Chapter 7

THE IMPACT OF AGGREGATE REVENUE AND EXPENDITURE ASSIGNMENTS ON ECONOMIC GROWTH: THE CASE OF PROVINCES AND MUNICIPALITIES IN SOUTH AFRICA

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7.1 Introduction

The overriding question of this chapter is whether or not the distribution of competencies among the different spheres of government has an impact on economic growth. Different fiscal 'arrangements' determine conditions for economic growth, and so their relative advantages can be assessed based on their effect on economic growth. The assignment of decision-making competencies to different levels of government can influence national economic growth by shaping regional (i.e. provincial and local) growth-promoting policies. In this regard, the traditional public finance instruments (i.e. taxes and government expenditures) can enhance or dampen regional economic growth. The chief objective of the South African assignments' system is to reduce interregional inequalities (through the provision of public services) and improve socio-economic indicators (Yemek, 2005). This system agrees with the broad public finance principles of expenditure assignment (which level of government does what and which level of government pays for what) and revenue assignment (which level of government should levy what taxes). In other words, there is a link between the geographic dimension of benefits from a specific service and the level of government that is responsible for its provision.

The empirical literature has not yet addressed the importance of the assignment of decision-making competencies for economic growth in South Africa. Hence, this chapter aims to fill this gap by answering the following: do South African provinces and district municipalities play a useful role in promoting economic growth and, if so, in what way (i.e. through revenue assignment, expenditure assignment or both)? Revenue and expenditure assignments are important pillars of the intergovernmental fiscal relations (IGFR[2]) system and for fiscal decentralisation[3], both of which have many dimensions. This chapter focuses on the economic growth, an objective that the South African government is (and has for some time been[4]) strongly pursuing. The empirical analysis uses South African provincial-level and municipal-level data and several econometric techniques. The supply measures for building a knowledge-based economy are investigated, arguing that an enabling regime can be created through an understanding of the effects of IGFR on economic growth. In particular, the development disparities of the various regions in South Africa can be reduced through the creation of a knowledge economy.

1 Financial and Fiscal Commission, Macroeconomics and Public Finance Unit

2 The specific nature of IGFR in any given country depends on how sub-national government and administration are organised (UNDP, 2005). In South Africa, three distinctive, interrelated and interdependent spheres of government (national, provincial and local) each have revenue-raising powers and concurrent and exclusive functions. Municipal and provincial revenue comprises of equitable share, conditional grants and own revenue, although the composition for the two tiers of government is markedly different. For example, most provincial revenue comes from the equitable share and conditional grants, whereas own revenue is a major component of total municipal revenue. In addition, Schedules 4 and 5 of the Constitution outline the concurrent and exclusive functions of national, provincial and local government in South Africa. Lastly, Section 230 of the Constitution allows for sub-national borrowing (i.e. municipal and provincial borrowing) but only for capital purposes.

3 Fiscal decentralisation defines how expenditures and revenues are organised between and across different levels of government.

4 In January 2010, the South African government adopted 12 outcomes that now form the foundation of its long-term development strategy (The Presidency, 2010a). These outcomes guide the planning and resource allocation process in South Africa and all have delivery agreements, in most cases involving all three spheres of government. The fourth outcome ("Decent employment through inclusive economic growth"), in particular, focuses on fundamental outputs to promote employment creation and to stimulate inclusive growth. In addition to the 12 outcomes, the South African government has adopted a New Growth Path, whose central focus is employment creation, and hence higher and inclusive economic growth (The Presidency, 2010b). Furthermore, more recently, the National Planning Commission (NPC) published a report containing their vision for 2030 (NPC, 2011). Much like the New Growth Path document, the focus is on employment creation and sustained economic growth. Hence, it is clear that provinces and municipalities have a very big role to play in job creation and redistribution.

However, for this to happen, the South African government needs to put proper planning, economic and fiscal mechanisms in place, and the role of innovation should not be underestimated. Fiscal decentralisation arguments can also be used to formulate a strong case for the role of sub-national government in the economic growth process – these are discussed in more detail in section 7.2. Section 7.3 reports the findings of empirical studies, while section 7.4 contains the empirical analysis for South Africa, and section 7.5 concludes with some policy recommendations.

7.2 Theoretical Underpinnings

IGFR contains five aspects (Bird and Vaillancourt, 2006):

(a) The assignment of expenditure responsibilities to different government levels (i.e. the expenditure assignment).

(b) The assignment of tax and revenue sources to different government levels (i.e. the revenue assignment).

(c) Intergovernmental fiscal transfers or grants to address vertical and horizontal imbalances.

(d) Sub-national borrowing.

(e) Institutional framework within which the national and sub-national government powers are exercised.

Each of these aspects must be addressed within the context of South African policy objectives, which may include not only efficiency (allocation), equity (distribution) and stabilisation, but also economic growth and achieving and preserving a regional balance. This chapter considers mainly aspects (a) and (b) (and to some extent aspect (c)), about which some more detail is provided below.

Expenditure assignment requires the functions and expenditure responsibilities for each sphere of government to be clearly specified (as they deal with which level of government will do what and which level of government will pay for what) and should follow certain principles:

- Sub-national government should focus on the allocation function (delivering goods and services, and how funds should be raised), whereas national government should focus on stabilisation and income distribution policies.
- Services should be delivered at the level of government closest to the citizen, for economic efficiency.
- Expenditure and revenue assignments should be balanced.
- Finance follows function.

In general, the assignment of expenditure functions should precede revenue sources because the prior informs the latter (Yemek, 2005). Revenue assignment requires a clear description of tasks to be performed by each sphere of government, i.e. it essentially deals with the question of which level of government should levy what taxes.

The aspects (a), (b) and (c) listed at the beginning of this section constitute important 'pillars' of fiscal decentralisation; hence, fiscal decentralisation is intricately linked to IGFR, though the two terms are not synonymous[5] (UNDP, 2005). Fiscal decentralisation can be defined as the devolution of fiscal power (revenue and expenditure assignments, and borrowing) from national to sub-national governments (Davoodi and Zou, 1998)[6],[7]. The four arguments in favour of fiscal decentralisation are (Thießen, 2003; Elhiraika, 2007):

5 For example, papers like De Mello (2000) investigate the relationship between fiscal decentralisation and IGFR and conclude that decentralisation entails greater complexity in IGFR, so that coordination failures in IGFR are likely to have a bearing on fiscal positions, both nationally and sub-nationally.

6 Yemek (2005, p 3) defines fiscal decentralisation as the percentage of total government expenditure executed by sub-national governments, considering the size and characters of transfers, or the level of tax autonomy of sub-national governments or both. He further adds that the borrowing capacity of sub-national government also needs to be taken into account.

7 There are three dimensions of decentralisation (i.e. transfer of power from the central government towards provincial- and local government): administrative, political and fiscal (Wolman in Bennet, 1990). Administrative decentralisation focuses on how responsibilities and authority for policies and decisions are shared between the different levels of government and how these are turned into allocative outcomes. Political decentralisation focuses on how the voice of citizens is integrated into policy decisions and how civil society can hold authorities and officials at different levels of government accountable.

- 'Diversification hypothesis' ('decentralisation theorem'): uniform levels of public goods and services across the jurisdictions are generally inefficient, so fiscal decentralisation may result in greater allocative efficiency. Through allocative efficiency, fiscal decentralisation can influence macroeconomic governance, promote local growth and poverty alleviation directly and through spill-overs (De Mello, 2000).

- 'Leviathan restraint hypothesis': governments may maximise revenue to the detriment of the taxpayers, and horizontal and vertical competition among the different levels of government may prevent this behaviour.

- 'Productivity enhancement hypothesis': fiscal decentralisation, through the transfer of responsibility and accountability to the sub-national governments, may provide incentives for the sub-national governments to look for innovative ways to produce and supply public goods and services. This hypothesis forms a basis for building the knowledge economy through innovation.

- Political arguments, such as lowering concentration of fiscal power and promotion of democracy. Fiscal decentralisation can promote the streamlining of public sector activities and the development of local democratic traditions.

There are a number of arguments against fiscal decentralisation (Thießen, 2003; Elhiraika, 2007):

- Fiscal decentralisation can contribute to regional inequalities because of competition between sub-national governments and, in particular, for redistributive reasons – i.e. poor regions cannot compete for mobile factors with the richer regions, and so poor regions get progressively poorer, while the rich regions get richer.

- Fiscal decentralisation may also result in lower quality government decisions, coordination failures, and greater corruption and influence of interest groups.

- Assignment of expenditure and financing responsibilities to sub-national governments can adversely affect service delivery for a number of reasons. These include a lack of capacity at sub-national level and misalignment of responsibilities because of incomplete decentralisation or political factors. However, country experiences indicate that the effect of fiscal decentralisation on service delivery is mixed.

- Fixed costs associated with fiscal decentralisation may negatively affect low-income/smaller countries (implying that fiscal decentralisation becomes attractive at a high threshold of economic development).

- Fiscal decentralisation may hinder long-term economic growth, when the fiscal adjustments needed to eliminate structural imbalances are considered (e.g. effective and timely coordination between the different levels of government is difficult to implement).

In brief, fiscal decentralisation can in principle improve the efficiency of the public sector, increase competition among sub-national governments in delivering public services, and stimulate economic growth (Davoodi and Zou, 1998). Given that fiscal decentralisation has many dimensions, this chapter focuses on economic growth, which is critical for South Africa. Fiscal decentralisation can contribute to economic growth[8] through three main channels: decreasing the size of the government, improving resource allocation within the public sector, and increasing competition among sub-national government (Martinez-Vasquez and McNab, 2001; Nguyen and Anwar, 2011). These channels are embodied in the diversification and the productivity enhancement hypotheses discussed earlier.

This chapter uses an endogenous growth model, developed by Zhang and Zou (1996) and Davoodi and Zou (1998), which provides micro-economic foundations to the relationship between fiscal decentralisation (i.e. revenue and expenditure assignments) and economic growth. The purpose is to treat the different levels of government (i.e. national, provincial and municipal) as factors of production. Fiscal decentralisation can take the form of either revenue decentralisation or expenditure decentralisation, both of which contribute positively to growth: revenue decentralisation through increased revenue collection and expenditure decentralisation through effective allocation of public spending (Bodman, Heaton and Hodge, 2009; Nguyen and Anwar, 2011)[9]. Proxies for both revenue and expenditure decentralisation (or revenue and expenditure assignments) are used in the empirical part of this chapter.

8 Theoretical examinations of the relationship between fiscal decentralisation and economic growth started with publications such as Tiebout (1956), Musgrave (1959) and Oates (1972).

9 The issue of causality between fiscal decentralisation and economic growth also needs to be considered – Osoro (2003) quotes a number of studies that show strong support for the view that fiscal decentralisation is a function of economic growth. However, empirical evidence for reverse causality is generally contradictory and beleaguered by measurement, analytical and specification problems.

Even given the above, no formalised theory exists for a relationship between fiscal decentralisation (expenditure and/or revenue assignments) and economic growth (Oates, 1999). In fact, the empirical literature regarding this relationship indicates an ambiguous and uncertain link between fiscal decentralisation and economic growth.

7.3 Empirical Evidence

Although a body of literature exists on fiscal decentralisation and economic growth, there is no consensus on the direction and the strength of the link between government structure and economic growth[10]. This section provides a brief summary of international empirical evidence to date[11].

Using data covering the period 1970–1989 for 46 developed and developing countries, Davoodi and Zou (1998) find fiscal decentralisation has a negative effect on economic growth for the developing countries (although not statistically significant) and no clear relationship for the developed countries. For a panel of developing countries, Woller and Phillips (1998), who also include South Africa in their sample of less developed countries, find similar results to Davoodi and Zou (1998) – no significant and robust relationship. More recently, Thornton and Olumuyiwa (2010), using annual data for 11 emerging market economies (including South Africa), find that sub-national governments contribute towards successful fiscal consolidations by cutting capital spending and raising their revenues. Examining the practice of fiscal decentralisation in developing countries, Smoke (2001) finds that the macroeconomic effects of fiscal decentralisation are mixed and anecdotal. Further, Smoke (2001) argues that simply decentralising is not going to lead to growth and development and failing to decentralise is not necessarily going to undermine growth and development. The challenge is to develop a structured system that provides incentives for responsible sub-national fiscal behaviour.

Zhang and Zou (1998) find that fiscal decentralisation efforts in China since 1998 have not been successful in promoting economic growth. On the other hand, Lin and Liu (2000) found the 1980s fiscal decentralisation had a positive impact on Chinese GDP growth. A more recent study by Jin and Zou (2005) uses a panel dataset for 30 provinces in China to examine the relationship between fiscal decentralisation and economic growth over two sample periods. Their results are contrary to what the theory suggests – divergence (rather than convergence) between sub-national revenue and expenditure assignments is associated with higher rates of growth in China.

Using a sample of OECD countries, Thießen (2003) finds that the relationship between economic growth and fiscal decentralisation is non-linear – i.e. the relationship is positive when fiscal decentralisation is increasing from low levels then reaches a peak and turns negative. Similar results are found for the relationship between fiscal decentralisation and investment share, as well as total factor productivity (as the main determinants of economic growth). The Thießen (2003) study's important implication is that the optimal degree of fiscal decentralisation that maximises economic growth needs to be found. Bodman and Ford (2006) also investigate the relationship between fiscal decentralisation and economic growth for a sample of OECD countries (for the period 1981–1998). They find little evidence of a direct relationship between fiscal decentralisation and output growth. However, their analysis provides evidence that a medium degree of fiscal decentralisation (using hump-shaped indicators of fiscal decentralisation[12]) is positively related to growth in the capital stock and the level of human capital. A more recent study of OECD countries finds a negative and significant association between fiscal decentralisation and economic growth (Rodriguez-Pose and Ezcurra, 2010).

Rodriquez-Pose and Krøijer (2009) use a dynamic panel of 16 Central and Eastern European countries for the period 1990–2004. Their findings suggest a significant negative relationship between fiscal decentralisation and economic growth. Rodriquez-Pose and Krøijer extend their analysis to the use of different time lags and show that the long-term effects vary according to the type of decentralisation: expenditure and transfers to sub-national government is negatively correlated with economic growth, whereas taxes assigned at sub-national level have positive effects on long-term economic growth.

Martinez-Vasquez and Rider (2006) argue that the effect of fiscal decentralisation on economic growth is complex. However, they find some evidence (though not conclusive) that fiscal decentralisation can contribute to macroeconomic instability and corruption. In addition, they find that for China and India, the lack of fiscal discipline and poor service delivery has the

10 Breus and Eller (2004) provide a very useful summary of the literature up to 2004.

11 It should be noted that all of the studies reviewed in this section look at both the revenue and expenditure assignments (decentralisation) and hence use proxies to capture these. The exceptions are three studies: Davoodi and Zou (1998), Rodriguez-Poze and Ezcurra (2010) and Ismail and Hamzah (2006). Thus, with the exception of these three studies and unless otherwise stated in this section, the effect of fiscal decentralisation on economic growth is measured through both sides of the budget, i.e. revenue and expenditure.

12 This formulation is based on the notion that it is not necessarily true that the more decentralised a country's fiscal system becomes, the faster its economy will grow, but rather that an optimal degree of fiscal decentralisation exists (Osoro, 2003).

potential to affect adversely the sustainability of economic growth rates. Using panel data on 61 provinces in Vietnam, Nguyen and Anwar (2011) find that the effect of expenditure decentralisation on economic growth has been negative, but the effect of revenue decentralisation on economic growth has been positive. Bodman *et al.* (2009) find that, for Australia, the impact of fiscal decentralisation is not straightforward: a weak link between fiscal decentralisation and economic growth and some support for centralisation of taxation and decentralisation of expenditure patterns.

Ismail and Hamzah (2006) investigate the effect of fiscal decentralisation in Indonesia for the period 1992–2002. They find that the expenditure indicator of fiscal decentralisation is positively related to economic growth, whereas the revenue indicator of fiscal decentralisation is negatively related to economic growth. Carrion-i-Silvestre, Espasa and Mora (2006) estimate a panel using disaggregated Spanish data and find a positive relationship between the decentralisation process undertaken in Spain and overall as well as regional Spanish growth.

Akai and Sakata (2002) use cross-sectional data for the period 1992–1996 and find that fiscal decentralisation contributes to economic growth in the United States. The paper asserts that data with minimal differences in history, culture and the stage of economic development is more suited to determining the effects of fiscal decentralisation on economic growth.

Finally, analysis for South Africa is scant and quite limited.[13] Yemek (2005) examines fiscal decentralisation in the South African context with a particular focus on how fiscal decentralisation affects the delivery of social services. The findings include that benefits of social expenditure are eroded by low quality of services and the link is weak between the supply of and demand for services. In other words, there is no correlation between social expenditure by the various levels of government and a decline in poverty. The paper argues that fiscal empowerment of sub-national governments is important for deepening and broadening democracy, cautioning that this proposed transfer of responsibilities to the sub-national governments could slow down service delivery unless it is accompanied by capacity-building. Elhiraika (2007) investigates the effect of fiscal decentralisation on public service delivery, using provincial-level data to estimate cross-sectional expenditure functions for education and health, with a special focus on the effect of own revenue on these two types of expenditure. The author argues for increased fiscal decentralisation in South Africa, in particular revenue autonomy of sub-national governments, which can only enhance service delivery. Lastly, Turok (2010) investigates the role that provinces play in promoting economic prosperity in South Africa, citing poor provincial capacity and coordination across government as areas for improvement.

7.4 Empirical Analysis for South Africa

7.4.1 Empirical Specification and Estimation Strategy

The analysis in this chapter is based on a simple endogenous growth model, the theoretical framework of which is outlined in Appendix 7A. The general specification used for estimation is represented as:

$$y_{it} = \alpha_{i0} + \beta FD_{it} + \sum_{j=1}^{k} \gamma_j CONTROL_{jit} + \varepsilon_{it} \quad (1)$$

Where *y* is a measure of economic growth, α is a constant, FD is a measure of fiscal decentralisation (or a measure of IGFR), $CONTROL$ denotes a series of control variables, and ε is $\text{IID} \sim (0, \sigma^2)$. In addition, since the chapter looks at provinces as well as municipalities, the following definitions apply for i and t:

13 The authors are aware of the work carried out by Prof. Estian Calitz and Hassan Essop (both of University of Stellenbosch) on fiscal centralisation in South Africa using financial and non-financial measures. However, this work was not publicly available at the time of publication.

Table 7.1. Sample and cross-section specification used in estimation

	Provinces	District Municipalities (Category C)	Metropolitan Municipalities (Category A)
i	1, 2, ..., 9	1, 2, ..., 46	1, 2, ..., 8
t	1999-2009	2006–2009	2006–2009

Notes: The selected time period in each case was governed by data availability. Strictly speaking, only six of the eight municipalities should be included in the analysis as Buffalo City Metropolitan Municipality and Mangaung Metropolitan Municipality only became metropolitan municipalities after the 2011 local government elections (and the analysis considers data prior to 2011). However, these two municipalities are treated as metropolitan municipalities together with the existing six metropolitan municipalities. It should also be noted that Category B (local) municipalities have been excluded from this round of estimation because of the lack of data for a number of these municipalities.

Hence, the model essentially relies on regression analysis that relates income levels or growth rates to fiscal decentralisation measures (i.e. revenue and expenditure assignment). The estimation carries out panel and pooled regression analyses, as these should capture relatively well the complicated short-run and long-run interactions between the different variables.[14] For the purposes of robustness, alternative estimation techniques and alternative variable specifications are experimented with.

7.4.2 Variables and Data

Table 7.2 summarises the variables and specifications used in literature that was surveyed in section 7.3. Breuss and Eller (2004), and more recently Esteban-Laelona, de Frutos-Madrazo and de Miguel-Bilbao (2011), have more comprehensive summaries of the empirical literature on the effect of fiscal decentralisation on economic growth. As Table 7.2 shows clearly, to avoid specification problems, control variables (such as general variables contributing to economic growth and dummy variables) should be included in the estimation of Equation (1). Furthermore, proper approximation of the fiscal decentralisation variable (using expenditure and/or revenue sides of the budget) warrants some consideration. For example, Smoke (2001) warns that the fiscal decentralisation variable proxy should not abstract from the political and institutional context. Hence, not only should alternative proxies be used, but the results also need to be carefully interpreted. Similarly, Dziobek, Mangas and Kufa (2011) argue that several indicators need to be used when looking at fiscal decentralisation. Their paper specifically looks at four measures of decentralisation: revenue, expenditure, tax effort and compensation of employees. Using the International Monetary Fund's Government Finance Statistics, Dziobek *et al.* (2011) show that the South African government can be considered decentralised if looking at the compensation of employees indicator but more centralised if looking at the tax effort measure. In this chapter, estimation includes expenditure and revenue indicators as measures of fiscal decentralisation. Table 7.3 contains detail on other variables used in estimating Equation (1) as well as the expected coefficient signs. Lastly, Appendix 7B includes a discussion on necessary data transformations.

14 It should be noted that in estimation, district municipalities and metropolitan municipalities are grouped together in a panel or a pooled regression set-up.

Table 7.2. Summary of the empirical analyses

Conceptual Frameworks
• Exogenous growth models (e.g. Solow, 1956)
• Endogenous growth models (e.g. Barro, 1990; Mankiw, Romer and Weil, 1992)
• Other (e.g. Davoodi and Zou, 1998)
Dependent Variables
• Average growth of real GDP per capita, average gross investment share of GDP, average growth rate of real gross fixed capital formation
• Real per capita growth rate of provincial/state income
• Total factor productivity growth
• Economic volatility
• Regional industrial output
Measures of Fiscal Decentralisation
• Share of provincial expenditure (revenue) in national expenditure (revenue), or average of these two
• Measure of self-reliance of provincial governments (e.g. own revenue as a share of total revenue)
• Tax revenue retention rate
Control Variables
• Openness
• Inflation rate
• Demographic variables (population, education, etc.)
• Unemployment, employment
• Investment
Estimation Techniques
• Pure and pooled cross-sectional growth regressions (e.g. Thießen, 2003)
• Panel growth regressions (e.g. Woller and Phillips, 1998)
Other Empirical Considerations
• Testing for non-linearities, threshold effects, causality issues

Table 7.3. Relation of independent variables to economic growth – Equation (1)

Variable	Proxy	Source	Coefficient (Equation (1))	Hypothesis (expected sign)
Degree of fiscal decentralisation (revenue or expenditure)	Ratio of total provincial / municipal revenue (expenditure) to total revenue (expenditure) of the general government	Various Provincial Budget Statements (National Treasury); National Treasury's local government database	β	+ (through the channels discussed in Section 7.2; i.e. decreasing the size of the government, improved resource allocation, increased competition)
Growth rate in provincial/municipal labour force	Log first difference of provincial / municipal GVA	Quantec EasyData	γ_1	+ (standard Cobb-Douglas production function arguments)
Provincial/municipal investment rate	Log first difference of provincial / municipal gross fixed capital formation	Quantec EasyData	γ_2	+ (standard Cobb-Douglas production function arguments)
Provincial/ municipal inflation rate	Deflator calculated using nominal and real GVA figures for each province / municipality; inflation rate is then calculated as the log first difference of the deflator	Quantec EasyData	γ_3	Ambiguous (+ because inflation impacts positively on economic growth through capital accumulation; - because uncertainty associated with high inflation can reduce the growth rate of productivity)
Degree of distortion in the provincial/ municipal economy	Ratio of provincial / municipal revenue collection (own revenue) to total provincial / municipal revenue	Various Provincial Budget Statements (National Treasury); National Treasury's local government database	γ_4	+ (this variable measures the aggregate distortion introduced by governments to finance their spending: the higher this variable, the higher government spending – assuming productive expenditure, higher degree of distortion would be expected to impact positively on economic growth)

7.5 Results

Section 7.5.1 first provides a preliminary analysis of the fiscal data for South African provinces and municipalities. Regression analysis is then carried out in section 7.5.2 followed by a discussion of the results.

7.5.1 Descriptive Analysis

South African provinces

Table 7.4 summarises the descriptive statistics for provincial revenue and expenditure assignments. The mean statistic represents the average of expenditure/revenue assignment over the sample period (1999–2009), whereas the standard deviation (std. dev.) figure measures the variation of expenditure/revenue assignment over the sample period. Therefore, the higher the std. dev. figure, the more erratic the expenditure/revenue assignment for a specific province. Some trends worth noting include:

- Revenue and expenditure assignments tend to mirror each other, irrespective of the province considered (i.e. the finance follows function principle).
    - The lowest revenue and expenditure assignments are recorded for the Northern Cape, followed by the Free State and Mpumalanga, whereas the highest revenue and expenditure assignments are recorded for KwaZulu-Natal, Gauteng and the Eastern Cape.
    - There is a wide disparity across the average revenue and expenditure assignments, with the lowest figures being around 1% of general government revenue expenditure and the highest figures being around 8%.

- Most volatile expenditure assignments (i.e. expenditure assignments that vary greatly over the sample period) belong to the Eastern Cape, KwaZulu-Natal and Gauteng.
- Most volatile revenue assignments are very similar, except for the North West province, which takes the place of the Gauteng province. Northern Cape is the province with the least volatile expenditure and revenue assignments.

Table 7.4. Descriptive statistics for the expenditure and revenue assignments (provinces; percentage of general government expenditure and revenue)

Assignment ⟶	Expenditure assignment			Revenue assignment		
Province ↓	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
EC	6.16	5.92	0.94	6.39	6.12	1.13
FS	2.64	2.76	0.31	2.82	3.06	0.47
GP	6.87	6.91	0.59	7.14	7.36	0.71
KZN	7.89	8.01	0.69	8.16	8.57	1.01
LIM	4.68	4.45	0.42	4.83	4.76	0.61
MPU	2.74	2.71	0.23	2.86	2.91	0.32
NC	0.97	0.99	0.09	1.00	1.02	0.11
NW	3.03	2.88	0.39	3.30	3.44	0.79
WC	3.96	3.75	0.37	4.16	4.10	0.61

Table 7.5 summarises the average composition of provincial revenue (over the 1999–2009 sample). For all provinces, the majority of revenue comes from unconditional grants (equitable share). The top three own-revenue collectors are the Western Cape, Gauteng and KwaZulu-Natal, and the worst collectors are Limpopo, the Eastern Cape and the Northern Cape.

Table 7.5. Average composition of provincial revenue (1999-2009; percentage of total)

Province ↓	Own revenue	Conditional grants	Unconditional grants
EC	2.41	9.35	88.24
FS	3.75	19.89	76.36
GP	5.99	19.19	74.82
KZN	3.57	10.95	85.48
LIM	2.12	9.51	88.36
MPU	2.82	9.56	87.62
NC	2.91	14.63	82.46
NW	3.24	16.66	80.11
WC	8.01	17.04	74.95

Next, the interrelationship between GVA growth and expenditure and revenue assignment variables is examined in Figure 7.1.

Figure 7.1. Scatter diagrams for economic growth and revenue/expenditure assignments: provinces

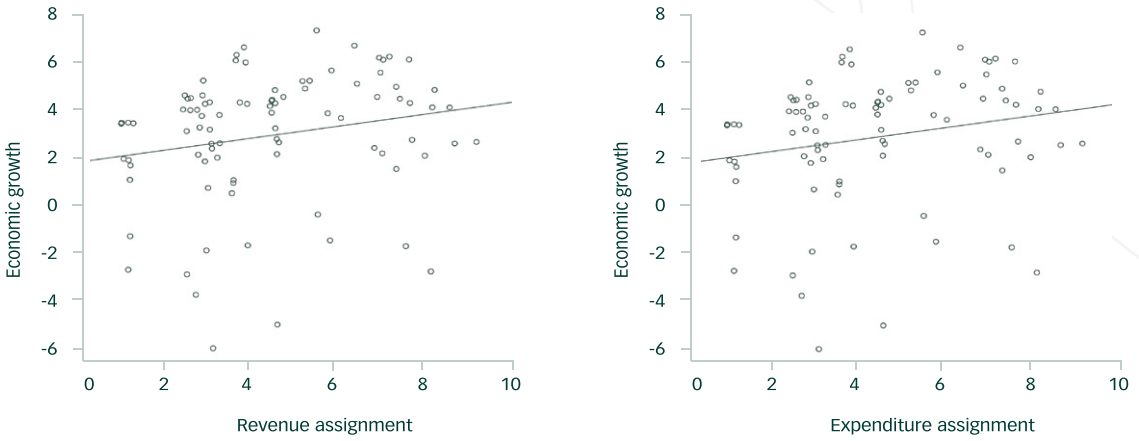


Figure 7.1 is a scatter plot of combined cross-sections (i.e. nine provinces) with a fitted regression line (upward-sloping denoting a positive relationship, whereas a downward-sloping line would represent a positive relationship between GVA growth and revenue (expenditure) assignment). What is evident from this figure is the apparently weak positive relationship between revenue (expenditure) assignment and GVA growth in provinces. By assumption, higher revenue (expenditure) assignment would lead to higher GVA growth for South African provinces on average and holding other variables constant – although this needs to be tested statistically in regression analysis.

South African municipalities

Figure 7.2 presents the average values for district municipalities' expenditure and revenue assignments for 2006–2009. What is evident is the variation (or wide disparities) across municipalities in terms of their revenue and expenditure assignments. In addition, much like the provinces, the expenditure and revenue assignments mirror each other in most district municipalities.[15]

Figure 7.2. Average values for revenue and expenditure assignments (2006–2009; metropolitan and district municipalities)

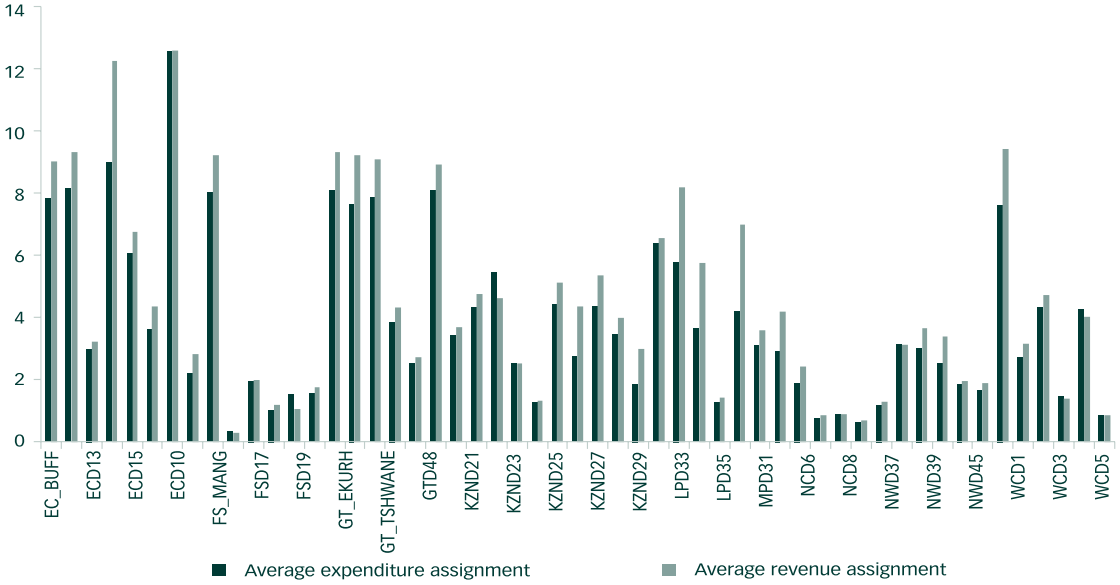
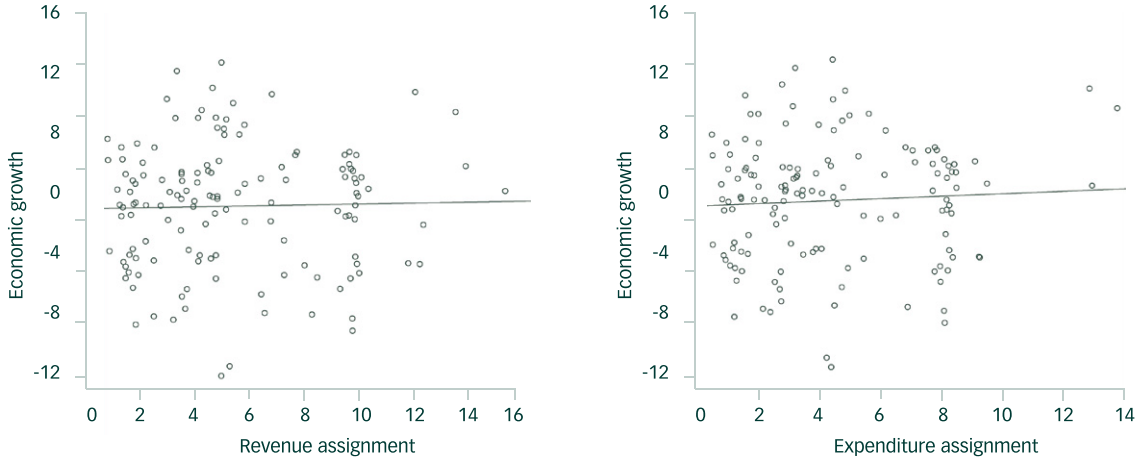


Figure 7.3 presents the scatter diagrams for municipalities (district and metropolitan) which provide an indication of the relationship between GVA growth and revenue (expenditure) assignment. The dots represent individual municipalities, and the line represents the regression line that is fitted to the stacked (collective) data of all municipalities. Both figures show clearly a weak positive relationship, indicating a lack of a relationship between GVA growth and revenue

15 It should be noted that the variance (standard deviation) figures are also erratic across different municipalities. These results are not reported in this paper.

(expenditure) assignment for municipalities. Once again, before any conclusions are made, these hypotheses need to be tested statistically as part of regression analysis, which is done in the following section.

Figure 7.3. Scatter diagram of GVA growth and revenue/expenditure assignment: metropolitan and district municipalities



7.5.2 Regression Analysis

South African provinces and municipalities

Please note that more detail on methodology is contained in Appendix 7B.

Table 7.6. Estimation results for provincial data

Dependent variable: real GDP growth	OLS Panel 1 (FE)	OLS Panel 2 (FE)	Dynamic Panel 1 (OD)	Dynamic Panel 2 (OD)	Dynamic Panel 1 (OD, W)	Dynamic Panel 2 (OD, W)	Pooled LS 1	Pooled LS 2	Pooled EGLS 1	Pooled EGLS 2
Lagged real GDP growth	-	-	0.195 (0.068)	0.304 (0.013)	-0.010 (0.912)	0.138 (0.358)	0.398 (0.003)	0.349 (0.000)	0.395 (0.000)	0.350 (0.000)
Growth rate in provincial labour force	0.243 (0.001)	0.204 (0.001)	0.027 (0.480)	0.033 (0.480)	0.349 (0.000)	0.295 (0.000)	0.128 (0.000)	0.146 (0.000)	0.119 (0.000)	0.139 (0.000)
Provincial investment rate	0.146 (0.000)	0.169 (0.000)	0.189 (0.000)	0.201 (0.000)	0.160 (0.000)	0.195 (0.000)	-0.103 (0.070)	-0.083 (0.171)	-0.061 (0.004)	-0.054 (0.003)
Provincial inflation rate	-0.048 (0.000)	-0.039 (0.000)	-0.062 (0.000)	-0.053 (0.000)	-0.064 (0.038)	-0.119 (0.000)	-1.020 (0.002)	-	-1.025 (0.000)	-
Degree of FD (revenue)	-1.688 (0.000)	-	-1.210 (0.000)	-	-0.930 (0.000)	-	-	-0.925 (0.029)	-	-0.895 (0.000)
Degree of FD (expenditure)	-	-1.562 (0.000)	-	-0.713 (0.000)	-	0.013 (0.968)	0.281 (0.369)	0.436 (0.172)	0.317 (0.000)	0.490 (0.000)
Degree of distortion in provincial economy	-0.311 (0.299)	0.000 (0.999)	0.652 (0.001)	1.171 (0.000)	1.206 (0.000)	1.443 (0.000)	7.034 (0.003)	5.475 (0.034)	6.661 (0.000)	4.973 (0.000)
Constant	16.001 (0.000)	12.797 (0.000)	-	-	-	-	0.475	0.439	0.977	0.951
Adjusted R2	0.582	0.518	-	-	-	-	0.398 (0.003)	0.349 (0.000)	0.395 (0.000)	0.350 (0.000)

Notes: p-values contained in parentheses. FE, OD and W, stand for fixed effects, orthogonal deviations, and white correction, respectively. LS, CS and EGLS stand for least squares, cross-section (specific coefficients) and estimated

generalised least squares, respectively. FD stands for fiscal decentralisation. The adjusted sample runs from 2000 to 2009, and the total number of cross sections is nine (i.e. nine provinces). Hence, the total balanced panel when using OLS (i.e. first two columns) has 90 observations. In the case of the last four columns, the adjusted sample runs from 2002 to 2009, resulting in a total number of 72 observations (balanced panel).

Table 7.7. Estimation results for district municipalities

Dependent Variable: real GDP growth	Pooled LS 1	Pooled LS 2	OLS Panel 1	OLS Panel 2	OLS Panel 1 (FE)	OLS Panel 2 (FE)	GLS Panel 1 (FE)	GLS Panel 2 (FE)
Growth rate in municipal labour force	0.155	0.144	-0.029	-0.031	0.394	0.345	0.487	0.412
	(0.037)	(0.039)	(0.277)	(0.227)	(0.007)	(0.021)	(0.000)	(0.000)
Municipal investment rate	0.481	0.477	0.493	0.488	0.420	0.418	0.400	0.393
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Municipal inflation rate	-0.336	-0.335	-0.303	-0.301	-0.236	-0.228	-0.213	-0.196
	(0.029)	(0.025)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Degree of FD (revenue)	0.195	-	0.120	-	0.255	-	0.284	-
	(0.000)		(0.191)		(0.383)		(0.000)	
Degree of FD (expenditure)	-	0.214	-	0.140	-	-0.196	-	-0.122
		(0.000)		(0.163)		(0.612)		(0.136)
Degree of distortion in municipal economy	-0.031	-0.031	-0.017	-0.016	-0.028	-0.023	-0.032	-0.010
	(0.337)	(0.358)	(0.417)	(0.437)	(0.260)	(0.371)	(0.000)	(0.266)
Constant	1.279	1.309	1.803	1.916	-19.067	-15.041	-23.660	-18.714
	(0.230)	(0.208)	(0.268)	(0.214)	(0.007)	(0.040)	(0.000)	(0.000)
Adjusted R2	0.607	0.624	0.582	0.604	0.825	0.823	0.987	0.987

Notes from Table 7.6 apply.

Summary of the results:

- A number of regressions have been estimated using various methods, for the sake of robustness and to control for possible endogeneity. The specification reported in Tables 7.6 and 7.7 is the benchmark specification that was derived in Appendix 7A.
- As mentioned earlier in the text, both revenue and expenditure measures are used in the analysis.
    - Revenue assignment (decentralisation) can contribute to economic growth by increasing the revenue collected, which can serve to reduce the government debt and hence its reliance on debt financing. In addition, increased government revenue reduces the incentives to increase tax rates.
    - Expenditure assignment (decentralisation) contributes to economic growth by ensuring efficient allocation of public spending.
- Results for provinces (Table 7.6):
    - The labour force participation rate and gross fixed capital formation have the expected positive signs and are robust across different specifications. Hence, provincial labour and capital contribute positively to provincial economic growth.
    - The sign on the inflation coefficient is negative, supporting the hypothesis that provincial inflation has a negative impact on provincial economic growth (uncertainty hypothesis – cf. Table 7.3).

- Irrespective of the proxy used (i.e. expenditure or revenue decentralisation), the sign on the fiscal decentralisation variable is negative. This indicates that decentralisation, or more specifically revenue and expenditure assignments at provincial level in South Africa, did not promote provincial economic growth – thus indicating an inappropriate level of decentralisation or too much decentralisation in government budgetary revenue and spending.

- The positive sign on the degree of distortion coefficient suggests that provinces are fairly good at collecting revenue from the public. It can be argued that provincial revenue collectors are able to take advantage of their superior knowledge concerning local affairs, which contributes towards a healthier fiscal position and also has a positive effect on economic growth.

- Results for district and metropolitan municipalities (Table 7.7):

  - Similar to the results for provinces, municipal labour and capital have a positive impact on municipal economic growth. The inflation variable also has a negative sign, implying that municipal inflation impacts negatively on municipal economic growth.

  - The results for the fiscal decentralisation variable are somewhat interesting, showing a positive effect on economic growth when the revenue measure is used and a negative effect on economic growth when the expenditure measure is used. An argument explaining this is that, in the early stages of economic development, the central government may be in a better position to undertake public investment with nationwide externalities. Also, it has been argued that expenditure decentralisation can contribute towards increased corruption, which can also explain the negative effect on economic growth.

  - The negative sign on the degree of distortion variable indicates that municipalities are not necessarily doing a good job at collecting revenue from the public.

7.6 Recommendations

With respect to alternative aggregate revenue and expenditure assignments for provinces and municipalities, it is recommended that:

- Key principles of national strategies such as the New Growth Path document and National Planning Commission's Vision for 2030 need to permeate provincial and local strategies. This can be achieved by translating these principles into complete sub-national strategies with full details on sustained implementation, followed by provincial and local governments' commitment to achieve the goals identified in the strategies.

  - Key components for sub-national government to consider are capital and labour inputs, and multifactor productivity. Provincial and municipal governments should continue to invest in physical and human capital, focusing specifically on issues such as lack of adequate skills and physical infrastructure needs (maintenance, better location, etc.). In addition, effective management and accountability mechanisms should be aimed at increasing multifactor productivity.

- The results reported in this chapter imply that economic development powers are well-placed at the provincial level, while economic growth powers could be better placed at the municipal level.

- Municipalities, and particularly non-metropolitan municipalities, should be encouraged to play a more direct role in economic growth. This can be achieved by:

  - National government assigning greater revenue and tax handles to the municipalities than is presently the case;

  - Reassessing all elements to support the growth-enhancing roles of municipalities, when reviewing the fiscal framework. These elements would include the local equitable share, local own-revenue sources (e.g. local business taxes) and conditional grants.

    - Such re-assessment should also ensure a better balance between equity and growth objectives in the local government fiscal framework.

- Municipalities are not necessarily doing a good job of collecting revenue from the public. Hence, municipalities need to improve their revenue-collection efforts, as these can contribute positively towards economic growth.[16]
    - It is well known that in South Africa some municipalities (for example, metropolitan municipalities) are raising substantial revenues, while other municipalities are still very dependent on transfers from national government.
    - Issues that need to be addressed include weak capacity within local administrations, small tax bases, delivery of free basic services requiring high municipal expenditures (that can only be financed through national transfers), and a lack of 'payment culture' for services.

Appendix 7A. Theoretical Model

The theoretical model discussion in this section has been derived using Zhang and Zou (1996) and Davoodi and Zou (1998). The starting point is defining government spending per capita (g) through the three spheres of government: national (f), provincial (p) and local (l):

$$f+p+l=g \tag{i}$$

Next, define a Cobb-Douglas production function used to measure output:

$$y=k^{\alpha}\, f^{\beta}\, p^{\gamma}\, l^{\omega} \tag{ii}$$

where *y* is per capita output and *k* represents capital stock. The following conditions are imposed on the parameters in (2):

$1>\alpha>0,\ 1>\beta>0,\ 1>\gamma>0,\ 1>\omega>0,$ and $\alpha+\beta+\gamma+\omega=1.$

The allocation of total government spending to the different spheres of government can be presented as follows:

$$f=\theta_f\, g, \qquad p=\theta_p\, g, \qquad l=\theta_l\, g$$

where $\theta_f+\theta_p+\theta_l=1$ and $0<\theta_i<1$ for $i=f,s$ and $l.$ Also, total government spending g is financed a flat tax rate τ_y.

The representative agent's preferences are given by:

$$U=\int_0^{\infty}\frac{c^{1-\sigma}-1}{1-\sigma}e^{-\rho t}dt, \tag{iii}$$

where c is per capita private consumption and ϱ is the positive time discount rate. Hence, the dynamic budget constraint of the representative agent is represented as follows:

$$\frac{dk}{dt}=(1-\tau)y-c=(1-\tau)k^{\alpha}f^{\beta}p^{\gamma}l^{\omega}-c \tag{iv}$$

The representative agent's choice of consumption is determined by maximising (iii) subject to (iv). Along the balanced growth path, the solution for the per capita growth rate for the economy is given by:

$$\frac{dy/dt}{y}=\frac{1}{\sigma}[(1-\tau)\tau^{(1-\alpha)/\alpha}\alpha\theta_f^{\beta/\alpha}\theta_p^{\gamma/\alpha}\theta_l^{\omega/\alpha}-\rho] \tag{v}$$

Equation (v) shows that the long-run growth rate of the economy is a function of the tax rate and the shares of spending by the different spheres of government. Hence, equation (v) presents the basis for the empirical investigation of

16 In its 2012/13 Annual Submission, the Commission had made some recommendations aimed at improving revenue performance of municipalities in South Africa which are still relevant. These include (among others) regular updating and maintaining of data and information on indigents, outsourcing of functions, establishing municipal service districts and expanding the powers of municipalities to exercise more punitive recovery measures.

decentralisation and economic growth. The higher the budget shares (i.e. θ_f, θ_p and θ_l), the higher the degree of fiscal decentralisation. If the existing allocation of government-spending shares is different from the growth-maximising shares, then decentralisation can lead to higher economic growth. The growth-maximising budget shares can be obtained by maximising (v) subject to $\theta_f+\theta_p+\theta_l=1$, and are given as follows:

$$\theta_f^* = \frac{\beta}{\beta+\gamma+\omega}, \quad \theta_p^* = \frac{\gamma}{\beta+\gamma+\omega}, \quad \theta_l^* = \frac{\omega}{\beta+\gamma+\omega} \tag{vi}$$

Thus, as long as the actual budget shares are different from growth-maximising shares, the growth rate can always be increased without altering the total budget's share in GDP.

Appendix 7B. Data Transformations

All of the socio-economic indicators are measured in calendar year frequency. However, municipal and provincial data are collected in financial year frequencies specified as follows:

- For provinces, the financial year runs from 1 April to 31 March of the following year.[17]
- For municipalities, the financial year runs from 1 July to 30 June of the following year.

This has implications for estimation, as the different data sets are not strictly comparable. Thus, to obtain calendar year data for (say) 2009, a weighted average of the provincial/municipal data for the financial years 2008/09 and 2009/10 was calculated. The data was weighted in accordance with the proportion of the 2009 calendar year that fell within the two financial years, respectively (i.e. ¼ for 2008/09 and ¾ for 2009/10 in the instance of provincial data; ½ for 2008/09 and ½ for 2009/10 in the instance of municipal data)[18].

A small discussion on the methodology:

Panel regressions use data that has both a cross-sectional dimension (provinces or municipalities; i in Table 1) and a time series dimension (t in Table 1) – more specifically provinces and municipalities are observed over time. Panel estimation is different from a pooled estimation – the latter pools independent cross-sections across time and estimates are obtained with a simple extension of the ordinary least squares (OLS). Consider the following generic specification of a panel regression:

$$y_{it}=\beta_0+ \beta_t+\beta_1 x_{it1}+\beta_2 x_{it2}+a_i+u_{it} \tag{vii}$$

The strict exogeneity assumption holds: $cov(x_{it},u_{is}) = 0$ for all t and s. Other variables are defined as follows:

y_{it}: dependent variable
x_{it1}, x_{it2}: independent variables
a_i: contains the effects of time-constant independent variables – this intercept is called a fixed effect or unobserved heterogeneity.
β_t: are the time-specific intercepts – these control for common shocks to all provinces (municipalities) at time t.
u_{it}: is the idiosyncratic error.

It should be noted that if the $cov(x_{it},a_i)$ is not zero and the pooled OLS method is used, estimates of all parameters might be biased (heterogeneity bias). The key assumption of the random effects (RE) estimator is that $cov(x_{it},a_i)$ is zero. The difference between the fixed effects (FE) and the RE estimator is that in FE a_i is controlled using dummy variables, whereas in RE a_i is omitted and is part of the disturbance. RE estimator is generally more efficient (precise) if the RE

17 For provinces, fiscal data was sourced from various editions of provincial budgets, which can be found on the National Treasury's website (www.treasury.gov.za). For each of the nine provinces, audited data was obtained for the period 1998/99 to 2009/10 (which was then converted to calendar year period 1999–2009 using the method explained in the section above). For municipalities, fiscal data was sourced from the local government database which can also be found on the National Treasury's website (www.treasury.gov.za). For district municipalities, data was obtained for the period 2005/06 to 2009/10 (which was then converted to calendar year period 2006–2009 using the method explained above).

18 An alternative way of dealing with calendar and fiscal year data matching entails using the calendar year data for the beginning of the fiscal year. Thus, for provincial/municipal data for fiscal year 1998, calendar year data from 1997 is used. This reflects the fact that decisions about fiscal structure are set at the beginning of the fiscal year, which occurs in the previous calendar year.

assumption holds. The difference between RE and pooled OLS is that in the RE approach, the correlation over time[19] is eliminated using some generalised least square (GLS) method, whereas in pooled OLS, the GLS correction is not used.

References

Akai, N and Sakata, M. 2002. Fiscal decentralisation contributes to economic growth: evidence from state-level cross-section data for United States, *Journal of Urban Economics*, 52: 93-108.

Barro, R. 1990. Government spending in a simple model of endogenous growth, *Journal of Political Economy*, 98: S103-S125.

Bennet, RJ. 1990. *Decentralization: Local Governments and Markets*. London: Clarendon Press.

Bird, RM and Vaillancourt, F (eds.). 2006. *Perspectives on Fiscal Federalism*, World Bank, Washington DC.

Bodman, P and Ford, K. 2006. Fiscal decentralisation and economic growth on OECD. Macroeconomics Research Group at University of Queensland. Available online: **www.uq.edu.au**.

Bodman, P, Heaton, K and Hodge, A. 2009. Fiscal decentralisation and economic growth: a Bayesian model averaging approach. Macroeconomics Research Group at University of Queensland (Discussion Paper Series), paper number 26. Available online: **www.uq.edu.au**.

Breuss, F and Eller, M. 2004. Fiscal decentralisation and economic growth: is there really a link? *CESifo DICE Report, Journal of Institutional Comparisons*, 2(1): 3-9.

Carrion-i-Silvestre, JL, Espasa, M and Mora, T. 2006. Fiscal decentralisation and economic growth in Spain, *Public Finance Review*, 36(2): 194-219.

Davoodi, H and Zou, H. 1998. Fiscal decentralization and economic growth: a cross-country study, *Journal of Urban Economics*, 43: 244-257.

De Mello, L Jr. 2000. Fiscal decentralization and intergovernmental fiscal relations: a cross-country analysis, *World Development*, 28(2): 365-380.

Dziobek, C, Mangas, CG and Kufa, P. 2011. Measuring fiscal decentralisation – exploring the IMF's databases. International Monetary Fund (IMF) Working Paper Series, working paper number: WP/11/126. Available: www.imf.org.

Elhiraika, AB. 2007. Fiscal decentralization and public service delivery in South Africa, African Trade Policy Centre (ATPC), Work in Progress, no. 58.

Esteban-Laelona, S, de Frutos-Madrazo, P and de Miguel-Bilbao, M. 2011. A review of the empirical literature about the relationship between fiscal decentralisation and economic growth, *Economía, Sociedad y Territorio*, 11(36): 349-381.

Ismail, AGB and Hamzah, MZ. 2006. Fiscal decentralization and economic growth nexus: evidence from province-level cross-section data for Indonesia, *Review of Islamic Economics*, 10(2): 133-149.

Jin, J and Zou, H. 2005. Fiscal decentralisation, revenue and expenditure assignments, and growth in China, *Journal of Asian Economics*, 16: 1047-1064.

Lin, JY and Liu, Z. 2000. Fiscal decentralization and economic growth in China, *Economic Development and Cultural Change*, 49: 1-21.

Mankiw, N.G., Romer, D. and Weil, D.N. 1992. A contribution to the empirics of economic growth, *The Quarterly Journal of Economics*, 107(2): 407-437.

Martinez-Vasquez, J and McNab, RM. 2001. Fiscal decentralization and economic growth, Georgia State University International Studies Program, Working Paper 01-1.

Martinez-Vasquez, J and Rider, M. 2006. Fiscal decentralization and economic growth: a comparative study of China and India, *Indian Journal of Economics and Business*, Special Issue China and India: 29-46.

Musgrave, RA. 1959. *The Theory of Public Finance.* New York: McGraw-Hill.

19 Since a_i is in the error term, observations over time are correlated for the same individual *i*.

NPC (National Planning Commission). 2011. *National Development Plan: Vision for 2030.* Available online: www.npconline.co.za.

Nguyen, LP and Anwar, S. 2011. Fiscal decentralization and economic growth in Vietnam, *Journal of Asia Pacific Economy*, 16(1): 3-14.

Osoro, NE. 2003. *Institutions, Decentralisation and Growth*. Economic Commission for Africa.

Oates, WE. 1972. *Fiscal Federalism.* New York: Harcourt, Brace, Jovanovich.

Oates, WE. 1999. An essay on fiscal federalism, *Journal of Economic Literature,* Vol. XXXVII: 1120-1149.

Rodriquez-Pose, A and Krøijer, A. 2009. Fiscal decentralisation and economic growth in Central and Eastern Europe, London School of Economics *Europe in Question* Discussion Paper Series.

Rodriquez-Pose, A and Ezcurra, R. 2010. Is fiscal decentralisation harmful for economic growth? Evidence for OECD countries, *Journal of Economic Geography*, 10(5): 619-644.

Smoke, P. 2001. Fiscal decentralization in developing countries: a review of current concepts and practice, *Democracy, Governance and Human Rights*, Programme Paper Number 2, United Nations Research Institute for Development.

Solow, R.M. 1956. A contribution to the theory of economic growth, *The Quarterly Journal of Economics*, 70(1): 65-94.

Thießen, U. 2003. Fiscal decentralisation and economic growth in high-income OECD countries, *Fiscal Studies*, 24(3): 237-274.

Tiebout, CM. 1956. A pure theory of local expenditures, in W.E. Oates (ed.) 1998. *The Economics of Fiscal Federalism and Local Finance*, Cheltenham and Northampton.

The Presidency. 2010a. *Delivery Agreement for Outcome 4: Decent Employment Through Inclusive Growth.* Available online: **www.gov.za**.

The Presidency. 2010b. *The New Growth Path: The Framework*. Available online: **www.gov.za**.

Thornton, J and Olumuyiwa, SA. 2010. Fiscal decentralisation and fiscal consolidations in emerging market economies, *Applied Economics Letters*, 17: 1043-1047.

Turok, I. 2010. Towards a developmental state? Provincial economic policy in South Africa, *Development Southern Africa*, 27(4): 497-515.

UNDP (United Nations Development Programme). 2005. *UNDP Primer: Fiscal Decentralisation and Poverty Reduction.* Available online: **http://asia-pacific.undp.org/practices/governance/documents/Primer_FDPR-200511.pdf**.

Woller, GM and Phillips, K. 1998. Fiscal decentralization and LDC economic growth: an empirical investigation, *Journal of Development Studies*, 34(4): 139-148.

Yemek, E. 2005. Understanding fiscal decentralisation in South Africa, Institute for Democratic Alternative for South Africa (IDASA) *Occasional Paper Series.* Available: www.idasa.org.za.

Zhang, T and Zou, H. 1996. Fiscal decentralization, public spending, and economic growth in China, *Journal of Public Economics*, 67(2): 221-240.