For an Equitable Sharing of National Revenue

FINANCIAL AND FISCAL COMMISSION

TECHNICAL REPORT:

SUBMISSION FOR THE DIVISION OF REVENUE

2011/12

FINANCIAL
AND FISCAL
COMMISSION

The background to this year's submission is that South Africa is recovering from the deepest and most serious economic crisis to affect the world since the Great Depression.

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For an Equitable Sharing of National Revenue

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FOREWORD AND EDITORIAL

The Financial and Fiscal Commission provides independent, impartial advice and recommendations on intergovernmental fiscal relations including the technical evaluation and design of provincial and local fiscal and economic policy.

The Commission helps provide information to all organs of state so that they can make informed decisions about complex fiscal issues. One of the main objectives of the Commission in this respect is to help inform the following year's budget by making recommendations on the division of revenue among the three spheres of government, and also recommendations to support government's policy-making on intergovernmental fiscal relations.

It does this by submitting annually an advisory document to parliament summarising the recommendations for the following year that should be taken into account when the executive crafts the next budget. This submission for the Division of Revenue is made in terms of Section 214 (2) and Section 229 (5) of the Constitution, and Section 9 of the Intergovernmental Fiscal Relations Act of 1999.

In May 2010 the Commission tabled its latest Submission Document for the Division of Revenue 2011/12. This volume of technical research reports is published as a companion document to that Submission Document for the Division of Revenue 2011/12. The report focuses on the process of adjusting to the recession and global economic crisis from which the South African economy is emerging. It highlights the need for cushioning the vulnerable and laying the foundations for future growth and development. This theme runs throughout the submission and focuses on the fiscal adjustments and reprioritisation that will need to be made in order to take the economy back to where it was before the recession without compromising access to basic services by the vulnerable groups in our society.

This report is organised into 7 chapters. **The first chapter, authored by Ramos Mabugu**, **Servaas van der Berg, Margaret Chitiga, Bernard Decaluwé, Hélène Maisonnave, Véronique Robichaud, Debra Shepherd and Dieter von Fintel** reports on a study to provide insights into the magnitude of the recent global economic crisis associated in macroeconomic terms, the country's capacity to withstand or cushion these shocks, and the extent of fragility in terms of poverty levels and child wellbeing. The analysis combines macro-economic and micro-economic tools to assess the extent of the crisis' impact on the country. Computable General Equilibrium modelling is employed to estimate the impact of the crisis on key macro variables. Results of the macro model are then used to assess the individual and household level effects of the crisis using household survey data and suitable micro-econometric techniques. The study finds that the poverty headcount ratio increases little in the moderate crisis scenario, but substantially under the severe scenario. However, under both scenarios there is a relatively successful return to close to the business as usual trend. It is important to note though that under both scenarios, more poverty sensitive measures (the poverty gap ratio and the poverty severity ratio) decline more, and remain in negative territory longer, showing that the major impact of the crisis is on the poorest, and that this impact is most difficult to overcome. Setting too high poverty lines and focusing on the poverty headcount ratio only would conceal some of this effect. Of particular importance to this study and of pertinence for other developing countries is how the effects of the crisis are mediated through the Child Support Grant, a uniquely South African feature which has been expanded greatly in recent years and is particular-

ly aimed at children in poor families. This offers a potential source of protection against poverty for poor children, if the care-givers regard such grants as firstly for the benefit of the children concerned.

Chapter 2 written by Kriege Siebrets and Servaas van der Berg reflects on the current state and likely future of the South African social assistance system, focusing on its fiscal sustainability, its effectiveness as an instrument to combat poverty in a longer-term developmental sense, and its impact on the allocation of resources. The authors show that the South African social assistance system is an effective intervention which significantly reduces poverty and apparently does not have severe undesirable behavioural effects. The major lacuna in the social assistance system is the lack of support for unemployed members of the labour force. The Unemployment Insurance Fund and the Expanded Public Works Programme only partially fill this gap. One of the outcomes of this situation is that the existing grants have become major sources of support for the unemployed. Such sharing of grant income sometimes stimulates and in other cases hamper labour-market participation, while the implied dilution of benefits could drag entire households (including the targeted beneficiaries of grants) into poverty. There is very limited scope for strengthening anti-poverty policy in South Africa by further expanding the social grants system, however, especially in view of the lack of fiscal space. Sustainable poverty reduction requires inclusive job-creating economic growth, and this should remain the primary focus of anti-poverty policy.

The third chapter on performance of conditional fiscal transfers in South Africa by Tebogo Makube presents comprehensive data on the allocation of conditional grants to provincial and local governments over the ten-year period from 2000/01 to 2009/10. It serves to document the history of conditional grants and highlights some interesting patterns in the composition of these grants. The study provides both the qualitative and quantitative analysis of conditional grants. The author argues that what is emerging in the application of conditional grants in South Africa is that allocations for conditional grants have been cyclical over the years. This is mainly because some grants have been merged into the equitable share, others merged into other conditional grants, others terminated whilst others have been in existence for more than 10 years. Notwithstanding the role and importance of conditional fiscal transfers, challenges remain persistent in the funding mechanism for concurrent functions and national priorities. There is a need, therefore, to continuously review the efficacy of the conditional grants in the country's intergovernmental fiscal relations system, specifically in relation to the necessity and purpose of some of the grants, criteria for allocations, targeting, reporting on non-financial data, performance and value for money.

Chapter 4 by Eddie Rakabe takes as its point of departure the premise that one of the key success factors upon which the implementation of the Local Government Turnaround Strategy will be measured against is the extent to which municipalities optimise their own revenue collection. In this respect, municipalities will be evaluated on the basis of their ability to collect revenue at a level which reflects the size of their respective local economy (fiscal capacity) and their ability to collect revenue at the rate at which it planned to do at the beginning of the financial year (fiscal effort). To understand this problem fully, the author investigates the possibility of local government revenue improvement to address municipal revenue challenges. According to the findings, South African municipalities are demonstrating chronic signs of fiscal stress which can potentially cripple the entire local government

system. Own revenue is being rapidly replaced and eroded by national transfers and a combination of growing inability and unwillingness to pay. Recognising these problems, municipalities have begun utilising remedial tools such as revenue enhancement programs which have the potential to augment municipal revenue in a substantial manner. However, owing to misdiagnosis of municipal challenges, actual revenue enhancement programs are often carried out to deal with issues that are out of sync with the factors that would ordinarily justify revenue enhancement. For instance, it emerges that negligible fiscal effort is a predictor of fiscal stress in most cases. As a result, a significant proportion of the programs conducted register minimal success, yet with maximum inputs. The chapter then makes recommendations so as to improve the general performance of municipalities with respect to revenue enhancement and collection.

Chapter 5 by Jugal Mahabir reviews the Local Government Equitable Share formula. The constitution, economic fundamentals and other policies are clear on the mandate and role of the Local Government Equitable Share and what needs to be funded. The various free basic services policies provide a basis for the required minimum level of services to be funded by the Local Government Equitable Share in order to ease the strain on municipal budgets. The chapter concludes that the formula in general attempts to adhere to most of the basic theoretical and legislative elements required of such a formula. The analysis of the structure of the formula leads the author to conclude that government appears to have adopted the expenditure equalisation framework in that the formula attempts to estimate and fund the potential fiscal gaps that exist in municipalities. However, the author points out that accurate measurement for expenditure needs and fiscal capacity are pivotal in developing a coherent equalisation framework. The current cost or subsidy estimates used in the formula have no theoretical or empirical basis that efficiently reflects the expenditure pressures faced by municipalities and local government in general. This argument is mirrored in the measurement of fiscal capacity, that is, the revenue raising component.

Sasha Peters and Tebogo Makube argue in Chapter 6 that governments can address the challenge of poor service delivery performance in numerous ways. A key consideration, and what determines how well a chosen reform will work, is whether the nature and root cause of poor performance has been properly diagnosed and whether the solution is geared at addressing the identified challenges. Observing a myriad of interventions by national government to address service delivery challenges at local government level that have taken the form of legislative amendments such as the municipal structures and systems acts, policy reviews, operational and management rationalisation efforts and the Constitution Seventeenth Amendment Bill, the authors argue that government must acknowledge that there are costs and benefits associated with rationalisation, corporatisation or regionalisation of municipal services. This has constitutional, financial, economic and accountability implications. They caution that before any move can be taken to amend municipal functions as listed in the Constitution, the root cause of poor service delivery performance must be properly diagnosed. Some of the reasons may not necessarily relate to the location of a function and thus focusing on function shifts may not produce the desired result. Special consideration should be given to examples of good practice that may exist, and which may be potentially adversely affected by restructuring. In any restructuring efforts, government must consider local government concerns about loss of control, as well as concerns of civil society and organised labour, in order to realize the potential improvements in consolidating municipal services.

The volume concludes with an insightful overview Chapter 7 by Philip van Ryneveld that addresses inter-governmental fiscal issues in urban public transport. There has been a significant increase in public spending on public transport in recent years and the inter-governmental fiscal system has been instrumental in much of this expenditure. Key items discussed include ongoing bus subsidies, the Gautrain, and the new bus rapid transit projects in cities like Johannesburg and Cape Town. All of these are sub-national government projects. The chapter highlights a number of important strategic issues against this background. They include issues of public transport within its urban context, institutional and financial issues. The latter include possible approaches to funding public transport in South Africa and some recommendations around this and further work that requires to be undertaken.

The views expressed in this report are primarily those of the authors and not necessarily those of the Financial and Fiscal Commission. Any mistakes and omissions are the responsibility of the authors.

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CHAPTER 1:

THE GLOBAL ECONOMIC CRISIS, FISCAL FRAMEWORKS AND COPING WITH VULNERABILITIES

Ramos Mabugu*, Servaas van der Berg**, Margaret Chitiga***, Bernard Decaluwé°, Hélène Maisonnave*, Véronique Robichaud°°, Debra Shepherd** and Dieter von Fintel**

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1. INTRODUCTION

Poverty in South Africa is much higher than one would expect in a country with its level of per capita gross domestic product (GDP). There is a high degree of inequality in South Africa, and it has its origins in the apartheid policies of the past. Child poverty, in turn, is still much higher than poverty amongst adults.

This makes it imperative to deal with the phenomenon of child poverty as a specific issue. This is necessary to prevent large numbers of children growing up in dire circumstances that can prevent them from developing their potential. Economically, childhood poverty also leaves a mark in terms of poor human capital and lower productivity in later life, thus creating the risk of a vicious cycle of poverty. To ensure that upward mobility of those born into poor families is possible, South Africa needs to create conditions that will reduce child poverty. Poverty and inequality are also high on the government's agenda as expressed in the constitution and the Medium Term Strategic Framework.

Government has made significant progress towards alleviating and reducing poverty and inequality through rapid growth in government spending on grants and other social programmes from the mid-1980s. The thorough overhaul of tax administration and collection in the second half of the 1990s and sustained positive economic growth from 1994 until 2008 were the main reasons that increased social spending has not caused fiscal problems. The subsequent rapid growth in tax revenues has enabled the government to expand social spending steadily, to reduce budget deficits and the public debt burden during the second half of the 1990s and to keep these aggregates at manageable levels thereafter.

The recent global economic crisis has radically changed the fiscal situation. Government has developed a substantial fiscal stimulus package, supported by a substantial budget deficit, to counter the effects of the crisis. This might have tightened the fiscal space available for social spending and its corresponding fiscal frameworks significantly for the future.

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Up to now, prudent management of the public finances during the crisis has left South Africa in a much sounder fiscal position than many other countries. Nevertheless, fiscal consolidation has become unavoidable. There is little room for introducing costly new social initiatives, especially given that the debt cost of total spending is expected to increase by 0.6 percentage points of GDP. In the longer term, growth in tax revenues will be a key factor in determining the scope for expanding the social expenditure system.

This environment is the one in which the Financial and Fiscal Commission has had to make its recommendations on the 2011/12 Division of Revenue.

This paper reflects on these developments and deals with the effect of the world economic crisis on the economic and fiscal future. The paper starts by looking at the background context to child poverty in South Africa, including a profile of child poverty and a brief description of the Child Support Grant, the main instrument used to combat child poverty in South Africa. This is followed by the macro-economic analysis, simulating the impact of two scenarios reflecting possible magnitudes of the economic crisis on key economic variables. The subsequent section then assesses what the possible impact could be on money-metric child poverty, whilst the final section attempts to place all of the preceding in context. To keep the text as reader-friendly as possible, it is largely kept free of technical analysis and description of the methodology, some of which are dealt with in appendices.

2. BACKGROUND TO THE ECONOMIC CRISIS AND CHILD POVERTY IN SOUTH AFRICA

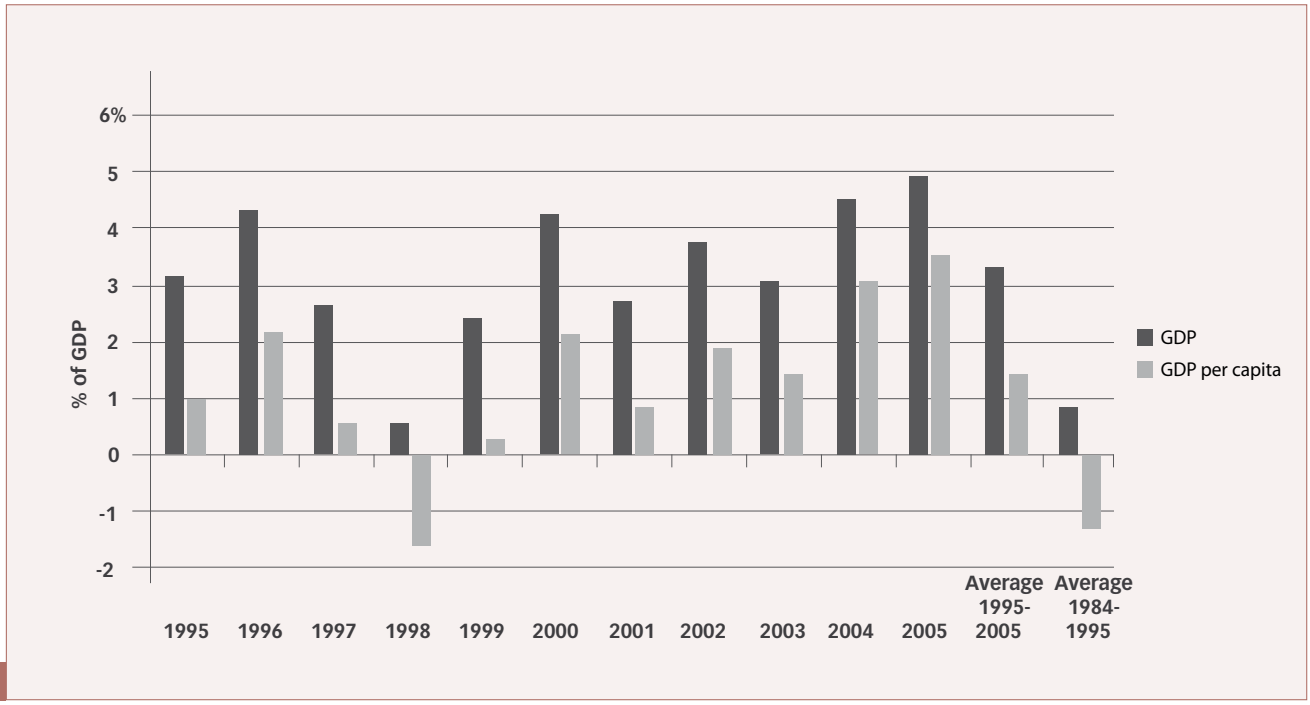
2.1 The economic crisis

The Commission based its economic analysis on a dynamic computable general equilibrium (CGE) model to evaluate the effects of the international crisis on the South African economy. The scenario analysis allows for the possibility of a moderate and a severe economic outlook.

The global financial crisis and resulting economic crisis have created widespread concern around the world. The global crisis is having serious impacts on developing countries, particularly in Sub-Saharan Africa (SSA). South Africa has not escaped the effects of the global recession. Since the last quarter of 2008 the economy had been in decline, export earnings fell and jobs were lost. Consequently, the last two quarterly GDP figures have illustrated a decline in growth, confirming the country's first recession in 17 years. The demand for mining products reduced overnight. Manufacturing activity declined significantly. Job losses are expected to be high due to retrenchments in these sectors, as manufacturing alone accounts for 16% of GDP and employs 14% of workers. By the end of the third quarter of 2009, cumulative job losses over the previous year had mounted to almost one million. Job losses will have a negative impact on demand for goods and services. Banks are experiencing a huge increase in bad debts resulting from massive lending prior to the introduction of the National Credit Act and the effect of the credit crunch. They are now unwilling to grant new loans. The economic downturn also reflected in gross domestic fixed investment. The real value of recorded building plans passed by larger municipalities (at constant prices) between January and September 2008 decreased by 14.9%, or R5.4 billion, compared with the same period for 2007.

The economy seemed to emerge from recession in the third quarter of 2009, but job losses, which usually lag economic activity, are still continuing. Nominal salary increases will be smaller than anticipated despite stubbornly high inflation. House prices are also only starting to record positive growth again.

Until recently, the economic performance of post-apartheid South Africa has been relatively impressive, averaging 3.3% growth rate for real GDP and 1.4% in per capita terms for the period 1995 to 2005.



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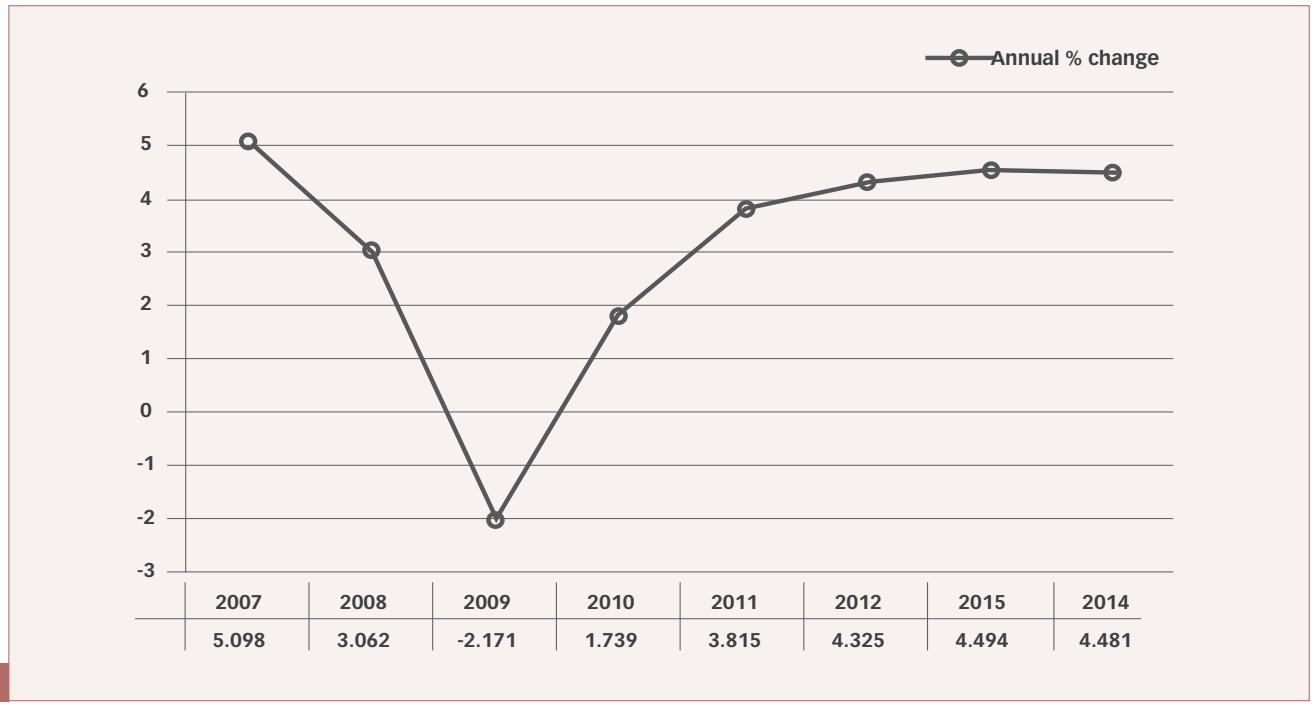
Source: South African Reserve Bank (SARB) database (www.reservebank.co.za).

Figure 1: GDP and GDP per capita growth rates (constant 2000 prices)

The International Monetary Fund (IMF) has recently downgraded its forecasts for economic growth in advanced economies quite dramatically. To the extent that South Africa's historical economic growth rate has been very closely linked to that of the world economy since 1993/94, such downward revisions in the forecasts for the world economy imply reduced domestic growth.



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Source: IMF, World Economic Outlook Database, October 2009

Figure 2: IMF Growth Projections for South Africa (estimates start after 2008)

In this context, it is likely that poverty has been increasing and that this increased poverty affected children. The concern is around the extent to which the crisis will undermine gains in child well-being in recent years, as well as risks to the achievement of child-related targets of the Vision 2014 and the Millennium Development Goals (MDGs). Thus, the crisis will further compound challenges in meeting MDGs and realising the rights of the child. It will be important to consider how these effects are mediated via mechanisms that may partly protect children from such shocks.

2.2 A profile of child poverty in South Africa

To derive a profile of child poverty, the commission set a poverty line at the 40th percentile of household per capita income in the Incomes and Expenditure Survey (IES) of 2005[1]. Naturally, there are important issues about the appropriate poverty line and about whether it would make a difference if some adult equivalent scale were used instead of per capita income. However, we have dealt with that in another work (Streak, Yu & Van der Berg, 2009). We concluded that the profile of poverty is not really affected by using any adult equivalent scale and that there is stochastic poverty dominance across most dimensions[2]. In other words, the profile of poverty would not change much if an alternative poverty line or an alternative poverty measure to the headcount ratio were used. Therefore, using per capita income rather than adult equivalent income shows that our findings on the insensitivity of the child poverty profile to the choice of adult equivalence scale support the argument of Woolard and Leibbrandt (2006). This is that one may as well use the simple per capita method for profiling poverty in South Africa and testing its robustness to alternative poverty lines.

Table 1 presents the profile of child poverty. Poor households tend to be larger. Therefore, the poverty headcount for the population as a whole is 52.9%. However, poorer households have a disproportionate number of children: 65.5% of children are amongst the poor (this converts into 11.8 million poor children)[3] as against only 45.2% of the adult population. Moreover, similar differences between adult and child poverty apply for the depth and severity of poverty: In fact, the proportional differentials are larger, indicating that children's share of the poverty headcount rises if lower poverty lines are used because of more severe poverty amongst children compared to adults.

[1] *The line is arbitrary, but agrees with what a number of other authors have used, particularly in assessing the effect of the adult equivalence scale.*

[2] *The exception is the provinces. There is no stochastic poverty dominance across this dimension, thus there are some provinces where the poverty ranking*

With respect to age, Table 1 illustrates that the poverty headcount and poverty shares based on the headcount are highest amongst the youngest age cohort, followed by children aged between 5 and 14 and between 15 and 17. The profile also confirms the racial dimension of child poverty, which is much higher amongst black children and high amongst coloured children[4]. The poverty depth and severity measures are also far higher for children from these groups. There is little gender difference in child poverty. Child poverty is still more prevalent, deeper and more severe in rural areas – nearly two thirds of children identified as poor live in rural areas. Its rural face is the most prominent feature of child poverty in South Africa, and this especially applies when the depth and severity of poverty are considered: the rural poor are further below this poverty line than the urban poor are, and the share of the rural child poverty headcount thus rises as the poverty line is set lower. There is large variation across provinces in child poverty.

Though the poverty incidence is highest in Limpopo, the poverty share of the more populous provinces is larger. Kwazulu-Natal and the Eastern Cape together have 46% of the poor children. The rankings for the poverty severity measure are slightly different from those on the depth and headcount measures. This indicates that stochastic poverty dominance does not always hold. Kwazulu-Natal has the most severe poverty, while it has the second highest poverty depth and the third highest poverty headcount. Limpopo ranks third in terms of the severity and depth measures, but first on the poverty headcount measure. Western Cape is the best performer on all three of the Foster-Greer-Thorbecke (FGT) poverty measures – it has the lowest child poverty headcount rate (P0)[5], the lowest depth of child poverty (also known as the child poverty gap ratio [P1])[6] and the lowest child poverty severity ratio (P2)[7].

[3] *This level, though somewhat arbitrary considering the equally arbitrary choice of the poverty line, can be seen in the context of findings based on earlier data sets that used similar poverty cut offs. The National Institute for Economic Policy (NIEP) measurement study (1996), which is based on the Project for Statistics on Living Standards and Development (PSLSD) of 1993, and which used the old Organisation for Economic Co-operation and Development (OECD) Adult Equivalent Scale (AES), found the poverty headcount amongst children aged between birth and 4 years of age to be 60%. Woolard (2002), using the October Household Survey (OHS) 1999, a welfare indicator of adult equivalent income and a Cutler and Katz (1992) type AES with the child cost parameter set at 0.6 and economies of scale parameter at 0.9, found it to be 59.2% amongst children aged between birth and 17 and 59.3% amongst children aged between birth and 6. Thus the poverty findings here are not all that different from those in previous studies, whereas there is somewhat less child poverty if the suggested Statistics South Africa (StatsSA) poverty line is used.*

[4] *Defining households by colour is one of the popular ways used in South Africa. Including the race-based definition is rooted in the apartheid period policies. The 'black' people of South Africa are natives of the country. They include mainly the Zulu, Xhosa, Ndebele, Swazi, Sotho-Tswana, Tsonga and the Venda language groups. 'White' people are mainly descendents of the colonial immigrants of Dutch, German, French Huguenot and British origin. 'Coloureds' are most commonly people of a mixed race or descendants of the Khoi and San. 'Asians' are mainly people of Indian descent (South Africa. Info, 2007).*

[5] *The headcount ratio, P0, is the number of poor below the poverty line out of the total population.*

[6] *The poverty gap is defined as the average poverty gap in a population as a proportion of a poverty line. It accounts for the intensity of poverty, meaning how poor the poor are.*

[7] *The severity of poverty gives more weight to the lowest incomes.*

Table 1: Poverty profile for children and adults using per capita income as the welfare measure and with the poverty line set at the 40th percentile of households

	Child poverty (0-17 years)					Adult poverty		
	P0 Poverty headcount rate			P1 Poverty depth measure	P2 Poverty severity measure	P0 Poverty head-count rate	P1 Poverty depth measure	P2 Poverty severity measure
	Rate (%)	Share (%)	Number			Rate (%)		
Age								
0-4	66.1	26.0	3 066 509	0.336	0.213			
5-14	65.7	56.5	6 681 507	0.343	0.202			
15-17	63.8	17.5	2 067 609	0.332	0.203			
0-17 (all children)	65.5	100.0	11 822 544	0.328	0.205			
18+ (all adults)						45.2	0.213	0.126
Racial group								
Black	72.5	93.9	11 100 826	0.375	0.232	54.4	0.261	0.156
Coloured	41.3	5.3	623 412	0.167	0.093	30.1	0.110	0.057
Asian	24.2	0.7	76 137	0.093	0.052	13.7	0.049	0.027
White	2.0	0.2	18 081	0.012	0.008	1.2	0.006	0.004
Gender								
Girls	65.4	49.1	5 819 410	0.336	0.204	39.7	0.238	0.142
Boys	65.6	50.9	5 985 265	0.332	0.206	49.9	0.184	0.109
Urban/Rural location								
Rural	82.8	63.3	7 376 451	0.446	0.280	69.0	0.344	0.209
Urban	48.6	36.7	4 442 491	0.226	0.133	31.7	0.139	0.080
Province								
Western Cape	37.9	5.0	587 580	0.153	0.085	25.1	0.094	0.048
Eastern Cape	77.9	20.1	2 378 696	0.415	0.258	59.8	0.292	0.174
Northern Cape	69.1	2.0	235 269	0.333	0.195	48.5	0.219	0.126
Free State	63.6	5.9	695 166	0.294	0.171	44.2	0.193	0.110
Kwazulu-Natal	75.0	25.2	2 975 734	0.413	0.266	53.8	0.279	0.175
Northwest	66.2	8.1	962 355	0.345	0.216	49.3	0.239	0.143
Gauteng	41.3	9.6	1 138 511	0.186	0.110	26.0	0.111	0.065
Mpumalanga	66.4	7.2	846 494	0.322	0.187	48.6	0.218	0.123
Limpopo	78.0	16.9	2 002 739	0.400	0.242	65.6	0.313	0.183

Source: Own calculations using income and expenditure of households (IES) 2005 data

Testing the robustness of the child poverty profile to select the poverty line found the age, race, gender, and urban/rural dimensions to be robust. In the poverty-relevant range, there is clear first order dominance in each of these cases. This implies that the poverty rankings are invariant to the poverty line chosen and to whether the poverty measure used is P0, P1 or P2. Figure 3 shows that the results for the provincial rankings are slightly more complex and hence also the provincial cumulative density functions or curves (CDFs) or poverty incidence curves. The CDF shows the population arranged from poorest to richest using the selected poverty measure and expresses those below any possible poverty line as a percentage of the total population (Deaton, 1997). In other words, it shows the headcount ratio of poverty at different poverty lines. It is therefore also known as a poverty incidence curve. Regardless of where the poverty line is drawn, Western Cape and Gauteng have the lowest child poverty headcount rates. However, the Western Cape has the lowest headcount up to an income level of approximately R6 000 per capita, per annum. Thereafter, however, there is a change. Except for the very low poverty lines, three provinces – Kwazulu-Natal, Limpopo and Eastern Cape –

have the highest poverty headcounts. There is also a shift in the rankings of the weakest performers when alternative poverty lines are selected.

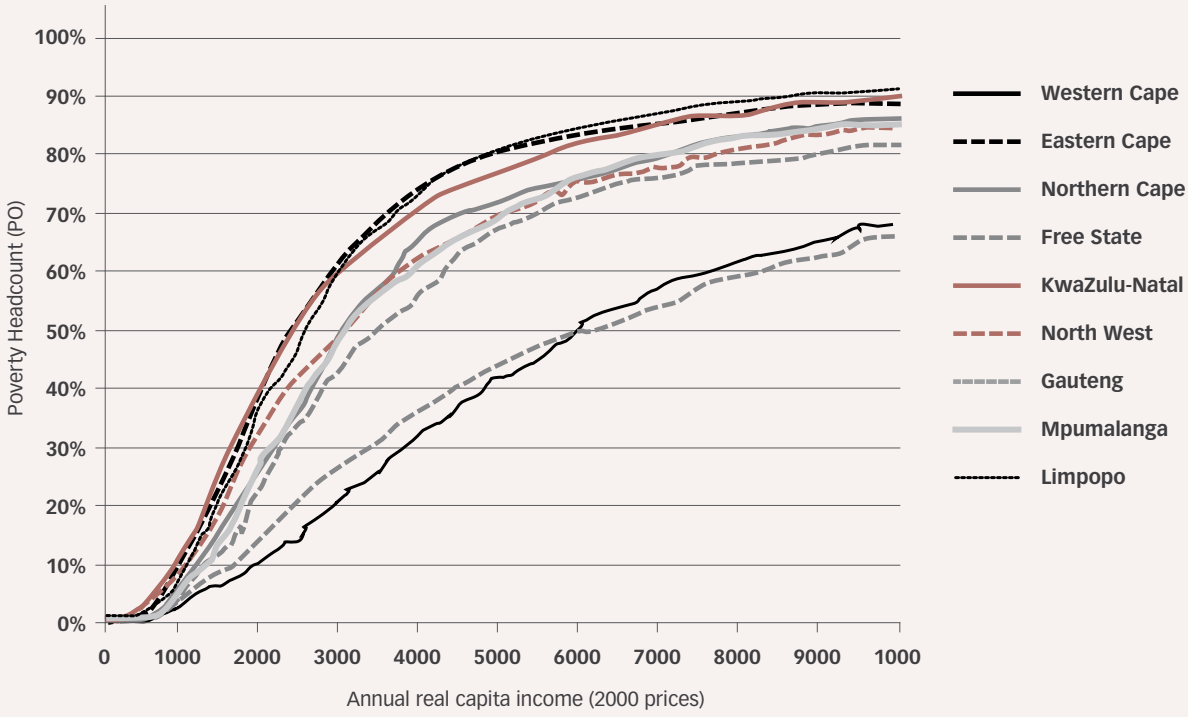

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Figure 3: P0 (0-17 years) by province, per capita method

Where one CDF consistently lies above another, there is first-order stochastic poverty dominance. This implies that the ranking of poverty between two provinces remains unchanged whatever poverty line is used and whichever of the three FGT poverty measures (P0, P1 or P2) is analysed. The intersections of the lines implies that both the poverty line chosen and whether the poverty measure used is the headcount, depth or severity of child poverty affect the ranking of child poverty. This confirms the results from Table 1. It does matter which measure is used, and this analysis implies that the choice of the poverty line itself is important for ranking poverty between provinces. At very low poverty lines, the severity of child poverty that Kwazulu-Natal experiences will be reflected even in the headcount index. However, if poverty lines are set high, there is a danger of underestimating Kwazulu-Natal's child poverty share when focusing on the headcount rate only.

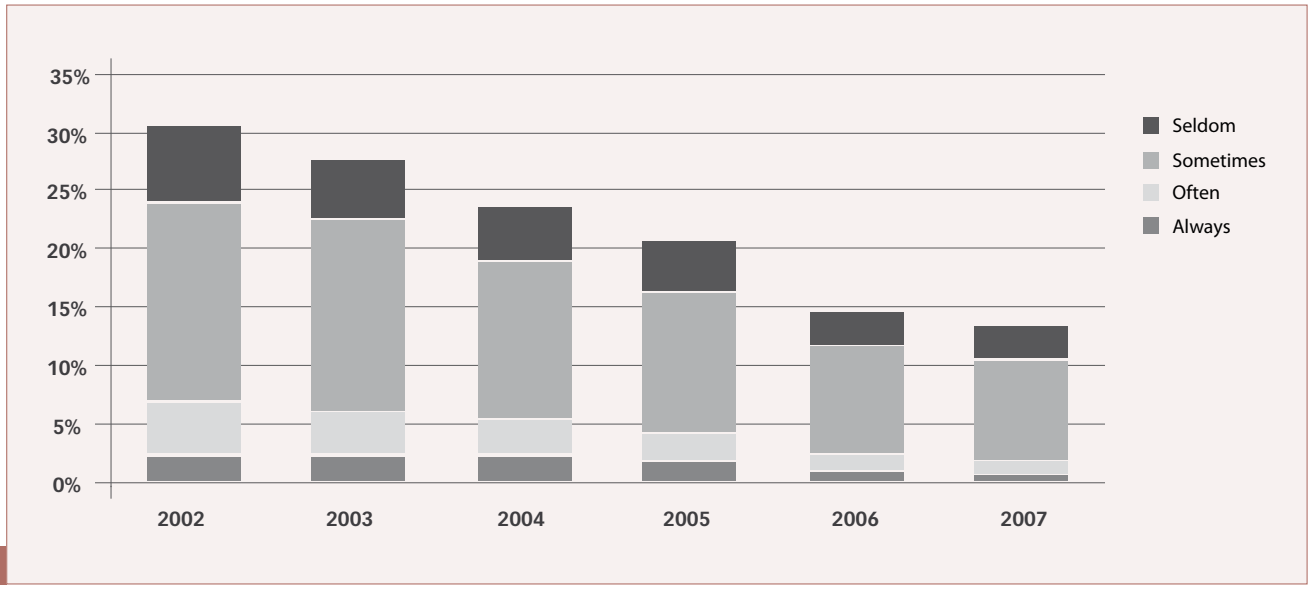
The profile of child poverty in South Africa presented here based on IES 2005 suggests that child poverty (at 65.5%) remains more extensive than poverty amongst the population as a whole (52.9%) and poverty amongst adults (45.2%), if the chosen poverty line includes 40% of poor households. This confirms that children are found more often in poorer households. Moreover, despite the massive injection of transfers to households with poor children through child support grants, poverty amongst children remains substantial.

The child poverty profile shed new light on the age dimensions of child poverty. The headcount, depth and severity of poverty are all higher amongst children in the youngest age cohort (birth to 4) followed by children aged 5 to 14, followed by those aged 15 to 17. This is surprising because the child support grant did not extend to the oldest group at the time of the survey. One would expect households containing only older children to experience more poverty.

2.3 Trends in child poverty and the role of social grants

There is strong evidence that poverty had been declining substantially since 2000, and this decline was largely caused by the expansion of social grants, in particular the Child Support Grant. For instance, Leibbrandt, Woolard and Woolard (2009) summarise the evidence regarding poverty trends by saying that poverty had declined and

that the social grants had largely been driving this process. But non-comparability between surveys obscures the measurement of poverty trends. A non-money-metric measure providing some evidence of the decline in poverty is child hunger. Figure 4 shows that child hunger, as reported by respondents in large annual household surveys, has been on a consistent downward trend, and this also applies to the severity of poverty; the more severe measures, of always or often experiencing hunger, also dropped strongly.



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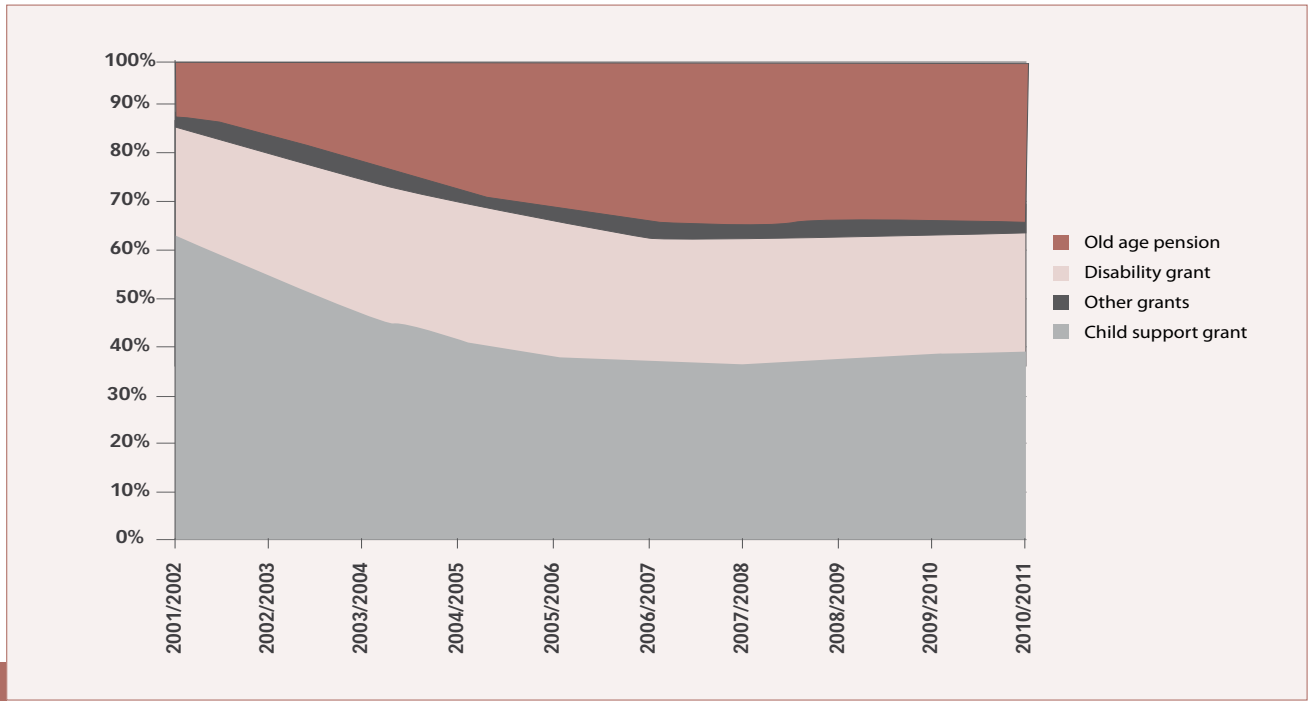
Source: Own calculations from General Household Surveys

Figure 4: Households that reported that children went hungry in the past year

The Child Support Grant, introduced in 1998, expanded rapidly. By 2001 April, approximately 1 million people received the Child Support Grant; this had increased more than eight-fold by April 2008. Figure 5 confirms that the child support grant is the most rapidly growing grant type.



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Source: National Treasury website

Figure 5: Percentage contribution of spending on each type of social grant to total spending on social grants

It is thus worthwhile to investigate the role of the grant system in driving down poverty. Table 2 and Figure 6 show that coverage was expanded in two ways; on the one hand, coverage of those in the age-eligible group grew over time, and on the other, age-eligibility was increased from initially those below eight years of age to those below 15 years[8]. There has been a continuous upward trend in the percentage of age-eligible children receiving Child Support Grant (i.e., in the coverage rate), from 27.0% in 2003 to 45.6% in 2006. The coverage rate is more than 50% in 2006 in Eastern Cape, Mpumalanga and Limpopo, but the lowest in Western Cape and Gauteng, reflecting the differences in the preponderance of poverty. Coverage in Western Cape has remained at about 25% throughout the years, while there has been a slight upward trend in Gauteng. In contrast to these provinces, coverage in provinces where one would expect most poor children to be was initially low due to slow roll-out, but rose very rapidly (e.g. from less than 26% to over 56% in Eastern Cape). Amazingly, the programme also succeeded in expanding coverage to be greatest in rural areas, where the poor are concentrated, something seldom achieved in social programmes in developing countries.

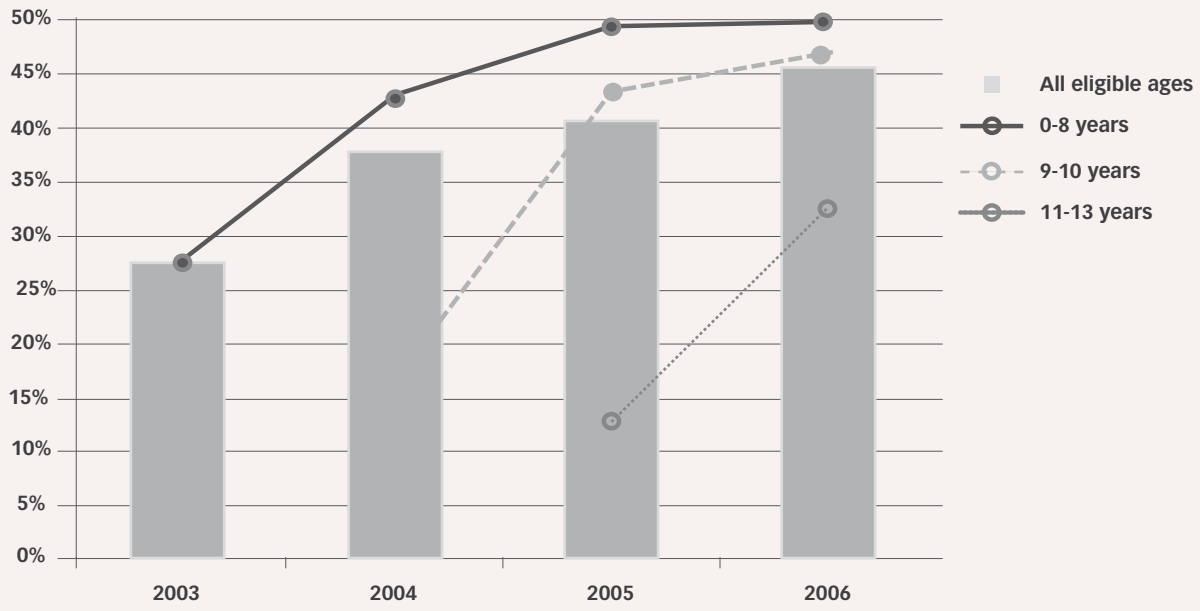
Table 2: Number of individuals and households receiving Child Support Grant

2

GHS	Eligible age	Recipients of Child Support Grant			Population of eligible age [D]	Coverage rate [A]/[D]
		Of eligible age [A]	Not of eligible age [B]	Total [C]		
Individuals						
2003	0-8 years	2 241 760	321 534	2 563 294	8 299 039	27.01%
2004	0-10 years	4 201 481	175 526	4 377 007	11 100 241	37.85%
2005	0-13 years	5 702 793	139 043	5 841 836	14 052 170	40.58%
2006	0-13 years	6 459 760	265 579	6 725 339	14 152 509	45.64%
Households						
GHS	**Eligible age**	**Number of households containing at least 1 child in eligible age**	**Number of households containing no children in eligible age**	**Total**	**Number of households containing at least 1 child in eligible age**	**Coverage rate**
2002	0-6 years	845 577	79 725	925 302	4 329 616	19.53%
2003	0-8 years	1 830 602	42 599	1 873 201	5 141 072	35.61%
2004	0-10 years	2 776 295	29 621	2 805 916	6 054 697	45.85%
2005	0-13 years	3 289 555	20 455	3 310 010	6 701 973	49.08%
2006	0-13 years	3 504 585	35 843	3 540 428	6 884 332	50.91%

Source: Statistics South Africa General household survey (various issues)

[8] *The age-eligibility rules for the CSG have been changed in gradual steps. When it was introduced, care-givers who met the means test criteria could receive the grant until the child turned 7. This was expanded to children under 9 years in 2003, to children under 11 years in 2004, to children under 14 in 2005, and it will be further extended to children under 15 in 2009 (see Tables 7 and 8). According to the data from the GHS surveys, the coverage of individual children in the age-eligible group increased from 27% in 2002, to 46% in 2006, while for households with age-eligible children, coverage increased from almost 20 to 51% in the same period (Table 8). Higher coverage with an unchanged means test in nominal terms (implying that in real terms the means test became increasingly strict over the period concerned) implies that the expansion was largely the result of increased roll-out of the grant to a growing proportion of those qualifying for it.*



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Source: Own calculations from General Household Surveys

Figure 6: Child support grant coverage rates for different eligible age groups

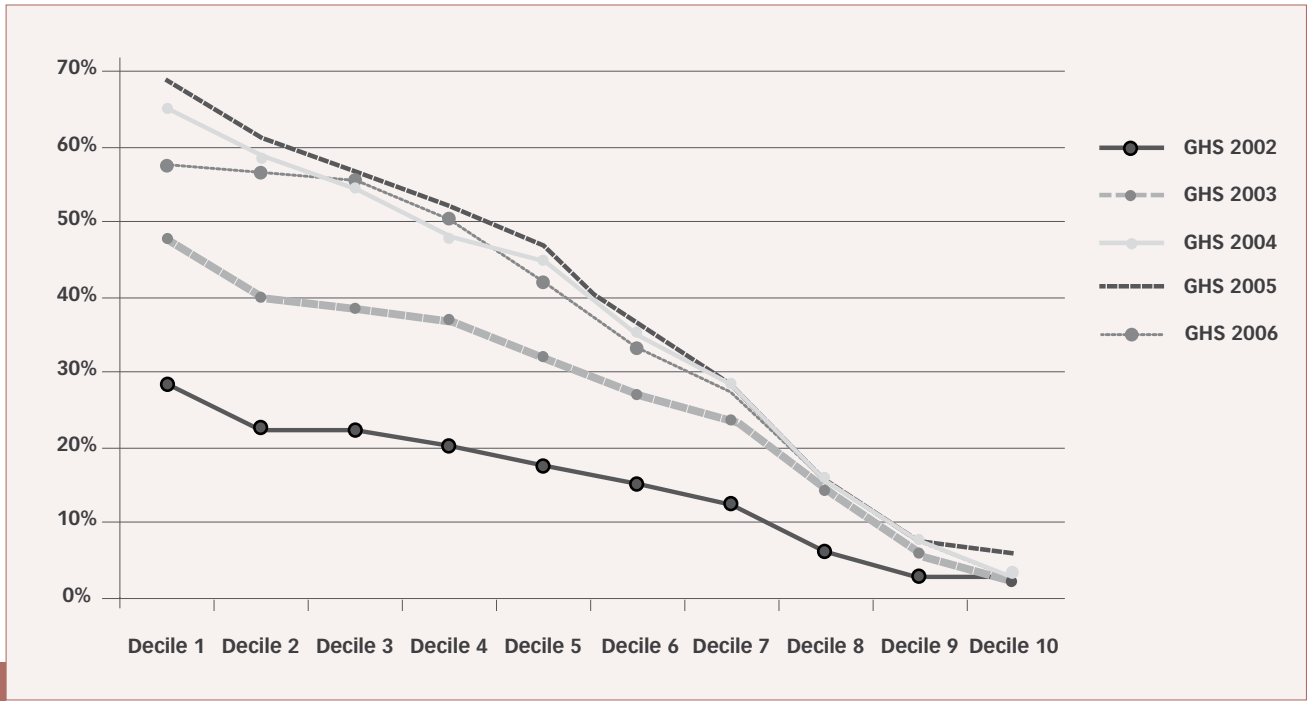
Table 3: Percentage of eligible children receiving Child Support Grant by demographic characteristics

3

	GHS 2003	GHS 2004	GHS 2005	GHS 2006
All	**27.0%**	**37.9%**	**40.6%**	**45.6%**
Province				
Western Cape	23.5%	26.6%	25.4%	27.5%
Eastern Cape	25.8%	34.0%	46.8%	56.3%
Northern Cape	14.0%	34.6%	37.2%	39.0%
Free State	34.3%	42.9%	47.0%	49.4%
Kwazulu-Natal	21.6%	33.5%	38.4%	43.5%
North West	29.6%	45.9%	40.6%	48.4%
Gauteng	19.3%	26.8%	29.1%	32.2%
Mpumalanga	38.3%	48.4%	47.9%	54.8%
Limpopo	39.7%	55.9%	51.4%	54.2%
Area type				
Urban	21.9%	29.9%	n/a	n/a
Rural	31.7%	44.7%	n/a	n/a
Gender				
Male	26.6%	37.4%	40.4%	45.1%
Female	27.4%	38.4%	40.9%	46.2%
Race				
Black	30.8%	43.0%	45.5%	51.1%
Coloured	16.0%	24.1%	25.0%	26.6%
Indian	2.3%	5.8%	12.6%	16.6%
White	0.8%	0.3%	0.8%	0.8%

Note: Area type is no longer available from GHS2005.

Figure 7 shows that targeting is fairly good (a far higher proportion of age-eligible children receive the grant in the poorest deciles), and also that the progressiveness has increased with increased roll-out over time. However, there are still major errors of exclusion: Many age-eligible children in the lowest wealth deciles do not receive the grant.



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Source: General Household Survey

Figure 7: Child Support Grant roll-out: Progression over time in Child Support Grant coverage rates in households by earnings decile[9]

More than 50% of Child Support Grant recipients come from female-headed households. Coverage rates for male and female headed households are quite similar. Although female headed households are by far the minority amongst all household, they constitute a majority of households with age-eligible children.

It has been shown that the expansion of the social grant system, in particular the Child Support Grant, has been instrumental in reducing poverty in the period after 2000 (Van der Berg, Louw & Yu 2008). This does not imply that there are no potentially important incentive effects of the Child Support Grant which may undermine its positive influence on poverty. Potentially, incentive related to the grant structure and rule can affect work effort, household formation, the location of children (where households are loosely structured), and even fertility, and grants come at a large fiscal cost. Though some doubt the magnitude of these negative incentive effects, they are nevertheless important to consider. A simple way of illustrating that these effects could be operating at the margin is to ask what would happen if the grant were to be 10 or even 20 times as large: Would it indeed affect fertility? In the context of substantial poverty, there can be little doubt that the answer to that is yes: Some poor women would be tempted to have more children, or would act less to avoid having children. The question is thus not whether grants can have these perverse incentive effects, but rather how large these are and how they weigh up against the positive impact on poverty, and particularly poverty of children. Our assessment, based on the available literature, is that the grants can indeed be seen as beneficial, in terms of their impact on child poverty. Yet at the same time one must doubt the fiscal sustainability of any attempt to further expand the grants. Such doubts arise from a combination of reasons. Firstly, government's fiscal position has worsened as a result of the economic crisis. Secondly, changes in the age criteria for the child support grant and old age pension have expanded the number of age-eligible. Thirdly, improved administration and roll-out have brought grants to many who were formerly not reached by the grants, and there are still large numbers who qualify yet do not currently receive the grant, so numbers are expanding. Finally, spending on social grants (3½ of GDP) is already quite high in international perspective (almost twice the levels of other developing countries with large grant systems). Government has also expressed its intention of limiting further grant expansion

and focusing on other poverty-alleviation measures.

The grants have been reducing poverty in a time of good economic growth. However, the disruption to growth and the world economic crisis may have reversed some of the poverty improvement. However, a hypothesis of the present research is that the grants also provide a measure of protection against economic shocks. The logic is simply that grants are a form of income diversification, and that like all forms of such diversification, it offers protection for the beneficiaries against risks of income loss, e.g. from losing employment. Thus one could consider the Child Support Grant an important factor ameliorating the impact of the economic crisis on child poverty.

The next part of the paper turns to the macro-economy, to assess how great the impact of the economic crisis may be on GDP, employment and consumption. This will be linked in the subsequent section with the micro-simulations to assess the impact of the economic crisis on poverty and specifically child poverty.

3. THE ECONOMY-WIDE IMPACT OF THE ECONOMIC CRISIS[10]

3.1 Brief overview of data, assumptions and methodology for the macro-model[11]

The 2005 Social Accounting Matrix (SAM) is used for the economy wide modelling of the crisis. The SAM has 54 activities and 54 commodities; two broad factors, labour and capital; four institutional sector accounts (households, enterprises, government and the rest of world); and two saving and investment accounts (change in inventories and gross domestic fixed investment (GDFI)). Trade, demand, industry production and household demand parameters are borrowed from other sources and unemployment rates drawn from the Labour Force Survey. Import penetration and export intensity rates reflect existing trade patterns (see Appendix Table A1). Gold (98% of its production), Scientific equipment (84%) and Machinery and equipment (67%) heavily rely on exports. A decrease in world demand or in international prices for these commodities will thus have a huge effect. In the same way, some sectors depend heavily on imports, such as Radio and equipment (39%), or Other mining (30%). South Africa exports most of its mineral and precious metals, together representing 40.9% of total exports. An external shock on mineral prices would thus have strong effects on the economy.

In 2005 South Africa had anticipated long run GDP growth rates of 4.5% per year. This forms the basis for the Business As Usual (BAU) simulation. To reach this growth, we add a total factor productivity parameter. Moreover, information on investment by destination for all the sectors as well as depreciation rates by activities from the South African Reserve Bank has been used. Statistics South Africa estimated that population will grow at a rate around 1%. Calibrating the BAU on these "real" data, capital grows faster than labour, so the BAU reflects a decrease in unemployment. Moreover, as production factors become more efficient, prices decrease (in real terms). These pieces of information are important in order to understand the results.

To evaluate the impacts of the world economic crisis on South Africa, we use the dynamic Poverty and Economic Policy (PEP 1-t) standard model by Decaluwé et al (2009), changing several assumptions to better reflect the South African economy. The model has two production factors, capital and labour; the latter is disaggregated into informal, unskilled, semi-skilled and highly skilled workers.

The production function technology is assumed to be of constant returns to scale and is presented in a four-level production process. At the first level, output is a Leontief input-output of value added and intermediate consumption. At the second level, a CES (Constant Elasticity of Substitution) function represents the substitution between composite labour and capital. At the third level, composite labour demand is also a CES function between composite skilled and composite unskilled labour. Note that the composite skilled demand is a CES with a low elasticity between skilled and semi-skilled workers, reflecting the fact that it is difficult to substitute semi-skilled for skilled workers. We also use a CES to describe the composite unskilled labour demand between informal and unskilled workers. Figure 8 gives the value added structure.

[9] *Note that the GHS does not provide full information on income. Household who has some earnings from labour income were then ranked by this measure. This would not perfectly match rankings based on all income information, the more appropriate ranking, but there is a strong association between these two rankings. Using rankings based on earnings allows one to track the pattern of targeting over time from the annually available GHS surveys.*

[10] *We are grateful to Andre Lemelin for his comments on an earlier version of this section.*

[11] *For more details, see the Methodological Annex.*

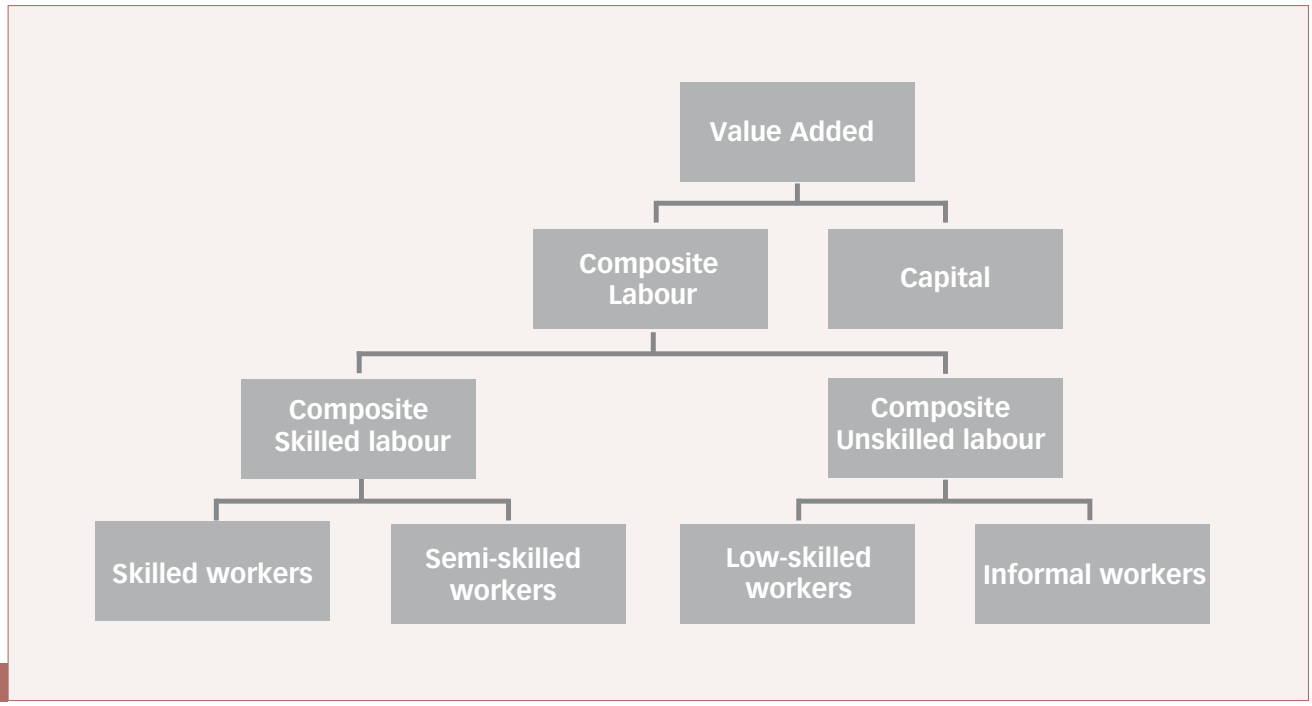

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Figure 8: The Value Added Structure

South Africa faces high unemployment, but unions are very strong. As a result, wages and salaries are strongly rigid downwards. To take this rigidity into account, we assume that wages cannot decline. Thus, if production decreases, producers will not be able to decrease their wages below initial levels, and will therefore have to retrench some workers.

South Africa faces high unemployment, but unions are very strong. As a result, wages and salaries are strongly rigid downwards. To take this rigidity into account, we assume that wages cannot decline. Thus, if production decreases, producers will not be able to decrease their wages below initial levels, and will therefore have to retrench some workers.

As South Africa is a small country, world prices are assumed fixed. However we assume that South African exporters face a less than infinite foreign demand equation for exports. In order to increase their market share on the world market they need to reduce their FOB prices for exports. Factor supplies are fixed in the first period and then grow at the population rate for labour force and using an accumulation equation for capital. Transfers between institutions and government consumption in volume are fixed at the base year and then grow at the population rate. We assume that the rest of the world's savings is a fixed proportion of GDP and we do not allow South Africa to borrow further from the rest of the world[12].

As the dynamic CGE model does not take into account financial flows, it cannot directly capture the financial consequences of the world economic crisis on the South African economy. However the economic consequences of the slowdown of the world economy will be captured through the real side of the CGE model. The main transmission channels of the world crisis to developing countries are a decrease in export demand and export prices, a decrease of Foreign Direct Investment and a tightening of the capacity to finance a current account deficit, a decrease in remittances and a drop in tourism revenues. However, for South Africa, the latter two channels are not relevant: South Africa does not receive substantial household to household remittances from abroad, and tourism has not decreased[13]. Thus we will focus on the external trade and foreign financing of domestic firms.

[12] *Fixing the current account balance as a proportion of GDP implies that South Africa cannot borrow from abroad as much as it wants. This thus rules out an endogenous current account balance.*

[13] *We do not consider tourism because essentially, a drop in tourism has not been noticed because South Africa organized many sports events in 2009.One factor in the steady performance of tourism in 2009 was that many sports events were organised in South Africa (the Confederation Cup, British Lions' Rugby Tour, Super 14 Rugby and preliminary organisation for the World Cup). Note also that the term "remittances" as used here refers to international remittances, of which transfers of investments are dominant. Thus the remittances included are transfers from the rest of the world to households. On the other hand, we do not take local remittances (from urban households to rural households) directly into account. They are taken into account in the model as transfers from households to households, and they depend on households' income.*

An innovation of our study is that we split the economy into four different groups of activities. Each group is defined by its degree of dependency/exposure to the global crisis and is assumed to be affected differently by the crisis. The four groups are defined as follows (see Table A2 in Appendix A).

Unaffected sectors (Group 1): It is assumed that these sectors will face neither a reduction in foreign demand nor a reduction in international prices. Basically, this group 1 consists of gold, food and beverage commodities.

Weakly affected Sectors (Group 2): These sectors are not heavily dependent on foreign trade and not closely related to other sectors. Found here are agriculture, clothing and wood.

Mildly affected sectors (Group 3): Like the previous group, these sectors are not heavily dependent on foreign trade but are closely linked to other sectors. Such sectors will react to a reduction in consumption, investment expenditures or reduction in demand for intermediate goods. This group includes most transports products, trade and construction.

Strongly affected sectors (Group 4): These sectors are closely linked to international markets either on the export or the import side. Here we find fossil fuels, other mining, machinery and equipment.

Mildly affected sectors represent around 60% of total output, while strongly and mildly affected sectors together represent 80% of total exports.

Two scenarios are presented over and above the business as usual (BAU) scenario that are distinguished by the magnitude of the recession (severe or moderate). The moderate scenario is consistent with the view that growth is beginning to pick up, albeit moderately, from the end of 2009 onwards. We also model a severe scenario that reflects a protracted slow global growth era and implies tight public budgets for some time to come[14]. It is important to investigate what impact that scenario might have on the sustainability of interventions to protect children and poor families.

The next set of tables presents the details of the proposed scenarios.

Table 4: Moderate scenario

Sectors	Changes in world prices of exports and imports	Changes in world demand for exports
Weakly affected	-2% in 2008 and 2009	
Mildly Affected	-3.5% in 2008-2009 and +2.1% in 2010	-2% in 2008-2009, and +2.1% in 2010
Strongly affected	-5% in 2008-2009 and +2.1% in 2010	-2% in 2008-2009, and +2.1% in 2010

Table 5: Severe Scenario

Sectors	Changes in world prices for exports and imports	Changes in world demand for exports
Weakly affected	-10% in 2008 and 2009	
Mildly Affected	-15% in 2008 and 2009	-10% in 2008-2009, and +1% in 2010
Strongly affected	-20% in 2008 and 2009	-10% in 2008-2009

In terms of foreign financing of domestic firms, we assume that foreign transfers to firms decrease by 5% in 2008-2009 and then increase by 2.1% in 2010 in the moderate scenario. In the severe scenario, we assume that it decreases by 10% in 2008-2009 and then increases by 1% in 2010. This reduction corresponds to a tightening of the liquidity available to firms to finance their investment program and has an indirect impact on the current account, as it reduces the financial resources available to finance imports and will require an increase in exports to compensate. After 2010, world prices recover to their BAU values; world demand increases at the population growth rate.

3.2 Results

Given the magnitude of the different shocks each scenario will generate differential outcomes on industries' output, the entire price structure and, consequently, factor reallocation. However, the final impact on households will depend

[14] *F See Tables A4, A5 and A6 in Appendix A.*

on their factor endowments and their sources of income, including transfers, as well as their consumption patterns. These effects are different in the short run compared to the long run and this is partly why dynamic analysis is called for. The following sections discuss in detail the impacts of the price and demand shocks as they channel through changes in macroeconomic variables and the government budget, in sectoral outputs, and the incomes and savings of agents (individuals and firms).

3.2.1 Impact on prices

As mentioned, this CGE model assumes that in order to protect foreign market share, South African exporters must adjust their FOB prices, taking into account prices of competitors and the world elasticity of demand for South African goods. Table 6 summarises the impact of the two scenarios on export prices. As can be seen, there is a huge decrease in exports prices, following the drop in international prices and demand, and the decrease is of course much greater for the severe scenario. For the strongly affected sectors the drop of FOB prices is a little less than the drop in world export prices (-5% in 2008 and 2009 for world prices and -4% and -2.7% for the FOB prices in the moderate scenario). This implies that South African firms are losing ground with respect to their competitors and do not adjust fully to the new conditions. The same is true for the severe scenario. It will be shown later that in terms of volume of exports, the drop of South African exports is greater than the reduction in the world demand. Note also that for non-affected sectors, the decrease in FOB prices is essentially due to the decrease in the cost of trade and transportation margins. In the two scenarios, world prices of exports increase by 2.1% in 2010 and resume their BAU level for the following years (up to 2015). This positive trajectory of world export prices nearly eliminates the effect of the preceding drop, but even in the long run FOB prices remain below their BAU level.

Table 6: Impact on export prices (% change from BAU)

		Moderate				Severe				6
Commodities	**Initial export shares**	**2008**	**2009**	**2010**	**2015**	**2008**	**2009**	**2010**	**2015**	
Non-affected	11.0	-0.9	-0.9	-0.4	-0.3	-3.2	-3.7	-1.4	-1.6	
Weakly affected	9.0	-1.9	-1.7	-0.2	-0.1	-8.5	-8.7	-0.7	-0.5	
Mildly affected	31.8	-3.3	-2.1	-0.5	-0.3	-14.0	-13.9	-2.2	-2.1	
Strongly affected	48.2	-4.0	-2.7	-0.3	-0.3	-16.6	-16.3	-1.6	-1.8	
All	100.0	-3.3	-2.2	-0.4	-0.3	-13.6	-13.5	-1.7	-1.7	

Tables 7 and 8 present the impact of the shocks on import prices and local domestic prices. The drop of world price of imports will reduce the domestic cost of imported goods even if the reduction is, in percentage points, a little less than the reduction in world price. For the moderate scenario, in 2008, it can be seen that import prices drop more than local prices for strongly and mildly affected sectors. We would expect for these sectors an increase in imports compared to domestic purchases. The opposite case is found for the weakly affected or non-affected sectors. It is important to note for the latter that there is a decrease in import prices due to margins.

Table 7: Impact on import prices (% change from BAU)

		Moderate				Severe				7
Commodities	**Initial export shares**	**2008**	**2009**	**2010**	**2015**	**2008**	**2009**	**2010**	**2015**	
Non-affected	4.1	-1.0	-0.8	-0.2	-0.1	-3.9	-3.9	-1.1	-0.7	
Weakly affected	8.7	-2.3	-2.1	-0.2	-0.1	-10.4	-10.4	1.1	-0.5	
Mildly affected	32.4	-3.4	-1.6	-0.1	-0.1	-14.4	-14.4	-0.5	-0.3	
Strongly affected	54.8	-4.5	-2.8	-0.1	-0.1	-17.8	-17.9	-0.6	-0.4	
All	100.0	-3.8	-2.3	-0.1	-0.1	-15.5	-15.6	-0.6	-0.4	

Table 8: Impact on local demand prices (% change from BAU) 8

Commodities	Initial export shares	Moderate				Severe			
		2008	2009	2010	2015	2008	2009	2010	2015
Non-affected	5.1	-2.4	-2.0	-0.7	-0.4	-9.2	-10.0	-3.4	-2.2
Weakly affected	5.7	-2.4	-2.0	-0.6	-0.4	-9.7	-10.1	-2.8	-2.2
Mildly affected	65.2	-2.9	-2.3	-0.6	-0.4	-11.6	-11.6	-2.9	-2.3
Strongly affected	11.5	-3.3	-2.2	-0.3	-0.2	-13.3	-13.0	-1.3	-1.3
All	100.0	-2.9	-2.3	-0.6	-0.4	-11.2	-11.3	-2.7	-2.3

3.2.2 Impact on exports, imports and local demand

As expected, results reported in Table 9 show that exports decrease strongly for products belonging to the strongly affected sectors, and deeper in the severe scenario. In 2008, at the beginning of the crisis, there is a decrease of 21.5% for strongly affected sectors in the severe scenario. The drop in world demand has a direct effect on exports and the lower reduction in FOB prices with respect to world prices also reduces the performance of exports.

It is important here to understand the behaviour of the non-affected sectors. Globally speaking, they benefit from the difference between local prices (that are sharply decreasing) and export prices (that are hardly affected). The real exchange rate depreciates strongly and this movement favours only those exporting sectors that are not affected by the reduction in foreign demand and international prices. For instance, the gold sector, a non-affected sector, sees its volume of exports increasing by 3.1% in 2008 in the moderate scenario and by 10.6% in the severe scenario.

Table 9: Impact on imports (% change from BAU) 9

Commodities	Initial export shares	Moderate				Severe			
		2008	2009	2010	2015	2008	2009	2010	2015
Non-affected	11.0	3.3	3.2	1.3	0.9	12.4	13.8	4.7	5.4
Weakly affected	9.0	-0.0	-0.6	0.8	0.3	-3.8	-3.2	3.3	2.2
Mildly affected	31.8	-2.6	-1.1	-0.5	-0.9	-13.3	-14.6	-4.6	-5.0
Strongly affected	48.2	-5.2	-3.9	-0.9	-1.1	-21.5	-23.0	-7.0	-6.8
All	100.0	-3.0	-1.9	-0.4	-0.7	-13.6	-14.5	-4.0	-4.1

From Table 10, we also note a sharp decrease in imports. As will be shown later, total income of households will drop substantially, driving a huge reduction in total absorption and a reduction of demand for imported goods. In the moderate scenario this demand reduction is sufficient to compensate for the positive effect of lower import prices. Altogether imports fall by 2.1% in the strongly and mildly affected sectors.

However this decrease will be greater for non-affected and weakly affected sectors as the local price falls more than the import price. One should also keep in mind the constraint set on the current account balance, which is assumed to remain fixed relative to GDP. This assumption implies that if the country's exports decrease, then its imports would have to follow the same path.

Table 10: Impact on imports (% change from BAU)

		Moderate				Severe			
Commodities	**Initial export shares**	**2008**	**2009**	**2010**	**2015**	**2008**	**2009**	**2010**	**2015**
Non-affected	4.1	-2.5	-2.2	-0.8	-0.8	-10.2	-11.1	-4.8	-4.1
Weakly affected	8.7	-2.2	-1.6	-1.0	-1.1	-8.4	-9.3	-6.1	-5.5
Mildly affected	32.4	-2.1	-2.2	-1.0	-1.1	-8.7	-9.6	-5.9	-5.7
Strongly affected	54.8	-2.1	-2.0	-1.1	-1.3	-9.3	-10.2	-6.4	-6.4
All	100.0	-2.1	-2.0	-1.0	-1.2	-9.1	-9.9	-6.2	-6.0

As explained previously, the contraction on the demand side translates into fewer imports. However, as shown in Table 11, this will affect domestic demand even more dramatically due to the increased competitiveness of foreign products created by the reduction in import prices.

Table 11: Impact on local demand (% change from BAU)

		Moderate				Severe			
Commodities	**Initial export shares**	**2008**	**2009**	**2010**	**2015**	**2008**	**2009**	**2010**	**2015**
Non-affected	5.1	-1.1	-0.8	-0.3	-0.5	-4.8	-5.0	-2.5	-2.6
Weakly affected	5.7	-1.6	-1.4	-0.4	-0.7	-7.5	-7.9	-3.1	-3.2
Mildly affected	65.2	-2.4	-1.9	-0.8	-1.0	-10.3	-10.2	-5.1	-5.0
Strongly affected	11.5	-3.1	-2.4	-0.8	-1.0	-13.0	-14.1	-5.4	-5.2
All	100.0	-2.4	-1.9	-0.7	-0.9	-10.3	-11.2	-4.9	-4.7

The decrease in the total demand for goods will have consequences for sectoral production. One would actually expect sectoral production to decrease most strongly for sectors strongly dependent on exports. On the other hand, sectors that are not directly affected by the crisis might be affected by a reduction of demand from other sectors, for instance in terms of intermediate consumption. This is the case for all transport and trade sectors.

3.2.3 Impact on production

The decrease in the production of most of the sectors will have a number of consequences. First, firms that see their exports and production fall will retrench workers as they are unable to adjust the nominal wage of labour. Thus, we expect labour demand to be reduced. We will have to focus on the composition of the labour force for specific sectors to analyse which category of workers will be vulnerable. Moreover, we know that firms will decrease their labour demand and will simultaneously decrease their demand for intermediate consumption given the reduction in the level of activity. Therefore, some sectors (not directly influenced) will actually be indirectly affected by the decrease in intermediate consumption of the strongly affected sectors. Table 12 summarises these effects on the sectors for the two scenarios.

Table 12: Impact on production (% change from BAU) 12

		Moderate				Severe			
Commodities	**Initial export shares**	**2008**	**2009**	**2010**	**2015**	**2008**	**2009**	**2010**	**2015**
Non-affected[15]	6.2	-0.0	-0.2	0.1	-0.2	-0.5	-0.3	-0.7	-0.5
Weakly affected	6.2	-1.3	-1.2	-0.2	-0.5	-6.8	-7.0	-1.9	-2.1
Mildly affected	59.5	-2.4	-1.8	-0.8	-1.0	-10.6	-11.5	-5.1	-5.0
Strongly affected	17.0	-3.8	-2.9	-0.9	-1.1	-15.8	-17.1	-6.0	-5.8
All	100.0	-2.4	-1.9	-0.7	-0.9	-10.7	-11.6	-4.7	-4.7

3.2.4 Impact on labour demand, unemployment rates and wages

What is the impact of the crisis on labour demand and unemployment? We have seen so far that exports, imports and production are falling. Due to the downward rigidity of nominal wages, firms will adjust to the reduction in demand by laying off workers. As unions are strong, producers will not be able to decrease wage rates to adjust to the falling demand, so they will have to retrench more workers. Indeed Table 13 shows the corresponding declines in labour demand.

Table 13: Impact on labour demand (% change from BAU) 13

		Moderate				Severe			
Commodities	**Initial export shares**	**2008**	**2009**	**2010**	**2015**	**2008**	**2009**	**2010**	**2015**
Non-affected	4.7	1.1	1.1	0.3	0.7	3.1	2.3	-2.1	3.9
Weakly affected	4.4	-2.4	-2.5	-0.5	-0.5	-12.2	-13.3	-4.7	-2.3
Mildly affected	55.7	-5.5	-3.8	-1.0	-0.8	-23.3	-23.9	-8.3	-4.2
Strongly affected	9.0	-9.5	-6.1	-0.4	-0.8	-37.3	-36.8	-6.2	-7.8
All	73.7	-4.7	-3.3	-0.8	-0.7	-20.1	-20.7	-6.8	-3.8

All sectors except the non-affected retrench workers. Non-affected sectors, and notably the gold sector, benefit from the crisis. We saw earlier that its production was increasing, and this is only possible by increasing the number of workers.

The process of retrenchments will not be uniform across the different labour categories (Table 14). Highly skilled workers are the ones who suffer the shortest from the crisis. Although there are important job losses during 2008 and 2009 (and 2010 for the severe scenario), the economy would rapidly face a shortage of skilled workers. This situation fits perfectly with the reality in South Africa.

[15] *Note here that we have a difference in this group between gold and the rest. Indeed, gold production increases. This sector does not depend on local purchases, thus it does not face a decrease in local demand. For food and beverage, their production decreases due to the decline in local demand (households).*

Table 14: Impact on total labour demand (% change from BAU)

	High Skilled		Skilled and Semi-Skilled		Low skilled	
YEARS	MOD	SEV	MOD	SEV	MOD	SEV
2008	-4.40	-20.73	-4.90	-19.57	-5.86	-23.87
2009	-2.36	-20.82	-3.96	-20.50	-4.23	-24.65
2010	0	-5.49	-1.33	-7.86	-1.04	-8.24
2015	0	0	-1.21	-6.59	-0.99	-5.28

14

In the BAU, for each labour category, we observe that unemployment is decreasing due to the fact that capital grows faster than labour, and that labour is more and more efficient in the economy. Results reported in Table 15 show that for highly skilled workers only, in the base year, the unemployment rate is very low (1%) and actually decreases in the BAU to reach 0% in 2007. In 2009, in the severe scenario, for skilled workers, their unemployment rate reaches a little more than 20%.

Table 15: Unemployment rate (%)

	High Skilled		Skilled and Semi-Skilled		Low skilled[16]	
YEARS	MOD	SEV	MOD	SEV	MOD	SEV
2005	1.00	1.00	15.00	15.00	26.40	26.40
2008	4.40	20.73	17.18	29.96	28.16	41.90
2009	2.36	20.82	15.50	30.05	26.07	41.83
2010	0.0	5.49	12.23	18.04	22.73	28.36
2015	0.0	0.0	7.02	12.08	18.42	21.96

15

Recall that there are actually four types of labour in the model, the three described above and informal labour. Assuming no unemployment of informal labour, the impact of the crisis for this type of labour will be on their wage rate[17], which falls sharply.

Table 16: Impact on high skilled and informal wage rate (%) (% change from BAU)

	High Skilled		Informal	
YEARS	MOD	SEV	MOD	SEV
2008	1.38	1.38	-5.00	-21.10
2009	2.48	2.48	-3.68	-21.85
2010	-1.68	-3.61	-0.97	-7.64
2015	-1.46	-7.99	-0.77	-4.24

16

It is not surprising to see a decrease in the rate of return of capital in most sectors, as depicted in Table 17. Thus, one would expect negative impacts on household incomes, and even more on firm incomes, since firms rely mainly on capital.

[16] *In the CGE model, we assume that the substitution between low skilled and informal is very low (0.1, which is almost a Leontief combination between them). Thus, formal sector workers who lose their jobs would find it difficult in the short to medium term to enter the informal sector, as this requires new skills and access to markets. Transitions directly from the formal to the informal sector are limited. In the longer run it may be more likely that formal sector workers who have become unemployed would move into informal jobs. However, growth of the informal sector remains limited, perhaps because many households have alternative income sources, e.g. from grants.*

[17] *Wages and earnings in the informal sector are both referred to as wages in the text.*

Table 17: Impact on rate of return to capital (% change from BAU)

		Moderate				Severe			
Commodities	**Initial rate of return shares**	**2008**	**2009**	**2010**	**2015**	**2008**	**2009**	**2010**	**2015**
Non-affected	4.1	-1.3	-1.8	-1.1	-0.3	-4.6	-7.2	-7.0	-1.9
Weakly affected	5.3	-1.7	-2.1	-0.7	-0.4	-7.7	-9.0	-4.1	-2.1
Mildly affected	71.3	-4.0	-3.1	-0.9	-0.4	-16.0	-15.9	-4.9	-2.7
Strongly affected	15.8	-6.2	-3.9	0.0	-0.2	-25.0	-23.1	-0.9	-1.6
All	100	-4.5	-3.4	-0.8	-0.4	-17.9	-17.8	-4.7	-2.7

17

Taking these results into account, we can now analyse what happens to the different agents following the crisis.

3.2.5 Impact on institutions:

- **Firms:**

  As mentioned previously, the rate of return for capital is sharply decreasing. Firm income is thus strongly affected, as this component represents 88% of their total income (Table 18). Moreover, one of the channels through which the crisis operates is modelled as a decrease in transfers from abroad. Thus, we expect their income to decrease strongly. Firm income decreases by 16% in 2008 in the severe scenario, and even in the long run it cannot return to its BAU level.

Table 18: Impact on firms (% change from BAU)

	Capital income		Transfer Income		Total Income		Savings	
YEARS	**MOD**	**SEV**	**MOD**	**SEV**	**MOD**	**SEV**	**MOD**	**SEV**
2008	-4.53	-17.94	-1.87	-3.73	-4.23	-16.34	-4.17	-16.06
2009	-3.72	-18.74	-2.22	-4.06	-3.55	-17.11	-3.52	-16.82
2010	-1.35	-7.24	-1.83	-4.06	-1.40	-6.89	-1.41	-6.83
2015	-1.45	-7.66	-1.83	-4.06	-1.49	-7.30	-1.50	-7.24

18

Firm savings are obtained after removing taxes to government and transfers paid to other institutions (mainly households and the rest of the world) from their income. As seen in Table 18, there is a dramatic fall in firm saving which is more pronounced in the short run. This decrease in firm savings will have important consequences for total investment. Indeed, firm savings represent 80.5% of total investment Here again, we can see that, even in the moderate scenario, the effect of the crisis remains in the long run as, firm savings remains below its BAU level (-1.5%).

- **Households:**

  Households receive income from labour and transfers from firms, government and the rest of the world. We assume that transfers from government and the rest of the world are fixed, whereas transfers from firms are a proportion of firm income.

As shown in Table 19, unemployment rises for all labour categories and labour demand decreases. As household income is mainly based on labour income, we expect it to decrease. Moreover, as mentioned previously, firm income is decreasing and so are the dividends it pays. Thus, household income decreases sharply in both scenarios. This decrease negatively affects household consumption and savings and thus total absorption through a reduction in consumption and investment.

Table 19: Impact on households (% change from BAU)

	Labour income		Transfer income[18]		Total Income		Savings		Consumption	
YEARS	MOD	SEV	MOD	SEV	MOD	SEV	MOD	SEV	MOD	SEV
2008	-5.4	-21.36	-3.43	-13.19	-4.64	-18.24	-4.83	-18.85	-4.62	-18.16
2009	-4.29	-22.26	-2.90	-13.86	-3.76	-19.04	-3.94	-19.69	-3.74	-18.96
2010	-1.37	-8.29	-1.17	-5.64	-1.29	-7.27	-1.38	-7.60	-1.28	-7.24
2015	-1.23	-6.67	-1.26	-6.08	-1,24	-6,44	-1.33	-6.87	-1.23	-6.40

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- **Government:**
  Government revenue expected to decrease. Indeed, direct taxes are decreasing (as a share of households and firm income), and taxes on products are also decreasing for most sectors (due to the decreases in imports and production). Half of government income comes from direct taxes and around a third from indirect taxes on products. Thus one can expect its revenue to decrease.

Figure 9 (overleaf) represents the variations of the share of government income in GDP as well as government savings as a percentage of GDP for the BAU and both scenarios.

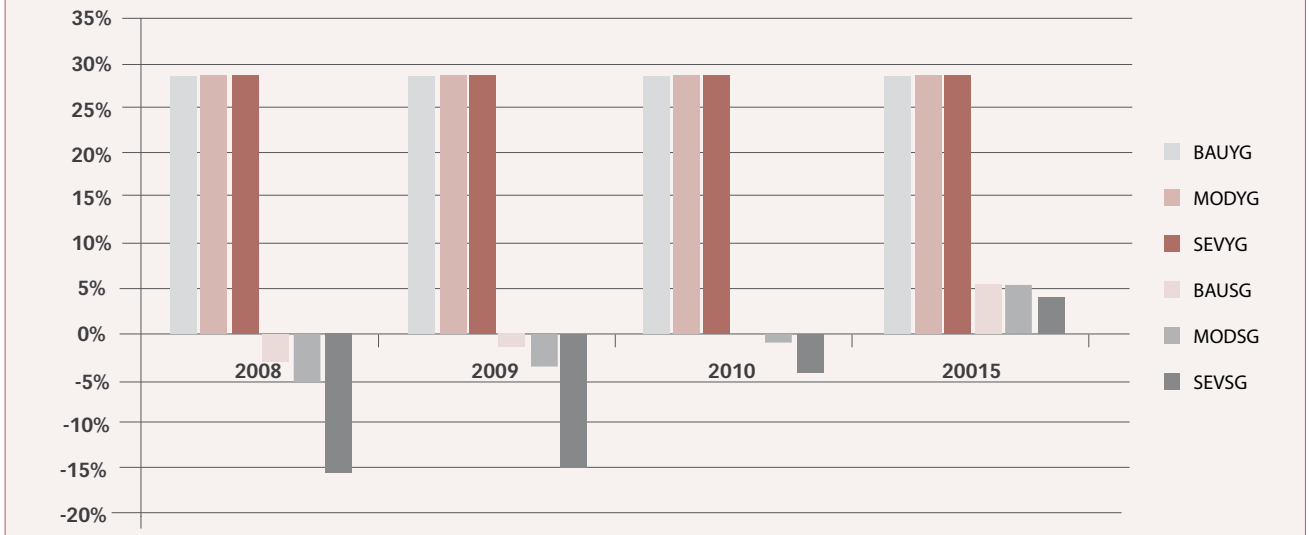

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Figure 9: Revenue/GDP and Savings /GDP for government

In the BAU, government income/GDP is around 28%. This share increases in the scenarios due to the huge drop of GDP. Regarding savings over GDP, in the BAU in 2008, the deficit represents 3% of GDP, and without any shock, the deficit would decrease to reach a surplus in 2015. Note that in the base year, the deficit is quite low, and then there is a decrease in prices in the BAU (as the economy is becoming more and more efficient through time). It is therefore easy to understand why government savings become positive in the long run.

[18] *Note that transfers to households are composed of transfers from firms, government and rest of the world. Transfers from firms are a share of firms' income and this is decreasing. Transfers from government and the rest of the world are fixed. Thus transfer income in the Table is essentially income from dividends.*

With the crisis of course, we do not observe the same pattern in the short run. Indeed, the deficit reaches 15% of GDP in 2008 and 2009 in the severe scenario, and around 5% for the moderate scenario. In the long run, the situation improves somewhat, but remains far behind the BAU situation.

3.2.6 Impact on total investment and GDP

Given all the preceding impacts it is no surprise to observe a huge decrease in total investment (Table 20). What is relevant to note here is that even though the crisis is in effect only in 2008 and 2009 and the recovery starts in 2010, impacts on investment remain in the long run. Indeed, under both scenarios one still observes lower investment in 2015 than under the BAU.

Table 20: Impact on investment (in %) (% change from BAU)

	Total investment (value)		Private investment(value)		Private investment(volume)	
YEARS	MOD	SEV	MOD	SEV	MOD	SEV
2008	-6.16	-23.94	-6.00	-23.49	-2.64	-11.20
2009	-5.03	-24.91	-4.99	-24.54	-2.62	-12.47
2010	-1.90	-9.61	-1.99	-10.00	-1.57	-8.21
2015	-1.93	-9.48	-2.03	-9.90	-1.78	-8.48

Now focusing on GDP, we know that the South African projections for GDP were around 4.5% growth per year. The world economic crisis produces a huge drop in GDP (Figure 10). For both scenarios, GDP falls in 2008 and 2009 and then increases again, but it does not return to its BAU value even by 2015. In other words, without positive shocks or deliberate and successful government interventions that stimulate the economy and counteract the negative impact of the world crisis, GDP will not recover to what it would have been in the absence of the crisis, under the BAU scenario.

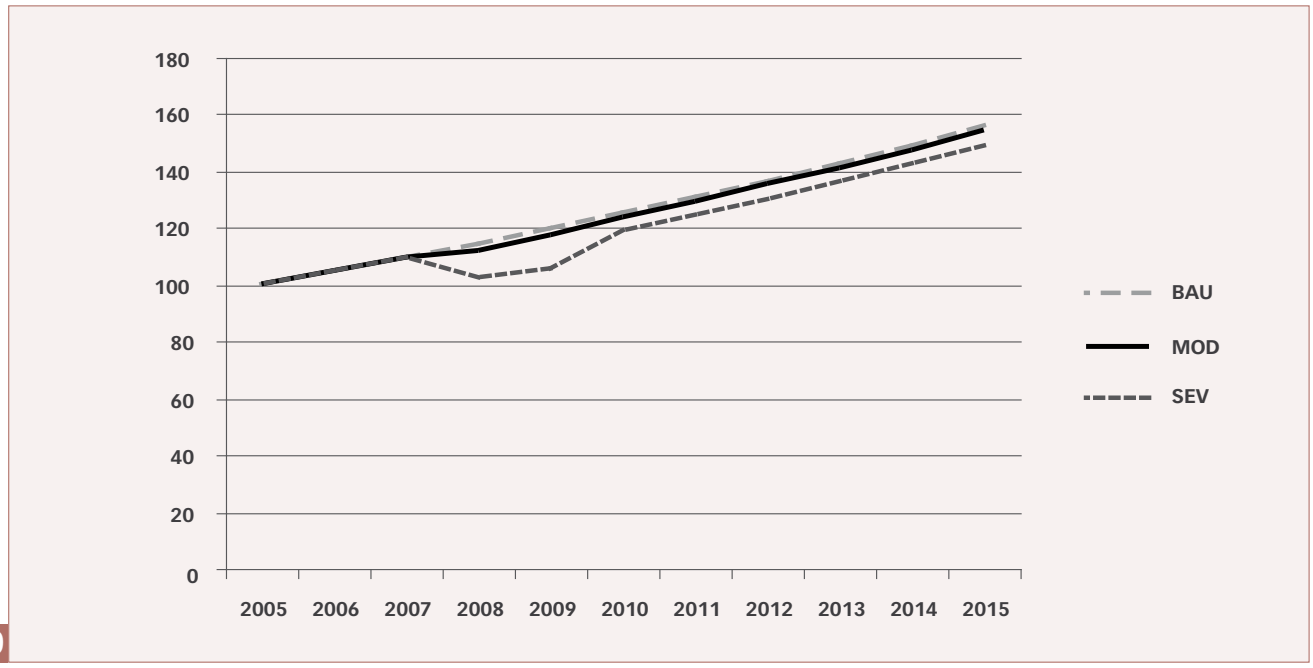

Figure 10: Evolution of Real GDP in BAU, Moderate and Severe scenarios

3.3 Concluding remarks on economy-wide impacts

The decrease in world prices together with the drop in world demand leads to a fall in production for most sectors. This reduces employment and unemployment rates increase as a result. Households see their income drop. The situation is worse for informal workers who do not have the protection of an effective wage floor that unions provide. They face a huge drop in their wage rate (earnings). Firms also suffer from the crisis as their incomes and savings decrease tremendously. Government deficit deteriorates especially in the severe scenario and the national government gross loan debt also increases as a proportion of GDP. Even if the crisis only lasts for 2008 and 2009, its effects will remain long afterward, particularly because of the permanent effect of the drop in investment[19].

4. EXTRAPOLATING FROM THE MACRO-ECONOMIC IMPACTS TO CHILD POVERTY

4.1 Background

The previous sections set out the situation regarding child poverty in South Africa and explained the results of the economy-wide modelling to estimate the economic impact of the international economic crisis. These economic impacts have been used in conjunction with a micro-model of the economy, to estimate the likely impact of the economic crisis on child poverty in South Africa. This section reports on these findings.

4.2 Brief overview of data, assumptions and methodology for the micro-model[20]

Essentially, the major purpose of the micro-modelling was to estimate the impact of the economic changes simulated by the CGE model on households. Essentially, three channels were modelled here:

- Changes in prices, which were taken to apply across the board to all households, the differences arising only from the composition of their spending, though initial prices have been estimated by cluster (area), thus implying that different incomes were required to reach the poverty line in different clusters, given the different prices faced. (Note that adult equivalence scales were also applied to allow for the differential food needs of different individuals in a household, by age and gender; see the full methodological note in the Appendix for more details.)

- Changes in wages in different skilled categories (the CGE models allows for four types of labour, three of these reflecting differences in the skills composition, the fourth the informal labour market).

- Changes in employment, for the three formal labour market categories. (It was assumed here that formal sector workers who lose their jobs do not revert to the informal sector but become unemployed.)

A possible fourth channel was not modelled, viz. possible changes in non-labour earnings on household poverty. Other than grants, non-labour earnings are uncommon amongst poorer segments of South African society, and simulating changes in such income components requires detailed information on assets and risks, which are difficult to come by. Moreover, other models of this nature have followed a similar approach to that taken here.

As has been shown in the previous sections, price and wage changes are relatively small and the poverty analysis shows that they have little impact on poverty. By far the major impact on poverty comes from the changes in employment. For this reason, much of the modelling attention had to be focused here. Probit models of the probability of employment for each employed and unemployed worker for jobs in various skills categories were estimated. These models were then used to identify those employed workers in each skill category most likely to lose their jobs when employment declines relative to the labour force. A similar procedure was used to determine the likely beneficiaries of new jobs and the wages of those who may gain jobs once economic growth returns. However, because of the poor fit of the wage estimates within skills categories, the wages of employed workers were assumed to remain as they had been recorded, rather than giving them the estimated wage from the wage equations, as is often done in such micro-simulations.

[19] *On the other hand we could argue that, in the long run, the reduction in investment will lead to a reduction in the capital stock because of the continuous depreciation of capital stock. A reduction in the speed that capital is accumulated could eventually lead to a change in the rate of return of capital. This could cause firms and households to increase their savings. The same argument could apply to the behaviour of foreign firms. They could eventually rebuild their capital stock, thereby helping their domestic partners to increase their investments. If this happens, then the permanent effects mentioned here of the crisis could eventually become only temporary if the households and firms try to rebuild their stock of capital at their usual levels.*

The dataset used for the micro-simulations was the 2008 National Income Dynamics Survey (NIDS), rather than the bigger 2005 Income and Expenditure Survey (IES), because the former contains both consumption data and labour market information. The 2008 data was taken to approximately reflect the 2007 situation before the crisis, and the modelling was then applied to these data to arrive at simulations. Because the micro-simulations essentially deal with a static model, projections were not attempted beyond 2011. As will be shown, by that time poverty would have returned to its usual course under the moderate scenario, and would have almost returned to initial levels in the severe scenario. Based on the macro-projections of growth, which envisage a further return to closer to the BAU by 2015, it is fairly certain that the course of poverty will edge closer to the BAU beyond 2011.

4.3 Results of the micro-model

4.3.1 Broad trends

Child poverty in 2007, that is, before the crisis, was estimated at 52.6%, using the moderately low poverty line of R250 per capita per month in 2000 Rand terms or R377 in January 2008 (to apply to the NIDS data)[21]. In the absence of an economic crisis, this headcount rate of child poverty would be declining by a small percentage every year, based on linking the macro- and the micro-simulations. In 2008 it would have declined to 52.2%, in 2009 to 51.9%, in 2010 it would have remained at 51.9% and by 2011 it would have declined to 51.8%, according to the BAU simulations. Thus, Business as Usual would have meant a slow but continuing decline in child poverty, as indeed for poverty of the whole society (poverty of individuals was estimated to decline from 46.8% to 45.9% from 2007 to 2011).

One should compare the impact of the international economic crisis against the initial child poverty levels, and also against the business as usual, i.e. the natural trend of the economy and economic policy. As indicated in the previous section, this paper allows for two scenarios: A moderate crisis scenario, in which the economic crisis is soon left behind and the economy recuperates well, and a severe crisis scenario, in which the effect of the international crisis lasts longer and it takes longer for the South African economy to recover. The most severe effects of the crisis are in 2008 and 2009, while by 2010 some of the impacts on poverty are already partly being reversed, even under a severe scenario.

The overall trends under the different scenarios are summarised in Table 21. Figure 11 shows the trends in the poverty headcount ratio for the period 2007 to 2011 for each of the three scenarios. The choice of scale is intended to allow a visual inspection of the different impacts, but note that the range covered here is fairly small. However, it accentuates the stark difference between the severe and moderate scenarios, though even under the severe scenario the headcount ratio declines by 2011 to not much higher than its initial level in 2007.

[21] *This is a poverty line often quoted in the literature. The "lower bound" poverty line of Statistics South Africa of R322 quoted by Woolard & Leibbrandt (2006) and derived by Hoogeveen & Ozler is some 30% higher, and the "upper bound" one at R593 per capita per month in 2000 some 140% higher.*

[20] *The methodology used here was heavily influenced by participation in a workshop in Accra, Ghana, and by advice rendered by members of the Poverty and Economic Policy (PEP) network. See in particular for the micro economic approach the two forthcoming papers: Cockburn, J., I. Fofana and L. Tiberti, "The Impact of the Global Crisis on Child Poverty in West and Central Africa", forthcoming as PEP (www.pep-net.org) and Innocenti (http://www.unicef-irc.org/) working papers; Bibi, S., J. Cockburn, I. Fofana and L. Tiberti, "Impacts of the Global Crisis and Policy Responses on Child Welfare: A Macro-Micro Simulation Framework", forthcoming as PEP (www.pep-net.org) and Innocenti (http://www.unicef-irc.org/) working papers.*

Table 21: Trends in poverty under three scenarios, 2007-2011

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			BAU	% change	Moderate scenario	% change	Severe scenario	% change
2007	Individual level	P0	0.468	0.0%				
		P1	0.183	0.0%				
		P2	0.095	0.0%				
	Household level	P0	0.362	0.0%				
		P1	0.130	0.0%				
		P2	0.064	0.0%				
	Child level	P0	0.526	0.0%				
		P1	0.205	0.0%				
		P2	0.107	0.0%				
2008	Individual level	P0	0.463	-1.1%	0.471	0.6%	0.508	8.5%
		P1	0.182	-0.5%	0.208	13.7%	0.287	56.8%
		P2	0.095	0.0%	0.125	31.6%	0.212	123.2%
	Household level	P0	0.359	-0.8%	0.366	1.1%	0.393	8.6%
		P1	0.129	-0.8%	0.148	13.8%	0.204	56.9%
		P2	0.064	0.0%	0.084	31.3%	0.146	128.1%
	Child level	P0	0.522	-0.8%	0.527	0.2%	0.549	4.4%
		P1	0.205	0.0%	0.230	12.2%	0.294	43.4%
		P2	0.106	-0.9%	0.137	28.0%	0.208	94.4%
2009	Individual level	P0	0.462	-1.3%	0.465	-0.6%	0.510	9.0%
		P1	0.182	-0.5%	0.197	7.7%	0.287	56.8%
		P2	0.095	0.0%	0.113	18.9%	0.212	123.2%
	Household level	P0	0.358	-1.1%	0.360	-0.6%	0.392	8.3%
		P1	0.129	-0.8%	0.140	7.7%	0.204	56.9%
		P2	0.064	0.0%	0.076	18.8%	0.147	129.7%
	Child level	P0	0.519	-1.3%	0.522	-0.8%	0.545	3.6%
		P1	0.204	-0.5%	0.219	6.8%	0.304	48.3%
		P2	0.106	-0.9%	0.125	16.8%	0.215	100.9%
2010	Individual level	P0	0.462	-1.3%	0.460	-1.7%	0.479	2.4%
		P1	0.181	-1.1%	0.181	-1.1%	0.216	18.0%
		P2	0.094	-1.1%	0.094	-1.1%	0.133	40.0%
	Household level	P0	0.358	-1.1%	0.356	-1.7%	0.371	2.5%
		P1	0.128	-1.5%	0.128	-1.5%	0.154	18.5%
		P2	0.063	-1.6%	0.063	-1.6%	0.090	40.6%
	Child level	P0	0.519	-1.3%	0.518	-1.5%	0.536	1.9%
		P1	0.203	-1.0%	0.203	-1.0%	0.238	16.1%
		P2	0.105	-1.9%	0.105	-1.9%	0.145	35.5%
2011	Individual level	P0	0.459	-1.9%	0.460	-1.7%	0.472	0.9%
		P1	0.179	-2.2%	0.180	-1.6%	0.206	12.6%
		P2	0.093	-2.1%	0.094	-1.1%	0.122	28.4%
	Household level	P0	0.355	-1.9%	0.355	-1.9%	0.366	1.1%
		P1	0.127	-2.3%	0.128	-1.5%	0.146	12.3%
		P2	0.063	-1.6%	0.063	-1.6%	0.082	28.1%
	Child level	P0	0.518	-1.5%	0.518	-1.5%	0.529	0.6%
		P1	0.201	-2.0%	0.202	-1.5%	0.228	11.2%
		P2	0.104	-2.8%	0.104	-2.8%	0.135	26.2%

Note: % change is shown relative to BAU in 2007 | Source: Own projections

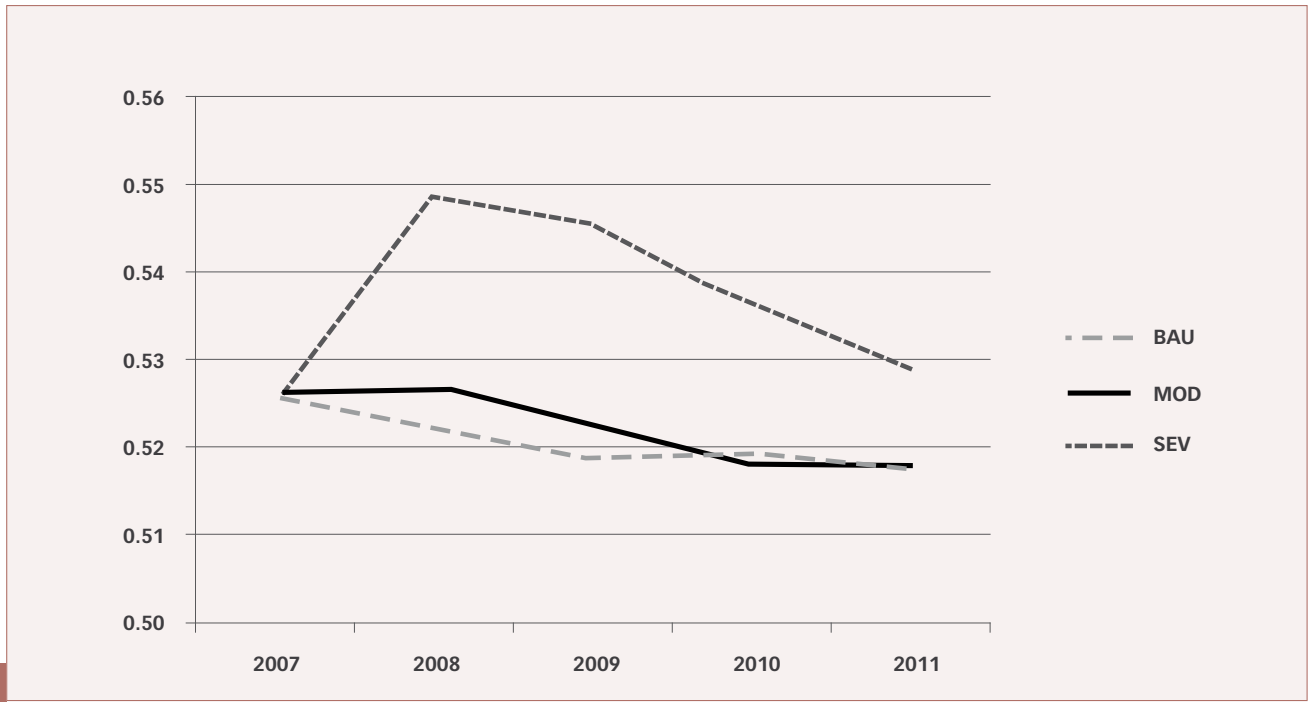

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Figure 11: The poverty headcount ratio (P0) for 2007 to 2011 under three scenarios: Business as Usual, Moderate Scenario and Severe Scenario

The impact of the moderate scenario for the crisis on the child poverty headcount is quite small in 2008, if one focuses on the headcount ratio only and uses this slightly below conventional poverty line[22]. The child poverty headcount ratio (P0) hardly increases (by 0.1 percentage points or 0.2% only), but in contrast, there is a 12% increase in the child poverty gap ratio (P1) and a 28% increase in the child poverty severity ratio (P2).

This indicates that a lot of the changes in the economic situation in 2008 under the moderate scenario occur at lower levels of income, i.e. quite some way below the poverty line. Thus those deepest in poverty are also most affected. Under this moderate scenario, child poverty actually starts improving in 2009, i.e. the headcount ratio drops to 52.2%, only 0.3% above the level of poverty that would have applied under the Business as Usual scenario and below the initial poverty headcount ratio. Yet some impact on the poverty gap ratio as well as the poverty severity ratio for children remains. This indicates that though fewer children are in poverty than in 2007, the changes at the bottom of the distribution have worsened the situation for the worst off children. If the poverty line had therefore been drawn at a lower level, the poverty headcount also would have risen.

In 2010 there is further moderation of the poverty headcount, but now the poverty gap ratio and the poverty severity ratio also improve relative to 2007.

We turn now to the more severe economic growth scenario. In this case, the child poverty headcount ratio would rise by 4.4% (2.3 percentage points) to 54.9% in 2008 relative to 2007, the poverty gap ratio by 43% and the poverty severity ratio by 94%. This again illustrates the severe consequences for children at the bottom of the income distribution, i.e. far below conventionally used poverty lines. Clearly, under the severe economic scenario, very poor children are greatly affected by the effect of the crisis in 2008. In 2009, there is little further change in the poverty figures in terms of the three conventional measures used here: The severity of the continuing recession means that the natural improving trend in poverty is largely cancelled out. The poverty situation has become slightly less severe in terms of the poverty headcount, which is now only 3.6% worse than was the case in 2007, but poverty in terms of the more poverty-sensitive measures still increases, with the effect that the poverty gap

[22] *In practice, poverty lines are derived in this model for each cluster of households in the sample, considering price levels in their area as reflected in the consumption patterns. The per capita lines mentioned here are those derived directly from the data without considering prices, by determining what poverty line would give the same child poverty headcount ratio.*

ratio has risen by almost half while the poverty severity ratio has doubled.

However, compared to Business as Usual, the backlog still grows, leaving a greater gap to negotiate to get back on trend.

By 2011 the poverty headcount ratio under this severe economic growth impact scenario has returned almost to its original levels, being only 0.6% above where it was in 2007, while the poverty gap ratio P1 has risen by 11% and the poverty severity ratio P2 by 26%. Thus even under the severe scenario, the impact of the economic crisis would have been sharply reduced by 2011, except at the very bottom of the income distribution.

4.3.2 Poverty dominance

Figure 12 shows the effect of the moderate scenario in 2008 and 2009 against the initial situation, in terms of cumulative density functions (CDFs). As discussed earlier, if one CDF line lies clearly above another, poverty by any of the conventional measures is higher, irrespective of the poverty line chosen. Such a situation is referred to as stochastic poverty dominance. The three lines depicting the initial situation and the moderate scenarios in 2008 and 2009 are barely distinguishable, except at the very lowest income levels, where there is clear poverty dominance. These scenarios show relatively small changes which would probably fall within the 95% confidence levels of the initial cumulative density function. In contrast to that, the situation in terms of child poverty would have been much worse, if there had been no Child Support Grant: The line depicting that situation lies well above all the other three lines. Thus the moderate scenario for the economic crisis shows an impact that is far too small to undo the beneficial effects for children of the earlier introduction and expansion of the Child Support Grant.

12

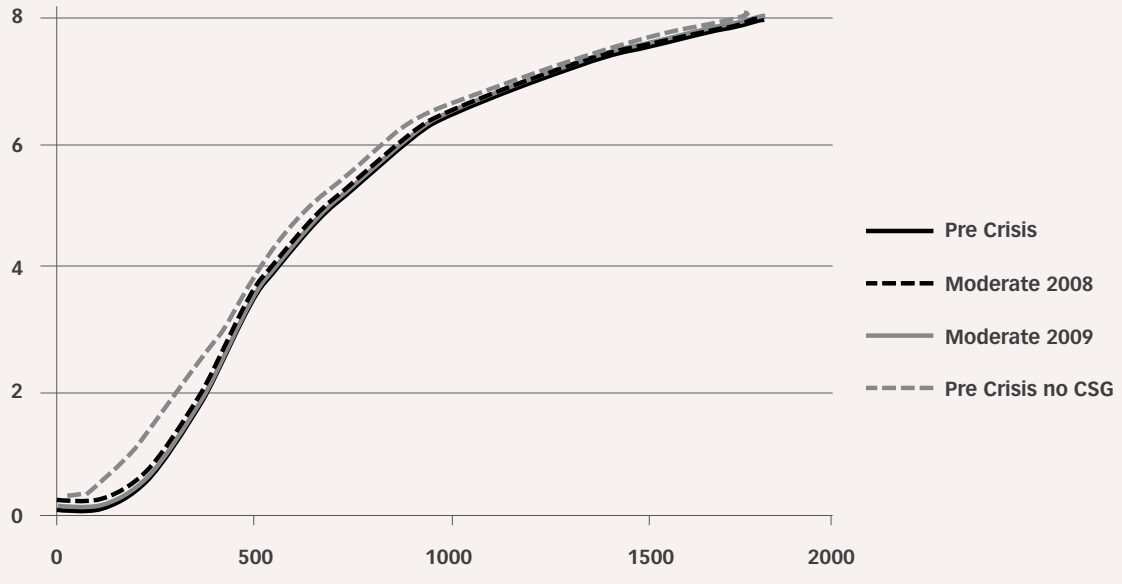

Figure 12: Cumulative density functions (curves) for child poverty in 2007, 2008 and 2009, under a Moderate Scenario, and a comparison with the beneficial effects of the Child Support Grant

Figure 13 (overleaf) shows the CDFs that compare the 2007 situation with the impact of the severe scenario in 2008 and 2009. Here the impact of the crisis is much clearer and there appears to be complete poverty dominance: Irrespective of the poverty measure or poverty line chosen, except for very high poverty lines, there is a large (and probably statistically significant) effect on poverty; among the very poor it is even larger than the beneficial effects of the Child Support Grant had been.

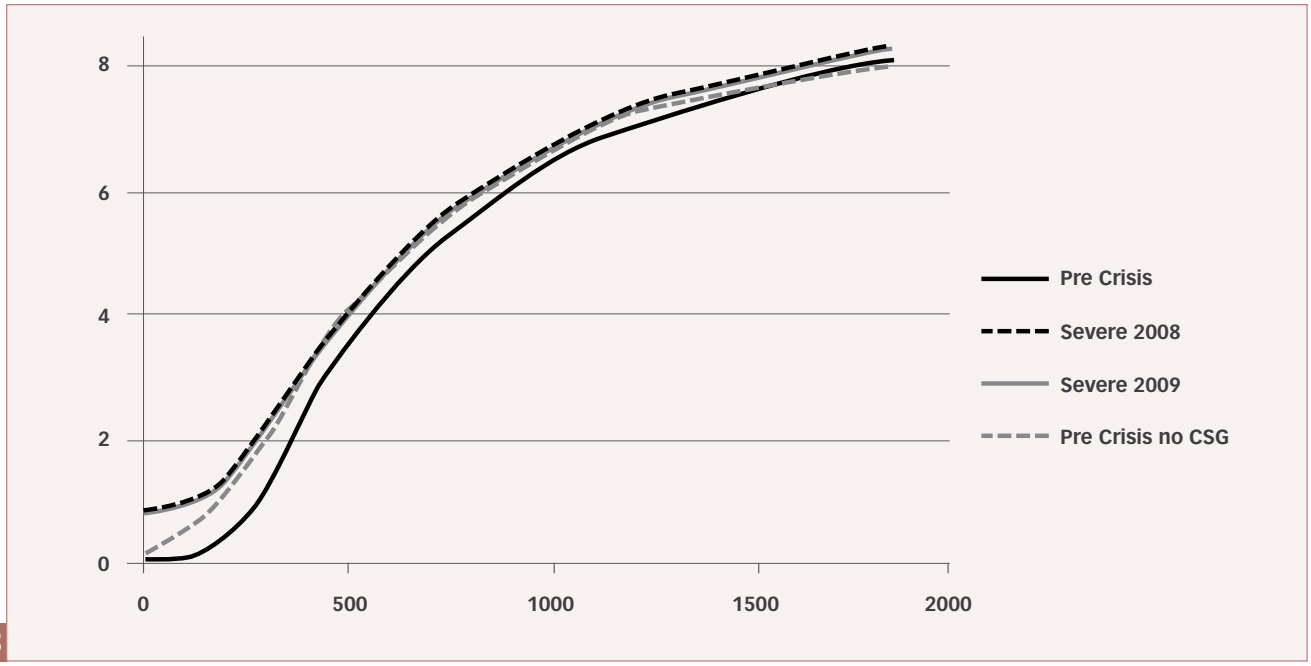

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Figure 13: Cumulative density functions (curves) for child poverty in 2007, 2008 and 2009, under a Severe Scenario, and a comparison with the beneficial effects of the Child Support Grant

In summary, then, the cumulative density functions indicate that the effect of the moderate scenario is not all that large. In contrast, the impact of the severe scenario is large, particularly at the lower levels; clearly we are dealing here with poverty impacts which affect the poorest most.

4.3.3 Comparing two poverty lines

Table 22 shows the differences in results using two alternative poverty lines. This confirms what the CDFs and the magnitude of the impacts on P1 and P2 relative to Po have already intimated, that the major impact of the crisis is closer to the bottom of the income distribution. For the lower of the two poverty lines shown here[23], the impact of the severe scenario is to increase the poverty headcount ratio by 16.8% in 2008 rather than by the 4.4% estimated using the higher poverty line; the poverty severity ratio rises by 195% rather than 94%.

[23] *This line is equivalent to a poverty line of R247 per capita per month in January 2008, or R163 per capita per month in 2000 Rand, compared to the higher poverty line that is R250 per capita per month in 2000 Rand.*

Table 22: Child poverty scenarios (Moderate Impact and Severe Impact of Crisis) at two poverty lines, 2007-2011, compared to Business as Usual in 2007

22

		Higher poverty line	% change from BAU	Lower poverty line	% change from BAU
2007 BAU	**P0**	**0.526**	**0.0%**	**0.364**	**0.0%**
	P1	**0.205**	**0.0%**	**0.119**	**0.0%**
	P2	0.107	0.0%	0.055	0.0%
Moderate scenario 2008	P0	0.527	0.2%	0.376	3.3%
	P1	0.230	12.2%	0.149	25.2%
	P2	0.137	28.0%	0.088	60.0%
Moderate scenario 2009	P0	0.522	-0.8%	0.369	1.4%
	P1	0.219	6.8%	0.136	14.3%
	P2	0.125	16.8%	0.076	38.2%
Moderate scenario 2010	P0	0.518	-1.5%	0.357	-1.9%
	P1	0.203	-1.0%	0.117	-1.7%
	P2	0.105	-1.9%	0.054	-1.8%
Moderate scenario 2011	P0	0.518	-1.5%	0.354	-2.7%
	P1	0.202	-1.5%	0.117	-1.7%
	P2	0.104	-2.8%	0.054	-1.8%
Severe scenario 2008	P0	0.549	4.4%	0.425	16.8%
	P1	0.294	43.4%	0.222	86.6%
	P2	0.208	94.4%	0.162	194.5%
Severe scenario 2009	P0	0.545	3.6%	0.424	16.5%
	P1	0.304	48.3%	0.221	85.7%
	P2	0.215	100.9%	0.162	194.5%
Severe scenario 2010	P0	0.536	1.9%	0.386	6.0%
	P1	0.238	16.1%	0.158	32.8%
	P2	0.145	35.5%	0.095	72.7%
Severe scenario 2011	P0	0.529	0.6%	0.376	3.3%
	P1	0.228	11.2%	0.147	23.5%
	P2	0.135	26.2%	0.086	56.4%

Note: The higher poverty line is the one used throughout the text, equivalent to about R250 in 2000 Rand terms. The lower poverty line is equivalent to a per capita poverty line of R247 per month in January 2008, or R163 per capita per month in 2000 Rand.

4.3.4 Urban versus rural poverty

Another way of looking at this is to also separate out the impacts on child poverty in urban and in rural areas. Poverty amongst children is more severe in rural than in urban areas. In 2007, before the crisis, poverty amongst children in urban areas was 44.9% versus 58.7% in rural areas. Given differential price effects, there appears to be a smaller difference at the lowest level, indicating that urban children generally face higher price levels, which increases poverty in these areas relative to poverty in rural areas, given reigning price differentials.

Table 23: Trends in poverty under three scenarios in urban and rural areas, 2077-2011

			BAU			Moderate			Severe		
			All	Urban	Rural	All	Urban	Rural	All	Urban	Rural
2007	Individual level	P0	0.468	0.392	0.553						
		P1	0.183	0.163	0.205						
		P2	0.095	0.088	0.104						
	Household level	P0	0.362	0.296	0.459						
		P1	0.130	0.114	0.154						
		P2	0.064	0.058	0.073						
	Child level	P0	0.526	0.449	0.587						
		P1	0.205	0.191	0.216						
		P2	0.107	0.103	0.110						
2008	Individual level	P0	0.463	0.390	0.546	0.471	0.389	0.564	0.508	0.425	0.600
		P1	0.182	0.162	0.205	0.208	0.166	0.254	0.287	0.227	0.354
		P2	0.095	0.087	0.104	0.125	0.091	0.162	0.212	0.156	0.275
	Household level	P0	0.359	0.295	0.453	0.366	0.296	0.468	0.393	0.321	0.498
		P1	0.129	0.113	0.154	0.148	0.119	0.190	0.204	0.164	0.264
		P2	0.064	0.058	0.073	0.084	0.064	0.114	0.146	0.112	0.197
	Child level	P0	0.522	0.448	0.581	0.527	0.445	0.593	0.549	0.488	0.598
		P1	0.205	0.190	0.216	0.230	0.190	0.263	0.294	0.243	0.335
		P2	0.106	0.102	0.100	0.137	0.102	0.166	0.208	0.154	0.252
2009	Individual level	P0	0.462	0.387	0.546	0.465	0.386	0.553	0.510	0.425	0.599
		P1	0.182	0.162	0.205	0.197	0.164	0.234	0.287	0.227	0.353
		P2	0.095	0.087	0.104	0.113	0.089	0.140	0.212	0.156	0.275
	Household level	P0	0.358	0.293	0.453	0.360	0.294	0.457	0.392	0.321	0.496
		P1	0.129	0.112	0.153	0.140	0.116	0.174	0.204	0.164	0.264
		P2	0.064	0.058	0.073	0.076	0.062	0.097	0.147	0.112	0.197
	Child level	P0	0.519	0.442	0.581	0.522	0.445	0.584	0.545	0.506	0.630
		P1	0.204	0.189	0.216	0.219	0.189	0.243	0.304	0.251	0.346
		P2	0.106	0.102	0.109	0.125	0.101	0.144	0.215	0.160	0.259
2010	Individual level	P0	0.462	0.386	0.546	0.460	0.386	0.543	0.479	0.398	0.568
		P1	0.181	0.160	0.205	0.181	0.161	0.203	0.216	0.178	0.259
		P2	0.094	0.086	0.104	0.094	0.086	0.103	0.133	0.104	0.166
	Household level	P0	0.358	0.292	0.453	0.356	0.292	0.450	0.371	0.302	0.472
		P1	0.128	0.111	0.154	0.128	0.112	0.152	0.154	0.126	0.195
		P2	0.063	0.057	0.073	0.063	0.057	0.072	0.090	0.071	0.118
	Child level	P0	0.519	0.442	0.581	0.518	0.444	0.577	0.536	0.460	0.597
		P1	0.203	0.188	0.216	0.203	0.188	0.214	0.238	0.205	0.264
		P2	0.105	0.100	0.109	0.105	0.101	0.108	0.145	0.117	0.167
2011	Individual level	P0	0.459	0.383	0.544	0.460	0.385	0.544	0.472	0.389	0.564
		P1	0.179	0.160	0.200	0.180	0.160	0.203	0.206	0.166	0.251
		P2	0.093	0.085	0.102	0.094	0.085	0.103	0.122	0.091	0.158
	Household level	P0	0.355	0.289	0.451	0.355	0.290	0.491	0.366	0.296	0.468
		P1	0.127	0.111	0.151	0.128	0.111	0.152	0.146	0.119	0.187
		P2	0.063	0.057	0.072	0.063	0.057	0.072	0.082	0.064	0.110
	Child level	P0	0.518	0.442	0.579	0.518	0.441	0.579	0.529	0.448	0.579
		P1	0.201	0.187	0.212	0.202	0.187	0.214	0.228	0.191	0.214
		P2	0.104	0.100	0.108	0.104	0.100	0.108	0.135	0.103	0.108

The economic crisis appears to have a similar effect in terms of who crosses the poverty line in urban and in rural areas, as the rise in P0 is quite similar in magnitude. However, the crisis affects already poor children in rural areas much more: P2 rises by 55% in urban areas in 2009 and by 136% in rural areas, under the severe scenario, and under the moderate scenario all poverty measures improve somewhat in urban areas, while P2 deteriorates by 31% in rural areas. Even the price effects, which tend to moderate the difference at lower incomes, cannot overcome the greater impact of labour market events in rural areas. This clearly needs longer run positive impact of a return to economic growth.

4.3.5 Price effects versus labour market effects

Distinguishing the part of the effect caused by price changes and job losses shows that the impact of job losses is by far the greater. Nevertheless, price changes do have an independent role and in some situations serve to moderate the impact of poverty on rural compared to urban areas. This particularly applies close to the poverty line[24].

4.3.6 Conclusion on money-metric poverty impact

What does all of this mean for the situation of children? In the first place, it is quite clear that the extent of the impact on child poverty depends very much on the economic scenario that one assumes. The moderate crisis scenario, which allows for a quick return to economic growth, has far less severe impacts on child poverty, and indeed on poverty in the whole society. On the other hand, in the severe crisis scenario, where the crisis is both deeper and more sustained, there is a quite strong impact on child poverty, but most of this impact occurs at very low levels of income, i.e. amongst the very poorest children.

It is worth again returning to the impact of the Child Support Grant (Child Support Grant) on poverty. As has been indicated in previous sections, this grant severely reduces child poverty, both because of its good targeting and because children are often more concentrated in poorer households. One can see from the cumulative density functions that the impact of not having the Child Support Grant is as large as that of the severe crisis. Without the Child Support Grant, the child poverty headcount ratio would have been 59.6% in 2007 rather than the 52.6% it was recorded at[25]. This implies a 13.3% increase in the headcount ratio, a 58% increase in the poverty gap ratio and a 107% increase in the poverty severity ratio: Clearly, the Child Support Grant is most effective for those deepest in poverty.

In contrast to this, the severe crisis would have increased the poverty headcount to 54.5% in 2009. This is still a much better situation than would have occurred if there had been no Child Support Grant, even in the absence of an economic crisis. Thus the impact of the Child Support Grant outweighs that of the economic crisis, and the Child Support Grant may even have reduced the impact of the crisis by keeping people out of poverty due to the grants, even if their other incomes alone would have placed them in poverty. This is effectively the same as the typical behaviour one finds in order to react against crises, namely to try to diversify income, thus reducing vulnerability. Though it does not result from individual effort but from state policy, such income diversification for the poor through the grants has a very positive effect on their ability to deal with crises of this nature. So, for instance, without the grants, the level of child poverty would have risen to 63.9% compared to its initial level of 52.6% with the grants and 59.6% without the grants. Whereas the poverty headcount ratio would have increased by 7.2% compared to its initial level in 2007 if there had been no grants, it actually increased by only 3.6% in the presence of grants. Given the much higher initial levels of P1 and P2 in the absence of the Child Support Grant, the percentage impact of the crisis would have been less on these ratios without the Child Support Grant.

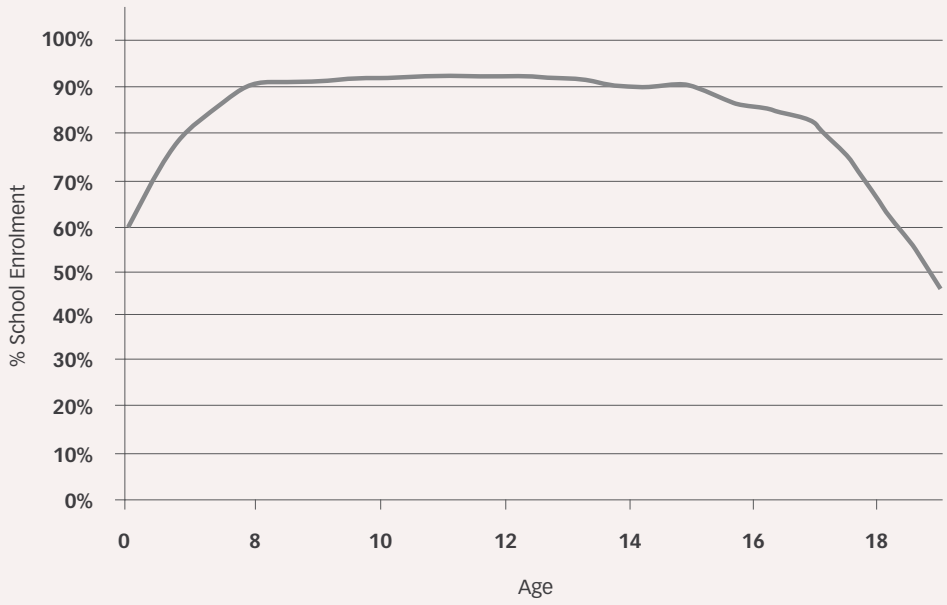
4.4 Impact on non-money metric poverty

The analysis of this document and of the study that underlies it has been focused largely on money-metric poverty. Lack of money due to the economic crisis may also spill over into other spheres of life, however, with potential consequences also for other dimensions of child poverty. Three potential areas stand out: Education, health, and welfare services.

[24] *This may not necessarily seem such an appropriate way of modelling the results, and one may wish to revert to a scenario in which only the impact of the labour market is measured. Nevertheless, within this model, poverty lines have been set for each cluster of observations in the initial sample, based on the price ratios which appear to apply in those clusters, in accordance with the methodology used. This methodology is described in Appendix B and Appendix C.*

[25] *This, of course, does not take into account possible effects of the changes in behaviour, such as work seeking, that may have resulted from the CSG, or the changes in family composition with regard to the location of both the child and the caregiver that may have resulted under a different scenario. It simply looks at the effect of subtracting the CSG from existing incomes.*

Access to education up to secondary school level is in South Africa now close to universal. The poor do not suffer exclusion from schools, but rather they are very often not able to obtain good education because of the abysmal quality of much of the education offered in South African schools. Figure 14 below shows that almost all children between the ages and 7 and 17 are enrolled at schools, though quality dimension of education (as evidenced for instance in international tests) indicate that equity in this dimension is still greatly lacking. But given such universal access to schools, as well as government policies to support access for the poor (e.g. the recent decision to introduce school-fee education for children in first the poorest two quintiles, and not the poorest three quintiles, of schools), it is unlikely that the economic crisis and the increased money-metric poverty it has brought would have significantly affected school enrolment. However, it is well possible that there may have been negative implications for school attendance. It is known that low school attendance rather than school enrolment was already a much more pervasive problem in many schools even before the crisis. School-related costs (uniforms, some books, and in some cases school fees and fees for excursions) make it more difficult, and sometime embarrassing, for some of the poor to attend school. School feeding programmes, where these exist in practice, may dampen such an effect. A dampening effect may also have been caused by the fact that few South African school-age children have realistic options of successfully participating in the labour market or being engaged in subsistence agriculture, due to the small size of this sector.



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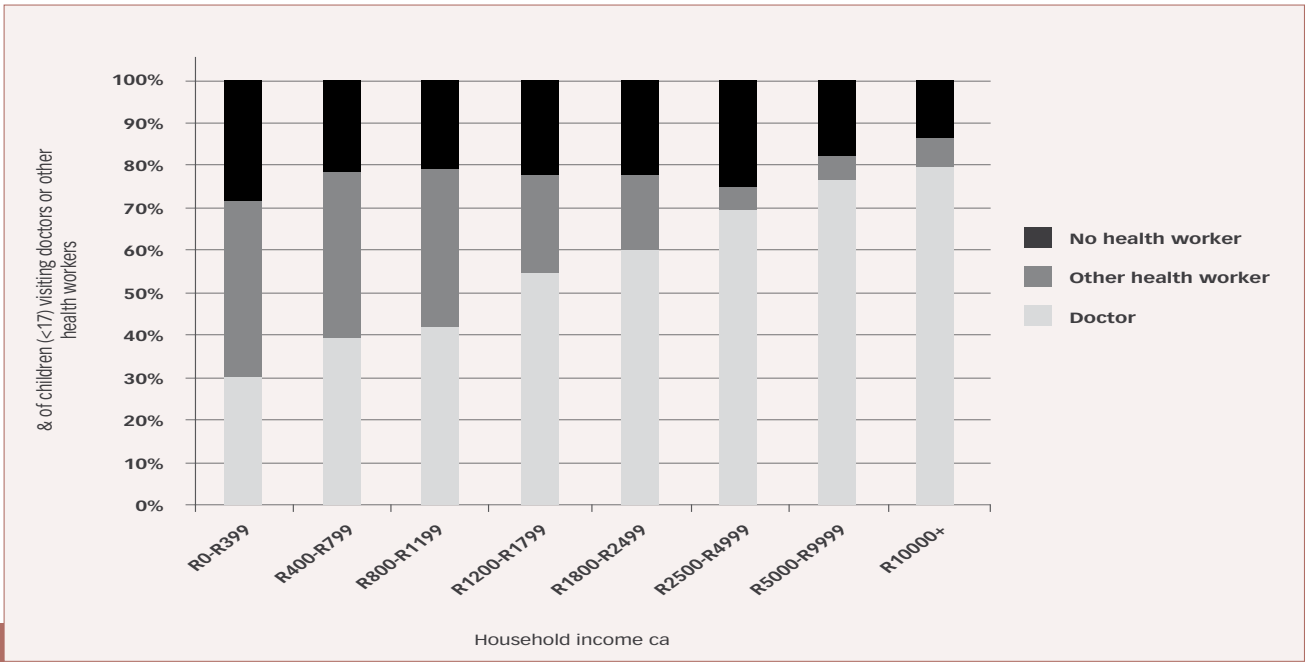
Source: Calculated from GHS2008

Figure 14: School enrolment ratio by age for children aged 6 to 19, 2008

Health access has considerable improved since the political transition, although public health services also suffer from severe quality problems. To a large extent, the issue is no longer access to health care of some sort, but rather access to quality health care, which most people, even the poor, seek through visiting private health facilities when their ailment is serious enough, or when they have the financial resources to do so. Figure 15 shows that there is little evidence of a problem of getting access to a health worker when ill: the differences between those in poorer income categories and those in richer ones are not significant. The issue is rather access to quality health services, which are often identified with having access to as doctor, mainly private doctors visited at their consulting rooms. It is quite evident from the figure that such access is highly dependent on economic status. So in the case of health, like for education, the poor do not suffer lack of access to health facilities because of their poverty, for most public health services are free or heavily subsidised. The financial aspect only enters into it when it comes to the choice of health facility or health worker, and it is likely that the crisis may have forced some poor children back to visiting public rather than private health facilities.



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Source: Calculated from GHS2008

Figure 15: Health visits to doctors and other health workers by children who were ill, 2008

Social welfare services in South Africa are quite inadequate and mainly urban based, as they depend to a large extent on private welfare organisations, some partly subsidised by the state. It is well known that child abuse is quite common, particularly in some of the poorest communities. However, this phenomenon is not directly linked to money-metric poverty, though one can expect economic stress levels to contribute in circumstances where such a problem is already common. Thus it is quite possible that this may have risen as a result of the economic crisis.

5. OVERALL ASSESSMENT AND CONCLUSION

Child poverty is high and has already long been a source of concern in South Africa, thus the progress made in the past decade to reduce it, largely through expanding the child grant system, was very important. Some of this progress may have been reversed by the economic crisis, thus its impacts needed to be studied and policy responses considered. From the combination of macro- and micro-modelling in this study, it is apparent that the impact of the economic crisis did not completely reverse the positive impact of the grants. Yet it is evident that the economic crisis did indeed have an impact on monetary poverty in South Africa. The moderate scenario shows a not very great impact, but an impact nevertheless, with the biggest part of this impact being felt by those who are the poorest. In the case of the severe scenario, the impact is much greater and it affects the very poor again by far the most. The impact of the Child Support Grant is to moderate the poverty effects of the economic crisis, both by reducing poverty levels before the impact of the grants themselves, and by also diminishing the effect of the crisis itself on child poverty.

In the estimates of the impact of poverty, no provision has been made for an expansion of the Child Support Grant. The assumption was simply that in the time frame available, very few people would be in a position to access the grant, given also the slow reaction time on the side of the administrative machine dealing with child support grants. Also, it is indeed the situation that those at or near the poverty line, already in most cases do have access to the grants and therefore the increase in poverty would not necessarily enable more people to qualify to get the grant (fewer than one-quarter of poor children do not currently get the grant, and that is largely because of administrative delays). One instrument available to government to ameliorate the impact of the crisis is to expand the value of the grant, thereby getting more money into poor households. However, currently the number of grant recipients itself is expanding rapidly as a result of changes in the age restrictions applying to the Child Support Grant as well as to the Old Age Pension, plus the further expansion of Disability Grants under the impact of HIV/Aids and other factors. This makes a further expansion of social grants unlikely to be fiscally viable. Nevertheless, having Child Support Grants has reduced poverty and vulner-

ability of children in the South African situation, and it can serve as an example to other developing countries, in that it reduces the depth and severity of poverty also the poor less vulnerable to the effect of an economic crisis, by diversifying their sources of income during such crises.

How likely are the two scenarios discussed in this report? One should first consider that the macro-model specifically attempted to isolate the effects of the global financial crisis, separate from for instance to earlier but enduring effects, that of a fuel and a food crisis that occurred at international level. Thus actual outcomes may be worse. It appears, from present knowledge, as if the moderate scenario may better reflect the course of the international economy than the severe scenario, but that depends on future recovery, which is still in its early stages. Also, the macro-model works at an annual basis and does not allow for lags within a year; in this respects, the exact location of the deepest trough may not fully reflect reality. Further, it appears as if the economic impact of the crisis has been less than under the severe scenario, yet the employment effects appear considerably worse than the moderate scenario. This may be the result of even greater wage rigidities (increasing wages during an economic crisis) than allowed for in the macro-model.

The time period over which this report has looked at the crisis did not really allow for a policy response in terms of anti-poverty policy. In fact, such responses are always slow to implement and depend largely on existing institutions. The Child Support Grant in South Africa is a major instrument to this end, as it is already in place and protects the vulnerable both before the crisis and during it. Moreover, in principle it is possible to use it to expand transfers to households, though the constellation of fiscal forces in South Africa (the fact that grants are already being expounded very rapidly) and the relatively short duration of this crisis reduce its potential role during this crisis.

It needs to be emphasised that this study did not consider household and individual responses to poverty, which may have unknown impacts on actual poverty outcomes, particularly for children, who are the most vulnerable in the sense that they cannot act to protect themselves from the impact. Intra-household behaviour, for instance the extent to which households allocate their resources to protect children from the worst effects of the crisis, is of particular importance. But household formation, dissolution and fracturing can all occur in response to changing economic situations. To some extent, the Child Support Grant has a mitigating effect on the possible impact of such behaviour on children, as it makes it more attractive to have them as part of the household.

Finally, the short section on non-money metric poverty also illustrates that South Africa is better armoured than many other countries against the impact of an economic crisis, in terms of how this is likely to affect children. Access to public social services is not highly dependent on income, but rather has been made easy for the poor. It is the quality of such services that needs more attention for the sake of the children. In addition, the system of welfare services (as opposed to grants) is clearly inadequate and an economic crisis is likely to worsen this situation, though measurement is not easy.

The impact that has been looked at here relates to child poverty in money metric terms. However, it is also important to consider other impacts. Given the policy constellation in South Africa, it is likely that many of the impacts of the crisis on child poverty have not been as severe as may have been the case otherwise, because of the fact that policy is already quite geared towards protecting the poor. So, for instance, the policy of not imposing school fees in the poorest two or three quintiles of schools has the effect of not making parents and children very sensitive to poverty in terms of school attendance. In fact, school attendance up to the age of 15 in South Africa is well above 90%, and unlikely to be much effected by the impact of the economic crisis. Of course, it may be useful here to make a distinction between school enrolment and school attendance, as the latter may be more effected than the former by the impact of the economic situation.

Similarly, the policy of largely free provision of public health services means that the crisis would not have had a great impact on people's ability to access public health services. However, it is well known, and the data also supports that, that those who can afford to do so, prefer to avoid the public health services and rather use private health services, because of real and perceived differences in the quality of health care provided for such services. The economic crisis may thus have had the effect of making it less possible for people to afford private health services, and thereby more of them may revert back to public health services, and thus a poorer quality of service.

Another area which is very difficult to quantify, is that of child abuse that may in some cases be exacerbated by the stress caused by poor economic circumstances, and partic-

ularly by a sudden deterioration in circumstances in some households. Child abuse is quite rife in South Africa and it is likely that the impact of the economic crisis would have been to increase such abuse. Present policy is not very well able to cope with the magnitude and nature of such a social problem in our society and the crisis only again exemplifies the difficulties faced in this field. Obviously in this arena would therefore have to be looked again, not only because of the crisis, but because this is one of the areas in which South Africa does badly at dealing with the situation of those who are vulnerable in our society.

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APPENDIX A: MACRO-ANALYSIS METHODOLOGY

Data for constructing the BAU

The Social Accounting Matrix (SAM) described below is based on 2005 data. In order to generate the BAU, we use consensus growth forecasts by economists of around 4.5% GDP growth for 2005 and the next years. In technical terms, we will generate a BAU that fits with 4.5% GDP growth, allowing the total factor productivity parameters to adjust. Because the model is recursive dynamic, it will be solved over a ten year time horizon. Other data requirements related to gross domestic product, population and labour force growth and capital stock.

The SAM

The Social Accounting Matrix (SAM) is based on the 2005 Supply and Use (SU) tables obtained from Stats SA and other national data sets from various sources such as the Reserve Bank. This SAM has 54 activities and 54 commodities; two broad factors, labour and capital; four institutional sector accounts (households, enterprises, government and the rest of world); and two saving and investment accounts (change in inventories and gross domestic fixed investment (GDFI)).

For the trade parameters, we use Gibson (2003) for the low-bound export supply, while demand elasticities are obtained from Behar and Edwards (2004). Estimates for parameters in industries' production and household demand are not available for South Africa. Therefore, this study borrows these values from the literature surveyed by Annabi et al. (2006). Finally, unemployment rates are drawn from the labour force survey report by Statistics South Africa (2005).

Given this specific study, Table 4 presents trade relations between South Africa and the rest of the world in 2005. It specifies the import penetration rate as well as the sectoral share of imports in total imports. Moreover, it details the sectoral export intensity rates measured as a share of exports in production in each sector and the share of each sector exports in total exports.

Table A1: Structure of South African trade[26](%)

A1

Sectors	Exports intensity rates as a share of total sectoral production (%)	Sectoral export shares as a portion of total exports (%)	Import penetration rates as a share of total sectoral supply (%)	Sectoral import shares as a portion of total imports (%)
Agriculture, forestry & fishing	21.89	4.14	5.84	1.09
Coal mining	48.96	5.01	4.47	0.26
Gold & uranium ore mining	98.65	6.58	0.53	0.00
Other mining	50.65	12.82	30.55	11.08
Food	8.50	2.38	6.02	2.52
Beverages & tobacco	22.16	2.29	2.54	0.42
Textiles	16.58	0.70	14.40	1.15
Wearing apparel	12.89	0.54	11.41	1.27

[26] *This table only refers to tradable sectors, thus government's activities are not represented.*

Sectors	Exports intensity rates as a share of total sectoral production (%)	Sectoral export shares as a portion of total exports (%)	Import penetration rates as a share of total sectoral supply (%)	Sectoral import shares as a portion of total imports (%)
Leather & leather products	35.87	0.44	17.45	0.26
Footwear	5.12	0.05	20.39	0.72
Wood & wood products	12.94	0.61	8.98	0.50
Paper & paper products	15.95	1.45	8.81	0.96
Printing, publishing & recorded media	4.89	0.22	14.78	1.10
Coke & refined petroleum products	17.39	2.59	5.34	1.30
Basic chemicals	30.81	4.60	21.66	4.32
Other chemicals & man-made fibres	11.54	2.09	12.53	3.95
Rubber products	23.54	0.48	22.56	0.91
Plastic products	5.54	0.36	9.13	0.73
Glass & glass products	11.56	0.19	12.64	0.29
Non-metallic minerals	7.71	0.46	11.18	0.87
Basic iron & steel	62.48	10.48	11.56	1.24
Basic non-ferrous metals	47.03	2.94	19.44	1.10
Metal products excluding machinery	19.02	1.79	13.88	1.66
Machinery & equipment	67.47	7.11	35.35	12.83
Electrical machinery	13.23	0.97	17.18	2.25
Television, radio & communication equipment	53.25	0.88	39.74	5.26
Professional & scientific equipment	84.86	0.90	30.42	2.40
Motor vehicles, parts & accessories	20.46	6.72	23.08	15.32
Other transport equipment	27.40	0.68	33.73	3.24
Furniture	48.87	1.71	9.48	0.56
Other industries	18.34	1.94	12.97	3.01
Electricity, gas & steam	0.96	0.11	0.02	0.00
Water supply	0.00	0.00	0.00	0.00
Building construction	0.05	0.02	0.26	0.09
Wholesale & retail trade	1.21	1.01	0.06	0.05
Catering & accommodation services	21.33	1.45	22.81	2.49
Railway transport	15.39	0.58	9.16	0.35
Road transport	7.42	1.93	1.55	0.37
Transport via pipeline	16.04	0.04	0.00	0.00
Water transport	13.52	0.53	31.67	2.80
Air transport	20.37	0.65	32.11	2.18
Transport support services	9.87	0.80	12.74	1.21
Communication	7.01	2.21	6.13	2.00
Finance & insurance	6.26	0.61	9.71	1.40
Business services	3.90	4.61	1.70	1.97
Medical, dental & other health & veterinary services	0.60	0.11	1.01	0.20
Community, social & personal services	3.69	1.22	6.47	2.29

Source: Own computations from SAM (2005)

From the table it is clear that gold (98% of its production), Scientific equipment (84%) and Machinery and equipment (67%) heavily rely on exports. A decrease in world demand or in international prices for these commodities will thus have a huge effect. In the same way, some sectors depend on imports, such as Radio and equipment (39%), or Other mining (30%). A decrease in international prices will strongly benefit these sectors, stimulating imports and increasing competition from foreign suppliers on domestic market. South Africa exports most of its mineral and precious metals, together representing 40.9% of total exports. An external shock on mineral prices would thus have strong effects on the economy.

Building the BAU

In 2005, the year of the SAM, South Africa had anticipated long run GDP growth rates of 4.5% per year. We therefore simulate a Business As Usual (BAU) taking into account the expected rate of GDP growth. In order to reach this GDP, we add a total factor productivity parameter. Moreover, we had for 2005, investment by destination for all the sectors[27], as well as depreciation rates by activities. Stats SA estimated that population will grow at a rate around 1%. Calibrating the BAU on these "real" data, we found that capital grows faster than labour, so in the BAU we have a decrease in unemployment. Moreover, as our production factors become more and more efficient, prices decrease (in real terms) also in the BAU. These pieces of information are important in order to understand the results.

The modelling framework

To evaluate the impacts of the world economic crisis on South Africa, we use the dynamic Poverty and Economic Policy (PEP 1-t) standard model by Decaluwé et al (2009). However, we have changed several assumptions of this standard model in order to better take into account the South African economy. Our model has two production factors, capital and labour, but the latter is disaggregated into four types of labour: informal workers, unskilled, semi-skilled and highly skilled workers. Each activity uses both production factors.

In line with the SAM, the model has 54 activities and commodities. The production function technology is assumed to be of constant returns to scale and is presented in a four-level production process. At the first level, output is a Leontief input-output of value added and intermediate consumption. At the second level, a CES (Constant Elasticity of substitution) function is used to represent the substitution between composite labour and capital. At the third level, composite labour demand is also a CES function between composite-skilled and composite unskilled labour. Note that the composite skilled demand is a CES with a low elasticity between skilled and semi-skilled workers, capturing the fact that it is quite difficult for the firms to substitute semi-skilled for skilled workers. On the other hand, we also use a CES to describe the composite unskilled labour demand between informal and unskilled workers. Here, we assume that for the producer, it is relatively easy to substitute them. Figure 8 in the main text gives the value added structure.

South Africa is faced with high unemployment problems, notably for semi-skilled and unskilled labour. Moreover, unions are very strong in the country. South Africa has the largest trade union movement in Africa, a movement that has been influential in policies on the labour market and other related industrial policies. They negotiate salaries and wages, conditions of service, workforce restructuring and retrenchments on behalf of their members. As a result, wages and salaries are strongly rigid downwards. To take this rigidity into account in our modelling, we assume that wages cannot decline. Thus, if production decreases, producers will not be able to decrease their employees' wages below the initial level. On the other hand, this rigidity will have an impact on unemployment: given that producers cannot decrease workers wage rate, they will have to retrench some of them.

The nominal exchange rate is the numeraire in the model[28]. Following the assumption that South Africa is a small country, world prices are fixed. However we assume that S.A exporters face a less than infinite foreign demand equation for exports. In order to increase their market share on the world market they need to reduce their FOB prices for exports increasing their competitiveness with respect to other suppliers on the international market. Factor supplies are fixed in the first period and then grow, at the population rate for labour force, and using an accumulation equation for capital[29]. Transfers between institutions as well as government consumption in volume are fixed at the base year and then grow at the

[27] *In most of dynamic CGE, this information is not available and we have to build a steady state (or regular path) to calibrate capital stock at the base year.*

[28] *Note that in the CGE results, a real devaluation of the Rand takes the form of a generalised reduction in domestic prices.*

[29] *To specify the accumulation of capital, we follow Jung and Thorbecke (2001) function.*

population rate. We assume that the rest of the world's savings is a fixed proportion of GDP. Given this assumption, we do not allow South Africa to borrow further from the rest of the world[30].

Simulation scenarios

As the dynamic CGE model does not take into account financial flows, it cannot directly capture the financial consequences of the crisis world economic crisis on the South African economy. However the economic consequences of the slowdown of the world economy will be captured through the real side of the CGE model. The main transmission channels of the world crisis to developing countries are a decrease in export demand and export prices, a decrease of FDI (Foreign Direct Investment) and a tightening of the capacity to finance a current account deficit, a decrease in remittances and a drop in tourism revenues. However, for South Africa, the latter two channels are not relevant: South Africa does not receive substantial household to household remittances from abroad, and tourism has not decreased[31]. However, for South Africa, the latter two channels are not relevant: South Africa does not receive remittances from abroad, and tourism has not decreased[32]. Thus we will focus on the external trade and foreign financing of domestic firms. On the positive side a drop in international prices could lead to a reduction in import prices and a possible reduction in the cost of imported goods especially for imported intermediate and capital goods. This positive impact could be counteracted by increased competition by foreign suppliers in sectors competing with imports.

An innovation of our study is that we split the economy into four different groups of activities. Each group is defined by its degree of dependency/exposure to the global crisis and is assumed to be affected differently by the crisis. The four groups are defined as follows (see Table A2).

- **Unaffected sectors (Group 1):** It is assumed that these sectors will face neither a reduction in the foreign demand nor a reduction in international prices. Basically, this group 1 consists of gold[33], food and beverage commodities.

- **Weakly affected Sectors (Group 2):** These sectors are not heavily dependent on foreign trade and not very closely related to other sectors. Found here are commodities such as agriculture, clothing and wood.

- **Mildly affected sectors (Group 3):** As for the previous group, these sectors are not heavily dependent on foreign trade but are closely linked to other sectors. Such sectors will react to a reduction in consumption, investment expenditures or reduction in demand for intermediate goods. This group refers to most of transports products, trade and construction.

- **Strongly affected sectors (Group 4):** These sectors are closely linked to the international markets either on the export dimension or the import side. Here we find fossil fuel, other mining, machinery and equipment.

Table 5 gives an overview of the South African economy for the different categories described above. We report the shares of output, of exports and imports as well as the composition of local demand and labour market. Thus, we can point out that mildly affected sectors represent around 60% of total output while strongly and mildly affected sectors represent respectively 48.2% and 31.8% of total exports. These two groups together represent 80% of total exports.

[30] *This assumption may seem strange, given that the country has in the past increased its savings from abroad. However, South Africa does not want to increase its current level of borrowing substantially.*

[31] *One factor in the steady performance of tourism in 2009 was that many sports events were organised in South Africa (the Confederation Cup, Lion's Tour, preliminary organisation for the World Cup).*

[32] *One factor in the steady performance of tourism in 2009 was that many sports events were organised in South Africa (the Confederation Cup, Lion's Tour, preliminary organisation for the World Cup).*

[33] *This paper does not consider the speculative surge in the demand for gold. This scenario will be analysed in future work.*

Table A2: Sectors grouped according to severity of the impact of the crisis

Group	Sectors	Number of sectors
Group 1: (Non- affected sectors)	Gold & uranium ore mining Food Beverages & tobacco	3
Group 2: Sectors weakly affected	Agriculture, forestry & fishing Textiles Wearing apparel Leather & leather products Footwear Wood & wood products Paper & paper products Water supply Furniture	9
Group 3: Sectors mildly affected:	Building construction Electricity, gas & steam Basic non-ferrous metals Metal products excluding machinery Other industries Basic chemicals Printing, publishing & recorded media Other chemicals & man-made fibres Rubber products Plastic products Glass & glass products Non-metallic minerals Wholesale & retail trade Catering & accommodation services Railway transport Road transport Transport via pipeline Water transport Air transport Transport support services Communication Finance & insurance Business services Medical, dental & other health & veterinary services Community, social & personal services	31
Group 4: Sectors strongly affected	Coal mining Other mining Coke & refined petroleum products Basic iron & steel Machinery & equipment Electrical machinery Professional & scientific equipment Other transport equipment Television, radio & communication equipment Motor vehicles, parts & accessories	10

Table A3 : Initial shares in 2005 (% in value)

Commodities/Sectors	Total output	Exports	Imports	Local demand	Labour demand
Non-affected	6.2	11.0	4.1	5.1	4.7
Weakly affected	6.2	9.0	8.7	5.7	4.4
Mildly affected	59.5	31.8	32.4	65.2	55.7
Strongly affected	17.0	48.2	54.8	11.5	9.0
All tradable	88.9	100.0	100.0	87.5	73.7
Total	100.0	100.0	100.0	100.0	100.0

Table A4: Commodity prices per Oz/per bbl

	Total output Exports		Imports Local demand		Labour demand	
	$ price	**Rand Price**	**$ price**	**Rand Price**	**$ price**	**Rand Price**
Gold	697	4900	895	6918	916	8519
Platinum	1304	9167	1772	13698	998	9281
Palladium	353	2482	393	3038	196	1823
Rhodium	6113	42974	7550	58362	3250	30225
Oil	72.7	511	111.2	860	78.3	728
Econometrix (2008)						

Note that the non-tradable sector[34] is not taken into account and as a result the sum of shares does not add to 100% (except, of course, in the case of imports and exports). The non-tradable sector represents more than 25% of the total wage bill and consequently provides employment opportunities to a significant part of the population.

The paper simulates the impact of two scenarios that are distinguished by the magnitude of the recession (severe or moderate), as discussed in the main text. We base our choices of the scenario magnitude on data for South Africa. A visible effect of the crisis has been declines in several commodity prices since their peaks around July 2008. Most dramatic of all have been the decline, of around 60%, in the prices of platinum group metals (PGMs) as shown in the Table A4.

Table A5 illustrates the magnitude of the decline in exports of precious metals and the decline in the value of oil imports on an annualised basis. It can be seen that there has been a decline in exports of precious metals of some R13.0bn compared with 2007 and by R37.4bn compared with the average export revenue achieved in the year to date in 2008.

One needs to also take into account declines in export values of minerals other than precious metals. In particular, coal prices have declined by some 30% in recent months, not to mention the 50% decline in the price of copper from its peak in July. One could therefore be looking at a further R10bn decline in the value of mineral exports in relation to the average for this year as a whole. The net effect at present, of lower commodity prices, would be to contribute to the widening of South Africa's trade deficit by around R15bn to R25bn on an annualised basis compared with the situation which prevailed when commodity prices were at their peaks in July 2008. This is not a dramatic deterioration in the trade account and is relatively small in relation to the services account of the current account of the balance of payments.

[34] *This sector regroups government sectors and water.*

Table A5: Value of Annualised Mineral Imports/Exports (R'bn)

	2007	Annualised 2008 (YTD)	Annualised Current
Gold	39.9	46.9	48
Platinum	46.2	58.6	39.7
Palladium	6.9	7.2	4.3
Rhodium	26.9	34.6	17.9
PGMs	83	100.4	61.9
Oil	109.8	153	129.5
Econometrix (2008)			

A5

Table A6: Change in Annualised Mineral/Exports (R'bn)

	Current vs 2007 Avg	Current vs 2008 Avg
Exports		
Gold	+8.1	+1.1
Platinum	-6.5	-18.9
Palladium	-2.6	-2.9
Rhodium	-12	-16.7
PGMs	-21.1	-38.5
Oil	-13	-37.4
Imports		
Oil	-19.7	-23.5
Balance	**+6.7**	**-13.9**
Econometrix (2008)		

A6

South Africa has a current account of the balance of payments (exports minus imports) deficit equal to between 7.5% and 9% of GDP. The country does not have substantial foreign exchange reserves to finance that deficit, and therefore relies on capital inflows. But if these turn to outflows as a result of the financial crisis, the Rand will be under enormous pressure, and will lose value rapidly in world markets. This will mean that, the world financial crisis will likely impact more heavily on South Africa in terms of its wide economic effects than it will via the exposure of its financial markets to the melting fortunes of foreign financial firms.

Thus, in terms of the impact of the crisis on Foreign financing of domestic firms, we assume that foreign transfers to firms decrease by 5% in 2008-2009 and then increase by 2.1% in 2010 in the moderate scenario. In the severe scenario, we assume that it decreases by 10% in 2008-2009 and then increases by 1% in 2010. This reduction corresponds globally speaking to a tightening of the liquidity available to firms to finance their investment program and has an indirect impact on the current account. A reduction in foreign transfers reduces the financial resources available to finance imports and will require an increase in exports to compensate this reduction.

After 2010, world prices recover to their BAU values; world demand increases at the population growth rate.

APPENDIX B: MICRO-ANALYSIS METHODOLOGY

In order to estimate the impact of the global crisis on monetary poverty (given the particular focus on child poverty), we need to capture the changes in household and individual consumption in response to changes in commodity prices and household income (Bibi, Cockburn, Coulibaly & Tiberti, 2009: 1). Models of household consumption behaviour provide estimates of price and income elasticities that are used to compute pre-crisis real individual consumption. The methodological approach adopted by this study on the micro-side draws largely from the work of Cockburn, Fofana and Tiberti (forthcoming UNICEF and PEP working paper), Bibi, Cockburn, Fofana and Tiberti (forthcoming UNICEF and PEP working paper), and Bibi, Cockburn, Coulibaly and Tiberti (2009), and this section will to some extent paraphrase their methodology. Given the macro-micro simulation results on changes in commodity prices, wages and labour market status, the pre-crisis real individual income can be compared with the base year (pre-crisis) equivalent to determine the impact of the crisis on poverty. A description of the data and methodology used to derive pre- and post-crisis individual income follows. Specific issues surrounding the South African data and the consequent limitations and adaptations for the micro methodology are also discussed.

DATA DESCRIPTION

Income and Expenditure Survey 2005/6

The Income and Expenditure Survey (IES) conducted by Statistics South Africa between September 2005 and August 2006 was the third of its kind. The main aim of the IES is to update the representative household basket of goods and services needed for calculating the Consumer Price Index (CPI). However, the IES datasets have also become important sources of information for welfare analysis.

The IES 2005/2006 adopted a new sample design framework consisting of approximately 3 000 primary sampling units that were based on the Census 2001 enumeration areas. Each PSU was representatively divided into four quarterly allocations of 750 each, within which a random sample of 250 PSUs was selected every month. A sample of 8 households was subsequently selected from each of the sampled PSUs for fieldwork. This would ensure that the sample drawn was evenly spread over the twelve month survey period, whilst remaining nationally representative in each quarter. After exclusions, the final sample size was 21 144 households. Data collection was comprised of a main questionnaire that was divided and conducted on five separate visits. Households were further required to record all food expenditures relating to the survey month in a weekly diary. Therefore, four separate diaries were completed by each household. Other expenditures (mostly non-food related) for the twelve month period prior to the survey were also declared by households. A significant issue of the IES 2005/6 dataset that is highly relevant to this study regards the lack of unit price data; that is, only total household monthly expenditure per expenditure item is reported. Price was therefore generated using the minimum monthly expenditure reported in each district as a proxy for the unit district price. This is in line with Fry et al (2000), and has been adopted by Koch (2007) in analysing South African household expenditure shares and the pitfalls of South African expenditure data.

An issue that arose from the IES 2005/6 dataset regards the under-reporting of food expenditure, perhaps due to respondents fatigue from the arduous task of maintaining weekly expenditure diaries. This may prove problematic for the micro analysis since the main focus is placed on food expenditure given the repercussions for child poverty in particular. A further issue is the lack of labour market information which is required for adequate modelling of wages and employment probability. Therefore, this study makes use of an alternative dataset for modelling real consumption before and after the crisis which contains both income and expenditure data, but is more detailed with regards to labour market and productive characteristics of individuals. This dataset is discussed next. However, the IES

dataset will still be used to calculate price (own and cross) and income elasticities to inform the macro model. It will further be of interest to compare the elasticity results of the IES with the NIDS dataset.

National Income Dynamics Survey (NIDS)

The micro-analysis makes use of the expenditure and income data from the first wave of the National Income Dynamics Survey. This survey has been designed with the aim of tracking changes in the well-being of approximately 28 000 individuals from 7 305 households in South Africa. This is achieved through recording changes in inter alia incomes, expenditures, assets, education and access to healthcare. The first wave of data was collected over the course of 2008, while it is foreseen that data will be collected every two years. Questionnaires were administered at the household as well as the individual level (separately for adults and children). Individuals of 12 to 59 years in age were further asked to complete a numeracy test. The survey employed a stratified, two-stage cluster sample design. In the first stage, 400 Primary Sampling Units (PSUs) were selected from Statistics South Africa's 2003 Master Sample of 3000 PSUs[35]. The explicit strata in the Master Sample are the 53 district councils (DCs). Two sets of weights are thus provided, the design weights and the post-stratification weights.

The expenditure section of the household questionnaire provides information on household spending on 32 food products and 53 non-food products. Non-response was widespread[36]. In preparing the NIDs data for public release, a number of derived variables were generated. These include the aggregation and imputation of missing values for household income and expenditures. Full descriptions of the methodologies employed for the imputation of food and non-food expenditures, income and housing expenditure are available in the NIDS technical reports (see Finn et al, 2009; Argent, 2009).

As for the IES 2005 dataset, no unit price data are provided. Price was therefore generated using the minimum monthly expenditure for an item or expenditure category reported in each district as a proxy for the unit district price. As much as is possible, district prices are generated using only response data (imputed expenditures were not used). In cases where the expenditure data for all sampled households within a particular district are imputed, the median price for the entire sample is used. Expenditure on food in NIDS is further found to be more highly aggregated than the expenditure data of the IES, which may lead to poorer proxies of price (see section 2b) given the high degree of heterogeneity within food categories.

The main advantage to using the NIDS dataset is that the consumption behaviour of a household can be directly linked to the labour market activity and earnings potential of that household. This makes it possible to directly assess the change in real individual consumption for a specific household. NIDS provides information on the labour market status, occupation and industry of employment, which combined the maximum level of education attained, makes it possible to determine the skills levels of individuals. Information on union membership and on UIF contributions and VAT registration are also provided, making it possible to determine whether the individual is employed in the formal or informal sector.

MODELLING THE POST-CRISIS LEVEL OF REAL ADULT EQUIVALENT CONSUMPTION

Adult equivalent aggregate consumption and categories of consumption items:

In order to estimate the base year (pre-crisis) level of consumption and price elasticities (to be used by the macro-model), the micro analysis needs to distinguish roughly 16 good categories (15 food groups and 1 non-food group). In the South African case, 14 food and 1 non-food categories were chosen, giving a total of 15 categories . These categories were chosen so as to be in line with the food, non-alcoholic beverage and alcohol beverage categories defined by the Classification of Individual Consumption According to Purpose (COICOP) method (published by the United Nations Statistics Division). Each commodity distinguished in the household survey was assigned to one of the 15 categories of goods, with products being grouped into broad food categories

[35] *This sampling frame was the same one used for the Labour Force Surveys (LFSs) and General Household Surveys (GHSs) between 2004 and 2007, and for the Income and Expenditure Survey (IES) 2005/6.*

[36] *22524 cases of non-response in the non-food section, and 5695 in the food section (Finn et al, 2009).*

[37] *The food categories were selected as mealie-meal, breads/cereals, meat, fish, vegetables, fruit/nuts, oils/fats, dairy, eggs, sugar, non-alcoholic beverages, coffee/tea, other food products not elsewhere specified, and alcohol.*

Table B1: Equivalence scale based on daily caloric intake, by gender and age

B1

Young children		
<1	0.32	
1-2	0.44	
2-3	0.52	
3-5	0.60	
Older children	**Boys**	**Girls**
5-7	0.71	0.67
7-10	0.81	0.69
10-12	0.85	0.75
12-14	0.92	0.81
14-16	1.02	0.83
16-18	1.10	0.83
Adult	**Men**	**Women**
18-30	1.00	0.77
30-60	0.96	0.79
>60	0.81	0.71

Source: FAO/WHO/UNU (1985)

based on the homogeneity of the different food products with regards to price, quality, nutritional/caloric content etc. Expenditure on products purchased in the market, received as gifts or in-kind, and self-consumption were aggregated to give total monthly household consumption (Bibi et al, 2009: 73), and converted to an annual basis by multiplying by 12 (unless where expenditure is already given at an annualised value).

Assuming a unitary household bargaining model, aggregate household consumption was allocated to individuals in the household by dividing total household consumption by the number of adult equivalents in the household (Bibi et al, 2009: 73). The equivalence scale adopted by the micro-analysis is the "caloric requirements" approach, which calculates the adult equivalent scale of each individual in the household based on the WHO calorie requirements tables by age and sex, with adult males aged 18-30 forming the reference group (adult equivalent scale equal to 1). Equivalence scales by age and gender are presented in table 1.

Converting individual consumption into real terms

The approach adopted by the micro-analysis for converting individual consumption into real consumption and comparing real consumption over time is the Almost Ideal Demand Systems (AIDS) approach of Deaton and Muellbauer (1980). In addition to the per adult equivalent consumption values discussed above, the share of each good category in terms of total household consumption and the district median unit price for all food categories were required for estimating the parameters of the demand system. However, no price data were available in the South African datasets. The proposed solution to this issue has already been discussed.

The following demand system model was estimated:

$$w_{j,c,h} = a_j + \sum_{k=1}^{K} b_{j,k} \ln p_{k,c} + c_j \ln \frac{x_{c,h}}{z_c} + e_j D_{c,h} \quad (1)$$

with

$$b_{j,k} = b_{k,j}; \sum_{j=1}^{J} a_j = 1; \sum_{j=1}^{J} b_{j,k} = \sum_{j=1}^{J} c_j = \sum_{j=1}^{J} e_j = 0 \quad (2)$$

where $w_{j,c,h}$ is the share of aggregate consumption for household h living in cluster c that is spent on commodity j, $p_{k,c}$ is the price of that commodity in cluster c, $x_{c,h}$ is the adult equivalent total expenditure, z_c is the poverty line in c, $D_{c,h}$ is a vector of socio-demographic household characteristics (see Deaton & Muellbauer, 1980). As district poverty lines are not available for South Africa, the adult equivalent total expenditure is scaled relative to another consumption value, household consumption at the 40 percentile or median consumption within a district. Equation (1) could similarly be written as:

$$w_{j,c,h} = a_j + \sum_{k=1}^{K} b_{j,k} \ln p_{k,c} + c_j \ln y_{c,h} + e_j D_{c,h} \quad (3)$$

with

$$y_{c,h} = \frac{x_{c,h}}{z_c} \quad (4)$$

where $y_{c,h}$ is considered endogenous (Bibi et al, 2009: 76).

The AIDS model in equation (1) is estimated following Deaton (1997), and relies on the spatial variability of prices within a country in order to estimate the parameters $b_{j,k}, c_j$ and e_j. A three-stage least squares model was used for this purpose[38].

Following the estimation of the model parameters, consumption in real terms can be calculated as:

$$\ln e_{c,h} = b(\mathbf{p_r})\left[\frac{\ln x_{c,h} - \ln z(\mathbf{p_c})}{b(\mathbf{p_c})}\right] + \ln z(\mathbf{p_r}) \quad (5)$$

where z(p) and b(p) are defined as (see Deaton and Muellbauer, 1980):

$$\ln z(p_c) = a_{0c} + \sum_{k=1}^{K} a_k \ln p_{c.k} + \frac{1}{2}\sum_{j=1}^{J}\sum_{k=1}^{K} b_{j,k} \ln p_{c,j} \ln p_{c,k} \quad (6)$$

$$b(p) = c_0 \prod_j p_j^{c_j} \quad (7)$$

The own and cross price elasticities can also be calculated from the demand system parameters. The own price elasticity ($\varepsilon_{j,j}$) for good j is defined as:

$$\varepsilon_{j,j} = \frac{b_{j,j}}{\overline{w_j}} - 1 \quad (8)$$

where $\overline{w_j}$ identifies the mean value of good j's share.

The cross price elasticity of demand of good j with respect to a change in the price of good k is defined as:

$$\varepsilon_{j,k} = \frac{b_{j,k}}{\overline{w_j}} \quad (9)$$

The income elasticity (η_j) is calculated as:

$$\eta_j = \frac{m_j}{\overline{w_j}} + 1 \quad (10)$$

where $m_j = c_j + 2d_j\overline{y_{c,h}}$ with $\overline{y_{c,h}}$ identifying the mean value of the logarithm of $y_{c,h}$.

MODELLING THE LINKING VARIABLES IN THE MICRO-MODEL – WAGES, LABOUR MARKET MOVEMENTS, AND COMMODITY PRICES

Commodity prices

Changes in commodity prices are estimated at the sectoral level in the CGE model. The sectors are defined such that they correspond to the 15 categories distinguished in the micro analysis (see above).

Wages

Potential wages and probability of employment are predicted using the sample of economically active individuals, i.e. those individuals who are of working age (between 15 and 65 years) and have labour market status of either unemployed or employed. The strict/narrow definition of unemployment was used. Paid employment may either occur in the formal or informal wage sectors. In addition to employment by sector, further distinctions were made by skills level (skilled, semi-skilled and unskilled).

The wage regressions for the formal and informal sectors are defined as:

$$\ln w_i^F = \alpha + \beta_i X_i + \varepsilon_i \quad (11)$$

$$\ln w_i^{INF} = \lambda + \vartheta_i X_i + \nu_i \quad (12)$$

where $\ln w_i^F$ and $\ln w_i^{INF}$ are the logarithm of wage received by individual i working in the formal (F) and informal (INF) sectors respectively. X_i represents a vector of productive characteristics that include, inter alia, gender, years of education (quadratic), experience[36] (quadratic), occupation dummies, industry dummies, union membership, and geographical characteristics of the household (province).

The macro model provides information on variations in wages for the various categories of workers. The wage functions estimated by equations 11 and 12 imply that only individuals with wage employment are considered in estimating the model. Therefore, the large incidence of unemployed individuals in the sample can lead to selectivity bias; that is, ordinary least square estimation of wage equations will lead to biased and inconsistent estimates. It has therefore

[38] *The model may be run separately for urban and rural areas in order to take into account the structural differences between these area types.*

[39] *Experience is calculated using the formula for potential experience i.e. experience = age – years of schooling – 6.*

become common practice to improve the wage equation using Heckman's correction procedure for selectivity bias (Heckman, 1979). One of the techniques proposed by Heckman proceeds in two steps: firstly, a reduced-form probit equation of the probability of having an observed wage is estimated, which is then used to calculate the Mills ratio; secondly, the inverse of the Mills ratio, also known as "Heckman's lambda", is included in the OLS estimation of the wage equation as an explanatory variable. In order to solve the identification problem, the employment equation has to include some variables which only influence the probability of being employed and not the wage, once such workers are employed. These are typically household socio-demographic characteristics such as marital status, number of children in the household, and whether or not the wage earner is the household head. The selection equation may also control for educational level, experience, and residence in a rural or urban area.

The wage regression model is therefore run separately for each category of worker following the Heckman selection model. The Heckman procedure allows for both the wage and employment probability equations to be jointly estimated for each of the worker categories. Following the estimation of the wage and employment models for each sector, the probability of employment in each of the sectors (worker categories) is predicted for the entire sample of economically active individuals between the ages of 15 and 65 years. Wages are similarly predicted. These will be used for reconciliation with the macro model in the following section.

Movement between the formal and informal labour markets

As mentioned, the macro model provides information on variations in formal and informal sector employment[40]. In order to transmit this information to the micro analysis to determine changes in real income/consumption, it must first be determined which individuals are affected. The "job-queuing" approach is adopted for this purpose. This entails ranking the sample of economically active individuals according to their predicted probability of being (first) in the formal wage sector and (secondly) in the informal wage sector. The results of the CGE model will then inform movements between these two sectors, with those individuals with the lowest probability of employment being the first to "leave" the sector, and those with the highest probability of employment being the first in line to "enter" the sector. This method assumes no change in the supply side of the labour market. The pathway of labour transition is imposed "a priori" according to a ranking of individual preferences; for example, the movement from skilled formal sector to semi-skilled formal sector.

Income from self-employment and capital

Income from self-employment activities is defined as:

$$\pi_h = \sum_{k=1}^{K} Y_k p_{y,k} - I_k p_{I,k} \quad (13)$$

where Y_k is the quantity of k produced, $p_{Y,k}$ is the producer price of good k, I_k is the quantity of inputs into the production of k, and $p_{I,k}$ is the price of inputs for the production of k. However, given the limitations of the South African data with regards to producer prices and input prices and quantities, self-employment is unlikely to be modelled in this way. Rather, variations in earnings reported through self-employment may be informed by macro model.

Transfers

Transfers received by households are defined as:

$$Tr_h = Tr_{h,pu} + Tr_{h,\mathrm{Pr}\,Ex} + Tr_{j,\mathrm{Pr}\,In} \quad (14)$$

where $Tr_{h,pu}$ are public transfers, and $Tr_{h,\mathrm{Pr}\,Ex}$ and $Tr_{h,\mathrm{Pr}\,In}$ are private transfers (internal and external). Changes in transfers are informed by the macro model.

Household aggregate income

Given the above changes in specific income sources, total household income at time 0 (pre-crisis period) can be written as:

$$Y_{c,h}^{t=0} = \sum_{i \in h} w_i^{F_{T=0}} F^{t=0} + \sum_{i \in h} w_i^{INF_{T=0}} INF^{t=0} + \pi_h^{t=0} + Tr_h^{t=0} \quad (15)$$

where F is a binary variable taking a value of 1 if person i is employed in the formal sector, and 0 otherwise. Similarly, INF is a binary variable taking a value of 1 if person i is employed in the informal sector, and 0 otherwise. The change in total household income between the pre- and post-crisis periods can be written as:

$$\Delta Y_{c,h} = \sum_{i \in h} w_i^{F} F^{t=1} + \sum_{i \in h} w_i^{INF} INF^{t=1} + \Delta \pi_h + \Delta Tr_h \quad (16)$$

[40] *Self-employment is assumed to be constant.*

where Δ is for the difference in the value in each associated variable between the post-crisis (t=1) and pre-crisis (t=0) periods.

Welfare analysis

As mentioned previously, no attempt was made to model intra-household allocation decisions, but rather a uniform model of household bargaining was assumed such that consumption was shared equally among members of each household (using a suitable adult equivalent scale). As a result, adults and children were defined as poor if they belonged to a household where per-adult equivalent consumption expenditure was lower than the poverty line. The robustness of the results can be illustrated using a range of different poverty lines.

Different poverty measures (poverty headcount, poverty gap and severity of poverty) per Foster, Greer and Thorbecke (1984) are estimated for the pre-crisis and post-crisis periods. The FGT class of poverty measures take the form of:

$$\mathrm{FGT}(\alpha) = \left(\frac{1}{\sum \mathrm{w}_1}\right)\sum w_i \left[1 - \frac{x_i}{z}\right]^{\alpha} \qquad (17)$$

where x_i is per capita expenditure for those individuals with weight w_i who are below the poverty line and zero for those above, z_i is the poverty line and $\sum w_i$ is the total population. α takes a value of 0 for the poverty headcount, 1 for the poverty gap, and 2 for poverty severity (squared poverty gap).

Given that the AIDS approach is adopted to model household consumption patterns, the poverty rate before the crisis is calculated by dividing individual consumption in real terms by the poverty line for the reference area and multiplying by 100, resulting in a new poverty line of 100 for all individuals (Bibi et al, 2009: 74). To calculate poverty rates after the crisis, individual consumption in real terms is re-estimated after replacing the price vector with the new vector of prices (obtained from the macro model) and the change in total household income i.e. the sum of the pre-crisis total household consumption and the change in household income obtained from the micro-simulation of labour market movements, and normalised by the adult equivalent scales. Given the new post-crisis real individual consumption, poverty rates are calculated and compared with the pre-crisis poverty rates.

APPENDIX C: ESTIMATED PRICE AND INCOME ELASTICITIES

The full micro-econometric modelling results are not all relevant to the child poverty outcomes. However, it is worth considering some of what was observed regarding this data.[41] Table 7 sets out the price and income elasticities from NIDS. One effect of the economic crisis was high food prices, which would have had a large effect on the consumption patterns of the poor, considering the relatively high price elasticities observed in the first columns for many food items.

Thus far there have been no price data available to use in South African poverty studies. It is thus instructive to note that the poverty figures obtained when considering the price levels derived in the micro-modelling lead to the differential between rural and urban poverty narrowing compared to many other studies, indicating that relative prices tend to be lower in rural areas.

Table C1: Price elasticity and income elasticity for certain consumption goods (at the 40th percentile of per adult equivalent[42] income in each province)

C1

	(Own) Price elasticity	Income elasticity
Maize	-0.399	0.8317
Rice/Bread	-0.745	0.7399
Meat	-0.853	0.8173
Fish	-1.174	0.7079
Vegetables	-0.909	0.8039
Fruit	-1.058	0.8985
Oil/Fats	-0.831	0.7197
Dairy	-1.036	0.8781
Eggs	-0.920	0.7038
Sugar	-0.866	0.7267
Non-alcoholic beverage	-1.042	1.0156
Coffee/Tea	-0.902	0.6874
Other/Unspecified elsewhere	-0.976	0.7064
Alcoholic beverage	-1.092	0.9360
Non-food	-0.824	1.1498
Source: Own calculations from NIDS		

[41] *The National Income Dynamics Study (NIDS) used in this analysis did not contain price data (the same applies for the larger IES 2005, which was also analysed in the same way). The following methodology was used to generate prices: In the case where a food category is comprised of more than one product, the price of the modal product within that food category was used. For example, the food category rice/bread (which comprises of rice, bread, flour, biscuits/cakes, cereals) had rice as the modal product; therefore the price of rice was used to proxy the price of this food category. As no unit price information was available, and neither quantity data (as this would have allowed price to be derived by dividing total expenditure by quantity), unit price was proxied by minimum total expenditure. That is, as unit price had to be determined at the cluster level, the minimum reported expenditure within each cluster was taken to be the best approximation of the unit price for the respective food category in that district. In order to correct for (what was considered to be) wide price ranges, a further adjustment was made whereby prices that fell below the 5th and 95th percentile were truncated to the 5th and 95th percentile prices respectively (similarly, we might have truncated price data to fall within 2 standard deviations from the mean. Results were not significantly different when adopting either method).*

[42] *The adult equivalence scale used here was simply derived from the food consumption for different age and gender groups obtained from the FAO.*

CHAPTER 2:

SOCIAL ASSISTANCE REFORM DURING A PERIOD OF FISCAL STRESS

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1. INTRODUCTION

Social security systems provide protection against risks of income loss due to contingencies such as old age, unemployment, disability, or injuries sustained at work. The social assistance components of social security systems consist of non-contributory cash or in-kind grants to provide protection to the most needy.

During the past two decades, extensive fiscal space and sweeping reforms have enabled South African policymakers to develop an unusually large social grants system by the standards of middle-income countries.[43] Several factors, however, suggest that South Africa has reached a crossroads in the evolution of the social assistance system: the public finances have deteriorated rapidly and severely as a result of a recession linked to the global economic crisis, large sections of the population have not experienced significant improvements in their standards of living since democratisation, and many South Africans harbour reservations about aspects of the design and impact of the grants. Hence, it is an opportune time to reflect on the current state and likely future of the South African social assistance system.

This paper provides such reflection, focusing specifically on the fiscal sustainability of the grants system, its effectiveness as an instrument to combat poverty in a longer-term developmental sense, and its impact on the allocation of resources. Section 2 outlines the elements, growth and size of the South African social assistance system and comments on its budgetary sustainability. Section 3 explores the effectiveness of the social assistance system as a mechanism for achieving the Government's objective of a developmental approach to poverty alleviation and its efficiency costs in

[43] *South Africa had the ninth-highest value in a recent comparison of the ratios of social assistance spending to GDP in 74 developing and transition countries (Weigand and Grosh, 2008: 25-26).*

2

terms of distortions to the allocation of resources. To this end, the section discusses the role of the grants system in the broader context of anti-poverty policy in South Africa and reviews relevant literature on the poverty-mitigating and incentive effects of the grants. Against this background, section 4 discusses the future role of the grants system in South Africa and comments on two sets of possible options for enhancing its effectiveness. These are conditional cash transfer programmes and workfare schemes to expand the access of unemployed members of the labour force to economic opportunities. Section 5 offers recommendations.

2. THE SOUTH AFRICAN SOCIAL SECURITY SYSTEM

2.1 Elements and coverage

The social insurance component of the South African social security system consists of three contributory funds providing conditional income support or compensation for defined-risk events: the Unemployment Insurance Fund (UIF), the Compensation Funds, and the Road Accident Fund.[44] In addition, binding industrial-council and other agreements between employers and employees have introduced an element of compulsion into many occupational retirement insurance schemes, thus turning them into quasi-social insurance schemes.[45] The social assistance system provides means tested income support for members of three vulnerable groups: children, the elderly and the disabled.

The remainder of this section outlines these two components

[44] *Social insurance programmes consist of benefits organised by the state and funded by means of specified contributions by employers and employees.*

[45] *In South Africa, unlike in many other countries, contributions paid by employers and employees are not included in social security taxes, because they do not flow through the coffers of the state. International comparisons of the extent of social security provision based on government spending ratios therefore misrepresent the scope of insurance provision in South Africa.*

of the South African social security system in more detail.[46] The discussion revolves around coverage in the three major life stages of individuals and families: childhood, working age, and old age.[47]

2.1.1 Childhood

The child support grant, which was introduced in April 1998 to replace the child maintenance grant, currently is the most important form of assistance for children in poor families. These grants are paid to the primary caregivers of children.[48] Since 1 April 2010, the child support grant amounts to R250 per month, and the number of beneficiaries reached an estimated 9 424 281 on 28 February 2010 (National Treasury, 2010a: 103, 105). The formula for determining the income threshold for the child support grant is A = B * 10, where A is the income threshold and B the monthly value of the grant. Hence, the income threshold now amounts to R2 500 per month for single caregivers and R5 000 per month for married caregivers (R30 000 per annum and R60 000 per annum, respectively).

Care dependency grants are paid to the parents or caregivers of children between the ages of 1 and 18 years who suffer from severe physical and mental disability and are in permanent home care (disabled persons between the ages of 18 and the retirement age receive state disability grants, while those above the retirement age receive old-age pensions). At the end of February 2010 these grants, the value of which increased to R1 080 on 1 April 2010, were paid to an estimated 119 307 care-dependent children (National Treasury, 2010a: 103, 105). The means test for care dependency grants is similar to that for child support grants hence, in April 2010 the income threshold increased to R10 800 per month for single caregivers and R21 600 per month for married caregivers (R129 600 per annum and R259 200 per annum, respectively).

Foster care grants are disbursed to children deemed in need of care by the courts. Such children are placed in the custody of foster parents designated by the courts and supervised by social workers. The aim of the grant is to reimburse foster parents for the cost of caring for children who are not their own; as such, the grant is not means tested and falls away if the child is adopted formally. From 1 April 2010 foster care grants amount to R710 per month and the number of beneficiaries reached an estimated 569 215 at the end of February 2010 (National Treasury, 2010a: 103, 105).

2.1.2 Working age

The UIF provides short-term compensation for qualifying workers.[49] Employees and employers each contribute 1 percent of the employee's monthly earnings up to a threshold of R12 478 to the UIF, and the proceeds are used to pay benefits to contributors or their dependents in instances of unemployment, illness, death, maternity and adoption of a child. Income replacement rates range from 60 percent for low-income earners to 38 percent for higher-income earners, and benefits are limited to one day for every six completed working days, up to a maximum of 238 days (34 weeks) in a period of four years. On average, the UIF disbursed about R495.8 million per month to 207 967 beneficiaries during the first nine months of 2009/10 (National Treasury, 2010a: 107). On 31 March 2009, the Fund's capital and reserves amounted to R34.6 billion, and an actuarial valuation at the time indicated that it would be able to meet its cash-flow requirements over the next ten years for a wide range of possible claims scenarios (National Treasury, 2010a: 107).

The Compensation Funds provide income benefits and medical care to workers injured on the job, funding for the rehabilitation of disabled workers, and survivor benefits to the families of victims of work-related fatalities. The main Compensation Fund is administered by the Department of Labour and covers workers in sectors other than mining and construction, while the Department of Health administers the Mines and Works Compensation Fund, which provides benefits to victims of lung diseases caused by working conditions. Private firms licensed by the Compensation

[46] *This report does not discuss the informal insurance component of social security systems (cash or in-kind assistance from the extended family and other social networks), which by nature is difficult to influence by means of policy interventions.*

[47] *Two elements are omitted from the discussion: compensation paid to victims of road accidents by the Road Accident Fund, and temporary grant-in-aid relief payments.*

[48] *Child support grants initially benefitted children under the age of seven years, but the coverage of the programme was expanded gradually and the grant is being rolled out poor children up to the age of 18 over the next three years (National Treasury, 2010a: 104).*

[49] *The Unemployment Insurance Act and the Unemployment Insurance Contributions Act do not apply to the following categories of workers: those working fewer than 24 hours per month for an employer, learners, public servants, contracted foreign workers, workers whose earnings consist of commission only, and working earning a monthly old-age social pension.*

Commissioner administer two other funds, namely the Rand Mutual Association for workers in the mining industry and the Federated Employers' Mutual Assurance for workers in the building industry. On 31 March 2009, the main Compensation Fund held an accumulated surplus of R6.5 billion and a reserve of R13.9 billion (National Treasury, 2010a: 109).

State disability grants are available to people disabled in circumstances other than road and work-related accidents. The grant is paid to disabled persons between the ages of 18 and the retirement age who do not receive other state grants and who are not cared for in state institutions. Eligibility is determined by strict medical-based criteria: the disability should be permanent and sufficiently severe to prevent the affected person from entering the labour market. Hence, the purpose of the grant is to compensate disabled persons for loss of income. Disability grants have amounted to R1 080 per month since 1 April 2010, and the number of beneficiaries was expected to reach 1 310 761 by the end of February 2010 (National Treasury, 2010a: 103, 105). The means test formula for the disability grant is D = 1.3A – 0.5B, where D is the monthly disability grant, A the maximum monthly disability grant, and B the monthly private income of the beneficiary. The threshold monthly private incomes for eligibility are R2 426 for single and R4 852 for married adults with disabilities (R29 112 per annum and R58 224 per annum, respectively). An additional provision states that grants are not paid to single and married disabled adults whose assets exceed R484 800 or R969 600, respectively.

2.1.3 Old age

South Africa has a well-established retirement fund market. The coverage rate for formal-sector employees of about 60 percent is comparatively high by international standards, which indicates the extent to which membership of an occupational fund is accepted as an obligatory condition of employment (National Treasury, 2007a: 5). According to the National Treasury (2007a: 5), South Africa's ratio of pension fund assets to GDP of 63 percent compare favourably with those of countries such as Australia, Chile, Malaysia, Singapore and the United Kingdom.

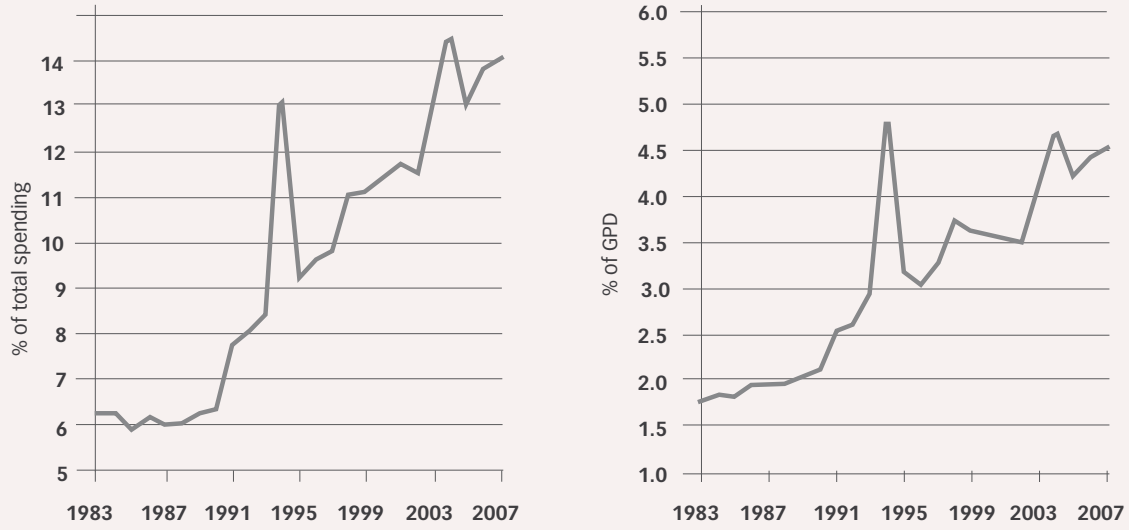
Coverage rates, however, vary considerably across income categories. Partly because of the favourable tax treatment of retirement saving, most middle and high-income earners are well covered: almost all formal-sector employees who earn more than R120 000 per annum belong to a pension, provident or retirement fund (National Treasury, 2008b: 100-101). Coverage is much less comprehensive among lower-income earners, however: some 360 000 formal employees in the R60 000 to R120 000 income category and 2.7 million of those earning less than R60 000 per annum lack retirement coverage. In total, only an estimated 5.9 million of the 8 million formal-sector workers (i.e. roughly one-half of the about 12.3 million employed and one-third of the 16.8 million economically active South Africans) have retirement coverage (National Treasury, 2008b: 100).

Moreover, early withdrawals and limited access to cost-effective instruments render the income replacement rates for many pension and provident fund members inadequate. Fewer than half of those who reach retirement age with a funded pension receive more than 28 percent of their pre-retirement incomes (National Treasury, 2007a: 5), and the Smith Committee (1995: 18) found that 40 percent of occupational pensions paid had a lower value than the social old-age pension.

Hence, lower-income South Africans (including many formal-sector workers) depend on social pensions in old age. The means-tested social pension is payable to persons of retirement age and older; since 2008, the retirement age for men is being lowered gradually from 65 to 60 years to bring it in line with that of women in 2010. The maximum amount of the grant has amounted to R1 080 per month since 1 April 2010 and an estimated 2 534 082 elderly people received social pensions at the end of February 2010. The means test formula for the social old-age pension is the same as that of the disability grant: D = 1.3A – 0.5B, where D is the monthly pension payable, A the maximum monthly pension payable, and B the monthly private income of the recipient. Single and married elderly persons whose assets exceed R484 800 or R969 600, respectively, are not eligible to receive social pensions. At the end of February 2010, some 1 248 war veterans received grants subject to the same income and asset thresholds applicable to social pensions. The value of these grants increased to R1 100 per month on 1 April 2010.

2.2 Growth and size

Government spending on social grants payments increased from R16 027 million (2.3 percent of GDP) in fiscal year 1998 to R71 161 million (3.1 percent of GDP) in fiscal year 2009. Data on social security spending indicates that this expansion was part of a longer-term growth trend: outlays on social protection (which include social grants, disbursements by the social security funds and pension payments to former government employees) increased from 6.2 percent of general government spending in fiscal year 1983 to 14.0 percent in



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Source: South African Reserve Bank Electronic Data

Figure 16: General Government spending on social protection 1983

fiscal year 2007; that is, from 1.8 percent to 4.5 percent of GDP (cf. Figure 16).[50] This outcome resulted from various developments that have affected beneficiary numbers and the values of the various grants, including the equalisation of benefits across population and gender groups, adjustments of grant amounts to fully or partially counteract the effects of inflation, the introduction and gradual expansion of the child support grant and increased take-up of disability and foster-care grants.

The number of beneficiaries of social grants increased from 2 889 442 in April 1997 to 13 114 033 in April 2009 (cf. Table 24). More than one quarter of the South African population now receive a state grant – a remarkably high figure for a middle-income country. Although all the grant types except the war veterans' grant experienced significant growth in beneficiary numbers during the past decade, the major driver of such growth in the system as a whole clearly has been the introduction and subsequent expansion of the coverage of the child support grant. 67.3 percent of all grants paid in April 2009 were child support grants; other large categories were old-age pensions (18.4 percent) and disability grants (9.8 percent). Because it is the smallest of the grants in rand terms, the child support grant does not dominate social assistance outlays. Thus, the 2010/11 Budget provided for social assistance expenditure of R89 368 million, of which R34 058 million (38.1 percent) was allocated for social pensions, R30 860 million (34.5 percent) for child support grants, R17 379 million (19.4 percent) for disability grants and R7 071 million (7.9 percent) for other grants (National Treasury, 2010a: 106).

Figure 17 indicates that the nominal values of all the grants rose markedly between 1994 and 2009. These increases, however, often did not keep pace with inflation, especially during the second half of the 1990s. Accordingly, the purchasing power of the old-age pension, war veterans' pension, disability grant, care dependency grant and foster care grant all increased only modestly between 1994 and 2009. By contrast, the purchasing power of the child support grant has increased markedly in real terms since its introduction in 1998.

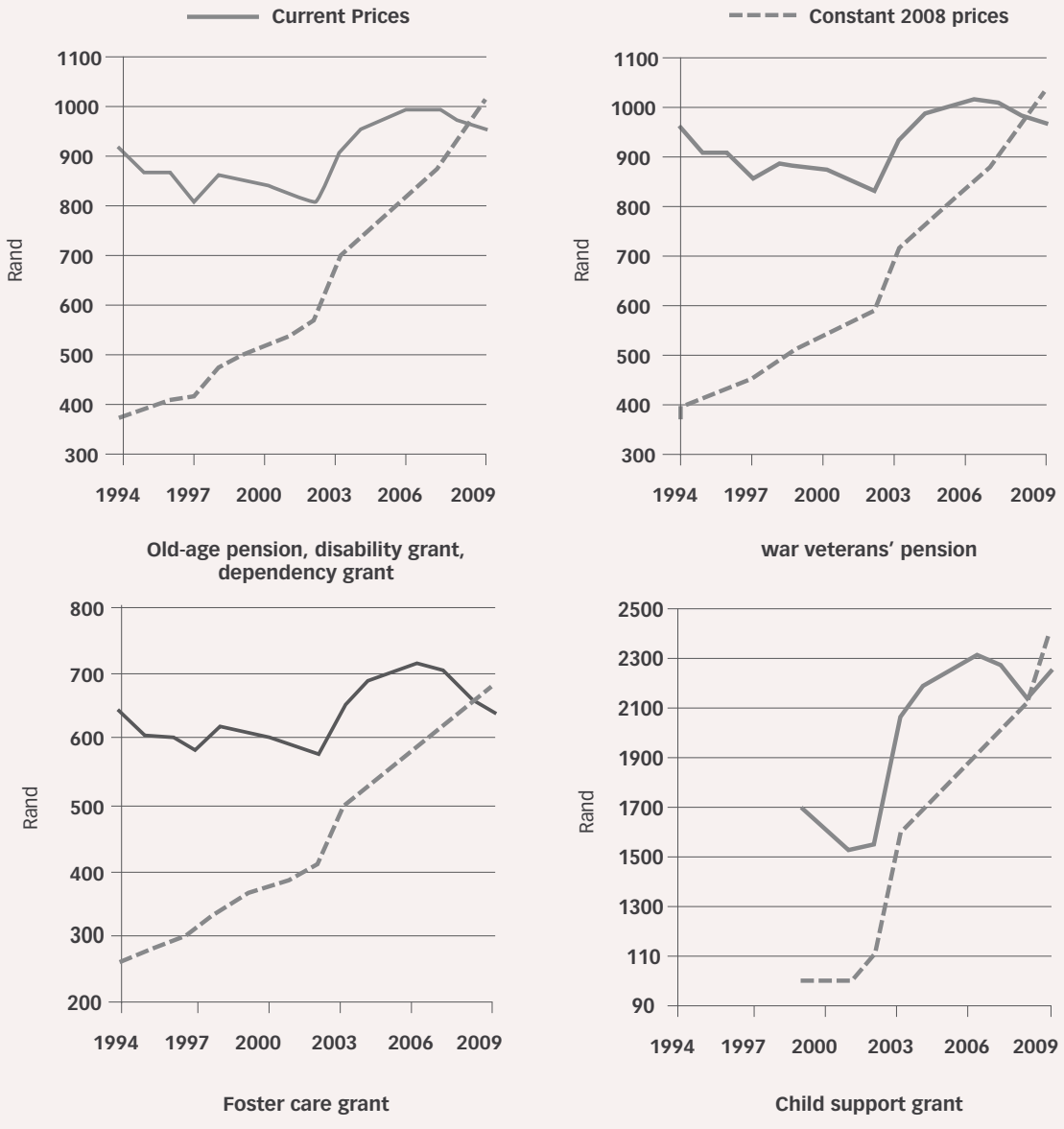
[50]*The sharp spike in both ratios in 1993/94 resulted from a special transfer amounting to R7 340 million to improve the actuarial position of the Government Employees Pension Fund.*

Table 24: Beneficiaries of social assistance grants (1997-2009)

Grant	Number of beneficiaries (30 April)[1]		
	1997	2003	2009
Old age grant	1 737 682	2 022 206	2 414 183
War veterans' grant	12 047	4 594	1 649
Disability grant	732 322	953 965	1 281 556
Foster care grant	41 865	138 763	483 687
Care dependency grant	2 895	58 140	107 134
Child support grant2	362 631	2 630 826	8 825 824
Total	**2 889 442**	**5 808 494**	**13 114 033**

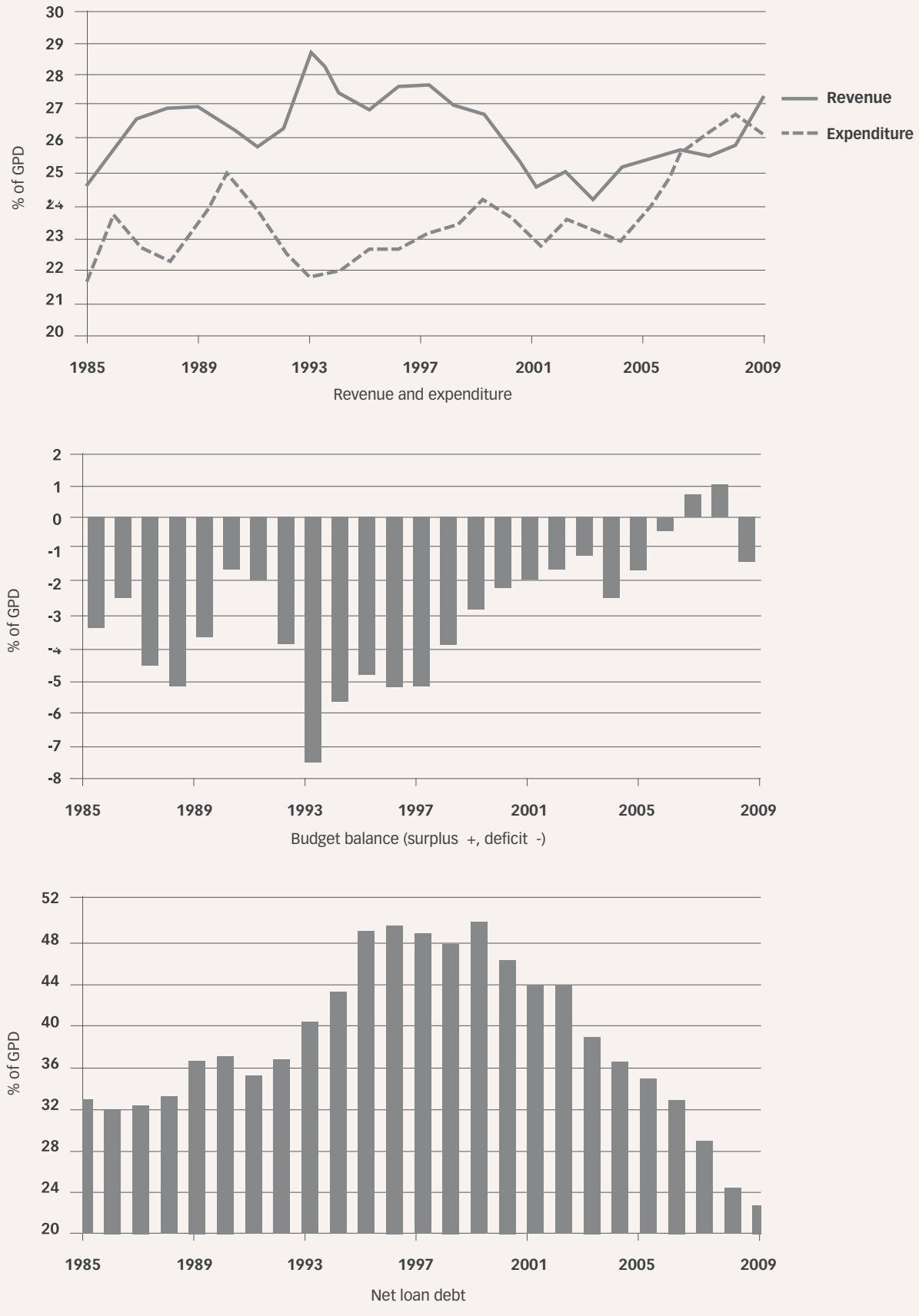
Source: National Treasury (2001; 2007b); South African Social Security Agency (2009)

Notes: 1 The numbers exclude the recipients of grant in aid and social relief of distress.
2 The 1997 number represents parent allowance and child allowance grants.



Source: National Treasury (Various Issues)
South African Reserve Bank Electronic Data

Figure 17: Nominal and Real Values of Social Grants (1991-2009)



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Source: South African Reserve Bank Electronic Data

Figure 18: National Government Main Fiscal Aggregates (1985-2009)

Table 25: Functional classification of general government spending (1995, 2001 and 2007)

	Percentages of GDP		
	1995	2001	2007
General public services	4.2	3.1	5.5
Protection services	5.3	4.5	4.8
Social services	15.0	14.8	15.6
Education	7.0	6.2	5.8
Health	3.1	3.1	3.2
Social protection	3.2	3.5	4.5
Other social services	1.7	1.9	2.2
Economic services	5.2	3.1	3.2
Public debt transactions	4.7	4.9	2.8
Total	**34.4**	**30.3**	**32.1**

Source: South African Reserve Bank electronic data

2.3 The budgetary sustainability of the social assistance system

The rapid growth and size of the South African social grants system have given rise to concern about it longer-term sustainability, within as well as outside of government. In 2004, for example, the National Treasury (2004a: 73) commented as follows on trends in the ratio between social grants expenditure and GDP: "This ratio is high compared to most other developing countries, and also high relative to spending on cash social assistance in some high income countries. Growth of this magnitude relative to GDP raises sustainability questions for the future." In addition, the limited size of South Africa's tax base also has contributed to concern about the sustainability of the social assistance system. In this regard, critics sometimes point to the gap between the numbers of individual taxpayers and beneficiaries of social grants: at the end of February 2009, for example, South Africa had some 2.3 grant recipients for every registered individual taxpayer.[51]

Figure 18 shows that the fiscal situation has remained sustainable despite the rapid growth in government spending on grants and other social security programmes from the mid-1980s.[52] The thorough overhaul of tax administration and collection in the second half of the 1990s and sustained positive economic growth from 1994 until 2008 were the main reasons why growing social assistance spending has not caused fiscal problems: the consequent rapid growth in tax revenues has enabled the Government to steadily expand social grants spending while reducing budget deficits and the public debt burden during the second half of the 1990s and keeping these aggregates at manageable levels thereafter.[53] Table 25 highlights how extensive the fiscal space available to the authorities was after the successful conclusion of the fiscal consolidation effort in 2000: from 2001 until 2007, the combination of rapid revenue growth and steady decreases in the interest payments on public debt made it possible to increase the GDP shares of almost all functional spending categories in the context of an expansionary fiscal policy stance which raised general government expenditure from 30.3 percent to 32.1 percent of GDP. Hence, in contrast to the period from 1995 to 2000 (when general government outlays decreased by 4.1 percentage points of GDP), the expansion

[51] *On 28 February 2009, South Africa had 5 540 646 registered individual taxpayers and 12 972 828 grant recipients (National Treasury, 2009b: 6; South African Social Security Agency, 2009: 5).*

[52] *A fiscal position is sustainable when the public debt burden does not pose the risk of an unmanageable upward deficit-debt spiral leading to debt default, given public spending commitments and tax capacity and compliance. An analysis of fiscal policy in South Africa between 1960 and 2008 by Calitz, Du Plessis and Siebrits (2009) showed that the post-1985 period formed part of a longer-term epoch of fiscal prudence during which South Africa avoided the fiscal policy-rooted macroeconomic crises that plagued many developing countries in Africa and elsewhere during this period.*

[53] *Growing spending on social grants contributed to relatively large budget deficits from 1990 onwards, but was a markedly less important causal factor than several extraordinary expenditures (including drought relief spending and transfer payments to the government pension fund to improve its actuarial position) and the depressing effect on tax revenues of the protracted recession that lasted from 1989 until 1993 (see Calitz et al., 2009: 5-6).*

Table 26: National government fiscal framework (2008-2013)

	Percentages of GDP at the end of fiscal years					
	2008	**2009**	**2010**	**2011**	**2012**	**2013**
	Outcomes		Estimates			
Revenue	26.9	26.2	23.3	23.8	24.3	24.5
Expenditure	26.0	27.4	30.6	30.3	29.9	29.3
Debt-service costs	2.5	2.3	2.4	2.6	3.0	3.2
Budget balance	0.9	-1.2	-7.3	-6.5	-5.6	-4.8
Gross loan debt	27.7	27.0	32.5	37.1	40.9	43.1

Source: National Treasury (2010a: 61, 93)

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of social security spending from 2001 until 2007 did not require compensating reductions (as percentages of GDP) in expenditures on other general government functions.

Prudent management of the public finances before and during the crisis has left South Africa in a much sounder fiscal position than many other countries, including several member states of the European Union.[54] Long-term modelling by the National Treasury (2010a: 63) based on an average GDP growth rate of 3.5 percent per annum indicated that the public debt should peak at a modest level of 44 percent of GDP in 2015/16 and decrease thereafter, albeit gradually. Hence, the available information does not suggest that the government spending-to-GDP ratio is likely to increase to such an extent over the next decade that severe cutbacks in social assistance would be required. More generally, revenue growth obviously will be a key factor determining the scope for expanding the social assistance system in the longer run. As was indicated earlier, the rapid growth in expenditure on social grants during the late-1990s and early 2000s was facilitated by exceptionally high rates of growth in tax revenues related to institutional reforms which improved tax administration and collection. Such rates of revenue growth are unlikely to recur once the economy has recovered fully from the effects of the global crisis, and this may well severely constrain future growth in public spending (including outlays on social grants).

In the short to medium term, fiscal consolidation has become unavoidable. Apart from adding large and potentially unsustainable amounts to the public debt, deficits of 7 percent of GDP or more will put upward pressure on interest rates and discourage private investment (especially in the context of the large infrastructure investment programmes to be undertaken by various public corporations in the next few years[55]). Furthermore, the increases in interest payments resulting from a rapidly growing debt burden could crowd out public spending on priority functions. The 2010/2011 Budget – which provides for a phased reduction in the budget deficit of the national government to 4.8 percent of GDP in fiscal year 2013 based on a combination of revenue growth and strict expenditure discipline – represents the first step of such a consolidation effort. The Budget provides for a 1 percentage point reduction in the expenditure-to-GDP ratio from fiscal year 2011 to fiscal year 2013 despite an expected increase in the debt costs component of 0.6 percentage points of GDP (cf. Table 26). This reduction will be based in part on identified cost savings of R25.6 billion at national-government level and R13.4 billion at the provincial level (National Treasury, 2010a: 117). [56]The adjustment imperative clearly will leave no room for the introduction of costly new social assistance initiatives during between 2011 and 2013, but the Government remains committed to the extension of the child support grant to eligible children up to their 18th birthday during this period.

[54] *The worst-hit country has been Greece, where the budget deficit has reached 12.7 percent of GDP and the public-debt-to-GDP ratio more than 110 percent (Why Pigs' mess is our concern, 1 March 2010). Ireland, Portugal and Spain have also recorded large fiscal deficits and public debt burdens well in excess of the 60 percent of GDP limit prescribed by the European Union's Stability and Growth Pact.*

[55] *The public sector is expected to spend a total of R846 billion on infrastructure projects during the fiscal years 2011, 2012 and 2013 (National Treasury, 2010a: 66).*

[56] *The expenditure implications of this deficit-reduction strategy pose particular challenges to the provinces, whose current spending increased rapidly in 2008 and 2009 as a result of employment growth, significant general salary increases and the implementation of occupation-specific salary dispensations (mainly in education and health).*

3. SOCIAL GRANTS, POVERTY AND DEVELOPMENT IN SOUTH AFRICA

This section discusses the effectiveness and incentive effects of the South African social assistance system. Section 3.1 outlines the current role of social grants in anti-poverty policy in South Africa. Section 3.2 comments on two aspects of the effectiveness of the social assistance system. First, it shows the extent to which the grants mitigate poverty by augmenting the incomes of poor South Africans. Second, it summarises evidence on the utilisation of social grants by the poor. In this regard, the key issue is whether the grants merely serve as a short-term palliative to poverty or play a developmental role as well (that is, enable poor people to break the cycle of poverty by undertaking income-generating activities and accumulating assets). Section 3.3 explores the impact of the grants system on allocative efficiency by identifying its most important incentive effects and empirical evidence on behavioural responses to such incentives.

3.1 Social grants as a component of anti-poverty policy in South Africa

The post-apartheid South African Government has consistently stressed the importance of job-creating economic growth as a mechanism for reducing poverty, arguing that growth creates economic opportunities which enable poor households to earn better incomes through jobs or self-employment.[57] Accordingly, the period since 1994 has seen the genesis of two strategies to accelerate economic growth, namely Growth, Employment and Redistribution (Gear – 1996) and the Accelerated and Shared Growth Initiative South Africa (Asgisa – 2005). Mindful of the high incidence of unemployment and deprivation in South Africa, however, the Government has also used a wide range of interventions to enhance the poverty-mitigating impact of economic growth (cf. Altman and Hemson, 2007: 8; The Presidency, 2008: 13-14):

- The Expanded Public Works Programme (EPWP) aims to relieve poverty by creating short-term jobs, provide experience and training to previously unemployed persons, and provide access to further employment. As was indicated in section 2, the social insurance and social assistance components of the social security system provide protection against risks of income loss due to various contingencies.

- Human capital investments in health care, education and training enhance productivity and facilitate participation in the economy.

- A "social wage" consisting of basic services and other non-financial transfers provides subsidised housing and access to water, electricity, refuse removal and sanitation, including a raft of minimum free basic services for vulnerable groups to prevent non-access to such services because of inability to pay.

- Programmes that facilitate access to assets (especially housing, land and capital, including public infrastructure) that aim to improve the economic and social security of poor households and to provide them with bases for longer-term involvement in the economy.

The social assistance system plays a very specific role within this gamut of anti-poverty interventions, namely to provide assistance to needy groups who are not economically active (the disabled and poor children and elderly individuals). The draft discussion document on an anti-poverty strategy for South Africa released in October 2008 confirmed the importance of this role.[58]

> As a country we have done relatively well in terms of providing social assistance, which research evidence shows plays a significant role in alleviating poverty. The provision of social grants will need to continue, particularly for the vulnerable groups such as people with disabilities, the aged and children. (The Presidency, 2008: 16)

The document nonetheless reiterated that the promotion of opportunities remained the primary focus of anti-poverty policy:

> As we go forward, we need to strengthen our resolve to reduce the incidence of poverty as well as to prevent intergenerational transmission of poverty within households and communities.

[57] *As the National Treasury (2010a: 2, 5) put it: "Our future depends on finding a more inclusive economic trajectory, characterized by more rapid growth in gross domestic product (GDP) and job creation… Increasing employment is the only sustainable solution to reducing poverty and inequality".*

[58] *As yet, the initial discussion document has not been followed by further drafts or a final document.*

Key to this resolve is creating and increasing economic opportunities and facilitating access to these. Unemployment and/or the absence of earned income are the major causes of poverty. Our efforts should be focused on ensuring that as a country we create economic opportunities that will ensure the promotion of self-sufficiency. (The Presidency, 2008: 16, emphasis in the original)

Several recent policy developments have confirmed the Government's focus on the promotion of opportunities as a strategy for reducing poverty. Most notable was the announcement of two important interventions aimed at job creation, namely Phase II of the Expanded Public Works Programme and a youth-targeted wage subsidy scheme (cf. section 4.3). At the same time, the Government's resolve to continue to restrict assistance to economically inactive persons has been confirmed by the refusal to introduce a universal income grant despite pressure by sections of civil society and endorsement of such a grant in 2002 by the Committee of Inquiry into a Comprehensive Social Security System (the Taylor Committee).[59]

Government interventions to combat poverty include outlays on goods and services (e.g. expenditures on the provision of education, health care, social grants, housing and municipal services such as water and electricity) and regulatory measures (e.g. the Broad-Based Black Economic Empowerment and employment equity initiatives and labour legislation). Ideally, assessment of the role of the social grants system should be undertaken against the backdrop of the effects of all such interventions. Quantification of the impact of regulatory measures is notoriously difficult, however, and will not be attempted in this paper. Instead, this section draws on the findings of a study of the incidence of social spending undertaken for the National Treasury (Van der Berg, 2009) to comment on aspects of the poverty-reducing role of social grants in South Africa. The study investigated the incidence of the following social spending categories: school and tertiary education, social grants, hospitals, health clinics, and subsidised housing. The analysis covered 68 percent of consolidated general government expenditure on social services, with the coverage of the individual spending categories as follows: education – 84 percent, health services – 70 percent, social security – 68 percent, and housing – 64 percent. Measured in current-price terms, expenditure on these items amounted to R177 billion in 2006; this constituted 37.5 percent of total consolidated non-interest government spending and more than 10 percent of GDP.

As was indicated in section 2.3, social spending has grown markedly since 1994. Expressed in constant 2000 Rand values, expenditures on the items included in the study nearly doubled from R67.7 billion in 1995 to R133.6 billion in 2006. Growth in social spending was particularly rapid from 2000 to 2006, buoyed by robust economic and government revenue growth. During this period, the aggregate growth rates of the individual social spending categories ranged from 127 percent (social grants) to 15 percent (tertiary education). Outlays on social grants increased from 20 percent of the social spending items included in the study in 2000 to 30 percent in 2006 and overtook spending on public hospitals as the second largest programme after school education. Growth in social spending outstripped population growth to such an extent that real per capita social spending increased by 21 percent from R1 643 in 1995 to R1 987 in 2000 and by a further 42 percent to R2 822 in 2006.

Apart from growth in amounts expended, the poverty impact of social spending was enhanced further by improved targeting. This is confirmed by changes in concentration ratios. Related to Gini coefficients, concentration ratios are measures that assume positive values when spending programmes favour the rich, zero when spending is completely evenly distributed and negative values when spending programmes favour the poor. The concentration ratio for all social spending items included in the study improved from –0.112 in 2000 to –0.152 in 2006 (cf. Table 27) – a considerable improvement to a level that indicates extremely good targeting of the poor.[60] Over the same period, the portion of such social spending benefitting the poorest

[59] *The campaign for the adoption of a universal income grant system has revolved around calls for a basic income grant (BIG) of R100 per month to all South Africans, irrespective of age and economic status. (The equivalent of a monthly grant of R100 in 2002 in 2009 would have been one of R307). The Government has never responded in detail to the arguments of the Taylor Committee and other proponents of a universal income grant, but remarks by ministers and officials and press statements indicated that its opposition to the introduction of a BIG system resulted from concern about the affordability of such an intervention and the danger of creating an unhealthy dependency on welfare payments among the poor (cf. Coleman, 2003). Coleman (2003: 22, 23) suggested that fears within Government regarding the affordability of a BIG system may well have been grounded in broader and longer-term considerations: "… one gets the impression that the real concern is less about whether the fiscus would be able to afford it; and more about the implications of giving in to what is seen as 'populist demands'. First, that it would open up the government (or future governments) to pressure to increase the amount of the grant, and that costs could spiral out of control… Second, there seems to be a fear that agreeing to a BIG would open the floodgates for other major new areas of expenditure."*

Table 27: Indicators of the targeting of social spending in South Africa (2000 and 2006)

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Spending category	Concentration ratios		Benefit shares poorest 40%	
	2000	2006	2000	2006
School education	-0.121	-0.128	48.7	49.1
Tertiary education	0.528	0.641	7.2	3.7
Social grants	-0.371	-0.359	—	—
Child support grants	-0.247	-0.318	57.3	61.7
Disability grants	-0.291	-0.288	60.0	58.5
Old-age pensions	-0.412	-0.436	69.9	70.2
Health	-0.118	-0.137	—	—
Public clinics	-0.177	-0.257	50.0	57.3
Public hospitals	-0.105	-0.103	43.2	44.6
Housing	0.160	0.070	21.3	23.9
All social spending	-0.112	-0.152	47.1	50.1

Source: Van der Berg (2009: 14, 27)

Table 28: Estimates of fiscal redistribution in South Africa (1995, 2000 and 2006)

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	Gini coefficients		
	1995	2000	2006
A Income/expenditure (excluding grants)	0.666	0.707	0.690
B Income plus benefits	0.578	0.576	0.523
C Income plus benefits less taxes	0.528	0.527	0.467
Effects of the fiscal process (A – C)	**-0.138**	**-0.180**	**-0.223**

Source: Van der Berg (2009: 24)

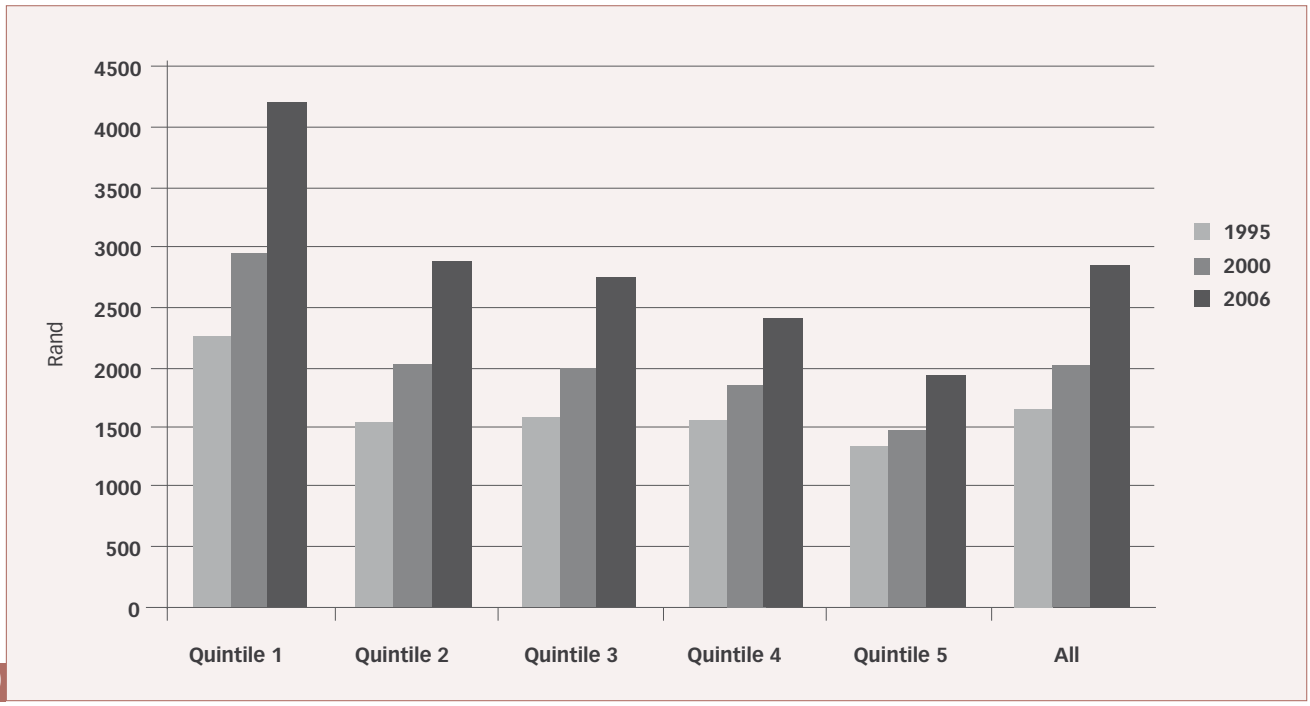
40 percent of the population increased from 47.1 percent to 50.1 percent. Concentration ratios as well as the benefit shares of the poorest 40 percent indicated that social grants were the best targeted of all social spending programmes.[61] These numbers testified to the effectiveness of the means tests used to determine eligibility for social grants as tools to prevent errors of inclusion (i.e. leakage of social assistance funds to the non-poor).[62]

The study also showed that social spending had a significant and growing redistributive impact in South Africa. The last columns in Figure 19 confirm two trends highlighted earlier, namely that social spending increased substantially in real per capita terms between 1995 and 2006 and that the largest part of this increase occurred after 2000. Furthermore, the figure shows that gains in social benefits were recorded right across the income distribution, but the gains for the poor were particularly large. An important reason for this was the rapid growth of the particularly well-targeted social grants spending. In real terms, per capita social spending for the poorest 40 percent of the population increased more than two-and-a-half fold over eleven years, from R1 373 in 1995 to R2 329 in 2000 and R3 532 in 2006 (all in 2000 Rand values). This reflected both the aggregate growth of social spending and improved targeting. The increase of more than R1 200 per person for the poorest 40 percent of the population since 2000

[60] *Some of the concentration ratios for 2006 (e.g. those for school education, public hospitals and public clinics) are particularly impressive compared to those for more than 30 developing countries reported by Yaqub (1999). A notable exception is the ratio for tertiary education. See Van der Berg (2009: 13).*

[61] *For a discussion of the factors influencing the targeting of the various social spending programmes, see Van der Berg (2009: 14-17).*

[62] *These benefits of means testing came at the expense of higher administrative costs, the risk of errors of exclusion, and possible perverse incentive effects. For an assessment of targeting and means testing in South Africa, see Samson, MacQuene, Van Niekerk, Kaniki, Kallmann and Williams (2007).*



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Source: Van der Berg (2009: 20)

Figure 19: Real per capita social spending benefits by income quintiles (2000 Rand values; 1995, 2000 and 2006)

was almost three times as large as for the richest 20 percent.

Table 28 provides rough estimates of the extent of redistribution through fiscal processes in 1995, 2000 and 2006. For each year, the table shows Gini coefficients for pre-fiscal incomes or expenditures (excluding grants), incomes including social spending benefits, and incomes including social spending benefits minus taxes paid. The comparability of the three underlying income distributions is subject to some uncertainty, and the important numbers therefore are the impact of fiscal processes on the Gini coefficients in specific years and how this has evolved over time.[63] In 2006, the Gini coefficient for pre-transfer income was 0.69, but it dropped to 0.52 for income plus benefits and to 0.47 after taxes had also been subtracted. Furthermore, the comparison with earlier years suggest that the budget has become more redistributive over time, with the mitigating impact of fiscal processes on the Gini coefficient increasing from 0.138 in 1995 to 0.180 in 2000 and 0.223 in 2006. Three conclusions regarding the impact of the budget on the distribution of income follow:

- The South African fiscal process was highly redistributive.
- Social spending had an especially large mitigating impact on income inequality, reducing the estimated Gini coefficients significantly more than what the progressive income tax system did.
- Income inequality remained extremely large even after the effects of all redistributive taxes and social spending programmes had been taken into consideration. This emphasised the limits of fiscal redistribution and the need for a reduction of market-generated income inequality. The latter requires a combination of human capital enhancement and economic growth.

This study also set out to investigate the redistributive impact of the provision of free basic municipal services (water and electricity). In the provision of such services, the mechanism for assisting the poor is cross-subsidisation within municipal boundaries. Unfortunately, this part of the study could not be completed successfully because suitably disaggregated

[63] *The Gini coefficient is a well-known summary indicator of the distribution of income ranging from 0 (perfect equality) to 1 (perfect inequality). It should be noted also that the coefficients in table 5 are not conventional Gini coefficients for all income; as such, they are not comparable to published Gini coefficients for other countries.*

[64] *For a discussion of the deficiencies of existing data sources, see Essop and Moses (2009).*

Table 29: Percentages of households reporting income from grants

Quintile	1997	2002	2006	2002	2006
	Any income			Main source of income	
1	15.9	32.0	69.4	16.1	47.7
2	54.0	55.8	69.9	31.4	51.0
3	46.7	51.6	69.4	31.1	34.5
4	33.8	33.2	45.4	18.1	16.0
5	14.0	11.3	12.0	4.4	2.5
All	32.9	36.8	55.2	18.2	30.4

Source: Leibbrandt, Woolard, Finn and Argent (2010: 61)

data for determining the impact of free basic services on the positions of the poor and the non-poor were not available.[64]

The findings of the fiscal incidence study highlighted important aspects of the role of the social assistance system in anti-poverty policy in South Africa. The social grants system clearly is a component of a wide-ranging suite of public expenditure programmes aimed at redistributing income and fighting poverty. Benefit incidence analysis suggests that these programmes generally are quite effective at transferring resources to the poor. The social grants system is a salient element of this suite of interventions for at least three reasons. The first is its size: as was indicated earlier, outlays on social grants now form more than one-third of government social spending, making it the second largest component of such spending after education. Second, social grants programmes are particularly effective instruments for ensuring that resources reach the poor, being the best targeted of all social spending categories. Third, the social assistance system is the main cash-transfer component of poverty-focused public spending programmes in South Africa. By providing cash to individuals who are incapable of earning an independent living (e.g. the disabled and poor children and elderly persons), the social grants schemes complement anti-poverty interventions which build human capital (e.g. provision of education and health services) and meet other basic needs (e.g. housing, water and electricity subsidies).

3.2 The effectiveness of the South African social assistance system

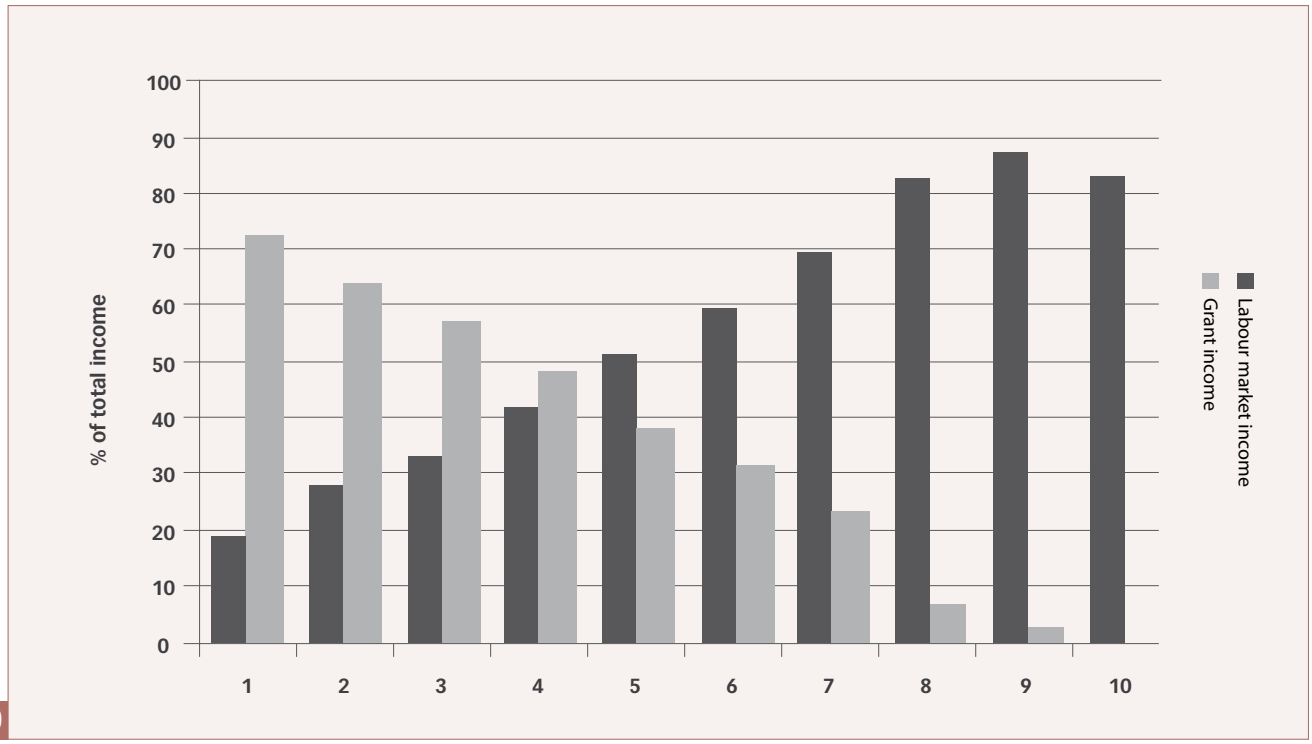
This section presents evidence on three questions relating to the effectiveness of the South African social grants system. First, what is the impact of social grants on the incomes of poor households (section 3.2.1)? Second, for what purposes do poor households use social grant income (section 3.2.2)? Third, does the social grants system give rise to widespread unintended effects of an undesirable nature (section 3.2.3)?

3.2.1 Social grants and the incomes of poor households

Social grants have become an increasingly common and important source of income for poor South Africans during the past ten to fifteen years. Table 29 highlights that the proportions of households in the poorest four quintiles who reported receiving income from grants increased markedly between 1997 and 2006; in the period from 2002 until 2006, similar increases were evident in the proportions of households in the poorest two quintiles who indicated that grants were their major source of income.

Figure 20 shows that poor households generally lack access to adequate wage income and therefore depend heavily on grant income.[65] In 2008, labour-market earnings constituted more than 80 percent of the total incomes of each of the three richest deciles, but only 18.7 percent of the total income of the poorest decile. Grant income was an insignificant source of income for the rich – the income shares of grants for deciles 8, 9 and 10 amounted to 6.8 percent, 2.6 percent and 0.4 percent, respectively – but dominated the cash incomes of the poor. Thus, in the four poorest deciles, the income shares of social grants ranged from 48.3 percent (decile 4) to 72.7 percent (decile 1). Van der Berg (2009: 27, 29) estimated that the three largest grant programmes (the old-age pension, the child support grant and the disability grant) more than doubled the income share of the two poorest quintiles in 2006 from 3.3 percent of total pre-transfer income to 7.6

[65] *The figure is based on 2008 data from the National Income Dynamics Study (NIDS), as reported by Leibbrandt, Woolard, Finn and Argent (2010).*



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Source: Liebbrandt, Woolard, Finn and Argent (2010: 78)

Figure 20: Labour market and grant incomes by deciles (2008)

percent of income including grants.

To obtain a rough indication of the mitigating effect of social grants on poverty, some studies (e.g. Woolard, 2003; Armstrong, Lekezwa and Siebrits, 2008; Armstrong & Burger, 2009) have compared the actual incidence of poverty to the incidence that would have been obtained if all households had earned zero income from social grants. Such exercises are indicative only – they obviously are sensitive to the choice of a poverty line and rest on the very strong assumption that the availability or otherwise of social grants has no impact what¬so¬ever on the behaviour of households in terms of labour supply, household formation patterns, et cetera – but nonetheless suggest that social grants markedly increase the incomes of very poor households in South Africa.[66]

Table 30 summarises findings of such an analysis of data from Statistics South Africa's Income and Expenditure Survey 2005 (Armstrong and Burger, 2009). The table shows the impact of social grants at the three experimental poverty lines used by Statistics South Africa: annual per capita incomes of R2 532, R3 864 and R7 116. At a poverty line of R2 532 per person per annum, social grants reduced the headcount poverty rate from 45.5 percent to 31.5 percent, that is, by 13.9 percentage points or 30.5 percent. The reality that the estimated impact on poverty was so much smaller at higher poverty lines confirmed the effectiveness of the grants for targeting those experiencing relatively severe poverty. Additional (albeit indirect) evidence of the poverty-reducing impact of social grants includes the drop in the headcount poverty rate from 50 percent in 1993 and a peak of 53 percent in 1996 to 39 percent in 2008 (Van der Berg, Louw and Yu, 2008: 68-70; The Presidency, 2009: 26)[67] and the decrease in the portion of children who had gone hungry in the previous year from 31 percent in 2002 to 16 percent in 2006 (Van der Berg, Louw and Du Toit, 2009: 25). Other studies (e.g. Leibbrandt et al., 2010) have also argued that the expansion of the social assistance system has been a major driver of the fall in headcount poverty rates after 2000.

3.2.2 Developmental effects

Providing well-targeted cash transfers to the poor is at best a

[66] *Other studies of the effects of specific grants (e.g. Case and Deaton, 1998; Barrientos, 2003) and the social grants system as a whole (e.g. Samson, Lee, Ndlebe, MacQuene, Van Niekerk, Gandhi, Harigaya and Abrahams, 2004) reached the same conclusion.*

[67] *Calculated from the All Media and Products Survey (AMPS) dataset, these poverty rates show the proportion of the population that had lived on less than R388 per person per month in constant 2008 Rands. For information on the dataset, see Van der Berg et al. (2008: 63-64) and Van der Berg, Louw and Du Toit, 2009: 16-17).*

Table 30: Effects of social grants on poverty

	Poverty rate (at annual poverty lines)		
	R2 532	R3 864	R7 116
Headcount ratio excluding grant income	45.5	55.0	67.6
Headcount ratio inclusive of grant income	31.6	47.3	65.3
Absolute change	13.9	7.7	2.3
Percentage change	30.5	14.0	3.4

Source: Armstrong and Burger (2009: 14)

necessary condition for reducing poverty: the actual impact of such transfers depends crucially on how poor people use the money. The most obvious threat to the poverty-mitigating potential of cash transfers is outright squandering of money on luxuries and so-called "sin goods" – a risk that has spawned a well-known (though far from conclusive) argument for the superiority of in-kind transfers over cash grants. Cognisance also should be taken of the distinction between the "livelihood protection" and "livelihood promotion" effects of anti-poverty interventions (cf. Devereux, 2002a: 661, 662). Livelihood protection effects have to do with consumption smoothing and maintenance of minimum living standards, while livelihood promotion effects involve sustainable poverty reduction through promotion of higher living standards in the longer term. Cash transfers traditionally were regarded as mechanisms for protecting livelihoods (e.g. during economic crises), but more recent research has highlighted that such transfers can contribute to the achievement of sustainable poverty reduction if the recipients invest in income-generating activities, education, social networks and the acquisition of productive assets (Devereux, 2002a). South Africa's social grants currently are not structured as livelihood-promoting interventions, being targeted at needy individuals who do not form part of the economically active population. However, the largest group of beneficiaries are poor children, who receive child support grants or live in multi-generation households sustained by social pensions. These children will eventually join the labour force and the grants could contribute to their future productivity to the extent that it is invested in their sustenance and education. This subsection discusses the findings of studies that have explored the impact of grant income on the spending patterns of recipient households in South Africa, with particular emphasis on the nutrition and school attendance of children.

Du Toit and Neves (2009) have pointed out that at least two factors complicate efforts to uncover relationships between grant income and household spending patterns. The first (and best known) is that the fungibility of money makes it particularly difficult to establish how grant income is actually used. A less appreciated but equally important factor is that decisions on the use of grant income take place within networks of informal social protection characterised by "complex monetary and non-monetary debts, obligations, exchanges, claims, histories and links" (Du Toit and Neves, 2009: 20). These sets of influences on the spending of grant money tend to be fluid and household-specific, and generalisation of survey results therefore is hazardous.

Be that as it may, no evidence of large-scale squandering of grant money has come to light yet, and several studies have found that grant receipts boost the food spending of beneficiaries. The responses to a survey by De Koker, De Waal and Vorster (2006: 483, 639-673) indicated that food is the first item on which about 75 percent of beneficiaries spent their grant money, and 50 to 60 percent (depending on the grant type) of recipients spent most of their grant money on food.[68] Another survey found that households that received child support grants spent 55 percent of their incomes on food, compared to 53 percent in households that were eligible for but did not receive such grants (CASE, 2008: 31).[69] Similarly, according to Samson, Lee, Ndlebe, MacQuene, Van Niekerk, Gandhi, Harigaya and Abrahams (2004: 75-77), households who receive grants spent relatively more on basic necessities (food, fuel, housing, and household operations) and relatively less on medical care, debt service and tobacco than households who did not receive grants.[70]

Several papers have highlighted the nutritional benefits to

[68] *This study was undertaken by the Department of Sociology and Social Anthropology at Stellenbosch University for the Department of Social Development.*

[69] *The survey was undertaken by the Community Agency for Social Enquiry (CASE) for the Department of Social Development, the South African Social Security Agency and the United Nations Children's Fund.*

children of increases in food expenditure associated with receipt of child support grants and social pensions. Using children's height-for-age ratios as ex post indicators of nutritional inputs, Aguero, Carter and Woolard (2007) found that children in KwaZulu-Natal benefitted significantly from receiving child support grants during the first 36 months of their lives. Using data from all three rounds of the KwaZulu-Natal Income Dynamics Study (KIDS), Yamauchi (2005) found that nutrition-related improvements in child health markedly lowered the age for starting school, increased the grade reached, and reduced grade repetition at the early stage of schooling. According to Williams (2007: 55-59), each grant received by a household significantly reduced the probability that any child in that household goes hungry.

With regard to old-age pensions, it emerged that the gender of the recipient influenced the nutrition and health-status effects of social grants. Duflo (2003) studied trends in the weight-for-height ratios of African children following the large increases in social pensions during the late 1980s and early 1990s. On balance, she found that the weight-for-height ratios of girls living in households with female pension recipients increased, while no increases were discernable in the same ratios of boys or girls living in households with male pension recipients. Samson et al. (2004: 82) and Lund (2006) also found that the nutrition of families with female pension recipients was more likely to improve than those with male recipients.

The evidence suggested that receipt of child support grants and old-age pensions encouraged school attendance among child support grant recipients and children living with pensioners (Case, Hosegood and Lund, 2005; Budlender and Woolard, 2006; Leibbrandt et al., 2010: 62-63).[71] On the whole, the positive effects on attendance were small in absolute terms – a reflection of the relatively high school enrolment and attendance rates in South Africa (cf. section 4.4.2) – but implied significant reductions in non-attendance (Budlender and Woolard, 2006: viii).

3.2.3 Incentive effects

As was indicated earlier, the vehicle for the provision of unemployment benefits to able-bodied South Africans is the Unemployment Insurance Fund – a contribution-based social insurance institution. People with disabilities are the only members of the working-age population who qualify for grants (subject to the means test). This, however, does not mean that the South African social assistance system has no impact on labour-market participation whatsoever. Research has shown that the grant system has important labour-market ramifications, but these do not arise primarily as a result of the mechanism normally emphasised by economic theory, namely distortion of the relative prices of work and leisure. Responses to the Human Sciences Research Council's South African Social Attitudes Survey showed that poor South Africans generally prefer labour-market income to the currently available grants: in 2006, 67.1 percent of those not working for pay (including 75.3 percent of the unemployed) indicated that they do not regard themselves as better off claiming grants than working (Noble, Ntshongwana and Surender, 2008: 15-16). Instead, the grants system seems to influence the supply of labour through direct and induced effects on retirement decisions, household formation and job search activities.

Direct effects have to do with the incentives faced by the actual recipients of grants. The means test discourages elderly people of limited means from working after reaching the age of eligibility by imposing an effective marginal tax rate of 50 percent on non-pension incomes exceeding R606 per month (R7 272 per annum).[72] A similar poverty trap arises in the case of the disability grant, which is subject to the same means test. In the South African context, this discouraging effect of the means tests is likely to be exacerbated by the exceptionally high unemployment rate and other labour-market disadvantages faced by elderly and disabled South Africans (many members of these groups have limited skills and reside in rural areas where job opportunities are scarce). An additional factor affecting people with disabilities is that the available job opportunities tend to be temporary and low-paid (Lund, 1998: 12). The resulting small differential between the disability grant and the available market wages means that there is little incentive for a person with a disability to take up paid work.[73]

Several empirical studies have explored the induced labour-market effects of elements of the South African social assistance system, that is, effects on persons other than

[70] *This study used data generated by the October 2000 Income and Expenditure Survey (IES), linked to data from the September 2000 Labour Force Survey and earlier October Household Surveys.*

[71] *The only exception to this pattern was a survey-based study of the impact of the child support grant; which reported "… no discernable difference in levels of school attendance between children aged seven to 13 years who are receiving the grant and those who are not" (CASE, 2008: 39).*

the actual recipients. There are the strong indications that the social pension has become a major source of support for unemployed South Africans of working age, especially in the rural areas (cf. Case and Deaton, 1998; Keller, 2004; Klasen and Woolard, 2008). Unemployed youths and younger adults often delay forming new households or return to their parents or relatives to share in the pension income of the elderly. Such attachment to households with pension recipients apparently affects labour-market participation in two ways. Some individuals stop looking for work when they join such households, often because they are located in rural areas where job opportunities are scarce (Klasen and Woolard, 2008: 5).[74] Researchers who have included migrant absentees in their definitions of households, however, found that access to pension income stimulates labour-market participation by enabling some household members to undertake job search away from home (cf. Posel, Fairburn and Lund, 2006; Sienaert, 2008). Such positive effects are particularly strong for women.

Williams (2007) found that receipt of child-support grants positively influenced labour-force participation by caregivers, but apparently did not affect their search behaviour or actual employment:

…receiving a CSG may give a mother some income stability and alleviate [sic] her enough from domestic duties and immediate subsistence needs that she is capable of holding a job. This would account for an increase in broad participation. However, if the means test income threshold is likely to be a binding constraint for her, this willingness to work may not translate immediately into active job search and employment – she may be passively network-searching for an employment opportunity that compensates her enough for the loss of her CSG.

Major labour-supply effects, however, are unlikely in view of the relatively small value of the child support grant (cf. CASE, 2008: 27). This was corroborated by another finding of the South African Social Attitudes Survey: 70.6 percent of the respondents disagreed or strongly disagreed with the proposition that the child support grant was too high and discouraged job-seeking (Noble, Ntshongwana and Surender, 2008: 15).

Saving

As was indicated above, the means test imposes an onerous effective marginal tax rate of 50 percent on non-pension incomes exceeding R606 per month (R7 272 per annum). Hence, the means-tested nature of the social old-age pension reduces the incentive for low-income earners to save for retirement (National Treasury, 2004b: 11). The means test sometimes penalises lower-income workers with inadequate occupational pensions to such an extent that their retirement incomes (i.e. the sum of the occupational and social pensions) are only slightly higher than those of others who have contributed for much shorter periods. The actual impact of this disincentive on the savings decisions of lower-income workers behaviour has not been established empirically yet.

Fertility

Public discourse has been indicative of concern about the possibility that the availability of child support grants has been encouraging needy women (especially teenagers) to have more children. Empirical evidence on this issue remains scant, but Makiwane, Desmond, Richter and Udjo (2006) argued that there are least three reasons for suspecting that the introduction of the child support grant has not had a major impact on the prevalence of teenage pregnancy in South Africa:

- The incidence of teenage pregnancy has increased in all sections of society over time, including those that are not eligible for means-tested child support grants. This suggests that forces other than the desire to access grants are at work.

The incidence of teenage pregnancy increased markedly in South Africa during the mid-1990s, but then levelled off around the turn of the millennium. Hence, it does not appear as if the introduction of the child support grant, which

[72] *The formula D = 1.3A – 0.5B (with D the monthly pension payable, A the maximum monthly pension payable, and B the monthly private income of the beneficiary) implies that the maximum monthly pension of R1 010 is paid to recipients with private incomes of R606 per month or less. The monthly value of the pension decreases by 50c for every R1 of private income available to the recipient above R606 per month and falls to zero when private income reaches R2 426 per month.*

[73] *Johannsmeier (2007: 62) pointed out that this is especially true as far as casual and temporary jobs are concerned.*

[74] *Bertrand, Mullainathan and Miller (2003) also found that the presence in households of pension recipients was correlated with reduced labour supply by household members of working age.*

occurred in 1998, had a strong positive impact on teenage pregnancy.

If large numbers of teenagers were falling pregnant to access grants, one would have expected a very high take-up of the child support grant among teenage mothers. Yet this has not been the case. In the period from 1998 to 2006, some 15 percent of babies in South Africa were born to teenage mothers, but teenagers constituted only three percent of the beneficiaries of child support grants.

Incentives matter at the margin; hence, the availability of the grant may have tilted the cost-benefit calculations of some in favour of having more children. In all likelihood, however, a small grant of R250 per month or less would have been a decisive factor in the reproductive decisions of only a relatively small number of people. Given the absence of clear evidence of increases in the incidence of teenage pregnancy or of reductions in the age of first conception since 2000, the introduction of the child support grant probably at most has slightly slowed the ongoing decline in the fertility rate in South Africa compared to what would have happened otherwise.

Health

The impact of HIV/Aids on prime-aged individuals is such that the house¬hold usually foregoes the income of the affected member. HIV/Aids-infected individuals qualify for disability grants when they become physically unable to work, but payment of such grants is terminated if their health status improves sufficiently. Highly Active Anti-retroviral Treatment (HAART) usually achieves such restoration of health within six months (Venkataramani, Maughan-Brown, Nattrass and Rugeres, 2009: 2). Nattrass (2006a; 2006b) first pointed out that this policy could give rise to perverse incentives: given the difficulty of finding employment in the labour-surplus South African economy, HIV/Aids sufferers may be tempted to avoid or discontinue Highly Active Anti-retroviral Treatment (HAART) in order to remain eligible for disability grants. In a study involving a large sample of the residents of the Khayelitsha Township in Cape Town, Venkataramani et al. (2009) found no evidence of individuals compromising their health in this manner. They did find, however, that losing the disability grant as a result of successful anti-retroviral treatment often subjected individuals and households to sharp decreases in incomes (Venkataramani et al., 2009: 9-10).

4. REFORM ISSUES AND OPTIONS

The growth performance of the South African economy has improved markedly from 1994 onwards. The protracted stagnation in per capita income came to an end: real per capita GDP at constant 2000 prices, which had decreased from R21 167 in 1970 to R19 996 in 1993, increased at an average annual rate of 1.67 percent after 1994 to reach R25 897 in 2008 (South African Reserve Bank, 2009: S-149). The poor, however, benefitted to a limited extent only from the accompanying increase in personal incomes.[75] As was indicated in section 3.2.1, the headcount poverty rate decreased by 14 percentage points from 53 percent in 1996 to 39 percent in 2008, but a significant portion of this drop resulted from the expansion of the social grants system. Moreover, in 2008 39 percent of the South African population still lived on R388 per month or less (cf. Figure 21).

This state of affairs is ample reason for reflection on the future role of the social grants system in anti-poverty policy in South Africa. The remainder of this section provides such reflection. Section 4.1 discusses the relationship between economic growth and employment creation in South Africa. It shows that job-creating economic growth is crucial for overcoming poverty, but also identifies factors which hamper employment creation and, hence, progress in reducing poverty. Against this background, and with reference to the current fiscal situation and recent policy developments, Section 4.2 comments on the future role of the social grants system in anti-poverty policy in South Africa. This section also briefly discusses the potential of the Expanded Public Works Programme (EPWP) and the recently announced youth wage subsidy schemes as alternatives to further expanding the scope of the social grants system. Sections 4.3 and 4.4 discuss two sets of possible reforms to the social assistance system that are being debated or implemented in South Africa: child-focused conditional cash transfer programmes and so-called "new-style" workfare programmes.

4.1 Economic growth, job creation and poverty in South Africa

In developing countries, relatively low per capita incomes limit the scope for reducing poverty by redistributing existing resources. Job-creating economic growth therefore is the primary vehicle for reducing poverty in a sustainable manner. Bhorat (2004: 944) put it succinctly:

It is the labour market that ultimately lies at the centre of access to income (or lack thereof) in the long run. A well-performing, job-generating labour market remains the key long-run mechanism for reducing the poverty and inequality levels in the domestic economy.[76]

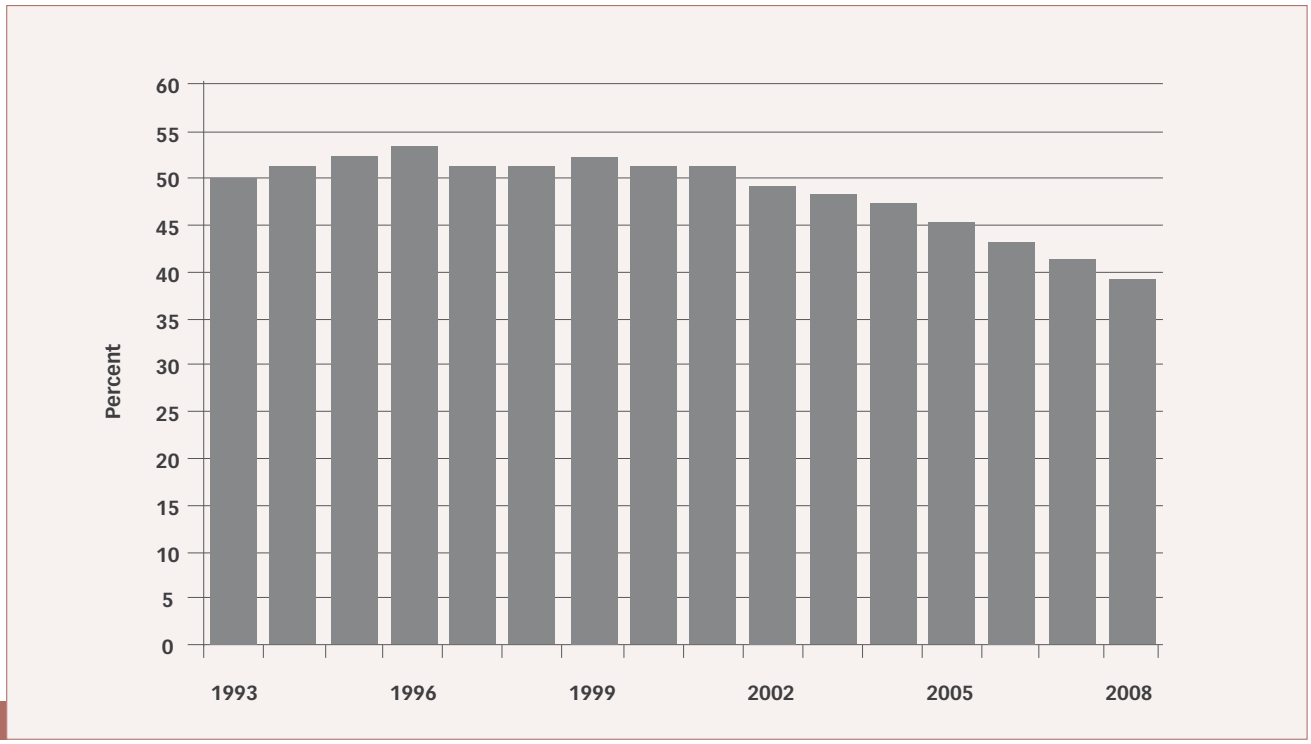

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Figure 21: Headcount poverty rates based on AMPS (1993 2008)

The links among economic growth, job creation, unemployment and poverty may seem self-evident, but the experience of the early and mid-1990s cast doubts about their validity in the then South African context. At the time, the South African economy shed jobs while output was expanding (albeit slowly), causing some to fear that the country was facing the bleak prospect of persistent "jobless growth" (cf. Hodge, 2009: 497-498). Such fears, however, proved to be unfounded. The fall in total employment during this period of positive economic growth resulted from sector-specific developments in manufacturing (possibly related to trade liberalisation) and, especially, gold mining (Hodge, 2009: 502). Moreover, 2.5 million new formal-sector and informal-sector jobs were created between September 2001 and September 2008 as economic growth continued and accelerated (The Presidency, 2009: 20).

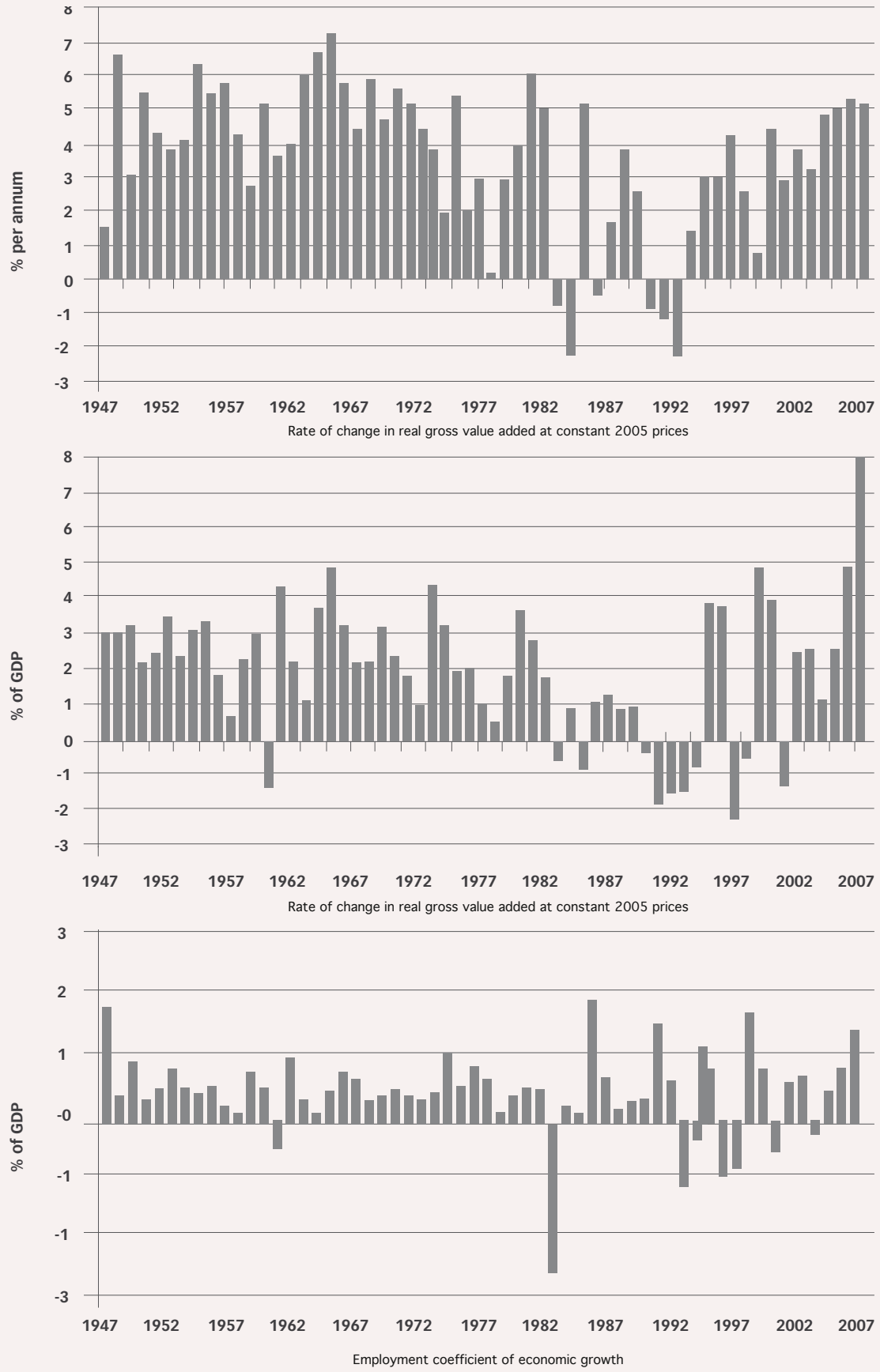
Using the data depicted in Figure 22, Hodge (2009: 497-498) pointed out that the period of "jobless growth" during the early and mid-1990s represented an aberration: since World War II, employment growth often lagged output growth in South Africa, but negative employment elasticities of economic growth have been rare. Hodge (2009: 497) estimated the long-term average ratio between employment growth and real economic growth as about 0.5, that is, a 1 percentage point increase in economic growth is associated with half a percentage point increase in employment growth. According to the National Treasury (2010a: 43), the employment elasticity of economic growth reached 0.66 from 2003 to 2008 – a level that compared favourably with estimates for other countries by the International Labour Organisation.

Employment growth during the post-1994 period nonetheless has been inadequate to sharply reduce unemployment and poverty in South Africa. Unemployment was already high at the time of democratisation – the 1995 October Household Survey reported narrow and broad unemployment rates of 17.6 percent and 30.8 percent, respectively (Yu, 2008: 32) – and increased further during the second half of the 1990s and the early years of the millennium.[77] The narrow and broad unemployment rates peaked in March 2003 (at 31.2

[75] *Personal or primary income is the actual value of income received in cash or in kind by individuals and households. Secondary income is primary incomes minus direct taxation plus the value of government services consumed.*

[76] *As was indicated in section 3.1, this proposition is at the heart of the anti-poverty strategy of the South African Government.*

[77] *The narrow unemployment rate (the official unemployment rate in South Africa) is the percentage of the labour force that was without work in the week preceding an interview conducted as part of an official labour-market survey, has taken active steps to look for work and was available for work. The broad unemployment rate is the percentage of the labour force that was without work in the week preceding such an interview and was available for work.*



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Source: Hodge (2009: 503)

Figure 22: Output and employment growth in South Africa (1947-2007)

Table 31: The skills composition of employment (1995-2008)

Year	Percentages		
	Unskilled	Semi-skilled	Skilled
1995	25.1	53.1	21.8
2004	23.4	52.7	23.9
2008	22.8	51.0	26.1
Job growth (1995-2008)	17.7	46.4	35.9
Source: National Treasury (2010a: 41)			

percent and 42.5 percent, respectively), and then decreased as economic growth accelerated, reaching lows of 23.0 percent in September 2007 and 30.2 percent in September 2008 (The Presidency, 2009: 21). Job losses resulting from the global financial crisis partially reversed this progress, however, and by the end of 2009 the narrow unemployment rate had risen to 24.3 percent (National Treasury, 2010a: 39).[78] International comparisons of unemployment are fraught with problems, but the evidence suggests that these are exceptionally high rates of open unemployment. Before the recent recession, for example, 44 percent of the working-age population in South Africa had jobs, compared to the international average of 60 percent (National Treasury, 2010a: 37-38; cf. also Kingdon and Knight, 2004: 391-392).

Research has suggested that supply-side and demand-side factors have hampered the ability of the South African economy to create enough jobs. On the supply side, South Africa has experienced rapid labour-force growth, especially during the second half of the 1990s (Hodge, 2009: 499-500).[79] The labour force has expanded much more rapidly than the working-age population (Kingdon and Knight, 2007: 816-819), which implied that labour-force participation rates increased markedly.[80] Burger and Woolard (2005: 5-8) and Kingdon and Knight (2007: 816-819) ascribed the increase in participation rates – which has been particularly noticeable among African women – to actual and perceived improvements in employment opportunities following the scrapping of apartheid-era restrictions on the mobility of Africans and the introduction of employment-equity legislation, rising education levels, and rapid growth in the number of households because of factors such as changes in household structure and HIV/Aid-related deaths among households heads.

As was indicated above, inadequate economic growth has been the major demand-side factor that has hampered job creation in South Africa. Furthermore, mismatches between the supply of and the demand for labour have constrained the labour intensity of economic growth. Most notably, the economy has experienced considerable structural change since 1970, with the primary sectors (agriculture and mining) shedding labour and new job opportunities arising in tertiary sectors such as finance, wholesale and retail trade and community, social and personal services (Banerjee, Galiani, Levinsohn, McLaren and Woolard, 2009: 723-724; National Treasury, 2010a: 40). These changes have contributed to an increase in the demand for more skilled labour accompanied by a fall in the demand for unskilled labour that has markedly worsened the employment prospects of the large unskilled portion of the South African labour force (Burger and Woolard, 2005: 16-18).

Table 31 confirms that the skills composition of employment has shifted from unskilled and semi-skilled to skilled labour since 1995. Only 17.7 percent of the new jobs created from 1995 until 2008 required unskilled workers and by 2008 only 22.8 percent of all jobs were classified as "unskilled". Fully 46.4 percent of the new jobs created between 1995 and 2008 were in the semi-skilled category, but this category's share of all jobs also decreased. By contrast, the portions of all job requiring skilled workers had increased from 21.8 percent in 1995 to 26.1 percent in 2008.

[78] *Total employment fell by 870 000 during 2009 alone (National Treasury, 2010a: 39).*

[79] *Labour-force growth has slowed sharply from 2000 onwards, averaging only 0.7 percent per annum from 2000 to 2007 (Hodge, 2009: 500).*

[80] *Kingdon and Knight (2007: 816-819) pointed out that immigration also contributed to rapid labour-force growth. Much immigration, however, has been informal or illegal and the extent of this contribution is therefore difficult to quantify.*

The relationship between labour-market institutions and outcomes is a controversial aspect of the unemployment debate in South Africa. Since 1995, the Government promulgated a series of laws that have substantially changed the complex of labour-market institutions.[81] Some economists (e.g. Arora and Ricci, 2005: 25-30) have argued that aspects of this institutional framework – including the laws governing collective bargaining processes and working conditions – have contributed to high unemployment in South Africa by rendering the labour market inflexible. The South African Government long resisted calls for the reform of this framework, having invested much political capital in its establishment. However, the following passage in the 2010 Budget Review (National Treasury, 2010a: 48-49) may have indicated the emergence of greater willingness to consider reforms to this framework:

South Africa has a well-developed labour-market regulatory environment, including effective employment protection legislation. In its 2008 Economic Assessment of South Africa, the Organisation for Economic Cooperation and Development (OECD) indicates that employment protection is broadly in line with international standards and is "relatively flexible". The OECD suggests, however, that the resolution of labour disputes and dismissals is slow and cumbersome, raising the costs and perceived risks to employers. Such difficulties inhibit new hiring, since firms are reluctant to hire inexperienced workers when it is costly to dismiss poor performers. It seems likely that improved implementation of labour protection legislation, together with adjustments to regulations where required, would contribute to better outcomes for both employment and industrial development.

Labour-market institutions such as collective bargaining frameworks affect wage determination in various ways.[82] Wage trends have varied since 1994, with rapid growth in some sectors (e.g. manufacturing, where real wages increased more than 40 percent between 1992 and 2008) and sluggish growth in others (e.g. the informal economy) (National Treasury, 2010a: 42). Data comparability issues have complicated analysis of overall trends in real wages: thus, Burger and Yu (2006) claimed that real wages increased by 4 percent from 1995 until 2005, while Banerjee et al. (2009) estimated a drop of 10 percent for the same period. Consistent with this estimate, Banerjee, Galiani, Levinsohn and Woolard (2006) argued that excessive wage growth was not a strong driver of the increase in unemployment in South Africa between 1995 and 2003. They added, however, that real wages did not fall enough to clear the labour market, partly because of the power of labour unions but also because the required drop was too large to be acceptable politically and socially (cf. Banerjee et al., 2006: 4).

Analysis of the South African labour market has highlighted two additional constraints to overcoming the unemployment problem. First, the legacy of apartheid-era spatial planning (which separated Black job seekers from job opportunities) and residual vestiges of racial discrimination may well undermine the effectiveness of search processes in the labour market (Banerjee et al., 2009: 734). Second, young people seem to experience exceptional difficulty in obtaining their first jobs and are affected particularly harshly by the scarcity of jobs.[83] Firms apparently put a high premium on work experience when making hiring decisions, possibly as a screening mechanism in an environment where virtually all younger workers now have at least ten years of formal education (Banerjee et al., 2009: 736-737).

Another notable feature of the South African labour market highlighted by Kingdon and Knight (2004: 391-392) is the small size of the informal sector: in contrast to the situation in most developing countries, the informal sector apparently has not expanded rapidly to compensate for the scarcity of formal-sector jobs.[84] In the fourth quarter of 2009, for example, some 2.1 million workers were active in the non-agricultural informal sector while 5.8 million were either openly unemployed or classified as discouraged

[81] *The most important pieces of legislation were the Labour Relations Act (1995), the Basic Conditions of Employment Act (1997), the Employment Equity Act (1998), and the Skills Development Act (1998).*

[82] *A well-known example is the centralisation of wage bargaining, in terms of which large firms and labour unions can extend arbitration agreements to all workers in defined bargaining council areas, including those employed by smaller non-unionised firms. Magruder (2010) found that such agreements reduce employment in particular industries by 8 to 13 percent, with small firms affected most.*

[83] *According to the National Treasury (2010a: 51, 42), more than 3 million young people do not work, and fully 73 percent of the unemployed are in the 15-35 age group.*

[84] *According to Heintz and Posel (2008: 2008), a comparison of Statistics South Africa and International Labour Organisation data for 2006 confirm that the ratios between non-agricultural employment in the informal sector and total employment were markedly higher in Latin and Northern American middle-income countries such as Argentina (36.1 percent), Brazil (40.6 percent), Mexico (38.0 percent) and Paraguay (50.1 percent) than in South Africa (18.5*

Table 32: Projections of job creation and unemployment (2009-2019)

	2009	2019	Change
Working-age population ('000)	31 261	35 184	3 923
Labour force ('000)	17 138	19 351	2 213
Economic growth of 3 percent per annum:			
Employment ('000)	12 974	15 057	2 083
Unemployment ('000)	4 164	4 294	130
Unemployment rate (%)	24.3	22.2	-2.1
Economic growth of 6 percent growth per annum:			
Employment ('000)	12 974	17 436	4 462
Unemployment ('000)	4 164	1 915	-2 249
Unemployment rate (%)	24.3	9.9	-14.4
Source of 2009 data: Statistics South Africa (2009a)			

work-seekers (Statistics South Africa, 2009a: vi).

Two explanations come to mind for the reality that the informal sector in South Africa is much smaller than what one would expect in view of the extent of unemployment (cf. Kingdon and Knight, 2004: 393). The supply-side explanation is that a large portion of the unemployed may prefer not to join the informal sector, either because they have access to alternative forms of income which enable them to exercise a preference for leisure over work or because informal-sector participation hampers searching for preferred formal-sector jobs. The implication of this explanation is that a considerable portion of South Africa's unemployment is voluntary. The demand-side explanation hinges on the existence of barriers of entry which prevent unemployed workers from joining the informal sector, in which case unemployment would be involuntary.

In a careful study of the evidence, Kingdon and Knight (2004) found no conclusive evidence of widespread involuntary unemployment in South Africa (cf. also Heintz and Posel, 2008). The "luxury unemployment" interpretation of joblessness is unrealistic: survey evidence has consistently found that informal-sector workers are markedly better off in terms of income and expenditure than the unemployed, and members of the former group tended to be markedly more satisfied with their living standards than members of the latter (Kingdon and Knight, 2004: 395-401). Hence, it seems most unlikely that social grants or any other form of non-wage income makes it unnecessary for the unemployed to join the informal sector. Kingdon and Knight (2004: 403-404) interpreted this as evidence of the existence of significant barriers to entry into the informal sector, including factors such as the impact of apartheid education and restrictions on the development of entrepreneurial skills among blacks, crime and insecurity, inadequate government support, and the lack of credit for start-up capital.

Future trends in economic growth and job creation will be major determinants of the numbers of people who will need government assistance in the form of social grants or other interventions. Table 32 provides rough estimates of the extent of job creation and changes in unemployment numbers and rates that could result from constant economic growth rates of 3 percent and 6 percent between 2009 and 2019, given certain assumptions regarding labour-force growth and the employment intensity of growth.[85]

Crude as they are, these projections illustrate important aspects of the links among economic growth, job creation and unemployment in South Africa. The estimated effects of an economic growth rate of 3 percent per annum indicate that even comparatively modest rates of economic growth should contribute to job creation and reductions in the unemployment rate, but not necessarily the absolute number of unemployed. Such growth rates clearly will not materially reduce the number of poor people dependent on anti-poverty interventions (including social grants targeted at economically inactive vulnerable groups). Both the Gear and Asgisa

[85] *Hi These assumptions are as follows: (i) the employment intensity of economic growth will remain at its long-run average of 0.5; (ii) the working-age population will grow at a rate of 1.2 percent per annum (as in 2009), and (iii) the labour-force participation rate will remain constant at its 2009 level of 55 percent. Hence, the exercise ignores the possibility of changes in the number of discouraged work seekers.*

strategies were aimed at achieving economic growth rates of 6 percent per annum. The projected effects suggest that such growth rates should result in large-scale job creation and marked reductions in the unemployment rate and the number of unemployed. Yet the extent of joblessness in South Africa is such that even a decade of rapid growth and job creation could leave almost 10 percent of the labour force (roughly 1.9 million work seekers) unemployed.

4.2 The future role of social grants in South African anti-poverty policy

A brief discussion of the determinants of poverty and of categories of interventions to address them is a useful starting point for discussing the possible future role of social grants as an element of anti-poverty policy in South Africa. Devereux (2002a: 658-660) identified three causes of poverty, each of which requires particular interventions:

- Chronic poverty often results from low productivity, that is, an inability to generate adequate returns from labour and other productive inputs. Low productivity often is related to unemployment or underemployment, especially in developing countries. The aim of interventions to address such poverty should be to facilitate income generation by raising productivity.

- Transitory poverty usually is related to vulnerability to temporary falls in returns to labour or temporary increases in irreducible expenses. Two factors determine the extent of vulnerability of a household: the likelihood that it will be affected by a particular shock ("exposure") and its ability to cope with the shock and its effects ("susceptibility"). Depending on the causes of vulnerability, appropriate interventions could include direct cash transfers, microfinance programmes aimed at smoothing consumption, and measures to restore productivity.

- Another major cause of poverty is dependency, which comes about because personal characteristics (such as disabilities, old age or childhood) prevent some persons from earning an independent living. Direct cash transfers are the best interventions to address dependency-related poverty.

As was indicated in section 2.1 of this paper, the South African social assistance system was designed to mitigate dependency-related poverty: grants are provided to needy members of vulnerable groups who are not members of the labour force (the disabled and poor children and elderly individuals). Section 3 showed that the grants system is effective at addressing this particular manifestation of poverty. The various social grants are well targeted and have a significant mitigating impact on poverty. Uncertainty remains about aspects of the utilisation and incentive effects of the grants, but evidence of widespread squandering of grant income and severe undesirable behavioural effects are yet to come to light. Furthermore, the child support grant and the old-age pension are used widely to enhance the nutrition and schooling of children, which represents investments in the human capital and productivity of future workers.

Although direct social assistance in the form of non-contributory grants is not available to the unemployed, the existing grants do impact on chronic poverty resulting from low productivity. This happens when grants (especially old-age pensions) are used to sustain unemployed labour-force members in multi-generational households. Section 3.2.3 showed that such sharing of grant income acts as a safety net and sometimes facilitates labour-market participation, but also ties some of the unemployed to rural areas where jobs are scarce. Furthermore, it carries the risk of diluting grant money to such an extent that all members of households supporting unemployed persons (including the targeted beneficiaries) could be dragged into poverty.

The case for maintaining the existing targeted social grants is very strong. These grants effectively assist poverty groups who otherwise would be extremely vulnerable in an environment where large-scale structural unemployment and the HIV/Aids pandemic put considerable pressure on informal social security systems. South Africa recently followed a growing number of countries by adding conditions to a social grants programme targeted at needy children. The purpose of conditional cash transfer schemes is to strengthen the developmental impact of social assistance systems. Section 4.4 discusses the merits of such interventions from a South African perspective.

The most vexing questions regarding the future of the South African social assistance system stem from the reality that it was not designed to mitigate chronic poverty resulting from structural unemployment.[86] The absence of dedicated assistance to the long-term unemployed has restricted the ability of the social grants system to reduce poverty in two ways: first, by excluding large numbers of poor households from coverage and; second, by giving rise to grant sharing that dilutes the benefits of those who are covered. As was indicated in section 3.1, the Government wisely has rejected

Table 33: Outcomes of Phase 1 of the Expanded Public Works Programme (2004-2009)

Year	Expenditure (R'000 000)[1]	Net work opportunities[2]	Average daily minimum wage (R)[3]	Wages paid to Employees (R'000 000)[4]
2004/2005	3 158	174 845	50	823.2
2005/2006	2 482	208 898	48	635.7
2006/2007	7 204	316 814	41	917.5
2007/2008	13 640	439 099	44	1 720.6
2008/2009	23 203	570 019	64	2 628.9
Total	49 687	1 709 675	53	6 725.9
Source: Department of Public Works (2009: 150, 158, 170, 182, 194)				

Notes: 1 *Including professional fees*

2 *Gross work opportunities minus possible work opportunities if the projects had been undertaken machine-intensively (i.e. opportunities added by the EPWP).*

3 *For manual workers*

4 *Product of the minimum wage and the number of person-days of work*

calls to address this gap in the social assistance system by means of the adoption of a universal income grant. The introduction of such an expensive programme clearly will be out of the question in the next few years in view of the need for fiscal consolidation, and it is unlikely to be sustainable in macroeconomic terms thereafter as well (cf. Thurlow, 2002; Van der Berg, 2002). The numbers may be different eight years down the line, but Van der Berg's (2002: 7) comment on the effectiveness of a basic income grant as an anti-poverty instrument remains valid:

The BIG uses a sledgehammer where this is clearly an inappropriate instrument. To transfer perhaps another R22 billion to the poorest forty percent of the population (already an overly ambitious goal that would stretch fiscal resources), it proposes that another R32 billion be paid to the not so poor, some of whom would then have to pay taxes of R65 billion to fund all of this (including the costs of transfers).

A basic income grant also is likely to be a disincentive to labour-market participation and could contribute to unhealthy welfare dependency among the poor. Moreover, the introduction of such a large entitlement programme represents a form of "open-ended fiscal exposure" which may expose future governments to strong pressure for increases in the amount of the grants (cf. Coleman, 2002: 22).

Two interventions currently provide assistance to the unemployed: the Unemployment Insurance Fund (UIF) and the Expanded Public Works Programme (EPWP). The impacts of these interventions are considerable, but inadequate. As was indicated in section 2.1.2, the National Treasury (2010a: 107) reported that the UIF disbursed about R495.8 million per month to an average of 207 967 beneficiaries during the first nine months of 2009/10. Hence, the Fund assisted some 5 percent of the more than 4.1 million unemployed members of the labour force (this ratio falls to about 4 percent if the more than 1 million discouraged work seekers are also taken into consideration). One of the main reasons why this ratio is so low is that most of the unemployed have never worked and therefore do not qualify for UIF assistance.[87] Executives of the UIF recently informed the Parliamentary Portfolio Committee on Labour that the Fund is giving consideration to raising the income replacement rate and extending the period during which benefits are provided from 238 days to 365 (Ensor, 2010).

The target of the first phase of the EPWP, which ran from

[86] *The social assistance system came into being in the interwar period to meet the needs of whites. At the time, job reservation and higher education and skill levels assured most whites of employment, and they mainly needed cover against cyclical unemployment, which was usually mild and of relatively short duration. The cover provided by the Unemployment Insurance Fund was adequate for this purpose, and there was no need for social grants to address structural unemployment.*

[87] *The Labour Force Survey of September 2007 indicated that 55 percent of the unemployed have never worked (Leibbrandt et al., 2010: 48).*

2004 until 2009, was the creation of 1 million short-term work opportunities (i.e. 650 000 full-time equivalent jobs).[88] Table 33 shows that the EPWP achieved this target by creating 1 709 675 work opportunities in net terms. The Programme clearly had a significant impact: apart from providing work opportunities equivalent to full-time employment for roughly 10 to 15 percent of the unemployed, it supplied more than 7.1 million person-days of training, and wage payments to workers amounted to at least R6 725.9 million at an average minimum daily rate of R53 (Department of Public Works, 2009: 110).[89]

EPWP wage disbursements nonetheless were relatively small compared to total outlays on the Programme (R49 687 million) and the total spending on social grants over the same period (R285 807 million).[90] Phase II of the EPWP, which commenced in 2009, represents a major expansion of the Programme and also aims to address some of the weaknesses of the first phase by increasing the lengths of work opportunities and the labour intensity of projects (National Treasury, 2010a: 50). Total spending is expected to amount to R52 billion over the next three years, and the aim is to create 4.5 million short-term jobs lasting 100 days on average (National Treasury, 2010a: 51). According to the Department of Public Works (2009: 142), this target is the equivalent of slightly more than 2 million full-time jobs, that is, some 650 000 jobs per annum. The possible contribution of the second phase of the EPWP to the reduction of joblessness should be assessed against the scale of the unemployment problem in South Africa: as was shown in section 4.2, even exceptional economic performance over the next decade (a constant real output growth rate of 6 percent per annum) is likely to only reduce the number of unemployed from the current 4.1 million to about 1.9 million.

The South African Government recently announced another intervention aimed at job creation, namely a wage subsidy scheme. The purpose of this scheme (which is expected to be in operation early in 2011) will be to encourage firms to hire young work seekers without work experience (Gordhan, 2010: 10). It is envisaged that the scheme will use the SARS payroll tax platform to provide a cash reimbursement to employers for a two-year period. To qualify for the subsidy, participating businesses, municipalities and non-governmental organisations will be expected to adhere to minimum labour standards.[91]

The notion of a wage subsidy has been on the policy agenda in South Africa for some time, having been mooted in 2007 in the context of retirement provision reform as an intervention to encourage job creation and the payment of living wages in labour-intensive sectors and low-wage occupations (National Treasury, 2007b: 112-113). It also was proposed by the Harvard University team that assisted the South African Government in the preparation of the Asgisa strategy (Levinsohn, 2008). The Minister of Finance indicated that the goal of the envisaged scheme will be to increase employment of young school-leavers by 500 000 by 2013 (cf. Gordhan, 2010: 10). It is difficult to judge the feasibility of this target. Attempts to model the effects of hypothetical wage subsidy schemes for unskilled and semi-skilled workers (e.g. Pauw and Edwards, 2006; Go, Kearney, Korman, Robinson and Thierfelder, 2009) indicated that such interventions should stimulate employment in South Africa, but the strength of the impact will depend on the elasticities of substitution of production factors and the flexibility of the labour market. This suggests that the decision to launch such a scheme on a limited scale by targeted a specific cohort among the unemployed was sensible.

Of late, attention is also being given to the notion of using the existing grants as a mechanism for providing increased access to economic opportunities to able-bodied household members of grants recipients. This idea was the topic of a discussion document released by the Department of Social Development (2006) and also featured in the draft discussion document on an anti-poverty strategy for South Africa, which suggested that

[88] *A full-time job opportunity is defined as one that provides a minimum of 230 hours of work per year (Altman and Hemson, 2007: 10).*

[89] *The wage bill to employees was calculated as the product of the number of person-days of work and the average daily minimum wage (cf. footnote 4 to table 11). As such, it represents a lower-bound estimate of total wage payments. Official EPWP documentation does not provide more exact wage bill data.*

[90] *High non-wage costs often reduce the poverty impact of public works programmes (Vodopivec, 2006: 66-67). To be sure, the purpose of most such programmes extends beyond supplying workers with cash wages: training and the creation and maintenance of infrastructure usually are important goals as well. This is the basis of the distinction between two types of public works programmes, namely labour-intensive employment programmes aimed at maximising short-term job creation and labour-based employment programmes, which give as least as much attention to objective of asset creation (cf. Devereux, 2002b: 2). It nonetheless remains true that social grants programmes normally achieve significantly higher cash transfer-to-total expenditure ratios than public works programmes.*

[91] *The National Treasury undertook to release a discussion document on the envisaged wage subsidy scheme at the end of March 2010.*

the administrative structures of the grants system could be a facilitating mechanism for anti-poverty interventions:

The channel of grants' administration offers a unique opportunity to reach poor working and unemployed people to enhance their participation in the economy. The objective is to identify scalable policy options that could be linked to the grants, insofar as they enhance the access to economic opportunity for labour market participants in beneficiary households… It will… allow for targeting interventions to have greater impact. (The Presidency, 2008: 50)

In a paper commissioned by the Department of Social Development, Altman and Boyce (2008) identified varied policy options of this nature. Such interventions are related to elements of the workfare programmes that have been adopted by the United States and a growing number of European countries. Section 4.5 comments on the scope for implementing such programmes in South Africa.

4.3 Conditional cash transfers

4.3.1 Overview and international experience

Rawlings (2005: 134) summarised the essence of conditional cash transfer (CCT) programmes as follows: "Conditional cash transfers provide money to poor families on condition that they make investments in human capital such as sending children to school or bringing them to health centres on a regular basis". The first CCT programme was the Progresa scheme introduced in Mexico in 1971. Progresa consisted of cash and in-kind transfers to households whose children regularly attended school and whose members all visited health centres regularly. The education component of Progresa targeted poor households with children in primary and secondary school, and provided educational grants and support for school materials. The programme also included supply-side benefits: teachers, for example, received bonuses for every pupil who was on the programme. The health component focuses on poor households with pregnant and lactating women, children under two years of age, and malnourished children between the ages of two and five; the benefits included cash grants for food consumption, basic health care services, nutrition and health education, and nutrition supplements (Rawlings and Rubio, 2005: 32). Furthermore, Progresa has a positive gender bias: benefits are disbursed to the female heads of participating households, and participating secondary-school girls receive higher cash grants than boys, because the former face higher risks of dropping out of school and their educational attainment brings positive externalities (Britto, 2005: 8). In 2002, Progresa was renamed Oportunidades and its scope was expanded to also include income generation for poor households by means of preferential access to microcredit, housing improvements, and adult education (Rawlings and Rubio, 2005: 32).

Subsequently, several other countries in Latin America, Central America and the Caribbean also adopted CCT schemes, including Brazil, Colombia, Honduras, Jamaica and Nicaragua. Brazil, for example, adopted the Bolsa Escola programme in 2001. This programme granted monthly cash transfers to poor households with children aged six to fifteen enrolled in grades one to eight, provided that they maintain school attendance rates of 85 percent or higher (Britto, 2005: 10-11). Bolsa Escola benefits are also disbursed to female heads of households. The benefits provided by Brazil's federal government were significantly lower than those of Progresa, but richer states and municipalities were allowed to raise the transfers or expand coverage. The details of the targeting of beneficiaries were also left to municipalities (Britto, 2005: 11). In 2003, Bolsa Escola was unified with other federal CCT schemes, creating a programme known as Bolsa Família. Apart from better coordination with other social spending initiatives, Bolsa Família added health-related conditionalities to Bolsa Escola's education-related ones and markedly extended the coverage and size of transfers.

The adoption of CCT schemes was a direct response to the shortcomings of traditional social assistance programmes, including high administrative costs, poor targeting of the needy, fragmentation of projects and programmes, and an overemphasis on short-term relief of poverty with inadequate attention to longer-term poverty of a structural nature (Rawlings and Rubio, 2005: 30, 33). Hence, the explicit aim of CCT schemes is to combat current poverty (by providing income support that enables consumption smoothing) as well as future poverty (by encouraging human capital accumulation among the young in an attempt to break the intergenerational poverty cycle) (Das, Do and Özler, 2005: 57; Rawlings and Rubio, 2005: 33). Other notable features of Latin American CCT schemes have included strong emphasis on obtaining co-responsibility for the success of interventions from participants; an explicit focus on achieving complementarities between the education, health and nutrition elements of human capital development; carefully planned impact assessment (which also were used as bases for expanding programmes); and various innovative targeting mechanisms (Rawlings, 2005: 144-148; Rawlings and Rubio, 2005: 36-38). [92]

According to Das et al. (2005: 57), CCT programmes "… are technically feasible in that the main stated goals of the programs are actually met in practice and are politically acceptable in that successive governments are willing to continue and even expand program coverage". The political acceptability of CCT programmes was reflected in marked increases in budgets and the number of recipients over time. When Progresa began in Mexico it involved 300 000 individuals; by 2002, the number of participants had grown to more than 4 million (20 percent of the population) (Rawlings and Rubio, 2005: 38). The same trend was observed in Brazil, where some 5 million people participated in Bolsa Escola in 2002 (Britto, 2005: 7). Rawlings (2005: 149-151) summarised evidence on the effectiveness of CCT schemes as follows:

- Primary and secondary school enrolment rates have increased markedly in Mexico, Colombia and Nicaragua since the introduction of CCT schemes.
- The impact of CCT programmes on school attendance has been mixed, ranging from very impressive in Nicaragua to modest in Mexico.
- It appears as if the introduction of CCT programmes has significantly reduced the incidence of child labour in Mexico and Brazil.
- In several countries (including Mexico, Colombia and Nicaragua), child health and nutrition have also improved since the adoption of CCT programmes.
- Participation in CCT programmes apparently has contributed to higher consumption levels in Mexico, Colombia and Nicaragua.
- Evaluations have suggested that CCT programmes are efficient (81 percent of the programme benefits have accrued to the poorest 40 percent of families) and cost-effective in terms of the ratio between benefits and administrative costs.

These findings are encouraging, but it should be kept in mind that it is still too soon to properly gauge the longer-term developmental impact of conditional cash transfer programmes (Rawlings, 2005: 154). More generally, such interventions by no means are panaceas for solving the challenge of designing effective social assistance systems. CCT programmes can be effective for overcoming obstacles to full use of schools and health clinics by the poor, including high pecuniary and opportunity costs, difficult access and inadequate incentives for investing in the human capital of children (Rawlings and Rubio, 2005: 33). Clearly, such schemes cannot address the short-term consumption needs of poor households without young children. Furthermore, their impact on human capital accumulation will be negligible in areas where school enrolment and attendance among poor children are high already or where service delivery institutions are absent or incapable of providing high-quality education and health services (Rawlings, 2005: 156; Rawlings and Rubio, 2005: 33). In such cases, the introduction of CCT programmes should be complemented by increased investment in and institutional reform of the supply of education and health care.

4.3.2 Application to South Africa

In some ways, conditional cash transfer programmes are attractive interventions in the current South African context: in return for what should be a modest increase in administrative costs associated with monitoring compliance, such schemes promise significantly higher returns on current social grants spending (mainly accelerated human capital accumulation among children in poor households). Moreover, the adoption of CCT programmes would not require modification of a design principle that is deeply entrenched in South Africa, namely that social assistance should be limited to economically inactive vulnerable groups.

The National Treasury (2008b: 94) first indicated an interest in adding conditions to the child support grant in February 2008, when it announced that "a review will be undertaken this year of the grant's administration and targeting mechanisms, and of appropriate conditional criteria, such as school attendance and immunisation of qualifying children". The 2009 Budget Review (National Treasury, 2009a: 91) confirmed that "… research has been undertaken on options for linking grants to key aspects of child care, such as schooling and

[92] *CCT programmes use a variety of targeting mechanisms (mainly a combination of geographical and household-level targeting, sometimes based on proxy means tests) (cf. Rawlings, 2005: 145; Rawlings and Rubio, 2005: 36-38). Honduras uses the Height Census of First Grade School children to provide data on malnutrition levels. In Mexico, qualifying communities in rural areas are selected using a marginality index based on census data. Furthermore, in Jamaica, beneficiaries' eligibility is continuously reviewed. This happens every three years in Mexico as well. In Nicaragua the programme only lasts three years in a community and is then phased out within two years.*

health monitoring", but failed to report any concrete findings. Conditions for the child support grant were introduced effective from 1 January 2010 (cf. National Treasury, 2010a: 104). This entails that the caregivers of beneficiaries must (1) ensure that they are enrolled and attending school, and (2) submit regular proof of enrolment and reports from the school to the Department of Social Development. In cases where these conditions are breached, the Department of Social Development will send a social worker to investigate and institute steps to ensure that the child attends school. However, punitive measures (such as terminating the grant) are not envisaged.

Das et al. (2005) suggested a useful conceptual framework for assessing the need for and likely effectiveness of conditional cash transfers in a variety of settings. Their point of departure was a standard theoretical argument for the superiority of unconditional cash transfers over conditional cash transfers: all other things equal, successful attempts to change the behaviour of rational (non-myopic) poor agents by means of conditional transfers reduce their welfare, because such efforts distort the decisions of the agents by inducing them to make choices which they would not have made otherwise (Das et al., 2005: 63). They then posed the following question: could there be market failures which prevent poor agents from making optimal choices, in which case appropriately designed conditional cash transfer programmes could enhance efficiency and the welfare of individual agents and society as a whole? Das et al. (2005: 64-71) identified the following possible market failures which could make conditional cash transfer interventions welfare-enhancing:

- Efficiency-related market failures. Mismatches between the interests of children and the preferences of parents could result in underinvestment in the education of the former. Children cannot credibly commit themselves to repaying parents for investments in their schooling. Hence, some parents may prefer inferior short-run outcomes which benefit them relatively more (e.g. higher incomes resulting from child labour or from using school-age children to look after younger siblings) to superior long-run outcomes involving relatively larger gains for the children. In such cases, cash grants tied to school enrolment and attendance could yield higher levels of efficiency and welfare by reducing or eliminating the gap between parental preferences and children's interests.

- Equity-related market failures. When it is not feasible to use conventional means testing for targeting purposes, attaching conditions to a cash transfer scheme programme can be a useful self-targeting alternative. The idea would be to use conditions which would tilt the cost-benefit calculation of higher-income groups against participation in the scheme (e.g. prescribing periodic visits to public health facilities which require a degree of queuing that would impose high opportunity costs on richer people with access to other health facilities).

Yet the existence of such market failure is not a sufficient rationale for the adoption of CCT programmes. Das et al. (2005: 66-69) note that conditions may not have the desired effects if the perception that the costs of the condition(s) outweigh the benefits of the grants causes potential participants to shun the programme. Another possible cause of programme failure is the fungibility of most conditioned-on commodities: participants could undermine CCT programmes by switching their consumption to close substitutes of the conditioned-on goods (e.g. by decreasing their consumption of oranges when given vitamin C tablets, or by reducing the food intake of children at home when they participate in school lunch programmes). Thus, careful cost-benefit analysis is required to estimate the potential effectiveness of CCT programmes.

On balance, lessons from the experiences of other countries and the issues raised by Das et al. (2005) suggest that conditional cash transfer programmes are unlikely to be cost-effective interventions in the current South African context. CCT programmes work on the demand side of social-service provision, but this is not where the real problems are to be found in South Africa as far as these services are concerned.[93] School enrolment and attendance figures, for instance, are high already: General Household Survey data showed that the school attendance ratio among 5 to 19-year olds in grant-receiving households was 90 percent in 2007, up from 87 percent in 2003. For 5 to 19-year olds in living in low-earning households receiving child support grants, the school attendance ratio increased from 86 percent in 2003 to 90 percent in 2007 (Statistics South Africa, 2009b: 17-18). Furthermore, the success of existing targeting mechanisms precludes the need to use conditions for screening purposes. Inefficiency and effectiveness on the supply side of the

[93] *AThe introduction of no-fee schools, for example, has markedly reduced the pecuniary costs of education to poor parents in South Africa.*

social service provision are major obstacles to human capital accumulation among poor children in South Africa[94]; indeed, in some cases, supply-side problems are already weakening the demand for publicly provided social services for which private alternatives exist.[95] Unless these problems are addressed, the most likely effect of the adoption of conditions is likely to be a dilution of the current poverty impact of the child support grant resulting from higher administrative and compliance costs. This would be most unfortunate given the need for effective anti-poverty interventions and the situation of severe fiscal stress in South Africa right now.

The conditions introduced for the child support grant with effect from 1 January 2010 therefore make little sense. The constraint on human capital accumulation by means of the schooling system is the supply-side problem of ineffectiveness in provision, not demand-side problems related to low enrolment or attendance; furthermore, the intervention lacks credible sanctions for non-compliance on the part of participants. One reason for the absence of sanctions could be that making eligibility for the child support grant conditional upon school attendance sits uneasily with the rights-based approach of the South African Constitution. Section 27(1)(c) of the Constitution of the Republic of South Africa (No. 108 of 1996) stipulates that everyone has the right to have access to social security, including appropriate social assistance for those unable to support themselves. Be that as it may, whatever human capital investment may result from the adoption of the conditions probably will not outweigh the accompanying increase in the administrative and compliance costs of the child support grant scheme.

4.4 Workfare programmes

4.4.1 Nature and international experience

Standing (1990: 680) defined workfare as a "government-administered policy whereby those in need and without regular employment are obliged to undertake work-related activity in return for state income transfers". A further distinction is sometimes made between two categories of workfare schemes which impose different types of obligations on the recipients of social grants: mandatory workfare requires actual work, while "new-style" workfare requires participation in other employment-related programmes (such as job-seeking, community work, training and formal schooling) (Standing, 1990: 680).[96] Public works programmes (such as the EPWP) therefore are examples of mandatory workfare schemes. This section focuses on "new-style" workfare programmes.

Contemporary workfare programmes originated in OECD countries, where trends such as rising long-term unemployment and changing family structures prompted concern about the work incentive effects of traditional social assistance systems and their ability to address growing social exclusion (Tesliuc, 2006: 5-8). Core elements of such programmes have included steps to reduce the amounts and duration of benefits and to force beneficiaries to seek work actively, often complemented by other measures to encourage working and social inclusion, including termination of the cancelling of benefits when recipients obtain part-time work, changing the delivery of benefits from the household to individuals so that individuals do not jeopardise the household's access to benefits when they find jobs, making the provision of benefits conditional on finding employment (e.g. cash bonuses, wage supplements and tax credits), and offering more assistance to job seekers (labour-market information, training programmes, etc) (Tesliuc, 2006: 7).[97] Hudson and Kühner (2009) described this development as a shift from "protective" to "productive" modes of providing social assistance.[98]

The United States pioneered modern welfare reforms aimed at integrating recipients of social benefits into the formal labour market. The workfare approach can be traced back

[94] *This issue also was highlighted by another assessment of the potential of CCT programs in the South African context (Lund, Noble, Barnes and Wright, 2008: 16): "... school attendance rates are good (though they may become less so with HIV/AIDS). Given the parlous quality of education for poor South Africans in both urban and rural areas, it is not necessarily getting children to school that matters in breaking long term poverty: it is about resources and facilities, or management, or teaching practice at schools... It is a supply-side problem... Poor teaching and lack of leadership in under-resourced schools are common, and there are low returns to education for a number of years. Enrolment and attendance are necessary conditions in trying to escape poverty, but they are not sufficient."*

[95] *An example of this is health care, where even lower-income groups show an overwhelming preference for private care, where it is available and affordable (cf. Van der Berg et al., 2009: 36).*

[96] *Hence, workfare programmes are a subset of conditional cash transfer programmes, but with a specific focus on members of the labour force.*

[97] *Ochel (2005: 78) emphasized that workfare programmes focus primarily on work; training and other mechanisms to achieve reintegration into the labour market are of secondary importance.*

[98] *This shift also could be described in terms of the typology proposed by Devereux (2002a: 661, 662) as one from a "livelihood protection" to a "livelihood promotion" approach (cf. section 3.2.2).*

to experimental programmes introduced by the Reagan Administration in 1981, but reached maturity under the Clinton Administration with the implementation of the Personal Responsibility and Work Opportunity Act (PRWORA) of 1996 and other welfare reforms. The major elements of US workfare programmes have been as follows (cf. Blank, 2004: 4-8). First, PRWORA abolished the matching-grant Aid to Families with Dependent Children (AFDC) programme and replaced it with Temporary Assistance to Needy Families (TANF), provided to states as a block grant. The introduction of TANF allowed the states much more discretion over programme design than AFDC, and the block-grant basis raised the importance of careful design by transferring the full financial risk of cycles in assistance needs to states. The PRWORA legislation also made access to federal funds conditional on states placing larger numbers of their active welfare recipients in jobs, limited TANF-funded assistance to 60 months over the full lifetimes of individuals, and limited access to income assistance programmes by certain targeted groups (e.g. immigrants and certain categories of disabled persons). The states responded to the PRWORA legislation by:

- markedly expanding their welfare-to-work programmes
- reducing the rate at which cash benefits decrease as earnings increase (to encourage working)
- enforcing sanctions (benefit losses) on assistance recipients who did not participate in work programmes
- enforcing the Federal 60-month limit on eligibility for TANF-funded assistance and, in some cases, setting and implementing even tighter limits

Other policy changes strengthened state-level efforts to get welfare recipients in jobs. These included the expansion of in-kind assistance to needy families by means of child-care subsidies, food stamps and Medicaid services, as well minimum wage increases and expanded refundable tax credits under the Earned Income Tax Credit (EITC) system (Blank, 2004: 9-12).

In a careful review of the empirical evidence, Blank (2004: 14-18) highlighted three major results of these changes:

- The number of persons on the welfare rolls dropped by 42 percent from 1994 to 2001, and did not rebound significantly during the 2000-2001 recession.
- Employment increased sharply during the late-1990s, especially among less-skilled single mothers. Data from 2002 showed that the majority of the women who had left welfare in the 1990s remained employed, although a significant minority were jobless.
- The incomes of single mothers (the group affected most heavily by the changes) rose during the second half of the 1990s, despite the fact that many of them lost cash benefits as a result of the introduction of workfare.

These developments suggest that workfare programmes have succeeded in their primary aims of reducing welfare caseloads and moving welfare recipients into jobs. Blank (2004: 37-40), however, added that it is particularly difficult to separate the effects of such programmes from concurrent labour-market developments such as the rapid growth in job opportunities and earnings in the US during the second half of the 1990s; furthermore, it is too soon to ascertain some of the longer-term effects of the welfare reforms on the livelihoods and social choices of needy families.

Welfare reforms with workfare elements were also implemented in the United Kingdom by the Labour Government of Tony Blair, as well as in the Scandinavian countries. The UK reforms, known as the New Deal, offer assistance to four groups of welfare recipients: young unemployed persons aged 18 to 24, long-term unemployed aged 25 and above, lone parents and disabled people (cf. Kildal, 2001: 4; Ochel, 2006: 80-81). Younger unemployed persons first entered a period of intensive job-search (the "Gateway"), after which they had to choose among four six-month options, namely subsidised employment, full-time education and training, voluntary service, and the Environmental Task Force (Ochel, 2006: 80). This was followed by another period of intensive job search (known as the "follow-through"). Unemployed persons aged 25 and above who had received the Jobseeker's Allowance continuously for 12 to 18 months underwent a 13-week Gateway period, followed by an Intensive Activity Period that lasted another 13 weeks and provided subsidised employment or education and training opportunities (Ochel, 2006: 81). Several studies reviewed by Ochel (2006: 80-81) found that the New Deal programmes successfully promoted the employment of younger and long-term unemployed people in the United Kingdom.

The Scandinavian countries have long combined a commitment to the maintenance of full employment (pursued by means of active labour-market policies, inter alia) with the

Table 34: Proposed interventions to facilitate access to economic opportunities

Age cohort	Interventions
< 18 years	Child support grants
Disabled persons	Re-assessment; training and skills development
Single parents	Specific assistance based on age, background and skills
18-22 years	Tertiary and technical education; training support
23-40 years	Adult basic education; training and skills development; job placement in local industries
41-50 years	Training; job placement and self-employment support
51-60 years	Job placement in services industry
60 years >	Old-age pensions
Source: Adapted from Department of Social Development (2006: 11)	

belief that generous social benefits for the unemployed are basic social rights regardless of achievements and financial means (cf. Kildal, 2001: 5-6). During the second half of the 1990s, however, the governments of these countries also introduced workfare-like welfare reforms, with Denmark leading the way. Prior to a series of labour-market reforms introduced from 1993 until 1998, the jobless in Denmark could have accessed unemployment benefits indefinitely, provided that they had participated in work programmes for six months during each three-year benefit cycle (Kildal, 2001: 7-9). The first wave of reforms abolished the right to earn new benefits through participating in work programmes by limiting the period of entitlement to seven years, of which the last three years involved compulsory "activation initiatives" aimed at reintegration into the labour market. The limits subsequently were tightened and by 1998 the maximum unemployment period was four years, including three years of activation activities. In 1996, these steps were complemented by special measures for low-skilled individuals under 25 years of age, who after six months of unemployment were compelled to enter education or work-training programmes and accept sharply reduced benefits. Ochel (2006: 81) reported positive employment effects for these Danish workfare programmes, but Kildal (2001) was more circumspect and expressed concern about the implications of such programmes for norms of fairness and justice that have long underpinned the Scandinavian welfare regimes.

The available evidence therefore indicates that workfare programmes can be effective mechanisms for returning welfare recipients to work, especially in rapidly growing economies where sufficient numbers of jobs are created to absorb programme participants in the regular labour market. The importance of the availability of jobs is magnified by the reality that workfare programmes affect the low-skilled labour market by assisting unemployed people in getting regular public or private sector employment. In contrast to public works programmes, which provide government-created temporary jobs, workfare therefore causes competition between social security recipients and regular workers for low skilled work in the formal labour market (e.g. sweeping streets, cleaning parks, and basic clerical tasks). Hence, inadequate availability of jobs may well be the most serious barrier to the successful implementation of workfare programmes. Moreover, the US experience showed that workfare programmes can be time-consuming and financially expensive: the costs to be taken into consideration are the work-related and child care expenses of recipients as well as supervisory and administrative costs (Samson, Rosenblum, Haarmann, Haarmann, MacQuene and Van Niekerk, et al., 2001: 12). Kildal (2001: 14) also warned that workfare-type schemes could easily lead to two-tiered labour markets in which poor labourers are compelled to work on "second-rate terms", lacking labour rights and sickness, vacation and unemployment benefits.

4.4.2 Application to South Africa

The discussion document released by the Department of Social Development (2006: 7) acknowledged that efforts relying solely on conditions-based incentives are unlikely to successfully draw the poor and beneficiaries of social grants into economic activity in South Africa. Hence, it argued for a more holistic approach that provides for a range of supporting measures to enable these groups to access economic opportunities. To this end, the document proposed the interventions listed in table 34 to assist the various age cohorts. Specific attention was given to two sets of interventions: "exit strategies" for the beneficiaries of child support grants and persons with disabilities capable of rehabilitation, and measures to assist the care givers of

beneficiaries of child support grants.[99] The document also outlined the rudiments of a process model for such interventions. According to the envisaged model, one agency would be responsible for compiling a so-called "gateway profile" for targeted beneficiaries, assisting them in exploring options, providing them with income incentives, and entering into a "social contract" with them. This agency also would be charged with referring beneficiaries to partner institutions providing the actual economic opportunities, for example the Department of Labour, the Department of Education and civil society organisations (Department of Social Development, 2006: 8).

In a report commissioned by the Department of Social Development, Altman and Boyce (2008: 5) fleshed out these principles by identifying five policy instruments ("direct job placement and job creation, top-up subsidies or vouchers, credit for productive activities, information, and insurance") and four general policy options ("direct job creation, enhancement of job search and employability, support for self-employment, and support to stabilise income from employment or self-employment"). Application of these instruments to the various policy options yielded the following proposals for interventions (Altman and Boyce, 2008: 22-33):

- Direct job creation. Access to EPWP opportunities could be facilitated by means of dissemination of information, while vouchers could be used to stimulate activity in the social sector of the Programme (e.g. child-care services). In addition, an employment voucher could be provided to working-age youth in beneficiary households to finance temporary work experiences.

- Enhanced job search and employability. Proposals included dissemination of job-search information, provision of education and training vouchers to members of beneficiary households, provision of transport coupons or subsidies to members of beneficiary households who manage to find jobs, and incentives to temporarily disabled grants recipients to return to work.

- Support for self-employment. Vouchers for the purchasing of advice and inputs, insurance against theft and access to credit could be made available to persons linked to grants beneficiaries.

- Stabilising incomes. Insurance for productive assets could be offered to increase the viability of businesses, while women in grant-receiving households could be provided with HIV/Aids services to enable them to remain employed.

These ideas clearly have much in common with the "new-style" workfare programmes of some OECD countries. Nonetheless, if such programmes were to be introduced in South Africa at this juncture, the purpose and systemic implications would differ in important ways from those in the OECD countries. These countries introduced workfare schemes to curtail social assistance dependence and spending; in South Africa, the adoption of such programmes would represent an expansion of the social assistance system. The fiscal costs of such programmes would depend on their scope and design, but large-scale interventions would be out of the question in South Africa in the present fiscal climate. Being additions to the South African social assistance systems, however, workfare programmes would not leave any of the poor worse off, as the imposition of work requirements and term limits on eligibility for assistance sometimes did in the United States.

Workfare-type programmes could be useful elements of anti-poverty policy in South Africa, but their potential impact should not be exaggerated. The very high level of unemployment and relatively low level of informal-sector participation highlighted in section 4.2 are indicative of a badly malfunctioning labour market. Workfare schemes and other job-creation initiatives could mitigate the symptoms of such malfunctioning, but lasting progress would require rectification of the causes of high unemployment in South Africa. These are likely to be found in the education system and in labour-market policy and practice. In the absence of job creation, the impact of workfare programmes could be restricted severely by the paucity of jobs available to participants.

While it makes no sense to adopt additional layers of policy measures to rectify distortions caused by existing interventions, workfare and other employment-creation initiatives can help to overcome market failures. Levinsohn's (2008: 9-11) proposal of a wage subsidy targeted at recent school

[99] *The rationales for these foci included that 36 percent of the beneficiaries of disability grant at the time had physical disabilities which did not preclude them from doing certain types of work, and that more than 85 percent of the care givers of child support grant beneficiaries were unemployed (Department of Social Development, 2006: 3, 5).*

leavers, for example, rested on the argument that market imperfections may well prejudice the employment prospects of younger work seekers in South Africa. Similar arguments could be made in support of some of the proposals of Altman and Boyce (2008), including dissemination of information about job opportunities, initiatives to improve access to credit among the poor, and provision of transport coupons or subsidies. In using market failures as criteria for judging the economic merits of workfare programmes, it should be kept in mind though that the prevalence of market failure is at best a necessary condition for government intervention: in practice, government intervention often gives rise to larger distortions than those caused by the market failures they were intended to address. The risk of government failure in the implementation of workfare programmes would be relatively high: the process model envisaged by the Department of Social Development (2006) would require coordinated decision-making by various institutions which also would have to deal with uncertainties regarding labour-market conditions and the ability and motivation of programme participants.[100] Moreover, Altman and Boyce (2008: 24) made a very important point when they stated that "… simplicity in the aims and implementation has been an important strength of the social grants programme. Imposing requirements that may be difficult to monitor or even achieve could make the programme less successful".

International experience has highlighted the importance of political economy considerations in the design of workfare programmes. It is sometimes argued that work requirements make the extension of social assistance to employable persons more acceptable politically (cf. Standing, 1990: 688). This claim, however, ignores the reality that workfare programmes often raise the ire of labour unions concerned about the possible development of a parallel labour market which might threaten worker rights and undermine the bargaining position of lower-skilled, lower-paid workers throughout the economy. Such opposition to workfare schemes from organised labour has come to the fore in the context of public works programmes in developing countries such as Argentina, Brazil and Chile (Seekings, 2006: 18-19). Moreover, left-wing critics of welfare reform in the United States have argued that workfare programmes exacerbate the downward pressure on the wages, job security and working conditions of ordinary workers caused by globalisation and firm-friendly economic policies (Midgley, 2008: 38-39). The Government obtained support for the Expanded Public Works Programme from organised labour by negotiating a Code of Practice for Special Public Works Programmes which governs wage-setting and other aspects of employment (Seekings, 2006:19), and something similar may be required depending on the nature of the economic opportunities provided as part of workfare programmes.

5. CONCLUSION AND RECOMMENDATIONS

This paper has shown that the South African social assistance system is an effective intervention which significantly reduces poverty and apparently does not have severe undesirable behavioural effects. The major lacuna in the social assistance system is the lack of support for unemployed members of the labour force, and the Unemployment Insurance Fund and the Expanded Public Works Programme only partially fill this gap. One of the outcomes of this situation is that the existing grants have become major sources of support for the unemployed. Such sharing of grant income sometimes stimulates and in other cases hamper labour-market participation, while the implied dilution of benefits could drag entire households (including the targeted beneficiaries of grants) into poverty. There is very limited scope for strengthening anti-poverty policy in South Africa by further expanding the social grants system, however, especially in view of the lack of fiscal space. Sustainable poverty reduction requires inclusive job-creating economic growth, and this should remain the primary focus of anti-poverty policy.

The following recommendations flow from this paper:

Short to medium-term recommendations:

- Social-assistance outlays should be protected as far as possible during the next few years. Fiscal consolidation, including strict public spending discipline, is now unavoidable in South Africa. The poverty-reducing effects of the social grants as well as their safety-net function (the importance of which was evident during the crisis) strongly suggest that the scope and coverage of the grants system should not be diminished as part of the deficit-reduction process.

[100] *The experience with the National Skills Development Strategy has underlined this danger. This Strategy has a clear and sound economic rationale, has had strong political support and has received ample funding. Yet according to the National Treasury (2010a: 50), implementation problems have severely blunted its impact: "… the system suffers from weak reporting requirements, underdeveloped capacity, lack of effective management, and inadequate*

- Two options which could be considered if it does become necessary to restrain social assistance spending as part of the fiscal consolidation effort are, first, to temporarily reduce the real value of the grants (by keeping the annual increases in the grant amounts values below the inflation rate) and, second, to postpone the announced expansion of the child support grant to children up to the age of eighteen. These measures would reduce the pressure on social assistance spending while the budget deficit is being reduced without compromising the scope of the grants system.

Longer-term recommendations:

- The introduction of unemployment or universal income grants should not be considered. Such grants will be unsustainable in budgetary terms and could have severe perverse incentive effects.

- Social assistance reform should not compromise the relative simplicity of the grants system. The relative simplicity of the social assistance system has been one of the cornerstones of its success, and care should be taken in designing future reforms not to compromise this characteristic by introducing complex institutional structures and conditions that are difficult to monitor or to achieve.

- The adoption of additional conditional cash transfer programmes targeted at needy children should be avoided. Such programmes make little sense in the present South African context: school attendance already is high and making eligibility for the child support grant conditional upon school attendance sits uneasily with the rights-based approach of the South African Constitution.

- Consideration should be given to adopting targeted workfare programmes aimed at expanding the range of economic opportunities available to the poor. Such programmes, however, could be costly and pose formidable design and implementation challenges. Moreover, their effectiveness is likely to be limited by the relatively slow pace of job creation in South Africa.

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CHAPTER 3:

THE PERFORMANCE OF CONDITIONAL FISCAL TRANSFERS IN THE SOUTH AFRICAN INTERGOVERNMENTAL FISCAL RELATIONS SYSTEM

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1. INTRODUCTION

Intergovernmental fiscal transfers are a dominant feature of South Africa's public finance system. They are used to finance expenditure needs of government.

The structure of intergovernmental fiscal transfers creates challenges and incentives for all spheres of government that have a bearing on fiscal management to ensure allocative efficiency, distributional equity, macroeconomic stability, and services delivery, (Shah, 2006).

Conditional fiscal transfers or conditional grants as referred to in South Africa were first introduced in the South African intergovernmental system in 1998/99 financial year to ensure that national policy priorities were being funded and to enable standard levels of service provisioning, compensate for inter-jurisdictional spillovers resulting from services provided by sub-national governments, support capacity building and structural adjustment within the recipient administrations and address backlogs and regional disparities in economic and social infrastructure (National Treasury, 2007).

1.1 Problem statement

Provincial and local governments have played a valuable role in supporting the implementation of national programmes and in discharging their own assigned duties. Challenges remain persistent in the funding of national priorities at sub-national level for concurrent and exclusive functions relating to education, health and infrastructure, amongst others. In dealing with these challenges both equitable share and conditional grants are being used to fund concurrent functions and other national priorities. Other fiscal approaches to fund national priorities sought to allow national government, in particular departments responsible for concurrent functions, to administer conditional grants for programmes implemented at provincial and local spheres

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of government. By so doing national departments have and influence on thee funding of national priorities.

As already stated, the Financial and Fiscal Commission (FFC) has previously expressed concerns that there is a proliferation of conditional grants and there is a need to use them sparingly. This necessitates a need to review the performance of conditional grants in the South African intergovernmental fiscal relations system (IGFR).

1.2 Aims and objectives

Understanding how provincial and local governments spend intergovernmental transfers is important for the design, operation and monitoring of fiscal policy. This study therefore, provides a comprehensive analysis of the allocation of conditional grants to provinces and local governments over the nine-year period from 2000/01 to 2009/10. It serves to document the history of conditional grants and highlights some interesting patterns in the composition of these grants.

This study examines literature on the design of conditional grants in the decentralised fiscal system. The review of conditional grants to provincial and local governments is in the context of the overall constitutional and legal frameworks and then focuses on the unfinished agenda for budget reforms. This paper evaluates the performance of conditional grants as well attempt to make an analysis of non-financial performance of the grants. Non-financial data is scanty in the South African IGFR system.

There are further issues resulting from conditional grants that relate to the credibility of the IGFR system, i.e. potential undermining of the executive authority of sub national government to use their discretion in making budget allocations. Of relevance to the study is whether conditional transfers can play a greater role in improving performance and service delivery at sub-national government level?

2. METHODOLOGY

Over the years in the South African IGFR system, conditional grants have been used as fiscal transfer mechanisms to fund government priorities and to redirect expenditure to areas of need. The rational is that conditional fiscal transfers can potentially improve targeted service delivery. In analysing the history of conditional grants in the South African IGFR system, this study reviews public finance literature on conditional fiscal transfers and how such transfers have been applied in South Africa.

This study provides both the qualitative and quantitative analysis of conditional grants in South Africa. Budget reviews are used to review allocations and expenditure trends to provinces and local government. It should be noted however that historical data for some of the grants is unclear because of the in-year withholding and adjustment of funds and changes in provincial and local demarcations/boundaries.

3. LITERATURE REVIEW ON CONDITIONAL FISCAL TRANSFERS

Intergovernmental transfers or grants can be broadly classified into two categories: general-purpose (unconditional) and specific-purpose (conditional or earmarked), (Shah, 2006). If the fiscal transfer is unconditional or general, no constraints are put on how it is spent. Specific-purpose or conditional transfers are intended to provide incentives for governments to undertake specific programmes or activities. These grants may be regular or mandatory in nature or discretionary or ad hoc, (Boex, 2001). The objectives of the fiscal transfers are to bridge the fiscal gap revenue and expenditure assignments so as:

- to fulfil national norms and standards
- to compensate for inter-jurisdictional spillovers and externalities (health, education, roads)
- to effect transition by supporting capacity building and structural adjustment; and
- to address backlogs and regional disparities in infrastructure.

Conditional transfers typically specify the type of expenditures to be financed, (input-based conditionality). These may be capital expenditures, operating expenditures, or both. Conditional transfers may also require attainment of certain results in service delivery (output-based conditionality), (Shah, 2006). To the extent that block grants have a specific purpose, they need to operate over a realistic timeframe, say over three to ten years (Brodjonegoro and Martinez-Varquez, 2002). For a given level of available assistance, grant recipients prefer unconditional grants, which provide them with maximum flexibility to pursue their own objectives.

Conditional transfers may incorporate block and matching provisions. Block grants are used where the fiscal transfer has very limited conditionality whereas matching grants require recipient governments to finance a specified percentage of expenditures using their own resources. "…Matching requirements can be either open ended, meaning that the grantor matches whatever level of resources the recipient provides, or closed ended, meaning that the grantor matches recipient funds only up to a pre-specified limit", (Shah, 2006: 4).

Closed-ended matching transfers are helpful in ensuring that the transferring authority has some control over the costs of the programme being financed. Matching requirements encourage greater scrutiny and local ownership of grant-financed expenditures, (Shah, 2006).

By themselves conditional grants are strategic fiscal instruments to achieve national policy objectives. However, some scholars in fiscal federalism find conditional transfers to be "…an intrusion that affronts sub-national governments' autonomy" (Rao, 2007:5). According to Bird, conditional grants reflect distrust of sub-national governments and are motivated, for example, by the desire to prevent the latter from 'wasting' money on expanding local payrolls. "…They distort local preferences, exacerbate perverse incentives already found in the intergovernmental fiscal relationship, and often connects revenue sources with expenditures in totally illogical ways" (Bird, 2001: 2).

From an oversight perspective, conditional transfers require a higher level of additional monitoring by departments responsible for their administration. The next section discusses the origins of conditional grants in South Africa.

4. ORIGINS OF CONDITIONAL FISCAL TRANSFERS IN SOUTH AFRICA

Conditional grants were first introduced in 1998/99 and classified as other allocations to provinces under Schedule 3 of the Division of Revenue Act (National Treasury, 2006). The design of these transfers is of critical importance for efficiency and equity of service provision and fiscal health of each sphere of government.

In South Africa, allocations for unconditional grants, also known as equitable shares are formula based taking into consideration population per province and per municipality, school going children, access to health care, poverty incidence, economic output per province and so forth.

Equitable share allocations are mandated by the Constitution. They are also termed block transfers and they provide broad support in a general area of provincial and local government expenditures (such as education, health and roads) while allowing recipient spheres of government discretion in allocating the funds among their expenditure responsibilities. Equitable share allocations provide budget support with no strings attached in a broad but specific area of provincial and local government expenditures, (Brodjonegoro and Martinez-Varquez 2002, Shah 2006)

In South Africa, matching grants are not used even though there are grants that are designed to mimic the latter. Supplementary grants such as the infrastructure grants to provinces (IGP) are transferred to provinces to supplement equitable shares for infrastructure development. This is a classical example of a non-matching conditional transfer which provides a given level of funds without provinces matching, as long the funds are spent for a particular infrastructure purposes.

Matching grants in South Africa will not be economically viable to implement especially at the provincial sphere of government which on average receives 97 per cent of its revenues through fiscal transfers. To limit transaction costs it will be worthwhile for the national government to finance a specific programme directly.

There is fiscal space for South Africa to start experimenting with matching grants at a local government level which generates on average about 94 per cent of its own revenue. National government can use matching grants as incentive to amplify service delivery. However, caution should be taken as matching requirements can place a burden for certain municipalities with limited fiscal capacity.

In South Africa other conditional grants are used to bring about changes in the way government services are delivered in the short to medium term. Transitional, capacity building and support grants as a result of structural adjustment within provincial and local governments. The financial management grant, local government restructuring grant, and municipal systems improvement grant are an example of such grants. These grants fund additional functions assigned to sub-national government for policy or capacity reasons or because the function has been inherited. There are also grants that address backlogs and provincial disparities in the distribution economic and social infrastructure that has been inherited. Health revitalisation and infrastructure grants to provinces are an example. Some conditional grants such as the provincial and municipal infrastructure grants are also formula driven taking into consideration infrastructure backlogs per province or municipality. Other grants finance natural disasters; disaster relief grant is an example.

The way South Africa is funding most of the disasters which affect provinces and municipalities is ex-post. This requires that an affected area be declared a disaster area, special funds be appropriated and then be transferred. Given the changing climate conditions, the government should consider coming up with an ex-ante strategy of risk financing natural disasters. The FFC in assessment of the National Disaster Bill in 2002 recommended that it should not be assumed that all the funds for disaster should be derived from nationally collected revenue. The possibility of leveraging resources from the private sector could be explored. It cited the example of India, where the Taxation Laws (Amendment) Act of 2001 increased the rate of surcharge payable by domestic companies in order to fund the National Centre for Calamity Management.

The FFC noted at the time that while this may not be appropriate to the South African tax system, both the private sector (in particular, insurance companies) and government would benefit from rapid, efficient, and effective response to disastrous events. In this context, cost-sharing incentives could be an option. There is a need, therefore, to study the implications of climate change for fiscal policies by assessing the impact of weather events on public budgets. Based on these findings, government can then discuss implications for fiscal policy and publicly-provided disaster insurance.

In South Africa conditional transfers are reviewed yearly with

the promulgation of the Division of Revenue Act which comes with amended grant frameworks and classifications. Classifications specify the conditionality of grants, whether they are specific-stand-alone grants or supplementary grants[101]. Allocations for other grants as are discussed through the budget process and decided in the vertical division part of the annual budget within the context of the three-year MTEF (National Treasury, 2007). Apart from the conditionality attached, these transfers normally form part of the equitable share and appear on the budgets of the sphere of government concerned. Some grants are transferred as block grants to recipient government. The central hospitals and most of the professional training and research grants are examples of block grants. On other instances, some grants are appropriated in the budgets of the national transferring departments but fund service delivery in provinces or municipalities. Usually the national department imposes conditions in the transfer and administration of the grant. Imposed conditions are hard and enacted. Failure to comply with the conditions of the grant will result in either the withholding of some or all funds earmarked for a province or municipality.

5. BUDGET ANALYSIS OF CONDITIONAL TRANSFERS

5.1 Conditional grant budget allocations to provinces

In the 2000/01 financial year, conditional grants to provinces amounted to R11.6 billion or 11 per cent of the total transfers to provinces (Table 32). Conditional fiscal transfers amounted to R49.2 billion or 17 per cent of the total transfers to provinces in 2009/10. This translates to an annual nominal growth of 17 per cent from 2000/01 to 2009/10 financial years.

Table 35: Equitable share and conditional grants allocations to provinces (2000/01 – 2009/10)

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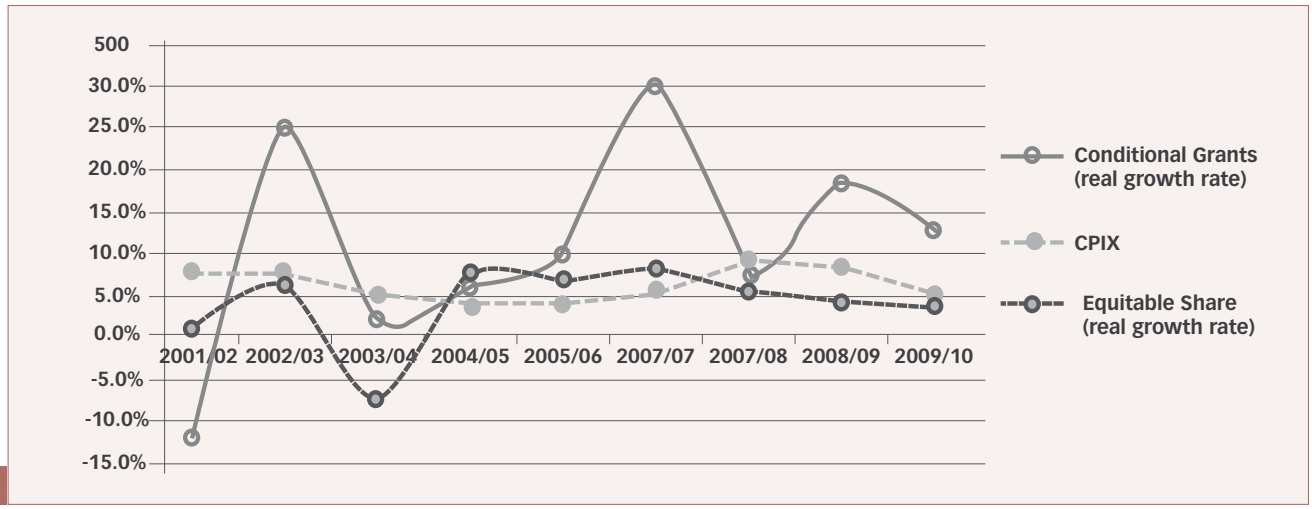
R million	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Annual Growth 2000/01-2009/10
Allocations											
Equitable Share	98 398 000	107 460 000	123 457 000	120 884 502	135 291 632	150 752 930	172 861 501	199 376 977	225 466 314	246 306 198	**11%**
Conditional Grants	11 631 991	11 010 979	14 848 270	1 601 337 917 695 358	17 695 358	20 323 112	27 996 627	32 953 379	42 455 506	50 567 103	**18%**
Total	**110 029 991**	**118 470 979**	**138 305 270**				**200 858 128**	**232 330 356**	**267 921 820**	**296 873 301**	**12%**
Percentage shares											
Equitable Share	**89%**	**91%**	**89%**	**88%**	**88%**	**88%**	**86%**	**86%**	**84%**	**83%**	
Conditional Grants	**11%**	**9%**	**11%**	**12%**	**12%**	**12%**	**14%**	**14%**	**16%**	**17%**	

Source: National Treasury Financial Database

In real terms, allocations for conditional grants to provinces since 2004/05 financial year have been above the rate of inflation (see Figure 23).



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Source: National Treasury Provincial Database

Figure 23: Real growth in equitable share and conditional grants Allocations to provinces

In terms of allocations per province from 2000/01 to 2009/10, large chunk of conditional grants in percentage shares have been allocated to Gauteng, KwaZulu Natal, Western Cape and the Eastern Cape (see Table 33). Allocations to Gauteng include funding for the Gautrain speed rail project. Even if allocations for Gautrain are removed, conditional grants to Gauteng and the aforementioned provinces are relatively high compared to other provinces. This trend has to do with grant formulas which tend to mimic the provincial equitable share formula which in the main is population driven. There is a need to review some of the grant formulas and improve targeting especially in areas of need. If this trend is not properly managed it can increase provincial disparities.

Table 36: Conditional grants per province (2000/01-2009/10)

R million	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Annual Growth 2000/01-2009/10
Eastern Cape	1 227 698	1 209 782	1 913 342	2 139 839	2 161 345	2 671 225	3 327 301	3 734 889	4 439 662	5 542 784	**18%**
Free State	841 866	781 697	1 028 032	1 250 168	1 508 777	1 676 363	2 007 598	2 359 818	2 972 271	3 654 466	**18%**
Gauteng	3 178 565	3 089 170	4 010 615	3 903 978	4 225 955	4 291 945	6 772 027	7 745 440	12 064 210	13 702 855	**18%**
KwaZulu-Natal	2 262 583	1 938 233	2 536 078	2 802 870	2 836 334	3 565 392	4 768 267	5 694 790	7 662 669	9 060 856	**17%**
Limpopo	933 674	938 793	1 385 242	1 481 646	1 542 959	1 833 255	2 500 258	2 852 665	3 426 614	4 228 021	**18%**
Mpumalanga	520 026	496 434	837 231	853 692	1 015 149	1 173 877	1 291 763	1 959 671	2 436 562	3 182 845	**22%**
Northern Cape	172 716	164 465	270 945	386 912	552 578	673 701	1 074 413	1 388 149	1 406 109	1 824 967	**30%**
North West	612 393	583 618	801 130	924 365	1 296 931	1 629 917	2 166 417	2 722 166	2 949 907	3 243 937	**20%**
Western Cape	1 882 200	1 808 797	2 065 656	2 269 909	2 549 330	2 807 437	4 088 583	4 495 791	5 097 502	6 135 371	**14%**
Total	**11 631 991**	**110 109 749**	**14 848 270**	**16 013 379**	**17 689 358**	**20 323 112**	**27 996 627**	**32 953 379**	**42 455 506**	**50 567 103**	**18%**
Percentage shares											
Eastern Cape	**11%**	**11%**	**13%**	**13%**	**12%**	**13%**	**12%**	**11%**	**10%**	**11%**	
Free State	**7%**	**7%**	**7%**	**8%**	**9%**	**8%**	**7%**	**7%**	**7%**	**7%**	
Gauteng	**27%**	**28%**	**27%**	**24%**	**24%**	**21%**	**24%**	**24%**	**28%**	**27%**	
KwaZulu-Natal	**19%**	**18%**	**17%**	**18%**	**16%**	**18%**	**17%**	**17%**	**18%**	**18%**	
Limpopo	**8%**	**9%**	**9%**	**9%**	**9%**	**9%**	**9%**	**9%**	**8%**	**8%**	
Mpumalanga	**4%**	**5%**	**6%**	**5%**	**6%**	**6%**	**5%**	**6%**	**6%**	**6%**	
Northern Cape	**1%**	**1%**	**2%**	**2%**	**3%**	**3%**	**4%**	**4%**	**3%**	**4%**	
North West	**5%**	**5%**	**5%**	**6%**	**7%**	**8%**	**8%**	**8%**	**7%**	**6%**	
Western Cape	**16%**	**16%**	**14%**	**14%**	**14%**	**14%**	**15%**	**14%**	**12%**	**12%**	

Note: Gauteng allocations include Gautrain conditional grant

Soure: National Treasury Financial Database

In terms of the conditional grants per type, most of the conditional grant allocations were health related followed by the National Treasury administered grants, education grants, housing grants, agriculture grants and transport grants. Some of the grants were merged with the provincial equitable share whilst others were stopped (e.g. land affairs, public works and social development grants). Table 34 shows that allocations for agriculture grants have been growing by an annual average (61 per cent), education grants by (13 per cent), health grants by (13 per cent), housing grants by (14 per cent), and National Treasury administered grants by (24 per cent).

[101] *According to the Division of Revenue Bill, conditional grants are classified as Schedules 3, 4, 5, 6, 7 and 8 allocations. Schedule 3 allocations remained general allocations to provinces, while Schedule 4 allocations are transfers made to provinces for general and nationally assigned priorities. Schedule 5 allocations refer to specific purpose allocations to provinces. Schedules 6 and 7 allocations are explicitly for local government related functions. Schedule 8 grant was introduced as an incentive grant intended to incentivise provinces and municipalities to meet or exceed prescribed extended public works programme targets*

Table 37: Conditional grants per sectoral allocations (2002/03 2009/10)

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Department/Grant	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Annual growth 2002/03-2009/10
Agriculture	**30 010**	**71 279**	**378 914**	**525 651**	**516 267**	**802 415**	**965 940**	**826 811**	**61%**
Agricultural Disaster Management Grant		30 000	130 000	163 281	112 148	316 148	214 746	60 000	
Comprehensive Agricultural Support Programme Grant			200 001	308 972	336 679	428 583	692 788	715 394	
Land Care Programme Grant: Poverty Relief & Infrastructure Development	30 010	41 279	48 913	53 398	70 440	57 798	58 406	51 417	**8%**
Education	**1 096 833**	**1 205 724**	**1 007 124**	**1 358 642**	**1 838 452**	**2 098 466**	**2 927 760**	**2 571 929**	**13%**
Early Childhood Development Grant	69 538	102 287	9 924						
Financial Management and Quality Enhancement Grant	278 649	240 776	31 054						
Further Education and Training College Recapitalisation Grant					470 000	639 303	795 170		
HIV and Aids (Life Skills Education) Grant	156 868	147 174	133 947	185 298	146 172	157 571	165 998	177 401	**2%**
National School Nutrition Programm Grant	591 778	715 487	832 199	1 173 344	1 222 280	1 301 592	1 966 592	2 394 528	**22%**
Health	**6 506 414**	**6 850 691**	**7 517 735**	**8 900 326**	**10 626 454**	**11 724 728**	**13 847 964**	**15 528 392**	**13%**
Comprehensive HIV and Aids Grant	226 843	350 832	748 833	1 157 039	1 641 023	2 006 223	2 889 666	3 476 186	**48%**
Forensic Pathology Services Grant	124 730	143 434	145 025	93 606	622 132	687 699	597 088	491 662	**22%**
Health Professions Training and Development Grant	1 328 125	1 347 220	1 437 447	1 531 628	1 538 382	1 596 189	1 679 061	1 759 799	**4%**
Hospital Construction Grant	217 000	92 356							
Hospital Revitalisation Grant	825 200	878 053	871 825	1 368 001	1 842 954	2 113 411	2 544 509	3 186 303	**21%**
Malaria and Cholera Prevention Grant		34 500	34 500						
National Tertiary Services Grant	3 784 516	4 004 296	4 280 105	4 750 052	4 981 963	5 231 206	6 137 640	6 614 442	**8%**
Housing	**4 879 549**	**4 933 287**	**5 084 070**	**5 315 763**	**6 606 549**	**8 532 738**	**10 367 601**	**12 592 396**	**15%**
Housing disaster relief grant								150 120	
Integrated housing and Human Settlement Development Grant	4 879 549	4 933 287	5 084 070	5 315 763	6 606 549	8 532 738	10 367 601	12 442 276	**14%**
Land Affairs			**6 250**	**14 200**	**8 000**				
Land Distribution: Alexandra Urban Renewal Project Grant			6 250	14 200	8 000				
National Treasury	**2 016 998**	**2 636 928**	**3 412 999**	**3 219 795**	**4 976 821**	**6 154 816**	**7 441 783**	**9 249 247**	**24%**
Provincial Infrastructure Grant	1 578 038	2 367 280	3 412 999	3 219 795	4 976 821	6 154 816	7 441 783	9 249 247	**29%**
Provincial Infrastructure Grant: Flood Rehabilitation Grant	438 960	269 648							
Provincial and Local Government	**303 382**	**315 470**	**279 266**	**40 689**			**17 040**		
Disaster Relief Grant		27 213		40 689			17 040		
Local Government Capacity Building Grant and CMIP	303 382	288 257	279 266						
Public Works							**889 121**	**1 148 505**	
Devolution of property rate funds grant							889 121	997 205	
Expanded public works programme incentive grant								151 300	
Social Development	**15 084**								
Financial Management and Social Security System	15 084								
Sport and Recreation South Africa			**9 000**	**24 510**	**119 524**	**214 330**	**293 273**	**402 250**	
Mass Sport and Recreation Participation Programme Grant			9 000	24 510	119 524	214 330	293 273	402 250	
Trade and Industry					**58 200**				
Industrial Development Zones					58 200				
Transport					**3 241 000**	**3 029 411**	**3 265 993**	**2 832 691**	
Gautrain Rapid Rail Link					3 241 000	3 029 411	3 265 993	2 832 691	
Other (not included above)				923 536	5 360	396 475	2 439 031	5 414 882	
Total conditional grants	**14 848 270**	**16 013 379**	**17 695 358**	**20 323 112**	**27 996 627**	**32 953 379**	**42 455 506**	**50 567 103**	**19%**

Source: National Treasury Financial Database

Allocations for agriculture are growing fast but from a low budget base and this reflect government commitment to invest in the sector to increase agricultural production and food security. Allocations for health are the largest and are driven by health facilities revitalization, national tertiary services grant, and HIV and AIDS prevention. The National Treasury administered grants are mainly driven by the infrastructure grant to provinces. This grant supplement provincial equitable share by investing in education, health, roads and agriculture infrastructure. In terms of the grant designs, a major issue with formula grants such as the infrastructure grant to provinces (IGP) is the availability and the quality of the data which determine the allocations. The unavailability of verifiable data makes a formula approach to allocations subjective and non-transparent.

In general terms, allocations for conditional grants have been cyclical over the years. There are various reasons to explain the trend:

This due to the introduction, termination and sometimes merging of grants into the equitable share as reflected in Table 38.

Table 38: Changes in the provincial government conditional grants (2000/01 – 2009/10)

Grants phased into Equitable Share	Grants Phased into other Conditional Grants	Grants shifted to other Spheres of Government	Grants phased out	Once-off Grants
Health Integrated nutrition programme grant Malaria and Cholera prevention grant Redistribution specialized services **National Treasury** Supplimentary allocations **Provincial and Local government** R293 Personnel **Social Development** HIV and Aids (Community-Based care) grant Integrated Social Development Services grant Child Support extension grant Social grant arrears	**Health** Hospital construction grant Hospital rehabilitation grant **Housing** Housing fund **Provincial and Local Government** Consolidated Municipal Infrastructure Programme (CMIP)	**Social Development** Social assistance administration Social assistance transfers	**Land Affairs** Land distribution : Alexandra renewal project grant **Trade and Industry** Industrial and development Zones	**National treasury** Transitional Grant : North West

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The emerging trend to fund certain concurrent functions through conditional grants which are being management by national departments (e.g. Public Transport and Infrastructure and Systems grant (PTIS), Health Revitalisation grant (HRG), HIV and AIDS (Life Skills Education) Grant, Electrification and Sanitation of Schools and Clinics grants, Comprehensive Agriculture Support Programme Grant (CASP), Land Care Programme Grant). There is no doubt that some these grants are important. From an IGR perspective the challenge is with the planning, design and implementation of certain grants. For instance, the supply and distribution of water and electricity lies with local government but that sphere has no direct role to play in the design of CASP, land care, electrification and sanitation of schools and clinics grants. Moreover some national departments administering conditional grants have no dedicated units to deal with the complex nature of IGR. This has an impact on expenditure trends and outer year allocations.

The trend in grant allocations per province presupposes that in practice, national departments determining and administering the grants may not have access to the information necessary to determine what the standard cost of providing services through conditional grants

should be. For an example, a lack of a proper costing and allocation methodology for some of the conditional grants is worrisome (e.g. agriculture and disaster related grants). Actual allocations for such grants are based on institutional discretion and negotiations through budget forums and thus the cyclical nature of conditional grants.

There is a need for an inclusive engagement with provinces to negotiate an agreed cost and to introduce financial and performance reporting arrangements that will allow the grant administrator over time to determine an appropriate standard cost. Equity and fairness between provinces should be an important consideration in designing conditional grants.

5.1.1 Expenditure trends on conditional grants to provinces

In terms of spending trends in the 2008/09 financial year, the total conditional grant adjusted allocation was R42 billion (including Schedule 4 grants and provincial roll-overs) with health making up the bulk at R14.3 billion or 34 per cent of total conditional transfers to provinces. Table 38 shows the spending trends on conditional grants for all provinces as at 31 March 2009, but excludes spending on general purpose conditional grants (Schedule 4 grants) like National Tertiary Services, Health Professions Training and Development and the Infrastructure grant to provinces, as reporting against these grants cannot be separated from the provinces' health and capital budgets (National Treasury, 2009). Table 39: Selected conditional grants spending rate as at 31 March 2009 further indicates that five or more provinces have spent less than 95 percent of their grants adjusted budgets at 31 March 2009: Community Library Services, National School Nutrition Programme and Hospital Revitalisation. The table also indicates the number of provinces spending at slightly higher levels between 95 and 100 per cent and greater than 100 per cent of their conditional grant adjusted budgets (National Treasury, 2009).

Table 39: Selected conditional grants spending rate as at 31 March 2009

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	Number of provinces spent less than 95%	Number of provinces spent between 95% and 100% (inclusive)	Number of provinces spent more than 100%
Agriculture			
Land Care Programme: Poverty Relief and infrastructure	3 EC NC NW	5 FS GT KZN LIM MPU	1 WC
Arts and Culture			
Community Library Services Grant	5 ECM FS KZN MPU NC	4 GT LIM NW WC	
Education			
Further Education and Training College Sector	1 EC	6 FS KZN MPU NC NW WC	2 GT LIM
HIV and Aids (Life Skills Education)	3 LIM MPU NW	3 FS GT NC	3EC KZN WC
National School Nutrition Programme	7FS GT KZN LIM MPU NW WC	1 NC	1 EC
Health			
Comprehensive HIV and Aids	1 GT	5 FS KZN LIM NC NW	3 EC MPU WC
Forensic Pathology Services	3 FS NC WC	1 MPU	5 EC GT KZN LIM NW
Hospital Revitalisation	5 EC FS MPU NC WC	3 GT LIM NW	1 KZN
Housing			
Integrated Housing and Human Settlement Development		7 EC FS GT KZN MPU NC NW	2 LIM WC
Sport and Recreation South Africa			
Mass Sport and Recreation Participation Programme	4 EC LIM MPU NW	5 FS GT KZN NC WC	
Transport			
Gautrain Rapid Rail Link		GT	

Percentages represent actual expenditure of adjusted budgets in the division of revenue Act 2008 (Act No.2 of 2008) as subsequent gazettes source National Treasury 2009

5.2 Conditional grants to local government

Allocations for local government conditional grants in the 2000//01 financial year amounted to R3.5 billion or 58 per cent of the total transfers (Table 40). Conditional grants have grown by an average annual growth of 22 per cent to total R19.4 billion in 2009/10. Conditional transfers have declined in percentage terms from 58 per cent of the total allocations in 2000/01 to 38 per cent in 2009/10. This shows that local government is being given fiscal space to manage its budget through the equitable share allocations.

Table 40: Equitable share and conditional grants allocations to local government (2000/01-2009/10)

R million	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Annual Growth 2000/01-2009/10
Allocations											
Equitable Share	2 315 000	2 607 000	3 964 000	6 793 237	7 810 546	9 951 802	18 608 197	21 297 364	25 750 152	31 010 606	**33%**
Conditional Grants	3 221 000	3 909 000	4 837 000	6 841 730	7 987 637	8 598 865	9 939 878	18 129 048	18 447 525	19 380 998	**22%**
Total	**5 536 000**	**6 516 000**	**8 801 000**	**13 634 967**	**15 798 183**	**18 550 667**	**28 548 075**	**39 426 412**	**44 197 677**	**50 391 604**	28%
Percentage shares											
Equitable Share	42%	40%	45%	50%	49%	54%	65%	54%	58%	62%	
Conditional Grants	58%	60%	55%	50%	51%	46%	35%	46%	42%	38%	

Soure: National Treasury Financial Database

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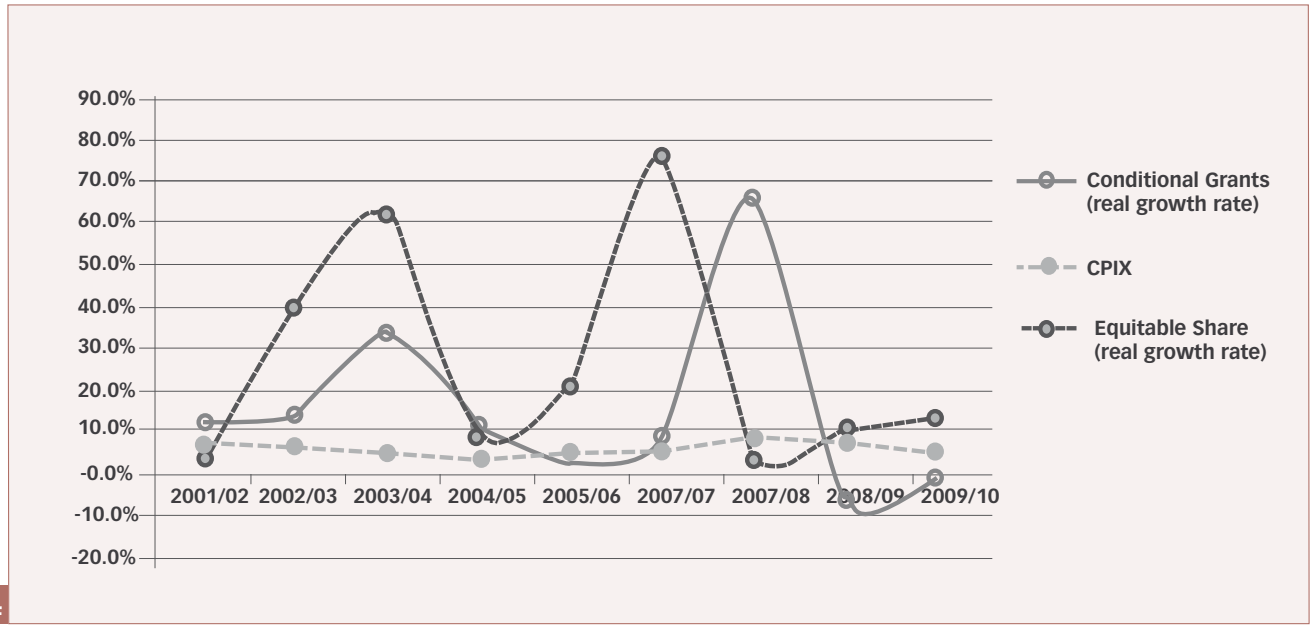
Both equitable share and conditional grants allocations to local government have been cyclical over the years (Figure 23). In 2004/05 financial year allocations for conditional grants equalled the equitable share allocations. Adjusted for inflation, conditional grant allocations have been declining by an annual rate of 14.8 per cent from 2000/01 to 2009/10. This has to do with the cyclical nature of conditional grant allocations in local government.



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Source: National Treasury Provincial Database

Figure 24: Real growth in equitable share and conditional grants allocations to local government

There have been 25 different types of conditional grants to local government between 2003/04 and 2009/10. Allocations for local government conditional grants amounted to R88.9 billion with average annual nominal growth of 19 percent over the same period (Table 38). Most of the local government grants are infrastructure related, followed by capacity building grants and other grants. In terms of average annual growth in nominal terms from 2003/04 to 2009/10, allocations for infrastructure grants have been growing by 21 per cent annually in nominal terms, capacity building grants by 9 per cent, and total conditional grants allocations by (19 per cent).

Table 41: Conditional grants to local government per type, 2000/01 – 2009/10

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Sch.	Grant	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Annual Growth 2003/04 - 2009/10
	Infrastructure	**5 939 822**	**7 219 496**	**7 400 446**	**9 096 221**	**17 200 391**	**18 017 525**	**18 393 008**	**21%**
Direct transfers									
6	Municipal Infrastructure Grant	47 000	4 439 943	5 436 161	6 252 683	8 261 788	8 657 090	10 330 230	**146%**
6A	Local Economic Development Programme Grant	117 000							
6A	Community Based Public Works Programme Grant	250 224							
6	Urban Transport Fund Grant	9 100							
6A	Consolidated Municipal Infrastructure Programme Grant	2 246 253							
6A	Building for Sports and Recreation Programme Grant	123 432	133 805						
6A	National Electrification Programme (Municipal) Grant	245 556	250 733	313 132	391 130	467 827	595 637	897 008	**24%**
6	Public Transport Infrastructure and Systems Grant			241 710	519 000	1 174 000	3 170 000	2 325 000	
6	Neighborhood Development Partnership Grant					115 800	407 015	700 000	
6	2010 FIFA World Cup Stadiums Development Grant				600 000	4 605 000	2 895 000	1 400 000	
Indirect transfers									
7	Water Services Operating Subsidy Grant	836 436	904 774	625 973	440 243	496 739	269 040		
7A	Community Based Public Works Programme Grant (indirect grant)	12 133							
7A	Implementation of Water Services Projects (Capital)	1 101 812	207 885						
6	Disaster Relief Grand (DWAF): Municipal Drought Relief	153 039	44 088			100 000			
6	Disaster Funds (DPLG)		280 000			492 352			
7	Integrated National Electrification Programme (Eskom) Grant	797 837	958 268	783 470	893 165	973 085	1 150 758	1 420 770	**10%**
7	Regional Bulk Infrastructure Grant					300 000	450 000	650 000	
7	Backlogs in Water and Sanitation at Clinics and Schools Grant					105 000	210 000	350 000	
7	Backlog in the Electrification of Clinics and Schools Grant					45 000	90 000	150 000	
7	Neighborhood Development Partnership Grant (Technical assistance)					63 000	122 985	170 000	
	Capacity building	**901 908**	**768 141**	**748 740**	**843 657**	**928 657**	**430 000**	**499 990**	
Direct transfers									
6	Municipal System Improvement Programme Grant	150 993	182 243	200 000	200 000	200 000	200 000	200 000	**5%**
6	Local Government Restructuring Grant	539 000	387 900	350 000	445 000	530 000			
6	Local Government Financial Management Grant	210 830	137 000	132 500	145 250	145 250	180 000	299 990	**6%**
Indirect transfers									
7	Financial Management Grand: DBSA	1 085	60 998	66 240	53 407	53 407	50 000		
	Other							488 000	
6	2010 FIFA World Cup Host City Operating Grant							488 000	
	Total	**6 841 730**	**7 987 637**	**8 149 186**	**9 939 878**	**18 129 048**	**18 447 525**	**19 380 998**	**19%**
Source: National Treasury local government database									

In comparing conditional grant allocations both in provinces and local government what is emerging is that (i) some conditional grants do not last long in the IGFR system. This has to do with the approach to the introduction, allocation, merging and stopping conditional grants. (ii) The lack of a policy guideline to how grants are introduced, merged or taken out of the system at times leads to discretionary decisions to allocations thus cyclical variations. Obviously some allocations are ex-post driven by disasters and outbreak of diseases. The next section discusses in detail some of the challenges pertaining to the administration of conditional grants in the South African IGFR system.

6. MAIN FINDINGS

Conditional grants ensure that provincial and local governments have earmarked and additional funding to provide reasonably comparable levels of public services to meet national priorities. However, in South Africa, conditional transfers have also been used as fiscal instruments to manage inherent contradictions in the funding of concurrent functions. In the introduction, this paper mentioned that the Financial and Fiscal Commission in its submission on the 2009 Division of Revenue Bill has expressed concerns that there is a proliferation of conditional grants. This is prompted by national departments, in particular education, health and transport to fund some of national priorities through conditional transfers even though functions are shared with other spheres of government.

Analysts observe that in any multi-sphere nation, there is an inevitable conflict between the interests of the national government in achieving a certain set of national goals, for example increasing the literacy rate among children, or eliminating the incidence of certain contagious diseases, and the interests of sub-national governments in maintaining as much fiscal and policy autonomy as possible. Over time, the national government continues to establish new conditional grants in response to perceived unresolved national problems. As the number of conditional grant programs grows, the freedom of sub-national governments to make their own fiscal choices is constrained. After a number of years, these limitations on sub-national governments increase political pressure to reduce the number of categorical grants or to fold them into unconditional grant programs. Over time, as new issue arise, the pressure to enact new conditional grant programs lead to a repeat of the cycle. This study has noted the following areas as challenging with regards to the implementation of conditional fiscal transfers in the South African IGFR system.

6.1 Allocation criteria for conditional grants

Rules for allocating and targeting of grants should be made transparent by selecting indicators that are simple, observable, and verifiable and that cannot be manipulated by allocating agents. For instance allocation formulas for both municipal infrastructure grant (MIG) and infrastructure grant to provinces (IGP) formulas do not pay serious attention to differentiated cost factors of the inputs required for delivering infrastructure across provinces and municipalities.

Municipal Infrastructure Grant formula

MIG = B + P + E + N + M

Where:
B represents the allocation for basic residential infrastructure such as water, sanitation, roads, electricity, street lighting and solid waste removal.

P denotes funds for new and rehabilitated municipal service infrastructure.
E is the allocation for the construction of social service institutions and micro-enterprises.
N is the allocation for nodal development and renewal programmes in targeted urban and rural municipalities and;
M is a performance related adjustment to the total MIG allocation for a municipality.

Infrastructure Grant to Provinces formula

The formula that divides the grant consists of three components which are weighted 33.3 per cent each:

- Equitable share component is based on the formula that allocates the provincial equitable shares;
- Roads component is based on the provincial share of the total provincial road network; and
- Backlog component which is adjusted based on education (2007 National Education Infrastructure Management System) and health backlogs. The component further includes a ruralness element drawn from Census 1996.

The challenge is that infrastructure grant allocations based on a formula do not take account of all input cost factors that are likely to place increased budgetary pressures on provinces and municipalities. These can be both fixed and variable costs informed by location, transport, labour availability and other factors such as the state of infrastructure or lack of it. There is a need for a reliable asset management data and financial costing model to inform budget allocations.

6.2 Introduction and termination of conditional grants

In the South African IGFR system there seems to be no policy guideline on the introduction and termination of conditional transfers. The number of grants that were either being phased into the equitable share, merged with other grants, shifted to other spheres of government, phased out altogether or once-off grants. This practice leads to the cyclicality of conditional transfers and affect rational provincial and local governments budgeting. Moreover there is no independent evaluation on the efficacy of most of the grants. Independent evaluation is important for the continuation, merging and stopping of grants. It is also important for national departments to provide guidance on service levels required, funding norms and standards for conditional grant projects and programmes.

6.3 Reporting on the performance of conditional grants

The challenges faced in our attempts to carry out a financial analysis of conditional grants related to the paucity non-financial performance data. The data in this regard is scanty if not non-existent. This raises the question of what informs multi-year allocations if performance is not known. Non-financial performance data is an important proxy for the accountability of public funds, especially of tangible delivery outcomes.

6.4 Grant classification and allocation criteria by recipient government sphere

The body of literature on conditional grants shows that different countries use a spectrum of fiscal transfer methods. Each tends to have different implication for equity, incentives, and distribution. In South Africa conditional transfers are being reviewed yearly with the promulgation of the Division of

Table 42: Allocations to provincial infrastructure from different grant transfers (2008/09)

Province	Equitable Share	Infrastructure Grant to Provinces (IGP)	FET colleges	Hospital Revitalisation	CASP	other	Total allocated budget
	R'000	R'000	R'000	R'000	R'000	R'000	R'000
Eastern Cape	2 766 100	1 259 662	0	324 104	73 190	0	4 423 056
Free State	1 042 767	599 478	0	202 753	49 089	0	1 894 087
Gauteng	2 000 509	602 007	0	844 312	0	0	3 446 828
KwaZulu-Natal	3 648 331	1 560 290	0	285 666	0	0	5 494 287
Limpopo	1 812 302	1 028 856	0	210 586	81 103	61 499	3 194 346
Mpumalanga	820 300	578 743	0	172 002	3 107	11 407	1 625 559
Northern Cape	175 655	381 681	0	246 364	27 564	0	831 264
North West	361 159	641 035	34 652	254 030	68 432	19 975	1 379 283
Western Cape	1 350 202	513 287	0	400 388	0	0	2 263 877
Total	**13 977 325**	**7 165 039**	**34 652**	**2 940 205**	**342 485**	**92 881**	**24 552 587**
Percentage							
Eastern Cape	62.5%	28.5%		7.3%	1.7%		18.0%
Free State	55.1%	31.6%		10.7%	2.6%		7.7%
Gauteng	58.0%	17.5%		24.5%			14.0%
KwaZulu-Natal	66.4%	28.4%		5.2%			22.4%
Limpopo	56.7%	32.2%		6.6%	2.5%	1.9%	13.0%
Mpumalanga	50.5%	35.6%		10.6%	2.7%	0.7%	6.6%
Northern Cape	21.1%	45.9%		29.6%	3.3%		3.4%
North West	26.2%	46.5%	2.5%	18.4%	5.0%	1.4%	5.6%
Western Cape	59.6%	22.7%		17.7%			9.2%
Total	**56.9%**	**29.2%**	**0.1%**	**12.0%**	**1.4%**	**0.4%**	**100.0%**

Source: National Treasury Provincial Database

Revenue Act which comes with amended grant frameworks and classifications. Classifications specify the conditionality of grants, whether they are specific-stand-alone grants or supplementary grants. Table 39 shows that even though Infrastructure Grant to Provinces is a supplementary grant, allocations for infrastructure development in Northern Cape and North West were mainly funded through conditional grants instead of the equitable shares. Free State, Gauteng, Limpopo, Mpumalanga and Western Cape contributed less than 60 per cent from the equitable share for provincial infrastructure development in 2008/09 financial year.

The whole point of conditional grants is to change the incentives faced by recipient governments but they also reduce the scope of recipient government o effectively budget for expenditures assigned to them. Even though South Africa does not utilise matching grants, schedule 4 grants which are supplementary grants to the equitable share in a way try to replicate them (matching grants). Matching grants require the recipient government to demonstrate its own level of spending on a service or activity. Schedule 4 grants serve an incentive to provinces but from a fiscal decentralisation point of view their scope is limited if the provincial own revenue base is limited only to 3-4 per cent of the total budget allocations on average. The challenge with such grants is that they end up recycling the very same money from the pot of national fiscal transfers. To some extent, the application of conditional grants in South Africa has been under-researched, and there is a lack of well-grounded practical guidance on how best to implement them. Conditional grants should support greater efficiency in the use of public resources, by facilitating improvements in planning, budgeting, and financial management and accountability. There should be corrective measures put in place to deal with weaknesses in the design, budgeting and delivery of programmes. Conditional grants should be used increasingly to promote better basic service delivery. They should be used as fiscal instrument to strengthen incentive systems for improved service delivery, and promoting innovative service delivery approaches, and encouraging replication of good practices.

6.5 Management of grants from an intergovernmental wide perspective

From an intergovernmental relations perspective, there is a challenge with regards to conditional grant framework formulations, planning, budget allocation, delivery and monitoring. For instance, there are grants (e.g. provision of water and electricity at schools and clinics, comprehensive agricultural support programme) whose implementation happens at a local government level but that sphere is not always consulted in the formulation and budgeting of the grants. This stifles delivery at an implementation stage because at times municipality did not plan or budget for the activity. As the key site of service delivery and development - the point of delivery where all spheres of government converge - local government must play a role in the formulation of grants to be implemented in that sphere of government.

The other challenge is with regards to the budgeting of capital and maintenance costs of grants rollout (e.g. health revitalization, provincial and municipal infrastructure grants). It is assumed that recipient sub-national governments will set money aside from their equitable shares for the maintenance of infrastructure delivered through conditional grants. This creates a problem for maintenance as little money is set aside for that activity. It is imperative that conditional grants for infrastructure make provision for life-cycle costing which can either be funded by the equitable share or the former.

From an oversight perspective, conditional transfers require a higher level of additional monitoring by national departments. By themselves conditional grants are strategies to achieve national policy objectives and some are managed by national departments. The challenge thus far has been for national departments to provide guidance on the service level requirements on programmes and projects funded through conditional grants. A case in point is the expanded public works programme incentive grant (EPWP) managed by the national department of public works (DPW). This grant is intended to create incentives for provinces and municipalities to undertake labour incentive infrastructure projects. In the 2009/10 financial year, the challenge with this grant has been the disbursement of funds to subnational government. Provinces and municipalities found it difficult to integrate this grant through their infrastructure programmes because actual allocations were not finalised when provincial and municipal budgets were appropriated in the legislatures and councils. It should be noted that labour intensive

[102] *Refer to the National Treasury Circular number 2 of 2009/10 on the classification and structuring and classifying of earmarked and specific funds and conditional grants in the fund segment of the standard chart of accounts (SCOA).*

work in any infrastructure development project must be planned. It is not only about appropriating finding. The grant should be streamlined to labour intensive infrastructure projects because the latter must be planned, costed and scheduled properly. Labour intensive work in any infrastructure development must also be planned. This is necessary to estimate the cost of construction employment. This must be factored in the EPWP incentive grant framework and budget allocations, and its performance monitored. Currently, the practice is to squeeze labour intensive infrastructure delivery into budget allocation whereas it should be the other way round.

7. OPTIONS TO IMPROVE CONDITIONAL GRANTS PERFORMANCE

The picture that is emerging from a 10 year review of conditional fiscal transfers to provincial governments and municipalities in the South African IGFR system (from 2000/01 to 2009/10 financial years) carried out by the Financial and Fiscal Commission is that the application of conditional grants has evolved substantially over time, often in an ad hoc and incremental fashion. Some grants have been merged into the equitable share allocation; others have been merged with other conditional grants. A few conditional grants have been terminated whilst others have been in existence for more than 5 years. This practice has meant that allocations for certain conditional grants have been sporadic and infrequent over the years.

While the National Treasury has provided some guidelines on the design of conditional grants, these have not been very effective and have been inconsistently applied.[102] There thus is a need to review the efficacy of the conditional grants, specifically in relation to the necessity and purpose of some of the grants, criteria for allocations, targeting, reporting on non-financial data, performance and value for money. Based on this, the Commission submits the following policy options.

7.1 Introduction and termination of conditional grants

Before conditional grants are introduced in the IGFR system with the exception of disaster related grants, national departments must ensure that appropriate planning has taken place in conjunction with provinces to identify the purpose of the grant and the outputs and outcomes it is to achieve. The Commission recommends a mandatory, systematic process in the design and planning of individual conditional grants, which would cover incentive effects and administrative accountability arrangements, as well as stipulate regular review periods and exit strategies for the phasing out of the grant.

Further, monitoring arrangements that will measure whether the stated purpose is in fact being achieved also need to be identified upfront. The Commission recommends that there must also be an independent evaluation of the grant performance or an existing strategy before grants are terminated or merged with other grants or into the equitable share allocation.

7.2 Transparency in the criteria used to allocate conditional grants

Generally for grant allocations, what is important is the identification of a public policy issue and reasons why it should not be funded through an unconditional equitable share allocation. There is a need to identify an area that will be affected by the grant and the change needed. Depending on the nature and magnitude of a problem to be resolved, not all provinces would necessarily be beneficiaries of the conditional grant system. Where individual provinces face different challenges, it may be more appropriate to have grants tailored to the particular problems. It is also important that the criteria, measures and baselines used are generally accepted throughout government to permit rigorous benchmarking of performance and evaluation of impact.

Criteria for the division of grant allocations amongst provinces need to be as transparent as possible and not only be modelled upon the equitable share formula, especially for infrastructure related grants. For infrastructure-specific grant schemes, selection criteria must be established to decide which projects will receive funding. There must be project proposals, which are designed to meet pre-determined funding criteria which is transparent and understood by all.

A related issue is the cyclical nature of conditional grants and allocations in outer years. Allocations to conditional grants tend to be cyclical and the reasons for that are the introduction, termination and sometimes merging of grants into the equitable share. Allocations are rarely linked to the purpose of the grant, the results to be achieved, the strategies adopted to achieve those results, and performance. Performance information should feed through to outer years allocations. Failure to do that creates perverse incentive and reduces their scope for proper budgeting by some recipient governments. The Commission emphasises that the budget allocation

process must specifically follow the grant frameworks and this should be monitored periodically through (Section 32 of the PFMA) and (Section 72 of the MFMA) reports.

7.3 Importance of non financial data

There is a severe lack of credible data in relation to the actual performance of conditional grants even in cases where outputs are in principle tangible and measurable. This renders systematic evaluation of grant performance virtually impossible, and undermines accountability for results. Accounting for delivery should be a prerequisite for most conditional grants. Provinces should be required to report on delivery as the basis for being awarded grants, especially infrastructure related grants where structure are visible and can be verified. It is essential that there is a documented agreement in place between the department responsible for the grant and the recipient government. The outputs need to be the actual products of the provincial department, such as houses, health facilities and schools built, meals served to school children or the number of people completing a training course in financial management. This agreement should include the relevant costs and be gazetted. Performance agreements between spheres of government should be elevated to, and signed by, the relevant Cabinet Minister and Members of Executive Council.

7.4 Achieving results based accountability through incentive oriented grants

Through the Extended Public Works Programme Incentive Grant to provinces and municipalities, Government has already started experimenting with output-based or performance oriented grants. These create incentives for good performance and create conditions for improvements in provinces and municipalities where service delivery is a challenge. Conditional grants should be used to create a competitive service delivery environment by making financing available on similar conditions to different spheres of government. Output-based grants should link grant finance with service delivery performance (.e.g. number of schools built, houses connected with electricity, kilometers of roads built). These types of conditional grants place conditions on the results to be achieved while providing full flexibility in the design of programmes and associated spending levels to achieve those objectives. For instance, National Treasury can manage a pool of funding as an incentive for good performance whilst focusing capacity development on struggling provinces and municipalities. Such grants can help restore recipient governments' focus on the results-based outputs and the alternate service delivery framework to achieve desired results. The intergovernmental grants system could also provide a mechanism to encourage judicious experimentation in service delivery modalities by subnational governments, allowing effective new development strategies and approaches to emerge from the bottom-up through trial and error The Commission notes with approval the move towards the adoption of incentive based grants, and further recommends that the future design of conditional grants explicitly take into consideration how to promote innovation within subnational governments and thereby strengthen incentives for optimal service delivery.

7.5 The review of financing natural disasters through conditional grants

Given changing climate conditions and increasing spate of natural disasters globally and in the country, new thinking is required on public financing of disasters. Government should examine the budgetary impact of natural disasters and review the way they are financed. Changing climate patterns require that government must re-evaluate institutional responsibilities for plans and financing of disasters including insurance and contingency reserves. Catastrophe insurance markets increasingly offer opportunities for the transfer of catastrophic risks. South Africa must explore such opportunities.

8. CONCLUSION

This paper has presented 10 year review of conditional fiscal transfers to provincial and local governments in the South African IGFR system. The review spans from 2000/01 to 2009/10 financial years. What is emerging is that the application of conditional grants has been evolving with some grants merged into the equitable share, others merged into other conditional grants, others terminated whilst others have been in existence for more than 10 years. This practice has meant that allocations for conditional grants have been cyclical over the years. There is a need to review the efficacy of the conditional grants in the South African IGFR system, specifically in relation to the necessity and purpose of some of the grants, criteria for allocations, targeting, reporting on non-financial data, performance and value for money.

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CHAPTER 4:

THE ROLE OF REVENUE ENHANCEMENT PROGRAMS IN ADDRESSING MUNICIPAL FISCAL STRESS

Eddie Rakabe
Financial and Fiscal Commission

1. INTRODUCTION

The design of South Africa's intergovernmental fiscal system is such that local government is generally self financing. It raises a significant proportion of its revenue from constitutionally assigned own sources such as rates, taxes and services charges. Municipalities generate, in aggregate, about 77 percent of their own revenues (National Treasury, 2009).

The remaining revenues are transfers from the national and provincial governments. This represents an important feature of a decentralised intergovernmental system where municipalities are directly accountable to local residents from whom they generate revenue.

Despite having access to a plethora of own revenue sources, local governments in South Africa are generally perceived to be hard pressed for revenue or fiscally stressed (National Treasury, 2009). The extent of the problem is not only confined to small and rural municipalities but also manifest profoundly within bigger cities. By March 2009 the National Treasury had classified 9 of the top 21 local municipalities as fiscally stressed. Over a number of years since inception, the sector has undergone a number of policy reforms aimed at enhancing its revenue raising capacity, among other things. Yet, the proportion of local own revenue to total revenue is declining over time, while the total revenue growth rate is increasing at a rate marginally higher than that of inflation. This implies that grant support or national transfers is increasing and more and more funds are flowing to municipalities from the national fiscus, see Figure 25.

Amongst many reasons, studies attribute current revenue challenges to the exponential growth in demand for services, to budget constraints, and to changing priorities (Development Bank of South Africa 2004). This, in turn, stimulates the need for municipalities to maximize revenue. In order to maximize revenue, municipalities develop revenue enhancement strategies and programs intended to optimize collections

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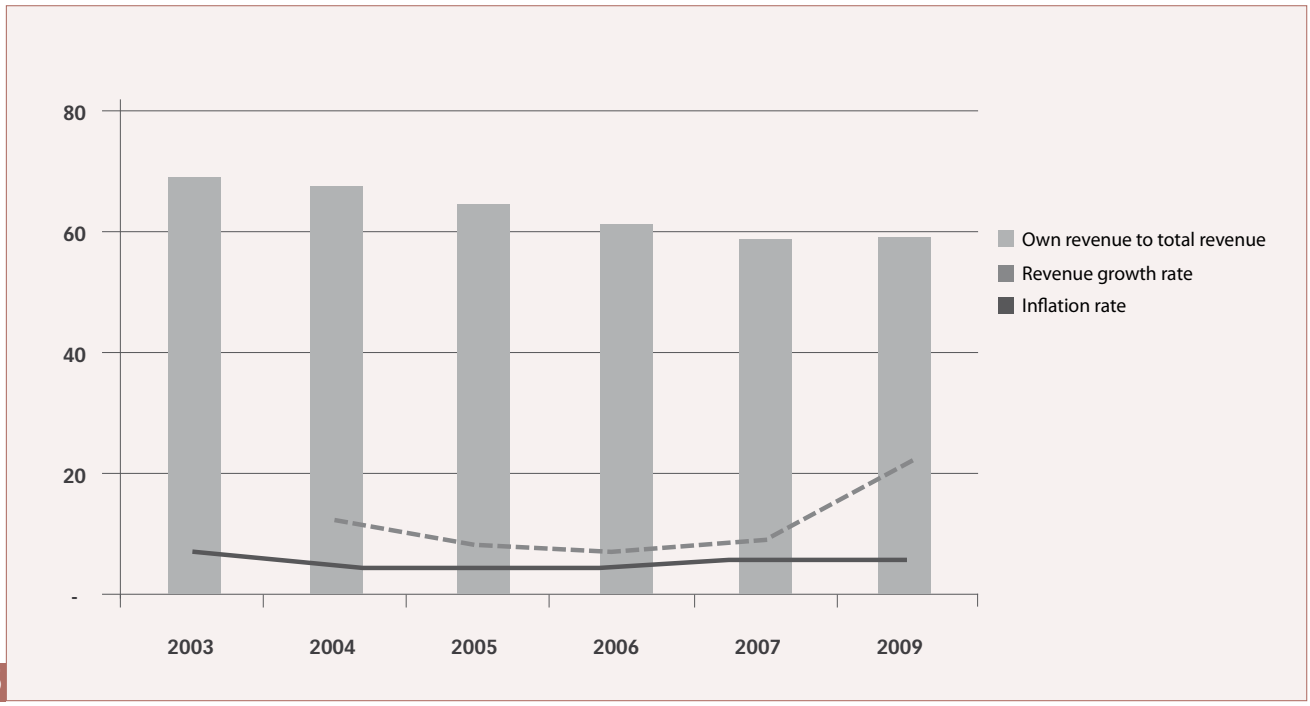
from already existing revenue sources, to identify additional sources of revenue, to streamline expenditure and to improve efficiencies. In some cases, revenue enhancement programs tend to be even broader involving a variety of activities ranging from debt management and credit control strategies to reviewing fees, privatization of selected activities, technological improvements and budget reforms. These programs also entail improvement in the financial management system of local government, especially in relation to its ability to effectively manage revenues, expenditures and budget execution.

Despite the growing practice by municipalities of conducting revenue enhancement programs, fiscal stress persists unabatedly. The implication of this anomaly is that the revenue enhancement programs currently being conducted are not particularly effective i.e. do not contribute to increased revenue collection and may therefore be inappropriate i.e. insufficient to deal with the magnitude of municipal revenue challenges. Evidence suggests that efforts to increase revenue are undertaken through stopgap-type measures, rather than through holistic revenue enhancement strategies. These ad-hoc measures disregard important elements of the revenue enhancing "value chain", such as efficient billing and ignore legislative guidelines on revenue management, such as availability of effective revenue as per section 64 of Municipal Finance Management Act. In many instances, revenue enhancing programs are pursued without a broader understanding of the problems facing municipalities and the particular enhancements may address different objectives from the problems encountered. Furthermore, there is often the absence of an implementation plan detailing the desired outcomes and objectives. Without well thought-out parameters against which to gauge the successes of the chosen interventions, municipalities are likely to lose more rather than enhance their revenue.

Based on the need to gain better insight into the issues associated with revenue enhancement with the view to making recommendations for more effective approaches than current practice, this study investigates the various justifications for municipal revenue enhancement programs



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Source: National Treasury database, 2009 and South African Reserve Bank, 2009.

Figure 25: Municipal own revenue peculiarities

by assessing the extent to which existing local taxable capacity is exploited. In addition, the study evaluates how programs are carried out to determine their relevance and efficacy. Moreover, the study evaluates whether there is potential for increasing local own revenue and identifies possible avenues from which additional revenue may be raised. These issues inform the Commission recommendations for the annual submission on the division of revenue 2011/2012.

2. METHODOLOGY

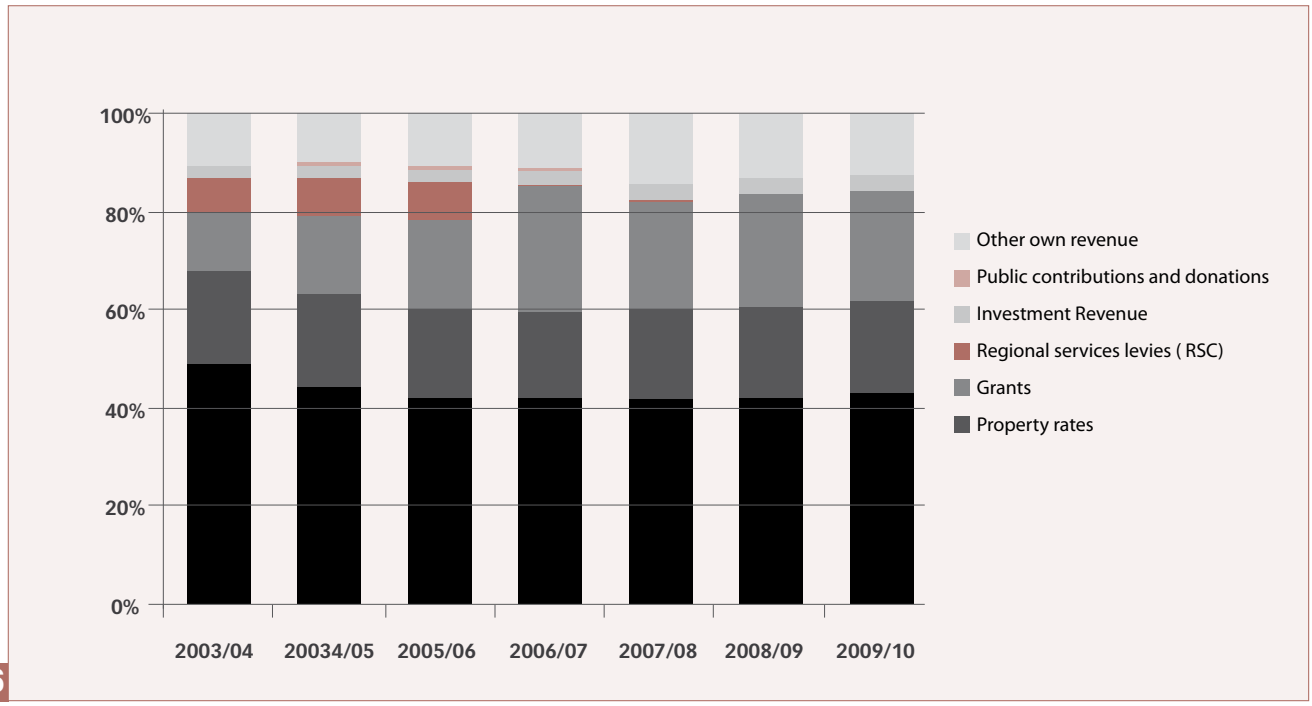
The study commences with a literature review outlining the main concepts and issues that relate to municipal revenue enhancement programs. This is undertaken to gain an understanding of what revenue enhancement entails. The literature review is followed by a review and analysis of the policies put in place by South African municipalities to address revenue challenges. Workshops were held with local government stakeholders including the Department of Cooperative Governance and Traditional Affairs, the South African Local Government Association (SALGA), the Development Bank of Southern Africa (DBSA) and National Treasury to ascertain their perspectives on revenue enhancement programs put in place by national government and experiences derived from implementing such programs.

3. MUNICIPAL REVIEW

3.1. Overview and rationale for revenue enhancement

Traditionally, local government revenue enhancement has always been understood to involve effective mobilization of existing local revenue sources from various sources such as business licenses, service fees, rents and property taxes (UNDP, 2001). However, contemporary evidence suggests that revenue enhancement is a multi-pronged approach and process. As an approach it entails identifying additional sources of revenue, streamlining expenditure and improving efficiencies. As a process it involves broader improvement in the financial management system of local government especially in relation to its ability to effectively manage revenues, regular collection and enforcement, budget execution and educating ratepayers on the rationale of municipal charges and their linkages to improved service delivery. In the view of Kelly, Montes, Maseya, Nkankha and Tobere (2001), mobilizing the community through improved participatory budgeting and civic participation will engage the citizens and contribute to enhanced revenue collection.

Revenue enhancement as a concept and practice emanates from the theory of fiscal stress which grew precipitously in the late 1970s and early 1980s mainly focusing on related topics such as revenue management and scarcity. Studies in this period analysed fiscal stress resulting from loss of



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Source: Adopted from National Treasury, 2008.

Figure 26: Municipal revenue by source

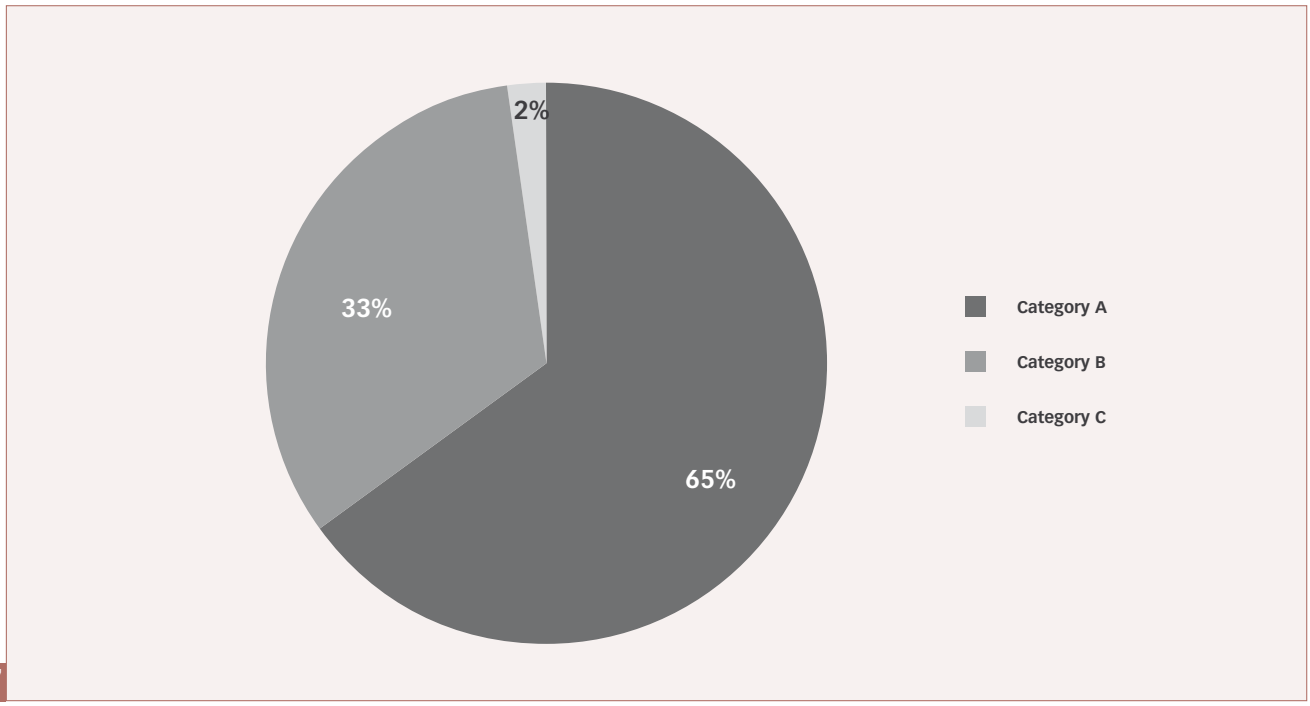
own local revenue sources and spending constraints. While these studies successfully identify causes of and responses to fiscal stress and revenue limitations, they were and still are generally restricted to specific localities or jurisdictions. As a consequence, much of the literature on fiscal stress remains confined to particular localities hereafter referred to as municipalities (Forrester and Spindler, 1990).

The critical linkage between local government revenue and fiscal stress emanates from the fact that the shortage of the former inevitably results in the latter. Consequently, municipalities fail to meet their service and expenditure responsibilities due to the following reasons articulated by Forrester and Spindler (1990): 1) scarcity of revenue resulting from the gap between the needs and expectations of citizens for municipal services and the ability and willingness of taxpayers to support those services; 2) cuts in revenue emanating from changes in the resource base such as slowdown in the rate of revenue growth, zero growth and tax limitations.

To be specific, fiscal stress occurs when local government revenue falls without a concomitant decrease in demand for local services; when demand for local services increases and local revenues do not or cannot keep pace with increased demand; and lastly, when national government allocates or imposes additional expenditure responsibilities without providing the necessary and sufficient funding (Chapman, 1998). Additionally, fiscal stress can be attributed to two broadly interrelated causes, that is, cyclical and structural fiscal stress. Cyclical fiscal stress stems from, amongst other reasons, fluctuations in economic conditions leading to erosion of the tax base and rising unemployment. The impacts of cyclical fiscal stress are generally short term (1 to 5 years), but can also be overwhelming if the municipality has a proportionately higher reliance on pro-cyclical tax structure. Structural fiscal stress arises from institutional factors such as the built-in set of formal and informal rules and practices, within which municipalities operate, find themselves or subject themselves to. Rules and practices can include the presence of absence of credit policies, while environmental issues include the presence of a weak or rural economic base, (Adams, 2009). The impact of structural fiscal stress is naturally long term (greater than five years) and generally beyond the control of local government.

3.2 Indicators of fiscal stress

Municipalities experiencing fiscal stress are generally characterized by a number of indicators including 1) low per capita income and tax base condition measured as 50% below the country's average or median; 2) cash balance of below 5 percent of operating revenue or less than three months of average operating expenditure; 3) a higher ratio of operating expenditure to debt, higher consumer debt and high proportion of debt to own revenue; 4) a high percentage of earmarked revenue; 5) a high operating deficit; 6) high local services demand measured by high proportions of people



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Source: National Treasury, 2008

Figure 27: Share of total available local revenue by category of municipalities, 2008

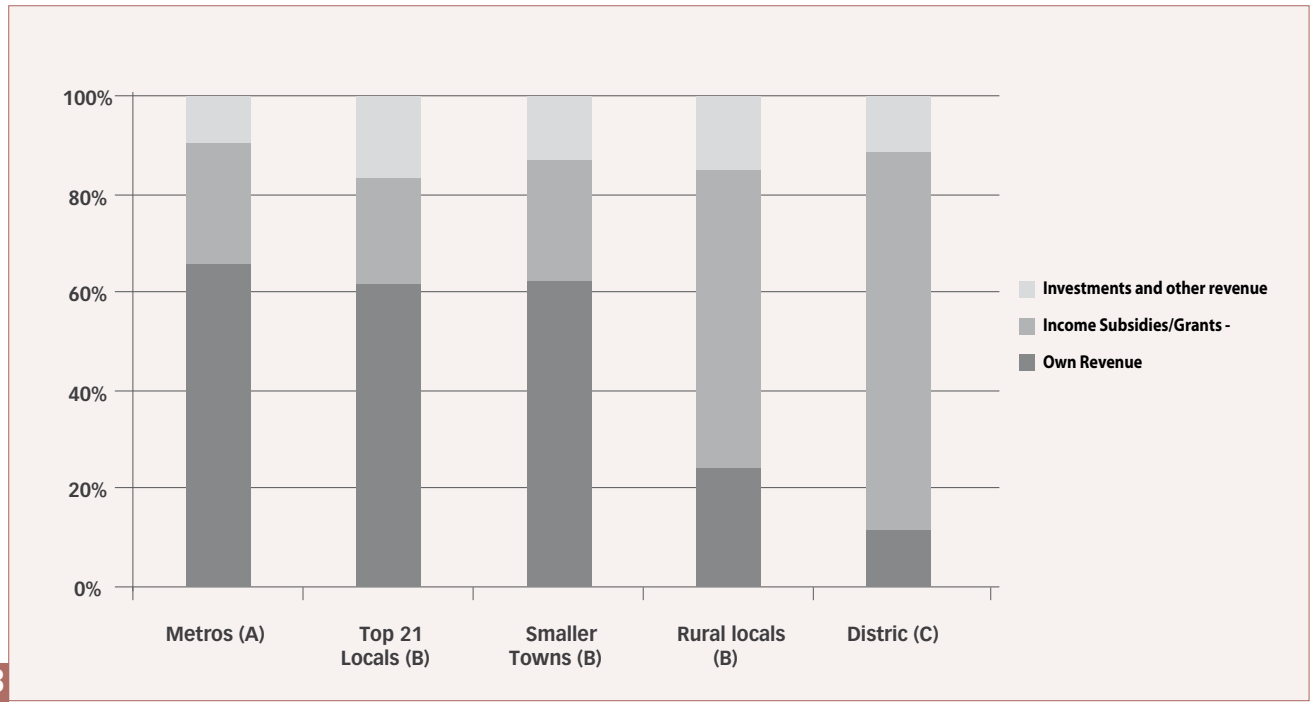
without access to municipal services and those eligible for free basic services and 7) low population density levels (The Washington State Office of Financial Management, 2006). Fiscally stressed municipalities also experience budget crises in terms of balancing the budget, higher tax rates than the population can afford and the inability to maintain a given level of public service (Agyeman and Yung, 1994). While these characteristics are typical across fiscally stressed municipalities, they are neither prescriptive nor exhaustive, given the varying circumstances which prevail across the different categories or types of municipalities in different countries.

4. THE STATE OF MUNICIPAL REVENUE IN SOUTH AFRICA

The basis for evaluating whether municipalities are fiscally stressed commences with an analysis of the current state of revenue. The main aim is to ascertain the current size of available revenue by type and by category of municipalities, as well as to determine the necessity for revenue enhancement. Local revenue is broadly made up of property rates, services charges on water and electricity etc, intergovernmental transfers or grants, borrowing and income from investments. Figure 26 gives a breakdown of these revenues by source over a seven year period 2003/04 – 2009/10 and also provides data on the overall fiscal effort[103] of local government in South Africa. Service charges account for a larger share or 43 percent of total municipal revenue, followed by grants and property rates with 20 percent and 18 percent respectively. The rest of the revenue was made up of RSC levies, which were abolished in 2006; a small proportion of investment revenue and donations; as well as a generous amount of other or miscellaneous revenue of roughly 10 percent of total municipal revenue. The latter comprises mainly of traffic fines, parking fees, business licenses, entrance fees for use of municipal facilities and income from fresh produce markets. Collectively, these revenue sources generated R73 billion for the 2003/04 financial year and are projected at approximately R127 billion for 2009/10 (National Treasury, 2009).

While Figure 26 indicates that local government is able to generate a substantial amount and potentially ideal mix of local revenue, Figure 27 shows that the aggregate picture masks a significant variation in the revenues of different categories and types of municipalities. This is due to diversity in population density and demand, socio-economic attributes and geography. For instance, almost 65 percent of total available local revenue is accounted for by six metropolitan or category A municipalities, while 33 percent of total revenue is accounted for by 231 local or category B municipalities and only 2 percent by 46 districts or category C municipalities.

[103] *Fiscal effort is a measure of the extent to which local government taxable capacity is utilised (Financial and Fiscal Commission, 1996)*



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Source: National Treasury, 2008

Figure 28: Operating revenue by type of municipality and revenue, 2008

A further disaggregation of municipalities (mainly category B)[104] and revenue by type shows that category A municipalities and several category B municipalities, classified as secondary cities or top 21 local municipalities, generate on average 60 percent of their revenue through own local sources. Conversely, a significant proportion of other category B municipalities generate as little as 20 percent of their revenue from own sources (Figure 28). However, it is important to note that, even within municipal subcategories as displayed in Figure 28, there exist wide disparities where certain local municipalities classified as poor (weak economic base) or rural are able to generate substantial amounts of own revenue relative to those with moderate economic bases. By implication, this data suggests two important points. Firstly, that ability to raise revenue is not simply a function of having a strong economic base and secondly, that revenue effort plays an integral part as a predictor of fiscal stress. These points are analysed more fully in the subsequent sections.

Although this analysis shows the relative size, performance and variances in revenue between different types of revenue sources and categories of municipalities, it does not necessarily suggest that total municipal revenue is not sufficient, nor that total revenue should be increased, nor that municipalities are fiscally stressed. This limited analysis does not justify the need for municipalities to carry out revenue enhancement programs. To establish the need for conducting revenue enhancement, the following section assesses the existence of fiscal stress, a key justification for revenue enhancement, in South African municipalities.

5. EVIDENCE OF FISCAL STRESS

5.1 Economic conditions

Table 40 evaluates the performance of the municipalities (only Category A and Bs) against the three key indicators of fiscal stress associated with economic conditions. In this table, municipalities whose per capita income and revenue indicators measure 50% below the national average or median are considered fiscally stressed. Conversely, municipalities whose poor households' indicator ranges in the category of more than 50 percent above the national average will likewise be regarded as fiscally stressed. Using these benchmarks, 55 municipalities or 23 percent of the total fall in the category of fiscally stressed when per capita income is considered; and 93 municipalities or 39 percent of the total can be regarded as fiscally stressed when per capita revenue is used as an indicator. The number of municipalities whose fiscal stress may be primarily due to high service demands imposed by poor households which are eligible for free basic services[105] is 32 (11 and 21). A majority of these fiscally stressed munici-

[104] *Categorisation developed by the National Treasury for analytical purposes*

[105] *People earning R800 or less are eligible for free basic services from the municipality. However certain locals apply a universal approach where every resident receive free basic services irrespective of the poverty status.*

Table 43: Selected indicators of fiscal stress in category B municipalities

Number of municipalities in a category	0 to 50% below national average	50 to 99.9% below national average	0 to 50 % above national average	more than 50 % above national average	more than 100% above national avaerage	Total
Per capita income	55	78	60	25	19	237
Per capita revenue	93	49	48	19	28	237
Poor Household (< R800 per month)	129	54	22	11	21	237

Source: own calculations from National Treasury, 2008 and Statistics South Africa, 2001

palities are rural, former Bantustans and mostly located within the 22 presidential rural nodes declared in 2001 and uniquely characterised by the dominance of traditional land.

5.2 Grant dependency

Revenue scarcity, low per capita income and a high proportion of poor households directly influences the extent to which national government augments local revenue through transfers. Transfers are generally pro-poor such that the poorest municipalities receive the highest grant support. When poorly designed, such transfers tend to ingrain a culture of dependency and minimal revenue raising effort on the part of the recipients. According to Mouritzen and Narver (1989), the degree of local government dependency on grants increases their vulnerability to reductions and elimination of grants by national government, thereby leading to fiscal stress. The impact of reductions will be even greater where the possibility of finding replacement revenue is limited or dependency is high. Table 41 below depicts the relative of proportion grant support to total revenue in all municipalities.

At least 37 municipalities or 13 percent of the total are more than 80 percent reliant on grants for revenue. The majority of these municipalities are former rural Bantustans located in the three poorest provinces of South Africa, such as Albert Luthuli in the Eastern Cape, Makhuduthamaga in Limpopo Province and Nkandla in KwaZulu-Natal. They are also generally poor and lack sound economic and business activity. In fact, these municipalities are suffering from what has been referred to earlier as structural fiscal stress. In addition, more than 80 of the country's municipalities exceed a benchmark grant dependency ratio of 5 percent thus making them susceptible to cuts in national transfers.

5.3 Consumers debt

The increasing and proportionally high level of consumer debt owed to municipalities is further testimony to the existence of fiscal stress. As at June 2009, aggregate municipal consumer debt amounted to R50, 4 billion[106] or more than 44 percent of total own revenue excluding grants. According to National Treasury (2009), there were at least 85 municipalities with debt to own revenue ratio of more than 50 percent as at June 2008. Just over 60 percent of total consumer debt is accounted for by metropolitan municipalities. Approximately 60 percent of the total debt is attributed to residential customers, while the remaining 40 percent is equally accounted for by government and businesses in all categories of municipalities.

Under normal circumstances, sustained high consumer debt levels are likely to result in a municipal operating deficit and at worst a bankruptcy, a further indication of fiscal stress, depending on how much provision has been made for bad debt. However, municipalities in South Africa are legislatively required to run a balanced budget, which makes it difficult to assess the occurrence of an operating deficit. With this requirement, it is thus reasonable to assume that the current debt is essentially an ongoing operating deficit, since municipalities are not utilising available once-off funds such as cash reserves or investment to balance their budget. This assertion is particularly evident in the next section.

6. Root causes of fiscal stress in South African municipalities

According to a panel of local government experts, fiscal stress within South African municipalities is a result of a number of

[106] *Note that the profile of the debt is not known with greater degree of certainty. It is argued that a greater chunk of the current debt is made up of historical debt, interest on debt as well as inflationary contents.*

Table 44: Grant as a percentage of operating revenue

Grant as a percentage of total income	A	B1	B2	B3	B4	C1	C2	Total	Cumulative percentage
	Number of municipalities per category type								
below 20%		11	15	17	1	2		46	16%
20% - 40%	6	10	13	58	5	1		93	33%
40% - 60%			1	28	15	1	7	52	18%
60% - 80%				6	30	11	8	55	19%
Over 80%				2	19	10	6	37	13%
Grand Total	**6**	**21**	**29**	**111**	**70**	**25**	**21**	**283**	**100%**

Source: Adopted from National Treasury Database, 2009

related and self-imposed factors including the following:

6.1 Non payment of services

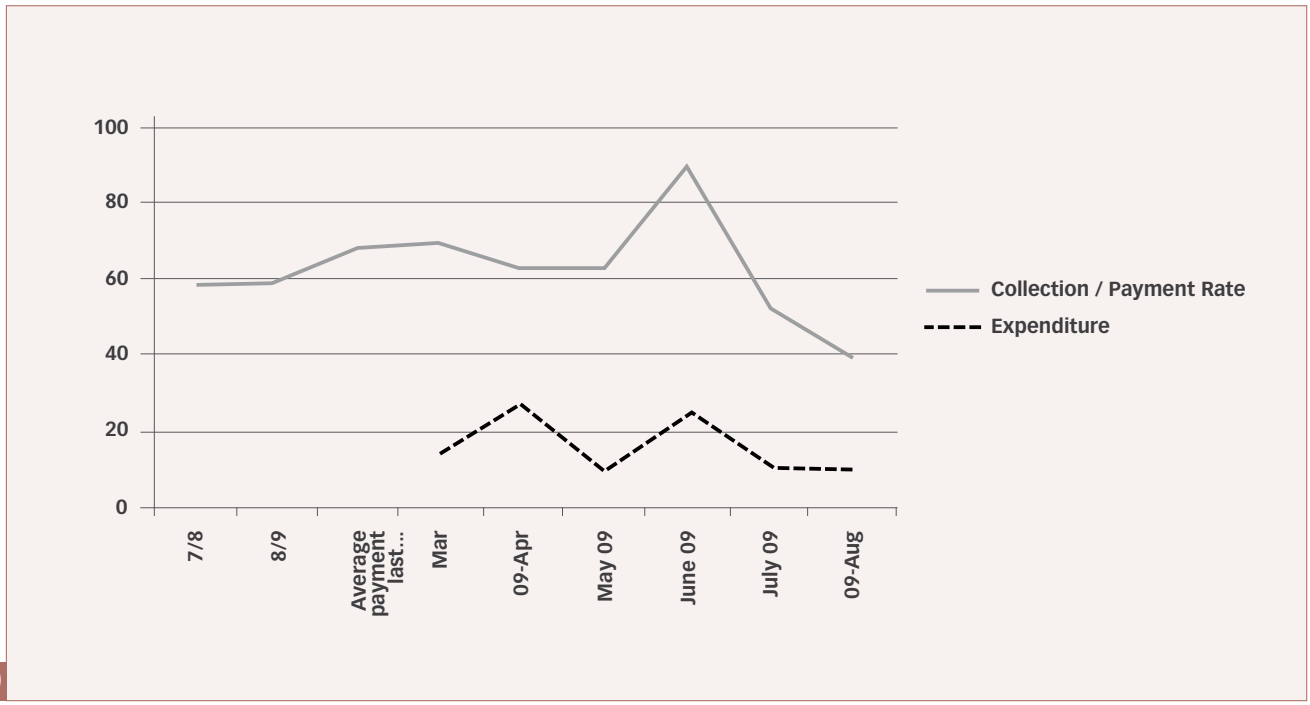
Non-payment for services emanates from the inability of residents to pay as a result of poor economic circumstances and to a lesser extent, incidences such as global recessionary conditions which also affect South Africa. It is also related to the unwillingness or explicit refusal by residents to pay, due to perceptions of poor services and corruption. The prevailing view suggests that non-compliance is caused mostly by high levels of poverty and a culture of entitlement to services on the part of residential customers. In its nation-wide survey of 1600 households, the Center for Development Support, University of Free State (2001) concluded that inability to pay rather than unwillingness to pay is the root cause of non-compliance. In contrast, the Helen Suzman Foundation (1999) concluded that a fundamental difficulty lies in the growing culture of non-payment, which may be further entrenched by provisions in the Bill of Rights i.e. the right to basic services. In this regard, there has been a growing and possibly unsustainable precedent set by the courts, to support and enforce explicit rights to basic services. *See Residents of Bon Vista Mansions v Southern Local Council; Grootboom v Government of the Republic of South Africa and Mnisi v City of Johannesburg.*

However, Fjelstad, 2004 finds that compliance variations exist between poor and rich communities, as well as within communities with similar socio-economic characteristics. He argues that non-payment cannot be attributed solely to inability to pay and entitlement, but also to the perceptions of the community about local government's capacity to act in their interest. Such perceptions include whether local government uses collected revenues to provide expected services, and establishes fair procedures for revenue collection and distribution of services. Notwithstanding the conflicting views on causes of non-payment, one point is clear: If the current trend of debt and non-payment of services continues unabated, a collapse of the entire local government system may become inevitable.

While poverty and non-payment culture partly explains the non-payment by residential customers, there remains a concern over what exactly causes the extremely unacceptable levels of non-payment by government, even though these payments would constitute an important part of guaranteed municipal revenue. According to PSU (2008), municipalities tend to incorrectly allocate accounts by debtor type where non-government accounts are classified as government. Government departments also often dispute that accounts are received and sometimes accounts are sent to the wrong institution/address. They also cite lack of budgetary planning for municipal services amongst the reasons for government non-payment. The situation is further worsened by the fragmented handling of various segments of municipal accounts by different departments, which makes consolidated billing problematic. For example, payment for property rates on all government buildings has until recently been under the purview of the Department of Public Works, while provincial departments of education are responsible for municipal services rendered to individual schools.

6.2 Dependency or soft budget syndrome

Grant dependency by municipalities does not only serve as an indicator of fiscal stress, but also as a either a deterrent to collect or an incentive to minimise revenue collection. Data on revenue collection from a six-month survey of selected municipalities in seven provinces shows disturbing monthly



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Source: Development Bank of South Africa, 2009.

Figure 29: Revenue collection trend for municipalities in North West province

irregularities. Revenue collection tended to rise significantly during the months after receipt of the equitable share and other grant allocations (May to June), and to decline thereafter, particularly towards the end of the financial year. Figure 29 below demonstrates this phenomenon in North West Province municipalities.

6.3 Low Fiscal effort

In addition to the reasons outlined above, low revenue can also be attributed to low fiscal effort on the part of most municipalities. Fiscal effort indicates the extent to which local government utilises the resources available to it – it's fiscal or revenue capacity. According to Savage (2009), this capacity is currently under-utilised within certain municipalities, considering the amount of fiscal resources that could potentially be raised. Savage's assertion borrows strongly from empirical studies which demonstrate a strong relationship between high aggregate income or economic activity and high levels of generated own revenue, although South African evidence on this is scanty.

Using aggregate household income and Gross Value Added (GVA)[107] as measures of taxable capacity, municipalities, in 2008, extracted at least 7 percent, 2 percent and 4, 5 percent respectively, equivalent to R99,3 billion (excluding grants and debtors). Total household income and total GVA at current prices amounted to R1,379 billion and R2,192 billion respectively (South African Reserve Bank, 2009). Notwithstanding the lack of consensus on the appropriate or ideal ratio of revenue collections to tax capacity, various data sources demonstrate that the current ratios of local revenue to tax capacity are too low and can be improved. For instance, the 2005/06 Income and Expenditure survey shows that there is gap between reported own revenue collected and expenditure on municipal services by household. The Survey revealed that municipal related services, such as water and electricity, made up the largest household expenditure item (R165 billion or 23,6 percent) in South Africa (Statistics South Africa, 2006). By 2008, the same expenditure item had increased to R193 billion (South African Reserve Bank 2009).

A major concern regarding this anomaly is that the majority of municipalities, even those with moderate levels of taxable income, solely attribute low revenue to factors associated with fiscal stress, while overlooking important aspects of improving overall fiscal effort. This concern is, however, not

[107] *Aggregate household income or Gross Value Added by municipality are used as generic measures of taxable or fiscal capacity given the inherent challenges associated with undertaking empirical studies of revenue raising capacity within local government. Challenges arise mainly from the rigorous data requirements for estimating taxable capacity per municipality. Most importantly measuring fiscal capacity is rather a costly exercise with and susceptible to a greater degree of questioning and censure*

Table 45: Municipal composite revenue performance index[109]

Municipality	Composite Revenue index	Composite Demographic index	Composite Socio-economic index	Composite Fiscal effort index	Total Revenue Performance index
Bottom3					
Ingwe	1.3	4.0	2.7	0.7	**2.2**
Moshaweng	1.3	4.7	2.8	0.7	**2.3**
Ntambanana	1.0	3.7	4.3	0.7	**2.4**
Top 3					
George	9.5	6.2	8.7	6.0	**7.6**
Saldanha	9.3	6.2	9.1	6.7	**7.8**
Overstand	9.5	8.2	8.1	6.7	**8.1**

Source: FFC own calculations from The Presidancy , 2006, National Treasury, 2008 and Statistics South Africa, 2008

generally relevant to all municipalities, because of varying revenue raising peculiarities across different categories and types of municipalities. For example, in 2008 Msinga municipality collected the lowest own revenue amounting to R72 000 while City of Johannesburg generated the highest revenue estimated at R13 billion. The difference in revenue collected between these two municipalities is explained by numerous distinct and yet obvious features. Msinga municipality is situated on the rural fringes of KwaZulu-Natal with vast amounts of tribal land and a very large proportion of poor households heavily dependent on grants (88 percent of total revenue). In contrast, the City of Johannesburg is a vibrant productive economic centre, while still having a significant proportion of households living in informal dwellings and a high, poor migrant population.

A stark contrast is nevertheless noticed between Msinga and other municipalities with similar characteristics. Municipalities such as Mier, Molopo, Ikwezi and many others with low taxable income comparable to that of Msinga, are nevertheless able to generate significant sums of own revenue. BelaBela municipality has a taxable income six times less than that of Thulamela municipality, yet the former generates twice the amount of own revenue compared to the latter[108]. When all municipalities are compared to the few best performers in terms of revenue maximisation, the majority of municipalities are doing considerably poor. Most municipalities score an own revenue to taxable income ratio of 1 to 3 percent while the highest is 7 percent. Given the ongoing debate about the optimal level of fiscal effort it may not be easy to conclude whether one percent or seven percent ratio is appropriate. However one point is clear. To increase local revenue there need be an improvement in own revenue to taxable capacity or the tax base itself made possible by interventions discussed earlier in the paper.

Table 42 depicts in more detail the relative performance of the bottom three and the top three municipalities, in terms of various indices that impact on local ability and willingness to generate revenue where one means poor and ten means excellent. Ingwe, Moshaweng and Ntambanana municipalities are ranked the lowest on the total composite revenue performance index against a combination of factors including poor socio-economic conditions and demographic conditions i.e. ruralness and vast tribal land as well as diminutive fiscal effort. George, Saldanha Bay and Overstrand municipalities, all of which are located in the Western Cape Province, are top performers on the composite revenue performance index. It is noted, however, that even though Msinga Municipality collects the lowest own revenue, it is ranked 5 on the total

[108] *We note the difference in service delivery authority between the two municipalities*

[109] *Municipal composite revenue performance index is a measure of ability or effort to optimise revenue collection relative to available taxable capacity while controlling for various factors that impact on the ability to collect revenue such as number of poor households, urban and rural divide, unemployment and fiscal capacity. To calculate individual indices, municipalities are ranked from highest to lowest per given variable, divided into ten separate and equal categories and then allocated a score of one to ten where quintile or category 1 represents the worst performers while category 10 represents the best performers. The composite revenue index is made up of performance variables such as percentage of grant to total revenue, actual revenue collected and revenue per capita. The demographic composite index is made up of the proportion of urban, rural, tribal and informal households, population density as well as household size per municipality. The composite socio-economic index comprises the number of poor and unemployed per municipality, the aggregate household income and gross value added by municipality. The fiscal effort index includes the percentage of own revenue to aggregate household income and gross value added as well as measures of revenue buoyancy. The total revenue performance index is the weighted average of all four indices.*

composite revenue performance index because of its better scores on the demographic and socio economic indices. This point bears testimony to the claim that there is considerable room for municipalities to increase current collections.

6.4 Poor Service Delivery

Perception of poor services and mismanagement simply deters people from paying municipal services. Associated issues include:

- Poor revenue management or non-collection relates to ineffective meter reading, billing and billing systems, no proper register of indigents, a lack of enforcement of credit control and debt collection policies in part attributed to political interference. There are incidents where local politicians put pressure on the administration to relax credit control policies, especially with regard to services disconnection.

- Poor economic conditions relating to low economic activity, poor demographic attributes such as large and rapidly growing number of indigent or poor households and low tax base.

- Powers and functions: A number of local functions are still performed by district municipalities and state agencies such as Eskom, which not only deprives some municipalities of potential revenue but weakens their ability to implement consolidated billing and use of electricity services as leverage for non-payment of other municipal services.

- High cost of municipal services in part influenced by bloated staffing structures and budgets within municipalities

- Lack of customer education or marketing of municipal services and ineffective community participation processes

- Lack of skills or expertise in the management of local government affairs

- Politics/administration dichotomy: Political pressure on the local tax administration to relax revenue collection

- Aversion to change: No new taxes or revenue streams explored

In summary, evidence of fiscal stress within local government in South Africa is overwhelming, albeit masquerading as incidents of low fiscal effort. Contrary to conventional belief, fiscal stress is not only limited to small and economically weak municipalities, but cuts across the entire spectrum including metropolitan municipalities. As at March 2009, 9 of the 21 largest municipalities, namely Msunduzi (Pietermaritzburg), Polokwane (Pietersburg), Rustenburg, Mbombela (Nelspruit), Buffalo City (East London), Sol Plaatje (Kimberley), O R Tambo, Mafikeng (Mmabatho) and Mangaung (Bloemfontein) were in financial distress (National Treasury, 2009). There are, however, significant disparities regarding the type of fiscal stress affecting different types of municipalities. On one hand, metropolitan municipalities and secondary cities are mainly confronted with cyclical fiscal stress related to non-payment and cash flow problems. Small municipalities, on the other extreme, are faced with structural stress problems including low revenue base and high services demand difficulties. The existence of fiscal stress triggers the design and implementation of revenue enhancement programs by municipalities. The following section examines how municipalities respond to fiscal stress.

7. RESPONSES TO FISCAL STRESS THROUGH REVENUE ENHANCEMENT STRATEGIES

Using 30 different survey studies of various municipalities in the United States, Adams (2009) developed a detailed list of local government policy responses to revenue enhancement. Mouritzen and Narver (1989) argue that such responses generally revolve around three orthodox approaches. These include 1) increasing taxes through changes in the tax rate structure in order to maintain prevailing expenditure and services levels; 2) reduce real expenditure; or 3) a combination of these activities. Table 43 below provides a detailed list of revenue enhancement strategies categorized into revenue side interventions, expenditure side interventions and efficiency or market interventions.

Similar to indicators of fiscal stress outlined previously, policy responses to revenue enhancement are not generally applicable to all municipalities conducting revenue enhancement strategies. Each policy response should be predicated upon its appropriateness to specific revenue challenges and circumstances facing a particular municipality within a given time. For example, an increase in taxes or fees during the period of economic decline is likely to be

Table 46: Revenue enhancement strategies to deal with fiscal stress

Revenue side interventions	Expenditure side interventions	Efficiency interventions
Increase taxes and rates	Defer or reduce capital expenditure and maintenance	Contract out selected services
Impose new taxes, rates and fees	Reduce or eliminate services, particularly low visibility and poorly performing programs	Restructure existing debt
Promote economic development e.g. business retention incentives	Target budget cuts	Consolidate departments
Pursue new grants from the centre	Hiring freeze	Improve management
Dispose of assets	Wage freeze	Privatise services
Rent out properties	Layoffs and early retirement	Regional service agreements/cost sharing strategies
Draw down reserves	Reduce employee related costs e.g. travelling, overtime, promotions etc.	Efficient service delivery policies
	Discourage population growth	Computerisation
	Increase short term debt	Staff training
Source: Adam, 2009		

counter-productive rather than to augment local revenue as envisaged. In the same vein, the process of creating new revenue sources, through tax increases and user fees will require substantive justification, because turning to taxpayers is politically unpopular (Alfred, 1994). Equally, deferring maintenance expenditure exposes municipalities to future service delivery and financial risks. The following section gives a brief overview of revenue enhancement programs conducted by municipalities in South Africa.

7.1 Requirements for effective revenue enhancement and management

For a municipality to fully maximize the benefits of revenue enhancement, it must undergo serious administrative reforms or comply with the requisite administrative practices. Revenue enhancement strategies require an effective revenue administration comprising of revenue management and implementation strategies, as well as the permanent flow of information related to the different financial aspects of the municipality. When administration processes are weak, local revenue mobilisation will be compromised (Kelly et al 2001). In order to be effective, administration procedures must be comprehensive, covering all components of revenue management functions, such as tax base identification, customer database management, liabilities assessment invoicing and enforcement, cash office management monitoring and customer services. PSU International (2008) considers municipal data on customers, indigents, services, cadastral, finances and socio-economic circumstances to be the most critical factors in the revenue management process and planning.

The revenue enhancement process commences by identifying an array of revenue bases. Once the revenue source is identified, information is collected, recorded and managed within the respective tax or revenue base register. Through this information, municipalities are able to determine tax liability, produce invoices and deliver the bills to taxpayers. The assessed taxes are collected via the cash management office. Such collections are monitored and action is taken against noncompliance in line with credit control policies.

As part of the integrated financial management system, once the entire revenue management process is complete, it should ideally feed into the budget and monitoring subsystem, comprising both revenue and expenditure sub-components. In this way, municipalities will be able to perform critical functions pertaining to fiscal planning and management, budget preparation, enactment and execution, as well as transactional accounting i.e. recording and reporting (Parry, 2006).

It is acknowledged that no single revenue structure is

appropriate for all types of municipalities. The design and implementation of appropriate revenue management processes for a municipality should be a function of the prevailing structural, economic and legal peculiarities within which it functions. It for this reason that revenue enhancement programs require a structured modus operandi for implementation, that enables the municipality to undertake a simple, yet detailed process. The implementation plan should entail setting out a clear understanding of the problem, the definition of desired outcomes and objectives, drafting of relevant planning documentation, as well as management and monitoring of the implementation process. In addition to the establishment of effective administration procedures and an implementation plan, local government capacity must be enhanced through training, technical assistance and dissemination programs, with support from national and provincial government.

Perhaps the biggest shortcoming with regard to the integrated financial management system is the initial capital cost requirement. Metropolitan municipalities such as eThekwini and Cape Town have spent funds in excess of billions to set up their respective financial systems. For small municipalities, procuring such systems would be costly and possibly unaffordable. Yet, these systems are essential to effective revenue management. The Municipal System Improvement Grant (MSIG) and the Financial Management Grant (FMG), which were set up specifically to assist municipalities in this regard, are however deficient in certain respects and often inappropriately utilized. For the 2010 financial year, these grants have collectively been allocated just under R500 million, used mainly to compensate financial experts temporarily deployed within selected municipalities. This approach to utilization of the grants tends to focus on the process of improvement, rather than on ensuring the effectiveness of the system within a defined period, let's say two years from date of receipt of the first tranche of grant funding. The bigger problem with respect to these grants has been the perpetual under-spending by municipalities, reflecting a massive failure to utilize available funding to create system effectiveness. For the 2007/08 financial year, the FMG under-spent by 15 percent whereas MSIG under-spent by 34 percent.

7.2 Revenue enhancement measures undertaken by municipalities and government in South Africa

Revenue enhancement initiatives commenced in earnest in 1995 through a national campaign called Masakhane – ''let us build together''. The campaign sought to accelerate delivery of basic services, stimulate economic development, create conditions for investment in infrastructure and promote payment for municipal services. While the campaign had broad objectives, it was criticized for narrowly focusing on the latter even though its achievements to this effect are considered dubious by Fjelstad (2004). Arguably, payment for municipal services in Soweto and Alexandra areas plummeted substantially during the life of the campaign.

In 2002, the then Department of Provincial and Local Government (DPLG), now Department of Cooperative Governance and Traditional Affairs (COGTA), launched the municipal revenue enhancement program, primarily aimed at improving revenue collection within local government. The program commenced with an investigation examining revenue challenges for local government and made the following remarks (DPLG, 2006):

- Consumer arrears affect overall viability of municipalities
- Municipalities are charging inappropriate taxes and tariffs
- Municipalities have difficulty in implementing free basic services and identification of indigents
- Municipalities have ineffective revenue administration practices
- Municipalities have poor metering, unreliable customer information, faulty billing and invoicing systems, unreliable postal services, inaccessible payment and enquiry facilities, illegal connections, poor incentives and penalties to encourage payment, and high government arrears.

The findings of the study culminated in a pilot project targeted at 12 municipalities, with a specific focus on three program areas of action: (a) improve the public and market confidence in the system of governance; (b) improve the financial and economic viability of municipalities and (c) improve operating and organisational systems. Each program detailed a mix of selected intervention areas specific to the municipality concerned. The interventions noticeably straddle different types of municipalities as summarised in Table 44 below.

Parallel to national initiatives on revenue enhancement, numerous municipalities, on rare occasions, independently carry out their own programs or utilize the assistance of private service providers. Municipalities such as Buffalo City, Mangaung, Sol Plaatjie and Ekurhuleni have formulated their

Table: 47: Revenue enhancement initiatives targeted at selected municipalities

Public Confidence interventions	Financial and economic viability interventions	Organisational systems initiatives
Improve indigent registration	Update customer database	Upgrade billing systems
Improve customer care	Address water loses	Develop or update GIS system
Improve community communication	Implement credit control	Create ICT system integration
Roll out free basic services	Update billing system	Reengineer meter reading operations
	Implement LED strategy, develop IDP plans	Implement performance monitoring system
		Reduce overtime usage
Source: DPLG, 2006		

own revenue enhancement policies, while others including Albert Luthuli, Cape Town, Rustenburg and Dihlabeng benefited from interventions by external service providers. Generally, the revenue enhancement programs of the municipalities assessed focuses on debt management strategy, credit control, reviewing services subsidies, tax and tariff setting, budget reforms, customer care strategies, as well as reduction in water and electricity distribution losses, data cleaning and installation of prepaid meters.

Market based revenue enhancement solutions are grounded in the prospects of improved and sustained revenue collection, improved and updated property valuation rolls and records, reduced services debt, improved service delivery including free basic services and streamlined access to resources. These solutions are commonly software based management and accounting systems that link up with the various records and activities of the municipality to streamline the revenue collection process.

The success of these packages depends heavily on the ability of the municipality to operate, manage and administer them effectively. Kelly, et al (2001) reaffirm this assertion by noting that the key to increasing local revenue is largely improved administration, as opposed to sophisticated revenue enhancement solutions. Municipalities must ensure that revenue is collected and enforcement undertaken against non-payment, that information on all services users is captured in their respective registers, that properties are classified and valued correctly, and that taxes and rates are set.

Of course, implementation of revenue enhancement programs is not immune to challenges. Most municipalities undertaking their own programs indicate that shortage of personnel and technology hampers effective implementation of their revenue enhancement policies. Moreover, municipalities argue that rapid growth in bulk services costs and poor economic performance puts their revenue enforcement plans in jeopardy. Mangaung Municipality bears testimony to the latter claim, where about 67 percent of the households in the municipality qualify for indigent assistance, thus limiting revenue generation to the remaining 33 percent.

Perhaps, more pertinent are the structural constraints which mutually reinforce one another, embedded within the set up of certain types of municipalities. The weak financial and economic positions that municipalities find themselves in are due to weak revenue bases driven by lack of economic activity and the associated large number of poor households. Financial and economic constraints limit the ability of municipalities to attract skilled personnel who will in turn design and manage revenue enhancement programs.

Revenue enhancement is also made difficult by the continued enforcement of the right to basic services by the courts and the lack of uniform policy on enforcing compliance. For example the Johannesburg High Court in the case Phiri residents (Soweto) v City of Johannesburg has recently ruled that installation of prepaid meters is unlawful and

[110]*The Johannesburg Metropolitan Municipality has since appealed the ruling of the High Court at the Constitutional Court which subsequently ruled in their favour.*

unconstitutional despite justification for meters as a revenue enhancement and water reservation tool[110]. The Court further ruled that the free basic water limit of 6 kilolitres per household per month be increased to 50 liters per person per day for Phiri residents. Following this judgment the City of Cape Town has halted the roll out of prepaid meters (Mail and Guardian, 2007).

The lack of uniform understanding on policies to enhance compliance or enforce credit control has been evident in the dissonance between the National Energy Regulator of South Africa (NERSA) and the South African Local Government Association (SALGA) on whether municipalities could cut electricity for non-payment of other municipal services. NERSA claims that the disconnection of electricity supply may only follow the non-payment of any electricity charges becoming due and payable. Subsequently, SALGA advised that a municipality may restrict or terminate the supply of electricity to a consumer who is in arrears with any component of his/her municipal services account, provided that the municipality has adopted a credit control and debt collection policy as per the Systems Act and the conditions pertaining to the termination or restriction of services have clearly been set out therein. SALGA supported the advice with the ruling of a case of Beck and Others v Kopanong Local Municipality and Others in which the Court found that the disconnection of electricity had a firm legal basis, as the municipality had adopted the appropriate legal instrument, namely the credit control and debt collection policy in terms of the Systems Act (SALGA, 2009).

Kumar (2009) summarises some of the other challenges impacting on the ability of municipalities to improve revenue collection as follows:

- Non payment by consumers due to unemployment, poverty, declining economic climate and rising electricity costs
- Budget and tariff increases restricted within the macroeconomic framework set by National Treasury. No provision for tariff increases above inflation
- Little or no growth rate in the tax or rates base
- Absence of strong credit control policies that are strictly applied
- Inability of courts to handle the large number of debt collection cases
- Water and electricity distribution losses
- Outstanding accounts by other spheres of government

Turning to market driven revenue enhancement packages, they are costly and mainly developed by accounting and law firms who inadvertently become their long term custodians. The City of Cape Town is on record noting that the revenue enhancement program is extremely expensive, even for a city of its size (DBSA, 2004). In many cases, municipalities tend to delegate their administrative responsibilities to the service providers contracted to deploy these enhancement packages, thus neglecting their legislated administrative responsibilities. Services providers instead of municipalities are often given the responsibility for community liaison or meeting with ratepayers during the development and collection process. For example, where the Albert Luthuli Municipality has appointed a service provider to manage revenue collection for 10 000 of its 30 000 households, it should be checked whether the municipality retains responsibility for other interventions required to make collections successful in this area. These practices represent a 'great escape' from general local traditions of accountability and community participation and further subject local residents to inequitable revenue administration systems. According to the UNDP (2001), direct consultation of local government with citizenry and equitable treatment of ratepayers contributes to high compliance levels in collection of local taxes and charges.

The principal conclusion in this section is that revenue enhancement strategies conducted my municipalities in South Africa are fundamentally different from international practice. The programs are not triggered by indicators that are related to fiscal stress. Municipalities continue to grapple with basic administrative and efficiency issues related to debt management, credit control and distribution losses, rather than exploring untapped new strategies. Revenue enhancement is an activity that should be undertaken when a municipality has exhausted all available revenue, not when it has failed to collect revenue due to itself. It is further clear that revenue enhancement requires sophisticated administrative procedures. However, evidence from municipalities regarding the existence of administrative capacity to the extent required by revenue enhancement programs is scanty. In its submission on the division of revenue (2009), the FFC observed that local government lacks capacity

to perform its critical functions. It also noted a number of un-admirable features associated with capacity building programs instituted by national and provincial government such as poor design, coordination and targeting (see FFC 2009). It is ironic that, whereas municipality's administrative capacity is poor, they are entrusted with the responsibility for implementation of complex revenue enhancement strategies. This will invariably lead to sub- optimal outcomes. The next section assesses the outcomes and effectiveness of revenue enhancement programs carried out by municipalities and government at large in more detail.

7.3 Measuring outcomes and effectiveness of revenue enhancement strategies

In measuring the effectiveness of revenue enhancement strategies, three critical indicators are relevant. Firstly, collection ratio (i.e. the extent to which liabilities are collected and enforced) must increase. For the purpose of this study estimating collection ratio has not been possible due to data shortages. However, previous discussions on high consumer debt imply that collection and enforcement rates are not optimal. To increase collection Kelly et al (2001) advise that municipalities must use a series of sanctions and penalties, such as withholding of services for non-payment, individual fines, closure of business, cancellation of leasehold rights and seizure, auction of movable assets and tax liens[111].

Fjeldstad (2004) documents the short-run positive effects of sanctions in South Africa, but also cautions against the possibility of large-scale resistance from the community. He argues that experience in South Africa on sanctions is contrary to economic theory of compliance: the more severe the sanctions observed, the more widespread the resistance to pay. This unusual phenomenon is explained by reciprocity, where unfair and unequal treatment of ratepayers by local government fosters disrespect for and resistance against local authorities. To avoid this, Kelly et al (2001) state that enforcement must rely also on positive incentives, such as provision of good quality services, efficient and equitable administration of revenue systems and constant taxpayer education and engagement.

Coverage ratio (i.e. the extent to which all services users are captured on the tax or rates roll) and classification ratio (i.e. the extent to which services users are classified in terms of status and properties are accurately valued) are the second and third outcome indicators of revenue enhancement. An increase in any of these indicators suggests that the benefits of the revenue enhancement program are positive. The current level of coverage and classification ratios within municipalities is without a doubt very low. This is especially true because certain municipalities have not compiled their new valuation rolls as prescribed by the new Property Rates Act No 6 of 2004 (National Treasury, 2009). Be that as it may, it is important to note that an increase in the coverage and classification ratios, without consideration of the following factors, can be deceiving. The effectiveness of revenue enhancement must be measured against factors including changes in the effective tax rates, tax burden for each service user, the total revenue yield, economic efficiency and overall fairness. For example, a revenue enhancement program that increases tax burden on households without a concomitant increase in local services is likely to contribute to citizen fiscal stress, thus becoming counter-productive.

According to their own standards of measurement, national government and municipalities regard their revenue enhancement programs as effective. In its report to the Portfolio Committee on Public Services and Administration, the DPLG (2006), now COGTA, claims that revenue increased substantially between 2005 and 2006 in the 12 municipalities targeted under the revenue improvement program. Table 48 depicts the list of municipalities, as well as their respective changes in collection rate. Undeniably, these figures suggest the national program has had a phenomenal success and impact. Municipalities such as Dr J S Moroka experienced a 60 percent increase in collection rate, while Moretele moved from 0 to 21 percent collection rate in one year. Table 45 further confirms that, where collection rates are already high, revenue enhancement exercises will result in modest outcome, see Nelson Mandela Metro and City of Johannesburg.

Without questioning the validity of the above figures, it is important to mention that increases in collection rates, as per the earlier definition, vary substantially from the general annual rate of increase. The former compares the monetary value of bills issued against actual revenue collected. Paradoxically, the latter only compares revenue collected in the current period against the previous period. The methodological problem here lies in the fact that, without information on the value of liabilities due to a given municipality, a collection rate cannot be estimated. Therefore, caution

[111] *A tax lien is a restraint imposed on a property from being sold or utilised as collateral until such time its owner settle the outstanding arrears with municipality.*

Table 48: Municipalities targeted under national revenue enhancement programme

Municipality	Collection rate	48
	2005	2006
Nelson Mandela Metro	90 %	96 %
Mafikeng	70 %	92 %
Moretele	0 %	21 %
Makhuduthamaga	5 %	16 %
Matjabeng	53 %	62 %
City of Johannesburg	87 %	95 %
Tsantsabane	53 %	94 %
Greater Kokstad	60 %	90 %
uMngeni	60 %	94 %
Dr J S Moroka	8 %	68 %
Cederberg	64 %	85 %
Source: Compiled from DPLG, 2006		

should be exercised when interpreting the overall effects of interventions, given the potential overestimation of misconstrued collection rates.

An independent survey conducted by the DBSA (2008 found that municipalities are generally content with the outcomes of their revenue enhancement programs. For example, through the assistance of an external service provider, Mogale City was able to update its records on ownership of properties. Inkomazi municipality had success in cost recovery and water consumption savings through the installation of prepaid meters. The City of Cape Town raised a once-off cash flow benefit of more than R140 million through improvements in the billing cycle, as well as improved timeframes for meter reading. Within one year of the intervention by the service provider, revenue collection improved by 2.4 percent or R15 million in the Rustenburg Municipality, following a series of incentives to households.

As may be seen from the above paragraph, there appears to be huge variety across municipalities on the focus of individual revenue enhancement programs, but narrow focus within such programs. Data cleaning, debt management and improvement in revenue collection are at the center of most revenue enhancement programs. However, a brief review of the revenue enhancement programs suggests that many important elements are overlooked in the implementation process. This makes it difficult to evaluate any of the programs against the three outcome indicators outlined earlier. Thus, similar to the self-assessed outcomes of national programs, the effectiveness of municipal revenue enhancement programs remains doubtful as long as their fairness, economic efficiency, total revenue yield and tax burden or incidents effects are unknown. For example, to claim a R15 million increase in revenue collection in Rustenburg Municipality as a success is questionable, considering the cost associated with such efforts and that the municipality collects revenue in excess of R900 million per annum.

To summarise, the effectiveness and impact of revenue enhancement programs on municipal revenue can generally be assumed to be modest, if not overestimated. This is especially true in that programs tend to be restricted to revenue management and administration issues, which are in actual fact part of the broader revenue collection value chain and do not necessarily constitute revenue enhancement. In other words, current outcomes of revenue enhancement programs could at the very least be regarded as the prize of streamlining revenue collection and reducing associated inefficiencies. This conclusion is based on the perspective that local government is, for various reasons, failing in its role to exploit additional revenue sources or unlock futile budget commitments. The question that immediately follows from this presumption is whether there is sufficient scope for raising additional revenue. The sections below unpack this subject further.

8. SCOPE FOR RAISING ADDITIONAL REVENUE

Simple simulations suggest that municipalities can generate up to R325billion if the standard tax rate of 23, 6 percent is

Table 49: Estimated fiscal capacity and fiscal effort of selected municipalities

Municipality	Population	Aggregate Disposable HH income (R' million)	Own Revenue (R' thousand)	Percentage of own revenue to HH income (revenue raising effort)	Projected revenue with standard tax rate of 23,6% (R' million)
Indaka	113 914	507	299	0.06%	120
Hlabisa	175 827	1 227	117	0.01%	298
Greater Giyani	242 100	2 581	27 271	1.06%	609
Magareng	22 709	348	18 529	5.33%	82
Mafikeng	260 111	5 291	182 401	3.45%	1 249
Ba-Phalaborwa	131 143	3 051	117 822	3.86%	720
Nelson Mandela Metro	1 014 220	33 136	2 708 516	8.17%	7 820
Midvaal	78 656	3 661	239 303	6.54%	864
Stellenbosch	120 339	6 203	399 419	6.44%	1 464
City of Tshwane Metro	1 987 549	126 528	8 744 707	3.91%	29 861
National Average	**204 196**	**5 820**	**419 238**	**7.20%**	-

Source: The Presidancy , 2006, Reserve Bank, 2009, National Treasury

applied to the given aggregate taxable income. The difference between what is currently collected and estimated potential revenue can be attributed to several factors including leakages in revenue streams, such as unaccounted for water and electricity, and to a greater extent the willingness of the community to pay.

Table 46 below provides a disaggregated picture of capacity to raise revenue in selected types of municipalities. Hlabisa, Indaka and Mafikeng municipalities display significantly lower levels of revenue raising effort relative to available taxable income. In the same vein, both Indaka and Hlabisa municipalities have a higher aggregate household income than Magareng municipality, yet the latter has higher own revenue and per capita household income. These findings repudiate the initial hypothesis that the higher the aggregate income, the higher the ability to raise revenue. They also affirm that capacity to raise revenue can be influenced by factors other than aggregate household income, such as political will and effective revenue management processes outlined earlier in the paper.

With respect to the observed low revenue raising effort of high income municipalities such as Mafikeng, the Australian Government Productivity Commission (2007) advises that such data should not be interpreted as justification or implication for increasing rates. Similarly, a high measure of revenue raising effort in municipalities such as Nelson Mandela Metro (above national average) does not necessarily imply that taxes and rates should be lowered. According to Goode (1984), decisions to alter rates and increase revenue should emanate from vigilant consideration of expenditure needs, alternative funding sources, impact of rates changes, administrative capacity and political tolerability. This means that efforts to enhance revenue cannot be isolated from the broader operations of the local government system.

In closing, it is very clear that local government has a significant potential to raise additional revenue from existing sources. Nonetheless, there is compelling evidence to claim that water, electricity, property rates, expenditure inefficiencies, etc remain the key sources of revenue, yet they are currently under-exploited. This brings us to a critical question upon which this study is premised, that is, how and where local governments can increase the current level of fiscal effort through revenue enhancement strategies, in other words, what are the specific sources from which additional revenue can be generated. The following section discusses this question.

9. POSSIBLE SOURCES OF ADDITIONAL REVENUE

Unlike their provincial counterparts, South African municipalities have wide ranging autonomy when it comes to tax and revenue policy. Not only are they free to set tax rates on existing taxes, they also have considerable liberty to introduce new ones (Ashworth, Geys and Heyndels, 2005). The Constitution prescribes a list of mainstream taxes that

may be imposed by municipalities, but also directs that they may impose any taxes other than income tax, subject to approval by Minister of Finance. Currently, 10 percent of total municipal revenue is made up of a mix of non-orthodox sources, like license fees and fines. Apart from this, there exists a virtually endless list of additional and potentially new local taxes. None of these is inherently good or bad, what matters is their adherence to the general principles of taxation such as political acceptability, economic efficiency, administrative costs on revenue authority, compliance cost on individuals and business and revenue yield. This is what ultimately determines their feasibility. The previous Finance Minister, Trevor Manuel (2008), cautioned against the affinity to introduce a proliferation of small taxes, which might increase administrative and compliance costs. The minister argued that municipalities should not be lured by the prospects of increasing revenue when introducing taxes, without equity, compliance and administration considerations.

9.1 Development charges

Evidence increasingly corroborates the view that municipalities underutilize some of the more obvious revenue sources directly due to them. One such source is the development charges or "commonly used levies that are imposed on developers of new or existing properties, usually at the point that a property is subdivided or when a development or building permit is issued thus contributing to initial municipal capital cost outlays" (Savage 2009). Estimated current under-recovery on this source of revenue range between R487 million and R4, 7 billion per annum. Under recovery on this source of revenue is attributed to lack of harmony and ambiguities in national policy regulating development charges, as well as poor operational practices in managing the system of development charges by municipalities[112]. According to Savage, development charges represent a large additional source of capital finance for municipalities, which remains unexploited.

9.2 Environmental taxes and charges

Another under-collected or untapped, yet appropriate revenue source for local government is environmental taxes and charges. Progressively, there is increasing international popularity for environmental taxes, underpinned by growing concerns over climate change, resource scarcity, water quality and environmental degradation (Ashworth et al, 2003). Evidently, climate change leads to increased costs for local government. These costs include 1) adaptation i.e. expansion of storm-water infrastructure, greater wear and tear of roads, buildings, etc 2) mitigation i.e., disaster relief, reducing emissions and industrial waste water spillages, etc and 3) monitoring and enforcement of environmental regimes i.e. impact assessment and licensing (CUPE, 2007). Municipalities in South Africa are lagging profoundly behind their international counterparts in pursuit of environment-related fiscal reform – taxing environmental harm. In 2006, the City of Cape Town adopted the "Energy and Climate Change Strategy" focusing on a number of adaptation strategies in response to potential risks on the economy, service delivery and resource sustainability (City of Cape Town, 2006). The strategy, however, stops short of introducing environment-related fiscal reforms.

Unlike development charges and other conventional taxes, environmental taxes are more complex and politically contentious (Ashworth et al, 2003). Environmental taxes are often criticised for being impractical, difficult to administer, unfair and generally less buoyant. More often than not, environmental taxes are introduced for reasons not entirely based on curbing adverse behaviour, but for revenue raising purposes. For this reason, critics argue that environmental taxes must be integrated with, if not replaced by, environmental policies that complement each other. For example, an increase in the fuel or energy levy must be accompanied by improvement in alternative public transport or energy sources.

Notwithstanding the complexities regarding the appropriateness, application and implementation of environmental taxes and charges, the associated cost implications and damages are evidently greater than the cost of inaction. Rodman (1998), Ashwort (2006) and Wild River (2006) document irrefutable evidence and success stories in both developed and developing countries on the effective use of environmental taxes, sometimes with minimal sophistication. This provides a reasonable basis for municipalities in South Africa to consider not only increasing the revenue base, but also reducing the social cost of environmental damage. There

[112] *See Savage (2009) for a detailed report on development charges, practices and constraints thereof. One of the outstanding and undesirable features of development charges pertains to its skeweness towards urban municipalities and ambiguities on whether it's a tax or fee. At least 60 percent of this revenue accrues to six metropolitan municipalities. Nonetheless, optimal collection of revenue from this source by metros could help redirect their national transfers to more fiscally stressed municipalities.*

are essentially four broad categories of environmental taxes: energy, transport, pollution and resources from which municipalities can generate revenue (European Environment Agency, 2004). To be specific, the most appropriate environmental taxes for municipalities are as follows:

- |Land use tax – to encourage effective and economic utilization of land
- Natural resources taxes e.g. sand, gravel, rock, fishing etc – to encourage effective and economic utilization and exploration of mineral resources
- Environmental fee for waste water
- Environmental fee for solid waste
- Environnemental fee for noise pollution
- Environmental fee for airports, trains and ports

It is worth noting that environmental taxes are not entirely new, since municipalities currently impose fines for minor pollution such as noise and dumping, provided for within their respective by-laws. However, data on municipal revenue from this source is not available due to concealed reporting requirements. Development charges, fines and fees are all captured under "Public Contributions and Donations" on municipal budgets.

In addition to the above mentioned taxes, municipalities could consider introducing the following taxes. Collectively these taxes, if properly justified and correctly implemented, have the potential to raise millions of rands:

- Tourist bed levies
- Entertainment taxes
- CBD congestion taxes
- Municipal port taxes
- Airport landing taxes
- Property transfer taxes
- Fuel levies
- General business taxes

Furthermore, by adopting a number of expenditure reduction and efficiency interventions, municipalities could also free up significant amounts of resources from current budgets.

10. CONCLUSION

South African municipalities are demonstrating chronic signs of fiscal stress which can potentially cripple the entire local government system. Own revenue is being rapidly replaced and eroded by national transfers and a combination of growing inability and unwillingness to pay. Recognising these problems, municipalities have begun utilising remedial tools in their attempts to prevent imminent disaster. In theory, one such tool, namely revenue enhancement programs, if designed for effectiveness, has the potential to augment municipal revenue in a substantial manner. However, owing to misdiagnosis of municipal challenges, actual revenue enhancement programs are often carried out to deal with issues that are out of sync with the factors that would ordinarily justify revenue enhancement. For instance, it emerges that negligible fiscal effort is a predictor of fiscal stress in most cases. As a result, a significant proportion of the programs conducted register minimal success, yet with maximum inputs.

The ineffectiveness of revenue enhancement programs is perturbing, given the huge prospective ability of municipalities to raise revenue. This could be an indictment on the inappropriateness of particular programs to address the problems of the day. Programs tend to be restricted to revenue management and administration issues, which are in fact part of the broader revenue collection value chain and should not necessarily be defined as revenue enhancement.

Although there are numerous practical avenues in which efforts to maximise revenue collection can be enhanced, it is also important to acknowledge that there are no quick fixes or "magic bullets". The rule of thumb is to get the basics right. This simply means that there must be general improvement in the quality of services delivered. Residents who receive good quality services promptly will be more inclined to honour their municipal accounts. Municipalities must also demonstrate visible signs of improvement in financial management and administrative capacity. Politicians must refrain from intervening with municipal revenue administration processes. Citizens must be encouraged to pay and

change their mindset through concerted marketing and consumer education exercises. Municipalities must drive the growth of their local economies through Local Economic Development programs. Those municipalities that are politically and administratively established and have a proven record of revenue maximisation can pursue more contemporary revenue enhancement initiatives, such as introducing new taxes, expenditure side and efficiency based interventions.

11. RECOMMENDATIONS

To improve the general performance of municipalities in revenue collection, the commission recommends:

1. Government should adopt standard indicators or early warning systems to measure and detect fiscal stress in municipalities and reach consensus about them. In addition to the criteria prescribed in section 138 of the Municipal Finance Management Act of 2003 for identifying serious financial problems in municipalities:

    a) These indicators should be pre-conditions for instigating mandatory provincial intervention in terms of section 139 of the MFMA and Municipal Financial Recovery Plans in terms of section 140 of the MFMA.

    b) Section 71 of the MFMA on monthly budget statements should be amended to require that accounting officers report on actual revenue per source and on the percentage of collected revenue to total value of billed revenue.

2. Government legislates, through section 43 of the Local Government Municipal Systems Act of 2000, revenue collection as one of the key performance areas against which to assess overall municipal performance.

    a) Municipalities must use at least the following standard indicators to harmonise revenue collection performance assessment across municipalities:

        - The collection ratio, which is the extent to which services are billed, collected and enforced.

        - The coverage ratio, which is the extent to which all service users are captured on the tax or rates roll.

3. Excessive levels of municipal debt from residential customers, businesses and government, which undermine the long-term financial viability of the sphere, must be reduced through constant taxpayer education and incentives by way of general improvement in provision of good quality services.

    a) Government must provide for, or enable, local government through the Municipal Systems Act of 2000, to issue garnishee orders on defaulting customers.

    b) The judicial system should have dedicated courts to deal with outstanding municipal accounts until the debt is reduced to acceptable levels.

4. The Revenue Raising Component of the Local Government equitable share should be reformed in such a way that it rewards good performance in revenue collection as opposed to the current 'Robin Hood system' or stepped tax bands which allocates more funding on the basis of low revenue collection .

5. The government should support concerted efforts to estimate the fiscal capacity and fiscal effort of municipalities to dispel the perception that certain municipalities will never be financially viable.

6. Municipalities should have broad revenue improvement programmes. They should not focus only on administrative streamlining but also on revenue side interventions, expenditure side interventions and efficiency based interventions.

    a) The nature of the interventions must be specific to local economic circumstances so that small rural municipalities, which mainly face structural fiscal stress, develop efficiency based and expenditure-side revenue improvement interventions. Urban municipalities, which encounter cyclical fiscal stress, can pursue revenue side interventions.

    b) Small rural municipalities must develop institutional arrangements or reforms that emphasise revenue assignment that is geared especially to sharing powers and functions between category B and C municipalities.

7. Effective revenue management processes, good financial

management and the provision of good quality services should underpin revenue improvement programmes. Municipalities should only conduct them when they have maximised the collection of locally available and outstanding revenue sources.

a) Where feasible, bigger municipalities, which already have financial systems, should be encouraged to share their systems and expertise with smaller ones.

8. The performance of revenue improvement programmes should be subjected to empirical tests that cover changes in the effective tax rates, tax burdens for all service users, the total revenue yield, economic efficiency and overall fairness.

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CHAPTER 5:

AN ASSESSMENT AND REVIEW OF THE SOUTH AFRICAN LOCAL GOVERNMENT EQUITABLE SHARE FORMULA

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1. INTRODUCTION

The local government sphere in South Africa forms part of a 3 tier system of decentralised service delivery in the country. Local government is assigned a range of expenditure responsibilities that are largely financed by their own revenues as well as intergovernmental transfers in the form of unconditional and conditional grants to ensure municipalities are well placed to deliver services.

The Local Government Equitable Share (LES) is a constitutional entitlement to local government to assist in fulfilling their expenditure mandates in the form of an unconditional grant. The LES comprises over a third of all transfers to local government and approximately 10% of total municipal operating revenue. The total revenue pool that constitutes the LES forms part of the process known as the vertical division of revenue, a largely politically driven process that allocates funds among the three spheres of government as outlined in the Constitution of South Africa[113].

Since its inception in 1998, the LES has been distributed to the country's 283 municipalities using a formula methodology based mainly on demographic and other service related data. This process is known as the horizontal division of revenue. The formula itself has undergone several reviews, including a major review in 2005/06 financial year that saw the introduction of the current formula, replacing several versions of a previous formula.

In 2008, the National Treasury announced a review of the current formula amidst several concerns over technical aspects and distribution trends. One of the apparent reasons for the review indentified by government is over the funding specifically of poorly capacitated[114] municipalities through the LES formula. As quoted in the 2008 Division of Revenue (DOR)

[113] *Section 227: to be discussed further in the paper*

[114] *Although there is no given definition or official consensus on what constitutes a poorly capacitated municipality, it generally includes municipalities with poor fiscal capacity, low levels of economic activity and institutional and administrative difficulties*

+ D – RRC ± C

5

bill, "the redistributive capacity of the model proved to be limited, due to the fact that the model is not designed for this purpose". The current measurement of fiscal capacity in the formula and the differentiation among municipalities were also questioned and used as a reason for a general reform of the formula as noted in the following quote: "in recognition of the large differences in the circumstances that exist at local government level, a concerted reform process is necessary to prevent poorer municipal areas from being underfunded".

In addition, certain municipalities[115] have raised concerns over the use of outdated data in the formula and the lack of accurate data updates. The concern is that annual migration patterns are not factored in the formula, thus not accounting for the additional expenditure pressures faced by these, mainly urban, municipalities. Other concerns include the inaccurate measure of poverty and the apparent difficulties in understanding the formula[116], especially the stabilising/ scaling factor.

The Financial and Fiscal Commission (FFC) commissioned this paper to contribute to the review of the LES formula and the review of the local government fiscal framework in general. This study will build on an array of previous research and publications by the Commission on the LES formula. In 2005, the Commission undertook an initial study on the allocation efficiency of the current formula. Since we are now in the fifth year of the current formula, the advantage this study has over previous studies is that a dynamic analysis of allocations can be undertaken so as to compare long run distribution trends in allocations and would thus not be limited to single year analysis.

1.1 Research problem and objectives

The primary objective of the study is to offer an in-depth analysis of the technical structure and overall distribu-

[115] *For example the City of Cape Town, Cape Times, 18 February 2009*

[116] *Confirmed by several requests to the FFC on explanations of the mechanics of the LES from provinces and municipalities*

tion trends of the current LES formula. This will include the following tasks:

- Placing the LES in context with a look at its constitutional underpinnings, economic efficiencies and retrospective development
- Understanding the implicit and explicit assumptions of the formula and each component
- Identifying shortcomings of the components and the model in general
- A dynamic (10 year analysis) and static (single year analysis) of distribution of LES funds to different types of municipalities
- A set of simulations to improve and remedy some of the current shortcomings in the model for short term efficiency gains
- Conclusions and recommendations

1.2 Methodology

The paper uses a quantitative approach to analyse the LES formula. The study mainly utilises descriptive statistical techniques to assess various aspects of the formula, including allocation trends. In conjunction with this project and to assist in the methodological approach, the FFC endorsed the development of the Commission's LES simulation model. The aim of the model is to analyse changes to the basic parameters of the current LES model and its impact on the allocations to individual and to different types of municipalities. The model produces results for each municipality as well as municipalities grouped into various categories based on demographic traits (2001 and 2007 population, 2001 and 2007 total poor households as well as 2001 and 2007 percentage of poor households), fiscal capacity (2009/10 budgeted own revenues), economic capacity (2004 Gross Value Added), spatial characteristics (Urban/Rural mix and 2007 population density). In determining mainly the short term recommendations, simulations will be undertaken using the simulation model to propose changes to current parameter settings to improve the equity of the distribution of funds. The Commission's LES simulation model was also used extensively to obtain descriptive statistics and allocations in explaining current distribution patterns of the LES model.

As expenditure responsibilities and fiscal capacity are determined by the socio-demographic, economic and fiscal characteristics of municipalities, it would seem appropriate to analyse allocations to municipalities differentiated by proxies for these profiles. This would assist in assessing the correlation between expenditure needs, fiscal capacity and actual allocations.

Based on the argument above, the basis for analysis of allocations are the following:

- Municipalities differentiated by population size (2007)
- Municipalities differentiated by total poor households (2001)
- Municipalities differentiated by percentage poor population (2001)
- Municipalities differentiated by own revenue capacity (2009/10)
- Municipalities differentiated by spatial characteristics[117]

The fundamental datasets used included the 2007 Community Survey (2007 population), Census 2001 (poor households[118]) and budget information from the National Treasury Local Government Database (2009/10 Budget information). In most cases, the differentiation of municipalities for analysis of allocations in the paper will be based on spatial characteristics and thereafter supported by analysis on other municipal categories. The reason for an emphasis on the spatial categorisation is that it not only distinguishes the urban rural nature of types of municipalities but also that this categorisation is most used in analysis by government departments[119].

Based on the spatial categorisation, municipalities were divided up into the following groups:

[117] *Based largely on the work of Palmer Development Group (PDG) for government*

[118] *As it will be discussed further on, income/poverty data from the 2007 Community Survey has several discrepancies and was not a robust variable for analysis*

[119] *As in the Local Government Turn Around Strategy, Department of Cooperative Governance and Traditional Affairs, 2009*

- Metropolitan municipalities: 6 in total, category A municipalities as defined by the Constitution, Municipal Demarcation Board and the Municipal Structures Act.

- Secondary cities: the 21 local municipalities with the largest budgets[120].

- Medium to larger towns: Local municipalities with a relative larger urban core with a larger urban population (29 in total).

- Smaller Towns: Local municipalities with an urban core and varying population sizes, with a large urban dwelling population (111 in total).

- Rural municipalities: Local municipalities which are mainly rural with, at most, one or two small towns in their area (70 in total).

- District municipalities without powers and functions: As part of the two-tier system of governance, district municipalities that are not authorised to provide the water and sanitation service on behalf of the local municipalities within its jurisdictions (25 in total).

- District municipalities with powers and functions: As part of the two-tier system of governance, district municipalities that are authorised to provide the water and sanitation service on behalf of the local municipalities within its jurisdictions (21 in total)[121].

It will become more apparent in the analysis to follow that most of the municipalities within each category share similar characteristics that validate the grouping analysis.

It is also important to note the asymmetrical division of powers and functions for service delivery that exists between local municipalities and district municipalities. This is known as the two-tier system of government whereby either a local or a district municipality is authorised for the delivery of a specific service. According to the Municipal Structures Act[122], the National Minster of Local Government[123] can authorise either a local or a district municipality with the powers and functions for either the water, sanitation and electricity function. Other functions that form part of local government's constitutional mandate (schedules 4B and 5B of the Constitution) are authorised by the Member of the Executive Committee (MEC) for local government within a province (These other services include refuse removal). Currently only local and metropolitan municipalities are authorised for electricity distribution, while mainly water and sanitation (and to a lesser extent refuse removal), is provided either by a district or a local municipality, depending on an assessment of its capacity to provide services. This is an important concept to grasp in order to analyse the LES as funds tend to follow functions. The allocation for the provision of the water service through the LES, for example, will either be allocated to a local or district municipality depending on which entity is authorised.

In order to get the full benefit to households or individuals that are in local municipalities serviced by a district municipality for water and sanitation, the funds that accrue to the district municipality for these services need to be disaggregated per local municipality within the district municipality. In other words, an explicit assumption is required that removes the mechanism in the formula that accounts for funding following powers and functions for service provision. A technical feature in the FFC LES simulation model allows for this assumption to be initiated and will assist in obtaining a more accurate analysis of fiscal incidence of LES allocations. In most cases the analysis will be based on the assumption that allocations follow the functions as authorised, unless otherwise stated that this assumption has been removed for analytical purposes.

2. RATIONALE FOR INTERGOVERNMENTAL TRANSFERS

General public finance literature offers a number of reasons for the justifications of intergovernmental transfers to sub-national government. Given the varying aspects and nature of public services, certain functions are best provided at the national level while others are more efficiently provided at a sub-national or regional level. This has led to the

[120] *National Treasury Budget Classification*

[121] *It is important to note that district municipalities with the water and sanitation function are largely in the former Bantustan municipalities where poor capacity of local municipalities and benefits from regionalisation and economies of scale are the underlining reasons for this arrangement*

[122] *Act 107 of 1998 as amended in 2000 and 2002*

[123] *The current Minister of Cooperative Governance and Traditional Affairs*

decentralisation of public expenditure and revenue responsibilities and ultimately the decentralising of the political administration as well.

Decentralisation in general has been the preferred method of enhancing efficiencies in regional economic development, service delivery and the concept of political representation and participation by all communities to the most micro of levels. In South Africa, the legacy of Apartheid has added greater significance, especially to political decentralisation, on the representation and participation of former disfranchised communities at all levels of government activities. The Constitution of South Africa once again plays the fundamental role in setting out the establishment of a decentralised system of governance and intergovernmental fiscal relations.

"In economic theory the major role of local government is to provide goods and services within a particular geographic area to residents who are willing to pay for them" (Slack, 2007 in Boadway and Shah, page 454). This is generally done to improve efficiencies in service delivery due to the varying needs of communities and the levels of services required to fulfil such needs. Local government is deemed to be better placed for the delivery of such services (Slack; 2007).

Local government, internationally, has been assigned with an array of service responsibilities, depending on the context and which sphere is best placed to undertake the service. In South Africa, the expenditure responsibilities of local government are outlined in schedule 4B and 5B of the Constitution. The major services provided by local government in South Africa are water reticulation, sanitation, refuse removal, electricity, environmental health services, local roads and transport, storm water management and fire protections, amongst others.

The provision of these services in a decentralised system is funded by the decentralisation of associated or other revenue powers i.e. fiscal decentralisation. In essence, expenditure responsibilities need to be matched by revenue powers. Usually, the sphere best placed to administer a tax is the sphere that gains access to such funds. Income tax, for example, is best administered by a central body while property tax is efficiently collected at a local level (Schroeder and Smoke, 2002). For local government in South Africa, Section 229 of the Constitution assigns the necessary revenue powers to fund their expenditure functions outlined above.

Major revenue sources for local government in South Africa are mainly property rates and tariffs and surcharges on services provided. However, generally, and in South Africa especially, the expenditure responsibilities i.e. "the minimum amount of money needed to provide basic services (as defined by the Constitution and the Bill of Rights) for those municipal functions assigned to that government" (Reschovsky, 2003) and fiscal or revenue capacities i.e. "the amount of money each government is expected to raise from local sources at a 'normal' rate of revenues effort" (Reschovsky, 2003) differs greatly across the different types of municipalities. Economic theory itself does not distinguish between the different types of municipalities (Slack, 2007). Such discrepancies are most likely to result in certain municipalities being able to raise enough revenues to cover or even exceed their expenditure responsibilities while others are likely not to. Economic theory refers to cases where a municipality's expenditure responsibilities exceed its own revenue raising capacity as a "horizontal fiscal gap" (Reschovsky, 2003).

Schroeder and Smoke note that "it is common to find that the own-source revenue-raising powers of sub national governments (in general) are not sufficient to meet the costs of providing the services they have been assigned" (Kim and Smoke, 2003, Page 21). In other words, the local government sphere in general (not specific to a municipality or group of municipalities) does not have the necessary revenue powers to meet their expenditure obligations placed on the sphere by national government. This is known as the vertical fiscal gap.

The perceived role of service grants in general is to fund the vertical fiscal gap that exists at sphere level and horizontal fiscal gaps that exist among municipalities. In addition to these two concepts, other factors such as economic externalities/inter-jurisdiction spill-overs, political rationales, local administrative weaknesses, streamlining bureaucracy and fiscal harmonisation provides a rationale for the existence of intergovernmental fiscal transfers.

Intergovernmental transfers are pivotal in the South African intergovernmental system to ensure that the constitutional obligation of government to provide basic services is achieved in addition to addressing the high degree of vertical and horizontal imbalances that exist in the system and promote static and dynamic efficiency gains.

Public economic literature identifies a set principles that intergovernmental fiscal transfers should adhere to and be

evaluated against. Some of these principles include transparency of grant design, equity, clear grant objectives, accountability and autonomy. Where possible, it will be attempted to analyse the distributive trends of the LES formula against these principles given the availability of data. It is noted that these principles are all not mutually exclusive and it is likely that some contradict each other and thus certain objectives need to be traded off against other. The importance of certain principles over others is in the hands of national government and the policy objectives it has for the role of the intergovernmental transfer.

3. THE SOUTH AFRICAN SITUATION

3.1 The LES and Underpinning Legislation

The economic fundamentals related to the South African situation described above illustrate that intergovernmental fiscal transfers are generally justifiable and necessary in a decentralised system. In most cases, intergovernmental transfers fundamentally address the vertical and/or horizontal gaps that exist in the intergovernmental system.

However, the LES in South Africa is a special case of an intergovernmental grant in that it has its foundations and origins in the Constitution of South Africa and the constitutional requirement that all citizens have the right to basic services[124]. The LES is a constitutional entitlement to local government and has political and legal justifications that surpass the economic one described above.

Sections 214 and 227 of the Constitution make provision for the sharing of nationally raised revenue among the three spheres of government i.e. the vertical division of revenue. Although the Constitution does not explicitly lay a structure for the horizontal division of revenues amongst the 283 municipalities, Section 214 (2) gives aspects that need to be considered when determining a municipality's LES allocation, in other words the clearly defined financing roles of the LES. These include a municipality's ability to provide services, its fiscal capacity and efficiency and its developmental needs. The structure of the previous and current formula is component based, with each component related to each of these constitutional aspects. This will be described in more detail further on. As the LES is a constitutional entitlement, the economic rationale provides mechanisms and methods by which it can be distributed in an equitable and fair manner, as long as its constitutional fundamentals are not compromised.

3.2 Evolution of the LES (1998 – 2004)

The sharing of nationally raised revenue with local government officially commenced on 1 January 1998, in line with the given date as stipulated in the Constitution. Government chose to allocate the LES via a component-based formula mechanism, reflective of service, development and backlog expenditure needs of municipalities. The formula was to be based on demographic and service data, collected by Statistics South Africa, which was transparent, objective and independently collected. The development of the formula had thus been initiated.

At the time, the legacy caused by the unequal development under the Apartheid government was still very apparent and had to be taken into consideration by the formula developed for the LES. Firstly, there was little or no form of local government (administrative or otherwise) in the former homeland states (sometimes called TBVC states i.e. Transkei, Bophuthatswana, Venda and Ciskei). This uneven development also led to significant economic and social disparities between these regions and more urban areas in South Africa.

An initial method to distribute the LES was proposed by the then Ministry of Finance (now comprises the National Treasury) in 1998 and comprised 4 separate formulae namely:

- The basic service grant
- The tax base equalisation grant
- The municipal institution grant
- The matching grant

The basic service grant formula intended to fund the provision of basic services to poor households in a municipality, while the municipal institution grant was to fund the basic administrative and political structure of a municipality. This logic is similar to the one applied in the current formula. The purpose of the tax base equalisation grant and the matching grant were to reduce disparities within a municipality and promote positive externalities across municipalities respectively

[124] *As part of the Bill of Rights, chapter 2 of the Constitution, that warrants all households to have access to basic services including water, safe sanitation and a sustainable and safe environment*

Ultimately, only the basic services grant and the municipal institution grant formulae were used to allocate funds to local government for the 1998/1999 financial year. This was termed the "windows" approach whereby the total pot of funds for each component were allocated via separate formula mechanisms. The other proposed components were not used due to certain complexities in their measurement, as well as due to further developments in the LG fiscal framework that remedied possible externalities among and within local government.

The two components[125] above were present from the inception of the previous formula in 1998 until its termination in 2004. The following is a brief illustration of the evolution of the LES formula till the inception of the current formula in 2005/06:

- Introduction of the LES formula in 1998
- Funding for former R293 towns to shift functions from provinces to municipalities in the former homeland areas (2000/01) included as an additional funding "window"
- Change in the poverty measure from income (households earning less than R800 per month) to imputed expenditure (Households spending less than R1 100 per month) (2001/02)
- Additional personnel subsidies to R293 towns (2001/02) as a separate funding "window"
- Re-alignment of functions to new municipalities including the funding of district municipalities (2002/03)
- Nodal Priority Programmes – additional funds were made available for specific programmes in specified nodal areas in 2002/03
- Free Basic Services – government implemented a policy for a portion of electricity, sanitation, refuse and water to be provided free of charge to poor households. Additional funding for these services was made available through the LES as part of separate funding "windows" in 2003/04
- The funding of district municipalities and the re-alignment of powers and functions between local and district municipalities in (2002 – 2004)
- Commencement of the review of the previous formula in 2004
- Update of fundamental data of the formula from 1996 census to 2001 census in 2004
- Introduction of the current LES formula in 2005/06 after a comprehensive review process

The Commission played a pivotal role in identifying several loopholes in the previous formula and furthermore the Commission's recommendations were even more pertinent in the development of the current formula. Some important recommendations in assisting in the development of the current formula include[126]:

- The need to link the components of the LES formula to the provisions in section 214 of the Constitution (2002/03)
- "Other services" of local goverment, in addition to the "basic services" currently funded, need to be funded through the LES (2002/03)
- The funding "windows" apparent in the previous formula are inefficient and need to be removed in the revised formula. This was due to complications in its implementation and the reduced objectivity on the part of practitioners of the formula in that the revenue pools for each formula were predetermined (2003/04)
- It is pivotal that the subsidies in the basic services grant be based on an accurate and updated costing framework (2004/05)
- A robust, unbiased and transparent measure of fiscal capacity that would improve the equalisation framework and redistribution in the formula (2004/05)

It will become apparent that government accepted and adopted several of the recommendations of the FFC in the developing the current formula, in particular points 1, 3 and 5. Other issues raised above by the FFC are still relevant as

[125] *Please refer to Reschovsky (2003) and the explanatory memoranda to the DOR bill from 2000 – 2004 for more details of the structure, mechanics and fundamentals of the previous formula*

[126] *Please make reference to the annual and technical reports published by the FFC for more details on these and other recommendations available at www.ffc.co.za*

potential shortcomings in the structure of the current formula including the funding of other municipal services and the lack of a coherent costing methodology that informs subsidies in the current LES formula.

4. ANALYSIS OF THE CURRENT FORMULA

The following discussion offers an analysis of the current formula (introduced in 2005) that is used to distribute the vertical share of nationally raised revenue to the local government sphere. Several other unconditional grants are allocated as part of the LES. These include the Regional Services Council (RSC) and Joint Services Board (JSB)[127] levies replacement grant to district municipalities and the special support for councillor's remuneration[128] funds. Although part of the total LES vertical division, these additional funding streams are independent of the LES formula and will thus not be discussed further on.

The current formula comprises five components:

$$LES = BS + I + D - RRC \pm C \quad (1)$$

Where:

BS	=	Basic Services Component
I	=	Institutional Component
D	=	Development Component
RRC	=	Revenue Raising Correction Component
C	=	Correction Component

Although the constitution does not prescribe a methodology for the horizontal division of revenue between the 283 municipalities, each component attempts to capture the basic provisions in section 214 (2) of the constitution:

1. Basic Service Component (BS) – section 214 (2) (d) – the need to ensure that the provinces and municipalities are able to provide basic services and perform the functions allocated to them;

2. Revenue Raising Correction Component (RRC) and Institutional Component (I) – section 214 (e) – the fiscal capacity and efficiency of the provinces and municipalities;

3. Development Component (D) – section 214 (f) – developmental and other needs of provinces, local government and municipalities; and

4. Correction Component (C) – section 214 (i) – the desirability of stable and predictable allocations of revenue shares.

The general structure of the formula as described above suggests that government has implicitly accepted the notion of the LES being an equalisation grant i.e. attempting to fill the fiscal gap that migth exist between fiscal capacity and expenditure responsibilities as the preferred method for the fair and equitable horizontal division of the LES. The sum of the BS and I component (and D) attempts to measure the expenditure needs of a municipality for provision of services while the RRC component measures fiscal capacity. The difference of which constitutes the fiscal gap that the LES intends to fund.

Another important feature of the LES formula is a technical feature called the stabilising or scaling constraint. Its purpose is to ensure that the given revenue pool for a single year (as part of the vertical division of revenue) is fully allocated among the 283 municipalities. This will be explained further on. Table 50 illustrates the size of each component relative to the different types of municipalities[129]:

A striking trend from the table overleaf is the size of the BS component relative to the I component. Over 92% of the funds are allocated through the BS component while the I component accounts for just under 8%. The D component is inactive and thus accounts for 0% of allocations. The breakdown is different for each type of municipality but in all cases the BS component is still the largest component. In metros, 97% of allocations are through the BS component while for district municipalities without any major powers

[127] *These levies were a former local government tax that was abolished from the 2006/07 financial year and replaced by a grant that was disbursed through the LES as an unconditional transfer largely due to the unconditional nature of the LES*

[128] *These are a special transfer to municipalities, graded on a scale to assist in the funding of their administrations*

[129] *It is important to note that the RRC component has already been subtracted from the BS and I components and have thus resulted in the shares above. The relative size of the share of the RRC component per municipality type is an indication of the magnitude as to which the BS and I components are corrected for*

Table 50: Relative Sizes of Each Component of the LES per Type of Municipality

50

Municipality Type	Number of Municipalities	Share of Municipalities	Basic Service Component	Institutional Component	Development Component	Revenue Raising Correction Component	Total
Metropolitan Municipalities	6	2%	97%	3%	0%	37%	100.00%
Secondary Cities	21	7%	95%	5%	0%	8%	100.00%
Larger Towns	29	10%	90%	10%	0%	7%	100.00%
Medium to Larger Towns	111	39%	88%	12%	0%	2%	100.00%
Rural Municipalities	70	25%	89%	11%	0%	0%	100.00%
Districts without power and functions	25	9%	62%	38%	0%	46%	100.00%
Districts with power and functions	21	7%	94%	6%	0%	2%	100.00%
Total	283	100.00%	92%	8%	0%	12%	100.00%

Source: FFC LES Simulation Model for 2009/10 Allocations

and functions, the BS accounts for 62%, driven largely by services delivery requirements in District Management Areas (DMAs)[130] and allocations to fund municipal environmental health. This is due to the former having the highest number of people and households within their jurisdictions requiring basic services, while most of the latter's allocations through the BS component largely goes to their local municipalities due to the asymmetric system of service delivery. Smaller and rural municipalities have relatively larger shares of the I component as this component is seen as the avenue in the formula to assist such municipalities[131]. In the 2008 DOR bill, government stated that "numerous options were explored including substantial increases in the base allocation of the institutional component of the formula" in order to better fund poorly capacitated municipalities. As it will be shown, the current LES formula does not appear to be a mechanism for targeting specific types of municipalities, as attempted above. Furthermore, the current structure of the formula does not allow for the base specifically of the I component to be increased in isolation. Another striking trend is the large size of the RRC component for district municipalities without powers and functions, more than that of metros.

The current formula allocates for three years in accordance with the Medium Term Expenditure Framework (MTEF)[132], the first being the actual allocation to municipalities that is gazetted in the DOR Act for that year and the outer two year amounts are indicative allocations. Currently, the fundamental data used in the LES formula is based on 2001 Census results for both access to service levels, poverty, total households and total population. The fact that there has not been an update in the data for almost 9 years raises the concerns that population and poverty dynamics are not being effectively captured in allocations through the current LES formula.

The current model and the version for discussion apply to the 2009 MTEF and in specific the 2009/10 financial year. The analysis of each component will touch on a brief description of the component, changes made to the parameters or fundamentals of the component, and concerns/issues with the mechanics of the component.

Basic services component

The BS component assists municipalities to provide basic services to poor households within their jurisdictions. It also corresponds to and serves to fund the free basic services (FBS) policy implemented by national government. The BS component is formula based and is depicted below:

$$BS = (WS*PW) + (SS*PS) + (RS*PR) + (ES*PE) + (AWS*PWW) + (ASS*PWS) + (ARS*PWR) + (AES*PWE) + (MHS*NH) \quad (2)$$

[130] *There are areas within district municipalities that receive their services directly from the district municipalities. These generally include game parks and related recreational and reservation areas. There is a policy to have them amalgamated to their adjacent local municipality from 2011*

[131] *Annexure W1 of the annual Division of Revenue Bill*

[132] *The three year budgeting cycle introduced by government in 1998 to improve budget coordination and planning for all spheres of government*

Table 51: Subsidy Levels per Service in the BS Component

Services	Subsidy Levels	
	Households with services	Households with out services
Water	30	10
Sanitation	30	10
Refuse	30	10
Electricity	40	15
Municipal Health Services	1.5	1.5
Basket of services	131.5	46.5
Source: 2008 DOR Bill		

Where:

WS = Water Subsidy
SS = Sanitation Subsidy
RS = Refuse Subsidy
ES = Electricity Subsidy
AWS = Subsidy for Alternative Water Supply
ASS = Subsidy for Alternative Sanitation
ARS = Subsidy for Alternative Refuse
AES = Subsidy for Alternative Electricity
MHS = Municipal Health Subsidy
PW = Poor households with Water Connection
PS = Poor households with Sanitation Connection
PR = Poor households with Refuse Connection
PE = Poor households with Electricity Connection
PWW = Poor households without Water Connection
PWS = Poor households without Sanitation Connection
PWR = Poor households without Refuse Connection
PWE = Poor households without Electricity Connection
NH = Number of Households

Table 51 illustrates the monthly subsidy amounts used by government for the service subsidies prior to the electricity price hikes in 2008. These subsidy amounts (adjusted for inflation as of 2004) are based on a study undertaken by the Department of Cooperative Governance and Traditions Affairs.[133]

Currently poor households that do not have access to the first four basic services are subsidised at a lower amount than that of households that are connected to such infrastructure. There are roughly 4 arguments for this: There is a higher operating cost associated with providing the full service to a household that has access to such infrastructure, it will serve as an initiative to municipalities that have a large number of unconnected households to roll out basic infrastructure to these households so as to benefit from increased allocations through the BS component of the LES, it was an attempt to link capital grants and programmes (such as the Municipal Infrastructure Grant (MIG)) to the operational allocations of the LES and it serves to subsidise alternative sources of services that are used by households that are not connected, like solar power and candles for electricity, boreholes for water and communal dumps for refuse. While most municipalities do not supply such alternatives, there is an operating cost associated with these alternatives for municipalities that do provide these alternatives.

Although this was the initial intension of the differentiated subsidy levels, the lack of frequent updates to the underlying data in the model fails to incorporate newly connected households via the MIG grant and thus municipalities that have made substantial efforts to eradicate the service backlogs are not being funded via the LES formula for the increased operating costs. This issue will be touched on further in section 6.

Formula 2 firstly calculates the BS using the above formula per metro, local municipality and DMA. Thereafter, depending on whether the district or local municipality is authorised for the specific service, the allocation is retained by a local municipality (if it is authorised) or transferred to its relative district municipality. All the allocations for DMAs accrue to the district municipality as these areas receive its services directly from the district municipality. Municipal health services are exclusively the functions of metros and district municipalities and electricity is exclusively that of metros and local municipalities. The funds for these services are allocated to these municipalities respectively.

[133] *DPLG, 1998, Explanatory Memorandum to the 2008 DOR bill*

Table 52: Relative Sizes of Each Component of the BS Component per Type of Municipality

52

Municipality Type	Number of Municipalities	Share of Municipalities	Water Subsidy	Sanitation Subsidy	Refuse Subsidy	Electricity Subsidy	Municipal Health	Basic Services Component
Metropolitan Municipalities	6	2.12%	22.56%	20.95%	22.50%	30.08%	3.91%	100.00%
Secondary Cities	21	7.42%	24.68%	20.67%	19.60%	35.04%	0.00%	100.00%
Larger Towns	29	10.25%	17.64%	14.81%	24.52%	43.04%	0.00%	100.00%
Medium to Larger Towns	111	39.22%	19.72%	16.15%	22.78%	41.35%	0.00%	100.00%
Rural Municipalities	70	24.73%	7.55%	4.16%	24.10%	64.19%	0.00%	100.00%
Districts without power and functions	25	8.83%	5.08%	3.48%	5.53%	5.62%	80.30%	100.00%
Districts with power and functions	21	7.42%	52.01%	39.71%	0.12%	0.03%	8.13%	100.00%
Total	283	100.00%	23.71%	19.36%	18.91%	35.00%	3.02%	100.00%

Source FFC LES Simulation Model for 2009/10 Allocations

In relation to all service related grants, government needs to stipulate a minimum level of service that needs to be funded (Slack, 2007). As previously stated, national government has linked the BS allocations through the LES to their policies of FBS[134]. Currently, government policy is for all poor households to receive 6kl of water per month free in reference to the Free Basic Water (FBW) policy and 50kw of electricity free per month in accordance with the Free Basic Electricity (FBE) policies. The service costs used in the formula and outlined above are an estimation of the cost of these FBS. However, as it shall be explained, the stabilising/scaling constraint of the formula results in uncertainty over actual costing subsidies used in the formula. Table 51 gives an illustration of the sizes of the different components of the BS component and its impact on allocations per type of municipality.

Given the higher subsidy amount, the largest component of the BS component is electricity. However, it differs per municipality type. The water and sanitation component is usually lower for rural municipalities as in most cases where the district municipality is authorised for the service. Likewise, district municipalities without major powers and functions receive most of their BS allocations through the municipal health component.

Modifications to the BS component

From the 2006/07 financial year, the function of municipal environmental health was funded through the LES. This was set at R1 per household and was adjusted to R1.50 in 2008/09 financial year.

In 2008, the subsidy of electricity was increased from R40 to R45 per household with access to electricity and from R15 to R16 for households without electricity due to the large increases in the electricity bulk price. The total basket of subsidies increased to R136.5 for serviced households and R47.5 for un-serviced households[135].

Concerns with the BS component

The basis for any subsidisation of services requires a proper costing of such services. The subsidy levels used in the formula currently have not been updated since 2004. As it will be seen further on in the paper, the fact that the stabilising feature of the formula scales up these subsidy levels results in higher subsidies than initially used in the formula. This suggests that the cost estimates in the LES formula is a far reflection of actual costs to provide services faced by municipalities.

General literature also confirms that regardless of the type of service, other factors such as topography, population size, population density and other geological characteristics influence the cost of services (Reschovsky, 2003). In addition, costs per specific service increase annually at different rates as they face different input pressures and not by a uniform measure of inflation. Therefore, it is not possible to use a uniform cost for all municipalities as is currently the practise in the LES formula. A proper costing study is

[134] *Please make reference to national government websites for more information FBS. This includes the Department of Cooperative Governance and Traditional Affairs, Energy and Water Affairs*

[135] *Please note the discussion under the scaling component*

Table 53: Relative Sizes of Each Component of the I Component per Type of Municipality

Municipality Type	Number of Municipalities	Share of Municipalities	Base Component	Population Escalation Component	Councillor Component	Total Component
Metropolitan Municipalities	6	2.12%	3.83%	26.35%	69.82%	100.00%
Secondary Cities	21	7.42%	11.58%	11.82%	76.60%	100.00%
Larger Towns	29	10.25%	20.55%	7.94%	71.51%	100.00%
Medium to Larger Towns	111	39.22%	36.41%	5.87%	57.72%	100.00%
Rural Municipalities	70	24.73%	18.59%	9.56%	71.85%	100.00%
Districts without power and functions	25	8.83%	18.54%	26.09%	55.36%	100.00%
Districts with power and functions	21	7.42%	14.03%	32.31%	53.66%	100.00%
Total	283	100.00%	20.12%	14.02%	65.86%	100.00%

Source FFC LES Simulation Model for 2009/10 Allocations

therefore required to fund a municipality's service costs as accurately as possible but retaining the relative simplicity of the LES formula.

The definition of "poor" used in the formula is a household earning less than R800 a month based on the 2001 census. This measurement was used in the previous formula, until 2001, and also in other formulae including the MIG. This measurement of poverty at income at R800 is inefficient in several ways and is currently a matter for debate.

It is also important to note the definition of a basic service. At present, there are 5 services in the model that are funded and are thus considered basic services related to the provisions in the Bill of Rights and given their importance to human survival and to sustain appropriate living standards. However, local government is assigned several other functions that have an impact on their budgets but are not funded through the LES including, amongst others, roads, storm water, local tourism, fire fighting services, public transport and street lighting. It is important to note that there are operating costs and additional expenditure pressures on municipal budgets associated with these other services, as most of these services are not revenue generating but are still important in the economic and social benefit of the community. The LES formula should take into consideration funding for these other expenditure items to ensure that municipalities are appropriately positioned to provide basic services and services in general for the betterment and greater well being of society. However, it shall become apparent in the analysis that when introducing a new service or funding priority in the formula for the horizontal division of the LES, it is important that the vertical division also be increased to reflect the added funding needs of municipalities. If not, then the added service will merely result in a shift of funds from one municipality to another.

Institutional component

Similar to the concept of the previous LES formula, the I component is intended to fund a municipality's basic administration and ensure the institutional capacity to deliver services to their communities. The I component is derived using the following allocation formula:

$$I = BC + PE + CA \quad (3)$$

Where: BC = Base Component

PE = Population Escalation Component

CA = Councillor's Allowance

The BC component is a flat amount that is allocated to all municipalities[136] (excluding DMAs) and is currently set at R360 000 per municipality. The PE component allocates R1 per a person in the municipality while the CA component allocates R36 000 per council seat[137] within the municipality. All of these parameters are adjustable but no update or changes have been done to the I component to date. Table 53 shows the percentage contribution of each parameter of the I component[138]:

[136] *Allocations through this component for district municipalities will include the total population of all the local municipalities within the district*

[137] *As determined by the national Minister of Local Government i.e. Cooperative Governance and Traditional Affairs*

[138] *Once again, please note that this analysis is of the total funds allocated through the I component, scaled up to ensure total use of revenue pool and corrected for the fiscal capacity of municipalities*

Table 54: Calculation of the Un-Scaled Allocations of the LES Formula

Basic Services Component				54
	Poor households with services	Subsidy	Per Year	Total
Water	3 322 295	30	12	1 196 026 097
Sanitation	2 260 814	30	12	813 893 034
Refuse	2 176 923	30	12	783 692 108
Electricity	3 079 340	45	12	1 662 843 652
Health	11 782 635	1.5	12	212 087 422
	Poor households with services	Subsidy	Per Year	Total
Water	2 213 488	10	12	265 618 596
Sanitation	3 274 969	10	12	392 996 284
Refuse	3 358 860	10	12	403 063 259
Electricity	2 456 443	16	12	471 637 041
Institutional Component				
	Indicators	Subsidy	Per Year	Total
Base Component	283	350000	1	99 050 000
Population Escalation	74 883 094	1	1	74 883 094
Councillors Remuneration	9 267	36000	1	333 612 0000
Total				6 709 402 587

Note: the population used is not the total population of South Africa as it double counts people in locals and district municipalities
Source: Own Calculations from the LES Simulation Model

The largest share of the I component comprises of the CA component, approximately 66% on average. This component is intended to fund the political structures that exist at the local government level. The relative sizes of the components differs for the different types of municipalities, with the base component being the most dominant for medium to larger towns while the population escalation being significant in district municipalities and metros due to their larger population sizes. It is assumed that the administrative burden increases with population size, which provides the rationale for the PE component. However, the I component in general assumes high economies of scales in local government administration, with average administration costs decreasing with larger populations.

Concerns with the I component

Similar to the argument raised under the discussion of the BS component, the subsidy levels that inform the parameters of the I component are not informed by an accurate costing or estimation of the administrative and governance expenses of municipalities and local government in general. The base allocation, for example, is just a rudimentary figure with no real empirical or theoretical basis. In essence, the administrative costs are likely to be different in each and every municipality depending on size of population, ability to attract skills, the size and quality of labour in the area and other dynamics of the labour market. It is important to note that all municipalities are equally in the market and have to compete for the same pool of skilled, semi-skilled and unskilled labour. It is likely that a rural municipality is likely to pay more to attract skilled labour in particular given the relative lower standards of living and the various barriers to access markets in rural areas. The R1 per person in the population escalation allocation assumes higher absolute costs with population but higher economies of scale in administrative costs with larger populations. This assumption is theoretically valid but is the current subsidy reflective or even an approximate estimation of true costs?

It is important to notice an inverse trend in allocations between the two components, i.e. the BS and I, and even parameter components within the BS and I components. In cases where a municipality, metros for example, receives the majority of their funds from the BS component, due to their larger number of poor households and service access, they receive relatively less from the I component. This trend is important - it will be shown under the simulations section, that it is very difficult to target a specific group of munici-

Table 55: Actual Subsidy Levels in the LES Formula

Basic Services Component			
With Services	Subsidy	Total Pot/Total SDI	Total
Water	30	3.398896351	101.97
Sanitation	30	3.398896351	101.97
Refuse	30	3.398896351	101.97
Electricity	45	3.398896351	152.95
Health	1.5	3.398896351	5.10
Total Subsidy	136.5	3.398896351	463.95
Without Services	Subsidy	Total Pot/Total SDI	Total
Water	10	3.398896351	33.99
Sanitation	10	3.398896351	33.99
Refuse	10	3.398896351	33.99
Electricity	16	3.398896351	54.38
Total Subsidy	46	3.398896351	156.35
Institutional Component			
	Subsidy	Total Pot/Total SDI	Total
Base Component	350000	3.398896351	1 189 613.72
Population Escalation	1	3.398896351	3.40
Councilors Remuneration	36000	3.398896351	122 360.27
Total			1 313 218.00
Source: FFC LES Simulation Model and own Calculations			

palities (for example the categorisation used above) without having at least one municipality worse off within the group. This is due largely to the authorisation of powers and functions and the different dependence levels for each component which forms a trade-off principle in that if one increases a parameter in the I component, the model will take funds from the BS component to fund the increases in the I component. In this case, municipalities that are more dependent on the BS component would lose funds from such a change. This is one of the technical constraints of the formula that make it difficult for practitioners of the model to achieve policy changes and goals, or to target groups of municipalities for specific spending needs. Given that government has adopted an equalisation formula as the most efficient method of distributing the LES, a more fundamental issue becomes whether or not the LES should actually be used as a tool to target specific municipalities for special funding.

Development component

The D component was introduced into the formula largely to correspond with the provision in 214 (2) (d) of the Constitution. The D component is currently inactive as government and stakeholders cannot agree on how or what should be measured and subsequently funded through this component.

Stabilising/Scaling Correction

The scaling component is a technical feature of the formula ensuring that the entire revenue pool for a given financial year for local government is completely allocated. In actual terms, the LES formula distributes a total of R 6.7 billion based on the current costing and subsidy parameters of the formula, as indicated for the BS and I components above. This is called the unscaled allocation and is depicted in table 54.

As can be seen, using the current costing parameters and demographics, the model actually allocates R6.7 billion in total. This is called the total services, development and institutional (SDI) support in the model[139]. However, each year the pool of funds are increased and greatly exceed the SDI amount above. The scaling component therefore firstly works out the un-scaled SDI amounts for the BS and I (and D) components and then scales the allocation upwards to match the total pot available by multiplying each municipality's SDI amount by the ratio of the total budget and total SDI.

[139] *2009/10 LES model, National Treasury*

For example, based on the demographic data, City of Cape Town's total SDI is R283 203 104 i.e. this is the actual amount that is derived for the City of Cape Town using the initial basic services costs and I component parameters. The total pot of funds for the 2009/10 financial year is R20 282 738 000. This amount divided by the total SDI above is 3.3988[140], creating a ratio. The City of Cape Town's SDI is then multiplied by this ratio to obtain its scaled allocation of R962 577 977. The RRC component is then subtracted from this amount. In Cape Town's case it would be the scaled amount above subtracted by the predicted own revenue potential of Cape Town (R351 962 025 for 2009/10) to obtain a total allocation of R610 615 971 for the 2009/10 financial year.

It is clear from above paragraphs that this technical feature, although it can be confusing and less transparent, is necessary in that it ensures the entire pool of funds are distributed. However, the concern is that the service costs and parameters used in the model are not the actual subsidy level that fundamentally accrues to a municipality[141]. In order to obtain the actual service subsidy and size of the I component parameters that accrues to municipalities, one can simply multiply the initial service costs by the total pot of funds to SDI ratio (3.3988 for 2009) as described above.

According to table 55, the actual subsidy that accrues to a municipality for services supplied to households connected to the related infrastructure is R463.95 vis-à-vis the R136.50 (from 2009) that is widely publicised.

It is clear that there is really no basis for the allocations through the LES currently. Practitioners of the formula do not have control and do not know the actual subsidy levels used and thus cannot efficiently implement a policy that would ensure a proper funding of a service. The nature of the feature and the subsequent allocations derived from the LES formula are more reflective of a horizontal revenue sharing methodology (where each municipality derives a share of the allocations based on a calculated percentage) as opposed to the expenditure equalisation framework claimed by government. This analysis alone can confirm that no-one really knows if municipalities are accurately funded through the current LES at the horizontal or the vertical division of revenue.

In addition, by applying the scaling feature to the BS and I (and D) components uniformly, it makes the implicit assumption that costs and subsidies for services are inflated by the same amount. This is clearly not appropriate given that costs for each service in the model are driven by different and unique factors. For example, the price of electricity has increased at a much higher rate than other municipal services. By keeping all initial subsidy levels unchanged (i.e. before the scaling feature is applied) as was the case from 2005/06 – 2008/09, all costs were inflated by the same amount. In order for the costs to increase at different rates, the initial subsidy for a service, for example electricity, need to be adjusted upwards relative to other service costs prior to the scaling feature so as to initiate a higher price increase for this service. This not only shows the lack of a thorough understanding and reflection of the costs faced by municipalities but also the difficulties in technically factoring a change in cost and subsidy levels[142].

Revenue raising correction component

The RRC component serves as a mechanism to account for a municipality's ability to generate its own revenues in the allocation of funds via the LES formula. Once a municipality's allocation through the BS and I components is calculated (rescaled)[143], the RRC mechanism would subtract funds from the allocation to obtain a final allocation (and fiscal gap measure).

The RRC component is calculated using two sources of municipal own revenues, namely property rates and Regional Services Council (RSC) and Joint Services Board (JSB) levies. With the abolishment of the RSC and JSB levies in 2005/06 and the subsequent introduction of its replacements, the RSC levy component of the RRC component now comprises of the RSC and JSB levy replacement grant for district municipalities and the sharing of the general fuel levy for metropolitan municipalities (local municipalities does not have access to this source of revenue).

Both the property rates and the RSC levy grant/fuel levy components are calculated outside the formula. The property rates component was initially predicted using statistical modelling but is now based on the three year average of the actual property rates collected and adjusted for inflation to obtain the current financial year (or MTEF period) amounts[144].

[140] *It is important to note that this ratio changes annually based on the total LES pot size*

[141] *Government confirms this in response to a FFC recommendation to increase subsidy levels in the LES as part of the 2007/08 DOR process.*

[142] *I would like to thank Andy Reschovsky for pointing this out*

[143] *Please see discussion on scaling component above*

The RSC levy replacement grant and the fuel levy are actual transfers to district municipalities and metros, respectively, and is therefore an accurate depiction of their revenue.

A proportion of the amount calculated for the RRC component is subtracted from the initial allocations of the BS and I components. The proportion is dependent on a taxing mechanism, initially set at 5%, in the LES formula that is applied to the RRC component.

As an example, the City of Cape Town's initial allocation through the BS and I components is R962 577 977 (rescaled amount i.e. the entire envelope for the LES for the year has been distributed across all municipalities). Cape Town's predicted property rates constitutes an amount of R2 458 476 861. The model will apply a "tax" on the latter amount (at 9.5% for example) and then subtract this from the former amount. In other words Cape Town's final allocation will be R962 577 977 – (R2 458 476 861 * 9.5%) = R688 376 598 . A similar operation is done for municipalities that have the RSC levy grant (currently a 6% tax rate) or the fuel levy, which would bring Cape Town's final allocation to R610 615 971 since it has access to funds from the fuel levy.

Changes to the RRC component

Government revised the methodology used to predict property rates in 2009. The average audited actual property rates collected over a three year period (from 2004/05 to 2006/07) for each municipality was adjusted by the Consumer Price Index (CPI) to obtain predicted property rates revenue for the 2009 MTEF. This, according to government, provided a more accurate depiction of municipal property rates[145], "in the absence of proper information on valuation rolls" [146], as opposed to the statistically predicted property rates.

Previously the tax applied in the model was a uniform 5% on the predicted property rate and RSC levy replacement grant/fuel levy for all municipalities. However, from 2009, the National Treasury introduced a differentiated tax system to reform the tax mechanism in the formula. In other words, municipalities were taxed differently depending on their own operating revenue per capita. Similar to the revised calculation of the property rates, three year averages of audited actual operating revenues were adjusted by CPI to obtain estimated operating revenues for the 2009 MTEF. This is illustrated overleaf in table 56.

A municipality with an operating own revenue per capita amount that falls within rating 1 for example (0 – R500) would be taxed 1.5% in their property rates on the RRC component. A metro or district would be taxed a uniform 6% from their RSC levy replacement grant/fuel levy. A concern with the application of this "stepped" tax system is that if a municipality's own revenue per capita is R500 and another is R501, two different tax rates would apply as they would fall in different tax bands. In other words, the difference between two tax bands is a single percentage point and can make a significant difference in the final allocation of a given municipality. In order to ensure municipalities are fairly treated, the tax bands need to be applied in a smooth gradient. In other words, all municipalities will have a different tax dependent on their actual operating expenditure per capita and not a single value within a band. Furthermore, using actual operating revenues collected reiterates similar inefficiencies associated with the calculation of predicted property rates, as discussed below.

Concerns with the RRC component

The current structure of the formula, which applies the scaling component before subtracting the RRC component, can create inefficiencies if the annual growth in the RRC component is not reflective of the growth in the total expenditure (i.e. the total LES revenue pool of the BS and I component scaled up). This would make the implicit assumption that expenditure responsibilities are increasing at a faster rate than the fiscal capacity of municipalities[147]. This may be the case at the vertical division of revenue, thus suggesting a larger vertical share of revenue to local government[148], but it is unlikely and can have dire consequences at the horizontal division of revenue as it would result in the progressive (annual)

[144] *The calculation of the property rates component of the RRC component, firstly by statistical prediction and now inflation adjustments, is seen as a temporary method until more accurate estimates of property rate revenues can be calculated when property valuation rolls are available for all municipalities as a requirement in the implementation of the Municipal Property Rates Act (06 of 2004)*

[145] *The possible contradiction to section 227(2) of the Constitution with using actual property rates in the calculation of the RRC component was pointed out by the FFC in its response to the 2010 DOR bill*

[146] *2009 DOR Bill*

[147] *Once again, appreciation to Andy Reschovsky for developing this argument*

[148] *Please note that this is not a quantified but rather a normative statement*

Table 56: Differentiated Tax Methodology Applied in RRC Calculation

Average Operating Revenue per Capita		Rating	Tax Rates		56
			Property Rates	RSC/JSB Levies	
0	500	1	1.50%	A	6%
501	1000	2	2.50%	C	6%
1001	1500	3	3.50%		
1501	1750	4	5.50%		
1751	2000	5	6.50%		
2001	2225	6	7.50%		
2226	2500	7	8.50%		
2501	5000	8	9.50%		
Source: 2009 DOR Bill, Annexure W1					

reduction of the size and importance of the RRC component of the formula. As the RRC component plays a redistributive role in the LES formula, this will result in the share of funds increasing annually for larger municipalities given their higher expenditure (BS and I components) estimation in the formula at the expense of more poorly resourced municipalities. The dynamic analysis under section 5.1 confirms this theoretical argument.

As the predicted property rates are now calculated using actual property rates collected, this can create an incentive for municipalities to under-report, especially larger municipalities. Furthermore, some municipalities do not have the capacity to correctly report, meaning that the figures used are not accurate. This method is a disadvantage to municipalities that perform good reporting and accounting. The new methodology also does not account for poor collection rates, as the less you collect the more funds you would receive through the LES, creating a disincentive to maximise own revenues and rewarding poor fiscal performance by municipalities. Another concern is that the current method used to calculate the property rates factor of the RRC component contradicts section 227(2) of the Constitution.

Furthermore, it is impossible to assume that all municipalities' property rate incomes increase by the same amount i.e. inflation. There are several other factors that influence annual adjustments to property rates, including the unique expenditure responsibilities of each municipality. Such an assumption is further compounded by the fact that section 20 of the Municipal Property Rates Act, which regulates annual increases to property rates, remains inactive.

Given the nature of the general fuel levy as a revenue sharing mechanism and the fact that the district municipalities continue to receive a grant for RSC levies, the continued use of these revenue sources as "own revenue" within the model needs to be reviewed especially given the fact that other major own revenue sources, such as surcharges and other taxes, are not used in the model. It does not seem appropriate to penalise a municipality on a revenue source that they cannot directly control or on a grant that is administered nationally.

Correction component

The correction component was developed to assist municipalities in the budgeting as part of the three year budgeting cycle of government. The LES allocations are designed to ensure stable and predictable allocations to correspond with Section 214 (2) (i) of the Constitution. In this sense the allocations from the LES are guaranteed at 100% in the first year, 90% in the second year and not guaranteed in the third year as part of the three year MTEF published for the given year in the DOR Act.

For example, in calculating allocations for the 2009/10 MTEF, the model will use the indicative allocation for 2009/10 from the published 2008 MTEF in the DOR Act. The model will ensure that a municipality does not get less than 90% of this previously published amount. Municipalities that receive amounts less than 90% of their published amount will be "topped up" by subtracting from other municipalities that have been allocated more than their previously published amount.

The principle of fairness comes into play against stability of allocations. One can argue that it is unfair for municipalities to lose funds given that the model allocated these funds based on their expenditure needs, accounted for their fiscal capacity, for the year (this, too, is refuted as the operation

of the scaling component suggests that no accurate expenditure equalisation framework is applied in the LES formula). Furthermore, is 90% a too stringent amount to be applied as a guarantee on the allocations? In other words, will a lower guarantee not ensure stability in allocations?

5. AN ANALYSIS OF ALLOCATIONS OF THE LES

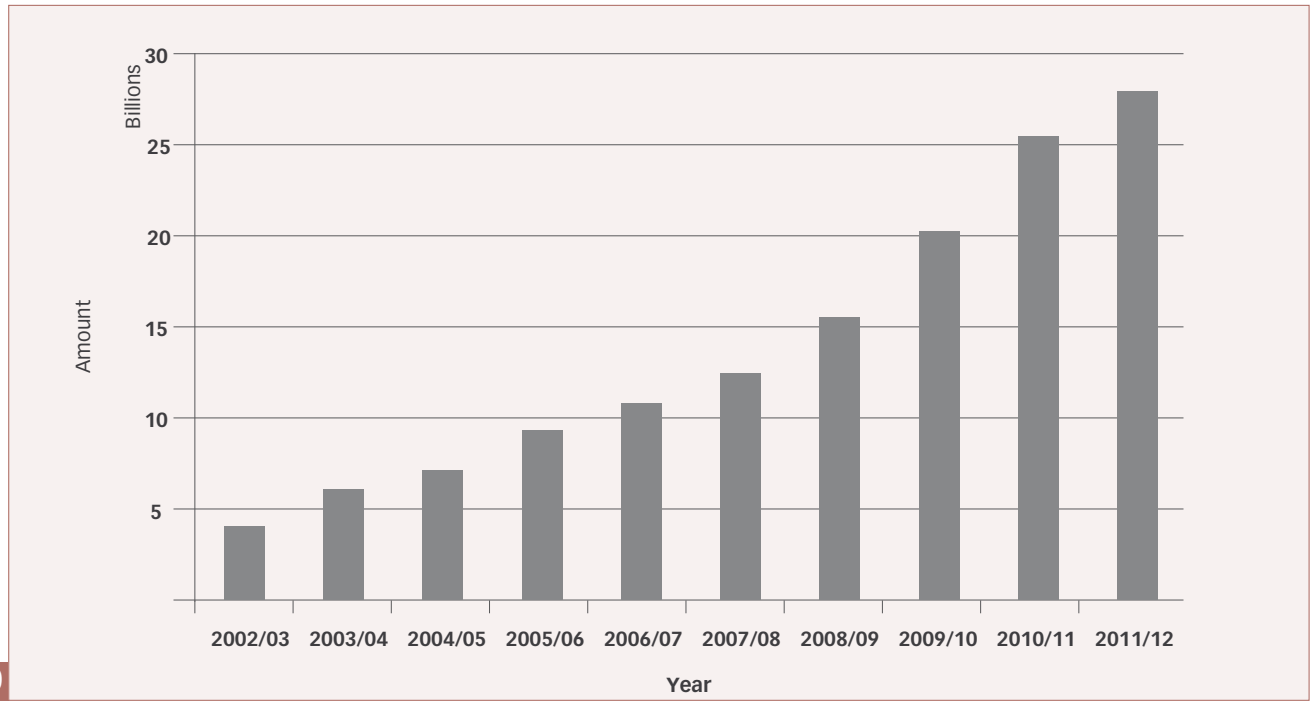
In recent years, the role that local government plays in the provision of basic services has come into the limelight given the numerous service delivery failures and subsequent protests in several parts of the country[149]. In addition, the significance of the services provided in the betterment of human life and the sustained roll-out of such service in economic development has led to national government pumping more funds year on year to assist the local government cause.

The analysis of the formula undertaken above suggests that although a framework for an equalisation grant has been adopted by government for the LES, i.e. measurement of a municipality's expenditure requirements subtracted by their fiscal capacity, the current costing and subsidies that inform the expenditure responsibilities, the technical structure of calculating allocations via the scaling component and the calculation of the RRC component are not true/real reflections of underlying expenditure and revenue potential. Therefore, it is uncertain whether current allocations through the LES formula is funding any fiscal gaps and it is thus difficult for now to accurately assess under or over funding of municipalities.

In this section, the allocations through the LES formula will be analysed. This includes a dynamic (10 year trend) and a static (single year – 2009/10) analysis of allocations to the different types of municipalities.

5.1. General Trend Analysis of Allocations[150]

Figure 30 shows the nominal growth in the LES from 2002 to 2012 (indicative), it is important to note that this trend analysis covers 3 years of the LES being distributed via the previous formula (2002/03 – 2004/05) and 7 years via the current formula (2005/06 – 2011/12).



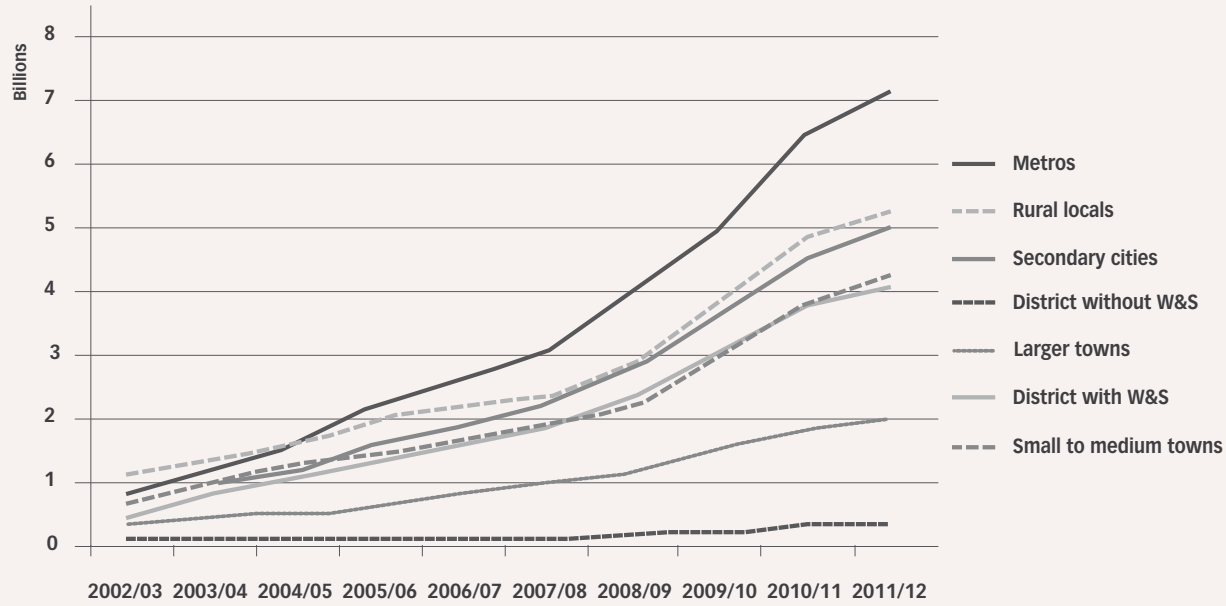
Source: Division of Revenue Acts 2002 – 2009

Note: These allocations are formula allocated funds only

Figure 30: Nominal Growth in Total LES 2002/03 – 2011/12

[149] *Various newspaper reports*

[150] *It is important to note that the allocations for the 2010/11 and 2011/12 financial years are indicative amounts published as part of the 2009 MTEF*



31

Source: FFC LES Simulation Model

Figure 31: Nominal Growths in LES Allocations per Type of Municipality 2002/03 – 2011/12

The (total revenue pool that constitutes the) LES has increased substantially over the last 10 years in nominal terms. From around R4 billion in 2002/03, the LES has increased to over R25 billion in 2011/12 (indicative). This is an average increase of over 30% year on year in nominal terms, although this has slowed considerable due to the recent economic crisis. However, the significance of local government's role in service delivery is being recognised by national government.

Figure 31 shows the growth in allocations per type of municipality. Generally, growth in total nominal LES allocations has been relatively buoyant for the various types of municipalities. The majority of the funds accrue to metros and larger urban municipalities given their higher populations and number of poor households that would theoretically contribute to larger expenditure responsibilities.

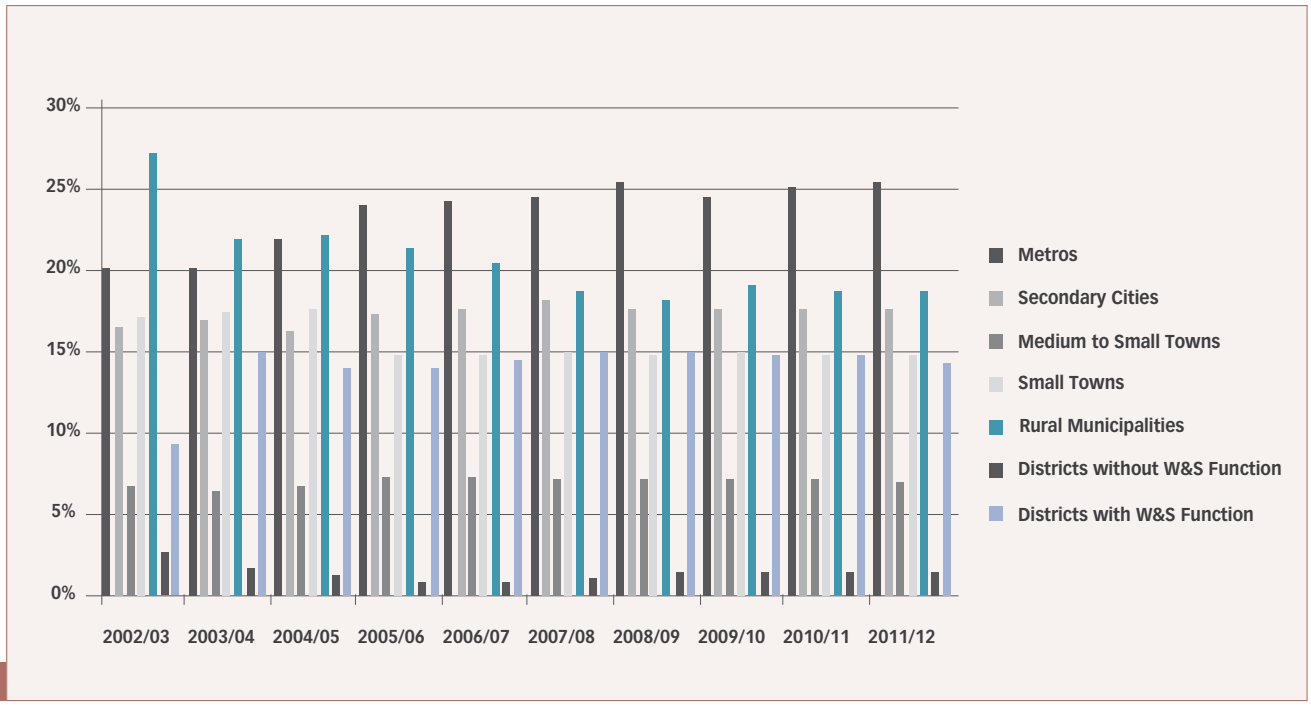
Although it is clear from figure 31 that allocations to the different types of municipalities are increasing in absolute terms, it will be interesting to see the relative shifts in allocation shares annually among the different types of municipalities. This sort of analysis will give us an opportunity to analyse the distribution trends to the respective municipalities and redistributive capacity of the formula. Figure 32 shows the changes in relative shares to the different types of municipalities from 2002/03 to 2011/12.

Analysis of allocations distribution with previous formula 2002/03 – 2004/05

Since the introduction of the current formula in 2005/06, metros and urban municipalities in general have progressively received higher shares of the allocations relative to rural and smaller municipalities i.e. allocations to metros and other urban municipalities are increasing at a higher rate than rural municipalities and other smaller municipalities. This is in direct contrast to relative shares in allocations prior to 2005/06 i.e. under the previous formula. From the 2002/03 financial year to the 2004/05 financial year, rural municipalities received a larger share of the LES allocations. This share has progressively decreased over the period. The large shares of the LES allocations to rural municipalities under the previous formula can be the result of several factors:

- The two-tier system of government in these regions was still in development and the subsequent allocations reflect this. This point is supported if one looks at the subsequent increases in LES shares for district municipalities with major service powers and functions together with the declining shares to rural municipalities.

- Under the previous formula, metros and larger urban municipalities did not receive allocations through the I component as the fiscal capacity correction in the formula resulted in these municipalities not "qualifying" for the grant.



32

Source: FFC LES Simulation Model

Figure 32: Changes in Relative Shares of LES Allocations per Type of Municipality 2002/03 – 2011/12

- As most of these rural municipalities are in former homelands, additional allocations via the LES made to these areas to assist in developing efficient local institutions is reflected in the trends above. These allocations include specific allocation to nodal areas and former R293 towns.

It is likely that all of these reasons played a role in the trend of allocations prior to 2005/06. Another important factor is the change in the underpinning data that underpinned the formula in 2004, which saw the replacement of census 1996 data with census 2001 data. Looking at the shifts from 2003/04 to 2004/05, when the data change became effective, there appears to be a larger increase in relative shares to urban municipalities, suggesting possibly effects of urbanisation captured in the new data[151].

Taking the above points into consideration, it appears that funding under the previous formula seemed to have focused on the institutional development of rural areas i.e. former homeland municipalities in particular so as to ensure that proper capacity existed in these areas to deliver services. One can then assume that the introduction of the current formula worked on the premise that these rural former homeland municipalities had developed enough capacity and the funding paradigm thus shifted from focus on building institutions to appropriately funding services and FBS. Another argument could be that the I grant of the previous formula better targeted rural/poorer municipalities or that the current formula better accounts for expenditure needs and fiscal capacity, hence a shift in relative funds to metros and urban municipalities in recognition of this.

The latter point would be very difficult to argue as there is general consensus that there are several municipalities in the country, mainly rural municipalities, that continue to face challenges in the provision of services to communities, institutional capacity problems and general poor performance[152]. From the analysis of the formula in section 4, it appears that the current expenditure equalisation framework adopted by the LES formula, firstly, may not accurately account for the varying expenditure responsibilities of the different types of municipalities in the country and, secondly, the RRC component may underestimate the fiscal capacity of municipalities. These normative judgments will be further explored.

Allocation analysis with current formula prior to RRC reform 2005/06 – 2008/09

From 2005/06 to 2008/09 the current formula has progressively distributed larger shares of LES funds to urban munici-

[151] *It is important to note that, in order to prevent shocks, the implementation of the new data was phased in by making changes to the guarantee mechanism in the formula*

[152] *Confirmed by the LGTAS, Department of Cooperative Governance and Traditional Affairs, 2009*

palities. Given the fact that metros and other urban municipalities face increasing operational costs associated with providing services to considerable amounts of people making their way to urban areas due to higher levels of economic activities, a higher standard of living and better prospects for employment, one can argue that these migration patterns can account for larger relative shares of the LES accruing to these municipalities. In other words, a dynamic equalisation framework would account for increasing expenditure pressures faced by these municipalities.

However, the shift in allocation shares to metros and urban municipalities is not been driven by changes in demographics (which would capture population dynamics and thus be justifiable) but by the mechanics of the RRC component and the stabilisation feature of the LES formula. As explained in the analysis of the LES formula in section 4, the stabilisation feature scales up the initial subsidy levels of the BS and I components of the formula to ensure that the entire revenue pool is fully allocated. In essence, by increasing the total LES revenue pool annually, the formula in turn increases the size of the stabilising factor. As the stabilising component is applied to the BS and I components and not the RRC component, the formula implicitly increases the subsidy levels and, inherently, the total "expenditure responsibilities" of municipalities. The trends above therefore confirm the hypothesis proposed in section 4 (under the explanation of the stabilisation factor) in that if the increase in total funds is not matched by an equal or accurate increase in fiscal capacity (the RRC component), the formula reduces the importance and impact of the RRC component and relatively allocates more funds to municipalities with higher populations. This in turn not only reduced the impact of the redistributive nature of the RRC component but also reduced the relative expenditure responsibility of smaller and rural municipalities.

Another feature that could have resulted in larger shares of allocations to metros during these years is the introduction of the funding of municipal health services in the LES. As this function is exclusive to that of metros and district municipalities, it would have resulted in higher shares accruing to these specific municipalities. This confirms that any additional service that is included in the formula will simply result in a shift of funds from one municipality to another at the horizontal division of revenue, if no additional funds are made available at the vertical division.

Allocation analysis with current formula after RRC reform 2009/10 – 2011/12

Due possibly to the trends in relative allocation shares from 2005/06 to 2008/09 described above resulted in the National Treasury reforming the mechanics of the RRC component with the introduction of the differentiated tax approach in 2009 to better account for the revenue raising constraints faced by rural municipalities. However, the reform has now resulted in these rural municipalities, with relatively little or no powers and functions, progressively receiving larger shares of the LES allocations relative to district municipalities that are authorized to service these areas. In an expenditure equalization framework, such as the LES, the trend of funding municipalities with little expenditure responsibilities progressively more does not make sense.

It is clear that the different expenditure responsibilities and revenue potentials of municipalities need to be accurately and effectively reflected in the fundamental measurements of expenditure responsibility and fiscal capacity frameworks in the formula to appropriately measure a fiscal funding gap. Currently, this is not accurately and efficiently accounted for in the current LES and it is therefore largely unknown as to what appropriate level of funding is required per different types of municipalities. Until this fundamental issue is resolved, it appears that the piece-meal changes implemented by government over the years have not been fully effective in addressing certain identified flaws of the formula.

5.2 General Static Analysis of Allocations

This section analyses the allocations to different types of municipalities through the current LES formula for a single year i.e. 2009/10. Table 57 shows the allocations across the different types of municipalities.

The majority of the LES allocations accrue to the 6 metropolitan municipalities, approximately 25%, at an average of R834 million per municipality. The remainder is split relatively evenly among the other groups of municipalities. Rural municipalities receive 19% of the total pot though (due to the higher number of municipalities within the category) receive on average around R55 million per municipality. Secondary cities and district municipalities with the water and sanitation authorisations receive high per municipality allocations - on average R171 million and R143 million, respectively.

In order to assess the static analysis above against basic equity and related intergovernmental transfer principles, one needs to determine the expenditure responsibilities of each type of municipality that is largely determined by its unique demographic profiles. At first glance, table 58 illustrates the

Table 57: Allocations per Type of Municipality 2009/10

Municipality Type	Number of Municipalities	Share of Municipalities	Total Allocations 200/10	Allocations per Municipality	Share Allocations
Metropolitan Municipalities	6	2.12%	5 007 229 498	834 538 250	24.69%
Secondary Cities	21	7.42%	3 598 880 136	171 375 245	17.74%
Larger Towns	29	10.25%	1 492 022 494	51 449 052	7.36%
Medium to Larger Towns	111	39.22%	3 002 782 164	27 232 272	14.90%
Rural Municipalities	70	24.73%	3 872 727 820	55 324 683	19.90%
Districts without powers and functions	25	8.83%	293 678 922	11 747 157	1.45%
Districts with power and functions	21	7.42%	2 995 416 968	142 638 903	14.77%
Total	283	100.00%	20 282 738 0000	71 670 452	100.00%

Source: FFC LES Simulation Model and Own Calculations

Table 58: Total Population and Allocations per Type of Municipality 2009/10

Municipality Type	Total Population 2007	Share of Population	Total Allocations 2009/10	Allocations per capita	Share of Allocations
Metropolitan Municipalities	16 974 424	35.05%	5 007 229 498	294.99	29.47%
Secondary Cities	8 233 208	17.00%	3 598 880 136	437.12	21.18%
Larger Towns	4 086 136	8.44%	1 492 022 494	365.14	8.78%
Medium to Larger Towns	6 158 282	12.72%	3 022 782 164	490.85	17.79%
Rural Municipalities	12 979 419	26.80%	3 872 727 820	298.37	22.79%
Total	48 431 469	100.00%	16 993 642 111	350.88	100.00%

Source: FFC LES Simulation Model and Own Calculations
Note: These amounts exclude allocations to district municipalities

total populations of each group of municipality and their respective allocations.

Areas with higher population numbers tend to receive larger absolute allocations through the LES. However, if one looks at the allocations per capita, municipalities with the smaller shares of the population tend to benefit. For example, secondary cities and medium to larger towns have 17% and 13% of the total population respectively, yet receive a higher share, 21% and 18%, of allocations. Metropolitan municipalities and rural municipalities, with shares of populations of 35% and 27% respectively, receive 29% and 23% of allocations. This trend is mirrored in the per capita allocations, with a person in a medium to larger town "receiving" approximately R491 and in a secondary city R437 per capita, significantly higher than metros (R295 per capita) and rural (R298 per capita) municipalities.

Before we delve deeper into the overall assessment of allocations in the LES, it is important to note that the analysis above is not optimal in a sense that it does not consider allocations to district municipalities, especially those that are authorised for the provision of water and sanitation. This is the fundamental reason why rural municipalities receive a smaller share of the LES grant relative to their share in the population. These district municipalities receive the basic services grant to roll out services on behalf of local municipalities (predominantly rural municipalities) to their respective communities. Therefore the benefit from the LES per individual or household in a non authorised local municipality is not fully captured in the analysis above.

In order to obtain the full benefit to an individual within a local municipality that is served for water and sanitation by a district municipality, it must be assumed that these allocations will accrue to the local municipality. The following analysis mirrors the one above but this time assuming that the basic services grants (including the municipal health

Table 59: Total Population and Allocations (BS to Local Municipalities) per Type of Municipality 2009/10

Municipality Type	Total Population 2007	Share of Population	Total Allocations 2009/10	Allocations per capita	Share of Allocations
Metropolitan Municipalities	16 974 424	35.05%	5 007 229 498	294.99	25.08%
Secondary Cities	8 233 208	17.00%	3 688 034 417	447.95	18.47%
Larger Towns	4 086 136	8.44%	1 861 660 747	455.6	9.33%
Medium to Larger Towns	6 158 282	12.72%	3 611 527 969	586.45	18.09%
Rural Municipalities	12 979 419	26.80%	5 794 453 284	446.43	29.03%
Total	48 431 469	100.00%	19 962 905 915	412.19	100.00%

These amounts assume that the BS component accures to local and metropolitan municipalities only
Source: FFC LES Simulation Model and Own Calculations

portion) accrues to local municipalities using the FFC simulation model[153]:

In Table 59, all of the different types of municipalities, apart from the metros, receive a larger share of allocations relative to their population shares.

Table 60 shows allocations to categories of municipalities differentiated by population size. The 19 municipalities that have population larger than 400 000 people are the only group that does not receive a share of the allocations that exceeds their population shares. Municipalities in these groups include all metros and most secondary cities. Therefore, although overall allocations increase in absolute terms with population, per capita allocations decrease with population. A further implicit assumption for this can be that the cost of serving a person in areas with larger populations is lower than areas with smaller populations i.e. increased economies of scale in service provision and general costs associated with higher population sizes.

The LES in general is also intended to service poor people with FBS through the BS component, which is the largest component of the formula. Table 61 illustrates allocations against the poor population[154] per category of municipality[155], again assuming that the basic services component is exclusive to category A and B municipalities.

In 2001, most of the country's poor population resided in rural municipalities, approximately 34%. However, these municipalities only receive a 29% share of the LES allocations[156]. The relative shares of LES allocations to all the other categories of municipalities exceed or are more or less on par with their poor population. Rural municipalities also have the lowest per poor household allocations, below the national average. It is important to point out that the larger the number and proportion a municipality has of poor households, the smaller its ability to generate revenues from these households given their ability, or lack thereof, to pay for services.

Table 62 shows allocations to municipalities differentiated into 6 groups based on number of poor households in 2001. In absolute terms, the 13 municipalities with the highest number of poor households receive the largest amount of funds. They also receive a larger share of the LES allocations relative to their share of poor households. However, in comparison to the group of municipalities with the least poor households, allocations per poor household are significantly lower for these municipalities.

The analysis above and the differences in allocations per poor household can be attributed to the differences in the subsidies allocated to households connected to services and those households that are receiving alternative services. Table 63 shows the different categories of municipalities and

[153] *From here on all allocations via the BS component will be assumed to local municipalities in order to obtain the true benefit to the individual within these areas*

[154] *Poor households, as defined in the LES, are households earning less than R800 per month*

[155] *Data on poor households are from the 2001 census and not the 2007 Community Survey due to approximately over 1.3 million households not responding to the income question, hence underestimating results*

[156] *It can be assumed that poverty has improved by a certain degree, however, a majority of poor should still reside in rural areas.*

Table 60: Total Population and Allocations (BS to Local Municipalities) per Population Category of Municipality 2009/10

Municipality Type	Number of Municipalities	Share of Municipalities	Total Population	Share of Population	Total Allocations	Allocations per Municipality	Share of Allocations	Allocations per Capita
Less that 25,000	29	12.24%	457 902	1%	336 935 319	11 618 459	1.69%	735.82
25,000 -49,999	42	17.72%	1 611 120	3%	1 062 328 359	25 293 532	5.32%	659.37
50,000-99,999	52	21.94%	3 824 582	8%	2 037 773 192	39 187 946	10.21%	532.81
100,000-199,999	55	23.21%	7 529 602	16%	3 409 447 848	61 989 961	17.08%	452.81
200,000-399,999	40	16.88%	10 880 617	22%	4 736 140 025	11 8403 501	23.72%	435.28
400,000 and more	19	8.02%	24 127 646	50%	8 380 281 172	441 067 430	41.98%	347.33
Total	237	100.00%	48 431 469	100%	19 962 905 915	84 231 671	100.00%	412.19

These amounts assume that the BS component accures to local and metropolitan municipalities only
Source: FFC LES Simulation Model

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Table 61: Total Poor Households and Allocations (BS to Local Municipalities) per Type of Municipality 2009/10

Municipality Type	Total Poor Households 2007	Share of Poor	Total Allocations 2009/10	Allocations per poor H/H	Share of Allocations
Metropolitan Municipalities	1 399 555	25.33%	5 007 229 498	3577.73	25.08%
Secondary Cities	897 574	16.24%	3 688 034 417	4108.89	18.47%
Larger Towns	469 205	8.49%	1 861 660 747	3967.69	9.33%
Medium to Larger Towns	862 080	15.60%	3 611 527 969	4189.32	18.09%
Rural Municipalities	1 897 859	34.34%	5 794 453 284	3053.15	29.03%
Total	5 526 274	100.00%	19 962 905 915	3612.36	100.00%

These amounts assume that the BS component accures to local and metropolitan municipalities only.
Source: FFC LES Simulation Model and Own Calculations

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poor households connected and not connected to services in 2001.

Most of poor households in rural municipalities are not connected to services; hence they would receive a smaller subsidy from the LES. This would explain the smaller per poor household allocations to these municipalities. Since the LES data has not been updated since 2001, improvement in extending services to unconnected households that has taken place since then is not factored into the formula. These municipalities continue to be funded a partial subsidy for these services even though they face a higher operating cost now that more households are connected to services.

It is important to note that although there are large numbers of poor household in metros and urban areas, these areas also have a considerably large numbers of non poor households. However, in most rural areas, the majority of households are poor i.e. these areas have a larger rate of poverty than metros and urban areas. Table 64 illustrates LES allocations per groups of municipality differentiated by percentage poor households (households earning less than R800 based on the 2001 census).

There are 44 municipalities in South Africa that have over 70% of their households that are poor. Most of these municipalities are in the rural areas of the country. Although these municipalities have 21% of the poor population, they receive 16% of the total share of allocations. The 40 municipalities that have less that 35% of their households that are poor receive a larger share (17%) of total funds than the municipalities with a relatively higher poverty rate. This is most likely due to the fact that the 40 municipalities with relatively lower poverty levels have a relatively high total population. It appears that although the LES allocations are correlated to population sizes and total poor population, it is less redistributive in targeting municipalities with high poverty rates. Again, this is possibly due to differences in service levels.

Allocations through the LES are not intended to fully fund municipal expenditure responsibilities but to complement own reveue to assist them in funding service provision and

Table 62: Total Poor Households and Allocations (BS to Local Municipalities) per Poor Household Category of Municipality 2009/10

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Municipality Type	Number of Municipalities	Share of Municipalities	Total Poor Households 2001	Share of Poor 2001	Total Allocations 2009/10	Allocations per Municipality	Share of Allocations	Allocations per Poor H/H
Less than 7500	82	34.60%	331 839	6%	1 566 589 765	19 104 753	7.85%	4720.94
7501 - 15000	49	20.68%	518 459	9%	2 035 390 400	41 538 580	10.20%	3925.85
15001 - 25000	45	18.99%	880 172	16%	2 991 516 445	6 647 8143	14.99%	3398.79
25001 - 40000	32	13.50%	1 004 234	18%	3 321 678 054	103 802 439	16.64%	3307.67
40001 - 70000	16	6.75%	802 993	15%	2 811 296 181	175 706 011	14.08%	3501.02
over 70000	13	5.49%	1 988 578	36%	7 236 435 069	556 648 851	36.25%	3639.00
Total	237	100.00%	5 526 274	100%	19 962 905 915	84 231 671	10.000%	3612.36

These amounts assume that the BS component accures to local and metropolitan municipalities only.

Source: FFC LES Simulation Model and Own Calculations

running their administration. However, municipalities have varying abilities to generate own revenues depending on their demographic and economic profiles. Table 65 depicts the varying own revenue potentials of the different categories of municipalities:

Metropolitan municipalities and other urban centres are more dependent on own revenues as a major income source. Own revenues here include income from property rates, tariffs and surcharges for services rendered and any other local tax instrument. This is due largely to the higher levels of business activity and richer households that can afford to pay for services. Rural and smaller municipalities on the other hand do not have such an extensive economic base and thus are more reliant on the LES for operating expenditure. Over 50% of a rural municipality's operating income is comprised of the LES on average.

Table 66 delves deeper into the issue of own revenue potential and LES transfers. It is now important to note that as we are analysing budgets of all types of municipalities against the relative LES allocations, we are forced to analyse LES transfers to all authorised municipalities for the delivery of a service. This is important as it related expenditure responsibility, own revenue potential and allocations for the LES intended to complement own revenues in delivering services. Metros have over 60% of the share in own revenues and 25% of the share in the LES. This is a massive 35 percentage points difference. Metros get the largest share of own revenues as well as the LES due to the larger populations in these areas. Apart from the metros and secondary cities, all other categories of municipalities receive a greater share of the LES in respect to their own revenue shares. A positive trend is that, on per household terms, rural municipalities have a larger LES per household compared to its own revenue per household. This would suggest that the model expects all other municipalities to top up allocations from the LES with own revenue while it attempts to fully assist rural municipalities.

Table 67 differentiates municipalities on income bands. In this table, the 16 municipalities with an own revenue potential that exceeds R1 billion receive the largest share of the LES grant due to the fact that they have most of the country's people. They have 46% of the population but receive 36% share of the LES allocations. This would indicate that the model is recognising the higher revenue capacity of these municipalities. With that said, the 38 municipalities with own revenues below R10 million receive a smaller share of LES allocations relative to their share of the population. One would expect this to be higher as the LES funds should compensate for these municipalities' low revenue base but it must be noted that these are mainly district municipalities with no major powers and functions, hence their smaller allocations. In order to get a clear picture of the formula's ability to account for low revenue bases, the middle income categories need to be analysed (R10 000 001 – 500 000 000). At first glance, these municipalities get a larger share of the LES allocations relative to their share of the population. However, per municipality allocations are low. Therefore it is important to analyse the impact of the LES allocations on municipal budgets, especially rural municipalities with low revenue bases.

The following analysis will look at the per capita allocations to each municipality type per the 3 major components of the LES, namely the BS, I and RRC components. Table 68 distin-

Table 63: Total Poor Households with and Without Access to Services

63

Municipality Type	poor hholds 2001	poor hholds with electricity	poor hholds without electricity	poor hholds with water	poor hholds without water	poor hholds with refuse	poor hholds without refuse	poor hholds with toilet	poor hholds without toilet
Metropolitan Municipalities	1 399 555	9181 16	481 439	1 132 732	2 66 823	1 128 218	271 337	1 000 771	398 784
Secondry Cities	8 97 574	593 375	304 199	663 497	234 078	436 821	460 753	4 84 515	413 059
Larger Towns	469 205	260 234	208 972	293 767	175 439	195 424	2 73 782	2 07 842	261 363
Medium to Larger Towns	862 080	478 034	384 046	590 371	2 71 709	3 32 583	5 29 498	3 92 735	469 345
Rural Municipalities	1 897 859	825 342	1 072 516	634 519	1 263 340	82 249	1 815 610	171 241	1 726 617
DMA	9 509	4 238	5 271	7 409	2 100	1 627	7 881	3 709	5799
Total	5 535 783	3 079 340	2 456 443	3 322 295	2 213 488	2 176 923	3 358 860	2 260 814	32 749 69

Source: 2001 Census, South Africa

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Table 64: Total Poor Households and Allocations (BS to Local Municipalities) per % Poor Household Category of Municipality 2009/10

64

Municipality Type	Number of Municipalities	Share of Municipalities	Total Population	Share of Population	Total Poor Households	Share of Poor	Total Allocations 2009/10	Share of Allocations
less than 35%	40	17%	12 755 637	26%	921 505	17%	3 459 923 221	17%
36% - 45%	40	17%	11 687 040	24%	1 154 043	21%	4 516 174 365	23%
46% - 55%	36	15%	6 327 143	13%	829 463	15%	3 335 686 204	17%
55% - 60%	23	10%	2 512 891	5%	335 206	6%	1 312 612 122	7%
60% - 70%	54	23%	7 499 663	15%	1 144 712	21%	4 119 062 809	21%
Over 70%	44	19%	7 649 095	16%	1 141 345	21%	3 219 447 193	16%
Total	237	100%	48 431 469	100%	5 526 274	100%	119 962 905 915	100%

These amounts assume that the BS component accrues to metropolitan and local Municipalities only

Source: FFC LES Simulation Model and Own calculations

Table 65: Total Budgeted Own Revenues and LES allocations per Type of Municipality 2009/10

65

Municipality Type	Number of Municipalities	Share of Municipalities	Total Operating Revenue 2009/10	2009/10 Budgeted Own Revenue	LES Allocations 2009/10	% of Own Revenue of Total Income	% of LES of Total Income
Metropolitan Municipalities	6	2.12%	91 903 030 000	82 079 809 000	5 007 229 498	89%	5%
Secondary Cities	21	7.42%	27 683 588 000	23 246 665 000	3 598 880 136	84%	13%
Larger Towns	29	10.25%	11 140 798 000	8 723 379 000	1 492 022 494	78%	13%
Medium to Larger Towns	111	39.22%	13 076 782 000	9 299 935 000	3 022 782 164	71%	23%
Rural Municipalities	70	24.73%	7 266 496 000	2 840 090 000	3 872 727 820	39%	53%
Districts without power and functions	25	8.83%	3 942 283 000	1 515 675 000	293 678 922	38%	7%
Districts with power and functions	21	7.42%	7 311 463 000	2 364 625 000	2 995 416 968	32%	41%
TOTAL	283	100.00%	162 324 440 000	130 070 178 000	20 282 738 000	80%	12%

Basic services component is allocated to authorised municipality.

Source: National Treasury Municipal Budget Database

Table 66: Shares of Total Budgeted Own Revenues and LES allocations per Type of Municipality 2009/10

66

Municipality Type	Number of Municipalities	Share of Municipalities	Total Households	2009/10 Budgeted Own Revenue	Share of Own Revenue	Own Revenue per HH	Total Allocations 2009/10	Share of Allocations	LES per HH	Difference LES and Own Revenue	Difference LES and Own Revenue per HH
Metropolitan Municipalities	6	2.12%	4 714 021	82 079 809 000	63.10%	17 412	5 007 229 498	24.69%	1 062	-38.42%	-16 350
Secondary Cities	21	7.42%	2 2 07 004	23 246 665 000	17.87%	10 533	3 598 880 136	17.74%	1 631	-0.13%	-8 902
Larger Towns	29	10.25%	1 095 455	8 723 379 000	6.71%	7 963	1 492 022 494	7.36%	1 362	0.65%	-6 601
Medium to Larger Towns	111	39.22%	1 637 400	9 299 935 000	7.15%	5 680	3 022 782 164	14.90%	1 846	7.75%	-3 834
Rural Municipalities	70	24.73%	2 824 237	2 840 090 000	2.18%	1 006	3 872 727 820	19.09%	1 371	16.91%	366
Districts without powers and functions	25	8.83%		1 515 675 000	1.17%		293 678 922	1.45%		0.28%	
Districts with powers and functions	21	7.42%		2 364 625 000	1.82%		2 995 416 968	14.77%		12.95%	
Total	283	100.00%	12 478 117	130 070 178 000	100.00%	10 424	20 282 738 002	100.00%		0.00%	-35 321

Basic services component is allocated to authorised municipality.
Source: National Treasury Municipal Budget Database

Table 67: Total Population and Allocations per Own Revenue Category of Municipality 2009/10

67

Municipality Type	Number of Municipalities	Share of Municipalities	Total Population 2007	% Share of Population	Total Allocations	Allocations per Municipality	Allocations with current settings
Below R10 000 000	38	13.43%	3 517 156	7.25%	1 173 093 769	30 870 889	5.78%
R10 000 001 - 50 000 000	87	30.74%	5 858 011	12.10%	3 073 083 727	35 322 801	15.15%
R50 000 001 - R100 000 000	49	17.31%	4 671 103	9.64%	2 438 556 267	49 766 454	12.02%
R100 000 001 - R500 000 000	79	27.92%	8 414 235	17.37%	4 627 018 750	58 569 858	22.81%
R500 000 001 - R1000 000 000	14	4.95%	3 767 389	7.78%	1 618 562 083	115 611 577	7.98%
Over 1 000 000 000	16	5.65%	22 203 575	45.85%	7 352 423 404	459 526 463	36.25%
TOTAL	283	100.00%	48431469	100.00%	20 282 738 000	71 670 452	100.00%

Basic services component is allocated to authorised municipality.
Source FFC LES Simulation Model and Own Calculations

guishes these factors based on the spatial categorisation,

Firstly, it is important to note that the BS and I components described above have already been corrected for fiscal capacity via the RRC component. From all types of municipalities, metros receive the smallest per capita allocations via the BS and I component and the largest RRC estimation per capita. Although the I component is intended to assist poorer municipalities in rural areas, the implicit assumption that there are large economies of scale with administrative costs resulting in these municipalities receiving relatively lower per capita allocations than smaller towns. This is also the case with the BS component. It appears per capita costs are assumed to decrease with population size. Looking at the RRC component, the results appear to be well aligned, with the larger municipalities having a higher estimation of fiscal capacity per capita, which diminishes as it moves towards smaller municipalities.

Table 69 now looks at per capita allocations per component of the LES per municipality type differentiated by population size. Similar to the argument made above, per capita allocations decrease with population. However, the RRC per capita estimates do not seem to be fully correlated with population sizes. The 19 municipalities in the highest population group have the higher RRC estimation per capita.

Table 70 extends the analysis to municipalities differentiated per poverty level. Similar to the analysis in table 68, although the municipalities with the highest poverty rate are

Table 68: 2009/10 Municipal Budget Information

Municipality Type	Number of Municipalities	Total Population	BS per capita	I per capita	RRC per capita
Metropolitan Municipalities	6	16 974 424	287	8	110
Secondary Cities	21	8 233 208	424	24	34
Medium to Small Towns	29	4 086 136	418	38	26
Small Towns	111	6 158 282	529	57	10
Rural Municipalities	70	12 979 419	412	34	0,38
Total	237	48 431 469	386	26	48

These amounts assume that the BS component accrues to metropolitan and local municipalities only
Source: FFC LES Simulation Model and Own Calculations

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Table 69: Per Capita BS, I and RRC Component per Population Category of Municipality

Municipality Type	Number of Municipalities	Total Population	BS per capita	I per capita	RRC per capita
Less than 25,000	29	457 902	602	133	9
25,000-49,999	42	1 611 120	589	70	13
50,000-99,999	52	3 824 582	483	50	18
100,000-199,999	55	7 529 602	413	40	11
200,000-399,999	40	10 880 617	405	31	10
400,000 and more	19	24 127 646	336	12	85
Total	237	48 431 469	386	26	48

These amounts assume that the BS component accrues to metropolitan and local municipalities only
Source: FFC LES Simulation Model and Own Calculations

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Table 70: Per Capita BS, I and RCC Component per 100% Poor Household Category of Municipality

Municipality Type	Number of Municipalities	Total Population	BS per capita	I per capita	RRC per capita
Less than 35%	40	12 755 637	255	16	96
36% - 45%	40	11 687 040	367	19	80
46% - 55%	36	6 327 143	496	31	20
55% - 60%	23	2 512 891	480	42	5
60% - 70%	54	7 499 663	511	38	2
Over 70%	44	7 649 095	387	34	0,24
Total	237	48 431 469	386	26	48

These amounts assume that the BS component accrues to metropolitan and local municipalities only
Source: FFC LES Simulation Model and Own Calculations

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Table 71: Basic Definitions of Access to Services

Services	Considered as access	Considered as no access
Water	Piped water inside dwelling, piped water inside yard, piped water outside yard but less than 200m away	Piped water outside yard and more than 200m away, rivers, streams, water vendor other
Sanitation	Flush toilet connected to a sewerage system or septic tank, dry toilet, VIP with ventilation	VIP without ventilation, chemical toilets, bucket toilet system,other
Electricity	Grid electricity	Candles, gas, paraffin, solar, other
Refuse	Removed by local authority at least once a week	Communal or own refuse dump, other
Source: Adopted from LGTAS, 2009		

assisted with a relatively small RRC per capita, their BS and I component per capita is relatively lower than categories of 46%-55%. The analysis above shows a certain degree of redistribution of allocations in the LES formula, but certain concerns over allocations to rural municipalities.

6. SIMULATIONS[157]

Simulation 1 - Removing the Differentiated Subsidy

In the BS component of the LES, services are only differentiated as households with access to a specific service and households without access. The definitions used for service levels correspond with the Reconstruction and Development Programme (RDP) guidelines. Table 71 gives an outline of the definitions of what is considered with access and without access for each service currently used in the BS component of the LES:

Currently, a full subsidy is given to a poor household that has access to the service for the associated operating costs and in line with the FBS policy (column 2 in table 51) and a partial subsidy is given to poor households that do not have access (column 3 in table 51) for any operation costs associated with supplying an alternative service option but that is below the required standard. The reasons for this cost differentiating are explained in section 3 discussion on the BS component.

The current arrangement raises two issues. Firstly, an underlying data problem which was earlier raised is the fact that the LES still uses census 2001 for demographic data. The changes in demographics over the period have been substantial given that it is now 2010. The National Treasury recently confirmed that the 2007 Community Survey, an alternative to a 5 year census, is not robust enough for use in the LES given the smaller sample size and higher degree of statistical errors (2010 DOR Bill). Therefore, municipalities with a higher level of households with no access to services will continue to receive a partial subsidy regardless of the improvements made in increasing access to these services with the assistance of conditional grants like the MIG.

Although it is logical to partially subsidise a service that is not up to the required standard and in all respects most probably costs less than providing the full service, the underlying data issue makes this principle null and void. Assuming that the underlying data issue cannot be solved in the short run, government should look at removing the partial subsidy mechanism in the formula and possible re implementing it when the formula is readily updated. Table 72 shows the changes in allocations between the different types of municipalities if there is no subsidy given to household without access to services, ceteris paribus (R1.5 per household per month) and no additional funds are made available.

The largest decreases in allocations are in rural municipalities and the district municipalities with the water and sanitation powers and functions (which encompasses most of these rural municipalities). This is due to large backlogs in these areas. However, according to the 2007 Community Survey, these backlogs have decreased. Removing the subsidy for households without access to services will result in dire consequences for these municipalities' budgets, given their relatively higher reliance on LES transfers. Table 73 illustrates

[157] *Please note that the table headings "year 1", year 2" and "year 3" used in most of the tables in this section denote the three year allocations calculated by the LES formula i.e. for 2009 MTEF 2009/10, 2010/11 and 2011/12*

Table 72: Simulation Removing Subsidies to Un-Serviced Households

Municipality Type	Number of Municipalities	Year One	Year Two	Year Three
Metropolitan Municipalities	6	673 353 818	1 209 782 771	1 510 935 795
Secondary Cities	21	113 551 686	289 555 187	431 542 966
Larger Towns	29	**-99 363**	44 683 410	87 125 997
Medium to Larger Towns	111	12 153 505	111 230 401	181 889 761
Rural Municipalities	70	**-535 341 706**	**-944 171 603**	**-1 246 422 706**
Districts without power and functions	25	74 432 710	120 006 452	139 809 726
Districts with power and functions	21	**-338 050 649**	**-831 086 627**	**-1 104 881 538**
Total	283			

Source: FFC LES Simulation Model

the allocations per municipal type if the same subsidy that is given to households with access to services is now also given to households without access to services, ceteris paribus (R136.5 per household per month).

In this simulation, the opposite occurs. Given the large backlogs in rural local municipalities and their corresponding district municipalities, they would now receive larger allocations through the LES. However, other types of municipalities, especially the metros, lose substantial amounts of funds. Implementing such a policy will result in a massive shock in allocations. Furthermore, implementing such a change will technically further compound the poor costing methodology in the LES that has been argued in the paper as differentiating costs on types of service is an accurate practise to continue. Table 74 is a simulation whereby the subsidy costs for households without access to services is doubled to now be approximately two-thirds of the subsidy of a household with access to services, ceteris paribus (R93.5 per household per month).

In terms of winners and losers the results are similar to that of table 73 but at a smaller increase or decrease in allocations respectively. However, the losses and gains can be justified in the sense that the data is not updated and these municipalities would have most likely received a higher subsidy through the LES.

Simulation 2 – Removing the stepped system in the differentiated tax application[158]

The stepped method of applying the differentiated tax approach is inefficient as municipalities at the extreme ends of bands are unfairly treated as a difference of just R1 per capita can lead to a higher tax rate. In addition, in some cases the bands are so large that municipalities with what would generally be considered a large variance are taxed by the same rate. For example the City of Cape Town, with an operating own revenue per capita figure of R3 777, is taxed at the same rate as the City of Johannesburg, which has a much higher per capita operating own income of R5 340 per person. This simulation uses one of many methods to introduce a smooth gradient for the application of the differentiated tax system, ceteris paribus.

The current tax bands applied range from 1.5% for low operating income per capita (R0 – R500) and 9.5% for high operating incomes per capita (R2 501 – R5 000). The highest operating income per capita is R6 316, which is that of Overstrand[159] Local Municipality in the Western Cape. This amount was then given the rudimentary figure of 15% as being the highest a municipality can be taxed. Thereafter, all other operating own revenues were taken as a share of the Overstrand figure and multiplied by 15%. This gives each municipality a unique tax rate that ranges from 0% - 15% depending on their operating own revenue per capita. Municipalities are now taxed more fairly and efficiently in the system. Table 75 illustrates the changes in using the smooth tax (gradient) system to that of the stepped system:

Apart from the technical efficiency, table 75 illustrates that

[158] *It is important to note that these simulations are done in isolation and that the net effect of applying all these changes has not been undertaken. Furthermore, these are just proposals as to how such changes can be implemented and is not an explicit recommendation to government. All that is recommended is the overall need for the change.*

[159] *The fact that Overstrand Local municipality has the highest operating own revenue per capita further compounds the inefficiencies of using actual collected data as Overstrand is well known as being a very efficient municipality in optimising own revenues*

Table 73: Simulation that removes subsidies to unserviced households

Municipality Type	Number of Municipalities	Year One	Year Two	Year Three
Metropolitan Municipalities	6	**-342 979 359**	**-1 428 018 112**	**-1 585 415 192**
Secondary Cities	21	**-275 471 876**	**-404 820 356**	**-447 608 932**
Larger Towns	29	**-77 953 977**	**-82 684 508**	**-97 358 545**
Medium to Larger Towns	111	**-201 298 965**	**-190 155 631**	**-200 195 259**
Rural Municipalities	70	419 713 110	1 117 404 465	1 256 919 282
Districts without power and functions	25	**-12 142 762**	**-90 912 828**	**-144 156 185**
Districts with power and functions	21	490 133 829	1 079 186 969	1 217 814 831
Total	283			

Source: FFC LES Simulation Model

the funds are redistributed from metros to other municipalities when the flat tax system is adopted. As these figures are in aggregate, it does not show changes in allocations per an individual municipality. Just to indicate a few changes, the City of Cape Town, although a metropolitan municipality, gains from the new system since it was unfairly treated in the previous system. The average tax rate among metropolitan municipalities is 9.96% while rural municipalities are taxed at 0.25%. This flat tax system, as a proposal, appears to be more efficient and a much fairer system than the current stepped tax system applied in the RRC component.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1. Overview of key findings

The Constitution and political process gives rise to the LES as an entitlement to local government to ensure municipalities are in a position to deliver services to its communities and address the notion of a vertical fiscal gap. The Constitution and other policies are clear on the mandate and role of the LES and what needs to be funded. The various Free Basic Services (FBS) policies provide a basis for the required minimum level of services to be funded by the LES in order to ease the strain on municipal budgets. The paper outlines all of these basic theoretical and legislative underpinnings of the formula and can conclude that the formula in general attempts to adhere to most of these.

In aligning with economic fundamentals and best practice of intergovernmental grants, the current structure of the formula suggests that the government has adopted the expenditure equalization framework in that the formula attempts to estimate and fund the potential fiscal gaps that exist amongst municipalities for the fair and equitable horizontal division of the LES. However, although the general structure of the formula is supported, accurate measurements for expenditure needs and fiscal capacity are pivotal in developing a coherent equalization framework. The paper concludes that the current cost/subsidy estimates used in the

Table 75: Comparison between the Stepped Tax Rate and the Flat Tax Rate on RRC

Year 1				
NT Stepped				
Municipality Type	Tax	FFC Flat Tax	Difference	Tax
Metropolitan Municipalities	5 007 229 498	4 887 354 351	**-119 875 147**	6 440 371 450
Secondary Cities	3 598 880 136	3 675 664 235	76 784 099	4 514 542 781
Larger Towns	1 492 022 494	1 512 719 864	20 697 371	1 862 744 671
Medium to Larger Towns	3 022 782 164	3 037 642 995	14 860 831	3 761 846 217
Rural Municipalities	3 872 727 820	3 878 513 997	5 786 177	4 812 277 919
Districts without powers and functions	293 678 922	293 847 343	168 421	389 207 339
Districts with powers and functions	2 995 416 968	2 996 995 215	1 578 247	3 723 548 622
Grand Total	20 282 738 000	20 282 738 000	0	25 504 539 000

Source: Own Calculations

Table 74: Simulation that gives equal subsidies to unserviced households

Municipality Type	Number of Municipalities	Year One	Year Two	Year Three
Metropolitan Municipalities	6	**-342 979 359**	**-853 970 678**	**-932 604 569**
Secondary Cities	21	**-193 823 121**	**-233 438 974**	**-262 200 868**
Larger Towns	29	**-51 799 342**	**-50 829 197**	**-58 433 379**
Medium to Larger Towns	111	**-131 375 244**	**-109 626 453**	**-119 579 595**
Rural Municipalities	70	345 237 951	666 654 996	729 337 536
Districts without power and functions	25	**-12 583 876**	**-79 342 861**	**-84 808 792**
Districts with power and functions	21	387 322 991	660 553 166	728 289 668
Total	283			

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formula has no theoretical or empirical basis that efficiently reflects the expenditure pressure faced by municipalities and local government in general. This argument is mirrored in the measurement of fiscal capacity i.e. the RRC component, which also has several inefficiencies in its application and measurement.

There are also several technical features of the current formula that make it difficult to estimate and fund fiscal gaps and municipalities accurately. These include:

1. The lack of an accurate costing framework that defines the different expenditure needs of municipalities and informs the service and administration subsidies in the LES formula.

2. Inefficient calculation[160], application and diminishing influence of the RRC component. In light of the fact that an extension was granted to municipalities to implement the Municipal Property Rates Act[161], thus maybe prolonging the non-availability of municipal valuation roles for all municipalities, the calculation of a municipality's fiscal capacity and own revenue potential is proving difficult with the lack of appropriate data.

3. The lack of transparency of the stabilisation or scaling component to ensure that the entire resource pool of funds for a given year is allocated. This results in several inefficiencies. These include uncertainties about actual subsidy levels provided for in the formula, all costs being inflated by the same amount annually and an overestimation of expenditure requirements relative to fiscal capacity

5. Inefficiencies with using outdated 2001 census data and implications for data updates associated with 10-year censuses, like shocks to allocations. The larger the period between data updates results in a larger adjustment

[160] *The use of actual property rates and general revenues collected and reported by municipalities can be seen as a contradiction of section 227 (2) of the constitution. The commission is currently in the process of getting legal opinion on the issue.*

[161] *Act 6 of 2004.*

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Year 2		Year 3			
NT Stepped		NT Stepped			Average Tax Rate
FFC Flat Tax	Difference	Tax	FFC Flat Tax	Difference	
6 326 788 471	**-113 582 979**	7 114 138 684	6 995 610 766	**-118 527 918**	9.96%
4 595 421 668	80 878 886	4 959 324 503	5 044 349 031	85 024 528	5.97%
1 878 400 609	15 655 938	2 039 549 807	2 054 244 906	14 695 099	5.09%
3 775 682 811	13 836 594	4 111 747 615	4 126 524 182	14 776 566	2.71%
4 815 418 906	3 140 987	5 256 389 841	5 260 063 751	3 673 910	0.25%
389 281 412	74 072	414 922 968	415 028 216	105 248	0.46%
3 723 545 123	**-3 498**	4 034 389 582	4 034 642 149	252 567	0.26%
25 504 539 000	0	27 930 463 000	27 930 463 000	0	3.53%

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in the underlying variables in the formula to include the change in data. This results in larger impacts and changes to allocations, which undermines the principles of stability and predictability of allocations to municipalities

6. Identifying an appropriate and socially reflective indicator for poverty, with income being the least preferred method because of large inaccuracies when collecting this variable.

Conclusions from the dynamic analysis suggest that the "piece-meal" reforms undertaken by government to solve certain identified problems have largely been ineffective given the technical structure and mechanics of the current formula and the fundamental issues of a poor calculation of expenditure needs and fiscal capacity in the LES formula.

Conclusions from the single-year static analysis illustrate some degree of redistribution of the overall funds in recognition of the different fiscal capacities of municipalities, but to a certain extent. It also illustrates the heavy reliance of most rural municipalities on LES funds. However, it does highlight the financial plight of these municipalities. Furthermore, it is unknown whether there is a shortfall at the vertical or horizontal division of revenue to local government, because of a lack of a thorough expenditure need and costing analysis of municipalities.

Simulations undertaken by the FFC look at changes to certain parameters and technical mechanics of the current formula. Those proposed changes will result in several short term operational efficiencies of the formula. All revenue neutral simulations (i.e. no additions to the overall revenue pool) simply result in shifts in funds from one municipality to another. Therefore, targeting a certain group of municipalities for a special policy priority, for example, is not possible with the current formula. In order for all municipalities to gain, additions need to be made to the vertical division of revenue. Therefore this suggests that by adopting the expenditure equalization framework for the LES formula, the current formula and the LES in general should not be used as the avenue to target funding to specific groups of municipalities. Any additional funding to target special priorities in municipalities should ideally be done outside the LES formula.

Therefore, a comprehensive review of the current formula is needed and supported. The study concludes that the current technical structure of the formula is not fully transparent and mechanically flawed in certain aspects. A new method of equalization and a new formula is required and needs to incorporate the following thoughts that are in contemporary debate:

1. The need for a differentiated approach to funding the different types of municipalities, while considering their unique expenditure needs, fiscal capacity and long-term planning and population dynamics.

2. The broader objectives of the local government fiscal framework that is, linking the LES to conditional grants (especially infrastructure grants) so that any additional operating costs for municipalities are factored into the formula.

3. Increased operating costs associated with new social infrastructure funded by the (MIG) where there is no financial return on the infrastructure.

4. The large maintenance backlogs and the continued difficulties in addressing these backlogs.

5. Sufficient flexibility to incorporate changes to current FBS policies and expenditure and tariff shocks.

6. Cognisance of the 'other' services that local governments provide and the effect these expenditure items have on their respective budgets. This can be extended to include the operating costs associated with maintaining road infrastructure.

7. The cross-subsidisation ability of certain municipalities to provide municipal services and account for fiscal capacity more accurately.

7.2 Short term recommendations

With respect to the reform of the Local Government Equitable Share Formula in the short run, it is recommended that:

1. Government should frequently update the data of the Local Government Equitable Share. In the meantime, it should ensure differentiating between costs depending on access to services is increased for households without access to a service to two-thirds the subsidy of households with access to services. This will ensure that the progress made in rolling out infrastructure from 2001 is accounted for, although not optimally. The commission also proposes that this remains until the next update of the data in the formula.

2. The institutional component of the Local Government Equitable Share becomes the primary mechanism to assist poor municipalities. The technical workings of the formula are currently eroding the size and effectiveness of the Revenue Raising Correction Component. This results in poor corrections for metros and urban municipalities that are able to fund their administrative costs from their own revenues better. The fundamental calculation of the Institutional component in the formula should be reviewed and changed because of this.

3. Related to this, the commission argues that the Revenue Raising Correction Component is supposed to account for those municipalities that greater fiscal capacity. Allocations through the Basic Services and Institutional components should reflect this. However, the paper concludes that the Revenue Raising Correction Component has several flaws in its measurement and application. The commission makes the following short-term recommendations for the Revenue Raising Correction Component:

a) Government should remove the step structure of the differentiated tax mechanism of the Revenue Raising Correction Component, as this is inefficient. Government should develop a flat gradient structure so that municipalities on the outer ends of bands are not treated unfairly.

b) Using actual property rates revenue collected and reported by municipalities raises several inefficiencies in the system. Firstly, the poor fiscal effort of municipalities is used as a measure for additional funding. This also applies to poor reporting by municipalities. Secondly, it can create an incentive for municipalities to under-report on collection rates, as this would result in a lower Revenue Raising Correction Component calculation and more revenue from the Local Government Equitable Share. Lastly, the current methodology of using actual property rates and own revenues collected can be seen as a contradiction of section 227(2) of the constitution. The commission recommends that this practise is replaced with alternative methods of revenue prediction.

7.3 Medium to long term recommendations

With respect to the reform of the Local Government Equitable Share Formula in the medium to long term, it is recommended that:

1. New approaches and methods of equalisation should be explored and the possibility of developing another mechanism to distribute the LES funds should be seriously considered.

2. National Treasury, the Department of Cooperative Governance and Traditional Affairs, the FFC and Statistics South Africa need to confer to determine what are the data needs of the LES and what data is available. New formula proposals should work with data available and what is possible to achieve and not develop a formula that requires data that is not attainable. In addition, national government (in particular Statistics SA) should explore the option of extending the survey sample size of the Income and Expenditure survey, given the current 5 year frequency of the survey, in order to obtain frequent income and expenditure data per local municipality to assist in updating the poverty measure in the LES. In addition, government should consider reviewing the use of income as a poverty measure given the unreliability of it and explore the use of imputed expenditure as a measure of household purchasing power and poverty.

3. It is recommended that a thorough costing analysis be undertaken of each local government service, administration and other expenditure responsibilities. This costing report will give national policy makers and analysts a basis to evaluate the funding pressures faced by local government and inform funding instruments such as the LES and other grant mechanisms.

4. Given the data difficulties, any correction for a municipality's fiscal capacity should ideally consider the factors that are not in a municipality's control that inhibits its revenue potential. These include such factors as poverty, economic activity, unemployment and other socio-demographic indicators. Therefore, government should consider alternative methods to measure fiscal capacity at a municipal level. Further research is required on appropriately and accurately accounting for fiscal capacity of municipalities.

5. The D component of the LES should be removed and replaced with a maintenance component to assist municipalities in the maintenance of social infrastructure. However, it is important to find a suitable indicator to allocate these maintenance funds. It is also important to indentify a method to link the MIG allocations and new infrastructure to the associated operating costs that needs to be funded through the LES. Further research in this regard needs to be undertaken.

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CHAPTER 6:

REGIONALISATION OF MUNICIPAL SERVICES: THE CASE OF THE ELECTRICITY DISTRIBUTION INDUSTRY IN SOUTH AFRICA

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1. INTRODUCTION

Improving service delivery performance with respect to access to basic services and ensuring value for tax-payers' money is an ongoing concern for governments, especially in the wake of the global recession.

In South Africa, the government has been grappling with local government service delivery challenges for many years. Its approach in tackling these challenges has taken the form of legislative promulgations such as the Municipal Structures Act (No. 117 of 1998) as amended and Municipal Systems Act (No. 32 of 2000). Both these pieces of legislation are central in empowering local government to fulfil its Constitutional mandate. The Constitution envisages a robust local government system, which can ensure the provision of services to communities in a sustainable manner.

Other government efforts in dealing with service delivery challenges have centred on the rationalization and corporatisation of municipal services. A case in point is the Johannesburg Metropolitan Municipality's iGgoli 2002 programme. Through the programme, Johannesburg metro undertook fundamental changes in its management of municipal functions, this was driven by, inter alia, new structures in local government, metropolitan demarcation and the management and service provision approach envisaged by the iGoli 2002 plan.

The other approach to improve service delivery at local government has been capacity support to local government. Project Consolidate ("a hands-on local government support and engagement programme") initiated in 2005 by the Department of Cooperative Governance and Traditional Affairs (COGTA) formerly known as the Department of Provincial and Local Government (DPLG) sought to provide support to municipalities in order to ensure that their functions are fulfilled. The project aimed at providing specific capacity in terms of human resources. (civil, electrical and water engineers and project managers) in order to accelerate

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service delivery with regard to the implementation of free basic services such as sanitation, water, electricity and refuse removal. Project Consolidate was then linked to Siyenza Manje (SM), which is designed to enable national government to leverage the expertise and project management skills of the Development Bank of Southern Africa (DBSA) to build local government capacity. The initial focus was on technical engineering and project management capacity, but this has expanded to include financial management capacity, as well as a Young Professionals programme that places interns in municipalities for two years. As at 2009 SM was in its third year of implementation.

In dealing with a specific municipal function challenges such as electricity distribution, government has, since late 1990's, been trying to rationalise the sector by creating six regional electricity distributors (REDs). This is done with the intention of improving service delivery, fostering economies of scale and ensuring universal access to electricity service delivery. This approach has not realised its full potential and is used as a case study in this study.

Notwithstanding all these intervention efforts, in 2009 government tabled the Constitution Seventeenth Amendment Bill. The Bill, if enacted, intends to empower the national government to further regulate the executive authority of municipalities in respect of local government matters listed in Part B of Schedule 4 and Part B of Schedule 5 of the Constitution. This is done to achieve regional efficiencies and economies of scale in respect of a specific municipal function. The restructuring of the electricity distribution industry (EDI) through the creation of REDs is used as a proxy in the memorandum of the Bill.

This paper argues that challenges facing service delivery at local government level are complex and dynamic and require a proper diagnosis. A blanket approach of shifting or regionalising services might not yield the desired results of efficiencies and economies of scale in respect of all municipal functions.

1.1 Research problem and study objectives

Local government plays a central role in advancing South Africa's developmental objectives – this is particularly achieved through the delivery of core basic services such as water reticulation, sanitation, refuse removal and electricity reticulation. Although much progress has been made in the delivery of services, substantial backlogs remain. Government set a target of addressing all service backlogs by 2014. In particular

- 33 per cent of the population or 15 million people do not have access to proper sanitation.
- 8 per cent of the population or 3.5 million people do not have access to safe, potable water.
- 8 per cent of the population or 3.5 million people do not have access to electricity, (Statistics South Africa, 2007).

The 2001 Census and 2007 Community Survey results reflect high service access levels in metropolitan municipalities. Although service access levels are lower in high capacity B municipalities than in metros, access is relatively high. Service levels are lower in poorer resourced municipalities, mainly in rural areas of South Africa. This shows that municipalities differ in their capacity to provide access to basic services. This is due to various reasons ranging from economic profiles of municipalities, supply and demand patterns, migration trends and density of municipalities, and financial, systems and management capabilities of municipalities.

This study reviews and analyses effort by government to improve service delivery at local government level. As indicated in the introduction there has been a variety of intervention approaches ranging from legislative promulgations and amendments, policy reviews, corporatisation of services, capacity support, and lately through the Constitution Seventeenth Amendment Bill an attempt to regionalise municipal services

This study asks a question that given differentiated capacity of municipalities to provide access to basic services, whether a blanket approach to regionalise certain municipal functions is the required intervention? Are there other approaches capable of improving efficiencies and economies of scale without requiring shifts in service delivery responsibility? Regionalisation might not yield social benefits if the root cause for poor performance is not properly diagnosed. Some of the reasons for poor performance may be as a result of ill defined mandates, poor regulation, and lack of funding, poor managerial skills and leadership capacity, as well as political reasons.

1.2 Methodology

This study was conducted through a combination of a literature review, discussions with academics and practitioners both within government, industry and the electricity regulator. Literature and data gathered were used to make an analysis of whether historical and proposed local government reforms have been and/or are adequate to foster efficiency and equitable outcomes.

In addition to assessing literature on municipal reforms and rationalisation of services, this paper uses the restructuring of the electricity distribution industry (EDI) as a case study to improve service delivery at local government level. The aim is to draw lessons and critical areas for consideration in reforming and rationalising municipal services and to propose recommendations on factors to consider in dealing with service delivery challenges at local government level.

2. LITERATURE REVIEW ON IMPROVING LOCAL GOVERNMENT SERVICE PERFORMANCE

This section sets out the key aspects associated with local government reforms, particularly regionalisation, to improve service delivery performance. Local government service delivery affects the welfare of communities, economy-wide resource allocations, and the financial performance of municipalities themselves.

There are various reasons why governments reform municipal services. These stem from good governance, financial stability, social and distributive justice, economic efficiency (economies of scale and scope) and fair pricing. These goals should ensure that municipal services are reliable and financially sustainable, are affordable for meeting basic needs and promote the efficient use of resources.

The key considerations include:

2.1 Economies of scale

Economies of scale arguments are frequently used to justify arguments for regionalisation. This refers to a decrease in average costs as the quantity of output rises. Within the context of regionalisation, the rationale is that "...the larger

the jurisdictional unit, the lower will be the per capita costs of service provision" (Dollery and Crase, 2004: 268). Several small municipalities are seen to be incapable of reaping the benefits of scale economies that larger municipalities can.

Linked to debates around economies of scale is the concept of optimal community size or optimal service district. This is the point at which economies of scale can be captured. Above that point diseconomies of scale arise. The optimal service district varies according to municipal function – it will not necessarily be the same for fire services as it is for public parks or sewerage treatment services. This implies that it is not possible to generalise the optimal community size or service district with regard to local government functions.

A 2002 review of the evidence about economies of scale in providing local government services (both internationally and in the Australian context), conducted by Byrnes and Dollery, raises significant doubts about the strength of the economies of scale justification because of the view that bigger is better. According to Byrnes and Dollery, the research conducted on this topic in the United Kingdom and the United States of America shows that:

- 39% of research papers find no statistical relationship between per capita expenditure and size;
- 29% of research papers find evidence of a U-shaped cost curve;
- 24% find diseconomies of scale; and
- 8% find evidence of economies of scale (Byrnes and Dollery, 2002:393).

The Byrnes and Dollery review emphasises that existing research is largely uncertain about the existence of economies of scale when it comes to local government service delivery. This lack of conclusive evidence raises questions about using this argument to support the view that bigger is better. Notwithstanding the evidence presented above, it would not be prudent to draw any conclusions about the existence or otherwise of economies of scale. The reason for this is that the mix of services provided by local governments varies substantially within and between countries. However, if we look specifically at the possibility of economies of scale in distributing electricity, the conclusions are similar. Reviewing the restructuring of the Ontario electricity distribution industry, Cronin and Motluk (2004: 2, 7) drew two key conclusions:

1. The evidence does not support the premise that bigger utilities have cost advantages compared to smaller ones. In fact, evidence from the Ontario case study confirms that costs for smaller utilities were significantly lower than those for medium and larger utilities.

2. Size is not an important determiner of cost and that efficient and inefficient utilities can be found amongst all size classes –small, medium or large.

It appears then that generalisations are also not possible when it comes to the electricity distribution industry, size and the potential to reap economies of scale.

According to Dollery and Fleming (2006), even if economies of scale were possible with regard to local government functions, lower per capita costs is not a given. They provide two key reasons:

1. Consolidating municipalities or service delivery functions often leads to a harmonisation of service levels and wages – this is usually pitched at the level of the highest expenditure municipality.

2. Substantial transitional costs are incurred in trying to bring about compatibility in computer systems and other operational aspects of the municipalities involved (Dollery and Fleming, 2006).

Despite the fact that no conclusive relationship exists between size and economic efficiency (lower average costs), regionalisation-type reforms of local government functions do bring certain advantages. These include "...the ability to coordinate services across municipal boundaries, the capacity to spread the costs of local government over a larger tax base, equalisation of service levels and a stronger voice for local government" (Dollery and Fleming, 2006:273).

2.2 Economies of scope

Economies of scope refer to a decrease in the cost of production because the number of goods produced has increased. As Dollery and Crase (2004) noted, this concept is also referred to as economies of joint production. They note that economies of scope arise particularly "...when the cost of producing a given set of services in a single organisation is lower than the cost of those services being produced by a number of specialised organisations." Furthermore, "...a

Table 76: Types of local government service delivery arrangements underpinned by the concept of regionalisation 76

MODEL TYPE	CHARACTERISTICS
Amalgamation	Refers to a force consolidation of individual councils. Great emphasis is placed on resource efficiency relative to representational effectiveness. Constituent councils completely surrender political autonomy and operational control to the new entity.
Ad hoc resource sharing models	Refers to voluntary arrangements between geographically adjacent councils to share resources on an ad hoc basis when the need arises – most flexible arrangement when compared against amalgamation. Happens spontaneously / when the need arises and must contain real prospect of cost saving/benefits – if this were not the case, then presumably these arrangements will not be entered into.
Regional Organisations of Councils (ROCs)	Refers to voluntary groupings of neighbouring councils that benefit from the free exchange of common concerns, potential solutions and development of common policy positions. ROCs are financed via a set fee from each member council as well as contribution based on proxy for the size of the participating council. Governed by a board composed of two members each of constituent municipalities.
Area integration or joint board Models	This is based on retention of autonomous existing councils and their existing spatial boundaries, but with shared administration and operations overseen by a joint board of elected councilors from each member of the municipality.
Agency Models	In this case municipalities completely surrender operational control of the services they direct but still retain and enjoy political autonomy as elected bodies for a spatially defined jurisdiction. In this model, the composition of municipal services is determined by municipal councils, whereas production and provision is carried out by the state owned agency.

Source: Dollery and Johnson, 2005

single organisation can attribute the cost of fixed inputs or overheads like central administrative staff, computing facilities, etc, across many of the services it produces" (Dollery and Crase,2004: 269). Unfortunately, economies of scope are a little researched topic and there is almost no empirical evidence on this concept (Dollery and Crase, 2004).

2.3 Capacity

Capacity arguments advanced to support regionalisation-type delivery arrangements are premised on the belief that larger local governments, because of their size, can acquire specialist expertise more readily. Dollery and Crase (2004) note that there is merit in this idea as small councils often struggle to acquire expertise.

2.4 Public choice considerations

Choice of institutional arrangement is thought to have an effect on the relationship between citizens and governments. Public choice theory suggests that citizens in larger municipalities are generally less likely to participate in local affairs and find it more difficult to influence public decision-making processes. On the other hand, it is assumed that smaller municipalities have a greater degree of transparency and it is more likely that community members are able to be in contact with elected officials. According to Dollery and Crase, "If smaller municipalities are indeed subject to closer and more informed scrutiny, then it can be anticipated a priori that they could experience greater public pressures to deliver local public goods more efficiently" (Dollery and Crase, 2004:272). This seems to imply that some of the benefits of the bigger is better school of thought, may be offset by a decline in local responsiveness.

2.5 Varieties of regionalisation reform types

A number of variations of regionalisation-type models exist. Table 76 briefly describes the characteristics of a few of them. They vary from models of forced amalgamation, where the political autonomy of local governments is surrendered, to models that are based on voluntary cooperation.

The literature identifies factors that are associated positively with higher levels of consolidated service delivery. They include the wealth of the community, the poverty of the community as well as population size and density. Fiscal stress also induces cooperation. However, the extent of those gains in social welfare is not clear, (Dole and Bartlett, 2004). This study argues that the main driver for rationalising municipal services should go beyond cost savings and focus on improved service to the community.

3. CASE STUDIES OF MUNICIPAL SERVICE REFORM

3.1 Johannesburg Metropolitan Municipality and iGoli 2002 Plan

The creation of independent municipal entities

The City of Johannesburg Metropolitan Municipality was established in 2000. it represents a combination of the Greater Johannesburg Metropolitan Council (Northern, Eastern, Western and Southern Metropolitan Local Councils) and portions of Midrand and Moddersfontein. Between 1995 and 1998, the Metro faced a financial and institutional crisis – this led to the development of the iGoli 2002 plan.

The emphasis of the plan was to structurally transform the city. The thinking was that by combining a new political governance structure with the establishment of utilities, agencies and corporatised entities, the city would work better.

City Power and Johannesburg Water were two of the utilities that were created. Whilst these two utilities are considered models of success utilities, they do provide lessons that can be taken on board when considering this type of reform. This paper makes use of the examples due to certain similarities. For one, the reform process, particularly with respect to electricity, entailed the merging of several electricity departments (Khumalo et al, 2003). This is similar to the notion of merging the various electricity distributors and establish 6 regional distributors. With respect to management, both utilities are overseen by a board of directors and have service delivery agreements in place with the City – as the City remains ultimately accountable for service delivery.

Whilst these two examples present models of success with respect to utilities, their experiences do provide good lessons which other models of reform can draw from.

a. The reform was met with significant resistance by labour unions, who remain wary of reforms that tend, no matter how little, towards privatization. Their unhappiness with the process includes the fact that labour is not represented on the board of directors and therefore has no say in decision-making processes.

b. The issue of equity has been raised – it appears that City Power has concentrated its effort with respect to service delivery improvements and customer care towards a small, mainly higher end corporate section of customers. This raises concerns regarding how electricity users will be affected should the customer base be expanded significantly – as would be the case if REDS are implemented.

c. Related to the above point, concern has been raised around the ability of municipalities to monitor the capacity of service providers to deliver quality services to all consumers' water services in Johannesburg, there remains difficulty in generating surplus revenues, whilst at the same time, attempting to expand service delivery.

d. Billing and revenue collection inefficiencies lessen the extent of efficiency gains that can be made.

e. Management struggles epitomised by shareholder's struggles to reform in an environment characterised by mistrust amongst officials, councilors et cetera, has hindered progress and complicates governance.

EDI Reforms and the creation of REDs

The current EDI restructuring process aims to implement a process of regionalisation that will see the consolidation of Eskom Distribution and current municipal distributors into six, wall-to-wall, regional electricity distributors. In terms of governance, each RED will be controlled by a board of directors appointed by shareholders, that is, national and local government (municipalities). Decision-making within the REDS will be through majority voting processes (DME, 2001:28). Essentially the restructuring will shift the distribution of electricity towards more business-like approach. Given that the REDS will be focusing solely on the distribution of electricity, and not a variety of functions, it is unlikely that they would reap economies of scope – this as opposed to an entity like Transnet for example, that is responsible for national ports, rail engineering, freight rail et cetera. Municipalities are to be compensated for this shift in service delivery responsibility through a combination of dividends and local government levy (surcharge). In the interim, prior to full establishment and operation of the REDs, a holding company, EDI Holdings, has been established to oversee and direct the reform process.

4. IMPLICATIONS OF THE REGIONALISATION & EDI REFORM PROCESS

4.1 Fragmented approach with respect to restructuring the electricity sector

In South Africa, the general electricity reform agenda has not been driven by factors considered common in the rest of the developing world, for example, poor utility performance or the need for privatization to alleviate public debt. Instead, reform has been informed by the following:

- the shift to democracy where after, the government's focus was on redress. Electricity was one of the areas characterised by unequal access and the need for reform.
- the move by government during the mid-1990s to improve efficiencies in state-owned enterprises through a process of corporatisation.
- the introduction of a new energy policy in the late-1990s which led to a reassessment of Eskom's performance (Eberhard, 2005).

As a result of these events, and as envisaged in the White Paper on Energy, South Africa was to embark on a two-pronged, all-encompassing reform process of the electricity sector – one focussing on EDI and the other on the electricity supply industry (ESI). The need to reform the ESI stemmed from the need to introduce wholesale and retail competition as well as greater involvement of the private sector in the supply industry. However, in large part, reform of the ESI has been suspended – whereas independent power producers will be introduced, Eskom, will, for the foreseeable future, remain under state ownership and will not be unbundled (Eberhard, 2004:236). Debates around EDI restructuring continue unabated and have even prompted a proposed amendment to the Constitution.

The concern is that at present, the vision for ESI and the direction that it may take once reform is actively pursued, is not clear. This has implications for the current EDI restructuring process and the anticipated advantages it will bring. The ideal would be to restructure the various components of the industry in tandem, or at the very least, to clarify restructuring plans in an integrated manner. As a result, this brings into question the assumptions and context within which the current EDI restructuring debate is proceeding on.

4.2 Blanket approach to restructuring with compulsory participation

The blanket approach to restructuring is not only a concern with respect to the Constitution 17th Amendment Bill, which requires a blanket regionalisation approach for municipal functions that are performing poorly or, where there is a need to improve economies of scale but also with respect to the EDI restructuring process. The proposal is that six wall-to-wall REDS be established. Currently in South Africa, there exist numerous instances where electricity distribution is not hindered by the general challenges that the restructuring process intends overcoming. An independent study

commissioned by the National Energy Regulator of South Africa (NERSA) in 2005, found that, with respect to Eskom Distribution, metropolitan and some larger municipalities, distribution was managed well, relative to smaller municipalities whose undertakings were described as being in poor shape (NERSA, 2005). When one considers the variable performance of different distributors there is merit in calling for a differentiated approach to the restructuring process that recognises the differences as there is a danger of negatively impacting instances of good performance.

As noted by Dollery and Crase (2004:274) since there exists no conclusive relationship between size and economic efficiency, restructuring should be on the basis, "...of current performance rather than current size". There are various options that allow for well-performing distributors not to be affected by the restructuring process. For example, drawing from Newberry (2008), the twelve largest municipalities in South Africa account for approximately 80 per cent of municipal electricity sales. Restructuring could be tailored so as to allow these 12 and other well-performing municipalities to be left alone and focus instead on poor performers. It should be noted that the current legislative provisions allow for creative service delivery arrangements that can assist municipalities in reaping similar benefits as to what is being proposed in the 17th Amendment. For example, Sections 82 and 87 of the Municipal Systems Act (No 32 of 2000) allow for the following:

• Section 82: this clause allows for one or more municipalities to work together to establish a company, co-operative trust, fund or corporate entity to provide a specific municipal service as a municipal entity under the ownership control of the participating municipality/municipalities. In addition, this section makes allowance for a municipality or group of cooperating municipalities to acquire ownership of an existing business operation, which will agree to deliver a service as set out in an agreement with the municipality/municipalities. Provision is also made for establishing a service utility to deliver an identified service.

• Section 87: this clause allows for the establishment of multi-jurisdictional municipal service districts (MMSDs). MMSDs are composed by two or more municipalities who cooperate in order to facilitate improved service delivery. The agreement between the municipalities must specify the service that will be provided as well as the mechanism through which provision will occur. MMSDs are managed by a governing body composed of representatives from the participating municipalities.

The options with respect to the institutional arrangements described above are similar to the regionalisation-type forms described in Table 76. The difference with respect to the above legislative provisions is that they are based on voluntary participation. Incentives to attract participation of lagging performers could be provided to facilitate restructuring within the context of the provisions of the Municipal Systems Act. In essence there are various ways in which restructuring can occur without needlessly impacting on already well performing distributors and diluting the autonomy of the local sphere. Instead of restricting the rights of municipalities to decide whether or not to restructure (as is being proposed in the Constitution 17th Amendment), appropriate incentives should be provided to prompt them to willingly participate. Restructuring based on willing participation and a shared understanding of the needs for and potential benefits that can be derived from the process will make for a much smoother reform process.

4.3 Updating benefits versus costs of restructuring

Before deciding whether to restructure or not, one needs to do a thorough assessment of the potential benefits that restructuring can produce versus the costs that will be incurred. An assessment was carried out at the inception of the restructuring process.

The EDI restructuring process has, however, been particularly drawn out and has yet to be concluded. Since this assessment was done, significant political, economic and social changes have occurred. This questions the current assumptions that underpin the restructuring process. Stalling the implementation of the REDs has generated new costs that require a total re-evaluation against the benefits that were perceived at the conception of the idea. Allocations to EDI Holdings alone will have cost government about R500, 000,000 between 2003 and 2011.

In weighing up costs and benefits, there are two key considerations capable of eroding any potential savings that need to be factored in.

1. Consolidating municipalities or service delivery functions often leads to an equalisation of service levels and wages. This is usually pitched at the level of the municipality with the highest expenditure. The success of the restructuring process will depend largely on how well human resource-related issues are handled.

Introducing REDS will necessitate amalgamating the employees of municipal distributors and Eskom Distribution, each of who have existing and varying basic conditions of service. According to guidelines on the restructuring process, the conditions of service of employees within a specific RED will be rationalised.

Given this, the obvious concern is whether REDS will be able to absorb this fiscal requirement. It should be kept in mind that the REDS are not legally obliged to rationalise the employment conditions of employees. The following excerpt is noted from section 197 of the Labour Relations Act: "The new employer complies with subsection (2) if that employer employs transferred employees on terms and conditions that are on the whole not less favourable to the employees than those on which they were employed by the old employer" (Department of Labour, 2002). Thus, it should be noted that, notwithstanding what the EDI Blueprint Report is implying, there is no legal requirement for equalising employment conditions. Therefore, it cannot be determined with certainty whether the status quo will be maintained or whether some employees will experience an improvement in their conditions of employment.

2. Substantial transitional costs are incurred when trying to bring about compatibility in the computer systems and other operational aspects of the municipalities involved (Dollery and Fleming, 2006).

In the case of the EDI restructuring, compatibility needs to be achieved amongst the various municipal distributors and the systems of Eskom Distribution. The intention, according to the recommendation in the EDI Blueprint Report is that "…REDs should operate on the basis of all of the operational processes and systems currently employed. This will inevitably mean use of a vast array of different practices at the outset …" (DME, 2001:69-70).

Customer billing, for example, will remain with Eskom and municipal billing departments until the REDs are able to fulfil the task for themselves. Given that the quality of operational processes, including the billing and debt management practices, of municipal distributors vary significantly, this may lead to negative implications for service delivery. No time line is attached to this arrangement – the Blueprint Report states that this arrangement will remain in place until the REDs are able to take on the task themselves.

The literature cautions about the costs associated with ensuring compatibility. Therefore, this is something that should be sorted out before establishing the REDs. Other unresolved aspects of the restructuring process, if further drawn out, can affect costs, relate to the need to ensure that the EDI Restructuring Bill and practical guidelines about moving municipal or Eskom distribution assets (via the Asset Transfer Guide) are finalised first before moving towards more advanced stages in the restructuring.

4.4 Effects on the municipalities and the broader local government sphere

4.4.1 Financial considerations

Most municipalities, particularly the metros and the top 21 cities, derive significant income, around 30% of total revenue, from selling electricity to end users. Table 77 illustrates this.

Both the EDI Blueprint Report and the Constitution 17th Amendment Bill stress that local government will be protected during the restructuring process and that municipalities will not suffer financially. Traditionally, municipalities have used surpluses earned from distributing electricity to cross-subsidise other municipal services. The shift to the REDS structure will require municipalities to redirect all electricity distribution-related resources to a relevant RED so that the RED can take over responsibility for distributing electricity. Two forms of compensation will be introduced to ensure the protection of municipalities. These are dividends and a local government levy. Dividends are compensation for the transfer of distribution-related assets while the local government levy is a recognition of the fact that surpluses earned through electricity distribution represent a significant source of income which, in many instances, is used to cross-subsidise other municipal functions.

According to the guideline on the restructuring process, municipalities will have to transfer all electricity distribution-related assets to the relevant RED. This has the ability to affect the credit rating of municipalities negatively, particularly in their ability to secure private sector funding. The result may be that municipalities will become more dependent on the national fiscus.

This seems more probable if we consider that dividend payouts to shareholders (of which municipalities form part) will be "…zero or very low initially and only begin to rise towards the target levels for most REDs by years four and five" (DME, 2001:53). This implies that municipalities should not expect significant returns from this income source in the medium term. An additional constraint about this source

Table 77: Budgeted revenue from electricity sales as a percentage of total budgeted municipality revenue (2008/09-2010/11)

MUNICIPALITY	2008/09	2009/10	2010/11
Metros			
Nelson Mandela Bay	33%	38%	37%
Ekurhuleni Metro	31%	33%	35%
City of Johannesburg	23%	26%	28%
City of Tshwane	30%	29%	29%
eThekwini	30%	31%	32%
Cape Town	24%	26%	28%
Average: Metros	**29%**	**31%**	**32%**
TOP 21			
Buffalo City	25%	25%	27%
Mangaung	26%	27%	26%
Matjhabeng	23%	24%	23%
Emfuleni	28%	27%	26%
Mogale City	31%	34%	35%
Msunduzi	31%	32%	32%
Newcastle	23%	23%	22%
uMhlathuze	35%	38%	41%
Govan Mbeki	23%	23%	23%
Emalahleni (Mp)	27%	30%	30%
Steve Tshwete	28%	29%	30%
Mbombela	26%	26%	26%
Sol Plaatjie	29%	30%	29%
Polokwane	12%	14%	17%
Madibeng	28%	29%	30%
Rustenburg	43%	46%	46%
Tlokwe	42%	41%	41%
City of Matlosana	22%	23%	23%
Drakenstein	43%	45%	46%
Stellenbosch	33%	32%	33%
George	31%	32%	33%
AVERAGE: TOP 21	**29%**	**30%**	**30%**

Source: National Treasury Local Government Database

of revenue is that it is tied to the financial performance of the RED concerned. Given that the REDS will be new entities made up of combinations of municipal distributors and Eskom Distribution, it is nearly impossible to predict performance.

4.4.2 Concerns about the executive authority of local governments

The EDI restructuring process has led to the Constitutional 17th Amendment Bill that, if passed, risks establishing a trend where functions are shifted where there is general unhappiness with performance – this as opposed to sorting out underlying issues and causes of poor performance. While this amendment is proposed in the context of a stalled EDI restructuring process, if it is passed the contents of the amendment will apply to any municipal function.

This will have an effect on the executive authority of the local government sphere. The Constitution of the Republic of South Africa establishes three spheres of government that are distinctive, interdependent and interrelated. The distinctive element refers to the autonomy enjoyed by the spheres: the degree to which each sphere is the final decision-maker on a particular matter that falls within its area of competence.

The proposed amendment thus dilutes the executive authority of municipalities with regard to the functions listed in sections 4B and 5B. The bill is heavily biased towards concerns for economic efficiency rather than on the executive authority of municipalities. According to de Visser (2008), one of the consequences of the fact that section 156(4), relating to subsidiarity in South Africa, is based on effectiveness (which alludes to effect), means that arguments for delivery by larger units because they are able to deliver a service better, are acceptable.

This contradicts traditional views about the principle of subsidiarity, where most arguments are for centralisation. The reverse is true in South Africa and one would need to make a case to devolve a function. The Constitutional 17th Amendment Bill highlights a weakened commitment to upholding the autonomy of the different spheres of government and highlights the diluted nature of section 156(4) of the constitution (the principle of subsidiarity).

Restructuring of the EDI towards the REDS model underlines a much deeper issue within the South African public service. It highlights a growing trend, in South Africa, to shift service delivery responsibilities continually when lack of performance becomes evident. The concern is that reforms may continue to be implemented without addressing the underlying reason for poor performance. Examples include the shift of social security grants to the Social Security Agency when provinces were thought to be inefficient. The establishment of the Housing Development Agency is another example of how unhappiness with provincial housing departments was resolved.

With regard to electricity distribution, the proposal is that the responsibility for service delivery is shifted to an entity, without addressing the root causes of inefficiencies and the poor performance of municipal distributors.

Municipal distributors are said to be characterised by high levels of debt because of non-payment. It is not clear why this is so and why reforms are not aiming at improving municipal performance in this regard. If the issue relates to current capacity, the challenges will be transferred to the REDS because all electricity distribution-related staff will be transferred to their relevant RED.

The question then is what prevents this type of challenge from characterising the various REDS. Without adequately assessing and addressing the real reasons for poor performance, we face a continued pattern of service delivery responsibility shifts. This will continue and will be supported should the 17th Constitutional Amendment be passed. In addition, the fragmentation of functions will present challenges with regard to integrated planning and development.

4.5 Implications for Eskom

Eskom is a state-owned enterprise that currently dominates the electricity (generation, transmission, distribution) sector in South Africa. Municipal distributors and Eskom Distribution will now merge to form six REDS. All assets and distribution-related resources from municipal distributors and Eskom Distribution are to be amalgamated to form the six REDS. In return for assets or distribution-related resources, it is envisaged that shareholding rights will be granted.

While this is so in the case of municipal distributors, it is proposed that the rights accruing to Eskom Distribution are to be held by the national government. This has been proposed to counter the common stake and dominance that Eskom enjoys in the segments of the electricity value chain other than distribution: generation and transmission.

REDS will buy power and transmission access from Eskom, thus including Eskom Distribution as a shareholder. This may create a conflict of interest (DME, 2001:27). The fact that Eskom will lose true ownership rights (shares) as well as significant assets may have a negative effect on its credit rating. This, in turn, can have a domino and negative effect on the rest of Eskom's business units.

This particularly worrying when one considers that some rating agencies (like Moody's Investor Services) have been downgrading the organisation's rating in recent years – Moody's downgraded Eskom's rating by three points in 2008 mainly because of tariff increases that were lower than requested (Eskom, 2009).

4.6 Effects on households and other end users

At the moment, municipalities charge varying prices for electricity. The variation in consumer prices goes far beyond what can be expected because of the costs associated with distributing electricity, like distance from the grid. Should the REDS structure be implemented, municipalities (and Eskom Distribution) within a particular RED will need to agree on a single rate to be charged to electricity users within the same income category residing within their particular service delivery parameters.

The methodology that will be used in arriving at the compromise prices and the effect on end-users is unclear. A balance needs to be achieved. While electricity tariffs need to be as cost-reflective as possible to assist customers to make rational decisions about consumption, tariffs for low-income households need to be kept below cost-reflective price levels for social development reasons. As a result, prices to end users could increase or decrease.

A similar situation exists with regard to the level of customer service that end users are currently receiving. End users enjoy either good or poor levels of service. Should the REDS model be adopted, end users may experience a change – it is however not possible to determine the direction of the change.

With regard to the electrification programme, the EDI Blueprint Report notes that, given the need for cross-subsidisation to maintain tariffs to poor customers at an acceptable level, the roll out of the electrification programme is burdensome to richer customers. There therefore exists a trade-off between expanding access to new customers and cost increases for existing ones.

Clarity is needed about electrification. It must be made clear which sphere of government will take the responsibility to plan, budget and implement the electrification programme.

5. LESSONS LEARNT FROM RESTRUCTURING MUNICIPALITIES

Based on the above analysis, the paper suggests that the following key aspects are critical for consideration, prior to reforming a municipal function in the manner in which the Constitution 17th Amendment would take us:

- The reform of functions need to be considered holistically and should be approached in an integrated fashion so as to not bring about incoherence and incompatibility within a sector at a later stage.

- Reform (and policy) decisions should be based on solid research findings so as to prevent implementation of reforms that are ill-suited to bringing about desired results.

- Caution is expressed against an approach to addressing lagging performance that calls expressly, and only, for regionalisation of functions. It is recommended that a proper diagnostic of the challenges be carried out on a case-by-case basis and that appropriate reforms, capable of overcoming identified challenges be selected.

- Related to the above, reform programmes should be weary of perceptions of generalised poor performance. A differentiated approach to reform, that recognises cases of good performance, is more appropriate.

- Participation in restructuring processes should not be compulsory. Instead participation should be based on appropriate incentives and understanding of the need for and potential benefits that can be derived from change.

- Based on the important developmental role played by the local government sphere, municipalities should be cushioned against any negative financial implications that may arise as a result of restructuring.

- Two key considerations when weighing up costs and benefits associated with restructuring and which can significantly erode any savings possible from restructuring, is (a) bringing about the equalisation of service levels and wages and (b) ensuring compatibility of operational systems used by individual municipalities.

- When reforming functions that form part of constitutionally mandated basic services, it is important that the social objective of universalising access to these services is not lost in the process of restructuring. It must be made clear which sphere of government will take the responsibility to plan, budget and implement basic service expansion programmes.

6. CONCLUSION AND RECOMMENDATIONS

This paper has arisen because of a myriad of interventions by national government to address service delivery challenges at local government level. The most recent of these is the Constitution Seventeenth Amendment Bill, which aims to widen the scope of national government interventions in local government matters listed in parts B of schedules 4 and 5.

The memorandum to the Bill uses the current restructuring of the electricity distribution industry as the first specific instance of proposed reform that could be applied to any other suitable municipal function where economies of scale

may be realised through regionalisation.

The underlying gist of this paper, in addition to assessing the EDI restructuring process, is to emphasise the need for government to recognise that there are costs and benefits associated with any type of reform and that a key precondition for ensuring that a particular approach will succeed is a thorough diagnosis of the challenges that need to be overcome.

Because of the complexity of the issues at hand, the commission has divided its recommendations into two groups:

6.1 General recommendations

1. In the absence of an assessment of the specific performance challenges faced by the different municipal functions listed in Part B of Schedules 4 and 5, it is recommended that approving a blanket regionalisation approach, as proposed in the Constitution 17th Amendment, not be supported. Current legislative provisions allow for alternative and creative service delivery arrangements that do not call for a dilution of executive authority at the local level.

2. All electricity distributors do not suffer from the challenges that the restructuring intends overcoming. As a result, the EDI restructuring process should consider a differentiated approach that distinguishes between variances in performance of the individual electricity distributors.

6.2 Recommendations should the EDI restructuring and establishment of REDS proceed

1. The government revisits the Blue Print assumptions initially made to restructure the EDI. The EDI component was informed by restructuring the electricity industry as a whole, including the electricity supply industry. The government needs to clarify the policy issue of whether it is necessary to change ownership and structure in order to ensure efficiency, economies of scale, robust regulations and to deal with management challenges in the sector.

2. The government conducts an up-to-date re-evaluation and analysis of the benefits of restructuring the EDI. In addition to the political, economic and social changes that have happened in the last eight years and which raise questions about the current assumptions underpinning the restructuring process, delaying the implementation of the REDs has generated new costs that require a total re-evaluation against the benefits that were perceived at the conception of the idea.

3. The government finalises the EDI Restructuring Bill and the practical guidelines related to the shifting of municipal/Eskom distribution assets (the Asset Transfer Guide) first before moving towards more advanced stages of restructuring.

4. The government implements measures to ensure that municipalities are adequately compensated for their loss of assets, particularly in the early stages of implementing REDs, where dividends are expected to be zero or minimal.

5. The government should ensure the compatibility of operating systems that will underpin the activities of the REDs before establishing REDS as this can negatively affect smooth service delivery and significantly reduce any savings that could be derived from the restructuring

6. It is important that the social objective of universalising access to electricity is not lost in the process of restructuring the EDI. The government must make it clear which sphere of government will be responsible for planning, budgeting for and implementing the electrification programme.

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CHAPTER 7:

INTERGOVERNMENTAL FISCAL ISSUES IN URBAN PUBLIC TRANSPORT

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1. INTRODUCTION

There is a growing awareness of the critical need to address public transport challenges in South Africa, particularly in the major urban centres. This chapter is intended to provide a background for discussion on these issues within the Financial and Fiscal Commission particularly as they relate to the Commission's mandate to make recommendations on improving the fiscal structure of decentralized government.

The focus of this chapter is on public transport in South African cities. There are clearly public transport challenges in rural areas, but the challenges are different and require a different focus. In South Africa, and globally, people and economic activities are increasingly being drawn to cities; urban economies now dominate world economies.

The economic rationale for cities lies in 'agglomeration' economies; they offer the scope for many different social and economic transactions in a concentrated space. In its 2009 World Development Report, entitled 'Reshaping Economic Geography' the World Bank argues that a key determinant of economic growth is 'distance from density' (The World Bank 2009). As accessibility to concentrations of wealth in the cities increases so does the scope for economic activity. Thus the management of access and mobility across a city is one of the key determinants of how well it functions from an economic perspective.

Public transport not only has the potential to greatly enhance access to opportunities and mobility for lower income people in particular, but also holds the potential to address some of the major congestion challenges that are making so many cities around the world dysfunctional, while helping reduce carbon emissions.

Given its responsibility for addressing inter-governmental fiscal issues, there are other important reasons for placing public transport high on the agenda of the Financial and Fiscal Commission. Not only has there been a significant increase in public spending on public transport in recent years, but the inter-governmental fiscal system has been

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instrumental in much of this spend. Key items include the ongoing bus subsidies, the Gautrain, and the new bus rapid transit projects in cities such as Johannesburg and Cape Town – all of which occur through sub-national governments. It has been argued that confusion of accountability amongst the three spheres of government has been amongst the biggest obstacles to investment in the improvement of public transport (van Ryneveld 2008), while the new National Land Transport Act (no 5 of 2009) introduces significant changes to the allocation of responsibilities for public transport among spheres of government, which in turn demands a re-assessment of associated inter-governmental fiscal mechanisms.

The recent rise in the implementation of public transport projects in the major cities indicates that some of the obstacles have been addressed. However these projects are now raising new challenges which the Financial and Fiscal Commission will undoubtedly be called to advise upon. And there remain major challenges surrounding the subsidization of buses and rail services.

It is appropriate at the outset to highlight five factors which make the provision of public transport particularly onerous in South Africa. Firstly, as is illustrated in the next section, the urban form of South African cities results in long trip distances which inevitably result in higher costs, whether covered by fares or by subsidies.

Secondly, the subsidy regime has developed around assisting workers to get to work and back in the context of high costs associated with the long distances. This results in very high peak demand alongside very low off-peak demand. The system capacity is determined by the peak, but much of this capacity lies idle during the day. Running it to serve the relatively low demand in the off-peaks is expensive and unprofitable, yet having it lie idle is inefficient and drives up costs. Because of the long distances many vehicles are only able to run a single trip in the morning and another in the evening.

Thirdly, because of the way economic activities are distributed across the urban form there is a 'tidal flow' of commuters

Table 78: Proportion and number of household members who made one or more trips on weekdays by settlement type

Settlement type	% of people making a trip	Number making a trip
Metropolitan	80.5%	12 410 000
Urban	78.7%	9 417 000
Rural	70.4%	13 376 000
Source: Department of Transport (2004a)		

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using transport to travel into the city in the morning and a reverse flow in the evening. Where vehicles do make more than one trip in each peak period they travel full in one direction but empty on the return trip. This is inefficient.

Fourthly, the market that is served by public transport in South Africa is relatively poor. This constrains the level of fares that can be charged and makes the provision of good quality public transport services very challenging.

Lastly, South Africa has invested considerable resources in infrastructure for private motorists and shaped cities according to these requirements. It is thus difficult to make public transport car competitive. In South Africa, market segments that in other countries would use public transport would rather use private cars.

Apart from this introduction the paper is divided into six sections.

Section two briefly describes some of the most significant features in public transport in South Africa, including a discussion about the urban form of South African cities.

Section three delineates some of the main features of key policy processes in public transport and related legislation since 1994. The new legislation passed in 2009, in effect, provides for asymmetrical devolution of power thus representing an important advance on previous approaches to devolution. However, it was not introduced as a 'money bill' so does not provide in any substantial way for the funding of public transport.

Section four outlines major funding flows from national government and describes developments amongst key modes and projects. These include the subsidized bus services, the suburban Metrorail services, the taxi recapitalization program, the Gautrain and the new bus rapid transit projects that are now being implemented in Johannesburg and Cape Town. It also describes the Gauteng Freeway Improvement Project.

Against this background section five highlights a number of important strategic questions. In particular, it raises issues around possible future approaches to funding of public transport in South Africa, and raises questions about the tension between spending on highways and spending on public transport.

Section six contains a conclusion and a set of draft recommendations to the Commission mainly around the further development of a policy research agenda.

This document has drawn on previous work done by the author including the 15 year review for the Presidency (van Ryneveld 2008), and an as yet unpublished report for the New York based Institute for Transportation Development and Policy[160].

2. OVERVIEW OF PUBLIC TRANSPORT SERVICES IN SOUTH AFRICA

2.1 Introduction

In 2004 the national Department of Transport published the first South African National Household Travel Survey 2003 (Department of Transport (2004a)). It was based on a representative sample of approximately 50000 households, and built on previous research done in preparing Moving South Africa (Department of Transport 1999).

2.2 Transport patterns by mode and settlement type

The survey estimated the total national population at 46 401 000. Table 78 shows the number and proportion of household members who made one or more trips on weekdays by settlement type (in 2001).

Table 79 indicates the high number of household members in

[160] *The author would also like to acknowledge the comments of Dave Savage and Sabelo Mtantato in developing this paper.*

Table 79: Weekday trip making by age group of household member

Age	% of people making a trip	Number making a trip
0-6 years	52.4	3 281 000
7-14 years	92.4	7 638 000
15-19 years	86.8	4 571 000
20-25 years	76.5	3 979 000
26-40 years	78.5	8 301 000
41-65 years	73.5	6 381 000
> 65 years	49.6	1 035 000
Source: Department of Transport (2004a)		

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Table 80: Number of commuters across settlement types

Age	% of people making a trip
Commuters in metropolitan areas	4.8 million
Commuters in urban areas	3.0 million
Commuters in rural settlements	2.2 million
Source: Department of Transport (2004a3)	

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Table 81: Modes used to travel to work by settlement type

Settlement type	Percentage of commuters					
	Train	Bus	Taxi	Car	Walk/cycle	Other
Metropolitan	11.2	8.1	28.4	41.0	9.1	2.2
Urban	1.7	6.2	27.0	35.5	25.6	4.1
Rural	0.5	11.6	15.1	15.8	52.6	4.4
Source: Department of Transport (2004a3)						

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the school going 7-19 age cohort and the high proportion of this age group making a trip.

A large proportion of these trips are undertaken on foot, particularly amongst school goers, where 76% of the 15.7 million trips to and from education centres are made by walking.

The focus of this document is city transport, which is dominated by commuters. The survey estimated the number of commuters travelling to work by all modes at 10 million, with the breakdown for commuters per settlement type shown in the table 80. As might be expected, commuting is a key feature of metropolitan areas in particular. Note that the actual number of trips is approximately double the number of commuters; thus, nationally, there were approximately 20 million commuter trips per day in 2001. Note that these figures exclude all trips other than commuting to work; they exclude the 15.7 million daily trips to and from schools and other educational institutions.

Table 81 shows the modal share for work trips by settlement types.

There is a marked correlation between income levels and mode use, as shown in table 82. Note that income levels are according to categories defined by 2001 Rands.

2.3 Public transport used in the six metropolitan areas

Figure 33 shows the modal split in transport use for work trips across the six metropolitan areas.

The proportional split is similar for most of the cities except that Cape Town has higher rail use and car use with a concomitant lower level of usage of bus and minibus taxi.

A recent Gauteng Transport Management Authority report

Table 82: Mode use for commuting by Income Group

Income Group	Main mode to work - % of commuters					
	Train	Bus	Taxi	Car	Walk/cycle	Other
Up to R500	3.0	7.0	20.5	4.4	57.9	7.2
R501 – R1000	6.6	10.5	29.0	6.6	39.5	7.8
R1001 – R 2000	10.4	12.4	37.9	13.8	19.4	6.2
R2001 – R3000	8.9	11.1	31.3	28.5	13.7	6.4
> R3000	2.4	5.5	15.7	65.4	8.4	2.6
South Africa	6.2	9.2	26.6	27.7	24.6	5.7

Source: Department of Transport (2004a)

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car ownership growing exponentially each year, resulting in serious congestion on the roads and longer travel times.

According to this report, of those using public transport in the province, 51% travel on minibus-taxis, 35% on trains and 14% on buses. There is very little integration between modes, with considerable duplication of routes.

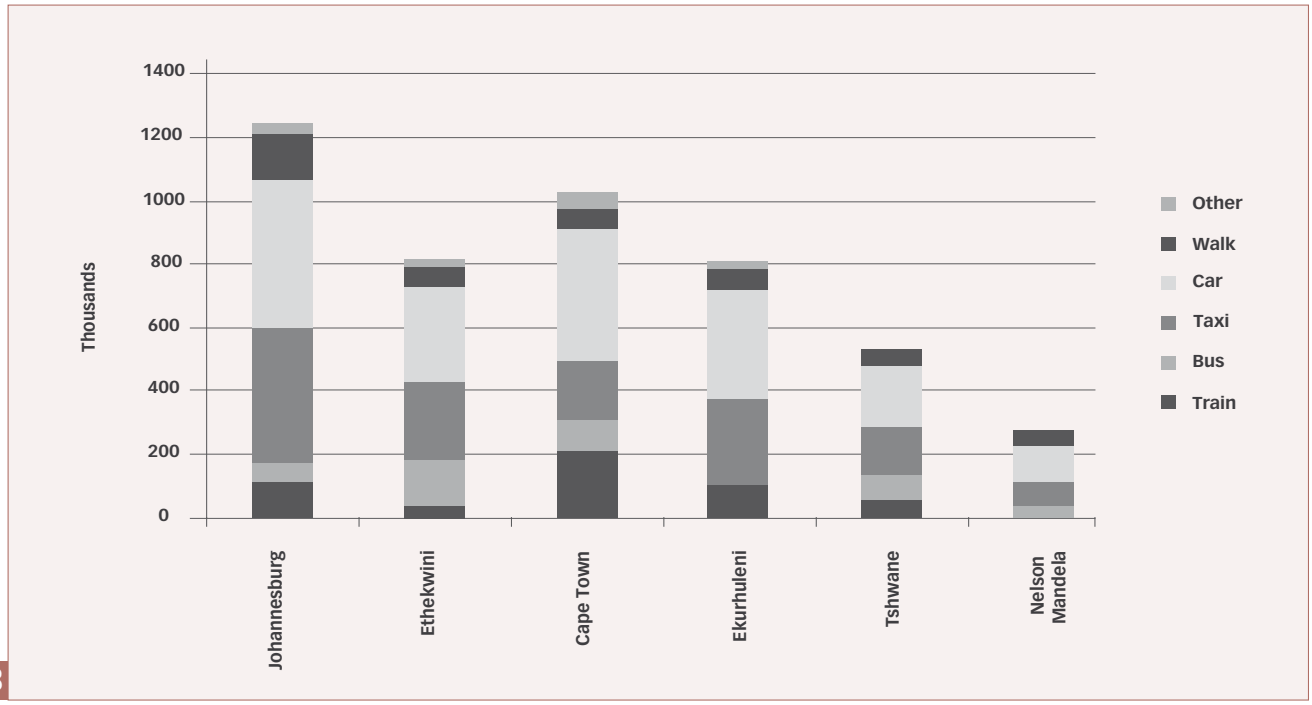
2.4 Growth in motor car use

In 2003 74% of South Africans were captive to public and non motorised transport as they lacked access to a car. Of the nearly 10 million workers who commuted to work, 4 million workers used public transport and 2.5 million workers walked. Even in metropolitan areas 2.3 million workers (49% of workers) used public transport compared to the 1.85 million workers (39.5%) who used a car. There is, however, strong growth in car ownership. Of significance is the relatively low income levels at which South Africans begin to use cars as their primary mode. Figure 33 shows the number of cars per 1000 people by settlement type at the time of the survey.

2.5 Expenditure on public transport and affordability

The most serious concerns about the cost of transport are related to the cost of travel to work, especially for low income workers. The cheapest commuting uses rail as the main mode to work, while those using minibus taxis as the main mode to work pay the most per month.

Table 85 shows the percentage of household income spent on public transport in relation to monthly household income.



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Source: Graphic derived from statistics in Cameron et al (2007)

Figure33: Modal split in transport use for the six metropolitan areas

Table 83: Proportion of households owning cars by metropolitan area

	Households owning cars	% of all households
Johannesburg	369000	32.1
Ethekwini	291000	33.7
Cape Town	411000	49.1
Ekurhuleni	269000	32.8
Tshwane	198000	33.0
Nelson Mandela Bay	95000	33.8
All metros	1635000	35.9
Source: Cameron et al (2007)		

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Table 84: Vehicular Penetration of Select Developed & Developing Countries

Country Developed	GNI per capita 2006 (US $)	Per 1000 Person		
		Passenger Cars	Total Vehicles	Two Wheelers
U.S.A.	44710	461	675	21
U.K.	40560	457	517	20
Japan	38630	441	586	104
Germany	36810	565	598	48
France	36560	496	598	41
Developing				
Mexico	7830	147	222	7
Malaysia	5620	225	272	236
South Africa	5390	103	151	6
Brazil	4710	136	170	37
China, P.R.	2000	18	28	62
India	820	10	22	58
Source: International Road Federation's "World Road Statistics, 2008" reproduced in Government of India (2009)				

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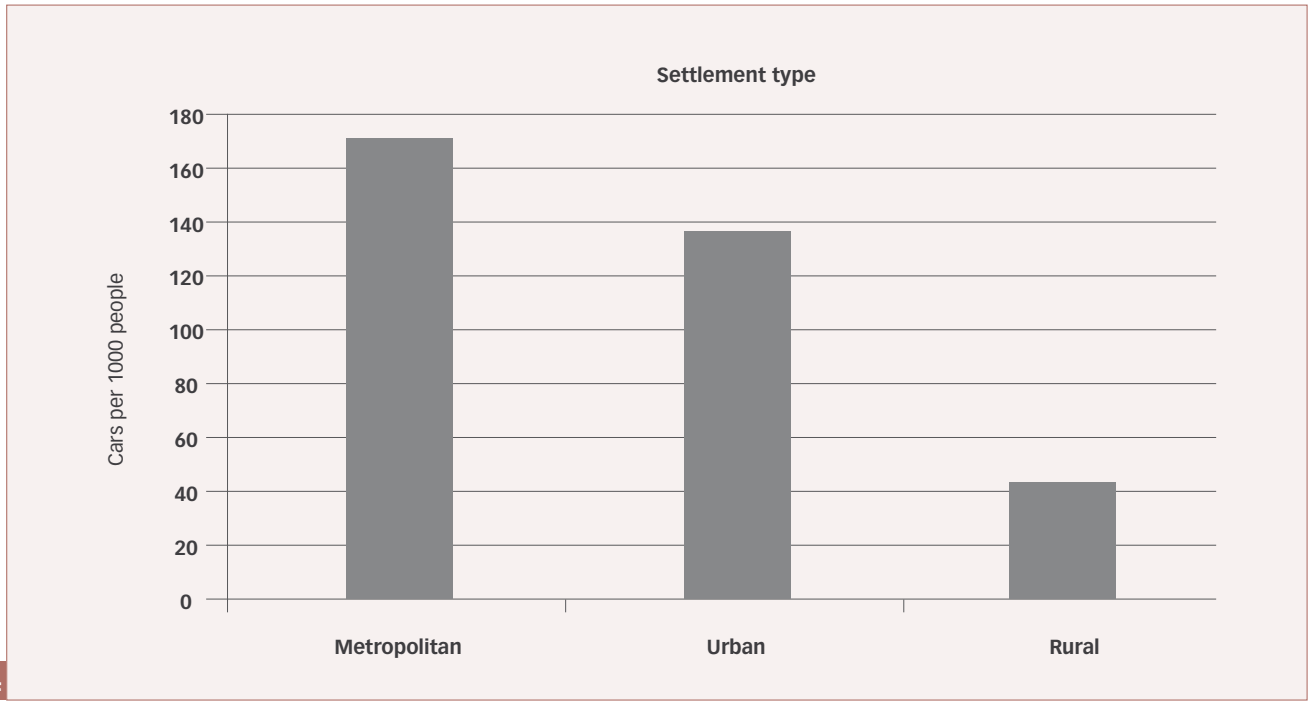

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Source: Department of Transport (2004a)

Figure 34: Cars per 1000 people by settlement type

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Table 85: Percentage of household income spent on public transport in relation to monthly household income

Monthly household income (2001)	Percentage of households					85
	0%	1-5%	6-10%	11-20%	>20%	
Up to R500	20.8	0.0	24.5	5.8	49.0	
R501 – R1000	14.1	33.5	20.9	13.2	18.3	
R1001 – R3000	15.1	28.8	24.0	22.0	10.1	
R3001 – R6000	32.5	35.4	18.6	10.7	2.8	
> R6000	68.8	23.8	5.4	1.9	0.0	
Source: Department of Transport (2004a)						

The amounts denoting the different bands have increased as a result of inflation. However, the high proportion of household income spent on public transport amongst lower income households continues. Approximately half of the lowest band of users and a fifth of the second lowest band spend in excess of 20% of household income on transport. And a high proportion of the lower income households spend between 11% and 20% of household income on public transport.

Note that buses and trains are subsidized yet the majority of passengers are transported by taxis, which are not subsidized.

2.6 Satisfaction levels

Tables 86 and 87 show levels of satisfaction with transport overall as recorded in the national household travel survey.

The following issues stood out in terms of problems mentioned by transport users:

- Almost half of the households in South Africa said that the main transport problem was that public transport was either not available or too far away;
- One third of households reported that safety from accidents and bad driver behaviour was the most serious transport problem;
- Cost was the most serious problem for one fifth of households
- Exposure to crime was identified as a key problem in the Western Cape
- Almost half (48%) of the minibus-taxi passengers, 42% of train passengers and a third of bus passengers were dissatisfied with the overall quality of service.

Table 87 shows the attributes which were the main sources of dissatisfaction.

2.7 Urban form in South African cities

South Africa has an unusually widely dispersed urban form in comparison to both industrialised and industrialising countries. This seems to have been driven by three key factors.

Firstly, many of the key urban areas did not generally develop in land use contexts which constrained urban growth. Secondly, from the 1960's until the end of the apartheid period in the early 1990's, high levels of motor car ownership

Table 86: Absence of transport problems by settlement type

Type of area	% of households	86
Metropolitan	27%	
Urban	41%	
Rural	18%	
South Africa	28%	
Source: Department of Transport (2003)		

Table 87: Percentage of users dissatisfied by key attributes across modes

Mode	Source of dissatisfaction	% of users dissatisfied
Trains	Crowding	71
	Security on walk to stations	64
	Security on trains	63
Buses	Lack of facilities at bus stops	74
	Crowding on buses	54
	Low frequency off-peak	51
Minibus-taxis	Safety from taxi accidents	67
	Lack of facilities at ranks	64
	Lack of roadworthiness of vehicles	60

Source: Department of Transport (2004a)

developed amongst the white population. These high levels of car ownership were associated with major urban and national highway construction programmes which facilitated the growth of extensive low density suburbs for the lower middle class and above.

Thirdly, within this context, apartheid planning had a significant impact on urban form. Generally townships were located well on the outskirts of cities – often behind natural or man made barriers such as railway lines or mine dumps. These were then served by government subsidised transport systems which brought workers long distances into the urban core on a daily basis. In some cases the townships were located within 'homeland' areas so that instead of urbanisation taking place within the city itself it took place some way out, but still within daily travel distance. This phenomenon is sometimes referred to as 'displaced urbanisation'. Examples of this include the former KwaNdebele area to the north of Tshwane/Pretoria which is located well over 100 kms from the urban centre, and Botshabelo which is over 50 kilometres east of Mangaung/Bloemfontein. The subsidised bus services still running between these locations and the urban centre continue to represent an immense policy challenge as discussed below.

Figure 35 was created by the urban planner, Alain Bertaud, and illustrates visually the dispersed urban form prevalent in South African cities. It compares population densities and urban form of London, Paris, Jakarta and Gauteng and demonstrates the peculiar nature of the Gauteng area, which consists of extensive low density suburbia interspersed with a scattering of small, fairly high density centres.

This is a key factor militating against the development of public transport systems.

The unusually dispersed nature of South African cities is confirmed in figure 36 from the same author. Cape Town and Gauteng are clearly outliers, matched only by the dispersed American cities where the private car is the form of transport for most people.

This observation is further confirmed by studies on trips lengths. Work by Cameron et al (2005) compares trip lengths in Tshwane with some other key cities. He notes that the displaced urbanization resulting from apartheid planning has resulted in public transport user travelling on average longer distances than car users.

3. OVERVIEW OF POLICY DEVELOPMENT AND FUNDING FLOWS IN URBAN TRANSPORT

3.1 Introduction

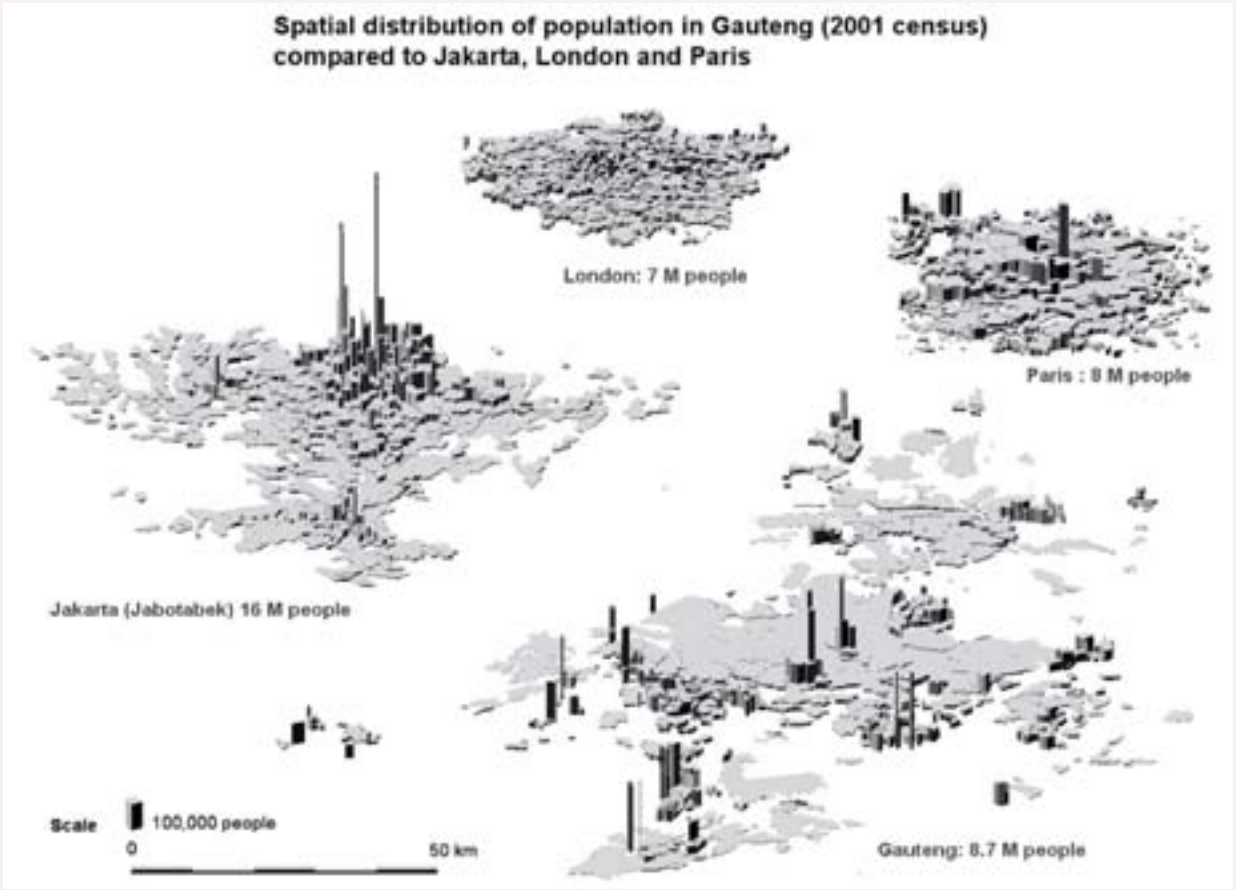
Three policy documents on public transport and two important sets of legislation have been published since 1994. The three key policy documents have been:

1. The White Paper on National Transport Policy (1996).

2. Moving South Africa (1999).

3. The Public Transport Strategy and Action Plan (2007).

The National Land Transport Transition Act (No. 22 of 2000) was passed after completing the first two policy documents, while the National Land Transport Act (No. 5 of 2009) was



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Source: Alain Bertaud

Figure 35: Spatial distribution of population in Gauteng

passed after adopting the Public Transport Strategy and Action Plan in 2007.

Initial direction was set in 1996 with the publication of the White Paper on National Transport Policy (1996). Subsequent policies have built on this with some shifts in emphasis rather than any substantial new direction. An important aspect of the developments in policy have related to the constitutional and institutional framework of responsibility for public transport. While policy documents have generally supported the assignment of responsibility to the local sphere of government, this process has been influenced by changes in the structure of local government and the wider debates and tensions about the roles of each of the three spheres of government.

3.2 White Paper 1996

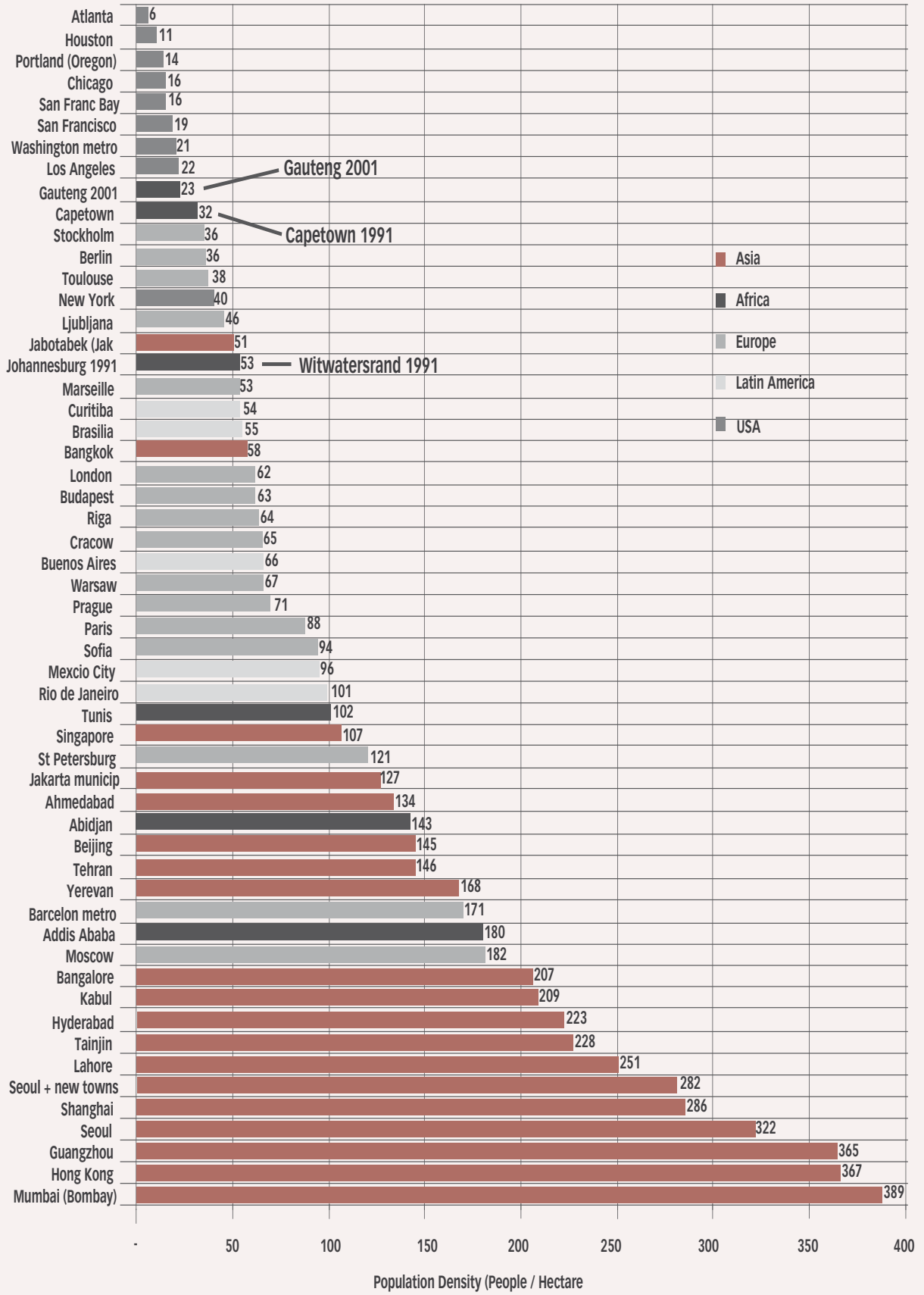
The White Paper's strategic objectives for public transport included:

- To promote the use of public transport over private car travel, with the goal of achieving a ratio of 80:20 between public transport and private car usage

- To ensure that public transport is affordable, with commuters spending less than about 10 percent of disposable income on transport

It stressed the need for comprehensive information as a basis for developing policy and strategy. The National Household Travel Survey was undertaken as a result of this.

The White Paper highlighted two key thrusts to achieve the goals of improved customer oriented transport services, namely the promotion of integration and inter-modalism. Integration encompassed 'modal, spatial, institutional and planning integration'. By 'inter-modalism' the White Paper sought to create an environment which encouraged use of the most appropriate mode of transport for any particular purpose. This was to be achieved not through regulation,



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Source: Alain Bertaud

Figure 36: Comparative average population density in built up areas in 51 metropolitan areas

but by creating the right incentives so that each mode could compete on the basis of its inherent strengths.

3.2.1 Role of government and competition

The White Paper placed significant focus on defining the role of government in the transport sector stating:

"In the past, Government's dominant role has been as a regulator of bureaucratic detail, a provider of infrastructure, and a transport operator, but it has been weak in policy formulation and in strategic planning. Government intends to reverse this legacy, and to focus on policy and strategy formulation which are its prime role, and substantive regulation which is its responsibility, with a reduced direct involvement in operations and in the provision of infrastructure and services, to allow for a more competitive environment."

The White Paper argued that efficiency could best be enhanced 'by ensuring competition in the provision of infrastructure and operations'. However, this did not imply leaving the provision of public transport purely to market forces. Instead, 'government proposes a form of regulated competition, which requires that operators function in a competitive environment, but in a manner which complies with the objectives of Government'.

Government objectives were to be defined through the mechanism of a passenger transport plan drawn up by the relevant authority. In some cases, such as in respect of the minibus taxi industry, it saw a need to tighten regulation.

The strategic objective was to 'promote and implement a system of regulated competition for public transport routes or networks based on 'permissions[161]' or 'tendered contracts' defined on the basis of 'passenger transport plans'.

One of the factors influencing perspectives in drawing up the White Paper included ongoing conflict within the minibus taxi industry. In developing a new approach the needs of the existing service providers, especially the minibus taxi industry had to be carefully accommodated without allowing the principles of the new system to be compromised. The formalization of the minibus taxi industry was a key objective of the policy makers, and this included seeking to accommodate 'pirate' operators.

3.2.2 Financing

The White Paper argued that 'economic' infrastructure and operations, which were ones which provided a measurable economic or financial return, should be operated on commercial principles and not subsidized. These included 'financially viable passenger transport operations'. There were, however, 'elements of infrastructure and operations which cannot or should not be paid for by the user, but which provide social benefits'. Government would contribute to the financing of these socially necessary services in a transparent manner.

To achieve this, the White Paper argued that there was a need for 'sustainable and dedicated funding for passenger transport infrastructure, operations, and law enforcement'. Where appropriate, infrastructure would be funded through user charges and/or investments by the private sector. However, the transport sector would seek increased appropriations for transport infrastructure from national government's general revenue, and would also seek to develop new sources for financing.

3.2.3 Land use

The White Paper was emphatic that South Africa's public transport challenges would never be effectively addressed without addressing land use patterns and urban form, stating that

"Land use and transport development are not integrated owing to a fragmentation of responsibilities for the administration, planning and regulation of the various aspects of land use, infrastructure, operations and regulations. This fragmentation and the legacy of apartheid policies has led to low density development, spatially dislocated settlements and urban sprawl, resulting in inordinately long commuting distances and times, low occupancy levels, high transport costs and low cost recovery."

Thus the following spatial development principles were agreed:

- land use development proposals must be subject to a land use/transport policy framework within an agreed development planning process;
- the effective functioning of cities and industrial areas must be enhanced through integrated planning of land use,

[161] *'Operator permits' were to be replaced with 'permissions (authorities) issued in terms of approved passenger transport plans'.*

transport infrastructure, transport operations and bulk services.

Required actions included 'regulation of land use development at local level so that development approval is subject to conformity with integrated land use/transport plans'; and 'containment of urban sprawl and suburbanisation beyond the urban limits' which would be addressed through provincial spatial development plans. Unrestrained car usage and subsidised car parking would be 'contained through the application of policy instruments which could include strict parking policies, access restrictions for private cars, higher licence fees, road pricing or area licensing'[162].

3.2.4 Devolution

The emphasis on the need to address land use issues led to a focus on the need to configure government in a manner that allowed this to be addressed. Thus, one of the strongest themes emerging from both the need to integrate decision making as well as the need to integrate transport planning with land use planning was the need for devolution.

In this regard the White Paper stated:

"The principle of subsidiarity and devolution of public passenger transport functions, powers and duties to the lowest appropriate level of government is confirmed."

The White Paper foresaw difficulties in achieving this. It recognized that public policy was carried out at various levels of government, but saw the need for clearly constituted bodies able to 'facilitate the effective and efficient planning, implementation, funding, regulation and law enforcement of the passenger transport system, devolved to the lowest competent level'.

Two set of relationships had to be addressed. Firstly, there was a need to promote integration and co-ordination of policy and activities between the national and provincial authorities. But the White Paper also recognized that the metropolitan conurbations, in particular, were of major importance, with 'a large proportion of South Africa's transport activities taking place within metropolitan areas'. Thus metropolitan structures were required, and, besides planning, these should 'take full responsibility for execution and implementation in metropolitan areas'.

It is important to note that the White Paper was arguing this in a context of multi-tier metropolitan government. With the subsequent creation in late 2000 of single tier metropolitan authorities the institutional arrangements which the White Paper sought to establish at metropolitan level became far simpler to achieve.

3.3 Moving South Africa

The White Paper was approved by cabinet and parliament in September 1996. However, while the White Paper addressed policy and had a time horizon of six to nine years, there was a need to sharpen the analysis based on much better empirical data and to develop strategy. The strategic approach had to identify and make key choices, and to do so with a 20 year time horizon. Thus the Department embarked on a process known as the 'Moving South Africa' (MSA) project, which aimed to develop a 'shared vision, clear choices, and consistent decision rules for all participants in the transport industry'. The final report was completed in 1999.

Amongst the proposals made by MSA was the creation of dedicated road infrastructure for public transport – most likely in the form of bus ways. These, claimed MSA, could provide the optimal solution, allowing increased speeds and comfort levels. Findings were that dedicated infrastructure can save between 5% and 20% of operating costs, if it improves speed by 25% over current performance. The study went further, arguing that without dedicated or prioritised road infrastructure for public transport, corridor densification was unlikely to yield the improvements in public transport cost and service levels envisaged by the MSA strategy.

The MSA research was emphatic that sub-optimal spatial planning was probably the biggest driver of public transport costs and the most difficult to turn around; and that building more roads in already well served metropolitan areas was not the solution to congestion. Experience internationally had shown that more roads attract more traffic which in turn generates demand for even more roads. Instead, MSA advocated managing car use in these congested areas through controls (e.g. limiting parking spaces), pricing mechanisms and incentives (e.g. promoting ride-sharing) whilst at the same time investing behind the core public transport network as the emerging alternative.

[162] *Restrictions on car usage could only be implemented in conjunction with improved public transport*

3.4 Public transport strategic plan

As discussed later in this section, the adoption of the White Paper of 1996 and the Moving South Africa report of 1999 was followed by the passage of the National Land Transport Transition Act (NLTA) (no 22 of 2000). However, there was little progress made in the five years or so after the passage of this act.

From around 2005 new thinking, particularly around how to implement the new agenda, began to develop within the Department of Transport informed by the successes achieved in creatively improving public transport in some of the major cities in South America, especially Bogota, in Colombia – along with some cities in Brazil and Ecuador.

This led to the emergence of a new public transport strategy, which was approved by cabinet in draft form in October 2006 for the purposes of public discussion and finalized in March 2007 on the basis of stakeholder comments and other discussions. An Action Plan was developed alongside the strategy and published in February 2007. (Department of Transport 2007a;b)

In essence the new model emphasizes the need to establish comprehensive public transport networks which are actively controlled and managed by a strong public network company linked to the city authority. While the vision of the White Paper and MSA is not inconsistent with the new approach, this new approach assumes a much more active role for the public sector in the management of city wide networks.

In the Department of Transport's chapter in National Treasury's 2008/09 Expenditure Estimates (National Treasury 2008a), it is stated that 'the strategy articulates a vision to shift public transport service delivery away from operator controlled, commuter based, uni-modal routes to user oriented, publicly controlled, fully integrated, mass rapid public transport networks'.

The three critical implementation building blocks are described in the Strategy as:

- Integrated Rapid Public Transport Network (IRPTN) Implementation Plans
- Municipal control over integrated networks
- A maximum stake for existing bus/minibus sector in rapid public transport network operations.

3.5 Legislation

There have been two sets of legislation affecting public transport since 1994. The first was the National Land Transport Transition Act (NLTTA) (no 22 of 2000). This was then replaced by the National Land Transport Act (NLTA) (no 5 of 2009). The latter is being phased in as relevant regulations are passed. The NLTA describes one of its purposes as 'to further the process of transformation and restructuring of the national land transport system initiated by the Transition Act' (clause 2(a)) It is thus not intended to represent a significant departure from the NLTTA, although there are some significant changes in emphasis.

3.5.1 National Land Transport Transition Act (Act 22 of 2000) (NLTTA)

The NLTTA sought to legislate the policies agreed in the White Paper process and the Moving South Africa project. It provided a set of principles which prioritized public over private transport while stressing the need for coherent planning which integrated transport planning with land use planning. Municipal legislation requires municipalities to draw up Integrated Development Plans. The NLTTA required Transport Plans to be drawn up as the transport component of Integrated Development Plans.

Taxis had operated throughout the country on the basis of permits, which were often poorly defined, and granted without reference to proper planning. The legislation provided for the conversion of these permits into 'Operating Licences' with much more clearly defined routes, and other requirements, in turn generated from Public Transport Plans. All contracted transport services had to now be based on a tender process.

3.5.2 National Land Transport Act (Act 5 of 2009) (NLTA)

An important motivation for the NLTA was the failure of the NLTTA to lead to the creation of effective bodies at local level to take responsibility for public transport. The dispensation that emerged under the NLTTA led to significant ambiguity as to how responsibility and power in relation to public transport was to be configured between provincial and city level. The NLTA sought to address this.

A key element of the NLTTA was provision for the creation of Transport Authorities. However, with the introduction of the new local government dispensation at the end of 2000, and the creation of single tier metropolitan authorities encompassing the whole metropolitan area the rationale for Transport Authorities largely fell away and the NLTA instead

placed responsibility largely with metropolitan authorities.

The constitution is ambiguous in its assignments of powers in relation to public transport, with 'public transport' being assigned concurrently to national and provincial government, while 'municipal public transport' is assigned to municipalities. The new legislation was influenced by legal opinion – argued on the basis of other sections of the constitution – to the effect that 'municipal public transport' refers to all public transport conducted primarily within the boundaries of a municipality. This interpretation tends to place within the municipal sphere activities which were previously assumed to be a provincial responsibility.

While the legislation does seek to assign specific responsibilities to each sphere where feasible, this is often not feasible. Firstly, the need for changes in assignment often emerge incrementally. Secondly, they often need to occur differentially, or asymmetrically, across different types of local government. Thus, while assigning some functions explicitly, the approach the legislation takes is to emphasise section 156(4) of the constitution, which assigns to municipalities relevant functions listed in Part A of Schedules 4 and 5 if:

a) that matter would most effectively be administered locally; and

b) the municipality has the capacity to administer it.

This is how, for example, the devolution of the operating licence function to municipalities is dealt with, a matter previously assigned to provinces. At the same time section 11(c) assigns to municipalities, inter alia

(xviii) the planning, implementation and management of modally integrated public transport networks and travel corridors for transport within the municipal area and liaising in that regard with neighbouring municipalities;

(xix) in relation to the planning functions contemplated in paragraph (iv) include service level planning for passenger rail on a corridor network basis in consultation with the South African Rail Commuter Corporation (SARCC);

(xxvi) concluding subsidised service contracts, commercial service contracts, and negotiated contracts contemplated in section 41(l)with operators for services within their areas;

Chapter 3 of the act is entitled Funding Arrangements for Land Transport. There is limited scope in legislation of this type to provide significantly for funding arrangements, since a bill that seeks to provide for taxation of any kind is defined as a 'Money Bill' and is required to go through a range of complex processes before being passed.[163] National Treasury would have opposed such an approach, preferring to have dedicated financial legislation for the imposition of taxes.

The chapter does provide for user charges and specifies such examples as charges on properties which lead to increased motor vehicle use, parking levies and levies for vehicles to enter specified areas. However these are all subject to the Municipal Fiscal Powers and Functions Act (no12 of 2007), which is the legislation that governs the process of getting authorization for the imposition of such levies at municipal level.

Chapter 3 does provide for the establishment of Municipal Land Transport Funds in respect of 'every municipality that is establishing an integrated public transport network'. All grants from national and provincial government must be paid into this fun, together with the proceeds of all user charges described above. This may become significant as the magnitude of the transport functions of city government expand, as is envisaged in terms of the act.

3.5.3 Conclusion

Many of the policy concepts that were originally adopted in the 1996 White Paper remain current and relevant. However, a notable feature of this discussion is the contrast between the sophistication of policy from 1996 and the relative absence of implementation until recently. Furthermore, the most substantial project that has been implemented, namely the Gautrain is arguably not consistent with the policy.

The failure to implement has probably been attributable to a wide range of factors, but these are likely to include, firstly, the fact that implementation requires confronting substantial vested interests across a range of stakeholders, including existing transport providers such as current minibus taxi and bus owners, and private motor car interests. Secondly, the

[163] *Money Bill is a Bill that appropriates money or imposes taxes, levies or duties. All money bills are considered under Section 75 of the Constitution of the Republic of South Africa.*

actions required are technically difficult, involving developing and applying complex insights across a range of operational, legal and financial areas in a context of limited experience. Thirdly, the assignment of responsibility within the spheres of government together with appropriate financial support has often been insufficient.

The next sections will outline the recent progress that has been made. A key new development has been the growing involvement of metropolitan governments in new public transport projects. While this is to be welcomed it does create significant financing risks at metropolitan level which will need to be addressed.

4. OVERVIEW OF FUNDING FLOWS AND KEY PUBLIC TRANSPORT SERVICES AND PROJECTS

4.1 Overview of the national government budget on public transport

Most public funding on public transport, with the exception of Gautrain, originates from national government. The national and provincial governments – the latter through its equitable share – jointly fund Gautrain. Municipalities spend relatively limited amounts of their own funds on public transport, although this is set to increase.

The first main expenditure area comprises subsidies to the commuter bus system. Bus subsidies are paid to provincial governments via the Public Transport Operating Grant (PTOG). They, in turn, contract private bus companies to run subsidised services. There is minimal additional expenditure on these services by provincial governments.

The second key expenditure area comprises subsidies to the commuter rail system, Metrorail. These transfers are made to PRASA (Passenger Rail Agency of South Africa) which replaced the previous SARCC, and is responsible for Metrorail, as well as the intercity rail and bus services.

The third key expenditure area is the taxi recapitalisation programme. This is financed from the national budget and pays an inflation-linked capital grant of R54 300 (from April 2009) to assist taxi owners replace old taxis with new ones to meet nationally determined specifications.

The fourth area of expenditure is the Gautrain. This is a public-private partnership, but capital expenditure comes overwhelmingly from public resources.

The fifth area of funding is via the Public Transport Infrastructure and Systems Grant. An important feature of this grant is that it makes transfers primarily to municipal governments. This was a key instrument in beginning to shift the locus of responsibility for public transport in key cities to city governments. Capital funding for the new Bus Rapid Transit Projects originates mainly from this grant, with some local contributions.

Most municipalities spend resources on building and managing transport interchanges and taxi ranks, while some municipalities run, or subsidise, local bus services. However, this is relatively small in financial terms compared to the amounts that come from national government. Figures on municipal spending are somewhat difficult to identify since they are often combined with overall transport spending.

4.1.1 Allocation of national government spending on public transport

National government spent R24 164.1 million on the Transport Vote (vote 36) in 2009/10. This was 3.23% of total expenditure on all functions. Table 85 shows that it has climbed significantly since 2006/7, when expenditure was R13 360.4 million and was 2.84% of all expenditure.

Table 88 shows total public transport expenditure against total the proportion of transport expenditure by national government.

Table 89 shows public transport spending according to its

Table 88: Public transport expenditure by national government as a proportion of total transport expenditure (actual R millions)

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	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Public Transport	10 444.5	12 312.3	16 179.8	17 452.4	17 429.6	18 354.7	18 747.5
Total	13 360.4	16 331.6	24 838.6	24 164.1	25 086.3	27 960.1	29 169.5
Proportion	78.2%	75.4%	65.1%	72.2%	69.5%	65.6%	64.3%
Source: National Treasury (2010a)							

Table 89: National government spending on Public Transport by sub-program actual (2006/7 to 2009/10) and projected (2010/11 to 2012/13) R millions

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	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Public Transport Strategy and Monitoring	4.7	2.8	4.2	22.8	10.0	7.8	8.2
Public Transport Management	9505.1	9831.4	12535.4	13540.2	12580.8	13302.1	13963.7
Taxi Recapitalisation Project Office	231.8	679.8	575.7	754.9	626.8	606.6	636.7
Public Transport Business Development	0.0	0.4	1.9	1.9	2.4	2.6	2.7
Administration Support	3.6	2.2	3.0	6.0	5.9	6.2	6.5
Public Transport Infrastructure and Systems	699.3	1795.7	3059.6	3126.7	4203.7	4429.5	4129.7
Total	10444.5	12312.3	16179.8	17452.4	17429.6	18354.7	18747.5

Source: National Treasury (2010a)

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Table 90: National government expenditure on key projects and programs (R millions)

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	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Bus subsidies/PTOG	2460.3	2836.0	3840.9	3531.9	3863.0	4153.2	4360.9
Total PRASA subsidy	3959.9	4431.2	5417.3	7482.4	8765.2	9128.5	9587.0
Current subsidy	2751.3	2259.1	3049.6	3185.8	3154.9	3343.7	3565.9
Capital subsidy	1208.6	2172.1	2367.7	4296.5	5610.3	5784.8	6021.1
Gautrain	3241.0	3029.4	3266.0	2976.7	438.4	5.3	0.0
Public Transport Infrastructure and systems grant	699.3	1795.7	3059.6	3126.7	4203.7	4429.5	4129.7

Source: National Treasury (2010a)

different sub-programmes.

Public Transport Management includes expenditure on the Gautrain, PRASA, which provides commuter rail subsidies, and the PTOG, which provides bus subsidies. The Taxi Recapitalisation Programme has its own sub-programme, while the Public Transport Infrastructure and Systems sub-programme makes transfers mainly to municipalities for establishing Integrated Public Transport Networks. These include, in particular, capital expenditure on the bus rapid transit projects. Table 90 summarises some of the key funding flows from national government.

Note that the Gautrain figures give only the figures from national government. Gauteng matches it on a one to one basis and the province funds the project from its equitable share revenue.

4.1.2 Public transport infrastructure and systems grant

Table 91 gives a breakdown of the allocation of the Public Transport Infrastructure and Systems Grant to municipalities for the period from 2006/7 to 2012/13, according to the Division of Revenue Bill published at the start of each financial year. In some cases, there may have been revisions during the course of the financial year, but these have been relatively few. Note that the total figure does not correlate with the total grant since some of this grant has also been paid to PRASA and the South African National Roads Agency

Table 91: Budgeted allocation to municipalities from Public Transport Infrastructure and Systems Grant (R million)

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Nelson Mandela Bay	69.0	132.0	305.5	147.1	408.3	600.0	800.0
Buffalo City	0.0	0.0	8.6	31.2	71.5	400.0	700.0
Amatole District	0.0	21.0	0.0	0.0	0.0	0.0	0.0
OR Tambo District	0.0	9.0	0.0	0.0	0.0	0.0	0.0
Mangaung	29.5	25.0	242.6	82.2	15.0	15.0	15.0
Ekurhuleni	27.7	13.0	7.6	27.7	20.0	20.0	20.0
Johannesburg	184.0	329.0	661.2	652.8	1070.5	1200.0	800.0
Tshwane	11.0	105.0	510.2	565.2	864.2	500.0	800.0
West Rand District	1.5	0.0	0.0	0.0	0.0	0.0	0.0
eThekwini	11.8	125.0	624.9	376.9	330.0	20.0	20.0
Msunduzi	0.0	0.0	2.1	7.7	15.0	15.0	15.0
Greater Tubatse	0.0	14.0	0.0	0.0	0.0	0.0	0.0
Polokwane	10.5	40.0	143.2	66.1	20.0	20.0	20.0
Mbombela	1.0	55.0	170.5	60.8	15.0	15.0	15.0
Sol Plaatje	1.5	11.0	0.0	0.0	0.0	0.0	0.0
Rustenburg	0.0	15.0	68.7	67.8	20.0	20.0	20.0
Potchefstroom	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Matlosana	0.0	22.0	0.0	0.0	0.0	0.0	0.0
Klerksdorp	30.5	0.0	0.0	0.0	0.0	0.0	0.0
Cape Town	120.0	230.0	424.8	332.5	850.0	1600.0	900.0
Stellenbosch	20.0	0.0	0.0	0.0	0.0	0.0	0.0
unallocated	0.0	28.0	0.0	0.0	0.0	0.0	0.0

Source: Division of Revenue Bill 2006, 2007, 2008, 2009, 2010

Limited (SANRAL).

In the grant framework for the Public Transport Infrastructure and Systems Grant, as included in the 2010 Division of Revenue Bill, the 'strategic goal' is stated as being to support the Public Transport Strategy (PTS) and Action Plan in promoting the accessible, reliable and affordable IRPTN services in the major cities of South Africa. The 'grant purpose' is stated as being to provide for accelerated planning, establishment, construction and improvement of new and existing public transport and non-motorised transport infrastructure and systems

4.2 Subsidised bus services

During the apartheid period, a system of subsidised commuter buses was established in order to mitigate the high transport costs that resulted from the location of black residential areas far from commercial areas and other work opportunities. The rationalisation of this system, to ensure a more competitive operating model, was a key priority arising from the White Paper process.

Information from the Department of Transport, compiled in 2007, gave the following statistics for bus fleets that received some form of subsidy from national government via the provinces.

Some of the subsidised bus companies were the old municipally owned fleets that have now, in some cases, been privatised or corporatised and generally receive some subsidisation from municipal councils.

The numbers appear to have risen since then. Walters (2009) states that the passenger base has risen by approximately

Table 92: Provincially subsidised bus fleets

Province	Number of buses	Main operating companies
Eastern Cape	265	Algoa Bus Company
Free State	240	Inter State Bus Lines
Gauteng	2130	Putco, North West Services
Mpumalanga	440	Putco
KwaZulu-Natal	1600	various
Limpopo	190	Great North
Northern Cape	40	various
North West	220	various
Western Cape	910	Golden Arrow
TOTAL	6035	35.9
Source: Department of Transport (2007d)		

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Table 93: Municipal subsidised fleets

Province	Number of buses	Main operating companies
Johannesburg	530	Metrobus
Tshwane	232	Tshwane Bus Company
Ekurhuleni	76	
eThekwini	650	
TOTAL	1488	various
Source: Department of Transport (2007d)		

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12% per year in recent years. The increase was driven by increased urbanisation improved services and the escalating costs of motoring.

The apartheid-era bus subsidy system was based on 'lifelong' permits. Operators who had permits to operate a route could do so for as long as they wished. An economic fare was determined for the route based on cost estimations and a 'normal' profit. A subsidised fare was also set. Operators collected the subsidised fare from commuters and the government paid the difference between the economic and subsidised fare.

Soon after 1994, the Department of Transport sought to end this system and shift to a new system known as 'current tendered contracts'. However, this was not easy to achieve since the rights given by the existing open-ended system were generally more attractive. Initially the tenders were to be for a period of four years. However, from April 1997 this was changed to five years in an attempt to reduce costs. It was subsequently changed to seven years.

The shift to a tendered approach was driven partly by the new constitution. However, new thinking in the Transport Department also motivated it. Apart from limiting the length of the concessions, among the objectives was that the department sought to provide for the incorporation of the minibus taxi sector to the new system, formalising it at the same time. It also sought to lower the average age of the buses. In 1997, the average fleet age profile in the country was 13 years, with many of the buses using obsolete and inappropriate technology. The objective was to lower the average age to 10 years by specifying the maximum bus age requirement of 15 years and only allowing a bus younger than 15 years from date of first registration to be rebuilt or refurbished (Department of Transport 2004b).

The shift to a new tendered basis presented a threat to existing bus operators, and to unions. Therefore, the Department of Transport, organised labour and the bus industry signed an agreement in an attempt to address labour's demands related to potential job losses. This incorporated a 10% 'right of first refusal', whereby if an existing operator's bid was within 10% of the winning tendered bid the existing operator

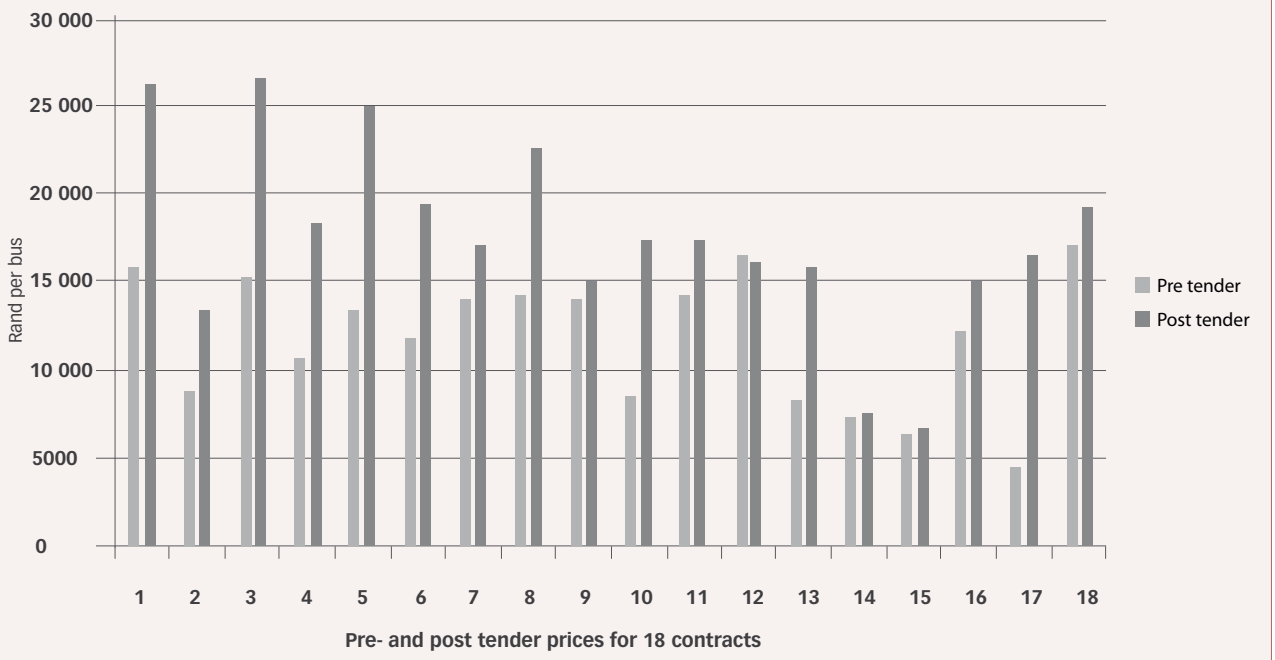

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Figure 37:Comparison of subsidy per bus between old and new tender system

Table 94: Contract types in operation in 2009

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Contract type	Number	Percentage of subsidy budget
Interim contracts	39	68%
Tender contracts	66	28%
Negotiated contracts	10	4%
TOTAL	115	100%
Source: Department of Transport quoted in Walters (2009)		

had the right to be awarded the contract at the winning price.

From 1997, the contracts were shifted from the inherited approach to what were termed 'interim contracts' in preparation for the tendering system as a first step. After its promulgation in 2001, the NLTTA sought to govern the new approach to bus contracting. However, it became evident that the prices that were tendered based on the new contracts were generally too high to be affordable to the departmental budget.

Figure 37 compares the subsidy per bus prior to the new tendering approach and the subsidy in terms of the new approach for 18 contract areas. All of the new tender prices were higher (Department of Transport et al (2002)).

Since February 2003, when a temporary moratorium on changes was lifted, contracts that were not re-awarded through a tender process have been extended on a monthly basis, and continued to be referred to as 'interim contracts'. Provision was also made in the NLTTA and carried over into the NLTTA to allow the authorities to negotiate new terms with an existing operator. This is allowed only once per contract, after which a full tendering process is mandatory.

Because of the legal and financial problems, the shift to the new tendered – or even negotiated – contracts has not been as fast as might have been hoped. Although most contracts (in terms of number) have been shifted, most contracts (in terms of value) remain interim contracts. Table 91 summarises the position as at mid-2009.

One of the difficulties, with a set subsidy per ticket sold, is that, as passenger numbers increase, the total amount payable in subsidy increases too, sometimes beyond the budgeted provision. Over the years, this was managed by

Table 95: Accumulating deficit arising from differences between subsidy incurred and actual appropriation (R millions)

	2005/06	2006/07	2007/08	2008/09
Initial allocation	2278.5	2415.2	2536.0	2829.6
Adjustment	19.2	45.1	300.0	154.5
Total allocation	2297.8	2460.3	2836.0	2984.1
Actual subsidy expenditure	2383.7	2695.6	3110.0	3688.8
Annual deficit	85.9	235.2	274.0	704.7
Accumulated deficit		321.1	595.1	1299.8
Source: Walters (2009)				

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Table 96: Projected subsidy shortfall by province for 2009/10

Province	Expenditure for 2008-09	Projection for 2009-10	DORA allocation 2009-10	Projected shortfall 2009-10
Limpopo	172.7	190.0	174.5	-15.5
Gauteng	1,466.3	1,613.0	1,403.8	-209.1
Mpumalanga	383.9	422.3	370.7	-51.6
KwaZulu-Natal	691.9	761.1	647.4	-113.7
Free State	158.0	173.8	151.8	-22.0
Eastern Cape	122.3	134.5	126.5	-8.0
Western Cape	628.4	691.2	593.7	-97.5
Northern Cape	23.7	26.1	22.2	-4.0
North West	41.6	45.8	41.3	-4.5
	3,688.8	4,057.7	3,531.9	-525.8
Source: Walters (2009)				

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the national government that increased the allocation in the adjustments budget and the provincial governments that paid bus operators out of funds intended for the next financial year. The upshot was that an accumulating deficit emerged and increased from year to year. Table 95 shows this developing situation between 2005/6 and 2008/9.

In late 2008, government indicated that it would not be able to fund the industry's contracts for the last four months of the financial year. Bus operators from Cape Town and Pretoria thus took government to court. This resulted in the national government being compelled to make the payments.

The process by which tenders had been managed, and the relative responsibilities of the provincial and national governments in this regard, was exceptional. While the subsidies had been managed at the provincial level, they did not appear on provincial budgets. In essence, provinces managed them on behalf of the national government. This was confirmed by the court that instructed National Treasury to pay the shortfall.

Part of the response by National Treasury was to reconstitute the subsidy as a conditional grant to provinces. It is now known as the Public Transport Operating Grant and has a number of conditions attached to it. One of the responsibilities required of the provincial departments, with the introduction of this new approach in the 2009/10 fiscal year, was that is that all interim contracts had to be re-negotiated to pay subsidies per kilometre rather than according to the number of tickets sold.

The conditions of the grant also require Public Transport Integration Committees to be established. These would consist of all three spheres of government in order to ensure, inter alia, that the subsidies paid to the bus operators were paid in a manner that was consistent with the introduction of the new Integrated Rapid Public Transport Networks as provided for in national government's new public transport strategy and the new NLTA.

Table 97: National bus subsidy and yearly increase

	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13
Amount of subsidy R millions	2172.7	2297.8	2460.3	2836.0	2984.1	3531.9	3863.0	4153.2	4360.9
Percentage increase on previous year's provision		5.8%	7.1%	15.3%	5.2%	18.4%	9.4%	7.5%	5.0%

Source: National Treasury (2009a; 2010a), Division of Revenue Act, 2009, Division of Revenue Bill, 2010.

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Despite the changes, a number of unresolved issues remains. It would appear that the allocations in terms of the Division of Revenue Act of 2009 were insufficient to cover the costs of the agreed contracts in the 2009/10 financial year, even taking into account the revision of the contracts to be payable on a per kilometre basis. Table 96 (in Walters (2009) and attributed to the Department of Transport) gives the actual expenditure for 2008/9 and the projected expenditure for 2009/10 as well as allocation for 2009/10 and its projected shortfall.

Table 97 shows the actual subsidy amounts paid per annum on a national basis from 2004/5 to 2008/9 and the budgeted amounts for the three years from 2009/10 to 2011/12. It also shows the annual increase over the previous year's provision.

Apart from these amounts, the 2009 Estimates of National Expenditure (National Treasury, 2009a) indicate that 'the programme expenditure is expected to exceed the appropriated allocation by R1.2 billion in 2008/09 due to legal action relating to bus subsidies'. In essence, this means that an additional R1.2 billion has been provided. However, this is to cover the accumulated shortfall indicated in Table 95 and not the projected shortfall of R525 million shown in Tables 96.

The new approach by national government would suggest that provinces will have to either cut the subsidies or find additional revenue to supplement the amounts provided by national government. This would have to come out of the general unconditional grant allocations to provinces.

A significant thrust of the NLTTA is that it provides for metropolitan governments to become responsible for managing the bus contracts previously managed by the provinces. The requirement in the Division of Revenue Act, 2009, and repeated in the Division of Revenue Bill, 2010, that Public Transport Integration Committees be established is fully consistent with this.

To the extent that operating subsidies must be paid to provide road-based public transport, the PTOG will be the channel. One of the critical issues to be addressed is how these legacy services and the associated funding are moved into the new bus rapid transit systems. A further crucial issue to be considered is how provinces will manage the ongoing provision of subsidised bus services to the distant areas of displaced urban areas like Botshabelo and the former homeland areas to the north of Tshwane.

4.3 Commuter rail

Some of the South African urban areas have significant commuter rail services, although rail only carries 11.2% of metropolitan area commuter trips and 5.9% of all metropolitan trips on average. It was hard hit by the growth of the minibus taxi industry, which is particularly effective at competing for the off-peak market. Low passenger numbers in off-peak periods meant that even infrequent trains were largely empty.

Figure 37 shows commuter rail trips per year for a thirty-year period from 1980 to 2009. Despite high and sustained population growth in the cities over the period, the total number of rail trips in 2009 remains lower than it was in 1980. The decline can be traced from the early 1980s to a low point around 1994. It largely stagnated for a decade before climbing again in recent years. Opening new lines in Khayelitsha in Cape Town has contributed significantly to a growth in passenger numbers in recent years.

The decline in investment in the commuter rail system over a long period has resulted in a generally poor service in much of the country. Frustration with services has led to a number of serious instances of vandalism with whole trains being burnt in protest at delays and other problems in recent years.

The government had tried to address the problems in commuter rail by introducing a SARCC to act as a 'buyer' of

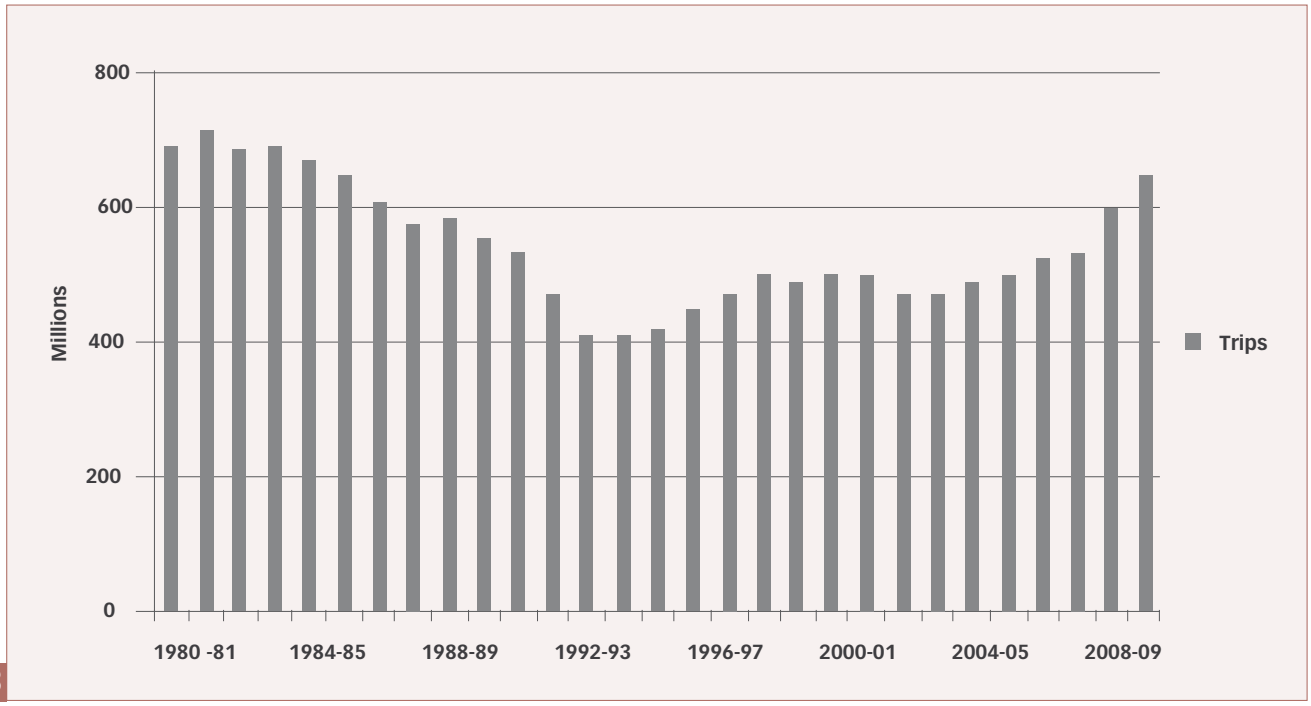

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Figure 38:Rail trips per annum from 1980 to 2009

services from the 'operator' Metrorail in 1989. Metrorail was part of Transnet, the national transport services parastatal. The mandate of SARCC was to "ensure rail commuter services were provided in the public interest and to promote rail as the primary mode of mass commuter transport". Its functions included managing finances and subsidies, managing the asset base and property portfolio and providing passenger rail information.

With the restructuring of Transnet in 2004, it was decided to combine SARCC and Transnet under the national Department of Transport and consolidate it with the long distance rail services known as Shosholoza Meyl, the associated long distance bus company known as Autopax and the property company that controls all property owned by the rail services known as Intersite. Metrorail was moved to the Department of Transport in March 2007, and in March 2009 the new consolidated passenger rail entity, known as PRASA, was established. Transnet continues to report to the Department of Public Enterprises.

PRASA is thus positioning itself as the provider of urban commuter rail services and long distance and rural public passenger transport services. These may include operating and delivering essential feeder and distribution services where this is considered feasible and necessary. It is also responsible for the property portfolio around its stations, which hold considerable potential, particularly if rail services can be improved.

The intention has been that rail will eventually be devolved to provincial or metropolitan governments. However, this idea has not been substantially developed other than to require rail authorities to consult local governments on plans.

Table 98: Classification of rail corridor priority grading

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A	Clear case for rail (High service level – ranks amongst top corridors and rail is clearly more appropriate and cost effective than other modes with passenger numbers at > 20 000 – 30 000 passengers per hour)
B	Rail still justified (requires lower level of service than for 'A' but higher than current
C	Case for rail uncertain (needs further review)
D	No case for rail at present
Source: SARCC/Metrorail 2006	

Table 99: Key statistics for A and B rail corridors

Region & Corridor		Daily Passenger Trips	Daily Passenger Km's	Daily Train Journeys	Daily Train Km's	Route Length (km)	No. of Stations
Tshwane	Mabopane-Pretoria (A)	266,700	3.55m	93	1,660	39.5	18
	Pienaarspoort-Pretoria (A)	182,600	1.22m	48	1,275	26.6	14
	Olifantsfontein (B)	60,100	1.74m	79	2,820	31.7	9
	Saulsville (B)	107,200	0.54m	57	801	14.1	7
Wits	Core network (A)	248,410	1.93m	260	8,169	42.8	27
	Naledi-New Canada (A)	85,483	0.54m	185	2,975	16.1	8
	Kwaggastroom-NC (A)	86,290	0.49m	108	5,173	52.6	15
	Olifantsfontein/Tembisa (A)	110,339	2.16m	105	4,022	43.5	13
	Daveyton-Germiston (B)	60,306	0.92m	82	2,843	31.5	11
	Springs-Dunswart (B)	29,086	0.59m	65	1,311	20.2	9
	Kwesine-Germiston (B)	36,704	0.46m	56	1,784	27.1	12
	Randfontein-Langlaagte (B)	27,804	1.05m	72	2,723	37.8	23
Ethekwini	Umlazi (A)	221,300	N/A	167	3,955	45.3	20
	Kwa-Mashu (A)	144,000	N/A	36	3,955	45.3	20
	Duffs Road (B)	35,200	N/A	36	2,750	74.7	19
	Isipingo (B)	36,700	N/A	64	2,890	50.7	16
	Crossmore (B)	17,500	N/A	30	730	20.2	5
Western Cape	Khayelitsha (A)	338,000	6.62m	171	5,610	34.0	18
	Kraaifontein (A)	75,000	2.32m	134	1,790	31.0	27
	Simonstown (A)	130,000	3.68m	204	5,660	36.0	42
	Balance of corridors	160,000	1.05m	154	5,890	N/A	N/A
Eastern Cape	(NMMM) (B)	9,800	0.15m	12	380	33	11
	(BCC) (B)	22,100	0.53m	23	957	41.6	18

Source: SARCC/Metrorail 2006

The National Rail Plan was agreed in 2006 as the basis for re-investing in the industry. Since the mid 1980s no new trains had been bought and much of the technology dated from the 1950s. The National Rail Plan sought to assess the viability of the various corridors across the country as a basis for deciding on investment priorities. Based on a set of agreed criteria, each corridor was graded A to D.

Table 99 shows all the corridors classified in the National Rail Plan as either A or B. It therefore indicates all the important commuter rail corridors currently in the country. It gives some salient statistics about to those services. Most of the regions correlate with a single metropolitan authority, although the Wits Region covers both Johannesburg and Ekurhuleni. The corridor that carries the largest number of passengers is the link between Khayelitsha and the Cape Town Central station in Cape Town. The second largest number of passenger trips is found on the route between Mabopane and Pretoria, although the Cape Town to Simonstown line records more passenger kilometres per day.

Flowing from this assessment, a capital investment plan for the short-, medium- and long-term was developed. Table 100 shows the capital requirements. Note that the largest required allocations for upgrading the network are in the Wits region.

According to the National Rail Plan, the corporation aims to boost revenue by:

1. Replacing the ticketing system.

2. Focusing on fare evasion.

Table 100: Capital investment plans for Category A corridors by region for Metrorail excluding rolling stock requirements

Region	Short-term(Rm)	Medium-term(Rm)	Long-term(Rm)
Tshwane	R55.5m	R126.0m	R105.3m
Wits	R2,202m	R599m	R2,000m
KwaZulu Natal	R786m	R150.7m	-
Western Cape	R740m	R90m	R142.5m
Eastern Cape	R218m	R60m	-
Total	R4,001m	R1,026m	R2,248m
Source: National Treasury (2008a, 2009a, 2010a)			

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Table 101: Transfers from National Government to Metrorail and SARCC (R millions)

	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Current	1 843.5	2 156.4	2 751.3	2 259.1	3 049.6	3 185.8	3 154.9	3 343.7	3565.9
Capital	655.0	688.3	1 029.6	1 696.1	2 367.7	3 831.8	4 813.3	5 784.8	6021.1
Additional transfers from PTISG			179.0	476.0		464.8	797.0	7.5%	5.0%
Source: National Treasury (2008a, 2009a, 2010a)									

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Table 102: Selection of key commuter rail performance statistics

		2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
		Actual				Projections		
Number of coaches overhauled and upgraded	Metrorail	375	310	489	709	531	450	450
	Shosholoza Meyl					30	40	50
Percentage trains on time (A corridors)		89%	87%	86%	87%	90%	92%	93%
Passenger trips per year		512m	530m	592m	646m	677m	745m	815m
Fare Revenue (R million)		R1020.0	R1060.0	R1191.0	R1335.0	R1347.0	R1465.0	R1610.0
National operational subsidy		R2156.4	R2751.3	R2259.1	R3049.6	R3185.8	R3154.9	R3 343.7
Source: Compiled from National Treasury (2009a; 2010a) and PRASA Annual Report 2008/9								

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3. Re-balancing fares.

4. Increasing patronage by arresting the decline in passenger numbers and capturing key strategic corridors.

Since Cabinet adopted the National Rail Plan there has been a marked increase in investment in what was then referred to as SARCC (now PRASA). Transfers to SARCC increased at an annual rate of 24% in the three years to 2009/10 and are projected to increase at an annual rate of 17.1% in the medium-term (National Treasury 2009).

Table 101 shows the amounts transferred to SARCC for current and capital subsidies.

The significant increase in capital expenditure is vital to

Table 103: Transfers to taxi owners for taxi recapitalisation

	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13
	Actual					Projections			
Taxi scrapping allowances	0	0	99.5	571.6	460.5	630.8	497.6	471.5	495.0
Taxis scrapped in the financial year			1990	11429	9208	11616	9164	8682	9117

Source: National Treasury (2009a, 2010a)

enhancing commuter rail services, and the focus of the investment on priority corridors means it is easier to make improvements in key areas.

Table 102 shows some key statistics related to the investment for improving the services and some resultant actual and projected service delivery indicators.

Slightly disturbing are the recent indications that, having achieved much greater funding support, Metrorail now appears to support expensive projects outside of the priority projects indicated above. Two examples that require further examination are:

1. The Moloto Corridor project. This involves expenditure of R8.6 billion to build a high-speed train to serve a dispersed rural route of 118 kilometres currently used by approximately 30 000 subsidised bus passengers between Tshwane and KwaMhlanga, the former KwaNdebele homeland.

2. A Cape Town Central Business District (CBD) to airport rail link estimated to cost R1.8 billion, yet expected to carry very few passengers. The recently published 2008/9 PRASA Annual Report shows the Cape Town CBD to airport link as a current project which is 'on track' with only minor problem. It notes "the technical feasibility, environmental assessment and detailed implementation programme have been completed", "negotiations with bidders have been approved by the FCP committee" and "transaction advisors are due to be concluded during the 2009/10 financial year" (PRASA Annual Report 2008/9 p22). The project will duplicate the Cape Town bus rapid transit route from the airport, for which infrastructure has already been built, and that is due to open before the 2010 World Cup.

It is clear that creating a governance framework that places effective planning and prioritisation of commuter rail at the city level or, in the case of the Wits and Tshwane regions, in combination between Johannesburg, Ekurhuleni and Tshwane within a rational fiscal framework is a priority, even if more substantial devolution in line with stated policy intentions takes longer.

4.4 Taxi recapitalisation

The Taxi Recapitalisation Programme was presented to cabinet and agreed in September 1999. At that point, the estimated number of taxis to be recapitalised was 97,000. The idea of taxi recapitalisation was a creative one, arising from the work of the National Taxi Task Team. The government created it in the mid 1990s to address the many challenges in the taxi industry – including challenges around the profitability of the industry, safety levels, and the high level of taxi violence. Recognising the very significant role played by the taxi industry, the objective was to improve its quality while retaining many of its key market-driven characteristics within a better-managed overall framework.

There were a number of motivations for the taxi recapitalisation programme. Firstly, it was hoped to reduce average fleet age and thus improve safety, together with other improvements arising from technology that is more modern. Secondly, the larger vehicles it would introduce should result in more operational efficiency, thus permitting a more efficient service. Thirdly, it was expected to assist in formalising the taxi industry. Fourthly, it was a response to arguments that there was unfair discrimination against the taxi industry because it was not subsidised while the bus industry was. The Taxi Recapitalisation Programme offered a more manageable and restricted form of subsidy than replicating the operating subsidy of the buses.

Taxi recapitalisation did not exclude the possibility of taxi owners getting operational subsidies. It was argued that by improving efficiency through the once-off recapitalisation process, taxi operators would be in a better position to tender for subsidised public transport contracts. Unfortu-

Table 104: Total estimated number of minibus taxis by province

Province	Number of taxis
Eastern Cape	10000
Free State	6000
Gauteng	44000
Mpumalanga	9000
KwaZulu-Natal	21000
Limpopo	9000
Northern Cape	1200
North West	10000
Western Cape	15000
Total	125200
Source: Department of Transport (2007d)	

nately, the implementation of the Taxi Recapitalisation Programme has been somewhat slow. There were disputes about the specifications of the new taxi vehicles that could qualify as replacement vehicles and the scrapping administrator was only appointed in October 2006.

The Estimates of National Expenditure (National Treasury 2009a and 2010a) give the figures on the Taxi Recapitalisation Programme as shown in Table 100.

The figures indicate that 34243 taxi-scrapping allowances have been granted as at end 2009/10.

Logistical problems are amongst those that present obstacles. For example, operators cannot afford significant downtime and there can be a considerable delay between the scrapping of the vehicle, the issuing of the R54300 allowance and the delivery of a new one. Many in the industry also argue that the R54300 is insufficient to have a real effect. However, it is difficult to change this amount significantly. The amount was R50000 before April 2009, but an annual inflation linked increase was introduced after that date.

Recent figures from the Department of Transport giving the total estimated number of minibus taxis by province.

A recent report quoted an official of the Department of Transport as estimating the total figure at 135000 (Business Report, 11 March 2010).

If the taxi recapitalisation programme is rolled out in line with the budget and concomitant taxi scrapping expectations, a total of 61200 taxi-scrapping allowances will be paid out. This accounts for a little over 40% of the estimated 135000 taxis nationally.

4.5 Gautrain

The Gautrain is possibly the best known of the current public transport projects in South Africa. It has become controversial largely because of its high cost, and the fact that it is aimed at serving existing motorists and airport customers rather than those most dependent on public transport. It is described as a rapid rail link, and connects Johannesburg, Tshwane and Johannesburg's OR Tambo Airport – all of which fall within the extended urban region of Gauteng. Once completed, the total track length will be 80 kilometres, running between Park Station in Johannesburg in the south and Hatfield, Tshwane, in the north, with a line connecting from Marlboro Station north east of Sandton to the OR Tambo Airport.

South Africa currently uses a narrow gauge (1067mm) rail. Gautrain, however, will run on a standard gauge (1435mm). Once completed, there will be 24 trains with four cars each. Trains will have a maximum speed of 160 kilometres per hour with six trains an hour travelling in both directions. However, it would appear that, because of the distance between stops, their speed will seldom exceed 80 to 100 kilometres per hour. The system will operate for 18 hours a day and will have 10 stations. Fifteen kilometres of the route will be tunnelled – mainly within the current built up area of Johannesburg around Rosebank and Sandton.

The project feasibility study shows that approximately 100,000 trips per day are projected. This will increase by 4.8% a year to reach 120000 by 2010 and eventually to 130000 once the project is completed. The 2004 feasibility study

Table 105: National government's matching contribution to Gautrain (R millions)

2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
0	0	3241.0	3029.4	3266.0	2976.7	438.4	5.3

Source: National Treasury (2010a)

assumed that 20% of motorists using the Ben Schoeman highway would use the Gautrain.

Gauteng premier, Sam Shilowa, originally announced the Gautrain as a provincial project in 2000. The provincial government projected its cost at between R3.5 and R4 billion in 2000. However, costs escalated as planning proceeded. In October 2005, the Minister of Finance announced that the project had 'national status' and that it would be supported financially on a matching 50:50 basis between the national and provincial governments. A further amount needs to be contributed by the Bombela consortium building the project.

The cost escalation has been significant. The estimated figure was revised upwards to R7 billion at the time of the Environmental Effect Approval process in 2004. However, the Minister of Finance put the cost at R20 billion in October 2005. It currently appears that costs are around R28.4 billion. Table 105 shows actual and projected cost contributions from national government.

This amounts to a total of R12,956.8 million, which would match an equivalent amount by the provincial government. An additional amount of approximately R3 billion should be added to this. This is being borrowed by the Bombela Consortium to give an approximate total project cost of R28.9 billion.

This compares with an estimated R73.8 billion (including the R12.957 billion on Gautrain) that the national government projected to spend on all public transport related services between 2006/07 and 2010/11. This is the period during which expenditure on the Gautrain will take place (National Treasury 2010a). If one adds Gauteng's own contribution for the Gautrain to the figure of the national government, it makes the total during this period R86.8 billion. This would be close to the figure for expenditure on public transport by all spheres of government during this period, as there would be limited spending by other provinces or municipalities from own revenues.

The Gautrain has thus accounted for approximately a third of all public spending on public transport in the country. This includes all publicly funded capital projects and operating subsidies over the five-year period from the 2006/7 financial year to the 2010/11 financial year.

The Gautrain may require further operating subsidies. This will happen if ridership does not reach the envisaged minimum levels needed to ensure profitability. Government has given minimum guarantees should this occur. In 2006, the maximum theoretical exposure of government was calculated at R14.3 million per month for 15 years. The likely maximum exposure was R7.5 million per month, while a more likely figure, based on simulations, is R5.9 million per month.

After the announcement that the project had national status, the Transport Portfolio Committee in the National Assembly held hearings in terms of its oversight obligations. The committee expressed serious misgivings about the project. It found that:

1. there had been insufficient transparency and effective participation by key stakeholders;

2. that the costs were very high compared to other more pressing public transport requirements – and these were possibly still underestimated;

3. that it was a high risk project aimed mainly at an affluent target market; and

4. that it represented a fragmented approach that would address only a very limited part of total public transport corridor needs in Gauteng.

The committee advised against going ahead with the project in its current form. It argued that much greater attention was needed to show how the Gautrain would integrate with other public transport systems. It suggested that the best approach would be to develop a more comprehensive network based on the Integrated Transport Plans of the three metropolitan governments rather than a single costly project.

However, Cabinet finally approved the project on 7 December

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Figure 39: Transmilenio system showing median lane and station

2005. Construction on the airport to Sandton link began on 28 September 2006. Although Gautrain is not a requirement for the 2010 World Cup in terms of the agreement with FIFA, it had been hoped that the link between OR Tambo Airport and Sandton would be in place in time for the World Cup. This remains a possibility according to recent radio reports.

As with many projects of this nature, its effect is not entirely predictable. It is possible that it will become an important facility for middle class users, and that this in turn will drive property development in a manner that contributes to a more compact urban area. The best possible outcome is that it contributes to a different vision of future spatial development of the Gauteng area. However, there is a danger that it makes less of a real impact on travel patterns than was hoped and that it fails to run at adequate capacity, resulting in ongoing operating deficits.

4.6 Bus Rapid Transit (BRT)

Some cities, such as Johannesburg, eThekwini and Tshwane, have, over the years, continued to run a somewhat limited municipal bus service. Both the management and financing of these services has been problematic. Furthermore, the locus of responsibility for decision making on bus services has generally been with national and provincial governments.

However, the concept of bus rapid transit was introduced to Johannesburg in 2006. It was subsequently adopted in various forms by Cape Town, Tshwane and Nelson Mandela Bay. Other cities, such as Buffalo City and eThekwini, are now investigating the potential for similar systems.

The BRT model that is being used as a benchmark in South Africa originates in South America. The concept was first introduced in Curitiba approximately 30 years ago. However, a more sophisticated version was opened in Bogota, Colombia, in 2000. This model has subsequently been the basis for the development of many new systems around the world.

BRT usually consists of trunk and feeder systems. The trunk system tries to replicate a metro system, but uses buses rather than rail. The key features of the trunk system include:

Dedicated roadways for the vehicles in the median

The dedicated roadways permit much higher speeds because there is little interference with traffic. The reason for using the median is that this greatly reduces interference with other traffic. Were the buses to use the side of the road they would constantly need to make allowances for traffic turning left (in countries which drive on the left hand side of

the road). Vehicles turning right, across the oncoming traffic, have to give way to this traffic anyway, but traffic lights in busy intersections can regulate this.

Stations with pre-boarding ticket verification

One of the drawbacks of conventional bus services is that passengers usually have to board one at a time in order to show their tickets. With stations, passengers can have their tickets verified at the entrance. Many people can therefore board and alight quickly when the vehicle arrives. BRT vehicles have wide doors to facilitate this. This greatly reduces time spent at stations, significantly increasing the speed of the service.

These features do mean that users must cross traffic flowing in one direction to reach the station. However, in conventional systems, users either have to cross no traffic or two directions of traffic. The amount of crossing required is the same for each system. However, it tends to be easier to cross traffic if it is only going in one direction.

Level boarding

BRT systems are designed so that the platform and the bus floor are level with each other. This permits easier access, including wheel chair access.

Private operators are paid on a per kilometre basis

One of the problems with South Africa's minibus system is that operators compete to be the first at stops to pick up passengers. They will also generally wait until their vehicles are full before leaving. In a BRT system, private operators are used, but they are contracted on a per kilometre basis and drive according to routes and times set by the public authority. Systems generally have more than one operating company. Private operators compete *for* the market, but not *in* the market.

A public authority directs the system and collects fares

BRT systems require a public authority – or company working under a public authority – that contracts the vehicle operators and sets the routes, times and fares. These authorities run a control centre that is constantly monitoring and in contact with all vehicles. Vehicles can be directed to slow down or speed up to reduce bunching. Detailed passenger information is received every day. This enables the public authority to tailor services to meet demand regularly.

It should be noted that this shifts a significant amount of financial risk onto the public authority. If use falls below expectations, vehicle operators can be required to reduce their vehicle kilometres. However, this needs to be limited so that they have a reasonably secure basis upon which to tender for services. Setting fares becomes the responsibility of the public authority. The authority usually employs an independent fare collection company.

In South Africa, the banking sector will introduce a new smart card system from April 2010. It can be loaded with electronic cash and with 'transit products' (a set of public transport tickets). They will become the basis for fare systems on BRT and other transport modes.

Appropriate vehicle sizes

BRT systems are able to size vehicles according to demand. Articulated vehicles are able to carry 160 passengers or more. Size can be set in order to optimise frequency.

Frequent service

BRT systems seek to provide services at sufficiently frequent intervals so that timetables are not required. The outer limit for such a system is one vehicle approximately every 20 minutes. Beyond that timetabling tends to become necessary.

Free transfers on trunk routes

The system of stations means that passengers can alight from a vehicle and board another vehicle travelling in a different direction from the same station.

Feeder systems integrate with trunk systems

Most BRT systems have feeder systems that are designed to integrate with the trunk systems. The feeder systems do not have dedicated lanes or pre-board fare verification. However, fare systems can be designed to permit for free transfers or to integrate the feeder routes into a single distance or zone-based fare.

Use of existing operators

Most BRT projects try to use existing operators to run the system. Where the informal sector serves the existing system, as in South Africa, this presents very significant challenges.

4.6.1 Johannesburg's Bus Rapid Transit project

Planning for the Johannesburg system, known as Rea Vaya, built on work previously undertaken towards the development of what was referred to as a Strategic Public

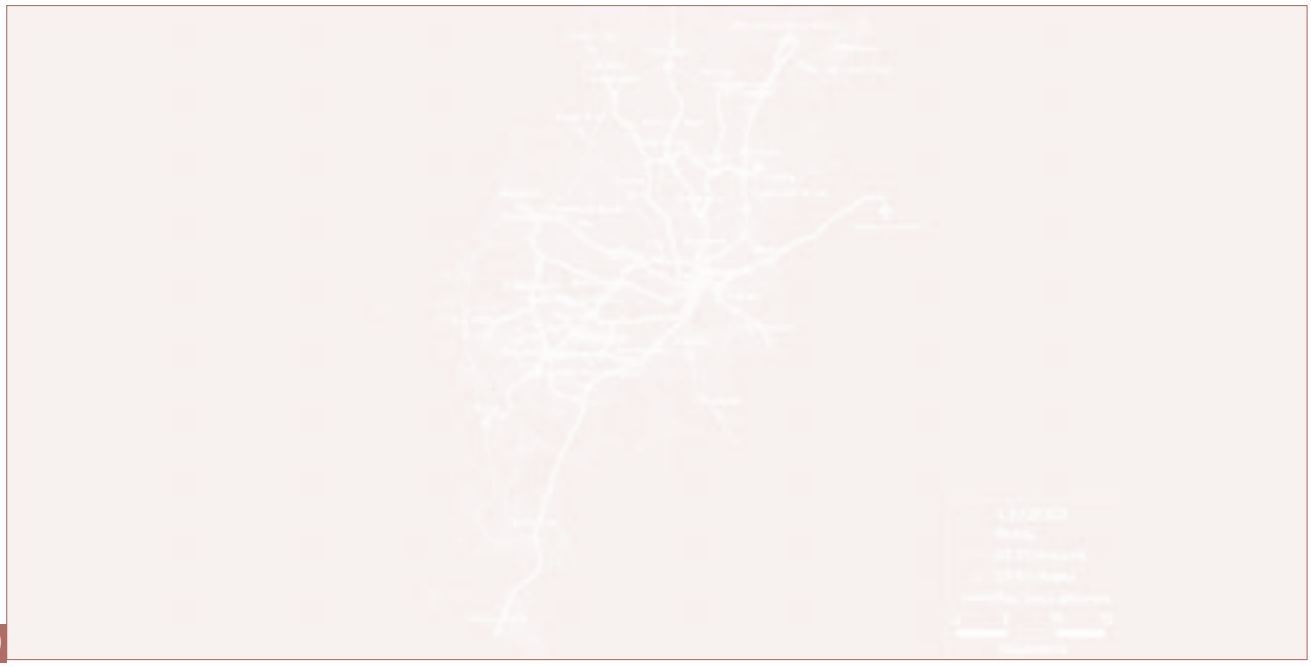

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Figure 40:Long term proposal for Rea Vaya system (330 kilometers)

Transport Network (SPTN) - essentially a planned network of bus routes across the city. But in 2006 before any construction had taken place, the Mayoral Committee recommended that a number of key SPTN corridors be approved for Phase 1 BRT implementation. A feasibility study established a goal of putting 85% of Johannesburg's population within 500 meters of a stop while a timeline was proposed which aimed to initiate Phase 1 operations in time for the 2010 World Cup. A long term vision of the system was also developed. This initial proposal for a full system envisages trunk routes of approximately 330 kilometers.

As implementation has progressed the original conceptualisation has had to be revised in the face of budget constraints, increased costs and the complexities of incorporating the taxi industry. Actual implementation has not been as fast as was initially envisaged. However, very substantial progress has been made, with the first operations beginning at end August 2009.

What are now referred to as Phases 1A and 1B are reduced in size from the original conceptualisation. The route already completed, which is shown in Figure 40, is now referred to as Phase 1A, and is 25.5 kilometres long. Once in place the system (i.e. Phase 1A and 1B combined) will use 640 vehicles.

While the infrastructure for most of Phase 1A is in place save for the depots, the envisaged Phase 1A routes have not all commenced, largely because of the need to negotiate with the taxi and bus industry around how services are to be provided. The initial service is referred to as a 'starter service', and uses 45 vehicles, with a further 5 vehicles in reserve. When it started operations it was carrying approximately 16 000 passengers per day, but this appears to have increased to 20 000 per day. Currently approximately 90 vehicles are being stored while negotiations with the taxi industry continue.

Figure 40 shows the progress with the actual implementation of the physical trunk infrastructure of the system, while the table describes these sections and the proposed forthcoming sections of trunk routes to be completed.

Capital costs for Rea Vaya so far have been approximately R1.8 billion. Most of this has been spent on the 25.5 kilometres trunk route for the reduced Phase1A. It has been financed

Phase	Kilometers	Stations	Buses	Passengers per day	Travelled kilometres
Phase 1A	25.5	25	143	70000	8.4 million
Phase 1B	63	78	640	334000	40 million

Phase	Kilometers	Stations
Description of trunk infrastructure to be built	**Planned implementation date**	**Colour as shown in Figure 40**
Orlando to Ellis Park via NASREC and the CBD	Completed	Green
Extend existing trunk from Orlando south west to Regina Mundi; Construct section of Phase 1B from New Canada via Highgate and RAU to Parktown	end June 2010	Yellow
Complete links between New Canada and Noordgesig, and between Parktown and the CBD	end June 2011	Blue
		Red

almost entirely by the national Public Transport Infrastructure and Systems Grant (PTISG). The total allocations to Johannesburg in respect of this grant are given in Table 103.

Modelling for Phase 1A and 1B combined has indicated that once the system is fully operational and ridership has reached projected levels bus operations alone are projected to run at less than projected revenues before other operating costs are taken into account. However when these other costs are added, including the fare operator, station contract and Rea Vaya agency an overall deficit of R97.5 million per annum is projected. This excludes the trunk and station infrastructure maintenance costs. Given the intense pressure on the city's general budget this will prove demanding unless new revenue sources are approved.

In late 2009 the Mayoral Committee resolved to investigate new revenue sources. Options include a share of the national fuel levy dedicated to transport.

4.6.2 Cape Town's Bus Rapid Transit project

The Cape Town BRT project is referred to as an Integrated Rapid Transit (IRT) project. This is because it is intended to emphasise that the bus rapid transit system is to be fully integrated with the commuter rail system and any other public transport service to create a single public transport system. It is also consistent with the terminology of national government's policy to create Integrated Rapid Public Transport Networks.

While currently close to half of all public transport usage in Cape Town is rail, it is not possible to serve the Cape Town market comprehensively with rail. The rail services are able to transport large numbers over long urban distances, but are essentially a suburban type rail system, unable to penetrate the current urban fabric to the degree possible with bus rapid transit. Furthermore, the cost of extending the public transport system by means of rail would be prohibitive. Other than where rail reserves have been demarcated and protected, as the city grows the cost of procuring the right of way for a rail line would be very high. Furthermore, the commuter rail service requires bridging or tunnelling wherever crossing is required. In essence, suburban rail 'cuts up' urban space while the bus rapid transit has the potential to 'knit up' urban spaces into corridors with activity shared along and across the public transport route. Because of the spread out nature of Cape Town there are no new routes to be implemented where passenger numbers are so great that a BRT system is unable to service it.

The idea of a bus rapid transit system for Cape Town was initially promoted by the provincial government of the

Table 106: PTISG allocations to Johannesburg as at March 2010 (R millions)

Year	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Amount (R1000's)	184.0	329.0	661.2	652.8	1070.5	1200.0	800.0
Source: National Treasury (2010a)							

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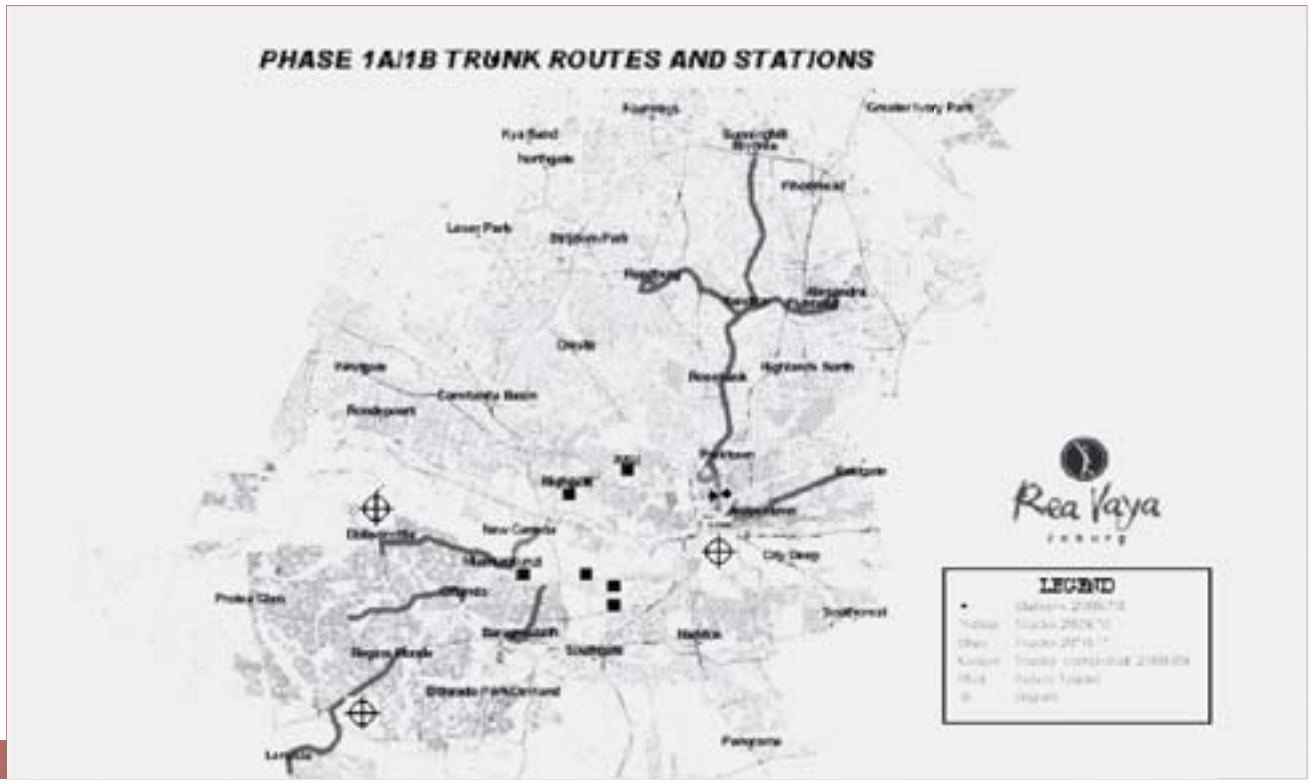

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Figure 41: Implementation as at November 2009

Western Cape. However, the provincial government's project never gained significant momentum and was essentially abandoned. The idea was resurrected by the City of Cape Town through the then Mayor, Helen Zille, in 2007.

Figure 41 shows the long term vision for the Integrated Rapid Transit network consisting of the envisaged trunk and feeder routes for BRT and rail.

Phase 1 serves the area referred to the West Coast, which is to the north of the Cape Town CBD. Because growth up the West Coast occurred more recently this area is not served at all by rail. It is the fastest growing area in the metropole; moreover its growth is constrained by significant traffic congestion. Phase 1 has a BRT station alongside the Woodstock rail station, connected by a pedestrian footbridge. Through this transfer passengers from the West Coast can thus easily connect to any route on the Metrorail system.

The project costs envisaged when the project was initially approved in August 2008 have proven to be very significant underestimates. The report also stated that no operating subsidy would be required for the first phase, and that it was expected that the roll out could be implemented in such a manner that at no time during the implementation of the full network would operational subsidies be required. Current modeling shows this to be incorrect. As in the case of Rea Vaya, if all operating costs, including security costs, the management of stations and the costs of running the fare collection system and control centre are included as well as the costs of the actual vehicle operations a significant ongoing subsidy will be required for the area of Phase 1A.

Taking into account all additional costs as well as escalation arising from a more delayed roll out the full capital costs of Phase 1A, including elements such as compensation of existing operators, are now estimated at R4.16 billion. Modelling has also indicated that approximately R118 million a year will be required to pay for the system operational costs not covered by fare revenues.

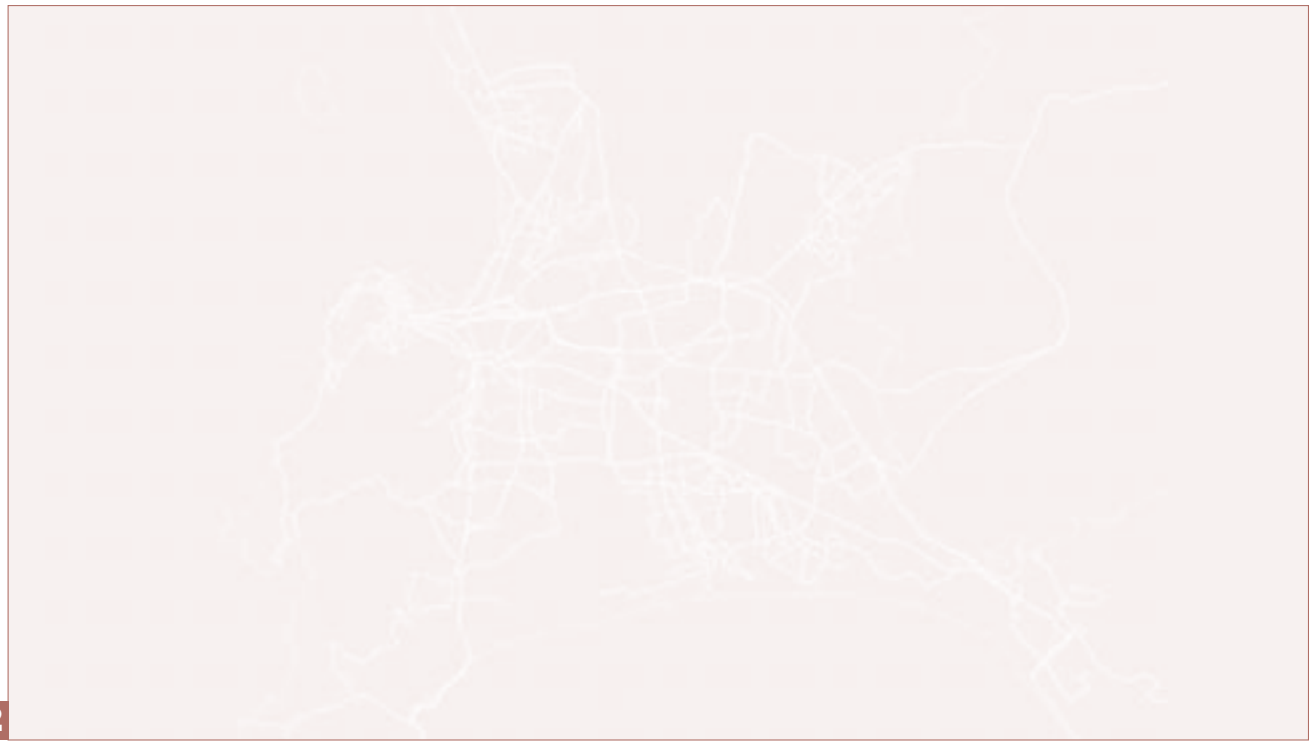

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Figure 42: Cape Town's envisaged Integrated Rapid Transit network showing trunk routes, feeder routes, and rail

The roll out of services for the Cape Town IRT are now projected to be as follows:

May 2010 to end October 2010	World Cup service	Airport to CBD link Feeder services within the central area Match day services for each of the eight 2010 match days involving a shuttle from civic centre to stadium
November 2010 to mid 2011	Starter service	Addition of the trunk service up the West Coast as far as Bayside (this infrastructure is currently being built)
Mid 2011 - 2013	Incremental additions to complete Phase 1	Functional IRT trunk in place as far as Atlantis including a variety of trunk and feeder routes, also extending to airport and Hout Bay
Further roll-out to take place once funds are available		

Key stations have been built, including those required for the World Cup service, while much of the dedicated roadway between the city and Bayside is complete. The city has ordered 43 trunk vehicles, including 35 12 meter and 8 18meter vehicles, which will be delivered prior to the World Cup.

One of the objectives in implementing the new system is to involve existing transport operators, particularly minibus taxi operators, but also bus operators, as owners and managers of the new vehicle operating companies. A company of taxi operators led by the Peninsula Taxi Association has now signed a contract with the City to deliver the World Cup service. They have already managed the service for the most

recent test event, and are gearing up to receive the new vehicles.

4.7 Gauteng Freeway Improvement Project

This document has concentrated on describing the most important public transport operations and initiatives relevant to the further development of public transport policy and interventions in the country. However a brief description of the Gauteng Freeway Improvement Project (GFIP) is included here to indicate the scale of resources being allocated to freeway upgrade in Gauteng in comparison to allocations to public transport.

The Gauteng Freeway improvement project is a massive project aimed at upgrading and expanding the current freeway network in Gauteng. It involves both freeway widening as well as the construction of new freeways. It has a number of other components such as lighting in the road median; concrete barriers; interchange upgrading such as single-point interchange conversions; installation of directional ramps; installation of traffic management systems (cameras, ramp metering and electric signage) and the implementation of a fully electronic toll system. A map showing all proposed phases of the project is on the following page (SANRAL website).

The project is split into three phases. The first phase began in June 2008 and will result in the upgrading of 185 kilometres of the existing freeway network, including the inner ring road around Johannesburg, which consists of portions of the N1, N12 and N3; the N1 highway between the northern end of the ring road and east Pretoria/Tshwane; and the R21 between the OR Tambo airport and Pretoria. The roads in this section cross the boundaries of all three metropolitan areas within Gauteng – namely, Johannesburg, Ekurhuleni and Tshwane/Pretoria. The project will widen the freeways to at least four lanes in both directions and in some sections up to six lanes. 34 interchanges are to be significantly upgraded, including well known bottlenecks such as the Allandale, Rivonia, William Nicol, Gilloolys and Elands interchanges. The first phase is expected to be completed in early 2011.

The freeway upgrade will be financed through tolling, which is to be introduced from October 2010. The tolling will take place through an open road tolling system, which would require every vehicle to carry an electronic tag. Tolls would be deducted every time a vehicle passes under one of 38 overhead gantries, which would be set about ten kilometres apart across the Gauteng freeway system. SANRAL envisaged that tags would be linked to bank accounts, or could be recharged at retail stores or through the Internet.

Figures published put the cost of the first phase at between R18.5 billion (Business Report 29th January 2009) and a little over R20 billion (iweek 1st June 2009).

The second and third phases of the project involve the upgrading and new construction of a further 376 kilometres of the Gauteng freeway network. New freeway sections include the PWV 9 (South), between the N14 and N1, and potentially a southern extension of the Mabopane Freeway up to the R55; PWV 5 between the R21 and PWV9; PWV 14 between R21 and M2; and the N17 to the West Rand.

No authoritative estimates appear to be publicly available as to the cost of the second and third phases, but they are large projects which could be expected to cost of a similar order to the first phase. The cost of the full project would thus be well in excess of R50 billion.

5. KEY STRATEGIC ISSUES

This descriptive analysis of public transport in South Africa raises a number of strategic issues. The first set of issues relates to understanding better the public transport sector within its urban context and the key changes needed to enhance outcomes; this, in turn raises institutional and financial issues, both of which are central to the Financial and Fiscal Commission's mandate.

5.1 Public transport within its urban context

The objective in enhancing urban public transport in South Africa is not for its own ends but to enhance the quality of life and economic efficiency of South African cities.

The introduction to this paper noted five factors that contribute to making the provision of effective public transport in South Africa so difficult. These include:

- long trip distances
- high peak to base ridership ratios
- uni-directional flow of passengers at any one time
- low income levels of public transport users

- high levels of investment in infrastructure facilitating private motoring

Underlying all of these is South Africa's peculiar urban form, which was illustrated in section 2 of the paper. Policy documents and legislation from the 1996 White Paper onwards have repeatedly emphasized the need to address issues relating to land use planning and urban form. Yet there is relatively little insight into the true costs of current urban form – nor clarity as to precisely how it can be improved. Indeed, it could well be argued that measures to enhance public transport are far outweighed by the contradictory impact of projects such as the Gauteng Freeway Improvement Project strongly reinforcing a dispersed, car oriented urban form and opening up new locations not easily accessible to public transport.

The efficiency of South Africa's urban economies is partly dictated by the ease of access to the opportunities presented by agglomeration. If access is costly in terms of both time and resources this will impact directly on urban competitiveness. Relative ease of access also has distributional effects. If access to opportunities determines scope for economic advance, then an urban form which facilitates access for middle class people with private motor cars, but constrains access for those dependent on public transport is likely to increase economic inequality.

Policy documents such as the 1996 White Paper envisage an 80:20 public transport to private transport ratio. The trend, however, appears to be in the opposite direction. On the other hand, it does not seem feasible for the foreseeable future to envisage South African cities where mobility is based on universal motor car ownership. The comparative statistics shown in section 2 suggest that a five-fold increase in per capita car ownership levels would be required to bring South Africa in line with car saturated countries. This would demand very substantial investment in road space. Moreover, in those countries which do base urban access predominantly on private motor vehicles, such as the US, there is increasing doubt as to its practical efficacy and desirability. Indeed, the majority of car saturated countries, such as European countries and Japan tend to base urban mobility primarily on public transport.

Greater insight and more pragmatic strategies are required if urban efficiency is to be enhanced and South African cities are to be reshaped away from the current symbiotic relationship between the apartheid spatial legacy and car oriented urban development towards patterns that are more socially, environmentally and economically optimal.

From the perspective of those seeking to enhance public transport and reduce the cross-subsidization required the objectives are clear. There is a need to reduce average trip length, smooth peak to base ridership ratios and increase counter-flow passenger movement. On the other hand unless acceptable, car competitive public transport options are in place urban dwellers will demand car oriented development, which will counter these objectives. Within the current urban context, which presents such obstacles to the provision of high quality public transport, offering acceptable options that enable a shift in the trend is challenging.

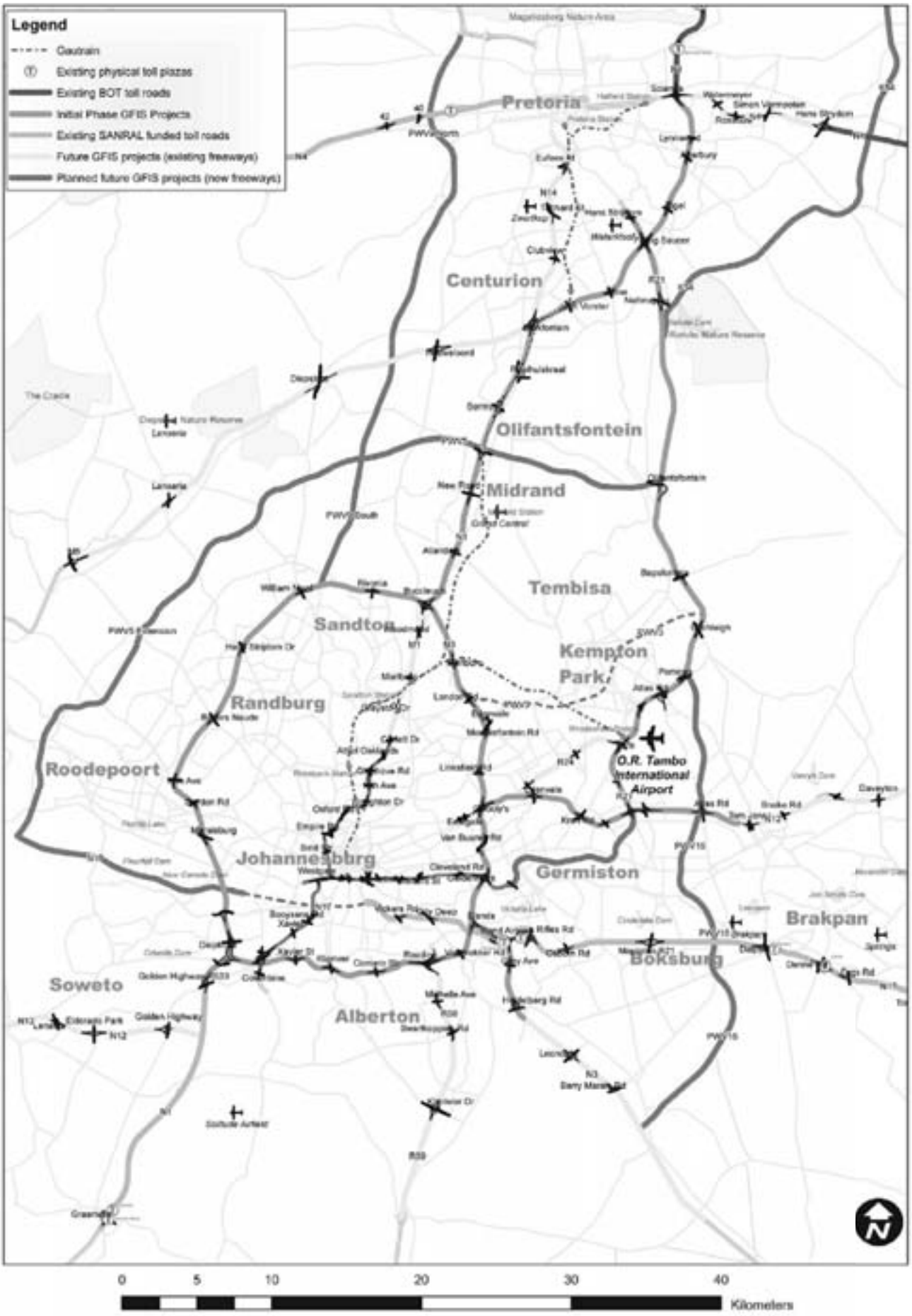
The scope for addressing these issues across all urban sectors needs to be pursued more creatively. It will undoubtedly require seeking pragmatic compromises which over the long term allow for a more positive trajectory. A better symbiosis between car oriented and public transport oriented development may be possible. For example, it may be feasible to build dedicated public transport lanes and services into the freeway system. The trajectory will also be strongly affected by the oil price over the coming decades. Indeed, if the predictions of continued high oil prices continue the costs associated with the current urban form of areas such as Gauteng will become exorbitant and offer a strong incentive for change.

Once the strategy and requirements are better understood implementing them will be a challenge – requiring appropriate institutions and financing mechanisms.

5.2 Institutional issues

Effective public policy requires that institutions and governance be structured to offer both the scope and the incentives for optimal solutions to be adopted.

It is important that as many of the functions as possible which relate to the management of the urban 'built environment' are integrated at city level. Management of the urban built environment includes the management of urban space, movement across that space and the infrastructure and services that contribute towards configuring the structure of that space. By bringing these functions together in a single institution, externalities can be internalized. For example, the location of new social housing impacts externally on public transport costs. If both functions are the responsibility of the same institution there will be the incentive and jurisdiction-


Legend
Gautrain
Existing physical toll plazas
Existing BOT toll roads
Initial Phase GFIS Projects
Existing SANRAL funded toll roads
Future GFIS projects (existing freeways)
Planned future GFIS projects (new freeways)
Pretoria
Centurion
Olifantsfontein
Midrand
Tembisa
Sandton
Kempton Park
Randburg
Roodepoort
O.R. Tambo International Airport
Johannesburg
Germiston
Brakpan
Boksburg
Soweto
Alberton
0
5
10
20
30
40
Kilometers

al power to maximize overall efficiency and minimize overall costs.

In many countries city government is too fragmented to exercise effective governance in an integrated manner across the functional urban area. However, the creation in South Africa of metropolitan governments and city governments with widely drawn boundaries established institutions which should be well suited to effective urban management. Within the current constitutional framework metropolitan and city governments are the institutions with primary responsibility for the management of the built environment based, inter alia, on their responsibility for urban planning.

Historically, responsibility for public transport in South Africa has been severely fragmented. Municipalities have been responsible for urban planning issues and public transport interchanges; national government has been responsible for urban rail services and provinces have subsidized bus services as agents of national government and controlled minibus taxi permits. There has been significant contestation between provincial and city governments, illustrated, for example, by the Gauteng government's monorail project which would compete directly with Johannesburg's Rea Vaya.

Where assignment of responsibility is ambiguous progress is difficult. Fortunately, the passage of the NLTTA in 2009 represented a welcome advance in that it reinforced a process of shifting jurisdiction over urban public transport issues to city governments.

However, the process of shifting that responsibility to place it clearly in city hands is by no means complete. As illustrated by the bus rapid transit projects in Johannesburg and Cape Town, cities have begun to play a more pro-active role consistent with the new legislation. However, the potential financial risks to the cities in taking on the very challenging public transport responsibilities have not been clearly addressed.

Apart from the financial risks in managing BRT systems, the legislation provides for cities to take over many of the bus contracts currently managed by provinces. However the financial stress surrounding these contracts and the problems inherent in taking responsibility for a contentious set of obligations rooted in apartheid spatial configurations will limit the readiness to do so.

In some cities Metrorail services play an important role in urban transport services. Legislation requires that rail planning take into account city perspectives. Yet there is a need to embed urban commuter rail services more substantially within city transport management functions. Careful thought is required as to how rail services can be organised so as to embed key decisions and operations more effectively within the city environment while retaining some of the economies of scale current in the existing organizational form. The fact that the Cape Town airport to CBD rail project is still being pursued by PRASA while the city's BRT infrastructure is currently being built at the airport suggests shortcomings in planning integration.

Particular attention will need to be paid to institutional arrangements within Gauteng. The metropolitan and some city governments of Gauteng do collectively constitute an extended urban region. Some key transport projects extend across metropolitan boundaries. These include the Gautrain and the Gauteng Freeway Improvement Project. While the Tshwane and Wits rail services are run as separate regions the Wits service encompasses both the Ekurhuleni and Johannesburg metropolitan areas.

Too many of the key functions that govern the built environment are located at city level to envisage contemplating shifting primary responsibility for the built environment from city level to the province. However there is a need for the cities to engage collectively with the Gauteng province to help ensure provincial wide spatial issues are optimally managed within the context of practical city level strategies. Currently there appear to be no major conflicts between city and provincial government in Gauteng. However, some attention needs to be paid to developing optimal integrating arrangements. These should ideally be based on developing consensus and coherence from below between metropolitan plans rather than driven from a provincial level.

5.3 Financial issues

The over-riding financial question is how public resources should be spent to optimise mobility and access in cities from an economic, social and environmental perspective. The key question becomes how revenue raising powers and subsidy flows between the different spheres of government should be configured to lead to optimal solutions.

There are two related issues. The first is whether existing subsidies are optimally used. In the 2010/11 financial year existing public transport subsidies are in excess of R15 billion. Combined rail and bus operating subsidies are R7.017 billion

(of which bus subsidies constitute R3.863 billion and rail subsidies R3.154 billion). Capital subsidies amount to R9.814 billion (of which R5.610 billion is for rail and R4.203 billion is for the Public Transport Infrastructure and Systems Grant). Most expenditure on Gautrain has now been completed.

Subsidies can either have a distributional purpose or an efficiency enhancing purpose aimed at correcting market failure. Where well functioning public transport systems can substantially improve the efficiency of urban economies when compared to car-based systems, there is a rationale for subsidies to increase public transport usage to levels, which are optimal from an economic perspective.

Historically in South Africa, subsidies have only been available for weekly or monthly tickets. This means that workers are subsidised to travel to work from distant townships. However, those not travelling on most working days can therefore not use the subsidised fares. The result is that the costs for those travelling from townships tend to become prohibitively expensive.

It could be argued that subsidies are being used to maintain an inefficient status quo, rather than to improve efficiencies, and that incentives are required to encourage relocation. However, ending these arrangements is likely to be highly contentious and could have negative distributional effects. Furthermore, given the fact that communities are now established, it could be more efficient to maintain the current arrangements than to force changes in residence.

In South Africa, given its severe income inequalities, it is likely that transport subsidies will, effectively, contain both efficiency and distributional components.

The second financial issue is how responsibility for revenue and expenditure is configured. An example of this relates to bus subsidies. It has been shown how bus subsidy requirements have risen above the amounts budgeted. To contain this risk, national government has now altered arrangements to place responsibility for exceeding the budget on provinces rather than cover the amounts itself. While the shift may be correct in that provinces are probably in a better position than national government to allocate these subsidies efficiently, the change is likely to lead to existing subsidised bus services being reduced. Provinces will need to find additional funds from their equitable share or face the political consequences of the cutbacks.

The implications for local government are more concerning, especially in the medium- to long-term. The thrust of the current changes introduced by the NLTTA places responsibility increasingly on metropolitan and city governments. Yet the potential financial risk to them could be overwhelming. The general tax revenues, over which cities have control, are property taxes and a share of the fuel levy. The property tax does not offer the scope or depth to manage this level of risk. The fuel levy is discussed below.

Modelling in Cape Town indicates that, if their proposed bus rapid transit system is fully rolled out as planned, total fare revenue and expenditure will be similar to electricity sales. This is despite the fact that perhaps half of all public transport services will be provided by rail. Yet, despite recent power tariff increases, the electricity market is far more reliable commercially than the public transport market: well over half of electricity sales are to the non-residential sector while middle class households consume most of the electricity in the residential sector. The public transport market consists largely of poor households.

When Johannesburg and Cape Town embarked on their bus rapid transit projects it was thought that the investment in capital would improve operational efficiency so that operating subsidies would not be required. However, a combination of actual experience and modelling for the first phases of both projects now indicates that annual operating subsidies will be required. Both cities are having difficulty marshalling the resources to cover these deficits, particularly in the current constrained financial environment.

There is a danger that if public transport responsibilities are shifted to metropolitan and city governments without addressing the concomitant financial implications, city finances could be severely affected. This matter needs to be addressed urgently if the new city-level public transport initiatives are to be extended as envisaged.

Addressing this financial challenge will require determining the extent to which it will be covered by grants or by own revenues. If suitably designed, own revenues are preferable since they tend to be more predictable and reliable for local governments. This is critical when making decisions about public transport, which has long-term implications. There is also a natural tendency in government to take greater responsibility when allocating own revenues as opposed to grants. However, it may be that a combination of both is best.

In principle, there are strong arguments to be made that, apart from fare revenues, public transport should be funded by private road users. Currently, the key source of revenue from private road users is the fuel levy. Other sources include road licences and tolls.

Metropolitan governments currently receive a share of the national fuel levy. However, this is to replace the previous Regional Services Council levies and therefore cannot be assumed now to cover an additional obligation. On the other hand, since this mechanism exists, either the city share could be increased or the long-term proposals that National Treasury has made around the possible implementation of a local business tax could be pursued. This would free up a portion of the fuel levy for allocation to transport. The scale of own resources required depends on how risk is to be shared and the proportion of grant funding to own revenues.

The NLTTA provides for Municipal Land Transport Funds. Considering how these funds are to operate, what their responsibilities are, and how they are to be funded may be a useful approach to addressing some of the issues as they relate to municipal governments.

6. RECOMMENDATIONS

The following recommendations flow from this chapter:

1. Passenger Rail Agency of South Africa and cities should ensure that investment projects on rail and roads infrastructure are aligned and coordinated. This will ensure that limited resources are used optimally to a targeted area or group of passengers instead of each mode investing independently in its own infrastructure to service the same target group of passengers

2. The government should make a decision without further delays on the funding streams that will contribute to the Municipal Land Transport Fund as delays could negatively affect the financial position of affected municipalities.

3. Passenger Rail Agency of South Africa should ensure that funding that has been made available for investment in the commuter rail sector should prioritize corridors already identified as A and B in the National Rail Plan.

4. A comprehensive review should be conducted by relevant stakeholders including national departments, cities and the Financial and Fiscal Commission into the costs associated with current urban form in a selection of major South African cities in order to improve the efficiency of land use patterns.

5. The current mechanisms and basis for distributing transport subsidies should be reviewed by the Department of Transport, National Treasury and other key stakeholders in order to promote the efficiency of urban transport and land use systems, taking into account equity and distributional effects on households.

6. The potential financial implications resulting from the promulgation of the National Land Transport Act on municipalities should be examined by the Department of Transport and the National Treasury and dedicated funding streams for public transport identified.

7. The Department of Transport should regularly update the South African National Household Travel Survey.

The MSA research was emphatic that sub-optimal spatial planning was probably the biggest driver of public transport costs and the most difficult to turn around; and that building more roads in already well served metropolitan areas was not the solution to congestion.

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ANNEXURE A: ALPHABETICAL LIST OF ABBREVIATIONS AND ACRONYMS

ABET	Adult Basic Education and Training
AES	Adult Equivalent Scale
AIDS	Acquired immune deficiency syndrome
BAU	business as usual'
BMP	Basic Minimum Package
BRT	Bus Rapid Transit
CBD	Central Business District
CCT	conditional cash transfer
CDFs	cumulative density functions
CEPD	Centre for Education Policy, Development, Evaluation and Management
CGE	computable general equilibrium
COGTA	Department of Cooperative Government and Traditional Affairs
DBSA	Development Bank of Southern Africa
DME	Department of Minerals and Energy
DoE	Department of Education
DORA	Division of Revenue Act
DPLG	Department of Provincial and Local Government
EDI	electricity distribution industry
EPWP	Expanded Public Works Programme
ESI	electricity supply industry
FBS	Free Basic Services
FET	Further Education and Training
FGT	Foster-Greer-Thorbecke
GDP	gross domestic product
GER	Gross Enrolment Rate
GHS	General Household Survey
HAART	Highly Active Anti-retroviral Treatment
HIV	Human immunodeficiency virus
IES	Incomes and Expenditure Survey
IES	Income and expenditure of households
IGFR	Intergovernmental Fiscal Relations
IRPTN	Integrated Rapid Public Transport Network
KIDS	KwaZulu-Natal Income Dynamics Study
LES	Local Government Equitable Share

LGTAS	Local Government Turnaround Strategy
MDGs	Millennium Development Goals
MFMA	Municipal Finance Management Act
MIG	Municipal Infrastructure Grant
MMSD	multi-jurisdictional municipal service district
MTEF	Medium Term Expenditure Framework
NER	Net Enrolment Rate
NERSA	National Energy Regulator of South Africa
NIDS	National Income Dynamics Survey
NIEP	National Institute for Economic Policy
NLTA	National Land Transport Act
NLTTA	National Land Transport Transition Act
OECD	Organisation for Economic Co-operation and Development
OHS	October Household Survey
PFMA	Public Finance Management Act
PIRLS	Progress in International Reading Literacy Study
PRASA	Passenger Rail Agency of South Africa
PSLSD	Project for Statistics on Living Standards and Development
PTOG	Public Transport Operating Grant
PTS	Public Transport Strategy
REDS	Regional Electricity Distributors
RRC	Revenue Raising Component
RSC	Regional Services Council
SACMEQ	Southern African Consortium for Monitoring Educational Quality
SAM	Social Accounting Matrix
SANRAL	South African National Roads Agency Limited
SARCC	South African Rail Commuter Corporation
SCOA	Standard Chart of Accounts
SETA	Sector Education and Training Authority
SM	Siyenza Manje
StatsSa	Statistics South Africa
TIMMS	Trends in International Maths and Science Survey
UIF	Unemployment Insurance Fund
US	United States

The Financial and Fiscal Commission's submission on the 2011/12 Division of Revenue focuses on the process of adjusting to the recession and global economic crisis from which the South African economy is emerging.

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The broad principles governing government's response include avoiding the risk of unfairly placing the burden of the global economic downturn on the poor and vulnerable.

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