC	Gross value added per capita
POP	Total municipal population

Disparities in population size, income distribution, revenue base as well as varying degrees in the levels of urbanisation and administrative capacity mean that the actual distribution of

responsibilities and revenue collection differs widely within and across types of local governments. As Bahl and Smoke (2003) note, some municipalities, especially those situated in large urban areas, take responsibility for a significant range of functions and services. On the other hand, smaller local governments, particularly (but not exclusively) in rural areas provide few services independently.

The analysis thus proceeds in two stages.

- First, the sys-GMM version (i.e. Eq. (4)) of the basic models is estimated exactly as defined in Eqs. (3a) and (3b) for each category of local municipalities – categories A, B1, B2, B3 and B4, respectively.
- Second, the analysis of sys-GMM for the respective equations require a set of feasible instruments that can be used in the estimations. Following Lewis (2005), instruments include second (and higher) lags and lagged differences of endogenous variables in **w** – per capita conditional and unconditional transfers, and first differences and levels of exogenous variables in **x** – per capita income, municipal population size, share of residents below the food poverty line and the measure of human capital.

References

References for Chapter 1

Agénor, PR, Izquierdo, A., and Foffack, H. 2002. *IMMPA: A macroeconomic quantitative framework for the analysis of poverty reduction strategies*. Washington, D.C.: The World Bank.

Dare, C, Jansen, A, and du Plessis, S. 2017. *Taxpayers' behavioural responses to changes in audits and penalties: The case of South Africa.* Grahamstown: Economic Society of Southern Africa 2017 Biennial Conference, Rhodes University.

Decaluwé, B, Lemelin, A, Robichaud V, and Maisonnave, H 2012. *The PEP Standard Computable General Equilibrium Model Single-Country, Recursive Dynamique Version PEP-1-t.* [*Sl}:* Partnership for Economic Policy (PEP). MPIA Research Network.

Dhlamini, L. 2017. Integrating agenda 2030 for Sustainable Development Goals (SDGs) into regional and national development plans and strategies. http://www.un.org.za/integrating-agenda-2030-for-sustainable-development-goals-sdgs-into-regional-and-national-development-plans-and-strategies/, accessed January 2018.

Frey B.S. and Torgler B. 2007. Tax morale and conditional cooperation. *Journal of Comparative Economics,* Vol. 35, No.1: pp 136-159.

Mabugu, R., Fofana, I, and Chitiga, M. 2015 Pro-Poor Tax Policy Changes in South Africa: Potential and Limitations, *Journal of African Economies*. (24(2)): pp 73-105, Oxford University Press. doi: 10.1093/jae/eju038.

Mabugu, R. 2017. The Impact of the Financial Crisis on Intergovernmental Financial Relations in South Africa, Chapter 13 in Ecclestone, PJH., and Krever, R., eds. *The Future of Federalism: Intergovernmental Financial Relations in an Age of Austerity*, UK: Edward Elgar Publishing Ltd. pp 314-342.

Ravallion, M. 2004. *Pro-Poor Growth: a Primer* Washington, DC: World Bank, Development Research Group.

Ravallion, M. 2007. Inequality is bad for the poor. in S. Jenkins and J. Micklewright, eds. *Inequality and Poverty Re-examined*, Oxford: Oxford University Press.

Statistics South Africa. 2015. *Millennium Development Goals: Country report 2015.* Pretoria: Statistics South Africa.

Statistics South Africa. 2017. *Poverty trends in South Africa: An examination of absolute poverty between 2006 and 2015.* Pretoria: Statistics South Africa.

Torgler B, Schaltegger CA and Schaffner M. 2003: Is forgiveness divine? A cross-culture comparison of tax amnesties, *Swiss Journal of Economics and Statistics (SJES),* Vol.139, No.3: pp 375-396.

Traxler C. 2010. Social norms and conditional cooperative taxpayers, *Political Economy*, Vol.26, No.1: pp 89-103.

United Nations. 2017. 2017 Revision of World Population Prospects. Accessed January 2018.

References for Chapter 2

Agasisti, T. 2011. Performances and spending efficiency in higher education: a European comparison through non-parametric approaches. *Education Economics,* 19(2): pp199-224.

Calitz, E, and Essop, H. 2012. Fiscal Centralisation in a Federal State: The South African State. Working Paper 10/12 of the Department of Economics and the Bureau for Economic Research, University of Stellenbosch. [Online]. Available at: https://www.ekon.sun.ac.za/wpapers/2012/wp102012/wp-10-2012.pdf. Accessed: 11 April 2018.

Department of Higher Education and Training (DHET). 2010. Annual Survey of Public FET Colleges, 2010: Raw Data

Department of Higher Education and Training (DHET). 2011. Annual Survey of Public FET Colleges, 2011: Raw Data

Department of Higher Education and Training (DHET). 2012. Annual Survey of Public FET Colleges, 2012: Raw Data

Department of Higher Education and Training (DHET). 2013a. Annual Survey of Public FET Colleges, 2013: Raw Data

Department of Higher Education and Training (DHET). 2013b. Statistics on Post-School Education and Training in South Africa, 2013. Pretoria: Department of Higher Education and training. [Online]. Available at: www.dhet.gov.za. Accessed: 11 April 2018.

Department of Higher Education and Training (DHET). 2014. Annual Survey of Public FET Colleges, 2014: Raw Data

Department of Higher Education and Training (DHET). 2015a. TVET College Annual Survey, 2015: Raw Data

Department of Higher Education and Training (DHET). 2015b. National Examinations Database, 2015: Raw Data

Department of Higher Education and Training (DHET). 2015c. Statistics on Post-School Education and Training in South Africa, 2015. Pretoria: Department of Higher Education and training. [Online]. Available at: www.dhet.gov.za. Accessed: 11 April 2018.

Department of Higher Education and Training (DHET). 2017. Budget Allocations for TVET Colleges 2010-2017: Raw Data

Dickovick, JT. 2011a. Decentralization and Recentralization in the Developing World: Comparative Studies from Africa and Latin America. University Park, PA: Pennsylvania State University Press.

Dickovick, JT. 2011b. Recentralization in Latin America: Institutional Layering and Presidential Leverage. [Online]. Available at: https://www.researchgate.net/profile/James_Dickovick/publication/228161888_Recentralization_in_Latin_America_Institutional_Layering_and_Presidential_Leverage/links/0f31753c02c15908f9000000.pdf. Accessed: 11 April 2018.

Duleep, HO and Liu, X. 2016. Estimating More Precise Treatment Effects in Natural and Actual Experiments. [Online]. Available at: https://www.econstor.eu/bitstream/10419/145189/1/dp10055.pdf. Accessed: 11 April 2018.

Horga, I and Costea, A.M. 2015. The regional policy in the EUMS from central and eastern Europe between decentralization and recentralization. [Online]. Available: https://digitalis-dsp.uc.pt/bitstream/10316.2/37112/1/The%20Regional%20Policy%20in%20the%20EUMS.pdf?ln=pt-pt. Accessed: 11 April 2018.

Kinara, P., 2014. Determinants of Technical Efficiency of Technical Training Institutions in Kenya. Unpublished Msc. Thesis. Nairobi: University of Nairobi. Viewed 19 July 2016. [Online]. Available at: http://erepository.uonbi.ac.ke. Accessed: 11 April 2018.

Lopez-Murcia, J.D. 2015. The Role of Economic Performance on the Emergence of Recentralisation: Colombia, 1994-2014. San Francisco: Conference Paper delivered at the 111th APSA Annual Meeting, San Francisco, CA Sep 3-6, 2015.

Meyer, BD. 1995. Natural and quasi-experiments in economics. *Journal of business & economic statistics,* 13(2), pp.151-161. Pretoria: National Planning Commission. 2011. National Development Plan: Vision for 2030. [Online]. Available at: www.presidency.gov.za. Accessed: 11 April 2018.

National Department of Human Settlements Database. 2012. Raw Data

National Department of Human Settlements Database. 2013. Raw Data

National Department of Human Settlements Database. 2014. Raw Data

National Department of Human Settlements Database. 2015. Raw Data

National Department of Human Settlements Database. 2016. Raw Data

National Department of Human Settlements Database. 2017. Raw Data

National Treasury. 2006. Budget Review, 2006. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2007. Budget Review, 2007. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2008. Budget Review, 2008. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2009. Budget Review, 2009. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2010a. Budget Review, 2010. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2010b. Division of Revenue Bill (DoRB). Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2011a. Budget Review, 2011. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2011b. Division of Revenue Bill (DoRB). Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2012a. Budget Review, 2012. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2012b. Division of Revenue Bill (DoRB). Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2013a. Budget Review, 2013. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2013b. Division of Revenue Bill (DoRB). Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2014a. Budget Review, 2014. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2014b. Division of Revenue Bill (DoRB). Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2015a. Budget Review, 2015. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2015b. Division of Revenue Bill (DoRB). Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za

National Treasury. 2016a. Budget Review, 2016. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2016b. Division of Revenue Bill (DoRB). Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2016c. Budget Review, 2016. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2017. Division of Revenue Bill (DoRB). Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.

National Treasury. 2017a. Budget Review, 2017. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.
National Treasury. 2018. Budget Review, 2018. Pretoria: National Treasury. [Online]. Available at: www.treasury.gov.za. Accessed: 11 April 2018.
Republic of South Africa. 1996. Constitution of the Republic of South Africa.
Webber, DA and Ehrenberg, RG. 2010. Do expenditures other than instructional expenditures affect graduation and persistence rates in American higher education? *Economics of Education Review,* 29(6): pp 947-958.
Webber, DA. 2012. Expenditures and post-secondary graduation: An investigation using individual-level data from the state of Ohio. *Economics of Education Review*, 31(5): pp 615-618.
Zhang, L. 2009. Does state funding affect graduation rates at public four-year colleges and universities? *Educational Policy*, 23(5): pp 714-731.

References for Chapter 3

Alessina A and Ardagna, S. 2013. The Design of Fiscal Adjustments. *Tax policy and the economy,* Vol 27, pp 19 – 67
Barrios, S and Martinez, D. 2012. Sub central government borrowing and regional development differentials under alternative fiscal frameworks. European Commission, Joint Research Centre. Available at http://ec.europa.eu/economy_finance/events/2012/2012-11-27-workshop/pdf/sub-national_government_en.pdf, Accessed 5 August 2017.
Bird, RM and Tassoyi, A. 2003. Constraining subnational fiscal behaviour in Canada: Different Approaches, Similar Results? *Fiscal Decentralisation and Challenges of Hard Budget Constraints,* World Bank
Derby J, Anton, V and Roy, G. 2005. Fiscal consolidation and decentralisation: A tale of two tiers. Fiscal Studies, Col 26, no 2, pp 169-195
Esteller-Moré, A. 2017. Fiscal adjustment to exogenous shocks: Evidence from Spanish municipalities. Barcelona: Barcelona Institute of Economics, University of Barcelona.
Financial and Fiscal Commission, 2012. Submission to 2013/14 division of revenue. Midrand, South Africa: Financial and Fiscal Commission
International Monetary Fund. 2006. Fiscal Adjustment for stability and growth. Washington: International Monetary Fund.
Kodolov, O and Hale, G 2015. Budgeting under prolonged constraints: Canadian provincial governments respond to recession and "slowth". *Canadian Public Policy*, vVol 42, no 1, pp 20-34
Kumar, SK, Leigh, D, and Plekhanov, A. 2007. Fiscal adjustments: Determinants and macroeconomic consequences. International Monetary Fund, working paper 07/178
National Department of Health. 2017. Systemic challenges in the health sector. Presentation to the Technical Committee on Finance. Pretoria: National Department of Health.
National Treasury. 2014. Guideline on unauthorised spending. Pretoria: Office of the Accountant General.
National Treasury. 2017. Budget review. Pretoria: Government of South Africa.
OECD. 2010. Fiscal policy across levels of government in times of crises, Working paper (2010)12, OECD Network of Fiscal Relations across Levels of Government, OECD
Office of the Health Ombudsman. 2016. The report into the circumstances surrounding the death of mentally ill patients. Gauteng: Health Ombud, South Africa.

Rattsø, J. 1999. Fiscal adjustment with vertical imbalance: Empirical evaluation of administrative fiscal federalism in Norway. Trondheim: Norwegian University of Science and Technology.

Schaltegger, CA, and Feld, PL. 2009. Are fiscal adjustments less successful in decentralised governments? *European Journal of Political Economy,* Vol 25, pp 115 – 123

Tellier, G and Imbeau, LM. 2004. Budget deficit and surpluses in the Canadian provinces: a pooled analysis. Paper presented at the annual conference of European Public Choice society. Berlin, 2004

Vammalle, C. and Hulbert, C. (2013), Sub-national finances and fiscal consolidation: Walking on Thin Ice, *OECD Regional Development Working Papers,* 2013/02. OECD Publishing

References for Chapter 4

Bahl, T and Smoke, P. 2003. Chapter 1: An Overview of Fiscal Decentralization in South Africa in P. Smoke, and R. Bahl eds., *Restructuring Local Government Finance in Developing Countries: Lessons from South Africa Cheltenham, UK and Northampton*, MA: Edward Elgar Publishers.

Bird, R. 2010. Subnational Taxation in Developing Countries: A Review of the Literature. *World Bank Policy Research Working Paper 5450*. October 2010

Brun, J. and El-Khdari, M. 2016. The Incentive Effects of Conditional and Unconditional Transfers on Local Own Revenue Generation: Empirical Evidence from Moroccan Municipalities. *Études et Documents,* No. 6, CERDI

Gramlich, E. 1991. The 1991 State and Local Fiscal Crises, *Brookings Papers on Economic Activity 2*, pp 249-287.

Lewis, B. 2005. Indonesian Local Government Spending, Taxing and Saving: An Explanation of Pre- and Post-decentralization Fiscal Outcomes, *Asian Economic Journal,* East Asian Economic Association, 19(3), pp 291-317.

National Treasury 2018. W1- Explanatory Memorandum to the Division of Revenue. National Budget Review 2018.

Qian, Y and Weingast, B. 1997. Federalism as a commitment to preserving market incentives. T*he Journal of Economic Perspectives*, 11(4), pp 83–92.

Rodden, J. and Eskeland, G. and Litvack, J. eds. 20013. Fiscal decentralization and the Challenge of Hard Budget Constraints. Massachusetts, London and England: The MIT Press.

Weingast, B. 2009. Second generation fiscal federalism: The implications of fiscal incentives. *Journal of Urban Economics,* 65(3), pp 279-293.

References for Chapter 5

Centre for Affordable Housing Finance in Africa. 2009. GAP Housing: The next property boom. Available online: http://housingfinanceafrica.org/app/uploads/IHS-conferenceinput_FinMark.pdf

Afonso A, Schuknecht L and Tanzi,V. 2006: Public sector efficiency: evidence for new EU member states and emerging markets, ECB Working Paper, No. 581. Available at: https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp581.pdf

Aschauer, DA. (1989). Is Public Expenditure Productive? *Journal of Monetary Economics*. Vol.23, pp 177-200.

Australian Government: Productivity Commission. 2013. On efficiency and effectiveness: some definitions. Research Note. Available at: http://www.pc.gov.au/research/supporting/efficiency-effectiveness

Bogetic Z and Fedderke JW. 2005. International Benchmarking of South Africa's Infrastructure Performance. *Policy Paper* No.7. UCT and World Bank

Bowen P, Edwards P and Cattell K. 2015. Corruption in the South African construction industry: experiences of clients and construction professionals. *International Journal of Project Organisation and Management,* 7, pp 72-92.

Calderon C and Serven L. 2004. The Effects of Infrastructure Development on Growth and Income Distribution. *Policy Research Working Paper*, No. 3400. Washington DC: World Bank. https://openknowledge.worldbank.org/handle/10986/14136

Chakraborty S and Dabla-Norris E. 2009. The Quality of Public Investment. *IMF Working Paper.*

Department of Basic Education (DBE). 2018. NEIMS Standard Report.

Dodonov B, Hirschhausen CV, Opitz P, Sugolov, P. 2002. Efficient Infrastructure Supply for Economic Development in Transition Countries – The Case of Ukraine. *Post-Communist Economies*, Vol 14(2), pp 149–169

Fay M, Andres LA, Fox C, Narloch U, Straub S and Slawson M. 2017. Spending Better to Achieve More. Washington, DC: The World Bank. Access: www.worldbank.org.

Fedderke JW, Perkins P and Luiz M. 2006. Infrastructural Investment in Long-run Economic Growth. South Africa 1875–2001. *World Development*, Vol 34(6), pp 1037–1059.

Emuze F & Swallwood J. 2012. Infrastructure Project Performance in the South African Construction Sector: Perceptions from two provinces. Acta Structilia. 19(2), pp 1-20.

Fourie J. 2007. A note on Infrastructure Quality in SA. Stellenbosch Economic Working Papers: 03/07

Gupta, S, Davoodi, H. and Alonso-Terme, R. 2002. Does corruption affect income inequality and poverty? *Economics of Governance*, 3(1), pp 23–45.

Hawkins J. 2013. Reducing Corruption in Infrastructure Sectors. Evidence on Demand. Available: http://dx.doi.org/10.12774/eod_cr.may2013.hawkins

International Monetary Fund.2015) Making Public Investment More Efficient. IMF. Available at: http://www.imf.org/external/pp/ppindex.aspx

Kenny, C. 2009. Measuring Corruption in Infrastructure: Evidence from Transition and Developing Countries. *Journal of Development Studies*, 45(3), pp 314-332.

Klitgaard, R. 1995. National and International Strategies for Reducing Corruption. Paper prepared for the OECD International Symposium on Corruption and Good Governance, Paris, 13-14 March 1995.

Locatelli G, Mariani G, Sainati T and Greco M. 2017. Corruption in public projects and megaprojects: There is an elephant in the room. *International Journal of Project Management* Vol.35: pp 252–268.

Mastromarco C and Woitek U. 2006. Public Infrastructure investment and efficiency in Italian regions. *Journal of Productivity Analysis*, Vol.25 (1/2), pp57-65.

Mauro, P. 1995. Corruption and Growth. *The Quarterly Journal of Economics*, 110 (3), pp 681-712

McIntyre, D and Ataguba, J. 2016. Access to quality health care in South Africa: Is the health sector contributing to addressing the inequality challenge? Cape Town: Health Economic Unit, University of Cape Town.

Meeampol, SO, Ogunlan O. 2006. Factors affecting cost and time performance on highway construction projects: Evidence from Thailand. *Journal of Financial Management Property and Construction*, Vol. 11(1), pp 3-20.

Mihaiu DA, Opreana A and Cristescu MP. 2010. Efficiency, Effectiveness and Performance of the Public Sector. *Romanian Journal of Economic Forecasting*, Vol.4.

More I and Ayea GC. 2017. Effect of Social Infrastructure Investment on Economic Growth and Inequality in South Africa: A SEM Approach. Pretoria: University of Pretoria. Available at: https://repository.up.ac.za/bitstream/handle/2263/59399/More_Effect_2017.pdf?sequence=1

National Income Dynamics Survey. 2008.

National Department of Transport (NDOT). 2017. Performance Assessment Report for the Provincial Roads Maintenance Grant, 2016/17. Internal Document. NDOT.

National Treasury. 2014. The Budget Review. Ch.7 Roads and Transport. Pretoria: Government Printers

National Treasury. 2016. Public Expenditure Review for Public Roads. Pretoria: Government Printers..

National Treasury. 2017. The Budget Review. Pretoria: Government Printers.

Olken BA. 2006. Corruption Perceptions vs Corruption Reality. NBER Working Paper 12428. Available at: http://www.nber.org/papers/w12428

Reinikka R and Svensson J. 2006. Using Micro-Surveys to Measure and Explain Corruption. *World Development,* Vol 34(2) pp 359–370.

Rioja, FK (2003). The Penalties of Inefficient Infrastructure. *Review of Development Economics*, 7(1) pp 127-137.

Shehu Z, Intan R, Endut IR, Akintoye A. 2014. Factors contributing to project time and hence cost overrun in the Malaysian construction industry. *Journal of Financial Management of Property and Construction*, Vol. 19 (1), pp 55-75.

South African National Road Agency Limited (SANRAL). 2016. Strategic Plan 2015/16 to 2019/20.

Tanzi V and Davoodi H. 1997. Corruption, Public Investment, and Growth. IMF Working Paper 97/139. Available at: https://www.imf.org/external/pubs/ft/wp/wp97139.pdf

Transparency International. 2005. Global Corruption Report. London: Pluto Press. Available: https://www.transparency.org

Zubaidi HA, Srour Al Otaibi SA. 2008. An Empirical Approach for Identifying Critical Time-Ovrerun Risk Factors in Kuwait's Construction Projects. *Journal of Economic and Administrative Sciences,* Vol 24(2).

References for Chapter 6

Department of Rural Development and Land Reform (RDLR). 2013. Priority Districts Analyses for Economic Transformation. Pretoria: Department of Rural Development and Land Reform.

Department of Water Affairs and Forestry (WAF). 2002. Free Basic Water Implementation Guidelines for Local Authorities, Version 2.3, Pretoria: Department of Water Affairs and Forestry.

Department of Water and Sanitation (DWS). 2001. Compulsory National Standards. Pretoria: Department of Water and Sanitation.

DWS. 2001. Norms and standards for water services tariffs 2001. Pretoria: DWS.

DWS. 2007. Pricing strategy for raw water use. Pretoria, DWS.

DWS. 2014. "National Water Policy Review (NWPR): Approved Water Policy Positions", Pretoria: DWS.

DWS. 2015. 2014 Blue Drop Report. Pretoria: DWS.

DWS. 2016. Norms and Standards for bulk water services supplied by BulkWSP or Regional Bulk Water Utilities to other WSIs V3, Support document on the Pricing Strategy for water use charges for raw water 2016 . Pretoria: DWS.

DWS. 2017a. Current Status of Water Supply in South Africa and interventions, presentation (at DBSA 03102017).

DWS. 2017b. National Water and Sanitation Master Plan - Action Plan, Pretoria: DWS

DWS. 2018. National Water and Sanitation Master Plan. Pretoria: DWS. Available at http://www.dwa.gov.za/National%20Water%20and%20Sanitation%20Master%20Plan/default.aspx)

Government of South Africa. 1997. Water Services Act (1997)

Government of South Africa. 1998. National Water Act (1998) (NWA)

Government of South Africa 2016. Division of Revenue Act 2016, (accessed at) http://www.treasury.gov.za/legislation/bills/2016

Government of South Africa 2018, Division of Revenue Bill, February 2018, National Treasury (accessed at) http://www.treasury.gov.za/legislation/bills/2018/Division%20of%20Revenue%20Bill%20B2%202018.pdf

Grey & Sadoff, Sink or Swim - Water security for growth and development, Water Policy 9 (2007) 545-571).

Muller 2008. Free basic water – a sustainable instrument for a sustainable future in South Africa, Environment and Urbanization, 20 (1).

PMG 2017. Minutes of Portfolio Committee meeting of 29th November 2017: Outstanding water debt by municipalities, with DWS Minister, Deputy & COGTA Deputy Minister, Parliamentary Monitoring Group (accessed at) https://pmg.org.za/committee-meeting/25631/?via=cte-menu

National Treasury. 2017. Presentation to the Portfolio Committee on Water and Sanitation – 29 November 2017..

National Treasury. 2018. Budgeting and financial management in the DWS. Presentation to joint meeting of the Portfolio Committee on Water and Sanitation and the Standing Committee on Public Accounts, 27 March 2018.

Parliament 2017. COGTA committee intervenes to find solutions to municipalities' financial challenges. Accessed at https://www.parliament.gov.za/news/cogta-committee-intervenes-find-solutions-municipalities-financial-challenges. Cape Town: Parliament of South Africa.

PMG. 2018. The Municipal Financial Sustainability & Payment of Trade and Other Payables. Presentation to Parliamentary Portfolio Committee on Water and Sanitation (presented on) 29112017. Cape Town: Parliamentary Monitoring Group.

SACN. 2016. State of city finances 2015. Cape Town: South African Cities Network.

Statistics South Africa. 2015. GHS Series Volume VIII: Water and Sanitation, in-depth analysis of the General Household Survey 2002–2015. Pretoria: Statistics South Africa.

Statistics South Africa. 2016. Community Survey 2016 data, Report 03-18-07 (2002-2015), Pretoria: Statistics South Africa.

Woodhouse P and Muller M. 2017. Water Governance — An Historical Perspective on Current Debates, *World Development,* Vol 92.