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Lund University

Spatial Economic Growth, Sub-national Governance and Institutions in South Africa

Master's Thesis

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Martin Ingvarsson

Under supervision of: Lennart Petersson

Abstract

Although South Africa's growth has outshone expectations for the four most recent years, spatial growth inequalities are still large at the sub-national level in South Africa. Recent theory suggests that at least part of this variation can be explained by differences in governance and institutions between locales. In this thesis, the linkage between spatial economic growth and sub-national governance for 21 South African urban areas over the period 2002-2006 is investigated. The study follows Hall and Jones's theory on "social infrastructure" and uses municipal budget data as proxy for good governance in a fixed effects panel data regression model. Based upon the econometric analysis and a research visit to North-West University in South Africa, the main finding is a strong and positive relationship between good local governance and the economic growth of localities. More specifically, municipalities that are well-governed in the sense that they are less dependent on financial aid from other spheres of government and have a competitive advantage in basic service delivery have also achieved higher growth rates over the examined period. The South African national government's decision to emphasize the building of capacity and capability in local governments as part of its development and growth strategies can therefore be considered well founded.

Keywords: South Africa, Spatial Economic Growth, Institutions, Sub-national Governance, Development

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1. Introduction

1.1 Background

Still in the aftermath of the economic difficulties caused by the Apartheid system, South Africa has been able to achieve economic growth rates above the world average for the four most recent years. For both 2008 and 2009, the national growth rate is expected to comfortably exceed 4 percent, with some predicting growth rates greater than 5 percent. Considering the previous poor state of the economy, partly inherited from the apartheid regime just over a decade ago, this is a great achievement.

At the sub-national level in South Africa there is however a somewhat different story to tell. While at the national level the country has performed well, at the sub-national level different regions have not grown at an equal pace, creating great differences in economic activity and concentration between places. Thus, two different types of urban areas characterize the spatial economic pattern of South Africa: 1) Areas with medium to high economic potential, high population density and high poverty and 2) Areas with low economic potential, high population density and high poverty.

How can this variation be explained? According to theory on economic growth, differences in input accumulation partly, but not entirely, explain the variation in economic growth between countries and regions. The rest is explained by differences in how productively inputs are used in the country or region i.e. by differences in institutions. The right institutions are needed to encourage appropriate policies for both the accumulation of inputs themselves and for stimulating developments that will improve productivity. There is therefore reason to believe that at least part of the difference in economic growth between these areas can be explained by institutional differences.

In South Africa the role of institutions and governance in economic development has been recognized in the Accelerated and Shared Growth Initiative for South Africa (AsGISA), the Local Economic Development framework (LED) and the National

Spatial Development Perspective (NSDP). In this thesis the linkage between spatial economic growth and sub-national governance for 21 key functional urban areas over the period 2002-2006 is investigated. Focus is centered on local governance, where the role of local governments in creating an “enabling environment” for both the local business sector and the community is emphasized.

1.2 Purpose of the Study

Quite a number of studies have been conducted on spatial economic growth differences in South Africa, most of them trying to explain the differences by geographical location, openness of the economy and demography. These studies have sometimes also included institutions and governance as one variable, but the data used in the studies have, however, been really imperfect proxies. The main purpose of this study is therefore to more accurately analyze the linkage between governance and spatial economic growth differences in the country. An elaborated investigation of this linkage is important to the development of South Africa, especially for the following reasons:

- i. Increased knowledge of the factors behind spatial economic growth differences in South Africa will improve the chances to achieve not only growth, but also a more diversified pro-poor growth.
- ii. Focusing on governance will raise the question of local government capacity. In order to reap the full benefits of local government and national donor support, a well-functioning local government system that is able to transfer the resources out in the municipalities is crucial. Local governance is also an important determinant of the development effects of foreign capital inflows, such as remittances and official development assistance.

The indicators of sub-national governance quality can later also be used in other studies on South African sub-national economic growth, hence filling a gap which to

date has been problematic. Additional contribution is made through the selection of focus areas. To the best of my knowledge there is as yet no study on spatial economic growth focusing solely on the key functional urban areas of South Africa. The data set used in the study is therefore in this sense unique. As the focus areas of the study have a recognized key-role to play in the struggle towards improved national economic performance, the intention of this study is also to attract more research attention to these focus areas.

Finally, the study aligns well with the Shared and Accelerated Growth Initiative for South Africa (AsgiSA), which is the “recipe” for reaching the government’s mandate of halved unemployment and poverty by 2014. The main purpose of the program is to improve growth and to ensure that *“the fruits of growth are shared in such a way that poverty comes as close as possible to being eliminated, and that the severe inequalities that still plague our country are further reduced”*(AsgiSA 2008). In the program, governance and institutions are identified as two main impediments for reaching this objective.

1.3 Research Question

This study investigates the hypothesis that the quality of sub-national governance is one important factor behind local economic growth in South Africa. The following research question is addressed:

- *To what extent does the quality of sub-national governance explain differences in economic growth between the 21 key functional urban areas of South Africa?*

1.4 Method, Material and Delimitations

The bulk of the research forming the basis of this study was carried out at North-West University, South Africa as part of a Minor Field Study-Scholarship from the Swedish International Development Agency. The purpose of the study is to investigate the linkage between the quality of sub-national governance and economic growth and does, therefore, not aim to provide a comprehensive analysis of all factors determining local economic growth in South Africa. To carry out the study, a general

model for local economic growth, including a specific variable capturing governance quality was built. As governance variable, an index compiled of several different indicators on governance quality was used. Major sources of information¹ have been the Regional Economic Focus and The South African Cities Network for estimating the model and The Municipal Demarcation Board and The National Treasury for building the index. All econometrics was carried out using STATA 9.

In addition to the work done at North-West University, qualitative interviews with personnel at the South African Cities Network, The Provincial and Local Government Department and The Palmer Development Group were conducted. The reason for conducting the interviews was to add texture to the study that went beyond readily available data and to improve the accuracy of the constructed measure. Interviews were conducted in English.

The data set used is a balanced panel data set consisting of 21 cross-sections over the period 2002-2006. This provides a maximum of 105 observations. The decision to examine a relatively small number of regions over a relatively short time-period is – except for other reasons spelled out in the text –based on data availability. The lack of comprehensive data is almost always an unfortunate constraint on research in developing countries. Even if data availability is generally better for South Africa compared to other countries in this category, the country is no exception. Availability is generally better for urban municipalities than rural municipalities and, unsurprisingly, this applies also for the more recent years. To the best of my knowledge there is presently no data allowing for an extended sample size or time-period. With respect to data availability and methodological considerations, the chosen time period and sample size was hence judged as the most advantageous.

1.5 Important Definitions

With the ambition not to contribute further to the already considerable confusion around institutions and governance in this thesis, they are treated separately. Thus when the term “institution” is used it refers to the definition by North, provided in section 2.2. When the term “governance” is used it refers to the definition of

¹ For a throughout description of how the data was compiled please see the appendix

governance provided in paragraph three in the same section. The terms local governance and sub-national governance are used interchangeably.

1.6 Thesis Outline

With chapter one coming to an end, this thesis is divided into five additional parts. In chapter two, theories on economic growth, institutions and governance are presented and the linkage between growth and institutions is clarified. Chapter three begins with an analysis of the South African spatial economy and continues with a discussion on place-specific growth determinants and the role of local governance in South Africa. Chapter two and three hence build the theoretical and empirical rationale for the econometric model used in this study. In chapter four the econometric model is introduced and in chapter five the results of the econometric analysis are presented. Chapter six concludes the main findings.

2. Institutions, Governance and Economic Growth

2.1 General Theory on Economic Growth

Differences in income levels and development, across and within countries of the world, have long been a puzzle to economists. Why are some economies growing faster than others? What causes the large differences in economic activity between and within countries that we see in the World today?

A first answer to this question was provided in the *neoclassical* Solow-Swan Model from 1956. According to the model, economies that save and invest a large fraction of their GDP and time in accumulating capital and skills tend to obtain a higher growth rate than economies that do not (Solow 1956:65pp). In the simplest form of the Solow-Swan model, economies are modeled to move towards an equilibratory outcome, a steady-state, where consumption, production and capital expressed in per capita terms are constant. Hence, in this basic and somewhat deterministic model, once an economy reaches a steady-state level, it ceases to grow. Both the savings rate and the rate of technological change are determined exogenously in the Solow-Swan model.

Later neoclassical growth models evolve the Solow-Swan model by including additional explanatory variables. The unrealistic figure of zero per capita growth in steady-state is removed in an extended version of the Solow-Swan model that highlights technological progress as the engine of economic growth. By introducing technology to the model, consumption, production and capital per capita are allowed to grow at a positive and constant rate in equilibrium². In an additional extension of the model, Gregory Mankiw, David Romer and David Weil introduce human capital to recognize the fact that labor in different economies may possess different levels of education and also different skills. The basic idea of this extended model is that individuals in this economy accumulate human capital by spending time learning instead of working, which leads in turn to the build-up of a stock of human capital that is favorable to economic growth. Later versions of the original Solow-Swan also take into account the effect of resource endowment such as land and non-renewable

² In equilibrium the parameters grow by the exogenously determined rate of technology

resources on the economy. One finding is especially important in these models: The more an economy is dependent on land and non-renewable resources in its production, the lower the long run growth rate (Jones 2002:169-192). In the short run however, this may not be true.

New, or *endogenous*, growth theory builds on the idea of technological progress as the engine of growth but goes beyond the neoclassical growth theories by contributing to the understanding of the economic forces underlying technological progress. In his famous model, Paul Romer (1990) stresses research and development (R&D) in the advanced world as the key factor behind technological progress. In Romer's model the long-run growth rate of the economy is determined by the parameters of the production function for ideas and the rate of growth of researchers. According to the theory, countries in the developing world do not develop their own ideas. Instead the economic growth rate in developing economies is determined by the economy's ability to adopt and use the technology produced in the advanced world.

Other scholars have used other factors, such as geography and the demographic composition of the population in order to explain economic growth. Sachs et al (1998a) for example find access to good soil and water in the past to be important determinants of the wealth of regions today (p.47). In a later study the same year, Sachs and Bloom also find the demographic composition of the population to be one key determinant of economic growth in African countries (Sachs 1998b:36)

The neoclassical and endogenous growth models described above obviously differ in some aspects, but they also share fundamental elements as the main determinants for economic growth. Summarizing and combining the results of the Neoclassical and Endogenous Growth models, the following seems to be true about the growth rate of the economy:

- i. Economies that accumulate a large amount of physical capital by savings and investments tend to grow fast.
- ii. Economies that accumulate a large amount of human capital, by having for example a well-functioning educational system, tend

- to grow fast.
- iii. Economies that produce a lot of research and development, alternatively economies that have the ability to extensively adopt foreign R&D are likely to experience high economic growth rates.
 - iv. Economies that have large resource endowments to start with tend to grow quickly on a temporary basis. In the long-run the opposite seems to be true.

On top of this come other factors, such as geography and demographics. Still, according to both neoclassical and endogenous growth models, large economies are not only large because they have large quantities of capital and education per worker, but also because these inputs are being used more productively. Accordingly, small economies are not only lacking capital and education, but also the productivity with which they use the inputs as well. This raises two questions: (1) Why is it that certain economies invest more than others and (2) why do they use their inputs much more effectively than others?

Robert E Hall and Charles I. Jones provide an early answer to this by pointing out the important role played by an economy's laws, government policies, and institutions. This so-called social infrastructure, presented by Hall and Jones, is fundamental to economic growth since it shapes the economic environment that determines how individuals produce and transact (Hall 1999:84). The concept of social infrastructure has gained increased importance during the last two decades within the academic world as well as within multinational development organizations. Thus, when theories of capital accumulation and technological change have failed, institutions and governance gain more and more attention as the predictors that are able to explain differences in world economic performance.

2.2 Institutions, Governance and “Good Governance”

In the economic growth literature institutions, governance and institutional quality are often used interchangeably, creating significant confusion around what we actually mean with institutions and governance. As bluntly confessed by Kaufmann and Kraay (2003), “despite the long provenance of the concept there is as yet no strong

consensus around a single definition of governance or institutional quality” (page 5). That does, however, not mean that researchers have not tried. Various authors have provided a wide array of definitions of institutions and governance, ranging from very narrow to so broad that they cover almost everything. When institutions are mentioned in daily life, people often relate them to organizations, foundations and other formal institutional arrangements that are dedicated to provide education, public service and other inputs to the society. This is the very narrow definition of institutions. According to the –at least in the academic world – more recognized definition by Douglass North, institutions are to be understood rather as the “rules of the game”, while organizations, foundations and other formal institutional arrangements operate as the players participating in the game³. More specifically:

"Institutions are the humanly devised constraints that structure human interaction. They are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behaviour, conventions, and self imposed codes of conduct), and their enforcement characteristics. Together they define the incentive structure of societies and specifically economies."

(North, 1993)

Hence in North’s view, institutions are more than just formal arrangements; they are the constraints on society that determine how actors and individuals transact. This, more holistic definition, is frequently quoted in the literature.

The general definition of governance is “the process of decision-making and the process by which decisions are implemented (or not implemented)” (UNESCAP 2008) and can be used in several different contexts such as corporate governance, international governance, national governance and local governance. This thesis is concerned with the last one of these. During the last two decades the term “good governance” has become increasingly popular within the field of development, thereby introducing a dimension of subjectivity to the general concept of governance. This means that different organizations also have somewhat different perceptions of what good governance is. The UNDP, for example, uses a set of eight major

³ In the article “What are Institutions”, Geoffrey M. Hodgson argues that the definition has often been misinterpreted as saying that organizations are *not* institutions but rather actors or players. With the support of correspondence letters from North, Hodgson claims that this was not North’s original intention. Instead, according to Hodgson, North “treats organizations as players simply for the purpose of analysis of the socio-economic system as a whole and that he does not regard organizations as essentially the same thing as players in all circumstances” (2006:10).

characteristics that together form good governance. According to the UNDP good governance is: *Participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follow the rule of law* (UNDP 2008A). The World Bank in turn defines good governance as consisting of six components: *voice and accountability, political instability and violence, government effectiveness, regulatory burden, rule of law and control of corruption* (World Bank 2008).

During recent years in particular, the measures used by the World Bank have been subject to much criticism, the main issue being the almost total dominance of liberal economic thoughts combined with a weak linkage to economic growth and development⁴. However, regardless of what the definition of good governance holds, the central issue is that governance has a recognized and important role to play in shaping institutions, which in turn can be crucial in determining economic performance. Thus, by promoting improved governance, the rules of the game can be altered and the opportunities for economic growth changed.

2.2.2 On The Importance of Institutions

Having clarified how institutions should be understood, why and when are they important? Following the Coase theorem⁵, the neoclassical assumption of efficient markets that will self-regulate the allocation of rights in the society only holds when property rights are well defined and it is costless for individuals to transact. Whenever it is not, transaction costs will add up to the costs of production and the reallocation of legal rights will only occur when the benefits of a reallocation are larger than the costs of bringing the change about (Coase, 1960:7-8). Consequently, only under the conditions of costless bargaining will actors reach the solution that maximizes aggregate income, regardless of the institutional arrangements. The answer to the question addressed in the beginning of this paragraph is therefore that in an ideal world where the negotiation, agreement and enforcement of rights are costless, the

⁴ See for example (Khan 2007) who makes a distinction between market-enhancing and growth-enhancing governance and claim World Bank policies to lead to the former but not necessarily the latter. See also Sachs et al (2004) who find good governance as measured by the World Bank to have very limited effect on economic growth in their study of African countries.

⁵ The Coase theorem, attributed to Ronald Coase, describes the economic efficiency of an economic allocation or outcome in the presence of externalities. The theorem states that when trade in an externality is possible and there are no transaction costs, bargaining will lead to an efficient outcome regardless of the initial allocation of property rights. See Coase (1960).

presence of institutions actually does not matter (Coase 1960:22). However, when the conditions of the ideal world do not apply and transaction is costly, institutions will have an important role to play.

Unfortunately, in the real world transaction is generally very costly. In 1986 Wallis and North showed that the proportion of US GNP in the transaction sector was as high as 45 percent in 1970. Wallis and North further concluded that the more developed the economy, the larger the marketed transaction sector. More important to developing and transition economies are however non-marketed transaction costs such as the resources spent on waiting, getting permits to do business, bribing officials and enforcing contracts. In these countries the size of the official transaction sector, as measured by Wallis and North is small. Often cited in this context is Hernando de Soto's *The other Path* (1989), which describes a research team trying to set up a small garment factory in Peru without the use of bribes or political connections. In the book it takes 289 days for the team to set up the small business; this is 280 times as much in waiting time and four times as much in monetary expenditures compared to the USA (Benham 2001:6). Another measure on unofficial transaction costs is the average waiting time to clear items already in port. In 1998, according to an investigation by "The Services Corporation", this was on average 15 minutes in Singapore, while in Tanzania the average waiting time was 7-14 days (The Services Corporation 1998). Thus in developed as well as in developing countries institutions do indeed matter.

2.2.3 Measures on Governance and Institutional Quality

Regarding measures on institutional quality, the literature suggests a number of different roads to follow. A key word in the definition of institutions provided by North and one which appears in other definitions is the word *constraint*. A good measure on institutions should therefore be able capture the constraints that "structure human interaction" and "define the incentive structure of societies and specifically economies", as put by North.

Much of the early literature on institutions and economic growth have used such measures as, for example, the strength of property rights, the degree of political

freedoms or the extent of judicial review on legislation to capture institutions. More recent literature uses similar measures, but with increased focus on the perception of institutions, and with different sources of data. Glaeser (2004), for example, uses “Risk of expropriation by the government”, “government effectiveness” and “constraints on the executive” as indicators on the quality of institutions. Knack and Keefer(1995), Hall and Jones(1999) and Acemoglu et. al (2001) use survey indicators on institutional quality from the International Country Risk guide collected over the 1980s and 1990s. The measurement constructed by Kaufman (2003) has been used in several recent studies and captures governance through six different indicators: “Voice and Accountability”, “Political Stability”, “Government Effectiveness”, “Regulatory Quality”, “Rule of Law” and “Control for corruption”. All these studies offer ways to measure the quality of institutions at the country level, where data availability allows for a holistic approach.

As this study concerns sub-national level institutions, with significant limitations in data availability as a consequence, it has a fairly different approach. Following the South African Cities Network’s (SACN) definition of governance as the interplay between the local government, the business sector and the community, this study uses local government budget data to capture good governance. According to the SACN this interplay requires a shift away from a state-centered perspective where local governments have a coordinating rather than a monopolistic role (SACN 2006:94). Thus the measurement used in this study does not capture governance as defined by the above-mentioned scholars, but rather is adjusted to better reflect governance on the sub-national level in South Africa. As it ought to be the new role of local government to create an *enabling environment* in which members of the business community and the local community can produce and transact (DPLG 2006:16pp) it does however align with theory on institutions and economic growth. The municipal obligation to create an enabling environment in which members of the business community and the local community can produce and transact, involves among other things the guaranteed provision of basic services. A more elaborate description on local governance in South Africa is provided in chapter 3.

2.3 Economic Growth and Institutions - Linkage and Causality

The linkage and especially the causality between institutions and economic growth is not obvious at a first glance. On the one hand it seems realistic to believe that institutions that are able to secure property rights and to uphold the rule of law will spur economic growth. On the other hand it may also be reasonable to believe that higher living standards and improved economic conditions will raise a demand for institutions that are able to secure property rights and to uphold rule of law, implying a case of reverse causality.

There are a number of studies investigating the former relationship. The importance of constraints on the government to encourage economic performance was first emphasized by Montesquieu (1748) and Smith (1776) and was much later followed up by the new institutional economists; perhaps the most prominent one being Douglass North. According to North (1990) institutional constraints are crucial to economic growth as they dictate the margins at which organizations operate and hence determine the interplay between the rules of the game –being the institutions – and the actors in the economy. If organizations –firms, trade unions, political parties and groups –engage in unproductive activities it is the institutional constraints that have created the incentive structure that encourages this kind of behavior (North 1990:110pp). Consequently, countries are poor because they have an institutional setup that does not promote input accumulation and productivity, crucial to economic performance. The work of North shares some elements with Baumol (1990) who emphasizes the role of institutional constraints in specifying the pay-off of different entrepreneurial activities. Depending on the institutional setup, entrepreneurs are allocated in productive or unproductive directions and may hence, depending on the direction, be beneficial, indifferent or even detrimental to economic growth (Baumol 1990:896-898).

Later work by Knack and Keefer (1995) assesses the important role of institutions as protectors of property rights and investigates the linkage to economic growth. Knack and Keefer use data from two private international investment risk services –ICRG and BERI – and find that institutions that protect property rights are crucial to economic growth and to investment. Hall and Jones (1999) follow the same

reasoning but adopt a broader perspective on institutions. They show that differences in output per worker are fundamentally related to differences in the institutions and government policies that provide the incentives for individuals and firms in the economy. This so-called social infrastructure is critical in determining the inputs, the educational attainment and the productivity in the economy, which in turn are the main determinants of output per worker (Hall and Jones 1999:86). Hall and Jones control for the possible feedback from output to social infrastructure and find social infrastructure to be the main determinant of a country's long run economic performance.

Finally, Rodrik and Subramanian (2004) evaluate the determinants of economic growth and find the role of institutions to be more important to a country's development than both the role of trade integration and the role of geography. In fact, when controlling for the effect of institutions the authors find integration to have no direct effect on income, and geography to have at best weak direct effects. According to the findings of Rodrik and Subramanian, institutions hence "trump" everything else.

Support for reverse causality is found in the work of Glaeser (2004), who on the one hand does not reject the importance of institutions but on the other hand takes a critical stand against the measures used in the above studies. In line with the reasoning of Lipset (1960), Przeworski (2004) and Barro (1999) he argues a reverse causality where economies accumulate human- and physical capital under dictatorship, and first when economic conditions improve, become more and more likely to improve the institutional setup (Glaeser 2004:298). Thus, according to Glaeser, it is economic growth and the accumulation of human capital that leads to improvements in the institutional setup, not the other way around. To illustrate that countries can achieve high economic growth also under conditions that are not participatory, consensus oriented, transparent or accountable, Glaeser uses the example of China that grew very rapidly during the dictatorship of Deng Xiaoping. Glaeser hence shows that under certain circumstances there is no absolute positive relationship between the presence of *democratic* institutions and economic growth. South Korea and Taiwan are two additional examples of countries that grew rapidly under one-party dictatorship before eventually turning into democracies.

This view however finds weak empirical support in the literature. The strongest critique perhaps comes from Kaufmann and Kraay (2002) who find a weak and *even negative* feedback from per capita income to institutions and consistently argue that one should not overemphasize the conventional wisdom that economic development leads to improvements in institutional quality. The reason is that as long as an elite reaps private benefits from the status quo of poor institutions, these are likely to persist. Kaufmann mentions state capture⁶ in transition economies as one example of when higher incomes do not automatically lead to a higher demand for better institutions.

The conclusion of this section is therefore a presumably positive relationship between institutions and economic growth. Strong theoretical as well as empirical arguments support this view. There are however reasons to believe that there is also at least a *possible* feedback effect, running from economic growth to the improvement of (democratic) institutions. Having recognized this possibility, the risk of drawing false conclusions because of this cannot be entirely overlooked. Due to the fact that in this thesis the concern is not to demonstrate the causality between democratic institutions and economic growth, the risk is however mitigated. In the case of local governance and economic growth in South Africa there is also empirical support for the former causal relationship to be found. This is presented in the next chapter.

⁶ State capture is when firms shape and affect the rules of the game through private payments to public officials and politicians. Hence they “capture” the state.

3. Sub- national Governance and Spatial Economic Growth in South Africa

Still just over a decade after South Africa's first democratic elections and the official abolition of the apartheid dual economy, the country has been able to achieve economic growth rates above the world average for the four most recent years. For 2008 and 2009 growth is expected to comfortably exceed 4 percent (The Economist Intelligence Unit 2008), with some predicting growth rates greater than 5 percent. Despite this success the country still has many challenges to face. In order to achieve the government's goal to halve poverty and unemployment by 2014 an annual growth rate of even 5% is not enough. Additionally, the different regions of South Africa have not grown at an equal pace, creating a spatial economy with great differences in economic activity and concentration between regions:

As deft as South Africa's handling in of the threat of inflation has been in this century, it has been less successful in terms of job creation, small business development, and overall economic growth. It is still growing less rapidly than planned and less rapidly than it needs to do to empower of all its citizens. Its growth is uneven, too; pockets of new indigenous wealth amid wastelands of aspiration and unfulfilled opportunity.

(Rotberg, Robert 2007, Belfer Center for Science and International Affairs)

In this chapter the space economy of South Africa is described and place specific determinants of local economic growth are suggested. The chapter also clarifies the role and the importance of local governance in South Africa.

3.1 The Space Economy of South Africa

Nowhere in the world is social and economic development evenly distributed over geographical space. Theory and empirical findings suggest this to be mainly due to uneven historical growth and unequal distribution of social and economic development in the past and as a result most countries of the world show large spatial inequalities. In Europe, for example, the major urbanized regions comprised 36 percent of places but generated 82 percent of GDP in 2003 (Stiller 2003:158). In Sweden, the spatial economic pattern is even more extreme; 90 percent of the aggregated daily wage is generated in approximately 0.5 percent of places (ITPS 2007:41). Thus, with 95.6 percent of GVA produced in less than one third of the land surface (NSDP 2006:10), the spatial economy of South Africa is by no means unique.

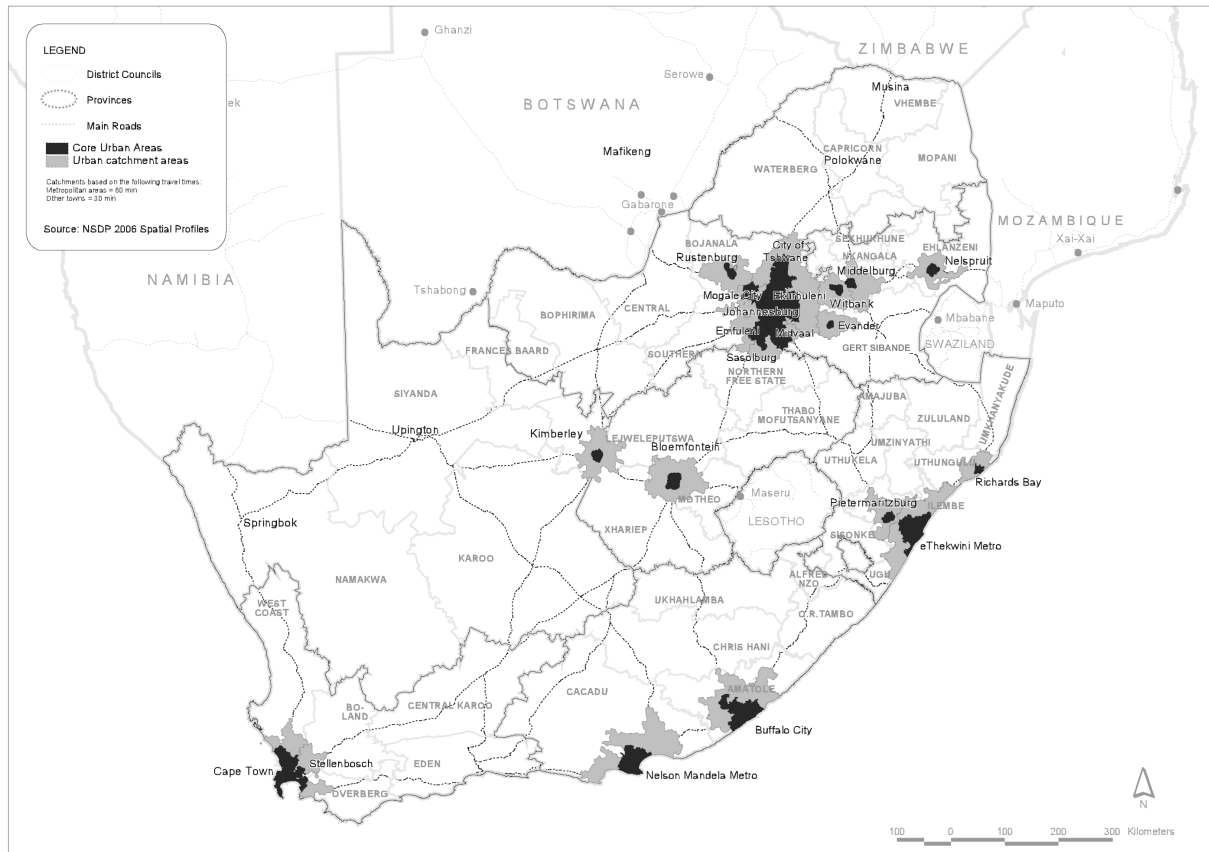
What is unique about South Africa, however, is that spatial inequality is not only the product of historical economic development, but also of apartheid spatial planning. Indeed, the model for spatial planning under the apartheid system was designed to ensure that the majority of people were located far away from areas where they could have social and economic capacities (NSDP 2006:8). As consequence there is today not necessarily a correlation between where people live and where economic opportunities for households to generate an income exist. One of the unfortunate results of this anomaly is the existence of areas with very high levels of poverty and, at the same time, very small potentials for economic development and growth. On a macroscale the South African economy hence roughly consists of two different types of areas: 1) areas of medium to high economic potential and high population densities and 2) areas with low economic potential and high population densities (NSDP 2006:70). On the microlevel these areas however also show great diversity – partly caused by the policy of petty apartheid⁷ – with social and economic exclusion of townships and informal settlements on the fringes of towns and cities.

Following the National Spatial Development Perspective⁸, as well as the State of Cities Report from the South African Cities Network, this study focuses on 21 “key functional urban areas”. The locations of the urban areas are shown on the map below in figure 1:

⁷ Two different classifications are often used when the apartheid system is described. “Grand apartheid” refers to the attempt on the national level to divide South Africa into different states based upon race. “Petty apartheid” refers to the political segregation of races, which was often stated in law.

⁸ The NSDP is a government-imposed framework to guide development planning at all levels in South Africa. It recommends mechanisms to bring about alignment between infrastructure investment and development programs within localities. A thorough description of the framework is to be found in section 3.3.1.2

Figure 1: Key Urban Areas and Their Catchments



(Source: NSDP 2006)

These urban areas together cover only two percent of the South African land surface but account for approximately 70 percent of national GVA (SACN 2006:24). Moreover, they also accommodate 41,7 percent of the South African population and approximately 26.8 percent of all persons living on less than one dollar a day. The key functional urban areas, their economic performance compared to national average and the percentages of persons living on less than one dollar a day in each area are specified in the table on the next page.

Table 1: The Key Functional Urban Areas

Urban Area	Population (Thousands,2006)	GDP/Capita (Rand, thousands, 2006)	GDP per capita growth 2002-2006	Compared to national average 2002- 2006	Urban areas percentage of all people living with less than \$1 per day 2002-2006	Compared to national average 2002-2006
Buffalo City	3132.8	42.6	4.5%	1.3%	1.2%	0.8%
City of Cape Town	3302.4	38.5	5.3%	2.1%	2.1%	1.7%
City of Johannesburg	2699.4	28.5	5.3%	2.0%	3.1%	2.7%
City of Tshwane	3458.4	58.7	5.4%	2.2%	1.8%	1.4%
Ekurhuleni	1077.6	36.7	4.3%	1.1%	3.3%	2.9%
Emalahleni	2129.9	48.4	2.9%	-0.4%	0.4%	0.0%
Emfuleni	129.8	29.1	4.1%	0.9%	1.4%	1.0%
eThekweni	214.2	39.8	4.5%	1.3%	5.4%	5.0%
Govan Mbeki	736.2	27.9	4.4%	1.2%	0.4%	0.0%
Mangaung	115.2	3.6	3.9%	0.7%	1.1%	0.7%
Mbombela	697.5	28.9	2.9%	-0.3%	1.1%	0.7%
Metsimaholo	134.9	88.1	6.9%	3.7%	0.2%	-0.2%
Midvaal	570.0	21.1	4.8%	1.6%	0.1%	-0.3%
Mogale City	364.8	11.4	4.9%	1.7%	0.4%	0.0%
Nelson Mandela Bay	252.4	60.5	3.9%	0.7%	1.5%	1.1%
Rustenburg	163.4	70.4	7.4%	4.2%	0.6%	0.2%
Sol Plaatjie	538.4	28.1	4.0%	0.8%	0.2%	-0.2%
Stellenbosch	459.3	50.4	4.6%	1.4%	0.1%	-0.3%
Steve Tshwete	658.0	17.9	3.6%	0.4%	0.2%	-0.2%
The Msunduzi	74.8	25.4	3.9%	0.7%	1.3%	0.9%
uMhlatuze	340.2	22.6	3.2%	-0.1%	0.9%	0.5%
Total	21249.5	-	-	-	26.8%	-

Source: Regional Economic focus (REF), authors own calculations

As can be seen in the table, the urban areas are not only large contributors to national economic growth, but also host a large fraction of South Africa's poor. Hence, as stated in the National Spatial Development Perspective, "the policy objectives of promoting sustainable economic growth and alleviating poverty operate largely in the same space" (NSDP 2006:71). All urban areas in the table belong to category one described in section 3.1, paragraph two, implying that they have an assessed medium to high economic potential and high population densities. Investments in these areas, in order to realize the potential and to achieve an encompassing growth, are therefore likely to have large effects in reducing the total number of persons living on less than one dollar per day in South Africa. As the table also shows, there is a relatively large variety in terms of average growth rates between the urban areas in the material. Rustenburg local municipality is the number one fast grower with an average growth rate of 7.4 percent over the period 2002-2006. This is 4.2 percent above the national average. At the very bottom is Mbombela local municipality with an average growth rate of 2.9 percent over the same period. This is 0.4 percent below the national average.

Based on the role of space in the wider regional economic development, the 21 key functional urban areas can further be divided into three different types of areas: *Core urban regions*, *Major urban areas* and *Significant urban service centres* (SACN 2006:26). *Core urban regions* have a size of more than 75 billion GVA per annum, a diverse economy with high GVA in almost all sectors and constitute a gateway to the global economy. The areas of Cape Town, Ekurhuleni, eThekweni, Johannesburg and Tshwane belong to this category. *Major urban areas* have a size of R9 to R75 billion GVA, a diverse economy but with areas of national economic significance only in a few sectors and provide similar functions as the Core urban regions but typically do not extend over provincial regions. The areas of Mangaung, Buffalo City, Emfuleni, Nelson Mandela Bay and Msunduzi belong to this category. *Significant urban service areas* have a size of R4.5⁹ to R9 billion GVA, typically have a one sector dominated economy and are of national significance in terms of GVA generated but have less impact on the immediate surroundings. These areas often stand out as an island in the sea of relatively low economic activity (SACN 2006:26). The areas of Govan

⁹ Lower limit determined by the SACN. If lowered other urban areas such as George, Polokwane, Newcastle, Klerksdorp, Potchefstroom, Umtala and Mafikeng also fall into this category.

Mbeki, Sol Plaatjie, Steve Tschwete, Midvaal, Mogale City, Mbombela, uMhlathuze, Rustenburg, Metsimaholo, Stellenbosch and Emalhleni belong to this category.

3.2 Determinants of Regional Economic Growth

In addition to the “classical” determinants of economic growth outlined in chapter 2 there are some additional place specific factors contributing to regional economic growth in South Africa. Drawing on so called New Economic Geography literature, Krugell and Naudé (2006) suggest agglomeration as one of the factors spurring regional economic growth in South Africa. The theoretical underpinning of this finding is that agglomeration tends to increase market size for firms, create spillover effects and reduce the negative effects of imperfect competition (Krugell 2006: 449). Additionally, as stated by Henderson (2000:2) a high degree of urban concentration is essential for a country to kickstart industrial development. Consequently, areas with high population densities are thought to represent the fast-growers in the South African spatial economy.

Following the same theoretical reasoning as for agglomeration, the geographical locality of a region is thought to have an impact on the growth performance of that specific region. In the case of South Africa, economic growth seems to be negatively associated with the distance to the main urban concentration, Johannesburg (Krugell 2006:454). To be located close to an urban settlement thus spurs economic growth on the one hand through an internal market effect but also by increased access to export markets. Important to the access of export markets is however not only geographical location but also the openness of the local economy. For South Africa, Krugell and Naudé (2006) find a positive relationship between the openness of the local economy measured as export share of GDP and economic growth. Areas that to a large extent have an open economy are hence expected to achieve rapid economic growth.

3.3 Local Governance in South Africa: Obligations, Opportunities and Initiatives

The institutional framework for government in South Africa was established in 1996 when the country adopted its first democratic constitution. Three elected spheres of

government were established, national government, provincial government and local government, each with distinctive functional responsibilities. In the constitution it is specified that the three spheres of government be required to function as a single system of cooperative government for the country as a whole (DPLG 2007:4). On the local level there are today 283 municipalities that are divided into three subcategories, according to size. These are from largest to smallest:

A municipality: The metropolitan municipalities

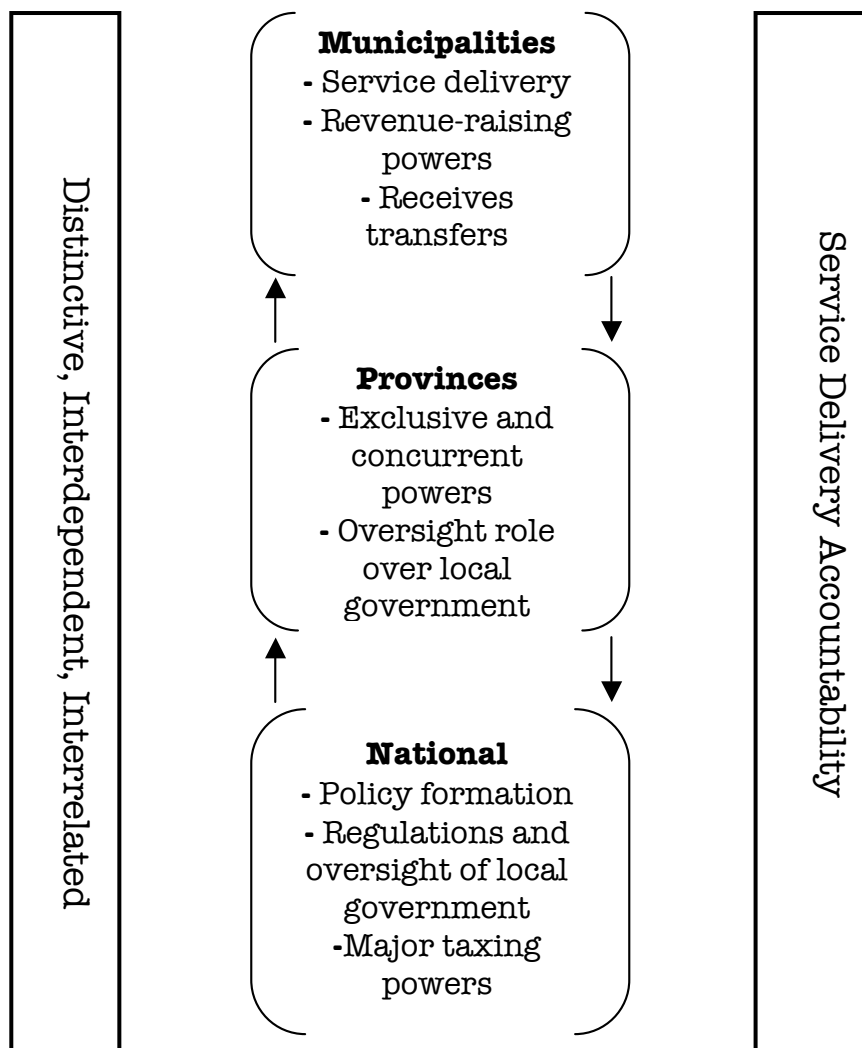
B municipality The district municipalities

C municipality: The local municipalities

Most of the municipalities in the data-set used in this study fall into category C. These do however belong to the largest municipalities within that category, implying that the municipalities in the study are typically larger than the average municipality size in terms of population.

The rights and responsibilities of the local government sphere are specified in the South African Constitution. It states that today local government is regarded as a sphere of government in its own right and is no longer a function of just one of the arms of provincial or national government (DPLG 2007:9). Section 156 (1) (a) of the Constitution allocates to municipalities the right to administer the local government matters listed in Part B of Schedule 4 and Part B of Schedule 5 to the Constitution¹⁰. In figure 2 the shared and concurrent powers of the different spheres of government in South Africa are specified:

¹⁰ For a detailed specification of these rights see The Constitution of the Republic of South Africa.

Figure 2: The Current Governance Model

Source: DPLG 2007

As specified in the figure, service delivery accountability is shared among the three government spheres, but municipalities have *distinctive powers* in service delivery as well as revenue raising powers. They also receive transfer payments in the form of grants and subsidies from higher levels of government, resulting in a dependency of municipalities on especially the provincial sphere of government. Today the reliance on grants and subsidies is significant among municipalities and constitutes a limitation to the municipalities' independence vis-à-vis the other spheres of government (Meeting with Sharon Lewis 24/6-08, Elhiraika 2007:11, Amusa et al. 2008:2). In South Africa the municipalities' lack of independence constitutes a problem as studies show that incomes derived from their own resources have a

higher and positive marginal effect on municipal expenditures and leads to more efficient spending (Amusa et. at. 2008:13) *Consequently, a local government that has the ability to cover its expenditures with its own sources of revenue will be more autonomous and possess more freedom to exercise its designated and distinctive powers.* In this respect, such a municipality can be considered better governed.

In Table 2 some distinctive powers of local, provincial and national governments are specified in more detail.

Table 2: Powers and Functions of Local Government

National	Provincial	Local
Health services	Health services	Municipal Health services
Housing	Housing	Building regulations
Industrial promotion	Industrial promotion	Local economic development
Road traffic regulations	Road traffic regulations	<i>Municipal roads, traffic and parking</i>
Electricity	-	<i>Electricity and gas reticulation</i>
Water	-	<i>Water and sanitation</i>
Airports	Airports other than international and national airports	Municipal airports
-	-	Stormwater management system in build-up areas
-	-	Refuse removals, refuse dumps and solid waste disposal

Source: DPLG 2007a, italics are the author's

Two areas of service provision are of particular importance in the table. According to a report from the South African Cities Network (SACN), the ability of local governments to guarantee reliable and consistent bulk services such as *water and energy*, along with the sustained maintenance of key *road infrastructure*, will serve as an increasingly powerful competitive advantage to private investors in the future (SACN 2008:22). Furthermore, according to the same report from SACN, it has become obvious that the provision of these bulk services cannot be taken for granted in the future. The municipalities that can guarantee such basic services therefore have a competitive advantage over the municipalities that cannot provide these services.

There seems to be little doubt that such a competitive advantage already exists in South Africa. According to David Madurai at the Department of Provincial and Local Government, both rural and urban area institutions do not have the capacity or the capability¹¹ to provide the services needed within their area of jurisdiction (Meeting 23/6-08). With no exceptions, there is a significant lack of competence in all spheres of government, he argues. This constitutes a major problem for the local governments, as an enabling environment is needed in order for the municipalities to attract investments (Madurai, meeting 23/6-08). According to Sharon Lewis at the SACN, however, the lack of capacity and capability seems to be a somewhat smaller problem for South Africa's more urban areas (Meeting with Sharon Lewis 24/6-08).

The view that local governance indeed matters is also supported by other actors within the field of local development in South Africa. Tim Mosdell at the Palmer Development Group for example argues that good governance may not necessarily be an issue but that bad governance and mismanagement at the local level certainly is (Meeting 2/7 -08). UNDP South Africa recognizes the importance of good governance and service delivery by focusing on the importance of capacity development for pro-poor growth in priority areas of service delivery and by providing policy advisory services on capacity development for enhanced service delivery (UNDP 2008b). Elhiraika (2007) contributes to the debate by arguing that South African sub-national governments have very little room to maneuver in terms of the

¹¹ Here capability refers to the knowledge necessary to be able to achieve something. Capacity refers to the resources necessary to be able to achieve the same thing.

link between sources of revenue and expenditure allocation, due to the design of the fiscal system. A result of this structural problem is that they are less responsive to the preferences of local people and they are less accountable to them (Elhiraika 2007:21). Municipalities that are able to respond to the demand of basic services delivery, such as water and electricity provision can therefore be considered more accountable to local people and hence more well-governed than municipalities that are unable to do so. That successful expenditure on basic service delivery is a proxy for good governance has also been shown in severe protests on the quality of service provision as well as in the 2006 municipal elections that almost took on the character of a referendum on service delivery (Booyesen 2007:21). The election, which was preceded by heavy protests on service delivery, had a higher voter turnout than the previous election, indicating that municipal citizens took the chance to vote for improved service delivery¹² (Booyesen 2007:29). As protests on lack of service delivery also show, in South Africa, demand for quality service delivery by far outstrips supply¹³. Only during the period March 2004 to end of February 2005, 5085 legal protests and 881 illegal protests over service delivery were reported to the South African Parliament (Booyesen 2007:23). Protests have occurred in all South African provinces but have been especially severe in the metropolitan and urban areas.

From the above reasoning it can be concluded that in South Africa, municipalities can be considered well-governed if they are: 1) Less dependent on subsidies and grants from other spheres of government, 2) Have the capacity and the capability to respond to the demand of basic service provision in the form of water and energy and 3) Have the capacity and the capability to provide and maintain key road infrastructure. On the national level there are already several programs that address the lack of capacity and capability in local governments. The remaining sections of this chapter provide a summary of the national plans already in place.

¹² Quite counter-intuitively the support for the ruling party, ANC, actually increased in the 2006 election. One explanation for this is an extremely high voter loyalty in ANC (approximately 95 percent) connected to the role of the party in winning majority rule (Booyesen 2007:29).

¹³ . In 2007, for example, 30.5 percent of South Africa's' population lacked access to piped water either in their dwelling or yard, and 33.6 percent lacked electricity for cooking (Statistics South Africa 2007)

3.3.1 National and Sub-national Plans for Local Economic Development

3.3.1.1 The LED

In South Africa there is one program specifically dedicated to recognizing the role of local governance in development. Initiated in the immediate post-apartheid period, the National Framework for Local Economic Development (LED) functions as the blueprint on which economic development at the local government level finds its expression. In the early years of LED the focus tended to be on municipal interests focused on ad-hoc development projects which, however, often proved difficult for municipalities to fully grasp and satisfactorily implement. Some metro municipalities even rejected the LED in favor of more comprehensive frameworks such as the one provided by the SACN (DBSA 2008:4, Rogerson 2007:2). Consequently, during recent years, there has been a significant shift in the emphasis of LED at the local level.

The new LED approach represents a more strategic approach to the development of local economies with a focus on joint action across government spheres and on engaging key roleplayers in the economy, including the private sector (Rogerson 2007:5). The new approach does (inter alia) involve the recognition that: 1) Government has a key role to play in shaping the economic destiny of South Africa 2) Local economic development results from local governance 3) Private companies, including social enterprises and cooperatives, are at the heart of economic development and 4) there is a need for a strong focus on municipalities for creating an enabling a healthy environment for the different actors in the local economy. The last point indicates that the role of municipalities is not necessarily to embark on different development projects and to function as employment provider, rather, the new role of local government is to create an *enabling environment* in which other roleplayers can conceptualize and implement viable projects that contribute to economic growth and development in the area (Nel 2001:356pp.). This function aligns well with the definition of institutions provided by Douglass North saying that: "*Institutions are the humanly devised constraints that structure human interaction. They are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behaviour, conventions, and self imposed codes of conduct), and their enforcement characteristics. Together they define the incentive structure of*

societies and specifically economies” (North 1993). Thus, instead of investing in ad-hoc projects, the role of the national government is to ensure that local governments have the capacity and the capability to form institutions that create the incentives for economic development of the region within its jurisdiction. Put differently, as institutions influence how firms and individuals in the economy transact, it is the role of the local government to ensure that the transaction is done in a way that spurs economic development.

3.3.1.2 The National Spatial Development Perspective

On the national level there is also the National Spatial Development Perspective (NSDP), which is a national framework with the ultimate purpose to eradicate the damage caused by decades of colonization and apartheid manipulation of settlement patterns and economic activity in South Africa. As such, the framework brings a geographic dimension to the growth and development plans described above. The NSDP is not a development plan in and of itself, but comes with assessments and recommendations for spending and investment decisions in South Africa. It is, therefore, very influential in directing funds both from the side of the national government and from outside development funding such as, for example, The Development Bank of Southern Africa. Beyond local governments’ constitutional obligation of service delivery, stated in section 3.3, according to the NSDP, government spending should be focused on localities of economic growth and/or economic potential in order to attract private sector investments, stimulate economic activities and create long-term employment opportunities (NSDP 2006:5). According to the NSDP, in contrast to the apartheid spatial planning system and in order to address past and current inequalities, the focus should be on people, not places.

This policy implies a classification of municipalities based on demonstrated economic potential and, accordingly, also on different growth strategies across municipalities. Thus, in places with high poverty and high demonstrated economic potential, this could imply a recommendation of fixed capital investments beyond basic service delivery in order to realize the economic potential of that area (NSDP 2006:6). In places with low economic potential but high poverty it could instead mean a recommendation of investments in education and training to spur human capital development. In the NSDP, it is also assumed that localities with high economic

potential have the best opportunities to overcome problems with poverty and that poor people make rational choices about relocating to areas with higher economic potential. Thus the NSDP emphasizes the importance of government policies and programs being in place, ensuring that poor are able to benefit from development and economic growth in such areas. Furthermore, in order to overcome the distortions of apartheid spatial planning, future economic development opportunities should be channeled into activity corridors and nodes that have the potential to link the main national growth centers. Moreover, infrastructure investments should mainly be focused on locations that are likely to become national centers of economic growth and that have the potential to function as a gateway to the global economy. As outlined earlier in this chapter the functional urban areas in focus in this study are already considered to be economic centers in the South African spatial economy or at least have the potential to develop into such. Therefore, the decision to concentrate on these areas is in line with the National Spatial Development Perspective.

3.3.1.3 Capacity and Capability Building -LOGOLA and the LEDF

In order to mitigate the lack of competence in local governments described earlier, the Department of Provincial and Local Government has established the Local Government Leadership Academy (LOGOLA), which aims to increase the capability of the managers working for local governments. The LOGOLA uses a “four skills program” in order to enhance emotional intelligence, effective communication, problem-solving and analytical thinking, and communal knowledge management skills in the local governments (Darlene Farmer, Meeting 23/6-2008). Today however, the program is small and still in its infancy, meaning that concrete results from the program have thus far been sparse.

Another interesting program engaged with capacity and capability building of local governments in South Africa is the Local Development Fund (LEDF), initiated by the Development Bank of Southern Africa (DBSA). Within the DBSA’s regular development fund, the bank runs the LEDF, which is a program focusing on recruiting and deploying expertise to struggling municipalities as a means of capacitating them for service delivery (DBSA 2008:8). The original LEDF was initiated in August 2007. In an updated version of the program the bank has recently made plans to move

beyond the provision of basic services by extending the program to also include provision of “catalytic economic infrastructure” (DBSA 2008:8). The vision of the LEDF to “ stimulate a reconfiguration of the space economy by unlocking economic potential within identified localities to drive share growth” will inter alia be achieved by building institutional capacity to nurture self-capitalising incentives (DBSA 2008:8-9). The fund will do so by providing both funds and management assistance from project initiation to implementation. Target areas will mainly be the ones that have demonstrated a medium to high economic potential.

3.4 Chapter Summary

This chapter draws a number of important conclusions: First, local governments have an important and recognized role to play in spurring local economic development and fighting poverty in South Africa. The importance of good local governance is emphasized both by experts on sub-national governance and in national government programs. Second, municipalities that are able to respond to the local demand for basic services in the form of water, electricity and infrastructure and are less dependent on financial support from other spheres of government have a competitive advantage on municipalities that do not have this ability. These municipalities can therefore be considered better governed. Third, local governments have an important function in creating an “enabling environment” for the local business sector and the local community. This approach aligns well with the definition of institutions provided by Douglass North.

In the next part of the thesis the empirical framework of this chapter and the theoretical framework of chapter three is combined to create a model for local economic growth in South Africa. The model is used in an econometric analysis that investigates the linkage between sub-national governance and economic growth in South Africa.

4. Model, Results and Discussion

Having identified the main determinants of local economic growth in South Africa as well as the role and the importance of local governance, in this chapter the variables of the econometric model are introduced and the model is specified. Late in the chapter the results from the regression analysis are also presented and discussed.

4.1 Model specification

Panel data regression offers *at least* two different options¹⁴ when choosing the appropriate specification of the econometrics model. *The fixed effects model* controls for omitted variables that change over time but are constant between cases. Thus the model allows the researcher to use the variation between cases in order to estimate the effect of omitted independent variables on the dependent variable. *The random effects model* is used when there is reason to believe that some omitted variables are constant over time but vary between cases, and others may be fixed between cases but vary over time. Compared to the fixed effects model, this option takes more information into account and provides better p-values, as they are more efficient estimators (Plümper 2005:3). Therefore the random effects model should be used if it is statistically justifiable to do so. Although the random effects model is the more efficient estimator, it does not, however, always provide consistent results. Therefore it is not always suitable for all types of panel data regression. The fixed effects model stands in contrast to random effects as it is always appropriate for panel data regression, giving at all times consistent estimators (Plümper 2005:3).

The generally accepted way of choosing between the models is to run a Hausman specification test that compares the random effects and the fixed effects estimates. If these are not statistically different from one another, it is safe to use the random effects model (Park 2008:3). Otherwise a fixed effects model should be used. For the panel data used in this thesis, the Hausman test¹⁵ strongly rejects¹⁶ the hypothesis

¹⁴ There is also a third model, the between effects specification, that controls for omitted variables that change over time but are constant between cases. This procedure is equivalent to taking the mean of each variable for each case across time and running a regression on the collapsed dataset of means. As this results in loss of information, between effects are not used much in practice.

¹⁵ The full test result is provided in the appendix

that the difference in coefficients is not systematic. A fixed effects model is, hence, the more correct specification.

As the purpose of this study is not to test a specific growth model, I follow Barro (1991) and Naudé and Krugell (2006) in using a general fixed effect panel data regression model on the form:

$$\ln y_{i(t+1)} - \ln y_{i(t)} = (\alpha_i + \mu_i) + \beta X_{it} \quad (1)$$

where the error terms are assumed to be approximately independent and identically distributed with expected value 0 and standard deviation σ^2 . The term $y_{i(t)}$ is per capita income for urban area i and X_{it} is a vector of different determinants of local economic growth rates, α_i are the individual effects, and u_{it} is the error term. Following economic growth theory and empirical findings presented in chapter two and three, the vector of determinants of local economic growth rates includes measures on human capital, the openness of the local economy, initial resource endowment, agglomeration, demography, physical geography and governance. Unfortunately, the fixed effects specification of the model makes it impossible to control for convergence, implying a risk that the growth rate of one urban area is affected by or affects the growth rate of neighboring urban areas. As the map in figure 1 shows, the urban areas of concern in this study are fairly evenly distributed over the geographical space; only a few of them are actually neighboring one another. The risk of spuriousity associated with convergence is mitigated by this fact and spuriousity is therefore likely to be less of a problem in this material.

Data on human capital, the openness of the local economy, initial resource endowment, agglomeration, demography and physical geography are obtained from the Regional Economic Focus (REF), described in the appendix. Among the vector of determinants, *human capital* is measured as the percentage of the population in each urban area holding a matriculation¹⁷ and PhD-degree. Higher education is included in the human capital measure, because including only matriculation does not add enough variation between places. Also, mere matriculation figures not create an

¹⁶ Prob>chi2 0.0002

¹⁷ In South Africa, matriculation refers to the final year of high school and the qualification received on graduating from high school.

accurate measure of human capital in South Africa. This follows Fedderke (2001) who shows that raw matriculation pass rates do not form a legitimate standard of comparison and that only the proportion of matriculating students in mathematics, and the proportion of degrees issued in natural, engineering and mathematical sciences, made a significant contribution to productivity growth in South African manufacturing (pp. 36-40). Because such indicators of high-quality screening by the education system are not available at municipal level, the number of PhDs in a municipality is used as a measure of human capital. The coefficient in front of the human capital variable is expected to have a positive sign. Population density, measured as the number of people per square kilometer, serves as an indicator on the level of *agglomeration* in each urban area. Also here a positive sign is expected. Likewise, exports as percentage of the municipalities GVA is used as a measure of the *openness of the local economy* and is expected to be positively related to local economic growth. The share of workers in the mining sector is used to estimate *initial resource endowments* of the locality. Also for this variable the relationship is expected to be positive. As measure of *physical geography* the average rainfall of each urban area is used. This variable captures the historical importance of being located in an area suitable for agriculture rather than the effect of rainfall on urban area growth today. Therefore it is a geographical/historical explanatory variable, and a positive sign is expected. Finally, economically active population as a percentage of total population is used to capture the effect of the *demographic composition* of the population on local economic growth. Also here a positive sign on the coefficient is expected.

As measure of governance, two different indexes were constructed. The construction of the indexes followed Zietsman et al. (2006) and Krugell, Otto and Van der Merwe (2007). First, standardized values were calculated for every index component, for example, “reliance on subsidies and grants as percentage of total capital expenditure”. After that, the standardised z-scores were summed per locale to derive the compound index of governance. Standardised z-scores were computed by the formula:

$$z_{ik} = \frac{x_{ik} - \bar{x}_{ik}}{\sigma_k}$$

where x_{ik} is the raw value of variable k for the urban area, i ; x_k is the mean value of variable k for all urban areas and σ_k is the standard deviation of the variable k . The z-score of variable k has a mean value of zero and a standard deviation of one. The result is that urban areas that have values above the urban area average for an index component have positive z-scores. Urban areas that have negative z-scores have values below the urban area average. The z-scores of the different variables are comparable across the urban areas and are added to create the governance index.

Following the definition of the well-governed urban area provided in the final part of section 3.3, the indexes were built on data from municipal budgets, collected and provided by the South African Municipal Demarcation Board. In South Africa, municipal budgets are divided into one operating side and one capital budget side. The operating budget reports operating expenditures such as wages, repairs and maintenance, bulk purchase on water and bulk purchase on electricity. The capital budget reports budgeted expenditures on capital investments, such as road infrastructure, electricity reticulation and water reticulation. As operative expenditures and capital expenditures may both be proxies on good governance as it is defined in section 3.3, two different indexes were constructed.

The governance index used in *model one*, is compiled of five different components:

1. Urban area reliance on subsidies and grants as percentage of total capital expenditure,
2. Expenditure on water reticulation as percentage of total capital expenditure,
3. Expenditure on electrical reticulation as percentage of total expenditure,
4. Expenditure on road infrastructure as percentage of total expenditure and
5. Capital budget expenditure as percentage of total budget expenditure.

All components except “reliance on subsidies and grants” are assumed to make a positive contribution to the total index value. The “reliance on subsidies and grants” component is assumed to make a negative contribution. As a whole the index is expected to be positively related to economic growth of the urban area.

The governance index, used in *model two*, is compiled of four different components:

1. Urban area reliance on subsidies and grants as percentage of total capital expenditure
2. Expenditure on bulk water as percentage of total operating expenditure
3. Expenditure on bulk electricity as percentage of total operating expenditure and
4. Expenditure on infrastructure repair and maintenance as percentage of total operating expenditure.

In contrast to the governance index used in model one, the governance index used in model two captures the effect of operating expenditures instead of capital expenditures. The governance index used in model 2 is also expected to have a positive sign.

Regarding robustness of the model, tests for heteroskedasticity and autocorrelation indicate the presence of both in the model¹⁸. To correct for these very common but unwanted features, OLS linearization/Huber/White/sandwich estimates of standard errors are used. The advantage of using these estimates is that they are robust to more than panel-level heteroskedasticity (Wiggins, 2001). In particular, they are robust to any type of correlation within the observations of each panel/group. There is no indication of multicollinearity in the model¹⁹.

4.2 Results and Discussion

Table 3 on the next page shows the results from the first regression analysis.

¹⁸ Test results are provided in the appendix

¹⁹ A correlation table is included in the appendix

TABLE 3 - REGRESSION RESULTS

Model 1			Model 2		
	Dependent variable			Dependent variable	
Regressors	Economic Growth	P-value	Regressors	Economic Growth	P-value
Agglomeration	0.0000443 (0.0000320)	0.183	Agglomeration	0.0000543 (0.0000334)	0.12
Demography	1.0048540 (2.5600000)	0.183	Demography	0.8045865 (0.3153082)	0.019**
Human capital	11.2490400 (6.3837970)	0.094***	Human capital	10.1682500 (5.5697950)	0.084***
Physical geography	0.0000342 (0.0000147)	0.031**	Physical geography	0.0000347 (0.0000125)	0.012**
Initial resource endowments	-0.1484451 (0.1504230)	0.336	Initial resource endowments	-0.1261276 (0.1374377)	0.37
Openness	-0.0052608 (0.0113343)	0.648	Openness	-0.0056260 (0.0129864)	0.67
Governance Index (Capital)	-0.0044664 (0.0024132)	0.08***	Governance Index (Operating)	0.0032870 (0.0018632)	0.094***
R ² :					
Within	0.3095			0.2717	
Between	0.0864			0.0571	
Overall	0.0092			0.0049	
Number of observations:	95			95	

Notes: Standard errors in parenthesis

***, ** and * indicate if the coefficient is significant at the 1, 5 or 10 % level, respectively

As can be seen in the table, human capital, physical geography and the governance indexes show significantly in both models. In the first model however, the governance index comes with an unexpected negative sign. The demography variable has the expected sign in both models but its value is statistically insignificant in the first one. Agglomeration has the “right” sign but is insignificant in both models. Two variables, initial resource endowments and openness of the local economy, surprisingly come with negative signs, but both are also highly insignificant.

In a second regression, the variables “initial resource endowments” and “openness of

the local economy” are therefore dropped. This provides me with the following, improved model:

TABLE 4 - REGRESSION RESULTS

Model 1			Model 2		
Regressors	Dependent variable		Regressors	Dependent variable	
	Economic Growth	P-value		Economic Growth	P-value
Agglomeration	0.0000556 (0.0000300)	0.079***	Agglomeration	0.0000602 (0.0000313)	0.069**
Demography	0.8608388 (0.3535288)	0.024**	Demography	0.7825366 (0.2762733)	0.01*
Human capital	9.4419030 (5.4155010)	0.097***	Human capital	9.4422870 (4.6897780)	0.058***
Physical geography	0.0000319 (0.0000143)	0.037**	Physical geography	0.0000315 (0.0000120)	0.016**
Governance Index (Capital)	-0.0049925 (0.0027693)	0.087***	Governance Index (Operating)	0.0032511 (0.0017744)	0.082***
R ² :					
Within	0.3059		0.2643		
Between	0.1549		0.1151		
Overall	0.008		0.0075		
Number of observations:	91		97		

Notes: Standard errors in parenthesis

***, ** and * indicate if the coefficient is significant at the 1, 5 or 10 % level, respectively

In this model all of the variables are significant and all but one come with the expected sign. The R²-value has not changed dramatically compared to the first regression and indicates a good fit within panels and a moderately good fit between panels. As expected, the coefficients of the variables agglomeration, physical geography, human capital and demography are all positive and significant. The demography variable is even significant at the one percent level. This is in line with

both theory and the empirical findings presented in earlier chapters. In model 1 the governance index comes out significant but again with the unexpected negative sign. This result is fairly surprising as it does not square with theory outlined in chapter three. The governance index used in model 2 is, however, significant and comes with a positive sign.

The results hence suggest that municipalities that are well governed in the sense that they are able to respond to the local demand of basic service delivery will achieve high economic growth over a five-year period, all other things equal. More surprisingly, they also suggest that municipalities that devote a large fraction of their budgets on capital investments will achieve lower economic growth over a five-year period, all other things equal. It is however reasonable to believe that this result has more to do with the time perspective applied, and less to do with the linkage between capital investments and economic growth. Infrastructure projects often have such long leads and lags that their effect does not show in the data. It may also be the case that all infrastructure spending does not show up in local government numbers as some of it is taken by parastatals. Successful operating expenditure is however a proxy for good governance and it is positively related to growth.

5. Concluding Remarks

This thesis examines the importance of local governance for local economic growth in South Africa. By looking into a data-set of 21 functional urban areas and using two separate indexes as indicators on good governance, the linkage between economic growth and local governance is investigated over a period of five years. The indexes are based on the same indicators on governance, but with operating and capital budget data used separately. The main finding is a positive relationship between local economic growth and sub-national governance when operating data is used, but a negative relationship between local economic growth and sub-national governance when capital data is used. This is an interesting finding.

First, and most importantly, it suggests the quality of local governance to be central to local economic growth in South Africa. This finding lends support to recent theory on economic growth, suggesting institutions and governance to be important factors behind the economic performance of countries and regions. The result is also encouraging, as it is in line with the national government's decision to include governance as one important factor behind local economic development in national economic development programs. Consequently, in the struggle towards improved national economic performance, halved poverty and halved unemployment in South Africa by 2014, efforts to strengthen the capacity and capability of local governments are likely to have a high pay-off. As not all local governments have the ability to satisfy local demand for basic service delivery and create an "enabling environment" for both the business sector and the community, this is likely to become a competitive advantage for local governments in the future.

Second, when comparing the results of the two different models, they suggest that how resources are divided between operating expenditures on basic service delivery and capital investments is important to the economic growth of the locality. For the period 2002-2006, municipalities that have spent a large fraction of their operating budget on basic service delivery have also been able to achieve high economic growth, all other things equal. For the same period, municipalities that have spent a large fraction of their capital budget on infrastructure investments in order to be able

to offer these basic services have obtained low economic growth, all other things equal. This does not square with economic growth theory suggesting capital investments to be more important to economic growth than operating expenditures, at least in the long run. The result is however somewhat misleading. Rather than saying something about the relationship between capital investments and economic growth, the results suggest that the effect of capital investments simply have not been able to transfer into economic growth due to the fairly short time period. If the time period was to be extended to a period of 15-20 years, there is reason to believe that investments in water, electricity and infrastructure as proxy for good governance would also be positively related to growth. The short time perspective of this study precludes definitive conclusions on this matter.

Despite the specific focus on sub-national governance in South Africa I believe that the conclusions drawn in this thesis may also be applicable to other African countries. Indeed, the debate on the relationship between economic growth, governance and institutions is very much global. On the South African side, I hope this study will contribute to additional research efforts within the field of spatial economic growth and sub-national governance. A good starting point for such efforts would be to have a look at an extended time period in order to be able to more fully capture the effects of governance on economic growth over time. This, however, presupposes improvements in data availability. Of much value would also be further improvement in the accuracy of the governance measure, possibly also to include capacity assessment measures which, as of today, are not available for the metropolitan areas of South Africa. This needs to be more thoroughly examined and constitutes an excellent topic for a forthcoming study.

6. References

Acemoglu, Daron; Johnson, Simon, Robinson, James. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation", *American Economic Review* 91(5) 1369-1401.

Amusa, Hammed; Mabunda, Robert; Mabugu, Ramos. 2008. *Fiscal Illusion at the Local Sphere: An Empirical Test of the Flypaper Effect using South African Municipal Data*, ERSA working paper nr 72, Available at: http://www.econrsa.org/working_papers.html, Retrieved 2008-08-25

AsgisSA 2008. *Accelerated and Shared Growth Initiative for South Africa*. Available at: <http://www.info.gov.za/asgisa/asgisa.htm>, Retrieved: 2008-08-20

Barro, Robert. 1999. "Determinants of Democracy" *Journal of Political Economy* 107(6-2), 158-183.

Baumol, William J, 1990. "Entrepreneurship: Productive, Unproductive, and Destructive", *Journal of Political Economy*, vol. 98, 893–921

Benham, Alexandra; Benham, Lee. 2001. *The Costs of Exchange*. Working Paper Number 1 July 2001, Ronald Coase Institute.

Booyesen, Susan 2007. "With the ballot and the brick: the politics of attaining service delivery" *Progress in Development Studies* 7, 1 (2007) pp. 21–32

Coase, Ronald. 1960. "The problem of Social Costs". *Journal of Law and Economics*, 3(1), 1-44.

DBSA 2008. *Local Development Fund – Concept and Modus Operandi*. Final, 13th February 2008.

DPLG 2006 *Stimulating and Developing Sustainable Local Economies – National Framework for LED*. Available at: <http://www.thedplg.gov.za/subwebsites/led/docs/National%20LED%20Framework%20Jan%202007.pdf>, Retrieved: 2008-08-20

DPLG. 2007a. *Policy Process on the system of Provincial and Local Government – Background: Policy questions, process and participation*. Department of Local and Provincial Government Republic of South Africa.

DPLG. 2007b. *Guidelines on allocation of Additional Powers and Functions to Municipalities*, Department: Provincial and Local Government Republic of South Africa.

Elhiraika, Adam 2007. Fiscal Decentralization and Public Service Delivery in South Africa. ATPC Project Paper for the Economic Commission of South Africa. Available at: <http://www.uneca.org/atpc/Work%20in%20progress/58.pdf>, Retrieved 2008-08-25

Fedderke, Johannes. 2001. *Explaining the growth absence: Reviewing the evidence that can account for the poor growth performance of the South African economy.* Paper presented at the TIPS Annual Forum. Misty Hills, Muldersdrif, South Africa.

Glaeser, Edward L. 2004. "Do institutions cause growth?" *Journal of Economic Growth*, 9, 271-303.

Hall, Robert E; Jones Charles I. 1999. Why Do Some Countries Produce So Much More Output Per Worker Than Others?" *The Quarterly Journal of Economics*, Vol. 114, No. 1 (Feb., 1999), pp. 83-116

Henderson, Vernon J. 2000. *How urban concentration affects economic growth*, Working Paper, Infrastructure and Environment, Development Research Group, World Bank. Washington DC

Hodgson, Geoffrey 2006. "What are institutions?" *Journal of Economic Issues*. Vol.XI, No.1 March 2006.

ITPS – Swedish Institute For Growth Policy Studies. 2007. *State of the Regions 2007*. Publication A2008:001 (Swedish version), Östersund.

Jones, Charles I, 2002. *Introduction to Economic Growth*. 2:nd edition. New York: W.W Norton.

Kaufmann, Daniel; Kraay, Aart 2003. *Governance Indicators: Where Are We, Where Should We Be Going?*. Policy Research Paper 4370, World Bank Institute

Kaufmann, Daniel; Kraay, Aart. 2002. *Growth Without Governance*, World Bank Policy Research Working Paper 2928, November 2002

Knack, Stephen; Keefer, Philip. 1995 "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures," *Economics and Politics* 7(3), November, 207-27.

Khan, Mushtaq H. 2007. "Governance, Economic Growth and Development since the 1960s". *DESA Working Paper No. 54*

Krugell, Willem F; Naudé, Wim A. 2006. "Sub-national growth rate differentials in South Africa: an econometric analysis" Paper in *Regional Science*, Volume 85 Number 3 August 2006.

Krugell Willem F; Hannelie, Otto; Van der Merwe, Jackie 2007. To make a better life happen where people live: Evidence from the South African Community Survey 2007. Available at: <http://www.regional-studies.assoc.ac.uk/events/prague08/papers/krugell2.pdf> Retrieved: 2008-08-20

Lipset, Seymour Martin. 1960. *Political Man: The Social Basis of Modern Politics*. New York: Doubleday

Mankiw, Gregory; Romer, David; Weil, David. 1992. "A Contribution to the Empirics of Economic Growth", *Quarterly Journal of Economics*, 107, May 1992, 407-37.

Montesquieu, Charles de Secondat. 1748. *The Spirit of the Laws*. Paris

Nel, Etienne; Binns, Tony. 2001. "Initiating Developmental Local Government in South Africa: Evolving Local Economic Development Policy". *Regional Studies*, Vol. 35.4, pp. 355-370, 2001

North, Douglass C. 1993. Nobel Prize lecture, December 9, 1993, Available at: http://nobelprize.org/nobel_prizes/economics/laureates/1993/north-lecture.html Retrieved: 2008-08-20

North, Douglass C. 1990. *Institutions, institutional change and economic performance* Cambridge : Cambridge University Press.

National Spatial Development Perspective (NSDP) 2006. The Presidency Republic of South Africa. First print, March 2007.

Park, Hun Myoung. 2008. *Linear Regression Models for Panel Data Using SAS*, Indiana University. Available at: <http://www.indiana.edu/~statmath/stat/all/panel/panel.pdf> Retrieved: 2008-08-20

Plümper, Tomas. 2005. "Efficient Estimation of Rarely Changing Variables in Fixed Effects Models" Paper presented at the annual meeting of the The Midwest Political Science Association, Palmer House Hilton, Chicago, Available at: http://www.allacademic.com/meta/p84516_index.html Retrieved 2008-08-22

Przeworski, Adam. 2004 *Geography versus Institutions: Were Fortunes Reversed?* Available at: <http://as.nyu.edu/docs/IO/2800/reversal.pdf> Retrieved: 2008-08-20

Rodrik, Dani; Subramanian, Arvind. 2004. "Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development," *Journal of Economic Growth*, Springer, vol. 9(2), pages 131-165

Rogerson, Christian M. 2007. *Local Economic Development*. ISANDLA Institute. unpublished paper.

Romer, Paul M. 1994. „The Origins Endogenous Growth.“ *Journal of Economic Perspectives* 8 (Winter):3-22

Rotberg, Robert I. 2007 "Africa's Successes: Evaluating Accomplishment." Program on Intrastate Conflict, Belfer-WPF Report 43, November 20, 2007. Page 2.

Sachs, Jeffrey; Gallup, John; Meelinger, Andrew. 1998a. Paper prepared for the Annual Bank Conference on Development Economics, Washington, D.C., April 20-21, 1998. Available at: <http://www.worldbank.org/html/rad/abcde/sachs.pdf>, Retrieved 2008-08-25

Sachs, Jeffrey; Bloom, David. 1998b. Geography, Demography, and Economic Growth in Africa, Paper published by Harvard Institute for International Development, Available at: <http://www.cid.harvard.edu/archive/malaria/docs/brookafr.pdf> , Retrieved: 2008-08-25

Sachs, Jeffrey; MacArthur, John; Schmidt-Traub, Guido; Kruk, Margareth; Bahadur, Chandrika; Faye, Michael, McCord, Gordon. 2004. "Ending Africa's poverty trap" *Brookings Papers on Economic Activity* 1: 117-240.

South African Cities Network (SACN) 2008. Urban Development Incentives. Circulated as an insert in Delivery Magazine May 2008. <http://www.sadelivery.co.za> Retrieved: 2008-08-20

South African Cities Network (SACN) 2006. *State of Cities Report 2006* Available at: http://www.sacities.net/2004/may30_nation.stm Retrieved: 2008-08-20

Smith, Adam. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*. London

Solow, Robert M, 1956. „A contribution to the Theory of Economic Growth.“ *Quarterly Journal of Economics* 70 (February) :65-94.

Statistics South Africa, 2007. *Community Survey 2007*. Available at: <http://www.statssa.gov.za/publications/statsdownload.asp?PPN=P0301.1&SCH=4117> Retrieved 2008-08-25

Stiller, Sylvia; Niebuhr, Annetrin. 2003. "Territorial Disparities In Europe". *Intereconomics* May/June 2003.

The Economist Intelligence Unit. 2008. *EIU Country Data*. Available at <http://www.eiu.com> Retrieved: 2008-08-20

The Constitution of the Republic of South Africa, Available at: <http://www.info.gov.za/documents/constitution/index.htm> Retrieved: 2008-08-20

The Municipal Demarcation Board 2008. *Municipal Profiles*, Available at: <http://www.demarcation.org.za/MunicProfile2006/index.aspx>, Retrieved 2008-08-25

The Services Corporation 1998. *USAID Executive Summary, The Investor Roadmap to Tanzania*, (Unpublished Report)

UNDP 2008a. *Good Governance and Sustainable Human Development* Available at: <http://mirror.undp.org/magnet/policy/chapter1.htm> Retrieved: 2008-08-20

UNDP 2008b *UNDP in South Africa* Available at: <http://www.undp.org.za/>, Retrieved 2008-08-25

UNESCAP 2008. *What is Good Governance?* Available at:
<http://www.unescap.org/pdd/prs/ProjectActivities/Ongoing/gg/governance.asp>
Retrieved: 2008-08-20

Wallis, John; North, Douglass. 1986. "Measuring the Transaction Sector in the American Economy" *Long Term Factors in American Economic Growth*, Chicago: University of Chicago Press.

Wiggins, Vince. 2001. *Comparing xtgls with regress, cluster()*. StataCorp. Available at: http://www.stata.com/support/faqs/stat/xtgls_rob.html Retrieved: 2008-08-20

World Bank 2008. *Governance Matters 2008- Worldwide Governance Indicators 1996-2007* Available at: <http://info.worldbank.org/governance/wgi/index.asp>
Retrieved: 2008-08-20

Zietsman, Josias; Rilett, Laurence; Kim Seung-Jun. 2006. "Transportation corridor decision-making with multi-attribute utility theory" *International Journal of Management and Decision Making*, Volume 7, number 2-3/2006.

Interviews Conducted

Farmer, Dalene, Representant, Local Government Leadership Academy, Department of Local and Provincial Government
Interview 23/6-2008s

Lewis, Sharon, Knowledge Manager, South African Cities Network,
Interview 24/6-2008

Madurai, David. Chief Director Development Planning, Department of Local and Provincial Government,
Interview 23/6-2008

Mosdell, Tim, Director, Palmer Development Group
Interview 2/7-2008

Appendix 1.

This appendix describes the definition and compilation of the variables used in the empirical analysis (Source: Krugell 2006, minor changes by the author; “magisterial district” replaced by “municipality”):

Empirical studies of sub-national growth and convergence are often constrained by the availability of data. Currently, South Africa has only one comprehensive sub-national database. It is, in fact, a system of integrated databases known as the Regional Economic Focus (REF) that provides information for each municipality over this period. The REF database is compiled by Global Insight Southern Africa and draws together many different sources of sub-national economic information from Statistics South Africa, government departments, development agencies and Regional Services Councils. The data components are internally consistent and add up to national totals. A number of indicators of the economies and people of the municipalities are used in this research note. The precise definition and compilation of these variables are as follows.

Gross Value Added (GVA) by region is used as a measure of economic activity. It is a proxy for income and is used for the variables income per capita and growth of income per capita. The GVA statistics differ from Gross Domestic Product (or Gross Geographic Product) in that it excludes “Other taxes on products” and “Other subsidies on products”, which are not available on a regional basis. The compensation of employees on a regional level and GVA by sector is, however, available and therefore it is possible to derive estimates of GVA at municipality level.

The human capital measure is an education measure – the number of people per locality with matriculation and a PhD.

The measure of initial resources is an estimate of the mineral endowment of each municipality. It is calculated as the number of workers in the mining sector relative to the total workforce. The number of persons employed in the mining sector was benchmarked on municipality level estimates of employment in the mining sector obtained from the Minerals Bureau. Export share is used as a measure of the openness of the local economies. It is the value of exports from the municipality expressed as a percentage of the GVA of the locality.

The export statistics are collected by the South African Revenue Services’ Department of Customs and Excise. The postal code of the post office or street address of the exporter is captured as part of the documentation of a particular transaction. In the REF the postal codes are mapped to the municipality to calculate exports by municipality. The magisterial allocations are then benchmarked to the national totals as contained in the South African Reserve Bank Quarterly Bulletin. It is important to note a peculiarity of the export share measure. The exports are measured at current world prices, which would contain taxes and subsidies not included in value added. This explains why it is possible for a municipality to have an export share greater than 100 percent.

Population density is used as a measure of market size and agglomeration. This is defined as the number of persons per square kilometers. The distance variables used in the analysis were obtained from outside the REF.

The rainfall data is sourced from the South African Weather Service. The data are obtained on weather station level. The average rainfall is calculated from the weather stations that are geographically within each municipality.

Economically active population as percentage of total population is a measure of the demographic composition of the municipality’s population. The data is also from the REF.

Appendix 2.

This appendix contains STATA 9 test results as support of the chosen model specification.

Appendix Table 1: Hausman Test for Fixed/Random Effects Panel Regression

---- Coefficients ----	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
Population Density	0.0597579	0.0021519	0.0576061	0.0531291
Rain1000	0.0164234	0.008276	0.0081474	0.0056627
Education1000	0.0042581	-0.0002915	0.0045496	0.0082015
Demography	0.8516487	-0.0437604	0.895409	0.2728327
Governance	0.0029787	0.0018853	0.0010933	0.0018809

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 24.51
 Prob>chi2 = 0.0002

Appendix Table 2: Wooldridge Test for Autocorrelation in Panel Data

H0: no first-order autocorrelation
 F(1, 19) = 3.711
 Prob > F = 0.0691

Appendix Table 3: Likelihood-ratio Test for Heteroskedasticity

H0: no heteroskedasticity in panel data

(Assumption: . nested in hetero)	LR chi2(20)	=	68.92
	Prob > chi2	=	0.0000

Appendix Table 4: Correlation Table**Appendix 2, Table 4:
Correlation Table**

Variables:	LNGDPgrowth	Population Density	Rain	Education	Demography	Governance
LNGDPgrowth	1.000					
Population Density	0.045	1.000				
Rain	0.252	-0.009	1.000			
Education	-0.052	0.265	0.231	1.000		
Demography	-0.146	0.235	-0.178	0.076	1.000	
Governance	0.177	0.085	-0.019	-0.098	0.196	1.000