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ERSA working paper 597

April 2016

Economic Research Southern Africa (ERSA) is a research programme funded by the National Treasury of South Africa.

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The Contribution of Fiscal Decentralization to Regional Inequality: Empirical Results for South African Municipalities

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Abstract

Over the past two decades, many African countries have carried out reforms aimed at decentralizing the political, administrative and fiscal structures of the public sector. The need to transform the structure of governance is informed by the view that decentralization increases the overall efficiency and responsiveness of the public sector in providing services, an outcome that enhances economic development and contributes to a reduction in regional disparities. Using panel data for South Africa's 234 municipalities over the period 2003–2012, we test whether the decentralization of some fiscal powers to municipalities acts as a commitment tool that motivates local authorities to implement policies that reduce inter-regional inequality. The results of the empirical analysis provide evidence of a statistically significant relationship between fiscal decentralization and inequality in the context of South Africa's local government sphere, with the specific nature of the relationship contingent on how fiscal decentralization is measured. In the case of revenue based measures of fiscal decentralization, the results support the hypothesis that the commitment device of fiscal decentralization provides incentives that decrease inter-municipal inequality. On the other hand, expenditure based fiscal decentralization contribute to increased inter-municipal disparities.

JEL Classification: H73, H77, O18, R11, R12.

Keywords: Decentralization, Inequality, Intergovernmental fiscal relations.

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1 Introduction

In developing countries where growing spatial inequalities have threatened to undermine social cohesion and political stability, the structure underpinning the fiscal and administrative autonomy of sub-national units has generated considerable interest among politicians, policymakers and academics. To a large extent, this interest has arisen out of competing views about the redistributive consequences of fiscal decentralization, and its efficacy in addressing the spatial dimensions of inequality.

One strand of the literature argues that fiscal decentralization results in a more equitable distribution of public services across regions and provides increased opportunities for poor citizens. Electoral (and democratic) processes within decentralized governance structures offer citizens the opportunity the chance to remove sub-national authorities (or officials) perceived as poor performers in implementing fiscal measures that could boost regional economic growth and enhance social welfare. Hence, (fiscal) decentralization induced inter-jurisdictional competition can induce officials in poorer regions to innovate and adopt effective policies (such as lower tax rates and flexible labor markets) to attract growth-enhancing investments that benefit local citizens. Such actions create the potential for the process of regional convergence to occur without a need to resort to centrally mandated redistribution programs (Qian and Weingast, 1997).

In contrast to above view, a number of scholars have advanced arguments to support the view that interregional inequality (and resource distribution) may be exacerbated rather than mitigated by decentralization. Proponents of fiscal decentralization usually ignore the the fact that very often, different regions begin the process of decentralization with varying degrees of resource endowments and economic development. Relative to poorer jurisdictions, richer regions with access to larger tax bases are likely to be more adept at providing higher levels of public goods or the same quantity and quality of public services at lower tax rates. Thus, decentralization induced competition may exacerbate existing regional disparities as mobile factors of production relocate to richer regions that provide better socio-economic infrastructure and qualified human capital at lower comparative costs (Lessman, 2009).¹ Furthermore, by requiring sub-national units to exercise greater administrative autonomy and control over fiscal resources, fiscal decentralization represents a process similar to the downsizing of a corporate firm, ensuring that limits are placed on both the quantum of fiscal resources and extent of budgetary powers available to a central government. Such constraints are likely to curtail the ability of a central authority to implement redistribution programs that address interregional inequalities (Prud'homme, 1995).

The question on whether decentralization can address regional disparities is particularly important for the case of South Africa. Following the democratic transition of 1994, the process of establishing decentralized administrative and fiscal structures became an integral part of the

¹Lessman (2009) suggests that in such circumstances, the skewed concentration of mobile factors will boost the tax bases and income levels within richer regions, an outcome which in the absence of effective redistribution programs, may further widen the inequality gap between regions. Similarly, Kelejian and Robinson (1997) argues that the need to be competitive may also cause local authorities to ignore spatial spillovers, an outcome that increases the levels of inadequate and inequitable provision of public goods across different regions.

significant political and economic reforms implemented in South Africa. Formal structures for decentralization was established with the enactment of the 1996 Constitution which set out an intergovernmental governance system consisting of three “spheres” – national, provincial and local government – that operate not along hierarchal lines, but as distinct, interdependent and inter-related units.²An important feature of this intergovernmental system is the mandated role of the local government sphere. As the sphere closest to citizens, the 1996 Constitution requires that the local government sphere play a “developmental ” role by using its assigned fiscal functions as a tool to address the country’s significant historical inequities in the distribution of, and access to resources. However, the trend across many municipalities where, citizens have increasingly sought to use (often violent) protest actions as a non–electoral mechanism to obtain improvements in the delivery of public services has prompted questions on whether, the process of fiscal decentralization within South Africa’s local government sphere remains a viable strategy for reducing existing interregional inequalities.³

In an environment of significant levels of poverty and unemployment, the persistently poor state of service delivery, poor financial management and inadequate capacity to design and implement service delivery plans within many municipalities represents a major challenge to policies aimed at addressing historically inequitable patterns of income distribution and access to socio–economic infrastructure. These problems have triggered numerous support interventions, focused on enhancing the accounting systems, budget implementation and project management capacity of municipalities, from national and provincial governments as well as from private entities and international development agencies. However, the absence of post-intervention measurements of improvement, a one–size–fits all approach to the variety of capacity problems bedeviling many municipalities as well as the weak application of intergovernmental checks and balances meant, that intervention strategies became quick–fix, short–term solutions characterized by their failure to ensure that capacity and delivery improvements were sufficiently institutionalized (Financial and Fiscal Commission, 2012).

Rather than implement temporary intervention strategies, recommendations from the recent policy conference of the ruling African National Congress (ANC) held in 2012 advocated long–term solutions in the form of radical legislative and structural proposals aimed at reducing the size, and reforming the functions of sub-national governments. These proposals are premised on the

²The interdependent and interrelated nature of the system is intended to foster a spirit of mutual co-operation and facilitate alignment in the implementation of policy, legislation and overall service delivery programs.

³At the beginning of 2004, South Africa experienced a wave of (often violent) protests which were initially centered in poor urban areas, but gradually spread to other municipalities in most parts of the country. While the exact nature of protests differed across municipalities, the underlying theme common to the protests was, deep-rooted frustrations with the (perceived) poor state of service delivery in the core functions of municipalities – water, sanitation, electricity and infrastructure required to support the provision of housing (Habib, 2010; Booysen, 2007). Closely linked with grievances over the poor state of service delivery was citizens’ dissatisfaction with the performance of elected representatives (mayors and councillors), rising levels of inequality and unemployment (particularly among the youth) and the inability of local administrations and institutions to respond to the needs of local citizens in a timely and adequate manner (Nleya, 2011). Between 2009 and 2012, an estimated 720 municipal service delivery related protests were recorded across South Africa’s nine provinces, events that led to South Africa been labeled the “protest capital of the world” (Multi-Level Government Initiative, 2012).

argument that South Africa's three-sphere system of government is complicated and often leads to over-lapping roles, unnecessarily protracted decision taking and inefficiency.⁴ With respect to the local government sphere, policy recommendations on addressing the failings of service delivery would could include among others, plans to either: (i) restructure district municipalities to ensure that district governance structures exist only in areas where there are weak municipalities, and transferring the powers of abolished districts to capable municipalities or provinces, (ii) incorporate financially distressed municipalities into provincial and national administrations, or (iii) where appropriate, the merger of administratively and financially weak local municipalities into metropolitan administrations which, in contrast to small district municipalities, are able to attract revenue and efficiently deliver public services. Either of these approaches is expected to provide for an intergovernmental system that is functional, effective, economically sustainable, and integrates communities in a manner that addresses large disparities in income and economic opportunities across the country's different regions (African National Congress, 2012).

With an emphasis on skills shortages and poor administration, the proposed reform agenda remains silent on the important link between municipal size and service delivery. Very often, municipalities are faced with the twin challenge of allocating small budgets towards the provision of public services to towns and cities spread over vast areas.⁵ This thus raises the policy question of whether, municipalities within South Africa's local government sphere can function as effectively as nations that although similar or smaller in size, have a greater number of decentralized administrative units operating larger budgets.⁶ Outside of the main metropolitan areas and secondary cities, the capacity of mainly rural municipalities is further stretched by the need to provide services to jurisdictions with low population densities. Overcoming such challenges will thus require that proposals on reforming service delivery by the public sector give serious consideration to the creation of a greater number of smaller municipalities (Holborn and Moloi, 2012).

Irrespective of whether a proposal of reduced or increased decentralized governance structure is eventually adopted, a very real issue for policymakers is that the chosen policy must be informed by a sound understanding of the effects of fiscal decentralization on inequalities. Unfortunately, for the case of South Africa, the debate on the redistributive effects of fiscal decentralization remains a subject for which detailed empirical evidence is lacking. Against this background, the primary purpose of this paper is to empirically investigate the relationship between fiscal decentralization and regional inequalities across municipalities in South Africa.

⁴This mirrors the hypothesis advanced by Tanzi (1996) who argues that decentralization may result in coordination problems, excessive regulation, higher administrative costs or poor quality of bureaucrats. Lessman and Markwardt (2010) also make the argument that in developing countries, decentralization might support corruption and cronyism and thus undermine potential efficiency benefits of having sub-national governments

⁵Prior to the consolidation process in 1998, South Africa had 843 municipalities, with each municipality been responsible, on average, for three of the country's 2,345 cities and towns. This average increased to eight following the consolidation and re-demarcation processes of 2000 and 2011, respectively.

⁶For example, the land area of South Africa's largest district municipality, Namakwa, is approximately the same as Greece. It is bigger than 70 countries including Switzerland, Belgium, and 7 states of Nigeria's south-west region. Yet, Namakwa district municipality comprises of 7 local municipalities, a far cry from the 774, 589 and 2,596 municipalities of Nigeria, Belgium and Switzerland, respectively.

Several reasons make the focus on South Africa a relevant empirical exercise. First, the administrative and political structures of many African countries function under Constitutions that are pro-decentralization and recognize the autonomy of sub-national governments. Despite this, the African evidence on the relationship between fiscal decentralization and regional inequality remains very limited. With the notable exception of the work by Akramov and Asante (2009) on Ghana, this limited evidence is primarily derived from the cross-country analysis of a sample of developing and developed countries (see for example, Shankar and Shah (2003) and Sepulveda and Martinez-Vazquez (2011)). In addressing the paucity of Africa related studies, the focus on South Africa represents a single country experience that yields more objective estimates of the impact of fiscal decentralization than those of cross-country analysis, which often ignore country-specific historical, cultural and institutional variations that affect the relationship between fiscal decentralization and regional inequalities. Second, the process of decentralization in South Africa, particularly at the municipal level, contrasts those in many other developing countries where challenges exist with establishing effective frameworks for inter-governmental relations, and developing appropriate degrees of autonomy for sub-national units (Bahl and Smoke, 2003). The Constitution has created an intergovernmental system in which two-thirds of municipal functions relate to providing crucial socio-economic services that have spillover effects, and to support these functions, a municipal fiscal framework characterized by some productive local revenue sources and a mechanism for recurrent intergovernmental transfers that have positive re-distributional effects. The study on South Africa thus adds a new dimension to the extant literature, namely that of the redistributive effects of fiscal decentralization in an African country with a maturing system of democracy and decentralized governance.

The rest of the paper is organized as follows. In the second section, we provide an overview of fiscal decentralization and discuss the nature of inequalities in South Africa. In the third, we outline the theoretical framework outlining the channels through which fiscal decentralization affects regional inequalities. In the fourth section, we present the empirical model and discuss the data. The fifth section describes the econometric strategy and presents the results of the empirical analysis. The main conclusions and implications of the study are summarized in the sixth and final section.

2 Stylized Facts of Fiscal Decentralization and Inequalities in South Africa

The present state of decentralization and inequality in South Africa is best understood in the context of the country's history. Prior to the democratic transformation in 1994, South Africa's system of decentralization was largely shaped by the country's experimentation with demarcating jurisdictions and organizing governance on the basis of race, rather than on the basis of functional linkages or

similar criteria (van Rynevald, 1996).⁷ Under apartheid, the geographical configuration of South Africa along racial lines created a system of fiscal and administrative decentralization organized along three tiers. The first tier was made up of the central/national government. The second tier consisted of three categories of government in the form of four provinces, and ten “Bantustans” that consisted of six self-governing territories (SGTs) and four independent homelands that were collectively termed the “TVBC” states.⁸

The last tier of government closely resembled a local government structure and consisted of two main categories: White Local Authorities (WLAs) and Black Local Authorities (BLAs).⁹ WLAs represented the earliest example of fiscal decentralization in South Africa. Established in the early 1900s, they covered most of the country’s urban commercial and industrial areas, and were primarily responsible for providing services to urban white, coloured and Indian citizens residing in areas outside of the homelands. Access to relatively wealthy sections of society meant that WLAs enjoyed a high degree of fiscal autonomy.¹⁰ Unlike the SGTs and the TVBC states, the ability to levy property rates and charge trading services (on the provision of electricity, water and sanitation) meant that the WLAs were the only sub-central authorities that raised a relatively significant proportion of revenues from own sources (see Table 1).

Table 1 Sub-Central Total Expenditure and Share of Own-Revenues in Expenditure Financing : 1993/1994

Government Category	Total Expenditure (Millions of Rands) ^a	Own Revenue (% of Current Expenditures)
TVBC	15,553	20.1
SGT	14,485	10.3
Provinces	19,702	11.4
WLAs	25,692	97.7

Source: van Rynevald (1996).

As one of the focal points in the practice of racial segregation, the BLAs were arguably the most inefficient and worst run sub-central administrations. Initially administered by adjacent WLAs, the BLAs evolved from the community councils that were introduced in response to the uprisings that

⁷Lester et al. (2000) and Christopher (1994) provide a detailed analysis of segregationist practices and policies that obtained pre-1948.

⁸The four provinces were Transvaal, Cape, Orange Free State and Natal. The six non-independent homelands included Kwazulu, Lebowa, Kangwane, QwaQwa, KwaNdebele and Gazankulu while Transkei, Bophuthatswana, Venda and Ciskei made up the four “independent” black homelands. Very little formal structures of local authorities existed in the TVBC states and SGTs. In most cases, conventional local government functions were handled by the respective central authorities.

⁹The development of segregated local government bodies for Coloureds and Indians followed a separate path from that for Africans. Under the Group Areas Amendment Act of 1962, provincial administrators constituted “Local Affairs Committees” or “Management Committees” in designated Coloured and Indian areas. In their initial phases, these committees were intended to act in a purely consultative capacity in relation to WLAs which retained administrative control over their areas. These committees were subsequently to be granted full local authority status in terms of the criteria set out by provincial administrators in relation to a prescribed range of local issues. Despite their transformation into wholly elected entities, very few attained full local authority as the majority of the committees status remained mere advisory bodies with little powers beyond granting trading licenses (Lemon, 1992)

¹⁰This autonomy carried a caveat; in line with the central government’s goal of ensuring macroeconomic stability, the budgets of the WLAs had to be assessed and approved by the Department of Finance.

occurred in June of 1976. Apartheid restrictions on economic development in black areas coupled with a hugely disproportionate allocation of socio economic infrastructure and a lack of access to property, quality education and formal employment amongst black South Africans impaired the capacity of BLAs to develop productive tax bases. As a result, BLAs generated very little own revenue, operated inefficient fiscal systems, and lacked capacity to provide necessary socio-economic services. Compared to WLAs, the inability of BLAs to raise revenue through fees on traded services was further compounded by the central government's provision of free housing and unmetered water services, as well as little or no electrification of black townships.¹¹

Social engineering during the apartheid era had marked consequences for inequality in South Africa. In the major cities, segregation enabled the majority of South Africa's white population to reside within urbanized neighborhoods located around areas of relatively lucrative commercial activities, and with access to good municipal infrastructure. The stringent application of the Group Areas Act resulted in controlled urbanization as South Africa's non-white population were forced to reside in racially-designated group areas beset with high levels of poverty and minimal socio-economic infrastructure. The deprivations faced by the non-white population was further exacerbated by strict restrictions on construction that limited accommodation to neighborhoods that were either severely overcrowded or dominated by poor housing structures such as shack dwellings and small, matchbox houses (Seekings, 2010).¹²

Apartheid practices had also created substantial disparities in the provision of basic services related to water, sanitation and electricity. By 1994, an estimated 12 million people lacked access to drinking water, while adequate sanitation¹³ remained inaccessible for 21 million citizens. Discriminatory spending on social infrastructure along racial lines meant that the poor state of service provision was especially acute for black South Africans, particularly for those resident in rural areas. Unlike the major urban and semi-urban centers with coverage rates of over 66%, sanitation in the semi-urban in the homelands reached less than half of the population, with many rural areas located in the Bantustans having zero sanitation coverage (Development Bank of Southern Africa,

¹¹The poor economic status worsened by the BLAs lack of political legitimacy that stemmed from been regarded as a facade instituted by the apartheid regime to give some form of democracy to blacks, while entrenching the system of racial segregation (Bahl and Smoke, 2003). General dissatisfaction with the weak financial positions within township administrations and stagnant economic development of the bantustans led to the creation of an additional administrative layers within the local governments. The Regional Services Council Act of 1985 established joint structures between local authorities termed "Regional Services Councils (RSCs)" and "Joint Services Boards" (JSBs), to operate a regional system for the provision of "bulk" infrastructure services in larger urban areas, especially poor black areas, as well as some rural areas. RSCs were funded by levying a turnover tax and a payroll tax on businesses located within their jurisdictions. Despite their officially stated aims of introducing multi-racial decision-making at local government level, and upgrading infrastructure within heavily disadvantaged non-white townships, RSCs were indirectly elected from constituent local authorities in a manner that assured whites retained political control (Lemon, 1992; Wittenberg, 2003).

¹²Very little difference existed in the material conditions of those residing in the homelands. Although 80% of the country's population were Africans, the land areas for the homelands constituted only 13% of South Africa and excluded the wealthy mining and industrial regions. With limited development and economic activity to sustain their populations, physically able residents of these homelands were forced to continually seek jobs in the major cities. As a result, homelands became vast, highly impoverished regions that were mainly populated by those who were very young, elderly, sick, or disabled, and women who were unemployed (Marks and Andersson, 1987; Price, 1986).

¹³Adequate sanitation is defined as full waterborne sanitation, septic tanks or ventilated improved pit (VIP) latrines.

1994). Similar disparities existed in the provision of electricity. In 1994, 64% of South Africa's households, the equivalent of 3 million families, had no access to electricity supply. As a result, some 4,000 predominantly rural clinics and 19,000 African schools lacked any connection to the electricity grid, while household supply varied along income lines – from 100% for formal, middle to high income areas to an average of between 1 and 4% for the rural districts of the homelands (Lester et al., 2000).

Following the first democratic elections in 1994, the ANC-led government of national unity (GNU) took office with a strong mandate from the electorate to develop the country, and address the formidable socio-economic inequalities inherited from the previous apartheid dispensation. As part of the administrative framework needed to fulfill this mandate, South Africa adopted a unitary governance structure made up of three spheres – national, provincial and local governments, operating not along hierarchical lines, but as distinct, interdependent and interrelated authorities (Smoke, 2001).¹⁴ Formal structures of the unitary system was established with the enactment of the 1996 Constitution. The four provinces and nine homelands were scrapped and replaced by nine provinces, while the disparate system of racially based local administrations was consolidated into a local government structure¹⁵ in which municipalities were divided into three categories: (i) *Category A* municipalities (metropolitan councils) that exclusively cover large urban areas; (ii) *Category B* municipalities (local councils) that administer non-metropolitan areas, which vary in terms of both size and extent of urbanization, and (iii) *Category C* municipalities (districts councils) that are successors to the previous RSCs.¹⁶

In the context of South Africa's unitary system, the 1996 Constitution outlined a 'developmental' role for the local government sphere as evidenced by substantial powers and functions granted municipalities, many of which are similar to those of the previous WLAs. About two-thirds of municipal functions relate to the provision of crucial socio-economic services including water, sanitation, roads, storm water drainage and electricity. In addition, the 1996 Constitution mandates municipalities to give priority to fulfilling the 'basic needs' of their communities.¹⁷ In the post-1994

¹⁴The interdependent and interrelated nature of the system is intended to foster a spirit of mutual co-operation and facilitate alignment in the implementation of policy, legislation and overall service delivery programs.

¹⁵Formal structures for the local government sphere were established following an elaborate three-stage process of transition outlined in the Local Government Transition Act of 1993. The first – the pre-interim phase (1993-1995), began with the negotiated settlement in 1993. The second phase was concluded by the 1995 elections which, created 842 municipalities governed by Transitional Local Councils (TLCs) and Transitional Metropolitan Councils (TMCs). The third and final phase commenced with the municipal elections of December 2000. For an excellent, comprehensive analysis of the history, demarcation and establishment of local government during the transitional period see Smoke (2001) as well as Steytler and de Visser (2009).

¹⁶*Category C* geographically encompass several *B* municipalities and are tasked with coordinating integrated development planning for the entire district, and providing services on behalf of less capacitated *B* municipalities located within their borders, particularly those in the country's most rural areas. The country's six largest urbanized and industrialized centers made up the *Category A* municipalities. Outside the metropolitan areas a two-tier structure was established with 231 *Category B* municipalities grouped under 47 *Category C* districts. Following local government elections in May 2011, changes to municipal boundaries by the Municipal Demarcation Board (MDB) reduced the number of municipalities to 278. *Category A* municipalities increased from 6 to 8, while the number of local and district municipalities decreased to 226 and 44, respectively.

¹⁷While much debate persists about what services can be considered basic, the Bill of Rights which has informed many of the developmental policies implemented by the local sphere identifies nine public services – portable water,

era, fiscal decentralization within the local government sphere has been shaped by the objective of ensuring that municipalities are made fiscally capable to fulfill their Constitutional mandate. Given the importance of services provided by municipalities, the Constitution has granted the local government sphere a number of relatively broad revenue sources including rates on property and utility user fees on water, electricity and sanitation services provided by a municipality. The Constitution also entitles municipalities to an equitable share of nationally collected revenues.¹⁸

The decentralization of fiscal resources has enabled municipalities implement a range of expenditure programs aimed at reducing extensive inter-regional inequalities. Following local government elections in 2000, municipalities in cooperation with national government implemented a policy of providing a package of free basic services (FBS) in water, electricity, sanitation and refuse services to all citizens, especially those residing in poor households.¹⁹ This strategy yielded some positive results, with the most impressive gains recorded in the expansion of socio-economic infrastructure and social service, particularly in rural areas. Between 1995 and 2003, the number of people with access to safe drinking water increased by 9 million. Over the same period, the proportion of households having access to sanitation increased from 49% to 63% 2003. With the addition of 4 million people to the nation's electricity grid, the percentage of households with access to electricity supply increased from 58% in 1994 to over 70% by 2002 (The Presidency, 2003).

While notable strides were achieved in expanding the delivery of social services through government's pro-poor spending and redistribution policies, South Africa still faced high levels of inequality and poverty. The country's Gini coefficient had decreased slightly from 0.66 in 1993 to 0.63 by 2001. Between 1994 and 2003, the country's economy grew at an average of 3.2%, making it its longest period of steady economic growth since World War II. However, this growth coincided with a period of rising unemployment rates. According to Seekings (2007), South Africa's unemployment exhibited a steady rise for most of the post-1994 period, and peaked in early 2003 at 31.2% (by the narrow or strict definition, including only active job-seekers) and 42.5% (using the broad or expanded definition, which included people who wanted employment but were not actively looking for work). The coincidence of steady economic growth, rising unemployment rates and stagnant employment growth led then President Thabo Mbeki to state that

“South Africa has two parallel economies, the First and the Second. The First Economy is modern, produces the bulk of our country's wealth, and is integrated within the global economy. The Second Economy (or the Marginalized Economy) is characterized by underdevelopment, contributes

sanitation, solid waste removal, electricity, roads, municipal health, storm water management, fire-fighting (and emergency services), and street lighting as basic services.

¹⁸To make this requirement functional, transfers to municipalities' are undertaken using two funding instruments: direct and indirect allocations. Most intergovernmental transfers entail the direct transfer of funds to municipal coffers, either on a conditional or unconditional basis.

¹⁹The free basic services subsidy includes funding for the provision of free basic water (6 kiloliters per month for each poor household with formal connections or daily allocation of 25 liters of portable water within 200 meters from dwelling), energy (50 kilowatt-hours per month, which is the amount required for basic lighting and to power basic electrical appliances such as small radios and electric kettles) and sanitation and refuse (based on service levels defined by national policy). With the exception of free basic water, every household is entitled to these free services. However, most municipalities provide free basic water to all or almost all their residents. In 2012, the total cost of providing free basic services was worth R28billion (about \$2.5billion).

little to the GDP, contains a big percentage of our population, incorporates the poorest of our rural and urban poor, is structurally disconnected from both the First and the global economy, and is incapable of self-generated growth and development.”

The developmental role of the local government sphere had been conceptualized as an important bridge to link the two economies, which were distinguished by unequal access to infrastructure of all kinds, and unequal access to opportunities. However, wide variations in size and resource endowments meant that some municipalities, especially those in smaller towns and rural areas, lacked adequate administrative, technical, financial and project management capacity to effectively fulfill the task of combating poverty and inequalities through service delivery planning and implementation. Following its re-election in 2004, the central theme of the Mbeki administration’s economic policy was inclusive growth and poverty reduction. To ensure a more effective role for the local sphere in achieving these twin objectives, the administration embarked on a process of local government reforms anchored on : (i) the deployment of expertise to boost the capacity in skills-deficient municipalities, and (ii) improved coordination of public spending on growth and poverty reduction initiatives, through more centralized intergovernmental relations (see Figure 1).²⁰

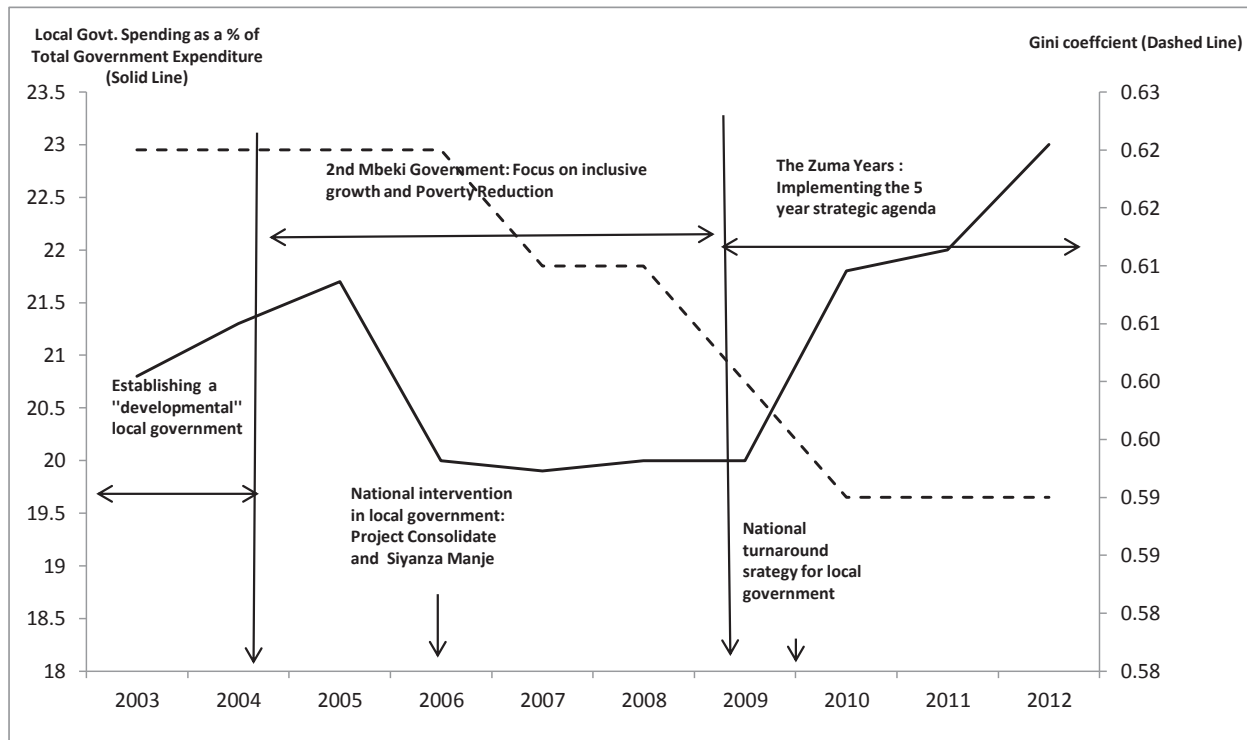
Beyond capacity issues, local government reforms also focused on addressing inefficiencies in local expenditures meant to support national priorities, especially those focused in alleviating poverty and reducing inequalities through expanded access to basic services. The fragmented management of infrastructure grants by different departments meant that municipalities lacked budgetary control and administrative oversight over crucial infrastructure projects implemented within their jurisdictions. To address these shortcomings and ensure a more effective alignment of infrastructure grant allocations with municipal integrated development plans (IDPs),²¹ the Municipal Infrastructure Grant (MIG) programme was launched in late 2003. As a consolidated, conditional grant mechanism,²² MIG is intended to achieve two main objectives: (i) supplement municipal capital projects

²⁰“Project Consolidate” and “Siyanza Manje” (which in the isiZulu language, translates into “we are doing it now!”) formed the two main programs of the national government’s support to municipalities lacking the expertise to discharge their constitutional mandate to provide basic services. Implemented as a two-year plan, Project Consolidate deployed technical experts to 136 municipalities – mainly in rural areas or former homelands which had the highest backlogs in basic services and were economically depressed (Powell, 2012). Siyanza Manje was rolled out in 2006 as an intervention programme that allowed national government to leverage on the expertise and project management skills of the Development Bank of Southern Africa (DBSA) to build local government capacity. The programme had two main aspects– the first aspect focused on the deployment of retired/senior professional engineers, planners and finance professionals to municipalities with poor capacity, and the second entailed the deployment of “young professionals” to municipalities. Initially aimed at strengthening engineering and project management capacity, the programme was later expanded to include building municipal capacity in financial management, project appraisal and planning, as well as procurement and contract management. By April 2008, Project Consolidate and Siyanza Manje deployments totaled 1,124 in 268 municipalities (Financial and Fiscal Commission, 2013).

²¹In order to implement their ‘developmental’ role, municipalities were required to undertake “integrated development planning” (IDP) process as the principle tool for addressing socioeconomic needs of local communities and achieving sustainable service delivery. The IDP process involves extensive consultations with local communities about their socio-economic needs and concerns. The feedback from the consultative process will then inform all planning, budget, management, and decision-making within a municipality

²²MIG replaced the existing system of capital grants for municipal infrastructure and merged previous infrastructure programmes including the Consolidated Municipal Infrastructure Programme(CMIP), the Local Economic Development Fund (LED), the Water Service Capital Grant, the Community Based Public Works Programme (CBPW), the Building for Sports and Recreation Programme (BSRP), the Urban Transport Grant (UTF) and the Integrated

Figure 1 South Africa's Inequality and Government Policies: 2003 –2012.



Source: National Treasury (various years)

to eradicate backlogs in basic municipal infrastructure utilized in the provision of basic services for the benefit of the poor, and (ii) promote integrated service delivery by giving municipalities greater control over infrastructure programmes within their jurisdiction, and ensuring that local authorities have adequate resources to cater for maintenance and operation costs over the life-cycle of infrastructure assets (Department of Provincial and Local Government, 2004).²³

Despite these policy initiatives, the Jacob Zuma led administration assumed office in 2009 and inherited a local government sphere generally beset by challenges of poor financial management, insufficient capacity due to a lack of scarce skills, and poor performance management that had contributed to a worrying mismatch between national policy objectives (of addressing the unequal legacy of apartheid) and the capacity of municipalities to implement them. In response to the numerous performance challenges and deteriorating levels of service delivery across municipalities,

National Electrification Programme (INEP) grant implemented by both municipalities and ESKOM, the national electricity utility company

²³With a total grant allocation of R15.5 billion (about US\$1.5 billion) in 2013, the MIG represents the largest infrastructure grant transfers from national government to municipalities. The MIG grant is allocated to individual municipalities via a formula consisting of percentage allocations for five different components representing aspects of municipal infrastructure needs, and is specified as: $MIG = B + P + E + N + M$ where **B** represents the allocation for basic residential infrastructure (such as water, sanitation, roads, electricity, street lighting and solid waste removal); **P** denotes funding towards new and rehabilitated municipal service infrastructure; **E** is allocation catering for the construction of social service institutions and micro-enterprises; **N** is the allocation for nodal development and renewal strategies in targeted urban and rural municipalities, and **M** is a performance related adjustment to the total MIG allocation for a municipality.

the Zuma administration discontinued flagship policies such as the Five-Year Strategic Agenda and adopted an urgent and comprehensive intergovernmental Turn-Around Strategy (TAS) for the local government sphere (see Figure 1). Municipalities are expected to adopt the TAS as part of their infrastructure development and IDPs, and ensure that their planning is centered on the three key priorities of: (i) improving access to basic services, (ii) deepening participatory democracy, and (iii) enhancing financial management and administrative capacity.

In line with the TAS, municipalities have taken up increased responsibilities for implementing a range of expenditure programs aimed at alleviating poverty and addressing inequalities in both access to, and provision of socio-economic infrastructures that are critical to improving the lives of many underprivileged South Africans. The share of local government expenditure in consolidated government spending has steadily increased since 2009, and now accounts for about 23% of total public spending (see Figure 1). As a result, there has been significant progress towards meeting the goal of achieving universal access to basic services for all households. With redistribution initiatives by municipalities complemented by pro-poor spending strategies employed by successive post-1994 national and provincial administrations,²⁴ South Africa's Gini coefficient has slightly reduced and is now stabilized at around 0.6 (see Figure 1).

More than two decades following its democratic transition and despite the strong emphasis on social programs, high levels of inequality persists across South Africa's economic and social landscape. At local government level, capacity challenges have formed the underlying drivers of service delivery backlogs – the percentage of the population either lacking access or not receiving services, estimated at 19.3% in the provision of water, 32.6% in terms of access to sanitation, 27.3% in access to electricity and 40.1% in access to refuse removal (Oberholzer, 2012). At the macroeconomic level, South Africa's unemployment rate remains stubbornly high at 24.7% and an estimated 3.3 million of the 10.4 million youth aged 15–24 lacking any formal employment, education or training in 2013 (Statistics South Africa, 2013). An analysis of the country's poverty profile reveals that between 2008 and 2009, about 26.3% of population lived below the food poverty line – the amount that an individual will need to consume enough food in a month, of R305 per person per month. Furthermore, 39% of South Africans were living below the lower-bound poverty line of R416 and 52% were living below the upper-bound poverty line of R577 per person per month. Using the international poverty lines, 10.7% of the population lived on less than US\$1.25 per day and 36.4% were living below the US\$2.50 per day poverty line. Using the food poverty line, South Africa's poverty gap was 8.5% , with about 3.8% of the population classified as living under severe poverty (Statistics South Africa, 2012).

In summary, the review of decentralization and inequality in South Africa shows that significant effort has been dedicated towards addressing the daunting legacy of apartheid-era social and

²⁴An important component of the pro-poor policy is South Africa's social security system, which is the largest and best-developed of its kind on the African continent. Made up of five components –the State Old Age Pension, the Disability Grant, the Child Support Grant, the Foster Child Grant and the Care Dependency Grant, the system of social grants benefits more than half of all South Africa's households, with the number of people receiving social assistance having increased from 2.4 million in 1994 to 16 million people (or 28% of the population) by 2012. Total spending in 2012/13 amounted to ZAR113 billion or 3.4% of GDP.

economic inequalities. These efforts have yielded substantial improvements in citizens access to key socio-economic services. However, while the degree of inequality in South Africa has slowly declined and stabilized in the post-1994 dispensation, it remains very high by global standards.

3 Theoretical Framework and Empirical Hypotheses

In the traditional theory of fiscal federalism, the argument commonly advanced in favor of decentralization is that sub-national governments are likely to have better information about local and needs and preferences and thus, can be expected to utilize such information to implement policies that may improve efficiency in the allocation of resources (Musgrave and Musgrave, 1973; Oates, 1972). The efficiency benefits associated with decentralization might be further enhanced by inter-jurisdictional mobility of factors of production. Where sub-national governments are autonomous, factor mobility can foster healthy inter-regional competition as officials can use their knowledge of local conditions to formulate policies to attract skilled labor and capital in a bid to promote (local) economic growth and development.

While broad consensus exists regarding the efficiency benefits of fiscal decentralization, questions remain about whether the implementation of redistributive policies under fiscal decentralization can yield substantial equity benefits. According to the traditional view, greater levels of equity can be attained when service delivery functions are exercised by subnational governments, and redistribution policies solely implemented by the central (or national) authority. Efficiency considerations inform the traditional view of the need to have a clear, jurisdictional delineation of service delivery and redistribution functions (Brown and Oates, 1987; Oates, 1968). To achieve a more equitable income distribution and improve the lives of poor citizens, sub-national governments should, *ceteris paribus*, raise the tax burden of the rich. In a scenario of free mobility of human and capital resources, the preference for redistributing resources towards the poor may encourage rich citizens to migrate to local jurisdictions that have lower tax regimes.²⁵ At the same time, the implementation of such a redistributive policy will attract poor residents from neighboring jurisdictions. For the redistribution implementing jurisdiction, the costs of its redistributive policies will tend to increase while simultaneously narrowing its tax base as a result of the migration of its rich citizens. Given that such outcomes are inefficient, the traditional public finance literature advocates that the responsibility for implementing redistributive policies be the preserve of the central government.

Tax-transfer schemes implemented by a central government can help ensure that resources are channeled from richer areas to poorer ones while minimizing the effects of factor mobility. According to Oates (1972), sub-national governments lack suitable redistributive instruments and as such, implementing a fiscally decentralized structure will only weaken the capacity of the only

²⁵Alternatively, according to Prud'homme (1995), richer regions tend to have larger tax bases and compared to poor regions, are more able to collect higher tax revenues in order to fund the provision of higher levels of public goods. Similarly, richer regions can also provide the same quantity and quality of public goods as poor jurisdictions but at lower tax rates. In both of these cases, industries/capital as well as household will prefer to reside within rich regions, a result that expands the tax base of such areas and widens inter-regional income inequality (Lessman, 2009).

level of government (i.e. the central one) to play an equalization role. With reduced resources for equalization programs, the capacity for economic performance of poor regions to converge with that of richer jurisdictions becomes limited. This argument provides the traditional hypothesis regarding the effect of decentralization on inter-regional inequalities:

Hypothesis I *The reduction of equalization transfers through fiscal decentralization will increase existing inter-regional inequality*

Contrary to the above hypothesis, recent literature have advanced the alternative hypothesis that fiscal decentralization generates positive redistributive effects, and has the potential to reduce inter-regional inequality. In “second-generation” models of fiscal federalism (see for example, Qian and Weingast (1997)), theoretical discussions on fiscal decentralization as a form of hard budget constraint has informed the view that in addition to enhancing efficiency at the local level, fiscal decentralization can assist in efforts to reduce inter-regional inequality without a need to use centrally-mandated redistribution policies. Within centralized fiscal structures, it is possible for a national (or central) government to impose a tax-transfer system to redistribute resources from rich to poor regions. While this approach can reduce regional inequality in the *ex-post* sense, it does not imply that when dynamic incentive effects of regions are considered, regional inequality becomes smaller when compared with *ex-ante* regional inequality. For instance, the central government can implement a system of intergovernmental transfers to bailout an *ex-post* poor region. While the bailout may soften the budget constraint of the recipient region *ex-post*, it might also have the effect of distorting the *ex-ante* incentive of regions that become poor *ex-post* without any effort, an outcome such a region might have avoided by exerting some effort. In this situation, devolving revenue sources and expenditure functions to lower tiers of government may act as a hard budget constraint, and signal a commitment by central government not to bail out regions that become poor *ex-post* (Akai and Sakata, 2005).

In a fiscally decentralized system, inter-regional mobility of human and capital resources and the need to render account of administrative stewardship to local citizens, raises the opportunity costs to local governments engaged in inefficient or wasteful allocation of resources. This suggests that with the commitment to non-bailout, fiscal decentralization endogenously hardens the budget constraints of sub-national governments. In such a scenario, there is a higher incentive for regions with the capacity to avoid being poor to increase efforts in formulating and implementing effective pro-development policies (Qian and Weingast, 1997). For richer jurisdictions, fiscal decentralization is an incentive mechanism that allows for the retention of resources that might have otherwise been transferred away to poorer regions, thereby increasing inter-regional income of richer jurisdictions.

In both fiscally decentralized and centralized settings, the extent of income inequality is determined by the difference in the incentive effects on rich regions and poor regions *ex-ante*. If the incentive effects of decentralization on an *ex-ante* poor region exceeds that on a rich region, the reduction inter-regional inequality may greater in a framework that devolves fiscal powers to sub-national units. The rationale for this conclusion is outlined in a theoretical model that is a straightforward adaptation of Akai and Sakata (2009).

Consider the case of an economy that consists of n poor (P) regions and a single rich region (R). To make the model more tractable, population size in each region type is assumed to be one and residents are immobile.²⁶ Income in each region i is generated by two factors:

$$\text{Income in region } i = \begin{cases} y^i : & \text{Actual resource} \rightarrow \text{Endowment} \\ e^i : & \text{Potential resource} \rightarrow \text{Generated by effort} \end{cases}$$

Suppose that regions do not function in isolation and there exists positive externalities of resources among regions, particularly the poorer jurisdictions. In this case, the potential income of region i will depend not only on its endowment and resources generated by own efforts, but also on the complementarities of local resources that result from the efforts of other regions. The production function of the potential income in region i is

$$h^i = y^i + f(e^i) + \alpha \left(\sum_{j \neq i}^n f(e^j) \right) - c(e^i) \quad (1)$$

where α denotes the degree of spillover effects from other regions, and $c(e^i)$ is the cost of the effort dedicated to attaining a region's potential resource, $f(e^i)$. The crucial assumption that positive externalities flow into poor regions is premised on the idea that with the main responsibility of authorities in poorer jurisdictions being the provision of basic skills and services, competition induced interactions across regions will tend to be more beneficial to poor regions than richer areas where, skills and services are more advanced and specialized (Akai and Sakata, 2009). In order to derive the main results as simply as possible, effort levels are categorized into two types, $e^i = 1$ or $e^i = 0$. Depending on effort level chosen by region i

$$\text{Potential resource in region } i = \begin{cases} f(e^i) - c(e^i) : & \text{if region } i \text{ makes effort} \rightarrow e^i = 1 \\ 0 \text{ otherwise} : & \text{if region } i \text{ selects no effort} \rightarrow e^i = 0 \end{cases}$$

Assuming that each region exercises its autonomy and behaves independently, a region i will have an incentive to make effort only when

$$f(e^i) - c(e^i) > 0^{27} \quad (2)$$

Inter-regional inequality will depend on how incentives inform the effort choices by regions, and the effect of such choices on income differentials between higher and lower-income jurisdictions within centralized and decentralized structures, respectively. Consider the case of a centralized fiscal system in which government can bailout regions that are poor *ex-post*, and have made no

²⁶This assumption mirrors what obtains in reality as relocation costs and non-monetary factors such as the need to adapt to new cultures and traditions often act as barriers to inter-regional migration

²⁷More specifically, region i will undertake efforts to realize its potential resource if the marginal benefit of such an action exceeds the cost, i.e. when $f'(e^i) - c'(e^i) > 0$, where $f'(e^i) \equiv f(e^i = 1) - f(e^i = 0)$ and $c'(e^i) \equiv c(e^i = 1) - c(e^i = 0)$. If region i makes effort, $f(e^i) = 1$ and $c(e^i) = 0$, yielding this particular condition.

efforts *ex-ante* to avoid being poor. Assume for simplicity that the bailout program requires that resources of T^i be shifted from the only rich region – **R**, to each of the n poor regions ($P^1, P^2 \dots P^n$). Under such circumstances, a poor region P^i , will have no incentive to undertake a unilateral effort that could alter its low-income status when $f(e^i) - c(e^i) < T^i$. Note that if $f(e^i) - c(e^i) < T^i$ holds for all $P^1, P^2 \dots P^n$, then *ex-post* income for a poor region P^i that exerts zero effort *ex-ante* can be expressed as

$$h^i = y^i + T^i \quad (3)$$

For the rich region with *ex-ante* fixed income level of Y , the effect of all n poor regions choosing $e^i = 0$ gives **R** an *ex-post* income of $Y - \sum_i^n T^i$. For simplicity of exposition and ease in solving the model, the n poor regions are assumed to be identical. Therefore, in the case of a centralized fiscal system where resources from a rich region (**R**) can be used to fund the bailout transfers to n identical poor regions, the resulting income differential between both region types may be written as

$$\text{Inequality} = \underbrace{(Y - nT)}_{\text{ex-post income of rich region}} - \underbrace{(y + T)}_{\text{ex-post income of } n \text{ identical poor regions}} \quad (4)$$

Within a fiscally decentralized system, the devolution of revenue and expenditure responsibilities signals the central/national government's commitment not to bailout sub-national units. In this case, the absence of a mechanism for *ex-post* redistributive transfers will cause officials in poor regions to make an effort towards formulating policies that may increase potential income. With the rich region retaining its resource,

$$\text{Inequality} = \underbrace{(Y)}_{\text{ex-post income of rich region}} - \underbrace{(y + f(e) - c(e) + \alpha(n - 1)f(e))}_{\text{ex-post income of poor regions when effort is exerted}} \quad (5)$$

Taking note of like terms (Y and y) in Equations (4) and (5), the question of which approach – fiscal centralization or fiscal decentralization, does a better job of reducing regional income differentials will depend on whether

$$nT + T \leq f(e) - c(e) + \alpha(n - 1)(f(e)) \quad (6)$$

The left-hand side of Eqn. (6) denotes the *standard* effect of the decrease in income differentials resulting from a system of intergovernmental transfers or bailouts, while the right-hand side captures the incentive effect on inter-regional inequality when fiscal decentralization acts as a commitment device. To achieve a greater decline in inter-regional inequality following fiscal decentralization, the *incentive* effect has to exceed the *standard* effect. Mathematically, this condition is specified as

$$nT + T < f(e) - c(e) + \alpha(n - 1)(f(e)) \quad (7)$$

For condition in Eqn. (7) to hold, it will require that $f(e^i)$ be high or the degree of spillover

(α) across regions be large.²⁸ Hence, when the incentive effects of fiscal decentralization exceed the standard effects, we get an alternative to *Hypothesis I*

Hypothesis II: *Fiscal decentralization acts as a commitment device that encourages efforts by sub-national governments to reduce inter-regional inequality*

4 Empirical Strategy and Data

In this study, the empirical specification is aimed at explaining the relationship between inequality and fiscal decentralization across South Africa’s 234 municipalities by using an empirical model that allows for the testing of the two main hypothesis outlined in the previous section. Given this objective, this study will follow much of the existing literature and estimate a multivariate model in which inter-municipal inequality depends on measures of fiscal decentralization, as well as other controls. The regression model to be estimated is:

$$R_{it} = \vartheta + \beta D_{it} + \sum_k^j \gamma_j \mathbf{X}_{it} + \psi_i + \delta_t + \xi_{it} \quad (8)$$

where the dependent variable R denotes the measure of regional inequality, D represents the measure of fiscal and \mathbf{X} is a vector of exogenous variables that account for non-decentralization factors assumed to influence inequality across municipalities. The subscript i is an index for a municipality, and t represents years (or time). To account for the effects of unobserved municipality-specific characteristics, the model includes municipal-specific dummies ψ_i ; similarly, time-specific dummies, δ_t are included in Eqn. (8) to account for unobserved time-specific effects. Finally, ξ_{it} is the corresponding disturbance term that is assumed to be independent and identically distributed with zero mean and constant variance σ_ξ^2 .

Before discussing the estimation strategy, we describe the fiscal, demographic and socio-economic variables required for the systematic analysis of the relationship between inter-municipal inequality and fiscal decentralization. Two sets of variables – the measure of municipal inequality and the degree of fiscal decentralization, are of particular importance to this study. According to Lessman (2009), three reasons make the measurement of regional inequality a difficult task,²⁹ namely: (i) the choice of an appropriate economic indicator on to base the calculation of inequality upon; (ii) ensuring that the analysis is carried out using a territorial classification that creates relatively homogeneous regions, and (iii) using a measure of inequality that is independent of both scale and population size while simultaneously satisfying the Pigou–Dalton principle.³⁰ To address these

²⁸Note that when $\alpha = 0$ and $f(e^i) - c(e^i) < T^i$, the commitment device embodied in fiscal decentralization will not help to reduce inter-regional inequality. In this case, $nT + T < f(e) - c(e) + \alpha(n - 1)(f(e))$ reduces to $nT + T < f(e) - c(e) \equiv nT < f(e) - c(e) - T$. As long as regions benefit more from transfers relative to making effort $\Rightarrow f(e^i) - c(e^i) < T^i$, then $nT \not< f(e) - c(e) - T$ since $nT > 0$.

²⁹(Lessman, 2009) provides a detailed discussion of the varied measurement concepts and issues relating to regional inequality.

³⁰As part of work relating the measurement of inequality (and poverty) to the axiomatic study of the properties of

three issues, this study uses the Gini coefficient (*GINI*) to quantify the extent of inequality across the 234 municipalities. The Gini coefficient measures the degree of spatial dispersion of income, and is widely used in literature devoted to the study of inequality in the distribution of socio-economic variables (such as income, wealth) as well as access to social services (including education, health-care and transport networks) both within and across countries (Akai and Sakata, 2009; Ezcurra and Pascual, 2008; Kim et al., 2003).³¹

In addition to the measure of inequality across municipalities, there is also a need to include appropriate measures of fiscal decentralization in the regression model. However, the task of finding a single quantitative measure of decentralization is made difficult by the complex and multi-dimensional process of intergovernmental relations (Schneider, 2003). In most of the existing literature, the usual practice is to approximate fiscal decentralization using the sub-national share in consolidated general government revenues or expenditures. However, the key methodological problem with this approach lies with its failure to adequately reflect the degree of revenue and expenditure autonomy of sub-national governments, and distinguishing between the two types of decentralization – that which reflects the assignment of functions and resources to different levels of government, and that which merely reflects the relative size of sub-national government activities.

In this study, to complement the traditional measures of fiscal decentralization – the shares of municipal revenues (*REVDEC*) and expenditures (*EXPDEC*) in total government revenues and expenditures, respectively, we follow the works of Lessman (2009) and Stegarescu (2005) and include improved, alternative measures of fiscal decentralization that take into account the vertical decision-making structures and autonomy, particularly with respect to municipal tax revenues. The first alternative measure relates tax revenues of municipalities to consolidated government revenues adjusted for intergovernmental transfers (*TAXDEC*).³² The second alternative measure of fiscal decentralization takes into account the relative importance of intergovernmental transfers in revenues of local governments in South Africa. Although transfers constitute less than 15% of total local revenues, disparities in resource endowment and fiscal capacities across municipalities has caused many local authorities to rely heavily on grant allocations from national government. Constitutional directives that local governments prioritize developmental programs has increased the importance of transfers in the ability of richer municipalities to fund the provision of a wider range of social services than they would with only own-revenues.³³ To capture these, we construct

indices (quantifying inequality and poverty), the Pigou–Dalton principle of transfers posits that inequality decreases (or social welfare increases) when an even transfer is made from richer to a poorer regions without reversing their pairwise ranking (see Sen (1973) and Dalton (1920) for details).

³¹Other notable, standard measures that overcome the stated difficulties of measuring inequality include the coefficient of variation, the adjusted Gini coefficient, and the population-weighted coefficient of variation. For a detailed comparison of these measures, see Lessman (2009) and Bendel et al. (1989).

³²In deriving this alternative measure, we rely on the classification of tax autonomy by the OECD. Under this classification framework, taxes are classified into two broad types: taxes determined by sub-national governments (with sub-national units having discretion over either the tax rate or tax base, or both tax base and rate), and revenues generated via tax sharing arrangements (with the revenue split jointly determined by the central/national government in conjunction with sub-national units, or unilaterally determined by central government. For more details of this classification, see OECD (2002) and Ebel and Yilmaz (2003).

³³The 1996 Constitution stipulates that the local government sphere be entitled to a share of nationally raised

the second alternative measure as the share of national transfers in municipal expenditures – a measure of vertical fiscal imbalance (*VIMB*). Given that transfers provide a channel through which central (or national) authorities can influence budgets at local level, the measure reflects the degree of local government autonomy, and captures the extent of a municipality’s reliance on transfers .

Taking into account the developmental role of municipalities in reducing inequalities, the regression model includes a vector of control variables (X) related to municipalities’ socio-economic characteristics and shown in the empirical literature as potential explanatory variables that affect inequality across regions. The first of these controls relate to variables intended to capture influence of regional development. The seminal work of Kuznets (1955) represents the first study to identify the process of a country’s economic development as an important determinant of the long-term evolution in the distribution of national income. Kuznets (1955) proposed the idea that the inequality characterizing income distribution exhibits a non—monotonic trend along the process of economic development: the inequality gap widens as an economy transitions into an industrial period (or the earliest phases of economic development, before systematically decreasing as regions make advances in their level of development. According to Williamson (1965), the observation that the regional inequality displays a trend similar to an inverted U shape suggests the presence of a non-linear relationship between economic development and regional inequality.³⁴ Therefore, the regression model includes both municipal per-capita income – Y^{pc} , as the measure of economic development, and its squared term as a quadratic function to test Kuznets hypothesis.

In recent years, models of the “new economic geography” have highlighted the important role of agglomeration economies in the relationship between economic development and regional inequality.³⁵ Agglomeration effects are controlled for by including two variables – municipal population

revenues. To make this requirement functional, transfers to municipalities’ are undertaken using two funding instruments: direct and indirect allocations. Most intergovernmental transfers entail the direct transfer of funds to municipal coffers, either on a conditional or unconditional basis. As the name indicates, unconditional transfers are general purpose allocations and form the bulk of total transfers to the municipal sphere. The main unconditional grant is the local government equitable share (LES), which is intended to (i) reduce fiscal imbalances stemming from the asymmetric matching of revenue and expenditure functions and (ii) enable sub-national governments to provide basic services and perform any functions assigned to them. Conditional grants, regulated through the Division of Revenue Act, are earmarked for spending programs designed to address inter-jurisdictional spillovers, meet national redistribution objectives, and aid the implementation of specific national priorities and policies related to socio-economic services provided by municipalities. Given these objectives, conditional transfers in South Africa are exclusively made up of infrastructure and capacity-building grants. For both of these grants, transfers are made directly (in the form of cash) or indirectly (in the form of assets or support services provided by relevant national ministries and state owned enterprises to a municipality). The largest infrastructure grant is the municipal infrastructure grant (MIG).

³⁴According to (Ezcurra and Pascual, 2008), the inverted U trend also suggests that progress in economic development can reduce regional inequality by contributing to the spatial dispersion of economic activity, where such dispersion results from factors such as the discovery of new resources in peripheral regions or the process of technological diffusion.

³⁵According to Dimou (2008), the most common interpretation of the Kuznets curve posits that the inverted U pattern results from the systematic process of structural change in which there is an initial reallocation of labor from a stagnant poor rural and agricultural sector to an expanding urban industrial sector (where the mean and standard deviations of incomes are much higher). This initial change creates rising inequality, as the mean and standard deviations of incomes in urban areas are much higher than those in rural areas. In later stages of economic development, increases in congestion costs associated with excessive concentration of industries in initially more developed regions will exhaust the benefits of agglomeration. Such congestion diseconomies coupled with the emergence of new

density (*POPDEN*) and a measure of the degree of urbanization within a municipality (*URBAN*), in the regression analysis. Another control linking to the concept of agglomeration to inequality is the sectoral composition of economic activity in a region. A region with a diversified economic base is less vulnerable to the adverse exogenous events such as bad climatic conditions and commodity price fluctuations, and has greater scope for random unemployment in one industry to be quickly offset by a random hiring in other industries. To the extent that greater levels of employment ensure higher regional per capita incomes, the degree of economic diversification will have implications for regional inequality.³⁶ For these reasons, the regression model employed in this study includes the *Tress* index (denoted *TRESS*) as a measure of the sectoral composition of economic activity within each municipality.³⁷

Wealthier regions have a larger scope to implement redistributive policies using funding mechanisms other than those provided by intergovernmental grant allocations and transfers (Lessman, 2009). Furthermore, Kuznets (1955) suggests that regions classified as farm-based economies display greater income inequality, and that the employment of a greater share of a region's labor force in the manufacturing sector is negatively correlated with income inequality. Both of these arguments suggest that extent of a region's economic size matters for regional inequality. To explore this hypothesis, the share of each municipality in South Africa's total Gross Value Added (*GVASH*) is included as an additional control in the regression analysis. Existing literature (see for example Alesina et al. (1999)) suggests that due to heterogeneous preferences of various ethnic groups over the types of public services to finance with tax revenues, ethnic fragmentation within a particular region may make it difficult for authorities to reach agreements on public spending programs. As a result, the provision (or financing) of certain public goods such as education and sanitation is inversely related to ethnic fragmentation in such areas, an outcome that may promote divergence in the equality of regions. Therefore, the vector of controls includes an index of ethnic fragmentation (*ETHNIC*) that is calculated by following the approach of Alesina et al. (2003). Finally, related studies by Kim et al. (2003) and Akai and Sakata (2009) have shown that the levels of employment and human capital affects regional inequality. The regression model controls for the impact of these factors by means of the unemployment rate (*UNEMP*) and the percentage of a municipality's population with a high-school diploma (*EDUC*), respectively. Variable definitions and data sources are summarized in Table 2.

locational advantages in rural or peripheral regions will lead to a reduction in income differentials (Ros, 2000).

³⁶Bonet (2006) suggests that agglomeration of production can directly cause income inequality, particularly when there are restrictions on inter-regional labor migration, or when the economy is saddled with a labor surplus.

³⁷Similar to *location quotients* that quantify and compare concentrations of industries in a particular area and are used in research to gain a critical understanding of a region's economic strengths and weaknesses, the *tress* index measures the level of diversification or concentration of a region's economy. A *tress* index of zero represents a totally diversified economy; alternatively, the greater the index (i.e. the closer the index is to 100), the more concentrated or vulnerable a region's economy.

Table 2 Definition of variables and descriptive statistics

Variables	Description	Mean(Std.Deviation)	Source
<i>GINI</i>	Gini coefficient	0.607 (0.035)	IHS Global Insight
<i>REVDEC</i>	Revenue decentralization measured as share of municipal revenues (including transfers) in total/consolidated government revenues	0.23% (0.010)	National Treasury (South Africa)
<i>EXPDEC</i>	Expenditure decentralization measured as municipal expenditures as % of consolidated government expenditures	0.2% (0.01)	National Treasury
<i>TAXDEC</i>	Tax decentralization measured as share of municipal tax revenues in consolidated government revenues	0.14% (0.01)	National Treasury
<i>VIMB</i>	Vertical imbalance measured by share of intergovernmental transfers in total municipal expenditures	38.9% (151.61)	National Treasury
<i>URBAN</i>	Urbanization rate	49.1% (0.347)	IHS Global Insight
<i>POPDEN</i>	Population density	97.29 (245.90)	IHS Global Insight
<i>TRESS</i>	Tress Index measuring diversification of economic activity	58.307 (11.72)	IHS Global Insight
<i>GVASH</i>	Share of municipality in national gross value added (GVA)	0.4% (0.017)	IHS Global Insight & National Treasury
<i>ETHNIC</i>	Ethnic fragmentation measured as $1 - \sum_i (Ethnic_i)^2$	0.227 (0.194)	IHS Global Insight
<i>UNEMP</i>	Municipal unemployment rate	27.4% (0.130)	IHS Global Insight
<i>EDUC</i>	Municipal human capital measured by % of municipal population with high school diploma	11.4% (0.049)	IHS Global Insight

Data are *municipal -year* observations for 234 municipalities during the fiscal years 2003 - 2012.

5 Empirical Results

5.1 Estimation results

By following a panel data approach, this study endeavors to fully utilize both the time and cross-country dimensions of the chosen data set, which is a balanced panel data spanning a ten year period over the fiscal period 2003–2012. The estimation strategy differs from some of the empirical literature on the fiscal decentralization–regional inequality nexus (see for example Lessman (2012) and Sepulveda and Martinez-Vazquez (2011)), which in order to capture the steady state relationship between dependent and explanatory variables, average out data over five or ten year horizons. As argued by Baltagi et al. (2009), averaging out data has two major drawbacks: (i) it does not always fully reflect the steady state equilibrium, and (ii) it represents a form of the smoothing out of time–series data, an action which removes useful variations that may help with more precise identification of the parameters of interest.

Eqn.(8) takes into account the possibility that there may exist municipality–specific effects that influence inequality across municipalities, but due to unobservability, are excluded from the set of explanatory variables. Failure to consider such effects may bias estimates and render results invalid. Estimating Eqn.(8) as a panel data model helps overcome this problem, as it includes a parameter of municipal–specific effects – ψ , that incorporates unobserved heterogeneity across municipalities.

Depending on the different assumptions made about the municipality-specific effects, Eqn.(8) can be estimated as a random or fixed effects model. In this study, we proceed by estimating Eqn.(8) using the four different measures of fiscal decentralization, and including both random and fixed municipality-specific effects. Table 3 reports the results of the random-effects and fixed-effects estimates, respectively. The different specifications indicate that the effect of decentralization on municipal inequality in South Africa vary according to the type of variable used to measure decentralization. When the proxy for fiscal decentralization is the share of municipal expenditures in consolidated (or total) government expenditures (*EXPDEC*), then fiscal decentralization tends to exacerbate existing inter-regional (or municipal) inequalities. In Model A, the fixed effects estimates show that the Gini coefficient of inter-regional inequality will increase by 0.82% (or 0.98% for the random effects estimation) if there were to be a 1% increase in *EXPDEC* (i.e., a 1% increase in the share of the entire local government sphere in total government expenditures). The result is also statistically significant. A different result is however obtained when the measure of fiscal decentralization is derived using municipal revenues. In this case, the decentralization variable — *REVDEC*, has a negative and statistically significant coefficient. From the results of the fixed effect estimation in Model B, a 1% increase in a municipality’s share of consolidated government revenues will reduce regional (or inter-municipal) disparities by 0.41% (or 0.23% in the case of random effects model).

Table 3 The impact of fiscal decentralization on inter-municipal inequalities

	Dependent variable: Gini Coefficient (2003—2012)							
	Model A		Model B		Model C		Model D	
	Fixed Effects	Random Effects	Fixed Effects	Random Effects	Fixed Effects	Random Effects	Fixed Effects	Random Effects
<i>LY^{pc}</i>	0.03 (0.019)	0.01 (0.012)	0.02 (0.018)	0.01 (0.011)	0.02 (0.018)	0.01 (0.011)	0.03 (0.019)	0.01 (0.011)
<i>LY^{pc2}</i>	0.002 (0.001)	0.002 (0.001)	0.002* (0.001)	0.002 (0.001)	0.002* (0.001)	0.002* (0.001)	0.002 (0.002)	0.002* (0.001)
<i>URBAN</i>	- 0.06 (0.055)	- 0.01 (0.018)	-0.10 (0.057)	-0.01 (0.018)	-0.07 (0.056)	-0.01 (0.019)	-0.06 (0.055)	-0.003 (0.018)
<i>LPOPDEN</i>	0.003 (0.008)	-0.002 (0.003)	0.01 (0.006)	-0.002 (0.003)	0.01 (0.007)	-0.002 (0.003)	0.004 (0.008)	-0.001 (0.003)
<i>LTRESS</i>	-0.10*** (0.027)	- 0.02 (0.017)	-0.10*** (0.024)	-0.03 (0.016)	-0.10*** (0.026)	-0.02 (0.016)	-0.10*** (0.027)	-0.02 (0.016)
<i>GVASH</i>	-1.59 (0.986)	-0.23 (0.154)	1.03 (1.263)	0.30* (0.163)	-0.46 (1.225)	0.19 (0.169)	-1.76* (1.064)	0.10 (0.110)
<i>ETHNIC</i>	- 0.04 (0.089)	- 0.03 (0.027)	-0.10 (0.085)	-0.03 (0.027)	-0.08 (0.088)	-0.03 (0.027)	-0.05 (0.089)	-0.03 (0.026)
<i>UNEMP</i>	0.04 (0.047)	0.01 (0.033)	0.07 (0.043)	0.01 (0.027)	0.05 (0.043)	0.01 (0.033)	0.04 (0.045)	0.006 (0.032)

Continued on next page

Table 3 – *Continued from previous page*

	Model A		Model B		Model C		Model D	
	Fixed Effects	Random Effects	Fixed Effects	Random Effects	Fixed Effects	Random Effects	Fixed Effects	Random Effects
<i>EDUC</i>	0.11 (0.171)	0.15 (0.099)	0.10 (0.167)	0.14 (0.10)	0.11 (0.175)	0.15 (0.10)	0.11 (0.177)	0.16 (0.10)
<i>EXPDEC</i>	0.82*** (0.386)	0.98** (0.453)	— —	— —	— —	— —	— —	— —
<i>REVDEC</i>	— —	— —	-0.41** (0.164)	-0.23* (0.132)	— —	— —	— —	— —
<i>TAXDEC</i>	— —	— —	— —	— —	-0.38 (0.289)	- 0.20 (0.210)	— —	— —
<i>VIMB</i>	— —	— —	— —	— —	— —	— —	- 0.0003 (0.005)	-0.0004 (0.005)
<i>Constant</i>	0.74*** (0.201)	0.54*** (0.081)	0.78*** (0.194)	0.57*** (0.082)	0.81*** (0.194)	0.57*** (0.082)	0.79*** (0.193)	0.56*** (0.081)
Municipal dummies	Yes	No	Yes	No	Yes	No	Yes	No
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2340	2340	2340	2340	2340	2340	2340	2340
R^2	0.014	0.252	0.027	0.233	0.001	0.238	0.026	0.252
<i>F-test/Wald-test</i>	17.90	315.17	18.52	313.99	17.59	303.78	17.38	299.57

The variables Y^{pc} , *POPDEN* and *TRESS* are expressed in natural logarithms. The numbers in parentheses are robust standard errors. (*), (**) and (***) denote statistical significance at the 10%, 5% and 1% levels, respectively. Time dummies (included in all equations) and municipal dummies (included in fixed effects regressions) are not reported. The respective F tests show that both time and municipal dummies are statistically significant across the four models. A dummy variable *URBAN* that equals 1 if a municipality is classified as urban and zero otherwise included in the random effects estimations is insignificant across the four models and is also not reported. Hausman's test based on the difference between fixed and random effects gives the following results: $\chi^2(19) = 34.14$ with a p -value of 0.018 for Model A; $\chi^2(19) = 42.45$ with a p -value of 0.0015 for Model B; $\chi^2(19) = 37.89$ with a p -value of 0.0067 for Model C, and $\chi^2(19) = 37.51$ with a p -value of 0.007 for Model D.

A concern with the results reported in Table 4 is the possible existence of an endogenous relationship between inter-municipal inequality and fiscal decentralization may cause the fixed and random effects estimates to be biased and inconsistent. From the political science literature on territorial and institutional dimensions of inequality and resource redistribution (see for example Bolton and Roland (1997)), there are valid reasons to suspect that fiscal decentralization may have an endogenous relationship with income inequality. Beramendi (2007) argues that one such reason is that the choice between competing administrative (and fiscal) systems (such as centralization versus decentralization) is shaped by knowledge about the distribution of resources and structure of inequality across regions or territories. Furthermore, the differing ideologies regarding how best to redistribute income and address inequalities implies the existence of a political process according to which the structure of inequality shapes the levels of decentralization. For example, demand for greater decentralization in a country may be driven by regions that have “socialist” leanings, and thus a higher preference for implementing redistributive policies relative to what obtains at the central/national level. Similarly, within a federal system, concerns over distribution of income and increasing regional inequalities might cause the a central/national government to take one of two

approaches: (i) increasingly centralize budgets in order to have an increased scope to implement redistributive programs, or (ii) where it believes decentralized decision-making is essential for regional convergence, implement a policy of fiscal decentralization (Lessman, 2012). Hence, knowledge of differences as well as the structure of regional inequalities, coupled with the political/ideological views on the best approaches to reducing inequalities may help shape preferences for fiscal decentralization and the actual extent of its implementation (Sepulveda and Martinez-Vazquez, 2011).

To tackle the problems of the possible endogeneity of fiscal decentralization, we use an instrumental variable (IV) in a two-stage least squares (2SLS) estimation of Eqn.(7). The application of the 2SLS approach is made difficult by the requirement that the chosen instrument satisfy dual conditions of being an exogenous determinant of fiscal decentralization, which is uncorrelated with the extent of regional inequalities. In the empirical literature, the standard variables used to instrument include lagged values of the measures of decentralization (see for example, Rodriguez-Pose and Ezcurra (2010)), the size of regions (see for example, Enikolopov and Zhuravskaya (2006) and Sepulveda and Martinez-Vazquez (2011)), or the degree of ethnolinguistic fragmentation (see for example, Arikan (2004)). Using a similar approach to Lessman (2012), we instrument decentralization using variables which, reflect the institutional and historical dynamics that may have influenced how fiscal decentralization affects inter-municipal inequalities in the context of South Africa.

The first variable we use as an instrument for fiscal decentralization is the share of whites in a municipality's population (*WHITE*). Historically, the concept of decentralization in South Africa can be traced back to 1910 Union constitution which transformed the existing colonies of the Cape, Transvaal, Orange Free State and Natal into provinces and powers to manage local or special affairs, including education, health and transportation facilities. The 1910 Constitution also granted provincial authority over a general framework of local government that consisted of municipalities for the major towns, divisional councils for the major districts, and a village council (or sanitary board) for rural centers of population (Worsfold, 1913). During apartheid, the segregated system of administration meant that relative to administrative bodies governing black citizens, white South Africans enjoyed considerable autonomy within their decentralized governance structures. As dedicated bureaucracies operating within all urban areas, WLAs carried out functions that included included water and electricity reticulation, refuse removal, sewerage disposal, low cost housing schemes, urban planning, traffic control and public health inspections. The costs of these services were financed through revenues generated from a combination of user charges, profits from commercial services (in particular electricity reticulation) and property taxes (Wittenberg, 2003).

The effects of the apartheid dispensation is reflected in operations of decentralized functions at municipal level. Municipalities located in more affluent urban areas that previously included the WLAs (as well as black urban areas within these WLAs), are generally, better performing municipalities which are more effective in utilizing existing revenue sources and intergovernmental transfers. In contrast, many municipalities covering rural areas and incorporating much of the former homelands continue to battle with challenges related to the legacy of apartheid, a system that did not adequately train nor prepare individuals for critical positions in the structures of local

governments within the predominantly black homelands. For such municipalities, the legacy of a lack of skilled and experienced personnel has created severe constraints that have adversely affected their administrative effectiveness as well as functioning of operations related to service delivery programs. The share of the white population helps reflect the influence of white South African’s prior experience with decentralization, and how that experience may have diffused into current integrated structures of previously segregated administrations. Municipalities with a historical link to previous WLAs that experienced greater decentralization are thus expected to have a higher degree of decentralization.³⁸

The second variable we use to instrument fiscal decentralization is a dummy variable, *CLASS*, that captures the sub-classification of municipalities within the local government sphere (see Table 4). While the 1996 Constitution provides for asymmetry in the form of three categories of municipalities, the comprehensive frameworks for functional competencies, governance and financial management, as well as policy targets are applied uniformly irrespective of the vast capacity and economic differences between municipalities. Despite this uniform application, the asymmetry in operational capacity has created variations in the extent to which municipalities exercise their Constitutionally assigned powers and functions.³⁹

Given that the equation of interest – Eqn.(8), contains an endogenous explanatory variables as well as unobserved heterogeneity in the form of municipality-specific effects, the IV estimates are obtained using the fixed effects two stage least squares (*FE-2SLS*) method (see Table 5).

Table 5 Panel data estimates using the instrumental variable approach

		Dependent variable: Gini Coefficient (2003—2012)			
		Model A	Model B	Model C	Model D
		RE-2SLS	FE-2SLS	FE-2SLS	RE-2SLS
		(1)	(2)	(3)	(4)
	<i>LY^{pc}</i>	0.02*	0.02	0.01	0.01
		(0.009)	(0.019)	(0.02)	(0.01)
	<i>LY^{pc2}</i>	-0.001	0.002	0.001	-0.001
		(0.002)	(0.002)	(0.001)	(0.002)
	<i>URBAN</i>	0.01	-0.15***	-0.16***	-0.003

Continued on next page

³⁸A similar approach is followed by Lessman (2012) who notes that idea of fiscal federalism can be perceived as an European invention that was spread across the world through colonial activities and how settler populations organized their administrative structures. Based on expectation that countries with a historical link to Western Europe should have a higher degree of decentralization, Lessman (2012) uses the share of the population that speaks a major European language as one of the instrumental variables for fiscal decentralization.

³⁹For example, Section 229 of the 1996 guarantees that rates levied on property will form an autonomous source of revenues for municipalities to fund services such as municipal roads, street lighting and street cleaning. However, problems with extending property rates to tribal lands and the lack of experienced personnel to conduct periodic assessments and maintain valuation rolls has resulted in many *B3* and *B4* municipalities operating much weaker property rates tax base, and collecting about half of potential revenues relative to amounts generated by *A* and *B1* municipalities.

Table 5 – Continued from previous page

	Model A	Model B	Model C	Model D
	RE-2SLS	FE-2SLS	FE-2SLS	RE-2SLS
	(1)	(2)	(3)	(4)
	(0.008)	(0.041)	(0.044)	(0.010)
<i>LPOPDEN</i>	-0.003*** (0.001)	0.01 (0.006)	0.01 (0.01)	-0.004*** (0.001)
<i>LTRESS</i>	0.03*** (0.009)	-0.08*** (0.023)	-0.09*** (0.023)	0.04*** (0.001)
<i>GVASH</i>	-1.59*** (0.511)	6.87** (2.76)	7.56** (3.09)	0.18*** (0.058)
<i>ETHNIC</i>	-0.06*** (0.012)	-0.22** (0.086)	-0.26** (0.098)	-0.05*** (0.011)
<i>UNEMP</i>	-0.02 (0.02)	0.132** (0.051)	0.0123* (0.053)	0.039** (0.019)
<i>EDUC</i>	0.27*** (0.065)	0.10 (0.151)	0.073 (0.158)	0.23** (0.067)
<i>EXPDEC</i>	5.08*** (1.495)	—	—	—
<i>REVDEC</i>	—	-1.24** (0.367)	—	—
<i>TAXDEC</i>	—	—	-2.69*** (0.828)	—
<i>VIMB</i>	—	—	—	-0.06** (0.026)
<i>Constant</i>	0.35*** (0.063)	0.76*** (0.011)	0.89*** (0.215)	0.45*** (0.059)

First stage regression diagnostics

Observations	2340	2340	2340	2340
Partial R^2	0.415	0.413	0.356	0.453
AP- F^\dagger	4.33	34.92	50.55	5.04
$Prob > F$	0.0019	0.000	0.00	0.00
Hansen J^\ddagger	25.52	0.00	0.00	2.166
Hansen $J(p - value)$	0.00	—	—	0.5387

Excluded instruments from overidentification test of all instruments

<i>CLASS</i>	<i>WHITE</i>	<i>WHITE</i>	<i>CLASS</i>
<i>WHITE</i>			<i>WHITE</i>

Note: Model A is the version of Eqn. (8) that uses *EXPDEC* as the measure of fiscal decentralization. Similarly, Models B, C, and D are versions of Eqn.(8) that use *REVDEC*, *TAXDEC* and *VIMB* as the chosen measures of fiscal decentralization, respectively. The variables Y^{PC} , *POPDEN* and *TRESS* are expressed in natural logarithms. The numbers in parentheses are robust standard errors. (*), (**) and (***) denote statistical significance at the 10%, 5% and 1% levels, respectively. Time dummies (included in all equations) and municipal dummies (included in fixed effects regressions) are not reported. \dagger denotes the Angrist-Pischke (AP) multivariate F test of excluded instruments; \ddagger is the Hansen J -statistic from the overidentification test of all instruments.

We note that in addition to the *FE-2SLS* approach, an alternative method to dealing with the endogeneity problem is to estimate a random effects two-stage least squares (*RE-2SLS*) model,

Table 4 Categorization and sub-classification of South Africa’s municipalities

Category	Number	Description
(A) Metropolitan municipalities	8	Large urban complexes with populations over 1 million and accounting for over 50% of all local government spending
(B) Local municipalities		
· (B1) Secondary cities	19	Local municipalities with the highest operating budgets and a large urban spatial pattern
· (B2) Large towns	27	Local municipalities with a large town as its urban core
· (B3) Small to medium towns	100	Local municipalities with small towns, and relatively small % of its population residing in smaller urban settlements, but with no large town as a core
· (B4) Mainly rural areas	70	Areas characterized by the presence of no more than two small towns in their areas, communal land tenure and villages or scattered groups of dwellings and typically located in former homelands
(C) Districts		
· (C1) District municipalities without powers	24	Municipalities not assigned powers and functions of water and sanitation provision
· (C1) District municipalities with powers	20	Municipalities assigned powers and functions of water and sanitation provision
Total	278	Local Government Sphere

Source: COGTA (2010), and *Author’s own calculations*

Following the definitions above, the regional classification of a municipality are as follows: 1= metropolitan area; 2 = municipality with major secondary cities; 3= municipality with small or medium town(s) as its main centre(s), and 4= rural municipality.

which yields estimates that are a matrix-weighted average of coefficients obtained from the between 2SLS and FE-2SLS methods, respectively.⁴⁰ Both estimators are applied to the regression analysis of the versions of Eqn.(8) that include the different measures of fiscal decentralization. To decide between both effects, Baltagi (2013) suggests a Hausman test based on the difference between the FE-2SLS and RE-2SLS estimators.⁴¹ On the basis of the statistical significance of the chi-square distribution, this alternative Hausman test, in the case of versions of Eqn.(8) that respectively use *REVDEC* and *TAXDEC* as the preferred measures of decentralization, the null hypothesis that the RE-2SLS yields a consistent estimator of Eqn.(8) and instead, selects the FE-2SLS as a viable estimator whose consistency cannot be rejected. The opposite is however the case for models A and D – versions of Eqn.(8) that use *EXPDEC* and *VIMB* as measures of decentralization, respectively.⁴²

The upper half of Table 5 reports the results of the second-stage regressions, while the lower part

⁴⁰The *RE-2SLS* produces the same results as the generalized two-stage least squares (*G2SLS*) but with standard errors that are lower and slightly more robust.

⁴¹The standard Hausman test is based on the contrast between fixed and random effects, assuming that the endogeneity is solely due to correlation between municipal-specific effects and regressors. This does not account for the endogeneity that results from a simultaneous type relationship between regional inequality and fiscal decentralization. The alternative Hausman test helps address this shortcoming.

⁴²The alternative Hausman test gives the following results: $\chi^2(18) = 3.08$ with a *p*-value of 0.97 for Model A; $\chi^2(18) = 39.91$ with a *p*-value of 0.002 for Model B; $\chi^2(19) = 36.41$ with a *p*-value of 0.01 for Model C, and $\chi^2(19) = 0.29$ with a *p*-value of 0.99 for Model D.

presents a summary of the first-stage regression diagnostics that assesses the validity of the chosen instruments. With the exception of the coefficients of variables measuring economic development in a municipality (Y^{pc} and its squared term), the effect of the control variables on inequality are statistically significant across the multiple estimates of Eqn.(8). Columns (2) and (3) show that for revenue based measures of fiscal decentralization, urbanization impacts negatively and significantly on inter-municipal inequality. This is consistent with the argument that since increased urbanization is often regarded as a sign of rising economic development, then greater transformations of municipal areas into urban centers should reduce income inequality (Kuznets, 1955). Similarly, columns (1) and (4) show that for expenditure based measures of fiscal decentralization, increases in population density lower regional disparities. The coefficient for the other measure of agglomeration, the log of *TRESS*, indicates that while the effect of an increased diversification of industrial activities is significant, its magnitude depends on both the regression estimator and the measure of fiscal decentralization. When random effects estimation is applied to versions of Eqn.(8) that include expenditure and transfers based indicators of fiscal decentralization (columns (1) and (4), respectively) higher levels of industrial diversification will result in increased inter-municipal inequality. In contrast, fixed effects estimates of versions of Eqn.(8) that incorporate revenue based measures of fiscal decentralization show that greater industrialization has a negative and significant effect on regional inequality (see columns (2) and (3), respectively). The observed ambiguity regarding the impact of industrial diversification on inequality is consistent with *a priori* expectations. While a diversified industrial base may provide less-skilled labor with opportunities to earn relatively high wages, thus reducing inter-regional inequalities (Borjas and Ramey, 1994), it is also possible that a tendency for service-producing industries with bimodal wage distributions to concentrate in particular areas (such as well developed metropolitan/urban centers) may result in a positive relationship between regional inequality and the measure of industrial diversification (Partridge et al., 1996).⁴³

With the exception of Model A, the coefficient for a municipality's share of national economic activity (*GVASH*) is positive and statistically significant. A possible explanation could be that municipalities which experience economic growth have better prospects to raise their revenue streams relative to those that either remain economically stagnant or experience an economic decline. In such a scenario, regional inequalities may worsen. The effect of ethnic fragmentation in inequality is consistent across all the different estimators of Eqn.(8), as Columns (1)–(4) show that a greater degree of ethnic fragmentation is negatively correlated with regional (inter-municipal) inequality. As expected, higher unemployment rates are associated with higher levels of inter-municipal inequality. According to Partridge et al. (1996), the prevalence of low-level education across all regions reduce inequality, while the prevalence of high-level education that promotes productive human capital accumulation increases inequality. The positive coefficient on *EDUC* in columns (1) and (4), respectively, suggests that the latter effect dominates in the context of South Africa's mu-

⁴³This latter argument can also be used to explain the alternative possibility that higher levels of urbanization may cause greater regional inequality.

municipalities. The differing coefficients and levels of significance do not allow for a coherent picture of the effect of Y^{pc} (as well as its squared term) to emerge. Nonetheless, the results do not support the Kuznets (1955) and Williamson (1965) hypothesis of a bell-shaped relationship between regional inequalities and economic development in the 234 municipalities considered in the study.

Important conclusions emerge from the estimated coefficients of the measures of fiscal decentralization. Column (1) in Table 5 shows a positive and statistically significant relationship between the expenditure based measure of fiscal decentralization and inter-municipal inequality. Holding all other factors constant, a 1% increase in the municipal share of total government expenditure contributes to a 5.08% increase in the value of the Gini coefficient. On the contrary, columns (2) – (4) in Table 5 show a negative and statistically significant relationship between the broad and narrow revenue based measures of decentralization and inequality across the set of municipalities considered in the study. The FE-2SLS estimator of Model B shows that a 1% increase in sub-national share of total government revenues (adjusted for intergovernmental transfers) contributes to a 1.24% reduction in the value of the coefficient for *GINI*; in column (3), a similar 1% increase in the share of municipalities’ tax revenues in consolidated government earnings would cause the Gini coefficient of inter-municipal inequality to decline by almost 3%. Finally, Constitutional imperatives to reduce inequality, as reflected in *VIMB*, does play some role in enhancing overall equity; a 1% increase in the share of intergovernmental transfers in total municipal expenditures will reduce inter-municipal inequality by 0.06%. The main inference one can draw from these results is that the relationship between fiscal decentralization and regional inequality within South Africa’s local government sphere is dependent on the variable used to measure decentralization.

When the measure of decentralization is expenditure based, the resulting positive and significant relationship between inequality and fiscal decentralization is consistent with the hypothesis that owing to a weakened redistributive capacity of national government, fiscal decentralization results in increased regional inequality. On the other hand, the negative and statistically significant coefficient of the revenue and transfer based measures of decentralization (*REVDEC*, *TAXDEC* and *VIMB*) provides evidence supporting the role of fiscal decentralization as a commitment device, which serves to reduce regional disparities in South Africa’s local government sphere. Turning to the interpretation of the first-stage regression diagnostics, the results for the Angrist–Pischke multivariate F-test of excluded instruments, which is a test of weak identification, indicates that the instruments are meaningful and thus do not suffer from a weak instrument bias ($F > 10$) for the degree of revenue decentralization [columns (2) and (3)]. For both the transfer based measure of decentralization and the degree of expenditure decentralization [columns (4) and (1)], respectively, it is quite close to 5 and suggests that the instruments can to some extent, be considered meaningful. Finally, with the exception of column (1), the test of overidentifying restrictions (the Hansen J -statistic) does not reject the null hypothesis that the chosen instruments (*CLASS* and *WHITE*) are exogenous.⁴⁴

⁴⁴Note that the Hansen J -statistic is derived using the estimator applied to each model. The fixed effects estimations of models B and C treats the categorical variable (*CLASS*) as collinear and thus, drops it from regressions for the overidentification test. Both Models B and C are therefore exactly identified.

Given the range of legislative and policy reforms aimed at improving the effectiveness and capacity of municipalities to meet their developmental role, why has expenditure decentralization failed to reduce regional disparities in South Africa? One argument to explain the positive link between fiscal decentralization and regional inequality is that as a broad measure, *EXPDEC* does not distinguish between spending on recurrent items (such as wages and salaries) and expenditures on capital projects. Likewise, it does not distinguish infrastructure spending from spending directed towards welfare and social security. Within the literature on economic growth, it is a well-known fact that a positive relationship exists between economic growth and capital (as well as infrastructure) spending by government (see for example de Mello, Jr. (2002); Barro and Sala-i-Martin (1995)). Hence, excessive spending by sub-national governments on unproductive items, even if optimal, can limit or even reduce economic growth. In this respect, it must be noted that underspending of resources has become a consistent and problematic feature of municipal budgets in South Africa.⁴⁵ Of the total capital budget allocated to 21 secondary cities, about R2.9-billion, or 44%, was underspent during the period between 2009 and 2012, with more than half of all district municipalities and 111 local municipalities found to be the worst performers as they consistently underspent their respective capital budgets by more than 30% (National Treasury, 2012).

Much of the trend in underspending can be attributed to capacity difficulties including poor capital budgeting and planning; a shortage of technical personnel able to prepare and manage project tenders of sufficient quality; inadequately managed procurement processes; political interference in procurement processes, and uncertainty arising from the reluctance of officials to take spending decisions owing to political considerations. The argument can therefore be made that for the case of South Africa, the observed inequality increasing effect of expenditure decentralization may be due to the failure of efficiency gains to materialize due to constraints placed by skills scarcity and weak administrative capacity on the expenditure decisions of local governments. Notable consequences of underspending, particularly on capital investments and infrastructure, have included a the deteriorating reliability and quality of municipal services; rising costs of maintenance and refurbishment of critical socio-economic infrastructure; a reduction in the useful lifespan of assets; overwhelming service delivery backlogs, and reduced revenues owing to the failure of selling an adequate level of municipal services (Managa, 2012). Together, these factors can be expected to limit the developmental role envisaged for municipalities and by extension, the capacity of many authorities within the local government sphere to effectively implement policies and spending programs that can reduce existing levels of inequality.

Another important explanation for the positive relationship between regional inequality and expenditure decentralization is the role of intergovernmental transfers in spending programs of local governments in South Africa. As a result of disparities in resource endowments and income levels, many local government authorities lack the fiscal resources adequately fulfill their mandated functions. In recognizing this gap, South Africa's Constitution has enshrined the principle of revenue

⁴⁵Municipal underspending of capital budgets amounted to ZAR8.5 billion (or 8.9% of total capital budget), ZAR18.9 billion (or 29.4% of total capital budget) and ZAR14.8billion (32.3% of total budgets) in each of the three financial years between 2009 and 2012, respectively.

sharing through a system of intergovernmental transfers as a mechanism to address wide variations in levels of service provision within and across local (as well as provincial) governments. Included within the transfer framework, are conditional grants that the national government utilizes in funding its priority programmes within sub-national governments. For the smaller and mainly rural (and semi-rural) municipalities lacking the fiscal and administrative capacity of larger urban and metropolitan local authorities, such conditional transfers can potentially address inter-jurisdictional spillovers, meet national redistribution objectives, and aid the implementation of specific national priorities and policies related to the provision of socio-economic services. However, the largely generalized approach to implementing conditional programs without full consideration of the extent of capacity in recipient local governments has often undermined local autonomy (and flexibility) in the design of expenditure programs, and limited adaptation of spending initiatives to suit local priorities/conditions has limited the impact of conditional spending programs. This situation is compounded by the fact the current approach to introducing, terminating and reviewing conditional grants is unsystematic and unevenly applied (Financial and Fiscal Commission, 2013). The proliferation of conditional grants from different departments with varying criteria for each program has placed smaller municipalities at a disadvantage, with many having to face a confusing array of overlapping programmes characterized by duplicated or competing objectives, as well as complex auditing and administrative requirements that often exceed the capacity of smaller, grant-dependent municipalities. Overall, these factors have contributed to reduced effectiveness of service sustainability and limited the potential for conditional grant-funded initiatives to reduce regional disparities.

5.2 Further Evidence: Robustness Analysis

The first set of robustness checks involves using an alternative variable to instrument fiscal decentralization. Although the size of a region does not seem to be related with income distribution, it represents the degree of spatial dispersion and decay of central public services to regions and has thus been identified as an important determinant of fiscal decentralization (see for example Sepulveda and Martinez-Vazquez (2011), Enikolopov and Zhuravskaya (2006) and Arzaghi and Henderson (2005)). in this regard, Table 6 presents the results obtained when the empirical model [Eqn.(8)] is re-estimated using estimators in which the expenditure, revenue and transfer based measures of fiscal decentralization are instrumented with two variables: (i) the size of a municipality, which is represented by the log of geographical area measured as square kilometers (*LAREA*), and (ii) the share of the white population (*WHITE*).

Table 6 Robustness Check: Estimating Eqn.(8) Using Log of Area and Share of Whites as Instruments

	Dependent variable: Gini coefficient (2003–2012)			
	Model A	Model B	Model C	Model D
	RE-2SLS (1)	FE-2SLS (2)	FE-2SLS (3)	RE-2SLS (4)
<i>Y^{pc}</i>	0.23 (0.015)	0.02 (0.019)	0.01 (0.021)	0.01 (0.01)
<i>LY^{pc2}</i>	0.002 (0.002)	0.001 (0.002)	0.001 (0.002)	-0.001 (0.002)
<i>URBAN</i>	-0.01 (0.019)	-0.15*** (0.041)	-0.15*** (0.043)	0.01 (0.01)
<i>LPOPDEN</i>	-0.003 (0.003)	0.01 (0.007)	0.01 (0.01)	-0.002** (0.001)
<i>LTRESS</i>	-0.02 (0.02)	-0.08*** (0.023)	-0.09*** (0.023)	0.03*** (0.01)
<i>GVASH</i>	-2.18*** (0.777)	6.89** (0.023)	7.06** (3.028)	0.15** (0.057)
<i>ETHNIC</i>	-0.05 (0.031)	-0.22** (0.086)	-0.25** (0.096)	-0.05*** (0.010)
<i>UNEMP</i>	-0.01 (0.036)	0.133** (0.051)	0.12** (0.052)	0.02 (0.019)
<i>EDUC</i>	0.16 (0.13)	0.09 (0.151)	0.08 (0.157)	0.27*** (0.067)
<i>EXPDEC</i>	6.91*** (2.291)	– –	– –	– –
<i>REVDEC</i>	– –	-1.25*** (0.367)	– –	– –
<i>TAXDEC</i>	– –	– –	-2.55*** (0.811)	– –
<i>VIMB</i>	– –	– –	– –	-0.02 (0.028)
<i>Constant</i>	0.43*** (0.127)	0.76** (0.204)	0.89*** (0.213)	0.42*** (0.059)
First stage regression diagnostics				
Observations	2340	2340	2340	2340
Partial <i>R</i> ²	0.62	0.68	0.72	0.39
AP- <i>F</i> [†]	0.28	19.11	30.66	0.60
<i>Prob</i> > <i>F</i>	0.755	0.000	0.00	0.548
Hansen <i>J</i> [‡]	0.08	0.20	0.71	4.16
Hansen <i>J</i> (<i>p</i> – value)	0.774	0.654	0.40	0.041

Excluded instruments from overidentification test of all instruments

Continued on next page

Table 6 – Continued from previous page

Model A	Model B	Model C	Model D
RE-2SLS (1)	FE-2SLS (2)	FE-2SLS (3)	RE-2SLS (4)
<i>LAREA</i>	<i>LAREA</i>	<i>LAREA</i>	<i>LAREA</i>
<i>WHITE</i>	<i>WHITE</i>	<i>WHITE</i>	<i>WHITE</i>

Note: The numbers in parentheses are robust standard errors. (*), (**) and (***) denote statistical significance at the 10%, 5% and 1% levels, respectively. Time dummies (included in all equations) and municipal dummies (included in fixed effects regressions) are not reported. *LAREA* is the *log* of the municipal size in square kilometers. † denotes the Angrist-Pischke (AP) multivariate F test of excluded instruments; ‡ is the Hansen *J*-statistic from the overidentification test of all instruments.

In general and relative to the findings reported in Table 5, the results in Table 6 show no substantial change to the signs and statistical significance of the coefficients of the control variables. For instance, columns (2) and (3) indicate that higher levels of unemployment are associated with higher inter-municipal inequality. Also, the more diverse and urbanized municipalities are, as reflected by *ETHNIC* and *URBAN*, respectively, the lower the extent of regional inequality. Shifting the focus to the effect of the different decentralization measures and regression diagnostics, the results show that the impact of fiscal decentralization on inter-municipal inequality is robust to the inclusion of a different instrument. The coefficient of fiscal decentralization is negative and statistically significant when revenue based measures, *REVDEC* and *TAXDEC*, are included in the regression analysis of the specified empirical model (see columns (2) and (3) in Table 6, respectively). In contrast, the coefficient of the decentralization measure reflecting expenditure responsibilities of municipalities, *EXPDEC*, remains positive and statistically significant [see column (1)]. Overall, these results confirm the earlier conclusion that the impact of fiscal decentralization on inequality across municipalities will vary according to how fiscal decentralization is measured.

A potential critique of the above results is centered on the measure of regional inequality. Within the income distribution literature, it has become a stylized fact that owing to a variety of approaches to aggregating information contained in distributions of variables such as welfare and inequality, different inequality measures may actually yield multiple orderings of the income distribution indexes one seeks to compare (Ezcurra and Pascual, 2008; Sen, 1973). Ensuring that results obtained in Table 6 are not sensitive to how inequality is measured makes repeating the instrumental variable estimation of Eqn.(8) a worthwhile exercise. As such, rather than use the Gini coefficient as the preferred measure of the dependent variable, the second set of robustness checks makes use of measure of inequality based on the concept of the relative share of fiscal resources. Following Qiao et al. (2008) and Bonet (2006), this measure is mathematically expressed as:

$$AdjI_{i,t} = \left| \frac{\frac{Y_{it}}{Pop_{it}}}{\frac{\sum Y_{it}}{\sum Pop_{it}}} - 1 \right| \equiv \left| \frac{y_{it}}{\sum y_t} - 1 \right| \quad (9)$$

where Y_{it} is the financial resources available in a region i at time t , and Pop_{it} is the population of region i in period t . In this study, income is used as the measure of available fiscal resources. If the ratio of the share of income to the share of population of a region i is defined as that region's

per capita income (or its relative share of fiscal resources), then the inequality measure in Eqn. (8) represents the absolute value of the distance from the relative share to the perfect equal share (i.e., where the perfect equal share has a value of one).⁴⁶In an ideal situation where there is no inequality or where perfect equality holds, then, the per capita income of the i^{th} region should equal the overall (or national) average for all regions in a given year. For regions with an initial per capita income greater than than one, an increase in their share suggests that decentralization results in increased inequality, while a decrease indicates more equity in the distribution of income. By the same token, inequality would increase if regions with an initial relative share of less than one experienced further reductions in their shares. The larger the distance (from the relative shares to the perfect share of one) in absolute terms, the greater the extent of regional income inequality. Similar to the strategy used to derive the estimates reported in Tables 6 and 7, the results of the IV regression, where the dependent variable is the adjusted measure of inequality (*AdjI*) and both *CLASS* and *WHITE* are used to instrument the different measures of fiscal decentralization, are reported in Table 7.

Table 7 The effect of fiscal decentralization on inter-municipal disparities using an alternative measure of inequality

	Measure of fiscal decentralization			
	<i>EXPDEC</i> (1)	<i>REVDEC</i> (2)	<i>TAXDEC</i> (3)	<i>VIMB</i> (4)
Estimation method	RE-2SLS	RE-2SLS	FE-2SLS	RE-2SLS
Coefficient	98.77** (15.20)	-5.33*** (0.513)	-9.76*** (0.932)	-0.002 (0.002)
<i>First-stage regression diagnostics</i>				
Partial R^2	0.273	0.249	0.231	
AP- F^\dagger	1.08	8.79	8.94	
<i>Prob - F</i>	0.366	0.00	0.000	
Hansen J^\ddagger	5.039	22.353	17.698	
Hansen $J(p - value)$	0.169	0.001	0.001	

Note: The numbers in parentheses are robust standard errors. (*), (**) and (***) denote statistical significance at the 10%, 5% and 1% levels, respectively. All the regressions include time-specific effects, and the following control variables: the urbanization rate, the log of population density, log of the Tress index, municipal share in national gross value added (GVA), the degree of ethnic fragmentation, the unemployment rate and the share of the population in a municipality with a high school diploma. The log of per capita income and its squared term were excluded to avoid the problem of multicollinearity. For all measures of fiscal decentralization, instruments used are dummy variable capturing the categorization of a municipality, and the share of whites in municipal population.

† denotes the Angrist-Pischke (AP) multivariate F test of excluded instruments; ‡ is the Hansen J -statistic from the overidentification test of all instruments.

For purposes of brevity, Table 7 does not present the entire estimation output and instead, reports the main findings related to the coefficients of the different decentralization measures and

⁴⁶Other measures, which satisfy the Pigou-Dalton transfer principle and are widely used in the literature include coefficient of variation (*CV*), the population-weighted coefficient of variation (*WCV*) and the Theil index. However, their use in this study is precluded by the lack of detailed data, in terms of both subject (municipalities) and time dimensions. It is also important to note the argument by Qiao et al. (2008) which states that conceptually, these alternative measures may not be superior to the measure specified in Eqn.(8), especially as this alternative inequality measure fully reflects how a given region is advantaged/disadvantaged in terms of fiscal resources relative to other regions.

first-stage regression diagnostics. The results in columns (2) and (3) of Table 7 show that revenue based measures of fiscal decentralization (*REVDEC* and *TAXDEC*, respectively) have a significantly negative effect on the alternative measure of inter-municipal inequality. On the other hand, the results show a positive and statistically significant relationship between the expenditure based measure of fiscal decentralization and the alternative measure of inequality across South Africa's 234 municipalities.⁴⁷ Importantly, the qualitative nature of the main results with respect to the effects of fiscal decentralization remain unaltered from the primary findings reported in Table 6. Hence, the results are robust to both different instruments and alternative measures of inter-municipal inequality. To sum up, the regression analysis provides strong evidence that the measurement of fiscal decentralization determines its effect on regional inequality. For the case of South Africa, revenue decentralization has a negative impact on inequality (i.e., it lowers inter-municipal inequality), while expenditure decentralization contributes to worsening regional inequality.

6 Concluding Remarks

The purpose of this study was to analyze the effects of fiscal decentralization on inter-municipal inequalities across the 234 municipalities that constitute South Africa's local government sphere. To facilitate the analysis, we rely on a theoretical model of fiscal decentralization, where the devolution of fiscal powers away from to sub-national units acts as a commitment device that motivates sub-national authorities to implement policies to reduce inter-regional inequality. The theoretical predictions are tested using a panel data covering the period 2003–2012. The result of the empirical analysis provides evidence of a statistically significant relationship between fiscal decentralization and inequality in the context of South Africa's municipality. Specifically, the nature of the relationship depends on how fiscal decentralization is measured. Where measures of fiscal decentralization are revenue based, the regression estimates support the hypothesis that the commitment device of fiscal decentralization provides incentives that decrease inter-municipal inequality. On the other hand, expenditure based fiscal decentralization contribute to increased inter-municipal disparities. This conclusion is robust to alternative estimation strategies and methods.

In recent years, questions have been raised on whether the current functions and powers of local government are sufficient for to achieve the developmental mandates set out in the Constitution. As the representative government closest to citizens, there has been increased demand for the transfer certain functions, such as housing, public transport and land use planning to municipalities. However, as the regression results have shown, increased expenditure decentralization may actually worsen inter-municipal inequality, particularly given limited planning resources and inadequate capacity issues faced by a number of municipalities. Policies aimed at having municipalities take up increased responsibilities for implementing inequality reducing expenditure programs must acknowledge the existence of large variations in capacity levels across the 234 metropolitan and local municipalities. A more pragmatic approach could be a policy that places emphasis on

⁴⁷The manner in which the calculation of the alternative measure of inequality is carried out requires the coefficients of the decentralization measures be divided by 100 to derive the actual values of the coefficients.

ensuring that municipalities are able to focus on those responsibilities that they are able to deliver on. This would mean that certain municipalities ought to focus on a smaller set of functions while other municipalities could expand their expenditure focus. In this regard, ongoing discussions on the practicalities of implementing a differentiated approach, which takes into account the different capacities at the local sphere when devolving additional expenditure and revenue functions to municipalities will be of positive benefit to reforms targeting the improved efficiency of South Africa's intergovernmental fiscal relations.

While this work presents some important findings, there is still room for future research. First, the data used in this study suffers from not being able to disaggregate municipal expenditures into its various components such as capital and recurrent spending. As the impact of expenditure on economic growth and inequality can not be examined in isolation of the different spending categories, future research should examine how the different types of expenditure allocated by municipalities affect inter-municipal inequality. Second, this study does not capture the political dimension of fiscal decentralization. South Africa's municipalities are administered by different political parties, with each party having distinct ideologies on how to exercise their exclusive and concurrent mandates. Thus, a possible opportunity for future research would be to test whether groups of municipalities governed by a specific political party exhibit greater (or lesser) inequalities than those administered by other political parties.

References

- African National Congress (2012). 4th National Policy Conference Recommendations. Chapter 7: Policy Proposals on Legislature & Governance. June 2012. Available at: <http://www.anc.org.za/list.php?t=Policy\%20Documents>.
- Akai, N. and Sakata, M. (2005). Fiscal Decentralization, Commitment and Regional Inequality. Center for International Research on the Japanese Economy (CIRJE) Discussion Paper CIRJE-F-315. January 2005. Available at: <http://www.e.u-tokyo.ac.jp/cirje/research/03research02dp.html>.
- Akai, N. and Sakata, M. (2009). Fiscal Decentralization, Commitment and Regional Inequality: Evidence from State-level Cross-sectional Data for the United States.
- Akramov, K. T. and Asante, F. (2009). Decentralization and local public service in Ghana: Do geography and ethnic diversity matter? International Food Policy Research Institute (IFPRI) Discussion Paper 00872. June 2009.
- Alesina, A., Baqir, R., and Easterly, W. (1999). Public Goods and Ethnic Divisions. *Quarterly Journal of Economics*, 114(4):1243–84.
- Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S., and Wacziarg, R. (2003). Fractionalization. *Journal of Economic Growth*, 8:155–194.
- Arikan, G. (2004). Fiscal Decentralization: A Remedy for Corruption? *International Tax and Public Finance*, 11(2).
- Arzaghi, M. and Henderson, J. (2005). Why countries are fiscally decentralizing. *Journal of Public Economics*, 89:1157–1189.
- Bahl, R. and Smoke, P. (2003). Overview of the local government revenue system. In Bahl, R. and Smoke, P., editors, *Restructuring Local Government Finance in Developing Countries: Lessons from South Africa*, pages 1–22. Edward Elgar Publishing, Massachusetts.
- Baltagi, B. (2013). *Econometric Analysis of Panel Data*. John Wiley & Sons, Inc., New Jersey.
- Baltagi, B., Demetriades, P., and Law, S. (2009). Financial Development and Openness: Evidence from Panel Data. *Journal of Development Economics*, 89:285–296.
- Barro, R. and Sala-i-Martin, X. (1995). *Economic Growth*. McGraw-Hill, New York.
- Bendel, R., Higgins, S., Teberg, J., and Pyke, D. (1989). Comparison of skewness coefficient, coefficient of variation, and Gini coefficient as inequality measures within populations. *Oecologia*, 78:394–400.

- Beramendi, P. (2007). Inequality and the territorial fragmentation of solidarity. *International Organization*, 61:783–820.
- Bolton, P. and Roland, G. (1997). Breakup of nations: A political economy analysis. *The Quarterly Journal of Economics*, 112(4):1057–1090.
- Bonet, J. (2006). Fiscal Decentralization and Regional Income Disparities: Evidence From the Colombian Experience. *Annals of Regional Science*, 40:661–676.
- Booyesen, S. (2007). With the ballot and the brick; the politics of attaining service delivery. *Progress in Development Studies*, 7(123):21–32.
- Borjas, G. and Ramey, V. (1994). Time-Series Evidence on the Source of Trends in Wage Inequality. *American Economic Review*, 84(2):10–16.
- Brown, C. and Oates, W. (1987). Assistance to the poor in a federal system. *Journal of Public Economics*, 32(3):307–330.
- Christopher, A. (1994). *The Atlas of Apartheid*. Routledge, 11 New Fetter Lane, London.
- COGTA (2010). State of Local Government in South Africa.
- Dalton, H. (1920). The Measurement of the Inequality of Incomes. *Economic Journal*, 30(119):348–361.
- de Mello, Jr., L. (2002). Public finance, government spending and economic growth: the case of local governments in Brazil. *Applied Economics*, 34:1871–1883.
- Department of Provincial and Local Government (2004). The Municipal Infrastructure Grant programme: An Introductory Guide. Technical report, DPLG, Pretoria, South Africa.
- Development Bank of Southern Africa (1994). South Africa’s Nine Provinces: A Human Development Profile. Technical report, DBSA, Midrand, South Africa.
- Dimou, M. (2008). Urbanisation, agglomeration effects and regional inequality : An introduction. *Région et Développement*, (27):7–12.
- Ebel, R. and Yilmaz, S. (2003). On the measurement and impact of fiscal decentralization. In Martinez-Vazquez, J. and Alm, J., editors, *Public Finance in Developing and Transitional Countries: Essays in Honor of Richard Bird*. Edward Elgar Publishing, Cheltenham, England.
- Enikolopov, R. and Zhuravskaya, E. (2006). Decentralization and political institutions. Centre for Economic and Financial Research, New Economic School, WP 65. Available at: <http://www.cefir.ru/papers/WP65updatedNovember.pdf>.
- Ezcurra, R. and Pascual, P. (2008). Fiscal decentralization and regional disparities: Evidence from several European Union countries. *Environment and Planning A*, 40:1185–1201.

- Financial and Fiscal Commission (2012). Lack of Capacity is Crippling Delivery of Services in Municipalities. Policy Brief 9/2012. Available at: <http://www.ffc.co.za/index.php/docman-menu-item/policy-briefs-2012/446-policy-brief-9-lack-of-capacity-crippling-delivery-of-services-in-municipalities>.
- Financial and Fiscal Commission (2013). Annual Submission for the Division of Review 2014/15. Technical report, Financial and Fiscal Commission, Republic of South Africa, Midrand, South Africa. Chapter 10: Measuring Financial Distress in South African Local Government. Available at: <http://www.ffc.co.za/index.php/submissions/commission-submissions/submission-chapters>.
- Habib, A. (2010). The state of the nation and its public service in contemporary South Africa: A critical reflection. *Administratio Publica*, 18(3):2–24.
- Holborn, L. and Moloi, L. (2012). The problem with SA Local Government. MoneyWeb. Available at: <http://www.moneyweb.co.za/moneyweb-soapbox/the-problem-with-sa-local-government>.
- Kelejian, H. and Robinson, D. (1997). Infrastructure Productivity Estimation and Its Underlying Econometric Specification: A Sensitivity Analysis. *Papers in Regional Science*, 76:115–131.
- Kim, E., Hong, S. W., and Ha, S. J. (2003). Impacts of national development and decentralization policies on regional income disparity in Korea. *The Annals of Regional Science*, 37:79–91.
- Kuznets, S. (1955). Economic growth and income inequality. *American Economic Review*, 45:1–28.
- Lemon, A. (1992). Restructuring the Local State in South Africa: Regional Services Councils, Redistribution and Legitimacy. In Drakakis-Smith, D., editor, *Urban and Regional Change in Southern Africa*. Routledge, New Fetter Lane, London.
- Lessman, C. (2009). Fiscal decentralization and regional disparity: evidence from cross-section and panel data. *Environment and Planning A*, 41:2455–2473.
- Lessman, C. (2012). Regional inequality and decentralization: An empirical analysis. *Environment and Planning A*, 44(6):1363–1388.
- Lessman, C. and Markwardt, G. (2010). One size fits all? Decentralization, corruption and the monitoring of bureaucrats. *World Development*, 38(4):631–646.
- Lester, A., Nel, E., and Binns, T. (2000). *South Africa, Past Present and Future: Gold at the end of the rainbow?* Pearson Education Limited, Essex, England.
- Managa, A. (2012). Unfulfilled promises and their consequences: A reflection on local government performance and the critical issue of poor service delivery in South Africa. Policy Brief. African Institute of South Africa. Briefing No. 76, May. Available at: <http://www.ai.org.za/wp-content/uploads/>

- downloads/2012/05/No.-76.-Unfulfilled-promises-and-their-consequences.
-A-reflection-on-local-government-performance-and-the-critical-issue-of-poor-service-deliver
.pdf.
- Marks, S. and Andersson, N. (1987). Issues in the Political Economy of Health in Southern Africa. *Journal of Southern African Studies*, 13(2):177–186.
- Multi-Level Government Initiative (2012). Local Government Bulletin: Service Delivery Protest Barometer. Technical report, Multi-Level Government Initiative, Community Law Centre at the University of the Western Cape, Cape Town, South Africa. Available at:<http://www.mlgi.org.za/barometers/service-delivery-protest-barometer>.
- Musgrave, R. and Musgrave, P. (1973). *Public Finance in Theory and Practice*. McGraw–Hill, Inc., New York, USA.
- National Treasury (2011). 2011 Local Government Budgets and Expenditure Review: 2006/07 - 2012/13. Technical report, National Treasury, Republic of South Africa, Pretoria, South Africa. Available at: <http://www.treasury.gov.za/documents>.
- National Treasury (2012). Over and underspending of municipalities as at 30 june 2012. Report to the Parliament of South Africa. Available at: http://mfma.treasury.gov.za/Media_Releases/Reports\%20to\%20Parliament/Documents/2012/01.\%20Report\%20to\%20Parliament\%20-\%20Over\%20and\%20under\%20spending\%202011-12.pdf.
- Nleya, N. (2011). Linking service delivery and protest in South Africa: An exploration of evidence from Khayelitsha. *Africanus*, 50(1):3–13.
- Oates, W. (1968). Theory of public finance in a federal system. *Canadian Journal of Economics*, 1:37–54.
- Oates, W. (1972). *Fiscal Federalism*. Harcourt Brace Janovich, New York.
- Oberholzer, C. (2012). Local government: Municipal Turnaround and Clean Audit. Deloitte Local Government Unit Report. Available at: http://www.deloitte.com/assets/Dcom-SouthAfrica/LocalAssets/Documents/Local_goverment_turnaround_strategy_25July12.pdf.
- OECD (2002). Fiscal Design Surveys across Levels of Government. Technical report, Organization for Economic Co-operation and Development, Paris, France. OECD Tax Policy Studies, Number 7.
- Partridge, D., Rickman, S., and Levernier, W. (1996). Trends in U.S. income inequality: Evidence from a panel of states. *The Quarterly Review of Economics and Finance*, 36(1):17–37.

- Powell, D. (2012). Imperfect transition – local government reform in South Africa. 1994–2012. In Booyesen, S., editor, *Local Elections in South Africa: Parties, People, Politics*. African Sun MeDia, Westdene, Bloemfontein.
- Price, M. (1986). Health care as instrument of Apartheid policy in South Africa. *Health Policy and Planning*, 1(2):158–170.
- Prud'homme, R. (1995). The Dangers of Decentralization. *The World Bank Research Observer*, 10(2):201–220.
- Qian, Y. and Weingast, B. (1997). Federalism as a Commitment to Preserving Market Incentives. *The Journal of Economic Perspectives*, 11(4):83–92.
- Qiao, B., Martin-Vazquez, J., and Yongsheng, X. (2008). The tradeoff between growth and equity in decentralization policy: China's experience. *Journal of Development Economics*, 86(1):112–128.
- Rodríguez-Pose, A. and Ezcurra, R. (2010). Does decentralization matter for regional disparities? A cross-country analysis. *Journal of Economic Geography*, 10:619–644.
- Ros, J. (2000). *Development theory and the economics of growth*. The University of Michigan Press, Michigan, USA.
- Schneider, A. (2003). Decentralization: Conceptualization and Measurement. *Studies in Comparative International Development*, 38:32–56.
- Seekings, J. (2007). Poverty and Inequality after Apartheid. Paper Prepared for the Second 'After Apartheid Conference', Yale University, 27–28 April 2007.
- Seekings, J. (2010). Race, class and inequality in the South African city. Social Survey Unit, Centre for Social Science Research (CSSR), University of Cape Town. CSSR Working Paper No. 283, November 2010.
- Sen, A. (1973). *On Economic Inequality*. Norton, New York.
- Sepulveda, C. and Martinez-Vazquez, J. (2011). The consequences of fiscal decentralization on poverty and income inequality. *Environment and Planning C*, 29:321–343.
- Shankar, R. and Shah, A. (2003). Bridging the Economic Divide Within Nations: A Scorecard on the Performance of Regional Development Policies in Reducing Regional Income Disparities. *World Development*, 31(8):1421–1442.
- Smoke, P. (2001). Fiscal decentralization in developing countries: A review of current concepts and practice. Technical Report 2, United Nations Research Institute for Social Development Programme.

- Statistics South Africa (2012). Technical report, Statistics South Africa, Republic of South Africa, Pretoria, South Africa. Report No. 03-10-03 (2008/2009). Living Conditions Survey 2008/09. Available at: <http://www.statssa.gov.za/publications/Report-03-10-03/Report-03-10-032009.pdf>.
- Statistics South Africa (2013). Technical report, Statistics South Africa, Republic of South Africa, Pretoria, South Africa. Statistical release P0211. Available at: <http://beta2.statssa.gov.za/publications/P0211/P02113rdQuarter2013.pdf>.
- Stegarescu, D. (2005). Public Sector Decentralisation: Measurement Concepts and Recent International Trends. *Fiscal Studies*, 26(3):301–333.
- Steytler, N. and de Visser, J. (2009). *Local government law in South Africa*. LexisNexis, Durban.
- Tanzi, V. (1996). Fiscal Federalism and Decentralization: A Review of Some Efficiency and Macroeconomic Aspects. In *Annual World Bank Conference on Development Economics*, pages 295–316. The International Bank for Reconstruction and Development/The World Bank, 1818 H Street, N.W., Washington D.C.
- The Presidency (2003). Towards a ten year review: synthesis report on implementation of South African government programmes. Technical report, Policy Co-ordinating and Advisory Services (PCAS), The Presidency, Pretoria, South Africa. Available at: http://www.sarpn.org/documents/d0000573/PCAS_10_year_review.pdf.
- van Rynevald, P. (1996). The making of a new structure of fiscal decentralization. In Helmsing, B., Mogale, T., and Hunter, R., editors, *Restructuring the State and Intergovernmental Fiscal relations in South Africa*, pages 4–24. Friedrich-Ebert-Stiftung & Graduate School of Public and Development Management, University of Witwatersrand.
- Williamson, J. (1965). Regional inequality and the process of national development: A description of patterns. *Economic Development and Cultural Change*, 13:3–45.
- Wittenberg, M. (2003). Decentralisation in South Africa. School of Economic and Business Sciences, University of Witwatersrand, Johannesburg and Economic Research Southern Africa. Available at: <http://sticerd.lse.ac.uk/dps/decentralisation/southafrica.pdf>.
- Worsfold, W. (1913). *The Union of South Africa. With Chapters on Rhodesia and the Native Territories of the High Commission*. Little, Brown and Company, Boston.
- Zille, H. (2010). The drive to destroy the provinces is purely political. Press Release of the Democratic Alliance. 15th October. Available at: <http://www.da.org.za/newsroom.htm?action=view-news-item&id=8805>.