LEX LOCALIS

Cost Efficiency of Municipalities in Service Delivery: Does Ethnic Fragmentation Matter?

Marjan Nikolov


§
LEX
LOCALIS

Title: Cost Efficiency of Municipalities in Service Delivery: Does Ethnic Fragmentation Matter?

Author: Marjan Nikolov, Ph. D.

First published 2013 by
Institute for Local Self-Government and Public Procurement Maribor
Grajska ulica 7, 2000 Maribor, Slovenia
www.lex-localis.com, info@lex-localis.com

Book Series: Intergovernmental Fiscal Relations

Series Editor: Žan Jan Oplotnik

CIP - Kataložni zapis o publikaciji
Narodna in univerzitetna knjižnica, Ljubljana

338.5:352

NIKOLOV, Marjan
Cost efficiency of municipalities in service delivery : does ethnic fragmentation matter? / Marjan Nikolov. - Maribor : Institute for Local Self-Government and Public Procurement, 2013. - (Lex localis) (Book series Intergovernmental fiscal relations)

ISBN 978-961-6842-16-7

269100288

Price: 59.60 EUR

COST EFFICIENCY OF MUNICIPALITIES IN SERVICE DELIVERY: DOES ETHNIC FRAGMENTATION MATTER?

Marjan Nikolov

Cost Efficiency of Municipalities in Service Delivery: Does Ethnic Fragmentation Matter?

MARJAN NIKOLOV

ABSTRACT Driven by the Ohrid Framework Agreement (OFA), decentralisation in Macedonia is a policy choice for spurring national cohesion rather than an economic instrument for the more efficient delivery of services. The OFA resulted in a new Macedonian Constitution with policies related to the decentralisation process and equitable representation of communities. This book aims first to estimate the spending efficiency of Macedonian municipalities in service delivery from their own resources and, second, to ascertain the determinants of that efficiency. The ethnic fragmentation of municipalities is taken into account as a possible determinant of efficiency, which represents a novelty in such types of studies. We employ the DEA-VRS, Kernel and SFA estimation techniques to control for the robustness of our estimates. Our findings show that on average Macedonian municipalities exhibit low efficiency in service delivery, although there are significant variations among municipalities. The ethnic fragmentation of municipalities together with the population density, own tax revenues and political affiliation of the mayor with the leading political coalition at the state level explain differences in their efficiencies. More fragmented municipalities tend to be less efficient when providing services to citizens.

KEYWORDS: • fiscal decentralisation • cost efficiency • service delivery • ethnic fragmentation • non-parametric efficiency analysis • parametric efficiency analysis

CORRESPONDENCE ADDRESS: Marjan Nikolov, Ph. D., Docent at International Slav University Sveti Nikole, Centre for Economic Analyses, Bul. Jane Sandanski, 10/2-11, 1000 Skopje, Republic of Macedonia, email: makmar2000@yahoo.com.

DOI 10.4335/978.961.6842.16.7(2013) ISBN 978-961-6842-16-7

Available online at http://www.lex-localis.com.

Marjan Nikolov, Ph. D.

Author Biography Marjan Nikolov graduates Mechanical engineering from the University of Ct Cyril and Methodius in Skopje in 1996 and started to teach at secondary technical school in Skopje. He started to attend the MBA program at the Faculty of economics from the University of Ct Cyril and Methodius in Skopje in 1998 and soon he won the EFTA scholarship for MSc studies at the Faculty of economics in Reykjavik. In 1999 he started to work at the Economic institute in Iceland on productivity and efficiency research. In 2000 in Reykjavik he took his M.Sc. in International economics and finance from the University of Iceland and soon was engaged from the IMF office in Macedonia to assist the resident expert on the VAT system implementation in Macedonia. Marjan was part of many donors' projects in Macedonia that involved public finance management and decentralization issues as well as business support. Marjan took his PhD on a fiscal decentralization topic about municipal economic efficiency measurement from the Faculty of Economics at the University of Ljubljana in 2013. He initiated and established the first economic think tank in Macedonia in 2003 the Center for Economic Analyses-CEA. He is docent at the International Slav University in Sveti Nikole-Macedonia.

Foreword

Modern societies, being extremely more mobile than traditional societies, are becoming increasingly diversified in terms of culture, ethnicity, regional and other social and perosnal characteristics. Individuals are called not only to adapt themselves to this changing context, but they and thei societies will have also to face the challenge of transforming what is still felt by many as a liability into an asset of personal and societal growth and sophistication. there is a large and growing literature by economists on the impact of ethnic fragmentation on the economic and political performance of the societal concrned by this phenomenom. there is also an increasing consensus in this literature on the fact political institutions play a crucial role in this respect. When political institutions are properly shaped, societes turn competition between ethnic groups into a positive sum game from negative one. the case of Maurice in the Indian Ocean area provides one of the best examples, where huge ethnic fragmentation has been turned into an engine of rapid and harmonious growth for the all nation. bosnia and Herzegovina show not the opposite, but surely an example where existing political and constitutional arrangements have the effect of paralyzing, rather than promoting, healthy competition among the ethnic components of the society.

The volume by Marjan Nikolov represents a very important contribution to the debate on this issue. Marjan Nikolov is one most qualified observers of the politics of ethnic fragmentation at the local level in Macedonia, having extensively worked on intergovernmental relations and decentralization in this country.

The volume analyzes, with an appropriate and sophisticated methodology, the impact of ethnic fragmentation on the efficiency of local expenditure in Macedonia. The main result is that (unfortunately) this impact is not positive, showing that political institutions are not properly shaped to produce healthy competition between ethnic groups, or more hopefully, that they are still too recent to have been able to fully display their expected potential.

There are many explanations for this. Some refer, as Marjan Nikolov points out, to the peculiar structure of decentralized government in Macedonia, such as lack of tax autonomy and excessive central control. Another and possibly crucial explanation refers to the working of the political and electoral system of Macedonia, where, among other, the two main ethnic components have to be jointly represented at the central government level. In fact, Marjan Nikolov' s volume shows that when the mayor of a city has the same party affiliation of the party coalition forming the national government - meaning also that the mayor may be indifferently either Macedonian or Albanian - efficiency is higher. However, higher efficiency does not derive necessarily from better effort, but more likely from the patronage system prevailing in Macedonian politics,

where action by mayors of the opposition will be hindered and action by friendly mayors will be favoured beyond merits.

The volume is of interest for a very broad public extending over disciplinary and national boundaries presenting a careful and well structured introduction to the recent evolution the Macedonian polity and economy and its interactions with the actions of the international community. The interest of the various topics and the high quality of the book make it very recommendable to read.

Prof. Giorgio Brosio, Ph.D.
University of Torino

Contents

Tables

Figures

Apendices

Introduction

This work examines the efficiency of municipalities in the delivery of public services, determines the causes of that efficiency and demonstrates how ethnic fragmentation in Macedonian municipalities impacts such efficiency or the lack thereof.

The overall measurement and impact of decentralisation depends on its goals, design and institutional arrangements. However, it also depends on the environment, developmental stage of democracy and other factors like region, ethnicity, socio-economic and political differences in a particular country. Measuring the impact and efficiency of decentralisation as a policy choice is not easy. As a young democracy in transition, Macedonia faces many socio-economic and political challenges. It is trying to build national cohesion after the inter-ethnic clashes between ethnic Macedonians and ethnic Albanians in 2001. The clashes ended with the signing of the so-called Ohrid Framework Agreement (hereinafter: the OFA), new constitutional changes in Macedonia, and the introduction of expensive preferential policies including new momentum in the decentralisation process; all to ensure national cohesion building and to mitigate political challenges.

Democracy might work better in socially, economically and ethnically homogenous countries. In heterogeneous societies, ethnic minorities often feel suppressed because democracy is usually considered the rule of the majority. Thus, decentralisation can make democracy work better by shifting toward consocial[1] elements of democracy designed at the central government level and at the municipal level. Ethnically diverse societies may produce mono-ethnic municipalities that are inefficient because they are »of the wrong ethnicity«, i.e. cannot lobby the leading ethnic majority national government or are ignored by that same government. As basic units of local government within the decentralised framework, municipalities directly face the dissatisfaction of citizens due to the inefficient delivery of public services as they are closest to the citizens/voters. Municipalities might be inefficient in public service delivery and cannot achieve economies of scale because they are simply too fragmented, small or rural.

[1] In Macedonia there are characteristics of a consocial democracy because at all times there has been a government established by the wining ethnic Macedonian political party and the winning ethnic Albanian political party; minorities have the right to veto laws related to culture, language and education. An equitable representation principle is also employed in the public administration (Vankovska, 2007).

Their particular ethnic fragmentation profile may play a role as well as numerous other possible variables.
Ethnic fragmentation may increase rent-seeking and reduce the incentive to invest in productive public services. Ethnic fragmentation might also induce lower levels of social capital simply because the different ethnic groups are exclusive, competitive with one another and primarily interested in furthering the welfare of their own group members (Ranis, 2011). Further, the ethnic group in power may limit spending on public goods to prevent those outside the governing group from benefiting and becoming stronger.

Macedonia has large disparities across regions, ethnicities and municipalities. In addition, given the tendencies for consocial democracy and ethnically driven political pressures within the decentralisation process, ethnic fragmentation can negatively affect the efficiency of the provision of public goods at the municipal level. On the other hand, the recent success of Macedonian municipalities in increasing the collection of their own revenues shows the potential of decentralisation to have a positive impact on Macedonian municipalities. Accurately determining the factors of municipalities' efficiency that have relative importance for the development of Macedonian local governments[2] remains a challenging task and would provide important feedback to policy makers in Macedonia.

This work estimates the efficiency of Macedonian municipalities. It also tries to identify the determinants of the efficiencies and inefficiencies. Several explanatory variables suggested in the literature are tested in our model, together with ethnic fragmentation, which is a novelty in such types of studies. **Two hypotheses are tested in this work:**
H1. Macedonian municipalities are on average relatively inefficient in providing services to citizens.
H2. Ethnic fragmentation contributes to the inefficiency of the decentralised service provision in Macedonia.

The work is organised in the following way. In Chapter 1, we give an overview of the Macedonian socio-economic experience as one of the less developed regions (hereinafter: LDRs) in former Yugoslavia. We also provide details about the early years of the Macedonian transition following its independence in 1991. The transition was a painful and long process for Macedonia which resulted in jobless economic growth. It is functioning below its potential compared to its peers. During the transition, Macedonia survived the Greek blockade because of the name issues. It survived the United Nations (hereinafter: UN) blockade on the Republic of Yugoslavia because of the wars in former Yugoslavia and Kosovo and the Metohija crisis due to the NATO bombing campaign as well as domestic ethnic clashes in 2001 and is currently surviving the adverse effects of the global economic crisis as a small open economy.

In Chapter 1, we also provide details about Macedonia's large disparities between regions. We present the ethnic structure of the regions and the ethnic profile of the

[2] Further on in the text we will use municipality and local government as synonyms.

population in the Nomenclature of Units for Territorial Statistics (hereinafter: NUTS) III in Macedonia. Namely, the ethnic Albanian population is generally located in rural areas, despite its increasing urban presence, especially in Skopje, but also in Gostivar, Debar, Tetovo and Struga (Buzar, 2006). A combination of socio-economic factors has created a particular geographic pattern in the distribution of Albanian settlements as they tend to be located on the agricultural periphery of a larger spatial unit, whereas the ethnic Macedonian rural settlements are more or less being abandoned as ethnic Macedonians tend to work in the industrial centres (Buzar, 2006). The regional disparities and different socio-economic behaviour that depends on ethnic background might complicate the decentralisation design and municipal efficiency regarding public service delivery across the spectrum from political decentralisation to administrative decentralisation and through the devolution of competencies.

The decentralisation process gained additional momentum with the new constitution of 2001 after the domestic ethnic clashes in 2001 had ended. That is why a chronology of the relationship between ethnic Macedonians and ethnic Albanians is given together with an explanation of the new preferential policies integrated into this constitution. This context will provide additional information on why it is important for decentralisation and public services provision at the municipal level to be analysed within the scope of ethnic fragmentation. Political scientists often rightfully emphasise that local government is not simply an economic mechanism for the delivery of public sector services; this is especially true in the Macedonian context. Despite acknowledging this crucial point, much economic theory still concentrates on the role of local government in promoting efficiency through its service delivery function (Bailey, 1999).

Chapter 2 provides a review of theoretical literature on decentralisation. Besides the usual pros and cons of decentralisation, such as the benefit of bringing the government closer to the voters and the disadvantage of the loss of economies of scale, we also provide a theoretical discussion related to decentralisation and the specifics of transitional countries, particularly those of Macedonia. Decentralisation in Macedonia is a policy choice to create national cohesion rather than an economic instrument. Thus, political variables like ethnicity and the political affiliation of a mayor with the central government and/or with the municipal council are becoming very relevant if we want to estimate the economic efficiency of public service delivery across municipalities in Macedonia.

Chapter 3 discusses fiscal federalism and decentralisation. It provides an overview of federalism and decentralisation in former Yugoslavia and the dynamics of decentralisation in Macedonia after its independence in 1991. We give details about decentralisation related to territorial arrangements in Macedonia, demography, economics, infrastructure, and fiscal decentralisation (expenditure assignments, revenue assignments, and inter-governmental transfers). We also illustrate the differences among the municipalities in Macedonia.

Chapter 4 provides a literature review of municipal efficiency estimated by using a nonparametric Data Envelopment Analysis (hereinafter: DEA) and a parametric Stochastic Frontier Analysis (hereinafter: SFA). Researchers use parametric and nonparametric techniques for estimation. Both techniques have their advantages and deficiencies. We use these techniques to estimate the efficiency of Macedonian municipalities. We also try to ascertain the determinants of such levels of efficiency. In estimating the determinants of the levels of efficiency from the DEA estimation, we use DEA scores within the Kernel method due to weaknesses related to the use of DEA scores in an Ordinary Least Squares (hereinafter: OLS) regression. We also estimate inefficiencies with SFA.

To identify variables, we conducted a literature review of empirical studies and we also present details about the input and output variables used to estimate efficiency and the variables that describe the determinants of efficiency.

Related to the use of the data set and methodologies for the estimation, we rely on the decentralisation legal framework and constitutional arrangements in Macedonia. Different types of data used in this work are provided by various institutions in order to estimate the efficiency of Macedonian municipalities. We pay close attention to these principles: availability, relevancy, official sources, and no missing municipal observations related to data collection and usage.

Macedonia and the Transition

1 Macedonia in Yugoslavia

The Socialist Federal Republic of Yugoslavia, established in 1946[4] (as the Federal People's Republic of Yugoslavia), was a socialist state and not an actual democracy. The federation had a significant amount of control over all the republics. However, the country was much more liberal domestically and more open to the world than other countries of the Eastern Bloc (Rudolph 2006). For much of the socialist period, particularly after the 1960s, it enjoyed a high living standard and access to international markets. Namely, with the economic reform of 1965 a greater proportion of the net income of enterprises was left to enterprises, thus strengthening the workers' self-management and allotting workers more funds to distribute according to their own discretion (Bicanic, 1973).

The Yugoslav system and its federalism was based on *egalite*, i.e. a society in which working people and man would be equal, free from exploitation and each nation (*narodi* in Slavic languages) and minorities (*narodnosti* as a Yugoslav expression for minorities) would together create the conditions for free and all-encompassing development in accordance with the constitution of Yugoslavia. The political system was a mono-party and coupled with poorly defined property rights and with the redistribution, through soft budget constraints, profitable firms were discretionally taxed and the proceeds were used to bail out unprofitable firms (Vodopivec, 1992). This soft budget constraint included the interregional redistribution from more developed regions (hereinafter: MDRs) to less developed regions (LDRs).

Within the former Yugoslavia, Macedonia was part of the LDRs benefiting from the subsidies from the MDRs[5]. An interesting analysis of the origins of the lesser development in some regions of Yugoslavia is presented in Uzunov (1966). Uzunov's main thesis is that being a LDR is actually inherited from the past out of the difference between the two feudal states of the Austro-Hungarian and the Ottoman empires. The capitalist breakthrough made them different. Namely, Yugoslav people were exploited

[4] For a chronology of the construction and deconstruction of former Yugoslavia, see Rudolph (2006).
[5] Under a federal law from 1965, the LDRs in Yugoslavia included: Bosnia and Herzegovina, Macedonia, Montenegro and Kosovo and Metohija, comprising 40% of the Yugoslav territory and 30% of the Yugoslav population.

in both empires but the growth of production forces was higher under the Austro-Hungarian than the Ottoman rule, thus growing infrastructure and the capital stock, while at the same time production forces and capitalism as such were not developed in the Ottoman Empire. In these different socio-economic situations, the tax system was also different. While in the Austro-Hungarian Empire it was new value and profit that was taxed, in the Ottoman Empire the tax system was based on taxing property and forcing redistribution rather than producing new value. Thus, the differences between these regions actually grew further when the first Yugoslav state was established in 1918 as foreign capital was invested in more competitive regions where infrastructure was present and some form of capitalism and market economy was already operating.

The World Bank (1993) stated that Yugoslavia was continually plagued by macroeconomic instability, in part because of the subsidisation of LDRs, poorly performing enterprises[6] and the tolerance of disintegrative tendencies. Further, accommodating its vast ethnic, religious and cultural differences Yugoslavia became a federation of six republics (World Bank, 1993). It was thought that this would resolve the burning national question and bring prosperity to all ethnic groups and decrease regional disparities. Namely, Yugoslavia was the most decentralised country in Europe for the sake of managing inter-ethnic conflict (Spencer, 2000). Yet Yugoslavia did not succeed in eliminating or diminishing regional differences (Table 1).

Table 1. Main indicators of Yugoslavia and its republics

	Year	Yugoslavia	B&H	Montenegro	Croatia	Macedonia	Slovenia	Serbia
Population (%)	1953	100	16.7	2.5	23.2	7.7	8.8	41.1
Population (%)	1989	100	18.9	2.7	19.8	8.9	8.2	41.5
GNP per capita (Yugoslavia=100)	1955	100	80	80	120	60	160	80
GNP per capita (Yugoslavia=100)	1988	100	65	71	129	65	200	88
Unemployment rate	1989	11.6	16.2	19.2	6.6	17.4	2.8	NA

Source: World Bank, *The costs and benefits of Slovenian independence*, 1993

Out of all LDRs, only Macedonia shows some improvement measured as GNP per capita and converging with Yugoslavia's average from 60% in 1955 to 65% in 1988 (having the highest population growth rate of 10%, second to Kosovo of 23%). The highest improvement in GNP per capita was enjoyed by Slovenia (in 1988 accounting for twice the Yugoslav average). It is also noted that Macedonia started the transition with a relatively high unemployment rate of 17.4%. The highest unemployment rate was in Montenegro (19.2%) and the lowest in Slovenia (2.8%).

The liberalisation reforms of the 1960s and the institutional reforms of the 1970s triggered the creation of regional barriers which prevented the creation of a national market. This hindered interregional trade within Yugoslavia and pushed regions into

[6] The poor performance of surviving Macedonian enterprises from former Yugoslavia continued even in the transition period. According to Zalduendo (2003), there are substantial differences in performance between surviving old firms and more agile new ones.

external trading (Vodopivec & Hribar-Milic, 1992). In practice, the principle of a single Yugoslav market was sometimes disturbed by invisible actions and measures in local communities (Grujoski, 2003). Still, in 1946 Yugoslav industry was 79% of the level it was in 1930 and the social product[7] in 1990 was 6.1 times the 1952 average/rate/level. In the period between 1980 and 1988, labour productivity in Yugoslav industry decreased 1% and the employment rate rose 11%, while in Western Europe productivity went up by 28% and the employment rate dropped by 12% (Latifik, 1997). In the period between 1981 and 1990, Yugoslavia was a heavily indebted country due to expensive service credits with high interest rates. According to Grujoski (2003), in the same period (1981–1990) in Macedonia there was an action to increase employment by hiring in the municipal administration, i.e. a further increase in administration creating inefficient employment.

In Yugoslavia, there were mechanisms for ethnic representation and the protection of minorities (Pupavac, 2000). The consecutive socialist collectivisation of farms and construction of large industrial enterprises induced gradual urbanisation and social modernisation in Yugoslavia, expressed in decreasing household sizes, falling birth rates and the inclusion of women in the active workforce (Buzar, 2006). People from dominant orthodox Macedonian communities moved to urban centres to work in large industrial enterprises. On the other side, the Muslim communities retained their traditional rural locations, structures and activities – with high birth rates, large household sizes and intensive emigration to Western Europe – while industrial and public service employment continued to stagnate in relative terms (Gerasimovski, 1997). This socio-spatial marginalisation will further widen the gap between ethnic Macedonians and ethnic Albanians in Macedonia, as will be illustrated in section 1.5.

2 Monetary independence, transition, restructuring and macroeconomic performance

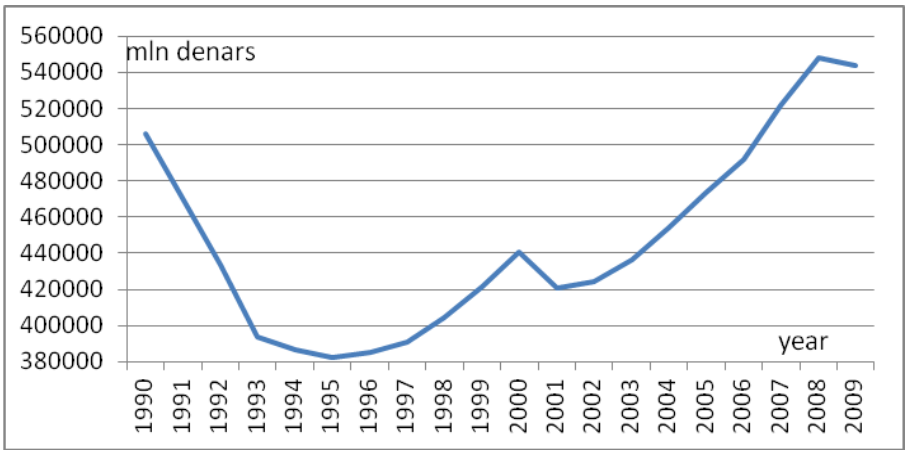
Macedonia gained its independence on 8 September 1991. Macedonian currency was issued in the form of coupons with an exchange rate of 1:1 between the Yugoslav dinar and the Macedonian denar on 26 April 1992. At that time, the inflation rate was growing by two digits per month (by the end of 1993 it was already 229.6%) and a fixed exchange rate regime was selected to stabilise the economy. From 10 May to 30 November 1993, the substitution of coupons for banknotes took place. On 8 April 1993, Macedonia became a member of the UN. Accordingly, it became a member of the World Bank in March 1993 and a member of the International Monetary Fund (hereinafter: IMF) in April 1993. The Bretton Woods twins played an important part during the Macedonian transition (for more on Macedonian and IMF relations, see Appendix A). In 1994, the inflation rate at the end of the year was 55.4% and it was

[7] Social product reflects the market value of final production and is analogous in its basic contents to the gross domestic product (hereinafter: GDP) of Western countries. However, unlike GDP, it is based on the value of material goods only. Namely, social product is the value added by productive sectors before the deduction of depreciation. However, it excludes the value of services in nonproductive sectors such as defence, public administration, finance, education, health, and housing.

9.2% in 1995. Since 1995, the National Bank of Macedonia has implemented a de facto exchange rate targeting strategy; a fixed exchange rate of the Macedonian denar against the German mark was selected as the main monetary target.

Macedonian privatisation started in 1993 with the Law on the Transformation of Enterprises with Social Capital (*Official Gazette of the Republic of Macedonia*, no. 38/93). The transition in Macedonia (like in other transitional countries) has led to a U-shaped response of output. Figure 1 illustrates the GDP in 1990 prices. It was only in 2008 that Macedonia reached the 1990 level of GDP.

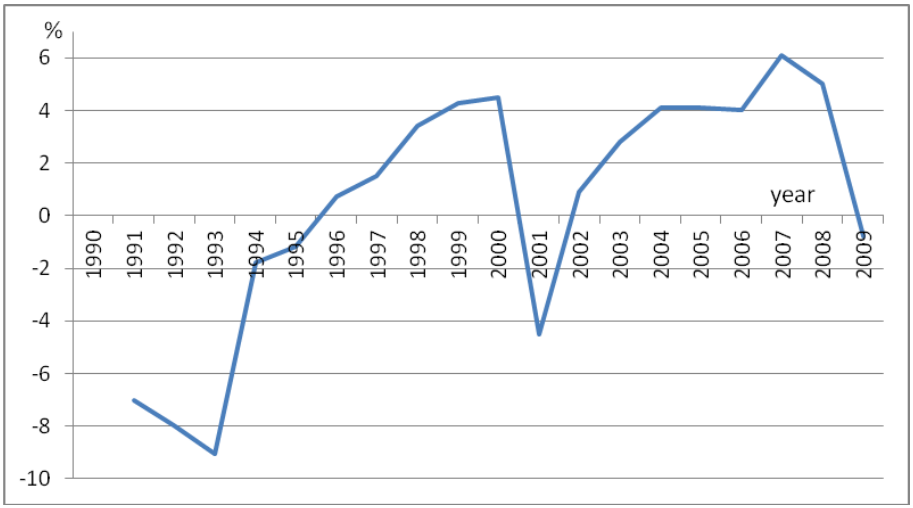
Figure 1. GDP in Macedonia in 1990 prices for the period 1990–2009 (in million denars)



Source: State Statistical Office Republic of Macedonia, 2012a

The growth rate has been sluggish and below potential with a sharp drop in 2001 because of the ethnic clashes and a moderate drop in 2009 due to the global financial crisis (Figure 2). Despite an improvement since 2007 (mainly because of increasing domestic demand), Macedonia's growth performance has been worse than that of its regional peers (IMF, 2009). The real average GDP growth rate in the period between 1995 and 2000 was 3% and the average real growth rate from 2002 to 2006 was 3.2%. This growth was mainly driven by total factor productivity (hereinafter: TFP) (around 2/3) and the share of labour and capital accounting for only 1/3 (IMF, 2009). Capital formation and labour contributions were more significant determinants of Macedonian growth after 2007 until the global crisis hit Macedonia in 2009. Exports to and imports from the European Union (hereinafter: EU), the Organisation of Economic Co-operation and Development (hereinafter: OECD) did not impact TFP even though Macedonia is an open economy (Damijan, Sousa & Lamotte, 2008).

Figure 2. Real GDP growth rates in Macedonia for the period 1990–2009 (in %)

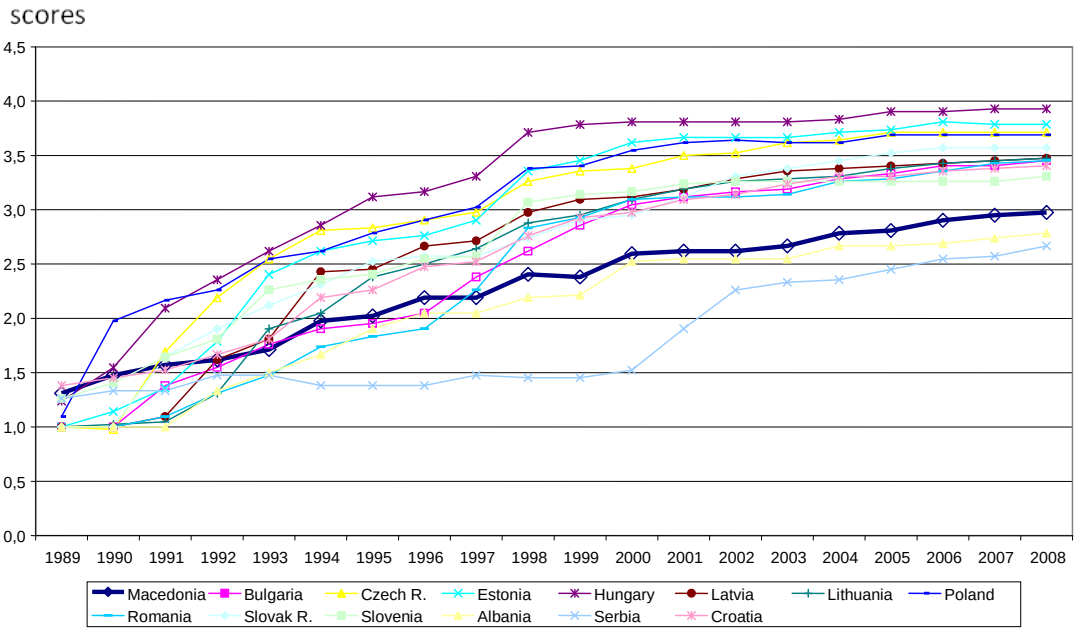


Source: State Statistical Office Republic of Macedonia, 2012a

Macedonia is progressing slowly in its transition from a command to an efficient market economy, as illustrated in Figure 3. In 2008, it only compares with Serbia and Albania even though in 1989 it had the highest starting point of all command economies as part of former Yugoslavia and according to the European Bank for Reconstruction and Development (hereinafter: EBRD) transition indicator's scores[8] (Kekenovski, Uzunov & Nikolov, 2006).

[8] EBRD transitional scores reflect the judgement of the EBRD's office of the chief economist about country-specific progress in transition. The scores are based on a classification system from 1-little private ownership to 4+ standards and performance typical of advanced industrial economies.

Figure 3. EBRD transitional scores in selected countries for the period 1989–2008



Source: EBRD, 2012

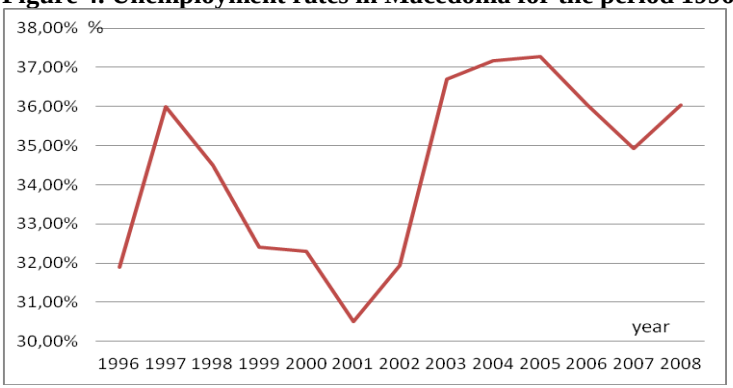
Privatisation in Macedonia was undertaken in several phases. The Law on the Transformation of Enterprises with Social Capital (*Official Gazette of the Republic of Macedonia*, no. 38/93) in 1993 gave enterprise managers and employees the right to choose the method of privatisation – in particular, permitting management and employee buyouts (IMF, 2004). In 1995–1996, privatisation was accelerated and, among other things, a special restructuring plan focusing on the largest loss-makers was launched. In 2000, since privatisation was then still not complete, another effort was launched to privatise or liquidate the largest loss-makers. Most of the enterprises were sold via preferential share sales to former managers and employees, thus preferring insider privatisation (IMF, 2004). The privatisation process was going much more slowly than envisaged as the insiders often had no incentive to modernise these firms (IMF, 2004). On the other side, the government was unwilling to push the loss-making enterprises into liquidation because that was considered politically sensitive. Employment concerns have been the dominant source of delays in dealing with large loss-making firms. Macedonia lost the opportunity to enhance the productivity of local firms by attracting foreign ownership because most enterprises were sold to former domestic managers (Damijan, Sousa & Lamotte, 2008).

According to the IMF (2003), while there were significant structural reforms in the financial sector and trade regime, Macedonia's track record in enterprise reform remained weak. Many old firms survive with substandard performance and progress.

3 Structural changes in the Macedonian economy: The legacy of the transition

Macedonian GDP was in decline from 1990 up to 1995 and subsequently began increasing Figure 1). As pointed out by Blanchard (1997), there are two reasons for this U-stylised fact for transition countries[9]. The first is the reallocation process meaning that some sectors are in decline and some need to expand. In Macedonia, the industry and construction sectors declined and the other sectors expanded in the early years of the transition. The second mechanism is restructuring that explains not only the recovery of value added but also the high unemployment rate. In Macedonia, restructuring resulted in an improvement of profitability indicators, a decline in the concentration of losses and a relatively high degree of firm turnover (Zalduendo, 2003). However, restructuring in Macedonia was prolonged and inefficient leading to persistently high unemployment[10], as illustrated in Figure 4. Thus, the growth of joblessness was mostly due to insider privatisation that led to changes in the ownership structure but not to a change in the structure and organisation of production.

Figure 4. Unemployment rates in Macedonia for the period 1996–2008 (in %)



Source: Labour force surveys of the State Statistical Office Republic of Macedonia, ILO methodology, 2012a

Despite a relatively sound macroeconomic environment, the comparatively slow progress with structural reforms has resulted in disappointing growth and employment creation[11]. Nevertheless, the enterprise sector remains inefficient and non-competitive.

[9] Macedonia also had its own specifics during the transition apart from the stylised facts pointed out by Blanchard (1997) such as wars in the ex-Yugoslav republics, the embargo Greece imposed on Macedonia because of its name, the embargoes imposed on Yugoslavia by the international community, the bombing of Kosovo and Metohija and Serbia by NATO, and the huge wave of around 350,000 refugees (representing 17% of the total population in Macedonia) who fled to Macedonia. All of these events had a negative impact on the economy and, more widely, on the entire social and political life of the country. Simply, they slowed down the process of the country's democratisation in all its spheres, thus influencing in a specific way the stability of the system. The other peculiarity in Macedonia is its own ethnic structure.

[10] The unemployment rate declined in 2001 because of the engagement of the security forces during the clashes in 2001. Unemployment started to drop in 2005 but the global financial crisis reverted the trend.

[11] For more on the labour market in Macedonia, the shadow economy and relevant statistics, see CEA, 2010.

Weak enforcement of contracts and protection of property and creditor rights remain significant impediments to robust private sector growth (IMF, 2004). Thus, the debate about the weak performance of the Macedonian economy and growth moved more toward the institutions in Macedonia, their performance and impact on the business environment than the macroeconomic performance, labour market and monetary issues. It was time to focus more on type II reforms in Macedonia (Svejnar, 2002).

Svejnar (2002) defines two types of reforms in a transition. Type I reforms involve the 'big bang' policies focusing on macro-stabilisation, price liberalisation and the dismantling of the institutions of the communist system. Type II reforms involve the development and enforcement of laws, regulations and institutions that would ensure a successful market-oriented economy. Papazoglou and Pentacost (2003) find that rapid price liberalisation has a depressing influence on output in transitional economies.

During the Type I reform, the large state-owned firms in Macedonia were relatively concentrated and highly vertically integrated. In order to survive, they were supposed to restructure and redefine their production lines while also replacing their managers, technology and equipment. This period in Macedonia was prolonged and that is why productivity did not increase and the unemployment rate has remained persistently high (IMF, 2005). It is also noted that Macedonia had already inherited an unemployment rate of 17.4% (Table 1) from the era of Yugoslavia and a high level of inefficient employment as a result of the actions to boost employment taken during that period.

The Type II reforms in Macedonia that included the development and enforcement of laws, regulations and institutions that would ensure a successful market-oriented economy were also interrupted by the ethnic conflict in 2001. The reasons for the conflict involved the socio-spatial inequalities that had accumulated during the days of Yugoslav modernisation or maybe caused by the territorial aspirations of the Albanian ethnic group, and were exacerbated during the transition as will be explained in section 1.5.

4 The Ohrid Framework Agreement and the new Macedonian constitution of 2001

4.1 History of the Macedonian and Albanian relationship

With the promulgation of a new Constitution at a special session of the Macedonian assembly in 1991, the Republic of Macedonia became an independent nation[12]. At that special session, representatives of the Albanian political party PDP-NDP abstained from

[12] This whole chapter heavily relies on the excellent chronology presentation by the Minorities at Risk (MAR) Project (About MAR, 2012). MAR project is a university-based research project that monitors and analyzes the status and conflicts of politically-active communal groups in all countries with a current population of at least 500,000. MAR Project is based at the Center for International Development and Conflict Management (CIDCM), at the University of Maryland, College Park. Detailed relation chronology between Macedonians and Albanians since 1990 is also illustrated in Appendix B with a kind permission from About MAR, 2012.

voting in order to protest the preamble of the Constitution which formally declares Macedonia to be the national state of the Macedonian people. Formerly, under the Yugoslav constitution, the preamble had defined Macedonia as a nation of the Macedonian people, as well as Albanian and Turkish minorities.

In 1994, the BBC reported that the Albanian political party PDP had announced that its new goal was no longer the federalisation of Macedonia but the proportional representation of Albanians in all political institutions. In the same year, ethnic Albanians won 19 seats in the parliamentary elections (out of 120) and Reuters reported that the Albanians' current demands included more education and media in their own language, more representation in central and local government, an Albanian-language university and a change in the constitution to put them on an equal footing with the Macedonian majority. The Macedonian census of the same year showed that ethnic Albanians then accounted for 22.9% of the country's population. The Albanians claimed that the census was »irregular« and that they actually accounted for up to 40% of the population and thus rejected the census findings. By the end of the year, the Macedonian government had blocked the opening of an Albanian-language university in Tetovo, declaring it illegal.

In 1995, Macedonia joined the Council of Europe. In 1996, representatives of the parliamentary group of the Albanian Party for Democratic Prosperity and the People's Democratic Party sent a pro-memoriam to the European Parliament. They asked the European Parliament to put pressure on Macedonia to give up the nationalistic concept to create a Macedonian state since that would be contrary to the multiethnic reality of the country. In 1998, the political party VMRO DPMNE won 46 seats out of 120 in the two-round general election and negotiated to form a coalition government with the new pro-business Albanian democratic alternative party and with the democratic party of Albanians. In 1999, Arben Xhaferri, the leader of the democratic party of Albanians, said that he supported Kosovo achieving independence by political means. Speaking during a visit to Bulgaria, Mr Xhaferri said that the situation of ethnic Albanians in Macedonia was quite different from that of ethnic Albanians in Kosovo and that is why it was impossible to talk about reshaping the borders of Macedonia.

The demographic balance in Macedonia was being seriously affected by the influx of refugees from the Kosovo crisis in 1999. There were 344,500 Kosovo Albanian refugees (17.2% of the total population in Macedonia) sheltering in Macedonia (Donev, Onceva & Gligorov, 2002). The Macedonian leadership called on Western nations to take in as many refugees as they could, while some Albanian political parties thought the refugees should stay in Macedonia. The Albanian party, which was part of the ruling coalition, said the Albanians of Macedonia were no longer satisfied with their status as a national minority and wanted the same status as ethnic Macedonians. According to Adelina Marku, spokeswoman for the Albanian Democratic Party based in Tetovo, Albanians wanted Macedonia to proclaim itself a multi-ethnic country made up on an equal basis of Macedonians and Albanians. She added that the time was not yet right to modify the Macedonian constitution.

In 2001, ethnic Albanians clashed with a military patrol in Macedonia. Due to increasing violence, Macedonia put its troops on alert along the border with Kosovo. In March 2001, the 120-member Macedonian Parliament ratified a long-awaited border treaty with Serbia. Only the small opposition Albanian Party for Democratic Prosperity voted against ratification on the grounds that political parties in Kosovo had not been consulted. Some observers believed that the initiation of the border accord by Macedonian President Boris Trajkovski and his Yugoslav counterpart Voislav Kostunica at the recent Balkan summit in Skopje might have triggered the latest violations of the Macedonian border. The Democratic Party of Albanians, the main coalition partner in the Macedonian government, was working hard to diffuse fears that the Tanusevci village incident could lead to inter-ethnic clashes in Macedonia. In the same month, US Secretary of State Colin Powell recommended that the Macedonian government consider constitutional changes which would allow ethnic Albanians to receive higher education in the Albanian language. Mr Powell said that the USA and its partners were considering strategies to help the Macedonian military end the conflict. Simultaneously, Mr Powell warned that excessive measures on behalf of the Macedonian authorities might alienate the ethnic Albanians in the country. An interesting fact is that the EU and USA representatives at that time shifted in an unprecedented way in their explanation of the Albanian insurgence from being »armed extremists« and »terrorists« to »rebels« (Nikolovska & Siljanovska-Davkova, 2001).

In April 2001, a strong multi-ethnic delegation from Macedonia signed an agreement in Luxembourg with the EU that called for new political and economic relations with the then 15-nation EU. The stabilisation and association agreement held the promise of eventual EU membership for Macedonia if it introduced this package of reforms.

Following the clashes in 2001, much has been done to grant ethnic Albanians the rights they have been claiming since independence with the OFA. However, today Macedonians and ethnic Albanians are living in practice and in most cases in separate enclaves (for an ethno barometer report from January 2010, see Ethnobarometer, 2010). Collaboration exists only at the level of political parties, not at the level of everyday life. Some modest progress (also supported by our empirical work in Chapter 4 of this thesis), as far as the latter is concerned, has been made in the most recent years. This is positive but falls short of producing an integrated society capable of developing political strategies aimed at generating the progress needed to significantly improve economic and social conditions or to sustain processes of democratisation and modernisation. Lines across which ethnic Macedonians and ethnic Albanians can build further integration might be religious in nature. For example, integration may be developed between ethnic Albanian Catholics and ethnic Macedonian Muslims.
Further, other minorities living in the country regard the OFA as a bilateral deal between ethnic Macedonians and ethnic Albanians that neglects the rights of other communities. The 2008–2010 action plan for Roma for example, with the exception of the training of trainers, is not being implemented, and the situation of the Roma population in Macedonia keeps deteriorating. The ethnic Turkish minority has seen their representation and participation in local government and other sectors decline. Finally, another factor is the growing division of public opinion from the political establishment.

It is perceived as corrupt whose members are believed by the large majority of the population to be mainly interested in making profit at the individual level rather than in working for the general well-being (for an ethno barometer report from January 2010, see Ethnobarometer, 2010).

Thus, we might conclude that four political factors were important for the ethnic conflict in Macedonia: the change in minorities' constitutional status in 1991 compared to the former Yugoslav constitution; the minorities' participation in government at the central and regional level; and the government's respect for fundamental human rights and the right to mother-tongue education (Koinova, 2001). The frustration of Albanians over the need of Macedonians to create an ethnic nation can be understood as a phenomenon within the three waves of ethnic nationalism since the late eighteenth century (Smith, 1991). It is the third wave of ethno-nationalism that has prompted a critical reassessment of theories on national identity with the ethnic movements for autonomy or separation from the 1960s that swept through much of Western Europe, reaching Yugoslavia and the Soviet Union. This third wave has a common characteristic of language mobilisation and cultural politicisation that are characteristics of the route by which ethnic groups are transformed into ethnic nations. As a result, the type of national identity they generate is quite different from territorial civic identities and poses a radical challenge to the new democracies. This, of course, holds true in the case of Albanians and Macedonians who differ in their linguistic, cultural and religious characteristics.

On the other hand, it is an interesting fact that on 6 July 2001 at the South-eastern Defence Ministerial Meeting in Thessaloniki, Macedonia's Minister of Defence stated that Albanian extremists and terrorists were actually fighting for territory and hiding behind claims for more civil rights (Arsovski, Kuzev & Damjanovski, 2006). This can also be supported by the first few *communiqué* dated 23 January 2001 sent to the Macedonian daily newspaper, Dnevnik, by the UCK (Albanian National Liberation Army) stating that its objective was the liberation of ethnic Albanians in Macedonia. Even after the subsequent *communiqués* and interviews since March 2001, the UCK emphasised that its armed struggle was aimed at constitutional rights and equality for Macedonia's ethnic Albanian population rather than the territorial disintegration of Macedonia (Ackermann, 2001).

Competition for power takes place in a variety of arenas. Some are explicitly spatial when a de facto territorial segregated group attempts to wrest some measure of local autonomy where an institutional arrangement to give sufficient recognition of the separatist does not exist (Paddison, 1983). Arsovski, Kuzev & Damjanovski (2006) argue that the root of the Macedonian/Albanian conflict is the territorial aspirations of the Macedonian Albanians and that their final goal is the creation of a Great Albania (also see Joseph, 2006). Siljanovska-Davkova (2007) asks if the constitutional provisions can be a reason for Albanian insurrection, i.e. if the constitution of 1991 can be a *casus belli*. This is especially pertinent when, in 2001, the dominant reasons for potential insecurity in Macedonia were detected as being: unemployment (57.2% of the respondents), low family income (16%) and insufficient social security (6.2%). Only a

small proportion of the respondents (5%) felt insecure due to inter-ethnic relations (Siljanovska-Davkova, 2007).

Thus, it is difficult to identify the roots of the ethnic conflict in Macedonia: Was it the different socio-economic status of the ethnicities? Was it the constitutional arrangements? Or was it just fighting for territory?

4.2 The OFA and the constitution after the OFA

On 13 August 2001, the Ohrid Framework Agreement (OFA) was signed and ended the clashes between Macedonians and Albanians[13]. It resulted in a change of the constitution and extended the rights of the minorities in Macedonia. The OFA rejects territorial solutions and seeks to maintain some of the civic features of the state. The OFA states that the multi-ethnic character of Macedonian society must be preserved and reflected in public life and that the development of local government through decentralisation is essential for encouraging the participation of citizens in democratic life, and promoting respect for the identity of communities.

In a way, the OFA institutionalised ethnicity in Macedonia (Bieber, 2004). After 2001, according to the constitution's preamble Macedonia is not a nation-state of Macedonian people but a state of citizens of the Macedonian people, as well as citizens living within its borders who are part of the Albanian people, the Turkish people, the Vlach people, the Serbian people, the Romany people, the Bosnian people and others. The constitutional amendments removed the notions of 'nationality' and 'minority', which were seen by Albanians as a sign of inferior status (for more, see Appendix C). Albanians were included in the government as an ethnic group even though it was already a »tradition« after the independence of Macedonia to have one Albanian political party in the government coalition in power. Albanians were also always represented in the Macedonian Parliament. Moreover, in 2007 the Law on the Committee for Communities' Relations (*Official Gazette of the Republic of Macedonia*, no. 150/07) was adopted that regulates and makes parliamentary decisions on, among other things: culture, language, education, personal identification documents and symbols.

Thus, the post-OFA constitution brought to Macedonia: new momentum for the decentralisation process, the equitable representation of communities, the establishment of a specific organ of consensus democracy (the Council for Inter-ethnic Relations), the use of additional official languages which were spoken by less than 20% of the

[13] The OFA is a peace treaty that stopped the ethnic clashes in Macedonia. The OFA was »written in Ohrid« and signed in Skopje on 13 August 2001, after a seven-month »war«. The negotiators were the leaders of four political parties, two Macedonian and two Albanian, in the spirit of consensus democracy. Negotiations went on under the »patronage« of the Macedonian President and in the presence of two »witnesses«, one from the USA and the other from the EU. The witnesses played the role of »whips« in disciplining the negotiators and were the key actors in creating solutions. The »procedure« was neither transparent nor democratic (Siljanovska-Davkova, 2007).

population, and higher education for communities. We will discuss these novelties in more detail.

The OFA gave fresh momentum to the **decentralisation process** in Macedonia. A revised Law on Local Government (*Official Gazette of the Republic of Macedonia*, no. 05/02) was adopted that reinforces the power of elected local officials and substantially enlarges their competencies in conformity with the constitution and the European charter of local government while reflecting the principle of subsidiarity in effect in the EU. The enhanced competencies principally relate to the areas of public services, urban and rural planning, environmental protection, local economic development, culture, local finances, education and social welfare. The Law on Financing Local Government (*Official Gazette of the Republic of Macedonia*, no. 61/04) was adopted to ensure an adequate system of financing to enable local governments to fulfil all of their responsibilities. In order to ensure that the police are aware of and responsive to the needs and interests of the local population, local heads of police were then selected by municipal councils from lists of candidates proposed by the ministry of the interior, and they communicate regularly with the councils. The ministry of the interior retained the authority to remove local heads of police in accordance with the law.

Equitable representation was introduced, involving laws regulating employment in public administration including measures to assure the equitable representation of communities in all central and local public bodies and at all levels of employment within such bodies. Yet it is questionable whether it is respecting the rules concerning competence and integrity that govern public administration[14]. Thinking within ethnic borders cannot be a qualitative and effective solution. It paralyses administration and initiates other problems with a package of advantages and privileges instead of creating

[14] In 2010, the Organisation for Security and Co-operation in Europe's (OSCE) Ambassador to Macedonia – Head of the OSCE Spillover Monitor Mission to Skopje said in response to a question during an interview: »*Is there a deadline until when the realization of such provisions [equitable representation of Albanians in administration] will be tolerated since this deadline was exceeded for several times so far?« answered*: *»No. We did not set any deadlines since the issue is not that simple. For certain positions are needed qualified people, which are often difficult to find. And then we should be careful they are not hired on party basis, but based on administration's needs.«* The interview with the OSCE Ambassador was retrieved from OSCE (2010a).
This statement diplomatically portrays the reality in Macedonia about the economic inefficiencies of hiring administrative people at the central and local level. It is not based on merit but on membership in the »right« political party within the Albanian ethnic community. This type of equitable representation practice that is based on ethnicity and politics rather than economic efficiency grounds based on a merit system cannot bring efficient public service delivery as will be tested in Chapter 4 of this work.
In a Macedonian Information Agency (MIA) interview, the OSCE Ambassador also answered: *»However, recruiting of representatives of ethnic minorities in the public administration must be done in a manner that will guarantee that these persons are professionals – this is the main standard, not the political affiliation. Progress has been made, but we must go on until we come to satisfactory solutions.«* This interview with the OSCE Ambassador was retrieved from OSCE (2010b).

a common people within a single joined nation. An over ethnic approach risks worsening what is already bad in the country (Badinter, 2001).

The 2001 constitution also provides for the establishment of a specific organ of consensus democracy, the **Council for Inter-Ethnic Relations**, with the following members: the President of Parliament, two representatives of the Macedonian, Albanian, Turkish, Vlach and Romani ethnic groups and two representatives of other minorities in Macedonia. The parity structure and the nature of its competencies, i.e. opinions and proposals with regard to parliamentary issues from the sphere of inter-ethnic relations, were supposed to make this council »an informal, second house of parliament« (Siljanovska-Davkova, 2007).

In relation to the **use of language** and local governments, in local governments where at least 20% of the population speaks a particular language that language and its alphabet should be used as an official language in addition to the Macedonian language and the Cyrillic alphabet. With respect to languages spoken by less than 20% of the population of a local government area, the local authorities shall decide on their use in public bodies. Thus, if the government does not implement the strategy for integrated education there is a risk of greater segregation between Macedonians and Albanians because of the language barrier.

With **higher education** now available in the Albanian language, demands for secondary schooling in Albanian will increase and, consequently, more Albanian students might possess relatively poor knowledge of the Macedonian language. Secondary education has become ever more segregated since the conflict. Two higher education institutions are now available in Albanian in the city of Tetovo (the South East European University and the State University of Tetovo) and we can expect fewer Albanians to study at the University Ss. Cyril and Methodius in Skopje, University St. Clement of Ohrid in Bitola and even farther east in Macedonia, the Goce Delcev University in Stip. In the past, the vast majority of Albanians had a reasonable command of Macedonian. On the other hand, despite the establishment of the South East European University (SEEU), there is little likelihood that ethnic Macedonians will wish to study Albanian in the near future, whereas ethnic Albanians might have poorer knowledge of the majority Macedonian language. In the past, some Albanians preferred to attend Macedonian language classes in order to enhance their chances of a good professional future in Macedonia. Finally, it is expected that the upcoming generation of young ethnic Macedonians and ethnic Albanians will be less familiar with one another than their predecessors (Ragaru, 2008).

In conclusion, since the OFA Macedonia has chosen relatively expensive constitutional preferential policies over electoral policies in order to reduce the ethnic conflict (Horowitz, 2000). Namely, electoral policies can accommodate ethnic harmony by: encouraging the formation of multi-ethnic coalitions, inducing ethnic groups (especially the majority) to engage in inter-ethnic bargaining, and fragmenting the support of one ethnic group (especially the majority) to prevent it achieving permanent domination. This shows that electoral policies do not really operate on the structure of society but more on the behaviour of voters and politicians.

In contrast, the preferential policies regard the ethnic conflict as a result of economic differences and ethnic disharmony due to the proportional distribution of all groups at all levels and functions in society. The electoral policies have a short time between their adoption and implementation and, finally, their impact; preferential policies do not and depend on the behaviour of voters and politicians rather than the structure of society.

Thus, implementation of the post-OFA constitution comes at a high cost. Preferential policies for reducing the ethnic conflict require more time, dedication, cooperation and resources. Given this, the partnership and help of the international community to Macedonia is essential especially because the two »witnesses«, one from the USA and the other from the EU are also signatories to the OFA agreement. For example, on 5 October 2010 the government of Macedonia adopted a strategy on integrated education (hereinafter: SIE) which was a huge step towards addressing complex issues related to the ethnic divisions in Macedonia's education system. The United States Agency for International Development (hereinafter: USAID) and the US embassy fully supported the implementation of the SIE. The SIE offered a carefully balanced and phased approach aimed at: 1) integration through joint student activities; 2) integration by increasing the mutual knowledge of each other's languages; 3) adjustments of curricula and textbooks; 4) improvement of teachers' qualifications for integrated instruction; and 5) the preparation of school management and teachers for more effective work in a multi-ethnic society. Moreover, the language use requirements at the local level also require time, human and financial resources, not to mention planning and management skills.

5 Socio-economic differences in Macedonia at the regional level

The roots of the 2001 clashes in Macedonia between ethnic Albanians and ethnic Macedonians could be the result of complex and divergent contingent paths of social inclusion over a prolonged period of time, rather than the 'ethnic hatred' stories that dominated both the local and international press (Buzar, 2006). The differences are socio-economic and geographical in nature.

Namely, in 2002 just after the clashes the European Stability Initiative (hereinafter: ESI) explored the socio-political economy of ethnic relations in Macedonia. Their findings can help us in this discussion. The ESI study looks at a region of 52,000 people in Western Macedonia, inhabited by 50% ethnic Albanians and 40% ethnic Macedonians. Macedonia has a deeply rooted tradition of ethnic coexistence. Yet it exhibits a diversity of economic and social patterns among its communities which seem programmed to generate inter-ethnic suspicion and fear. The Zajas (Mr Ahmeti's[15] village) is one with over 67% unemployment and a gross domestic product at purchasing power parity (GDP PPP) of about one-quarter of the national GDP PPP. Also, when Macedonia was still part of former Yugoslavia the Albanian population was less represented in the industrial and administrative employment sectors as the ethnic Albanian population had retained their traditional rural locations, structures and

[15] Mr. Ali Ahmeti was the leader of the Albanian uprising UCK and is now a leader of the political party of Albanians, the Democratic Union of Integration (DUI).

activities and/or were migrating abroad. These migrants were fuelling the economy with remittances, as they still do (CEA, 2008a). During the transition and the restructuring of the economy, ethnic Macedonians' living standards dropped as the industrial sector shrank. Nowadays, the post-OFA public administrative sector is under pressure to provide for increased representation of the ethnic Albanian minority and to thus further reduce employment opportunities for ethnic Macedonians (ESI, 2002).

There are also significant geographical differences in the spatial distribution of the main ethnic groups in Macedonia. The Christian Orthodox Macedonians generally represent the dominant urban 'middle' class in Struga, Kičevo, and especially Kumanovo, Ohrid and Skopje, while being an absolute minority in Gostivar, Tetovo and Debar (Buzar, 2006). During the socialist era, this population was mainly employed in the industrial sector. The ethnic Albanian population is generally located in rural areas. A combination of physical and economic factors has created a particular geographical pattern in the distribution of Albanian settlements as they tend to be located on the periphery of larger spatial units (Buzar, 2006). For example, the greatest concentrations of Albanian populations in the Polog, Struga and Kumanovo areas can be found on the edges of the valley floors where large villages (>5,000 population) have merged with each other or with ethnically segregated suburbs to form several continuous bands of high rural and quasi-urban density (Buzar, 2006).

The ethnic structure of regions in Macedonia at the NUTS III[16] level is illustrated in Table 2. One can see that the Polog region is dominated by Albanians while the South-western region is almost balanced between Macedonians and Albanians[17].

[16] The nomenclature of units for territorial statistics (NUTS) is a hierarchical classification of administrative boundaries developed by Eurostat. The idea of NUTS is to provide a common designation for different levels of administrative or geographical boundaries across the EU, regardless of local language and naming conventions. The NUTS levels are defined in terms of minimum and maximum population sizes: NUTS I is 3,000,000–7,000,000; NUTS II is 800,000–3,000,000; and NUTS III is 150,000–800,000.

[17] Ethnic affiliation in Macedonia has traditionally been a highly controversial and politicised subject. According to Friedman (1996) in Buzar (2006), the concepts of ethnicity, nationality, language and religion have a complex history of interrelationships in Macedonia, one whose complexity continues into the present day. Thus, for example, some Macedonian-speaking Muslims declare their nationality as Albanian or Turkish on the basis of identifying their religion with the Turkish or Albanian ethnicity. Similarly, some Albanian-speaking Christians declare their nationality as Macedonian after equating Macedonian Orthodox Christianity with Macedonian ethnicity. As might be expected, Albanian ethno-politicians insist that Macedonian-identified Albanian-speakers are Albanians, while Macedonians insist that Albanian-identified Macedonian-speakers are Macedonians. There was also the citizenship-based category Yugoslav which, until 1991, was steadily growing in popularity. The blurring of ethnic boundaries is particularly pronounced in the case of smaller groups based in rural areas, whose ethnic self-concept has been developing in a slower and more fragile manner (Buzar, 2006).

Table 2. Ethnic structure of regions in Macedonia in 2008

	Region[18]	Total	Macedonians (%)	Albanians (%)	Others (%)
1	Vardar	159,487	89	3	7
2	Eastern	181,858	92	0	8
3	South-western	221,546	48	37	15
4	South-eastern	171,416	90	0	10
5	Pelagonia	233,184	85	5	10
6	Polog	304,125	18	73	8
7	North-eastern	172,787	59	31	10
8	Skopje	578,144	64	23	13

Source: UNDP database from 2008; UNDP, *Guidelines for processing of survey database and calculation of indicators for PCA*, 2009b

Now, in theoretical terms we can ask what the Macedonian government has been doing since the OFA in order to achieve the second welfare theorem of fair distribution and to maximise social welfare because, even when the economy achieves a Pareto-efficient allocation of resources (fulfilment of the first welfare theorem), there is still room for improvement. For example, can we say that in an economy of two ethnic groups with complex divergent contingent paths of social inclusion over a prolonged period that it is possible for the two groups to achieve their Pareto-efficient allocation or, rather, will the whole economy fall short of maximising the social welfare[19]? Certainly, answers to these challenges are beyond the scope of our work and will also require some historical distance from the clashes of 2001[20] and more time to pass after the OFA. What we can provide here are some indications in recent years about the different paths of social inclusion, demography and the economy across the regions and to compare the situation within the ethnic spectrum where possible. Unfortunately, the situation described in ESI (2002) and, more generally, in Buzar (2006) has not changed much in recent history, as will be illustrated. In Table 3 we provide labour statistics by regions in Macedonia.

[18] As per the Law on Balanced Regional Development (*Official Gazette of the Republic of Macedonia*, no. 63/07), Macedonia is divided into eight regions – the same as the statistical regions at the NUTS III level. In accordance with NUTS, Macedonian territory is NUTS I and NUTS II.

[19] The theory says that in accordance with the second welfare theorem a society can attain any Pareto-efficient allocation of resources by making suitable assignments of initial endowments and then letting people freely trade with each other as in the popular Edgeworth box model. It would be interesting research to investigate if the OFA can be considered in economic terms in this context as assigning the initial endowments for ethnic Macedonians and Albanians in the socio-economic and political Edgeworth box.

[20] We asked for help from Mr. Irfan Asani who was the chief of cabinet of Mr. Ali Ahmeti to obtain written materials from the ethnic Albanian leaders to identify their views on the clashes in 2001. Mr. Asani was explicit when said that Mr. Ahmeti believes that the UCK's archives can be opened within a distance of at least 20 years after 2001.

Table 3. Labour market statistics by regions in Macedonia for 2008

Region	Unemployment rate	Activity rate – females	Unemployment rate among youth 15–24	Unemployment rate of Macedonians	Unemployment rate of Albanians
Vardar	43.6	42.5	80.6	41.6	64.9
Eastern	20.0	42.5	65.4	32.5	81.8
South-western	39.3	29.9	75.4	33.6	58.6
South-eastern	11.7	45.2	67.2	32.4	50.0
Pelagonia	34.5	44.2	75.0	37.0	49.2
Polog	26.4	16.3	78.4	34.2	58.4
North-eastern	58.0	32.9	80.3	41.2	74.3
Skopje	37.3	39.1	67.6	22.7	62.6
Macedonia	38.1	36.1	72.5	32.0	61.2

(table continues)

(continued)

Source: UNDP database from 2008

Table 3 shows that the overall unemployment rate is relatively high for Macedonia as well as in all regions. It is higher for the Albanian population than for the Macedonian population. There may be different reasons for these results. The shadow economy in Macedonia can be high. Overall, for Macedonia 10 percentage points of the total unemployment rate (32%) could be shadow employment (CEA, 2005; CEA, 2009; CEA, 2012). Given that agricultural labour was not registered as employment and given the traditional agricultural activity of Albanians, this may result in an overestimation of the unemployment rate amongst ethnic Albanians. The female activity rate is also low in the Polog and South-western regions due to Albanian cultural factors related to female participation in the labour market.

Further, natural population growth is presented in Table 4. The highest population growth is registered in the Skopje and Polog regions, while the Eastern and Pelagonia (mainly ethnically Macedonian dominated) regions registered negative growth in the same period of 2006–2009. Thus, the demographic patterns vary across the regions and across the ethnic spectrum in Macedonia.

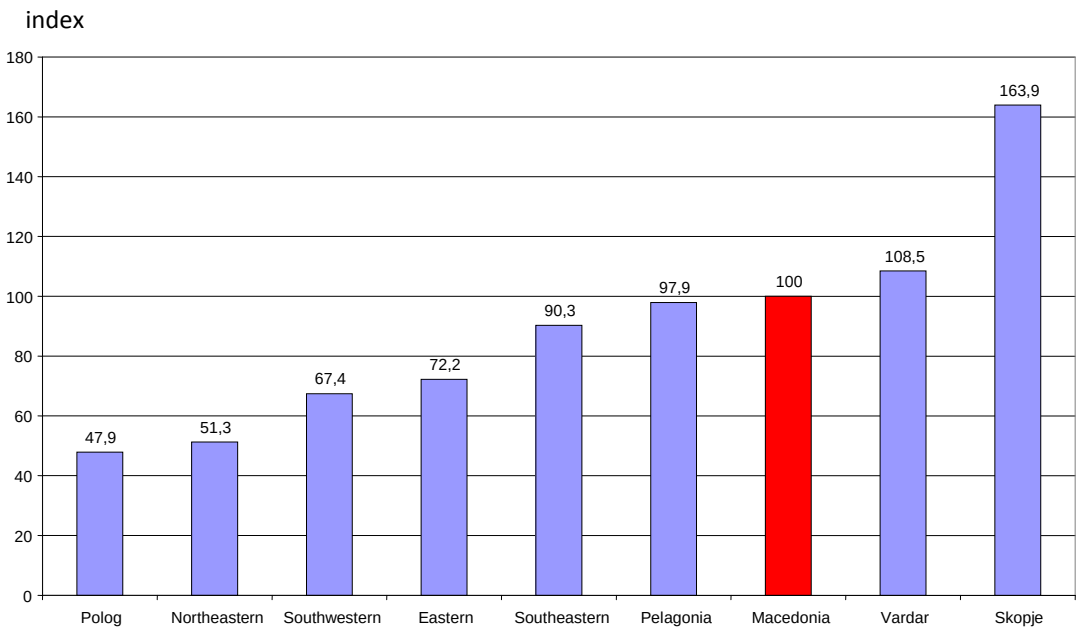
Table 4. Natural population growth in Macedonian regions for the period 2006–2009

Regions	2006	2007	2008	2009
Vardar	0.0	-0.6	0.4	0.5
Eastern	-0.8	-1.3	-0.9	-0.5
South-western	1.5	0.8	0.8	0.8
South-eastern	1.2	1.2	2.1	1.9
Pelagonia	-2.0	-3.3	-2.1	-1.5
Polog	4.2	4.3	3.7	3.9
North-eastern	2.3	1.4	2.0	3.0
Skopje	3.9	3.8	4.2	4.6
Macedonia	1.9	1.5	1.9	2.3

Source: UNDP database from 2008

In economic terms, the regional differences at the NUTS III level in Macedonia are relatively high when measured by GDP PPP, as illustrated in Figure 5.

Figure 5. GDP per capita in PPP across regions in Macedonia; Macedonia=100



Source: State Statistical Office Republic of Macedonia, 2012a

The lowest median monthly equivalised[21] income is registered in the South-western region (114 PPP) and is almost 30% less than the level in the Eastern region (161 PPP). It is indicative that if the performance of the (Albanian dominated) Polog region is measured by GDP PPP per capita (Figure 5) it ranks lowest, and if it is measured by median equivalised income (Figure 6) it is performing better than the country's median

[21] Equivalisation is made on the basis of the OECD modified scale which assigns a value of 1 to the household head, 0.5 to each additional adult member and 0.3 to each child (UNDP, 2009b).

equivalised income and at the same median level as that for the Skopje region (UNDP, 2009a). These differences in regional rankings if measured by GDP PPP or by equivalised income could be due to the larger inflow of remittances into the Polog region, as illustrated in Table 5.

Table 5. Received remittances in the last six months of 2008 by regions in Macedonia

Region	Percentage of respondents who answered Yes
Skopje	5.1
Vardar	3.0
North-eastern	8.2
Polog	10.6
Pelagonia	3.6
Eastern	3.3
South-western	14.6
South-eastern	8.5
Macedonia	7.0

Source: UNDP database from 2008

Further, the scale of regional differences is lower within regions than within ethnic affiliations in Macedonia. Table 6 shows that the lowest median monthly equivalised income is registered for the Roma (45 PPP) which is almost 70% lower than the level for Macedonians (161 PPP). Skopje's regional income performance is deteriorating directly because of the low Roma median monthly equivalised income (61% of Macedonian Roma live in the Skopje Region and are concentrated in the only Roma municipality in Europe – Shutka; by comparison, 15% of Roma live in the Eastern region of Macedonia as the region with the second highest Roma concentration).

Table 6. Mean and median equivalent household income by ethnic groups in Macedonia in 2008 (in euros)

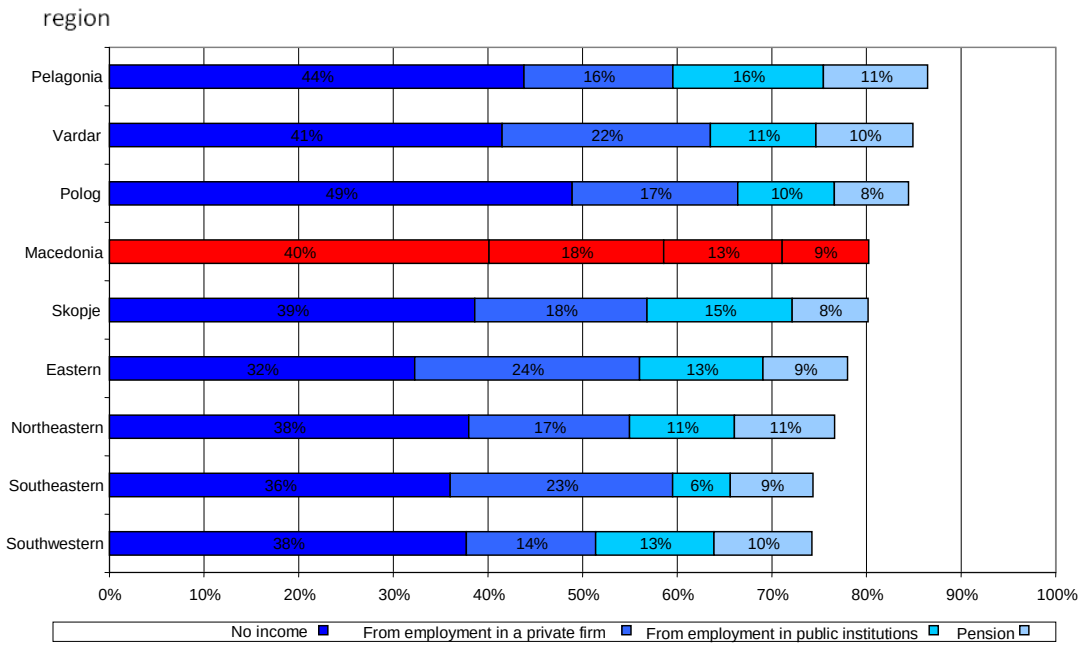
Ethnic group	Mean equivalent household income	Median equivalent household income
Macedonians	182	161
Albanians	140	114
Roma	80	45
Total	171	151

Source: UNDP database from 2008

In Table 6 we can also see that the median equivalent household income is lower than the mean equivalent household income (within ethnic affiliations within the country) and thus we can conclude that more than half of the households have an income lower than the average income. This is especially true for Roma and Albanians. This indicates a sharper inequality within ethnic affiliations in Macedonia.

What is interesting about the source of income is that around 40% of the respondents answered (Figure 7) that they had no income at all. Most of the income from employment in private firms is registered in the Eastern region (24%) and South-eastern region (23%) and is lowest in the South-western region (14%). The highest share of those employed by public institutions includes the Pelagonia (16%) and the Skopje regions (15%). The shares of pensioners across the regions seem to be similar. The highest share of those claiming no income (49%) is registered in the Polog region that is dominated by the Albanian population.

Figure 6. Household sources of income by regions in Macedonia in 2008



Source: UNDP database from 2008

The quintile analyses of the equivalised disposable income by ethnic affiliation show that the income inequality is sharp for the country and the ethnic groups (Tables 7 and 8). The situation of inequality measured by quintiles is discouraging across the country as a whole since the richest 20% of the population receive 43% of the total disposable income, while the poorest 20% receive just 5% of the total income. The highest inequality is registered among the Roma, with the richest 20% of Roma households (the fifth quintile) receiving 49% of the disposable income while the poorest 20% (the first quintile) receives only 2% of the disposable income.

Table 7. Equivalised disposable income and expenditure by quintiles and by rural and urban settlements in 2008

	Equivalised disposable income by quintiles			Equivalised disposable expenditure by quintiles		
Quintiles	**Rural**	**Urban**	**Skopje**	**Rural**	**Urban**	**Skopje**
1	5%	6%	6%	8%	8%	8%
2	11%	12%	12%	15%	13%	14%
3	17%	17%	18%	20%	17%	18%
4	24%	23%	25%	23%	22%	23%
5	43%	41%	40%	35%	38%	37%
S80/S20	8	7	7	4	5	5

Sources: UNDP database 2008; UNDP, *People centered analysis-PCA report*, 2009a

Another indicator of income distribution is the S80/S20 ratio – the ratio between the total income received by the highest quintile (the richest 20% of the population) and the total income received by the lowest quintile (the poorest 20% of the population). There is no difference between rural and urban areas for this measure (Table 7).

Some differences are, however, observed with this S80/S20 ratio measure in relation to ethnic groups (Table 8). In the case of ethnic Macedonians, this ratio is 15 (the richest 20% receives 15 times higher income in total than the poorest 20%). The highest ratio (hence the highest overall inequality) is among the Roma (20).

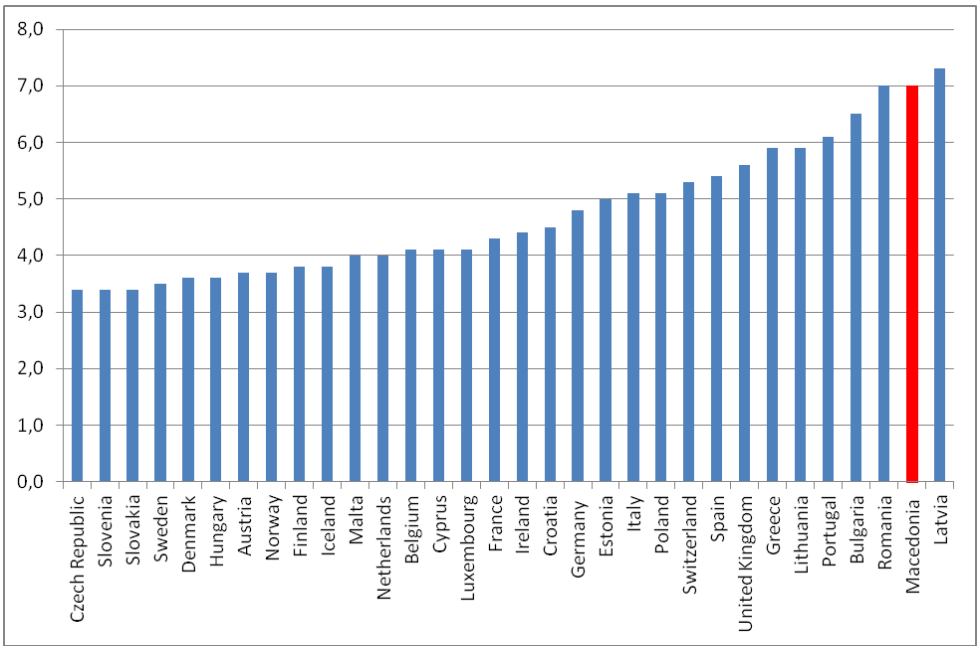
Table 8. Equivalised disposable income by quintiles and by ethnic groups in 2008

Quintiles	Equivalised disposable income by quintiles		
	Ethnic Macedonians	Ethnic Albanians	Roma
1	3%	5%	2%
2	13%	11%	9%
3	17%	17%	15%
4	24%	23%	23%
5	43%	43%	50%
S80/S20	15	9	20

Source: UNDP database 2008

A cross-country EU comparison illustrates that the income inequality in Macedonia is second only to Latvia (Figure 8).

Figure 7. S80/S20 income quintile share ratios in EU countries and in Macedonia in 2008



Source: Eurostat, *S80/S20 income quintile share ratio by sex and selected age group (SILC)*, 2012

What we can conclude from this analysis of the socio-economic differences in Macedonia across regions and across ethnic groups is that the demographic and socio-economic differences are large and that there is a risk that the post-OFA government policies might not be addressing the main socio-economic reasons for the inter-ethnic clashes in 2001. Socio-economic and demographic differences considered by some as determinants of the ethnic clashes are still present in Macedonia across ethnic affiliations and across regions. Not much progress has been made in the political economy of Macedonia's ethnically fragmented society during the transition, especially since the OFA of 2001, to address these differences.

Theoretical Consideration of Decentralisation

1 Decentralisation theory

Decentralisation, defined as a set of policies that encompass fiscal, political and administrative changes, can impact virtually all aspects of development (Litvack & Seddon, 2000). Decentralisation transfers authority and responsibility for public functions from the central government to subordinate or quasi-independent government organisations or to the private sector and covers a broad range of concepts (Rondinelli, 2000). **Political decentralisation** aims to give citizens and their elected representatives more power in public decision making and is often associated with pluralistic politics and representative governments. **Administrative decentralisation** seeks to redistribute authority, responsibility and financial resources for providing public services among different levels of government. Administrative decentralisation has three major forms: **deconcentration, delegation and devolution** (Litvack & Seddon, 2000). **Deconcentration** shifts responsibility from central government officials in the capital city to those working in regions or municipalities or creates field administrations under the supervision of central government ministries. **Delegation** is when central government transfers responsibility for decision making and administration of public functions to semi-autonomous organisations. These organisations are usually given discretion in decision making and may be able to charge users directly for services and/or receive compensation from the central government for the services rendered. **Devolution** is the transfer of authority for decision making, finance and management of local governments. In a devolutionary set-up, local governments have clear and legally protected geographical boundaries over which they exercise authority and within which they perform public functions. In **fiscal decentralisation**, local governments assume financial responsibility for their local governments. Within fiscal decentralisation, municipalities have transferred competencies for which expenditures are assigned. Municipalities can expand and administer their own source revenues, receive transfers from central government and can engage in municipal borrowing.

The theory of fiscal decentralisation was developed for industrial countries and was thus influenced by the democratic processes of budget making and the median voter theory (Bahl & Linn, 1992). According to Bahl, Johnson and Wasylenko (1980), empirical research has shown that the behaviour of US state and local governments more or less square with this theoretical model. In the median voter theory, the level of tax effort and expenditure mix in local areas are responsive to changes in relative prices and income and the potential losses in efficiency caused by interference from a higher level of

government can be substantial (as can the potential efficiency gains from the greater fiscal autonomy of local government). Decentralisation is also considered a superior good (one that is common to industrial countries) and there is a relatively higher level of per capita income at which decentralisation and its benefits can be better absorbed than in countries with a relatively lower per capita income (Martinez-Vazguez & McNab, 2005). Contrary to this, Oates (1993) found that the empirical correlation between the level of development and the presence of fiscal decentralisation is not monotonic between the two and not bound to income per capita. Thus, it might be that fiscal decentralisation will offer advantages to countries with a lower level of development if the relationship between the level of development and the presence of fiscal decentralisation is not monotonic.

Yilmaz (2002) summarises the core logic of decentralisation by building on Stigler (1957), Musgrave (1959), Oates (1972), and Buchanan (1965). He argues that to care about growth and poverty issues one should be concerned about efficiency in supplying public services up to the point at which the welfare benefit to society matches its cost. In the private sector, it is straightforward that the market-price system mechanism matches its benefits to the cost. But when the market fails in this objective, there is a case for the public sector to intervene with resources to supply the activity. Once the public sector intervenes, the efficiency logic is in favour of some form of fiscal decentralisation. The argument of decentralisation then is that spatial considerations make a municipality a necessary medium for setting up a system of budgets that best approximates the efficient solution of matching benefits and costs (Yilmaz, 2002). This closely refers to the decentralisation theorem of Oates (1972) stating that the government closest to the citizens can adjust budgets (costs) in response to local preferences in a manner that best leads to the delivery of a bundle of public services. Local governments then become agencies that provide services to citizens up to the point at which the value placed on the marginal amount of services for which recipients are willing to pay is just equal to the benefits they receive.

The context for fiscal decentralisation in transition economies is unfortunately very different from those in market economies and yet very similar to each other even though decentralisation is considered a key element of the transition from a command to a market economy (Bird, Ebel & Wallich, 2001). The literature on transition has tended to focus on »big picture« issues such as macroeconomic reform, governance and privatisation. In transition countries, not only must the structure of taxes, transfers and expenditure responsibilities be realigned among levels of government but what governments do must change. In Macedonia, for example, municipalities must also build new institutional capacities to provide services formerly provided by the central government. Simultaneously, municipalities must provide for the participation of citizens, accountability, and governance transparency as well as to calm the ethnic unrest in administration, education and other competencies transferred from central government.

Municipalities in Macedonia face a number of challenges to improving the quality and effectiveness of public spending. As argued by the World Bank (2008), years of under-

spending on road maintenance have left a large maintenance gap in Macedonia that the central and local governments must tackle with the available budget. A similar situation is registered with the fixed assets (buildings) in education, kindergartens, the fire department and other competencies that were transferred to the local governments in 2005. Primarily, the need to improve the quality and availability of a quality water supply, a sewage system and solid waste management system is increasing. Moreover, new spending may be required to support the country's EU accession process and harmonisation. Another type of challenge for Macedonia is to provide an efficient supply of public services in a rather diverse ethnic environment. The challenges here are the fiscal pressures upon the local governments, determining the appropriate policies for responding to those fiscal pressures and how to implement them in an ethnically diverse context that requires the funding of translations to bridge language barriers. With decentralisation, many of the problems with low investment and maintenance during the transition were transferred from the central to the local level, thus creating fiscal stress on municipalities in Macedonia (EAR, 2007).

It is important to note that such challenges cannot be addressed without a multidisciplinary context and that is why we will frequently make reference to other disciplines like political science, public policy, public sector management, geography and demographics etc. Local government economists must study the work of political scientists, economic geographers, sociologists, public management experts and others in order to see how their own efficiency principles can be (and are being) applied in the local government sector. Local government economists must not restrict themselves to the narrow boundaries of neoclassical economics (Bailey, 1999).

Decentralisation can help increase the government's sensitivity to local conditions and needs and allow greater political representation of diverse political, cultural and ethnic groups in decision making. It can provide better opportunities for local residents to participate in decision making. It can also provide political stability and national unity by allowing citizens to have more control over public programmes at the local level (Rondinelli, 2000). With fiscal decentralisation, overall resource mobilisation will increase because local governments can tax the fast growing parts of their economic base more easily than the central government can (Bahl & Linn, 1992).

On the other hand, decentralisation can result in a loss of economies of scale and of control over scarce financial resources by the central government. Possible weak administrative capacities at the local level may result in services being delivered less efficiently. Responsibilities may be transferred to the local governments without adequate financial resources, thereby making the provision of those services more difficult (Rondinelli, 2000; EAR, 2007). The precise derivation of the optimal degree of decentralisation is impossible due to controversial theoretical suggestions. This is especially true for Macedonia because the appropriate degree of decentralisation has to be detected on a case-by-case basis (Breuss & Eller, 2003).

Economic theory emphasises the important role of local government in providing public services and seeks to determine the conditions for the maximisation of citizens'

economic welfare. But this is only a partial approach since it does not include the political, sociological, spatial and/or other aspects. In a broader context, nation building in Macedonia requires the development of stronger institutions and efficient local government as a strategic supply-side policy instead of looking only at the public expenditure approach. The question is how local government fits into this scheme of a broader socio-economic and political context. From an economic perspective, Klugman (1994) argues that decentralised systems of government have better abilities to match service provision to the preferences of the constituencies and can deliver public services more efficiently. From a political perspective, it is argued that decentralised systems of government are preferable because they tend to be more accountable and transparent and increase political participation, factors which, in turn, have an indirect positive effect on efficiency as argued by Putnam (1993). Tiebout (1956) argues that the consumer-voter revealing preferences can make use of the decentralised choice in the public sector to enhance the efficiency of resource allocation. Further, according to Oates (1972) the decentralised choice in the public sector (as in the private sector) provides an opportunity to increase economic welfare by tailoring levels of consumption to the preferences of smaller, more homogeneous groups. On the other hand, for transition countries, many of the explicit and implicit assumptions of the Tiebout and Oates models are not relevant or applicable. Thus, decentralisation might be like some potent drugs for transition countries; when prescribed for the relevant illness, at the appropriate moment and in the correct dose, they can have the desired salutary effect. However, in the wrong circumstances, they can harm rather than heal (Prud'homme, 1995).

For Macedonia as a transition country, there is a risk that the process of decentralisation could become the potent drug described by Prud'homme (1995). The **first** reason might be that the voter preferences in Macedonia are not as readily translated into budget outcomes as in industrial countries simply because of the low fiscal transparency and accountability (one proxy for Macedonia can be the relatively low fiscal transparency scores as per the open budget initiatives (OBI) available at IBP (2012); also Nikolov, 2009). The **second** reason was apparent in the last Macedonian local elections in 2009. During the campaigns, mayors talked more about national level problems than about local problems (thus the local preferences were not revealed). Most importantly, central-level politicians are more active in local elections than local politicians and thus local elections are seen as nothing more than a rehearsal for the parliamentary elections. This is a reflection of not having a long enough history of democracy. The **third** reason might be that decentralisation in Macedonia is more of a deconcentration and less of fiscal autonomy and the devolution of power to municipalities. In such a set up, reliance on the central government's funds for grants/public goods is retained and there are no mechanisms by which the local voters can reveal their preferences. In the end, less can be gained from this form of decentralisation than in other industrial countries. This is simply because the power rests in the centre and is likely to lead to lobbying, continuous bargaining, uncertainty, conflict and economic fluctuations in the central and local governments' relations. It might also bring clientelistic behaviour and preferences for municipalities where the mayors have the same political affiliation as the central government or even lead to obstacles being put before municipalities where

mayors are not of the same political affiliation as the central government (as empirically confirmed in Chapter 4). The **fourth** reason may be the inadequate financial transfers for some services (education and roads, for example) and forcing municipalities in Macedonia to inefficiently provide services. This creates the inability to maintain the existing yet depreciated assets. Further, the non-optimality of the transfer of competencies to the local government (unfunded mandates of municipalities in Macedonia) might create unsustainable fiscal stress on local government due to the large fiscal gap. The **fifth** reason is that ethnic diversity can affect the efficiency of public service delivery (as empirically confirmed in Chapter 4). The **sixth** reason is that there might be difficulties in decentralisation management given the lack of experience, skills and knowledge. The **seventh** reason is that in Macedonia there are constitutional post-OFA requirements on the equal representation of ethnic minorities in local public administration, language requirements, and education requirements in order to align the country's unity along ethnic lines that are the direct responsibility of the municipalities. Thus, decentralisation can be considered the key expensive policy choice for providing political stability and Macedonian national cohesion more than solely bringing economic efficiency.

These questions raise issues that are complex to address and to empirically test. On one side, the need for higher economic growth in a sluggish transition, such as in Macedonia, requires centralisation and not decentralisation at least from an efficiency point of view. On the other side, there are the requirements to implement the post-OFA need for decentralisation and for country cohesion. The environment is even more complex given that during the transition the regional differences have been increasing in Macedonia (as already illustrated in section 1.5). Since 2005 and a new wave of decentralisation the wealthier local governments in Macedonia stand to benefit even more from a higher tax base and this might further increase regional inequalities. The Law on Balanced Regional Development (*Official Gazette of the Republic of Macedonia*, no. 63/07) might help in decreasing the regional differences but it is too early to assess if it will be successfully applied (it was only in late 2008 that a ranking of the regions was done so that budget resources can be allocated to poorer regions) due to the slow implementation and lack of skills and knowledge to plan and manage complex, regional and local infrastructure projects.

While efficiency requires that the provision of a public good be expanded until it reaches the level at which the sum of each person's marginal valuation of the last unit equals the marginal cost, here the discussion relevant to our study must follow the Pareto efficiency level, i.e. whether municipalities are failing to efficiently provide public goods and services in an ethnically fragmented environment. While with private goods and services every consumer has the same marginal rate of substitution and consumers can consume different quantities (by being non-excludable and, even if a public good is excludable, its provision will still be inefficient by being non-rival). For public goods and services, everyone consumes the same quantity but consumers can have different marginal rates of substitution. That is why Samuelson (1954) argues that where there is a public good any single person can snatch some selfish benefit in a way not possible under the self-policing competitive pricing of private goods. In Macedonia,

it is possible for 'ethnic selfishness' to have an adverse impact on the efficiency of providing public goods and services at the municipal level.

Bailey (1999) distinguishes between allocative and technical efficiency cases in municipalities. Decentralisation allows for decentralised public choices, thus leading to Pareto improvements because of the removal of the deadweight loss of consumers' surplus. The size of allocative efficiency (welfare loss) depends on the size of the disparities between central and local choices (the greater the heterogeneity of ethnic preferences, the greater the welfare losses). On the other hand, decentralisation might have negative effects, which can generally be described as greater technical inefficiency of the decentralised administration due to the potential loss of economies of scale.

In Macedonia, the discourse is focused more on the political context in order to resolve conflicts with ethnic characteristics taking priority over economic efficiency concerns. The main challenge in Macedonia is to find the right path for the economic and political arguments to converge, as argued in Tanzi (1995). Thus, ethnic fragmentation in Macedonia with Albanians and Macedonians having different linguistic and religious characteristics might have a direct negative correlation with the efficiency of providing public services due to heterogeneous ethnic preferences which prevent the removal of the deadweight loss. Indeed, with the OFA, decentralisation seems to have become a »one size fits all« device by the international community to freeze ethnic conflicts and to escape their responsibility to deal with the sources of the conflict (Monteux, 2006). Such international relations risk allowing tensions to develop further and potentially making the situation even worse.

The role of local government in Macedonia could be to somehow find the preferences of the ethnic groups and then use force to coerce them to pay for the public goods and services they receive. If a local government is credible, it can avoid the free riding of its citizens and ensure that public goods and services are optimally provided. Rosen (2002) emphasises that free riding is not a fact but an implication of the hypothesis that people maximise a utility function that depends only on their own consumption of goods.

2 Public service delivery in an ethnically diverse local government

The first welfare theorem of public finance suggests conditions under which markets allocate resources efficiently. Social interactions among neighbours generate neighbourhood externalities for children and adults. When there are external costs and benefits, we do not expect the market equilibrium to be socially efficient (O'Sullivan, 2007). In the case of the external costs, people pay less than the full social cost of an action or behaviour like driving and polluting and, in the case of an external benefit, people receive less than the full social benefit by educating themselves (O'Sullivan, 2007). When they stop short of the socially efficient level of education, externalities can cause inefficiencies. Thus, we can say that a positive externality is when a person is not compensated for an action that benefits someone else and a negative externality occurs when a person does not pay for an action that imposes a cost on someone else (O'Sullivan, 2007). For children that imitate adults, a neighbourhood of educated and

successful adults provides good role models. This is a positive externality as the adults are not paid every time they encourage children. Drug abuse in a neighbourhood is a negative externality because the drug abusers are not compensating the neighbourhood for the unpleasant environment. Households are competing for places in a desirable neighbourhood by bidding for housing and land in those neighbourhoods (O'Sullivan, 2007). The results of the empirical research in Chapter 4 show that, at the municipal level in Macedonia, people are significantly dissatisfied with the environment in which they live in general (not explicitly because of ethnicity). Yet Macedonian people have been denied services because of their ethnicity in more ethnically fragmented municipalities.

In the economics of neighbourhood choice, households are choosing a set of local public goods and a set of taxes to finance the public goods. What they also choose is a set of neighbours who provide opportunities for social interactions and with whom to send their children to the same school. In our work we try to understand the diverse municipalities with the formation of households from different ethnic backgrounds. One extreme could be the equal representation of households with different ethnic backgrounds and the other extreme could be segregated municipalities with a neighbourhood for each ethnic group.

In Macedonia, there is a variety of municipalities each with a different mix of public goods. At least in theory, these variances allow citizens to »vote with their feet« when choosing a municipality or *mesna zaednica* (a unit smaller than a municipality, a commune) with the best combination of public services, taxes and neighbours for social interactions. Namely, at the central level, the preferences of consumers/voters are given and the government tries to adjust to the pattern of these preferences, whereas at the local level the various governments have their revenues and expenditures more or less set. Given this set of preferences, the consumer/voter moves to that community whose local government best satisfies his or her set of preferences (Tiebot, 1956).

The sorting of local public goods is best illustrated with the preferences in education as a public good, especially as it has been decentralised as a competency since 2005. There are constant pressures in Macedonia from ethnic Albanians to segregate the primary schools (not wanting their children to learn in the Macedonian language), even though Article 48 of the constitution clearly prescribes that in schools where education is carried out in the language of a nationality the Macedonian language is also studied. What might be the consequences of such a forced segregation policy? Albanian households have lower »official« incomes on average, but are matching the average income with more remittances, as already discussed in section 1.5. In economic terms, ethnic and income-based segregation reduces employment opportunities for low-income households (O'Sullivan, 2007). The concentration of ethnic households in one part of a municipality might increase the municipality's poverty level because the bulk of jobs might be in other parts of the municipality (as presented in ESI 2002 the Albanian community is concentrated in agricultural/rural parts while the Macedonian community is concentrated in industrial urban parts). This spatial mismatch might decrease the employment opportunities for any ethnic minority because of something as

simple as the costs of commuting. Ihlanfeld and Sjoquist (1990), for example, test the spatial mismatch hypothesis for the USA and find that inferior access to jobs explains about 25% of the gap between the employment rates of black and white workers and about 31% of the gap between Hispanic and white employment rates. Wunnava, Prasch and Mitra (2012) investigate the determinants of economic growth emphasising the role of institutional quality, social fragmentation and increasing global integration and find that ethnic heterogeneity has been a significant impediment to growth, but religious and linguistic heterogeneity have not.

Further, these decreasing employment opportunities can result in low-income municipalities. Low-income municipalities are likely to spend less on schools so their children are likely to receive an inferior education. Schools in such communities must then devote far more time and financial resources to security and school safety (which is evident in Macedonia with increasing ethnic violence in secondary schools and on the busses of Skopje's public transportation company). From an economic point of view, the results are a vicious combination of lower school funding, higher costs and inferior education. Namely, in Macedonia already 54.7% of the poor live in households where the head of the household only has a primary education (State Statistical Office Republic of Macedonia, 2012a). Thus, the push for ethnic segregation policies by the Albanians might further increase poverty. Cutler and Glaeser (1995), for example, find that in the USA young black adults are much worse off in more segregated cities because of neighbourhood externalities (in a low-income environment there are fewer contacts with positive role models). Estimates based on US data confirm that racial segregation interacts with structural shifts in society that concentrate poverty (Massey & Fischer, 2000). Walks and Bourne (2006) find that the concentration of apartment housing, visible minorities in general, and a high level of racial diversity in particular do help account for the neighborhood patterning of low income.

3 Economic efficiency and the fiscal gap

We take education as a case study to discuss further. Education is an important element in the central and local budgets in Macedonia and in the whole decentralisation process in Macedonia (representing, on average, 72% of the total earmarked transfers from central to local government in the period between 2005 and 2008 and almost 90% of all employees transferred from central to local government since 2005). On top of that, it is a highly politicised activity involving the need to integrate young ethnic Albanians and young ethnic Macedonians on one side and the political pressure to separate school classes along ethnic lines on the other[22].

[22] Education is very important in Macedonia as the government implemented many programmes: each student at primary and secondary school must have computers, free books for primary education, mandatory secondary school, conditional subsidies for parents from vulnerable households to send their children to schools, an an increased share of central budget expenditure to GDP for education each year since 2006. But there were also disputes when the minister wanted to introduce mandatory classes in the Macedonian language in the first year instead of the third year of primary school for the other, non-Macedonian ethnic groups.

According to the Macedonian Ministry of Education and Science, the allocating of decentralised education functions to municipalities is being done in a phased approach. The phased approach to fiscal decentralisation (for the phases of fiscal decentralisation in Macedonia, see Appendix D) and to intergovernmental grants is prescribed in the Law on the Financing Local Government (*Official Gazette of the Republic of Macedonia*, no. 61/04). During the first phase of the decentralisation process in Macedonia, a system of earmarked grants was introduced by the Law on Financing Local Government (*Official Gazette of the Republic of Macedonia*, no. 61/04). The earmarked grants are supposed to cover the distinct activities and the line ministries. The government funds are responsible for proposing to the Ministry of Finance the formulas for the allocation of grants to individual municipalities by projects, institutions and/or programmes referring to the budget of each next fiscal year. In practice, the earmarked grants are supposed to cover the operating and maintenance costs of the distinct competencies (culture, social care, child protection and education), i.e. the costs of water, heating, communication, transport, materials and tools, repair and current maintenance and contractual services.

Since the inception of the second phase of the fiscal decentralisation process, block grants are paid to those municipalities that have entered the second phase. These block grants cover competencies prescribed by the Law on Local Self-Government (*Official Gazette of the Republic of Macedonia*, no. 05/02) such as culture, social care, child protection, education and health. Specifically, this means libraries, music and performance activities, museums, cinemas, kindergartens, geriatric homes, primary and secondary schools, whereas no transfer of competencies was done for the health sector. Further, according to the law, the amount of block grants must not be less than the amount of expenditure made by the central government in the fiscal year preceding the transfer of the competency. In practice, the block grants are supposed to cover the operating and maintenance costs of the municipal competency and the salaries and related benefits of the employees.

The formula for allocating a block grant for education includes the standard for the student-teacher ratio, which holds important weight. This favours municipalities with relatively higher population growth (the natural growth of Albanians and Macedonians is in favour of the Albanian population as was illustrated in section 1.5), for which the actual student-teacher ratio is higher than the standard. On the other hand, it puts at a disadvantage those municipalities with low population growth and thus lowers the student-teacher ratio. As a consequence, some municipalities are under pressure to close schools, reallocate teachers or dismiss them. All of this means that the devolution of teachers' salaries is not a minor reform. On the contrary, it amounts to giving local governments throughout Macedonia the important responsibility of reforming primary and secondary education. Yet they are not necessarily equipped for these tasks given their limited operational and management capability or fiscal resources. Municipalities are therefore finding it difficult to improve their efficiencies in providing these services. They also have serious concerns in dealing with the underinvestment and lack of maintenance from the transitional past, especially with severely depreciated assets. None of these issues were considered as additional costs for municipalities when the

central government transfers started in 2005 with the decentralisation reform. Thus, municipalities in Macedonia are facing unfunded competencies. These unfunded competencies could create unsustainable fiscal gaps for municipalities when they are already under fiscal stress (EAR, 2007).

In the period between 2005 and 2008, municipalities in Macedonia had been utilising a wide spectrum of actions to face the problems deriving from the decentralisation of education. A growing number of municipalities throughout the period, reaching proportions of more than 50%, had been allocating their own revenues in addition to the central government transfers for this function. Municipalities had been using parents' contributions which had increased from the initial 20%. However, it seems that the proportion has stabilised at about 30% of municipalities receiving such contributions (EAR, 2007). The number of donors' contributions has also been rising and such donations are benefiting more than 50% of municipalities. Ever more municipalities are focusing on more efficient transportation of students and more efficient use of teachers. There is also a growing trend of municipalities searching for greater energy efficiency in schools.

Some municipalities intend to close certain school units, close entire schools or to merge school units and schools. At least one-third are revising their maintenance contracts as well. Inter-municipal cooperation seems to be a preferred action for more than half of the municipalities[23]. It is interesting that reducing maintenance costs and revising maintenance contracts are considered to be useful actions by only approximately one-third of municipalities. The trend is to increase these actions but not as dramatically as other actions. A possible explanation of this is that municipalities, whilst looking in a more long-run perspective, are trying to solve the »bigger/urgent« problems such as teachers and the transportation of students.

Another issue might arise since maintenance is covered by the earmarked grants (issued by the central government) and municipalities do not see it as their own responsibility (a typical 'flypaper effect'). Some municipalities have concluded that some of their school units are so old or have so few students that they are not worth maintaining. This perception is reinforced by the school network which was set up before the transition and no longer reflects the present demand profile and demographic trends for primary education. It is also worth noting that donor agencies (particularly the USAID/PEP project which has an extensive three-year plan)[24] are providing resources for the

[23] From the EAR's TA to the Ministry of Local Government survey conducted by the company LDK to municipalities in 2007, the planned types of inter-municipal cooperation were mostly for: joint planning and development, joint administration and joint communal enterprises (internal questionnaire of the project).

[24] The USAID-financed Primary Education Project (PEP) project is a five-year, USD 16.4 million initiative targeting all public primary schools in Macedonia. So far, they have renovated eight schools and planned, in 2008, to renovate 32 more in 32 municipalities. Each municipality can apply for renovations in conjunction with two schools. The goal is for each municipality in Macedonia to have at least one school renovated with help from the USAID/PEP project. The limit is USD 30,000 per municipality with at least a 10% cost share from the school. Interestingly,

reconstruction and renovation of schools on a relatively large scale. This also has an impact on the decision making of municipalities regarding which actions to pursue related to primary education expenditures.

The evidence of low efficiency in education services in Macedonia is also supported by the World Bank (2008) which stated that government spending on education, as a share of the officially estimated GDP, is modestly higher than in most countries in the neighbourhood. However, student achievements are relatively poor compared to those same countries and substantially worse compared with EU countries. Enrolment rates in secondary education are lower than in the EU and the skills acquired in schools are not in line with market needs. Access to education seems equitable at the primary level, but gaps open up at the secondary and tertiary levels, with the level of wealth, place of residence **and ethnicity** all affecting enrolment rates. Poor learning outcomes are one of the factors that may have contributed to the sluggish economic growth and high unemployment in Macedonia. Boosting the productive capacity of the economy should be accompanied by raising the quality and relevance of education. These are key components in helping to improve living standards and accelerate EU integration, both of which are top government priorities (World Bank, 2008).

Substantial differences appear in the amount of spending on schools with different ethnic compositions. For example, Durlauf (1996) and Benabau (1996) (cited in Alesina, Baquir & Easterly, 1999, p. 4) show how city-suburb polarisation is inefficient for human and capital accumulation with regard to local school financing. Cutler and Glaeser (1995) examine the effects of segregation on outcomes for blacks in schooling, employment and single parenthood. They find that blacks in more segregated areas have significantly worse outcomes than blacks in less segregated areas. They control for the endogeneity of location choice using instruments based on political factors, topographical features and residence before adulthood. Scheinkman and Shleifer (1995) find that blacks suffer worse outcomes in education, income and other social dimensions in more segregated metropolitan areas.

In the last few years in Macedonia, there have been constant pressures from ethnic Albanians to open separate Albanian-language classes in primary schools, thereby segregating them. Further, despite government efforts to promote the principles of integrated education, the practice of separating pupils along ethnic lines or language differences has continued in a number of Macedonian schools. Cases of inter-ethnic violence in secondary schools have persisted. Efforts have been made to promote and implement the SIE in close cooperation with the Organisation for Security and Cooperation in Europe (hereinafter: OSCE). An inter-ministerial coordination working group was established. However, the Ministry of Education and Science lacked the human and financial capacities necessary to support implementation of the strategy (European Commission, 2011).

---

the municipalities are currently participating with, on average, 28% of their own funds. The projects should fulfil certain standards like energy efficiency.

Federalism and Decentralisation in Macedonia

1 Federalism in Yugoslavia

Perhaps one of the best descriptions of former Yugoslavia is given in the Managing Multiethnic Cities of the Open Society Institute's (OSI) Local Government and Public Service Reform Initiative (2010), which reads as follows: one country, two scripts (Cyrillic and Latin); three basic religions (Roman Catholic, Orthodox and Islam), four languages (Serbian, Croatian, Slovenian and Macedonian); five major nationalities (Serbs, Croats, Slovenians, Macedonians and Bosnians) and several smaller national groups (Albanians, Hungarians, Turks, Roma etc.); six socialist republics (Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, Serbia and Slovenia), with seven neighbours (Italy, Austria, Hungary, Romania, Bulgaria, Greece and Albania); and eight constitutive parts (six socialist republics and two autonomous provinces – Vojvodina and Kosovo and Metohija).

The principle of federalism was established at the second session of *AVNOJ* (Anti-Fascist Council of People's Liberation of Yugoslavia) in 1944 in Yugoslavia before the end of World War Two. It is said in the preamble to the constitution of Yugoslavia that Yugoslavia is a republic of free nations and minorities. The distinction between nations and minorities was clear and it was thought that the nations and minorities could live in »brotherhood and unity« as the then constitution stated.

Federalism, as a principle, was not a factor in the breakup of Yugoslav. Instead, it was due to the people's dissatisfaction with economic development, i.e. LDRs believing they were receiving less and the MDRs believing their development was decelerating because of the LDRs (Grujoski, 2003). According to Rudolph (2006), the conflicts that ripped Yugoslavia apart were not only rooted in deep grievances separating ethno-national communities but economic differences also reinforced the cultural differences separating Yugoslavia's national groups and provided the national leaders of the communities with additional justification for seeking secession.

Crawford (1998) offers an alternative explanation of the ethnic conflicts in former Yugoslavia. She argues that the roots of ethnic conflict there can be found in the institutional structure of the Yugoslav political and economic systems constructed after World War Two. While the post-war institutional structure offered numerous incentives for identity within an integrated Yugoslav state, as well as incentives for regional (as opposed to ethnic) political loyalty, it also encouraged inter-ethnic rivalry through its

institutions of allocation, representation and participation. With deepening fragmentation, local elites had many resources to distribute in exchange for support and saw few reasons to maintain loyalty to the central Yugoslav government.

Yugoslavia incorporated several nations not because of political history but due to the cognate languages and geographical proximity (Smith, 1991). On the other side, the separate histories and religious differences suggested the possibility of Yugoslavia providing a model of a 'transcendent nation' in the form of a federation of nations. However, the Croat spring, the Kosovo conflict and the final dissolution of Yugoslavia suggest the long-lasting power of the constituent nations that composed the federation rather than a supra-national institution or any other Yugoslav sentiment.

Accordingly, were political or economic factors more important in the breakup of Yugoslavia? This remains to be answered in some other research agenda. However, the research of Hayo and Voigt (2010) can give some indication. Namely, they empirically tested 169 countries and found that domestic political factors are more important than economic ones in changing the form of government. They also found that geographical factors and former colonial status are important determinants of the survival probability of the existing form of government. Also, presidential systems are, *ceteris paribus*, more likely to survive than parliamentary ones[25]. The most important factors relate to intermediate internal armed conflict, sectarian political participation, the degree of democratisation, party competition as well as the extent to which knowledge resources are distributed among the members of society.

2 The Macedonian local government system in former Yugoslavia

The local government system in Macedonia was first introduced with the Law on the Administrative and Territorial Organisation of Macedonia in 1947 (the constitution of Yugoslavia was adopted after World War Two in 1946), organising Macedonia into cities and regions (in Macedonian *okolii*). At that time, the people's boards where mainly acting within the centralised government organisation of the federation (Dojcinoski, 2007). With the reorganisation of local government from 1952 on, the fundamentals of the modern local government in Macedonia were established. The people's board competencies were expanded. In 1964, the communal system was established with the Law on Organising Municipalities and Regions. In that law municipalities were defined as a basic political-territorial organisation of self-governing working people and a basic socio-economic community of citizens within their territory.

With the new constitution of the Socialist Republic of Macedonia signed in 1963 (after the Skopje earthquake[26]), local government competencies were only defined in the most

[25] A presidential system is a system which has a directly elected executive, with a limited term of office and general responsibility for the affairs of state. A parliamentary system is a system which has: (1) a directly elected legislative body; (2) the fusion of executive and legislative institutions; (3) a collective executive that emerges from the legislature and is responsible to it; and (4) separation between the head of state and the head of government (Newton & Van Deth, 2005).

[26] It is stated in Grujoski (2003) that the Skopje earthquake took 9% of Yugoslav GNP.

general terms, leaving any more precise definitions for the proper legislation to specify. The municipality's statutes became a constitutional category. With that constitution, the people's board became the municipality's council and the local communes were introduced as the smallest organisational unit of local government within municipalities.

With the 1974 constitution of Yugoslavia, the delegation system was established and municipalities were self-governing[27] as a socio-economic community based on self-determination of the working class and the citizens (constitution of the Socialist Republic of Macedonia, Article 184, paragraph 1). The changes of the 1974 constitution were the result of development of the concept of federalism and the new positions of the republics to further expand their competencies and to build the delegation system from the bottom up, from municipalities to the federation (Vankovska, 2007). The very nature of self-governance was in many ways undermined by the political supremacy of the ruling political party. The Union of Communists, which was the only political party allowed, was centralised up to the republic level (Kandeva, 2001).

3 Decentralisation in Macedonia after independence

Dynamics. Three periods can be identified in the process of decentralisation in Macedonia during the transition after 1991 (for more, see CEA, 2006). The first of these periods was one of centralisation between 1991–1995 which left municipalities without competencies and an efficient system of financing. During this period, the government was focused on achieving macroeconomic stabilisation and privatisation.

During the second period, lasting from 1995 to 2005, macroeconomic stabilisation was achieved but the overall economic performance was relatively poor. During this period, for the first time after independence, a new Law on Local Government (*Official Gazette of the Republic of Macedonia,* no. 60/95) was adopted in 1995 and a new Law on Territorial Organisation (*Official Gazette of the Republic of Macedonia,* no. 49/96) was adopted in 1996 introducing 123 municipalities (see www.lsg-data.org.mk). Both laws were products of a highly ethnically and politically motivated process (Popovski & Panov, 1998).

Macedonia signed the European Charter of Local Self-Government in 1996 and ratified it in 1997. In 1998, the Ministry of Local Government was established. The process of decentralisation was further supported by two important documents adopted in 1999, namely the government programme and the government strategy for reforming the public administration. As a result of these two initiatives, a working team within the Ministry of Local Government was established in March 1999 to start the process of decentralisation.

In 1999, the Kosovo conflict further complicated ethnic tensions in Macedonia and led to an armed inter-ethnic conflict in 2001. The crisis in Macedonia ended with the

[27] The self-governance, i.e. *samoupravuvanje,* is identified with decentralisation or participation in foreign literature (Grujoski, 2003) and was actually transferring responsibilities/competencies from central to local state bodies, i.e. transferring government power closer to the citizens.

signing of the OFA in 2001 and the decentralisation initiatives of 1999 thus gained new momentum. One consequence of the politically-driven decentralisation process was the reverse sequencing of decentralisation in Macedonia, with revenue decentralisation preceding a loosely defined assignment of expenditure (UNDP, 2005).

Essentially, the decentralisation of particular functions was delegated to line ministries which used every opportunity to slow the process down as they had no incentives to give over their own power to the municipalities. The speed of the decentralisation reforms greatly accelerated during 2004 as the Ministry of Local Government moved forward with a number of initiatives and intensified its contacts with the Association of Local Governments (known by its Macedonian acronym, ZELS).

The third period of decentralisation in Macedonia started in 2005 when the government adopted a detailed plan for the transfer of competencies and resources. In April 2005, administrative decentralisation was planned in terms of the transfer of institutions, assets, employees and documentation. In that plan the de-concentrated units of line ministries were transferred to the local level as well. This, together with the new legislation, provided an efficient legal framework for the new modern process of decentralisation.

Territorial Organisation. With the new Law on Territorial Organisation (*Official Gazette of the Republic of Macedonia,* no. 55/04) adopted in 2004, the local governments in Macedonia were restructured into 84 municipalities (15 of which have fewer than 5,000 inhabitants) and with the city of Skopje as a special unit comprising 10 municipalities in accordance with a separate law on the city of Skopje (*Official Gazette of the Republic of Macedonia,* no. 55/04). For comparison, we illustrate the average size of local governments in selected countries in Table 9.

Table 9. Average size of municipalities in selected countries

Countries	Municipalities with fewer than 1,000 inhabitants	Average population	Average area in sq. km
Macedonia	1	24,000	296
Bulgaria	0	35,000	432
Slovenia	3	10,300	106
Croatia	3	8,800	104
Albania	0	10,000	77
Romania	2	7,600	81
Hungary	54	3,300	32
Slovakia	68	1,900	17
Poland	0	16,000	130

Source: Adopted from P. Swianiewicz, *Consolidation or Fragmentation? The Size of Local Governments in Central and Eastern Europe*, 2002

Macedonia is more fragmented than Bulgaria and less fragmented than the other countries. Smaller municipalities can act as free riders because citizens living in smaller municipalities still benefit from many services delivered by the bigger municipalities (the capital city of Skopje is an extreme example). On the other side, large

municipalities can more efficiently provide services which may lead to more public interest and participation in local politics.

Demographic differences across municipalities in Macedonia. The population density in Macedonia is, on average, 80 persons per km^2. However, there is a wide range of differences. The most sparsely-populated municipalities have a minimum of four persons per km^2, whereas the most densely-populated ones have 16,193 persons per km^2. In Macedonia, 68.3% of the population is between the ages of 15 and 65 years. The natural population growth (i.e. the difference between births and deaths), across municipalities, averages out at 0.4, with a minimum of -2.12 and a maximum of 2.01. This demonstrates huge disparities with some municipalities booming and others with negative trends. In the latter case, if this trend persists there is a risk these areas will become depopulated. The ageing index (i.e. the ratio of persons over 65 to children aged up to 14) shows an average of 0.50 in the entire country. This means there are twice as many children up to the age of 14 as there are people over 65. But, as with other statistics, this is merely an overall national average. The discrepancy across municipalities is high, with a minimum ageing index of 0.13 and a maximum of 2.17. The general conclusion could be that the population in Macedonia is growing at a relatively low rate overall, but that ethnic disparities are still relatively high in terms of population concentration, ageing and growth, as was illustrated in section 1.5.

Economic differences across local governments in Macedonia. The average 2002 GDP at PPP for Macedonia was USD 6,850 per capita (expert estimated data). But the variation across municipalities went from a minimum of USD 734 per capita up to a maximum of USD 53,466 per capita. The average unemployment rate in Macedonia was 38.1% in 2002, with a municipality minimum of 11.0% and a municipality maximum of 79.4%. Consideration of these numbers, illustrated in Table 10, once again confirms the relatively large discrepancies in economic and social data across municipalities in Macedonia.

Table 10. Descriptive statistics of GDP at PPP and unemployment across local governments in Macedonia in 2002

Statistics	GDP at PPP	Unemployment in percent
Mean	6,850	38.1
Median	4,110	40.2
Maximum	53,466	79.4
Minimum	734	11.0

Source: State Statistical Office Republic of Macedonia, 2012a

Infrastructure differences across local governments in Macedonia. As illustrated in Table 11[28], the mean population per km of asphalt-equivalent in municipalities in Macedonia is 204. However, the range of variation is from a minimum of 20 people per km of asphalt-equivalent to a maximum of 2,748 people per km of asphalt-equivalent. The differences are also great for the population density measured in squared kilometres (km^2) of a local government's area. The mean population is 80 inhabitants per km^2. The lowest density is 4 inhabitants per km^2 and the highest is 630 inhabitants per km^2 area. The median is lower than the mean for both measures thus, illustrating that most of the local governments in Macedonia have less than the national average density and less than the national average of inhabitants per km of asphalt-equivalent.

Table 11. Descriptive statistics of population per km area and per km of asphalt-equivalent across local governments in Macedonia

	Population per km^2 area	Population per km of asphalt-equivalent
Mean	80	204
Median	49	132
Maximum	630	2,748
Minimum	4	20

Source: Author's calculation using State Statistical Office Republic of Macedonia data, 2012a

Given the differences across municipalities, one should be careful when using average values. Further, symmetric decentralisation (all municipalities, regardless of their capacity and population size, must exercise the same competencies), in the long run has the potential to create even bigger differences than those at present. Therefore, a more efficient asymmetric fiscal architecture design could be more beneficial for Macedonia than the design currently available or fully developed in the legislation.

Ethnic structure in Macedonia with a focus on Macedonians and Albanians. The ethnic structure of Macedonia is illustrated in Table 12. We can see that the Albanian community almost doubled in Macedonia from 1961 to 2002.

Table 12. Ethnic structure of the Macedonian population in 1961–2002 (in %)

Ethnic group	1961	1971	1981	1994	2002
Macedonian	71.18	69.35	68.01	66.60	64.18
Albanian	13.02	16.99	19.76	22.67	25.17
Others	15.08	13.66	13.23	10.73	10.65

Source: H. Johansen, *Ethnic dimensions of regional development in Macedonia: A research report in Eurasian Geography and Economics*, 2004

[28] Data for the local governments (10 in all) within the city of Skopje were not taken into account due to a lack of data for all local governments within the city of Skopje. Population data are based on estimates from 2010. Data on km asphalt equivalent are from 2009.

In 1994 during the first census taken after independence in 1991 five major ethnic groups were identified: Macedonians, Albanians, Turks, Serbs, Vlachs and Roma. Because the Macedonian and Albanian population dominate the population structure in Macedonia[29], we further analyse these two dominant ethnic groups.

The key differences between the dominant ethnic groups, Macedonians and Albanians, are religious, cultural and lingual. Macedonians are mainly Orthodox Christians and Albanians are mainly Muslim. Linguistic differences between the Macedonian and Albanian languages are now recognised in the post-OFA constitution. The Albanian language is also an official language in communities with a predominantly Albanian population.

The year 2001 brought ethnic tensions to an ethnic clash that caused more than 170,000 ethnic Albanians and Macedonians to flee from their homes. This insurgency was led by the nationalistic Albanian National Liberation Army (hereinafter: NLA). The 2002 elections ended with a number of former NLA members obtaining political posts in Macedonia's new government. An amnesty programme was granted to former NLA guerrillas. Several political parties represent the Albanian minority in Macedonia, all of them being very active in national and local politics, together with a plethora of cultural and religious organisations (Johansen, 2004). Some minor groups and the new political party of Albanians – *Democracia e re* (New Democracy) – from 2009 also claim federalisation but most are asking for regional autonomy with widespread powers.

Expenditure assignment of Macedonian local governments. The 2002 Law on Local Self Government (*Official Gazette of the Republic of Macedonia,* no. 05/02) regulates the competencies of the local governments. A wide range of responsibilities is listed in the provisions of Article 22 of this law, including: urban planning and space arrangement; environmental and nature protection; local economic development; communal services; cultural development, in accordance with the national programme for culture; sports and recreation; social care and child protection; foundation of education, financing and managing of primary and secondary schools in cooperation with the central government; organisation of transport and food supplements for students and student housing; health care, managing the system of public health organisations and primary health care; undertaking measures for the protection and rescue of citizens and material goods in the case of destruction in war, natural disasters and other accidents; fire protection that is provided by the local fire departments; and supervision over activities regarding the municipality's responsibilities and other matters determined by law.

Table 13 illustrates the total expenditures of Macedonian municipalities by the type of expenditures and source of financing in 2010.

[29] For example, Turks are the third largest ethnic group after the dominant Macedonians and Albanians, with 4% of the total population of Macedonia.

Table 13. Total budget of Macedonian municipalities in 2010 by type of expenditures and source of financing (in euros)

Budget item/ source of expenditures	Own budget	Donations	Borrowing	Self-financing activities	Transfers from central government	Total
Wages and salaries	27,490,872	2,419	0	539,779	160,906,870	188,939,941
Reserves	662,256	0	0	726	484	663,466
Goods and services	47,680,322	461,091	0	12,819,211	36,852,124	97,812,747
Interest payment	23,079	0	0	0	0	23,079
Subsidies and transfers	11,654,009	45,314	0	272,366	131,266	12,102,955
Social transfers	353,668	0	0	0	0	353,668
Capital expenditures	71,785,405	2,451,415	575,491	923,136	2,301,488	78,036,935
Principle payment	64,385	0	0	0	32,258	96,643
Total	**159,713,997**	**2,960,239**	**575,491**	**14,555,217**	**200,224,491**	**378,029,434**

Source: Ministry of Finance Republic of Macedonia, 2012

We can see that the **current expenditures** (wages and salaries, reserves, goods and services, interest payment, subsidies and transfers and social transfers) are almost 55% of the **total own budget expenditures**, but in the **total budget** (all sources) the current expenditures are almost 80% of the total budget. **Expenditures from transfers** from central government are almost 53% of the **total expenditures**, reflecting a relatively high level of fiscal dependence on the central government.

Self-financing activities are contributions from citizens for different services (for example, school excursions paid by parents) and are almost 4% of the total expenditures. Of the total expenditures, municipalities are spending 50% on salaries and wages. More than 85% of the wages and salaries are paid with transfers from the central government.

One must also consider that the demographic, economic and institutional changes that took place during the transition have also impacted local finance in general. This created additional expenditure needs without a corresponding provision of finance, or even shrinking the tax base. At the same time, it must also be taken into account that the central government appears to be unwilling to compensate municipalities for (EAR, 2007): (a) transition expenditures (including those stemming from the lower purchasing power and from changes in the relative prices that took place after the fall of socialism); (b) administrative overheads, incurred hitherto by departments of the central government for the now transferred competencies; (c) geographical (and other) distinctions among various municipal jurisdictions; (d) diseconomies of small-scale service delivery by municipalities where these may occur; (e) the potential of social disruption resulting from small-scale or more localised choices of service delivery; (f) macroeconomic instability (inflation); (g) demographic changes; (h) underinvestment

during the transition and before decentralisation; and (i) insufficient maintenance during the transition and before decentralisation.

Revenue assignment of Macedonian local governments. The sources of financing for Macedonian municipalities are defined in the Law on Financing Local Government (*Official Gazette of the Republic of Macedonia*, no. 61/04). In Table 14, we illustrate the local government revenues in Macedonia by source, the way they are reported to the Ministry of Finance.

Table 14. Macedonian municipal revenues by source of financing in 2010 (in euros)

Budget item/ source of revenues	Own budget	Donations	Borrowing	Self-financing activities	Transfers from central government	Total
Tax revenues	98,779,325	447	-	2,611	926,498	99,708,881
Non-tax revenues	5,371,087	74,418	-	14,758,814	81,802	20,286,121
Capital revenues	25,321,367	-	-	2,474	-	25,323,841
Transfers and donations	36,439,372	2,896,510	-	21,907	203,044,597	242,402,385
Borrowing domestic	1,310,968	-	575,491	-	-	1,886,458
Total	**167,222,119**	**2,971,375**	**575,491**	**14,785,806**	**204,052,897**	**389,607,686**

Source: Ministry of Finance Republic of Macedonia, 2012

We can see that Macedonian local governments have their **own budget revenues** coming from: property tax, a proportion of personal income tax (hereinafter: PIT), non-tax revenues from communal taxes and administrative taxes, capital revenues from the sale of assets, transfers and donations from value-added tax (hereinafter: VAT), borrowing from banks and from the Ministry of Finance. In 2010, there was no foreign borrowing and no emission of bonds but only **domestic borrowing**.

Donations, as a source category, mostly come from foreign donors in the education sector. **Self-financing** activities are a source of revenue from the local government's budget users (schools and kindergartens) like the participation of parents and the organisation of excursions. **Transfers from central government** are tax revenues for part-time employees, non-tax revenues from administrative activities of the local governments, transfers and donations for the block, earmarked grants for wages/salaries for teachers and employees in education, kindergartens and maintenance of the schools and kindergartens.

The **total own budget** is 43% of the total local government budget. The **central government transfers** make up 52% of the total municipality budget. This illustrates the relatively high level of fiscal dependence of the local government on the central government.

Transfers from central governmental – structure and types of transfers. The phased approach to fiscal decentralisation is closely connected to the transfers from central government. The process of fiscal decentralisation is envisaged by the Law on Financing Local Government (*Official Gazette of the Republic of Macedonia,* no. 61/04) to evolve in two phases (for details, see Appendix D). The first phase started on 1 July 2005 with the introduction of the earmarked grants. In the second phase, the block transfers were launched. The major principle of this phased approach was to project a gradual devolution of responsibilities proportional to the demonstration of greater capacity by local governments to undertake those responsibilities, and to provide an equitable and adequate transfer of funds for the efficient and ongoing execution of transferred competencies.

The Law on Financing Local Government (*Official Gazette of the Republic of Macedonia,* no. 61/04) envisions the following channels of transfers from the central government:

1. Value-added tax (VAT) revenues (a total fund equal to 3% of the VAT collections in the previous fiscal year). This unconditional grant is distributed by a formula which states that at least 50% of the grant will be distributed according to population and not more than 50% according to other criteria. These other criteria will be stipulated in a methodology to be defined by the government in agreement with the commission to monitor the development of the financing system. The central government sees the VAT as an unconditional transfer for equalisation purposes even though it is defined in the law as an own revenue for local governments. In contrast, ZELS views VAT as a kind of unconditional transfer with the stance that central government should introduce a new equalisation transfer or increase the PIT transfer share to local government. In 2009 amendments to the Law on Financing Local Government were made whereby a new dynamic for gradually increasing the VAT transfer was adopted as follows: 3.4% of GDP in 2010; 3.7% of GDP in 2011; 4% of GDP in 2012 and 4.5% of GDP in 2013.
2. Personal income tax (PIT) revenues are an unconditional grant distributed on an origin basis. The total pool is calculated as 3% of the PIT from salaries allocated to the local government where the employee resides and 100% PIT collected from artisan activities.
3. Earmarked transfers are allocated for operational costs in the areas of education, culture and social policy. The appropriate ministries and agencies monitor the use of these earmarked funds.
4. Capital transfers are distributed in accordance with programmes specified by the government.
5. Block transfers are the same as the earmarked grants plus the wages and salaries. The appropriate ministries and agencies are responsible for defining the methodology and criteria to be used in this transfer formula. For example, the Ministry of Education defines the methodology and criteria for the block transfer and how it is to be transferred to each municipality for primary and secondary education (for education, see CEA, 2008b). The other responsible ministries are the

Ministry of Labour and Social Policy (for child care and homes for the elderly, see Nikolov, 2006), the Ministry of Culture (for houses of culture), and the Ministry of Health (for primary health coverage and preventive health care).

6. Funds received for delegated competencies from the central to the local governments. In this case, the amount of funds is determined by way of a contract signed between the mayor of the local government and the appropriate ministry responsible for the competency.

In Table 15, the structure of earmarked and block transfers from the central government to local governments in Macedonia is presented.

Table 15. Earmarked and block transfers from the central government to local governments for the transferred competencies in 2010 (value in euros and share in %)

Earmarked and block transfers	Education	Culture	Kindergartens	Homes for the elderly	Firefighting	Total
Value (in euros)	175,294,487	4,168,879	19,046,491	998,343	4,544,697	204,052,897
Share (in %)	85.91	2.04	9.33	0.49	2.23	100.00

Source: Ministry of Finance Republic of Macedonia, 2012

We can see that most of the central government transfers (85.91%) go to the education sector (out of which 81% goes to wages and salaries). Homes for the elderly only account for a small percentage of 0.49%.

Block transfers from the central government to local governments in Macedonia cover wages and salaries for teachers and other employees in education, houses of culture, libraries, kindergartens, homes for the elderly, fire fighting departments and the maintenance of public buildings. In Macedonia, decentralisation is more of a deconcentration than devolution and local governments serve only as a financial channel of the central government for these competencies. Thus, there is no real devolution of these competencies as the local governments have no say in how to spend these transfers. Municipalities lack the means to take over full responsibility and assume that the central government is the one that should pay for these competencies. From Table 14, we can see that the central government transfers for these competencies amounted to EUR 204 million in 2010. In the same year, local governments paid for, out of their own budget, these competencies and spent only EUR 5.4 million. Local governments can make the decision to allocate more money for these competencies from their own budget revenues to improve the quality and scope of these services for their citizens but instead they consider the financing of these competencies to be a responsibility of the central government. These decisions also depend on the fiscal capacity of the local governments, management capacities of the mayors, the rural or urban character of the local governments, political impact of the central government etc.

In the expenditure decision-making process, some local governments can be more efficient than others and this will be tested in Chapter 4 of this work. The important

point to note here is that, if we want to test the spending efficiency of Macedonian municipalities, we should only take into account the expenditures made from their own budgets and not the transfers from the central government. This is because the spending decisions about the transfers from the central government are already made by the central government and not by the local governments, whereas the local governments only have full power to make spending decisions concerning their own budget share.

Comparison of central government and local government revenues from 1999 to 2008. Both central and local governments are required to provide public services. It is common to find that the local governments' powers for raising their own source of revenue are insufficient to meet the costs of providing the services they have been assigned. The resulting fiscal gap can only be filled by increasing those local revenue raising powers or by increased transfers from the central government. Due to the concern for macroeconomic stabilisation, the lack of appropriate local revenue bases, and the low capacity to administer taxes locally, transfer mechanisms from central to local governments may be a more suitable way to solve this fiscal gap. In Macedonia, there is a significant fiscal gap where the central government level makes transfers to the local government level because the local level holds revenues which are less than their fiscal needs (Nikolov, 2012). The challenge is to design transfers with an eye to ensuring that, at the margin, local governments view transfers as they do their own revenue (Giugale & Webb, 2000).

The procedures for calculating the earmarked and block grants in Macedonia are related to the budget process as well as the budget circular and is simply done by assessing the number of employees in the proper competency and the historical costs of maintenance for the buildings. However, even though the procedure for distributing the grants to municipalities is transparent, it is based on historical costs and not on estimated cost-drivers. It also does not take the change of prices into account and thus there are indications of substantial under-funding.

Table 16 presents a comparison of the central and local governments' revenues for the period between 1999 and 2008 in Macedonia. We can see a stable share of central government revenues in GDP while the municipalities' revenue share in GDP has been increasing, especially after the 2005 decentralisation momentum. However, we must be careful when using this indicator as a measure of the degree of fiscal decentralisation as it is widely accepted that the local government's share of total government spending/revenue is an imperfect measure of fiscal decentralisation (Yilmaz, 2002) simply because the need to standardise the fiscal variables in government financial systems inevitably eliminates details about the design of fiscal systems and the level of devolution.

In Table 16 we can see the growing trend of local government share in GDP from 0.88% of GDP in 1999 to 4.59% of GDP in 2008. The central government share in GDP is between 33% and 35% in the same period except for 2001 and 2002, during and after the ethnic clashes, when it was 41% of GDP. On the central and local government sector size and its impact on the public sector, it is other literature that is searching for

the Leviathan which we will not consider here. For example, Nelson (1987) and Oates (1985) both investigate whether fiscal decentralisation tends to act as a constraining influence on the overall size of the public sector, Musgrave (1959) also studies how the distribution function of government would be carried out by the local government, as did Brennan and Buchanan (1980) when they developed the Leviathan model. Brueckner (1982) tests allocative efficiency in the local public sector with a test for Pareto-efficiency in the local public sector. Rodden (2003) finds that local governments grow faster as they fund a greater portion of public expenditures through central government transfers.

Table 16. Central and local government revenues as shares in GDP in Macedonia

Year	GDP (million current denars)	Central government revenues (share in GDP in %)	Municipal revenues (share in GDP in %)
1999	225,751	35	0.88
2000	241,366	34	1.00
2001	238,018	41	1.22
2002	248,062	41	1.25
2003	254,510	34	1.85
2004	275,404	33	1.84
2005	298,468	35	1.96
2006	324,322	34	2.74
2007	369,830	33	3.38
2008	413,280	35	4.59

Sources: State Statistical Office Republic of Macedonia, 2012a; Ministry of Finance Republic of Macedonia, 2012

The growth of local government's revenue in Macedonia over time has gained momentum since 2005 when the post-OFA decentralisation wave started. A jump is to be noted from 2005 to 2006, which corresponds to introduction of the first phase of decentralisation. The rates of growth of local revenue remained buoyant between 2006 and 2007 and made a second upward jump between 2007 and 2008 with implementation of the second phase of decentralisation and the start of the block grant transfers (Table 16).

From 1999 to 2008, local government revenue in Macedonia grew quite rapidly. In money terms, it grew from 1,983 million denars in 1999 (in nominal terms) to 10,501 million denars ten years later (in nominal terms). That is a more than five-fold nominal increase. Local revenue, valued at 1999 prices, rose from 2,132 to 9,851 million denars during the period between 1999 and 2008, with a slightly smaller increase than in current terms. Due to this rapid dynamic, the share of local revenue in GDP increased from a mere 0.88% in 1999 to 4.59% in 2008. This share is still substantially lower than it is in most EU countries that became members between 2004 and 2007 (Table 17). Nonetheless, it is not abysmally low, showing that the almost complete neglect of local government, prevailing at the beginning of the period under observation, has been somewhat attenuated.

A cross-country comparison of transition countries that have most recently joined the EU, plus Greece and Ireland, show large differentials in local government finances, as illustrated in Table 17. The share of local government in GDP ranges between 3.3% of GDP for Greece to 13.4% of GDP for Poland. The Macedonian local government share as a percentage of GDP in 2006 was the smallest, amounting to 2.74%[30]. Moreover, between one-third and one-half of the shares of local government expenditure in a number of former transition countries are comparable to Macedonia in terms of area size and/or population (such as the Baltic countries, Slovenia and Slovakia). The reference to a similar size is justified by the consideration that, in general, the levels and needs of decentralisation are smaller in smaller countries. For example, intermediate levels of governments are not usually required in countries with small areas and populations.

Table 17. Share of expenditure in GDP by levels of government: selected EU countries, 2006

Countries	General government	Central government	Local Government
EU (27 countries)	46.8	25.6	11.3
Bulgaria	36.6	25.2	6.2
Czech Republic	42.5	30.7	11.7
Estonia	33.2	25.4	8.2
Ireland	34.1	27.6	7.1
Greece	46.1	33.3	3.3
Latvia	37.0	22.7	10.0
Lithuania	33.6	20.7	8.6
Hungary	52.5	36.7	12.8
Poland	43.3	24.5	13.4
Romania	32.0	17.5	8.1
Slovenia	46.3	29.3	9.0
Slovakia	37.3	21.5	6.6
Macedonia	38.8	34.0	2.7

Sources: Eurostat, 2012; for Macedonia – Ministry of Finance Republic of Macedonia, 2012

Grant system analysis in Macedonia. Several policy decisions need to be made for the grants if they are to be systematically distributed to local governments. These include (Bahl & Linn, 1992):

- the determination of the grant pool, i.e. how much will be available to be distributed to local councils;
- the method used to allocate that pool across all eligible local governments; and
- the degree of restrictions associated with how the grant funds can be spent by local governments.

The grants transferred to municipalities from the central government in Macedonia come from PIT and VAT. PIT is a pure shared tax; it is certain and simplifies the fiscal

[30] In 2008, it was 4.59% of GDP, which is around half the level of Slovenia, for example.

planning of the local governments. Further, it is not conditional and can increase fiscal autonomy. Sharing gives the local governments an income and an inflation-elastic tax base. The disadvantage is that it is an inflexible solution because it is difficult to change the percentages once they have been established. This might be important in the Macedonian context with its high economic uncertainty and high energy prices, weak economy, high unemployment etc (Nikolov, 2012). Another disadvantage is that it does not provide equalisation and, in principle, increases inequality. The sharing percentages can and should be revised after a comprehensive analysis of the fiscal gap and vertical imbalance has been done. Higher percentages can provide greater incentives for compliance to taxpayers and may decrease tax evasion if taxpayers/voters at local elections can consider it as an own source revenue.

The total divisible pool for the VAT grant in Macedonia is allocated by a formula. The VAT formula-based grant is transparent although the lack of timely and adequate data included in the allocation formula is a serious deficiency. The Law on Financing Local Government (*Official Gazette of the Republic of Macedonia*, no. 61/04) leaves a lot of ambiguity since the formula is imprecisely defined. VAT transfers are intended to finance the competencies of municipalities and their distribution will be based on at least 50% population and other criteria. It is unclear what the central government is trying to achieve: to equalise the fiscal capacity, to reduce the disparities in providing public services or to encourage the local governments to mobilise their own resources. The central government should clarify this confusion by setting the formula in the respective methodology as soon as possible in order to make the system of financing local governments transparent. Further, the population as the only explicit indicator by law for the VAT distribution formula (at least 50% of the weight) more clearly shows the riskiness and weakness of the state's statistical system and a lack of credible and timely data at the local level than being a thoughtful policy choice (UNDP, 2005).

Measuring Municipal Efficiency in Macedonia

1 Review of empirical studies on the efficiency of local governments

The literature on efficiency measurement at the level of a municipality is quite recent. Using both input and output quantitative indicators and information about their prices, efficiency measurement is easier to apply to private manufacturing firms. For public firms, it is more difficult to find good indicators that express the efficiency of the services provided. These difficulties are even more important when considering the efficiency of municipalities, a problem that the economic literature has started dealing with since the 1990s (Boetti, Piacenza & Turati, 2009).

In general, efficiency studies have been conducted for the public and private sector. Regarding the public sector studies, efficiency studies on municipalities can be divided into:

- general efficiency studies: studying the efficiency of municipalities as a whole or the provision of some local services delivered by municipalities; and
- specific efficiency studies: studying the provision of specific local services (e.g. efficiency of public utilities).

In Table 18 we give an overview of empirical studies that estimate **efficiency scores** for municipalities and outline the specific techniques used when computing the scores (a similar table was developed in Boetti, Piacenza & Turati 2009). We also provide information on the sample size, countries, methodology used and input and output indicators for the estimation. As mentioned, there are also studies that evaluate the **efficiency of the provision of a particular local service** (sometimes a public utility), as is the case, for instance, of waste collection (Worthington & Dollery, 2001; Filippini, Hrovatin & Zoric, 2007), municipal police (Diez-Ticio & Mancebón, 2002), water services (García-Sánchez, 2006, Fillipini, Hrovatin & Zoric, 2010) or education (Anderson, Walberg & Weinstein, 1998; McMillan, 2004). Since we are concentrating on the efficiency of municipalities, a review of the latter will not be covered in this work. By municipal efficiency we have in mind cost efficiency which incorporates allocative and technical efficiency. The approach is more thoroughly explained in section 4.2.1.

Table 18. Review of empirical studies estimating the efficiency of municipalities and input and output variables used in the first stage of estimating such efficiency

Authors	Sample	Methodology	Input variables	Output variables
Vanden Eeckaut, Tulkens and Jamar (1993)	235 Belgian municipalities 1986	Nonparametric (DEA and FDH)	current expenditure	• population • length of roads • no. of beneficiaries of minimal subsistence grants • no. of pupils enrolled in local primary schools • population older than 65 years • no. of local crimes
De Borger, Kerstens, Moesen and Vanneste (1994)	589 Belgian municipalities 1985	Nonparametric (FDH)	• municipal staff • number of white collar and number of blue collar workers • capital stock (the surface area of buildings)	• roads • beneficiaries of minimal subsistence grants • pupils in primary schools • floor space of public recreational facilities • number of non-residents
De Borger and Kerstens (1996)	589 Belgian municipalities 1985	Nonparametric (DEA and FDH) and parametric (deterministic and stochastic frontier)	current expenditure	• population • no. of beneficiaries of minimal subsistence grants • no. of pupils enrolled in local primary schools • public recreational facilities • population older than 65 years
Athanassopoulos and Triantis (1998)	172 Greek municipalities 1986	Nonparametric (DEA) and parametric (SFA)	current expenditure	• no. of resident families • average residential area • building area • industrial area • tourism area
Worthington (2000)	177 municipalities of New South Wales (Australia) 1993	Nonparametric (DEA) and parametric (SFA)	• no. of full-time workers • financial expenditures • other expenditures (materials)	• population • no. of properties required to provide: potable water, waste collection and sewerage • km of sealed and unsealed roads (urban and rural)
Balaguer-Coll, Prior-Jimenez and Vela-Bargues (2002)	258 Valencian municipalities (panel)	Nonparametric (DEA)	total expenditures	• population • tonnes of waste collected • road infrastructure area

	Period 1992–1995			• no. of lighting points • area of public parks • quality of services (quality variable: good, normal and bad)
Loikkanen and Susiluoto (2005)	353 Finnish municipalities Period 1994–2002	Nonparametric (DEA)	current expenditure	• children's day care centres (no. of days) • children's family day care (no. of days) • open basic health care (no. of visits) • dental care (no. of visits) • bed wards in basic health care (no. of visits) • institutional elderly care (no. of days) • institutional handicapped care (no. of days) • comprehensive schools (teaching hours) • senior secondary schools (teaching hours) • municipal libraries (total loans)
Afonso and Fernandes (2005)	287 Portuguese municipalities 2001	Nonparametric (DEA)	current expenditure	• total municipal performance indicator composed of sub-indicators grouped in the following dimensions: 1) general administration 2) education 3) social services 4) cultural services 5) domestic waste collection 6) environmental protection
Loikkanen and Susiluoto (2006)	353 Finnish municipalities Period 1994–2002	Nonparametric DEA	• net operating costs • proportional share of administrative costs	• children's day care • basic health care-visits • dental care-visits • ***bed wards*** in ***basic health*** care • care of the elderly • care of handicapped people • teaching hours in schools • libraries
Arcelus, Arocena, Cabases & Pascual	Spain Navarre region 263	Parametric (SFA)	current expenditure	• area • total population

(2007)	municipalities Period 1998–2001			• share of elderly people • dwellings • index measuring scarcity in the provision of municipal services • time trend
Balaguer-Coll, Tortosa-Ausina, and Prior (2007)	Spain Valencia region 414 municipalities 1995	Nonparametric (DEA and FDH)	total expenditures: • wages and salaries • expenditure on goods and services • current transfers • capital transfers • capital expenditures	• population • no. of lighting points • tonnes of waste • street infrastructure area • public park areas • quality of services (good, average, bad)
Gimenez and Prior (2007)	Spain – 258 municipalities in the region of Catalonia 1996	Non-convex nonparametric estimation	current expenditures: • materials • current transfers • labour costs	• population • urban area • no. of cars • no. of buildings • ordinary refuse
Geys and Moesen (2008)	Belgium Flanders 300 municipalities 2000	Parametric (SFA)	current expenditures	• no. of subsistence grant beneficiaries • no. of students in local primary schools • size of public recreational facilities • length of municipal roads • share municipal waste collected
Boetti, Piacenza & Turati (2009)	262 municipalities belonging to the Province of Turin 2005	Nonparametric (DEA) and parametric (SFA)	current expenditures	• population • total length of municipal roads • amount of waste collected • sum of the number of pupils enrolled in: 1) nursery; 2) primary; and 3) secondary schools • no. of people over 75 years • dummy variable to control for political orientation of governing coalition
Geys and Moesen (2008)	Belgium Flanders 300 municipalities 2000	Parametric (SFA)	current expenditures	• no. of subsistence grant beneficiaries • no. of students in local primary schools • size of public recreational facilities

				• total length of municipal roads • share municipal waste collected
Kalb (2010)	Panel data on 1,111 German municipalities in the German state of Baden-Württemberg Period 1990–2004	Parametric SFA	current expenditures	• no. of pupils in public schools • total population • share of the population older than 65 years • no. of employees covered by social security • surface area of public recovery areas
Stastna and Gregor (2010)	202 Czech municipality Period 2003–2008 and 1994–1996 (comparison)	Nonparametric (DEA) and parametric (SFA)	current spending	• population • elderly population (over 65 years) • cultural facilities (museums, galleries, sport and recreational centres) • pupils in primary schools and kindergartens • municipal waste • urban green area • arable land • municipal roads • bus stations • municipal police dummy
Geyes, Heinemann & Kalb (2010)	Germany: Baden-Wurtenberg 987 municipalities 1998, 2002, 2004	Parametric (SFA)	current expenditures	• students in local public schools • kindergartens • surface area of public recreational facilities • population • elderly people (over 65 years) • no. of employees paying social security contributions
Kalb (2010)	Germany: Baden-Wurtenberg 245 municipalities Period 1990–2004	Parametric (SFA)	current expenditures	• students in public schools • population • share of elderly people • number of employees covered by social security • surface area of public recovery areas
Nieswand and Seiferd (2011)	96 Départements in metropolitan France	Nonparametric (DEA)	total expenditures	• social services (care for the elderly and provision of minimum subsistence grants) • secondary education

	2008			• road construction and maintenance • general administration
Mahabil (2011)	129 South African municipalities Period 2005–2009	Nonparametric FDH	operating expenditure per capita	• water • sanitation • electricity • refuse removal

This table extends the overview of Boetti, Piacenza and Turati (2009)

As seen in Table 18, the efficiency of municipalities was estimated for many countries. A few methods are used for the first-stage efficiency estimation like Data Envelopment Analysis (DEA), Free Disposal Hull (FDH) and Stochastic Frontier Analysis (SFA). DEA and FDH are nonparametric methods of estimation, whereas SFA is a parametric method of estimation.

DEA and FDH will be discussed in more detail in section 4.2.1. The history of DEA starts with Farrell (1957) who wanted to find a model that can combine measurements of multiple inputs into a satisfactory overall measure of efficiency. He proposed that the efficiency of a firm consists of two components, technical and allocative efficiency. The initial DEA model, which is built on Farrell's earlier work, was originally presented by Charnes, Cooper and Rhodes (1978). The non-convex FDH was introduced by Deprins, Simar and Tulkens (1984). The FDH differs from the DEA in that it relaxes the convexity assumption.

SFA will be discussed in more detail in section 4.2.3. The parametric SFA method postulates a functional form with a given number of parameters and describes the production technology. The error term in this functional form is decomposed using a conditional-distribution-providing estimate of the cost inefficiencies as proposed by Jondrow, Lovell, Materov and Schmidt (1982) for a half-normal distribution.

The main difference between DEA and SFA is that DEA is a nonparametric approach and is suited to measuring efficiencies of a deterministic industry for multiple inputs/outputs information. On the other hand, SFA is a parametric approach and is suited to measuring efficiencies of a stochastic industry for input/output information. SFA needs to assume a cost function of the usual regression form and a distribution type of error item which is equal to the sum of two components. The first part is symmetric and captures statistical noise and events beyond the control of municipalities, and the second part represents the technical inefficiency of municipalities.

Measuring efficiency by using a nonparametric DEA is done in two stages. In the first stage, the efficiency scores are estimated with the DEA method and in the second stage parametric or nonparametric methods are used to identify critical determinants of efficiency. Measuring efficiency by using a parametric SFA is done by simultaneously estimating the efficiency scores and the determinants of efficiency.

1.1 Input and output variables in the first stage of the estimation

The definition of **input** depends mainly on the availability of data. The most commonly used variables are **current expenditures** because the **capital expenditures (investments)** are considered non-recurrent and sometimes incidental (Van den Eeckaut, Tulkens & Jamar, 1993; Athanassopoulos & Triantis, 1998; Kalb, 2010; Stastna & Gregor, 2010). Total expenditures are used by Balaguer-Coll, Prior-Jimenez & Vela-Bargues (2002).

In addition to the most commonly used current expenditures as an input variable, some other input variables have been used in different studies. For example, **municipal staff** as an input is used by De Borger, Kerstens, Moesen & Vanneste (1994) when constructing data on capital and labour input. For labour, they use two separate categories of personnel, like the number of **white collar** and the number of **blue collar** workers. Using both components of the labour force as inputs was interpreted as an attempt to account for the implicit heterogeneity of the labour force. The capital stock data was not available and therefore they use the **surface area of the buildings** owned by municipalities as a proxy for capital. Worthington (2000) uses (information on total capital stock was unavailable) three inputs: **labour** (measured in full-time equivalent units), other **physical expenses** (largely materials and inventory, excluding depreciation), and **capital expenses** (loans, overdrafts and other borrowings). For the Loikkanen and Susiluoto (2006) research, measures on labour or capital input use were not available. Thus, they use a single **money-metric measure of municipal resource** used in basic service provision. It is the **sum of the net operating costs** of providing health care, social services, cultural activities and education each year, evaluated at 1995 prices. A **proportional share of administrative costs** in these activities is included in the expenditures. General administration costs of the municipality (city council, centralised planning etc.) are excluded from all models in their research. **Age and gender of the mayor** is used in Boetti et al. (2009) in order to take account of the effect of female representatives and to stress their key role in determining policy preferences and spending outcomes. Age and gender of the mayor proves to be insignificant.

Similarly, for the output variables, proxies for **municipal competency** are used, for example, **population** and **population age groups**, but also **length or surface area of roads** as most frequent outputs. The number of **lighting points** is used in Balaguer-Coll et al. (2002), local **crimes incidents** in Vanden Eeckaut, Tulkens and Jamar (1993), **type of municipalities** (tourist, industrial etc.) in Athanassopoulos and Triantis (1998) and Gimenez and Prior (2007), **waste collection** and **sewage** in Worthington (2000), **area of public parks** and **quality of services** in Balaguer-Coll et al. (2002).

The output variables in the first-stage estimation also depend on data availability, the purpose of the study, country-specific and municipality competencies within the country's decentralisation design. The output variables are meant to capture important aspects of the most relevant services provided by municipal governments. In the De Borger and Kerstens (1996) research, Belgian municipalities have important

responsibilities in the field of education, social and recreational services, and overall administrative services. Thus, outputs are proxied by the **population size**, number of **beneficiaries of minimal subsistence grants**, number of **students in primary schools**, surface area of **public recreational facilities** and the population **older than 65**. For municipal outputs, Afonso and Fernandes (2005) use statistical information to construct a composite local government output indicator that tries to globally assess the several areas of municipal provision of goods and services. Gimenez and Prior (2007) base the selection of outputs on the minimum services required of each municipality. More specifically, they use the services of public street lighting, cemetery services, waste collection, street cleaning, supply of drinking water to households, infrastructure, surfacing of public roads, and regulation of food and beverages as a proxy for **population, urban areas, number of cars, number of buildings and garbage collection**. Geys and Moesen (2008) use the number of **subsistence grant beneficiaries, the number of pupils in primary schools, the size of public recreational facilities (in hectare), the total length of municipal roads (in km) and the share of municipal waste** collected through door-to-door collections to proxy for social, educational, recreational, infrastructural and environmental responsibilities of local governments. Kalb (2010) for output variables uses: the **number of students in public schools, the total population, the share of the population older than 65, the number of employees covered by social security (at their place of work), and the surface area of public recreational areas**. All of these variables represent approximations and are a proxy for important responsibilities of the municipalities with regard to educational, infrastructural, social, economic and recreational services. Thus, we can see that the input and output selection in the studies reported in Table 18 relies on:

- the availability of data;
- the institutional set up of fiscal decentralisation;
- the proper transfers of competencies from the central to the local level governments;
- the goal of the study; and
- a proxy between specific expenditure groups with a group-specific set of output variables.

Results from the efficiency estimation. Based on first-stage estimation, Afonso and Fernandes' (2005) research results suggest that most municipalities in Portugal could achieve, on average, the same level of output using fewer resources. They could improve their performance without necessarily increasing municipal spending. During the first stage of the estimation by Athanassopoulos and Triantis (1998), DEA proved to be more sensitive to outlier observations and thus the assessed cost efficiencies for Greek municipalities were particularly low with an average of 50% and 60% under constant and variable returns to scale assumptions, respectively. On the other hand, the parametric efficiency assessment yielded average efficiency scores of 80% and 85% under the half-normal and exponential inefficiency distribution assumptions, respectively. Balaguer-Coll et al. (2002) find that there is a wide margin available to public managers for optimisation in the use of public resources in Spanish municipalities. They also find that, with regard to entity size, the optimum size is a

relatively small municipality. However, those with the largest population, despite not being the optimum size, have better and more numerous resources at their disposal, placing them very near their frontier in variable returns to scale.

Boetti et al. (2009) find that the average inefficiency score is close to 0.22 for DEA-VRS and between 0.26 and 0.28 for SFA efficiency scores in Italian municipalities. This means that municipalities, on average, could achieve the same output levels with an approximate 25% current spending reduction. Further, the correlation between the DEA and SFA inefficiency scores is very high for both VRS and CRS specifications. This means that the inclusion of the dummies for extreme dimensions in the stochastic cost frontier help to control for the effects of variable returns to scale on efficiency estimates, like in the DEA-VRS, even if they do not vanish completely (Boetti et al. 2009). SFA models confirm constant returns to scale, like in the DEA-CRS specification. Such a result is probably driven by the prevalence of municipalities of small to medium sizes (82% of observations) for which returns to scale appear to be constant when looking at the difference between the DEA-CRS and the DEA-VRS. Variable returns to scale appear to characterise municipalities with fewer than 1,000 and between 10,000 and 15,000 inhabitants in Boetti et al. (2009). The first ones show increasing returns to scale, perhaps because of the influence of fixed costs that are very large for several services (e.g. waste collection, general administration). The second ones mainly exhibit decreasing returns to scale, likely due to the wider range of more complex services they produce; this is particularly true for care of the elderly and welfare spending that includes different social assistance items (Boetti et al. 2009).

De Borger and Kerstens (1996) consider parametric and nonparametric methodologies and find large differences in mean efficiency scores for Belgian municipalities. The estimated means ranged from 0.57 to 0.94. Moreover, rank correlations between the parametric and nonparametric measures were relatively low, ranging between 0.59 and 0.83. However, in the second stage of the estimation, despite the variability in mean efficiency scores, the explanatory analysis of inefficiency yielded, at least qualitatively, reasonably robust results.

Geys and Moesen (2008) find that larger and more densely populated Flemish municipalities tend to be less efficient indicating that a significant part of the observed inefficiencies is driven by scale inefficiencies. Gimenez and Prior (2007) find that the excess of costs in globally inefficient Spanish municipalities reach 25 percent of the total cost. The short-term variable cost deviation is 5.72%; inefficiency coming from the inadequate utilisation of the capacity of fixed inputs is 0.37%, and the scale inefficiency is 19.03%. The majority of cost excess can thus only be tackled from the long-term perspective and that depends on the real possibilities of modifying the structure of municipalities.

Loikkanen and Susuiluoto (2006) find considerable cost efficiency differences among Finnish municipalities and that they remained fairly stable over time. The most efficient municipalities were quite small and geographically dependent (mostly located in southern Finland), while the least efficient ones were in the peripheral northern parts of

the country. The biggest cities showed fairly varying performances. Nieswand and Seiferd (2011) indicate in their research significant room for improvement and detect spending inefficiencies averaging between 10 and 22% in French municipalities, depending on model specifications.

1.2 Determinants of efficiency

Many variables are used as determinants of efficiency to explain what drives the general efficiency of providing public services at the municipal level in the second stage of the estimation, as illustrated in Table 19. Table 19 shows significant explanatory variables for the efficiencies that have been used in several studies as well as the findings on the impact of these variables (positive or negative) on municipal efficiency. The studies are listed by author in the first column[31].

Table 18. Determinants of the efficiency of municipalities analysed in the second-stage estimation by authors

Author	Second-stage estimation's technique	Variables with a positive impact on a municipality's efficiency	Variables with a negative impact on a municipality's efficiency
Vanden Eeckaut, Tulkens and Jamar (1993)	For the nonparametric FDH and DEA: analysis of excess spending	• political characteristics (affiliation of the mayor with the central government)	• political characteristics (number of coalition parties)
De Borger, Kerstens, Moesen & Vanneste (1994)	For the nonparametric DEA: Tobit	• population • education	• average personal income • political variables • grants
De Borger and Kerstens (1996)	For the nonparametric: Tobit censored regression model For the parametric: OLS	• local tax rates • population density	• per capita block grants • income level per capita • level of education
Athanassopoulos and Triantis (1998)	For the nonparametric DEA: fuzzy K-means clustering analysis and Tobit	• share of fees and charges in municipal income • investment share in total expenditures	• population density • state grants • parties affiliated with the central government
Worthington (2000)	For the nonparametric: Tobit For the parametric: Tobit	• current assets • debt service	• no. of staff per 1000 population • current assets • residential property rates
Balaguer-Coll et al. (2002)	For the nonparametric DEA: Tobit	• population • level of commercial activity	• per capita tax revenue • per capita grants
Lokkainen and Susiluoto	For the nonparametric DEA: OLS	• share of municipal workers in age group	• peripheral location • income level

[31] In Appendix E we provide a similar table of efficiency determinants, but studies are listed there by variables used as determinants of efficiency.

(2004)		35-49 years • dense urban structure • share of services bought from private sector • education level of inhabitants	• population • unemployment • diverse service structure • share of services bought from other municipalities • share of costs covered by state grants
Afonso and Fernandes (2005)	For the nonparametric DEA: Tobit	• population's purchasing power • population with secondary education • population with tertiary education • population density • geographical distance	
Loikkanen and Susiluoto (2006)	For the nonparametric DEA: Tobit	• share of municipal workers in age group 35-49 years • dense urban structure • share of services bought from private sector • education level of inhabitants	• peripheral location • income level (high wages) • population • unemployment • diverse service structure • share of services bought from other municipalities
Balaguer-Coll et al. (2007)	Nonparametric Kernel smoothing regression	• population	• tax revenues • self-generated revenues • deficit • grant
Gimenez and Prior (2007)	For the nonparametric non-convex: Tobit regression	• population • low and medium income • commercial and tourism activities	• income • libraries
Geys and Moesen (2008)	For the parametric SFA: efficiency equation (truncation of the normal distribution)	• grants	• population • population concentration • public debt
Boetti et al. (2009)	For the nonparametric DEA: Tobit regression model For the parametric SFA: factors in inefficiency directly in the frontier model	• percentage of current expenditures covered by local taxes (fiscal autonomy index)	• current revenues per capita over median • electoral mandate (post-election years of the mayor and the governing coalition)
Kalb (2010)	For the parametric SFA: time-variant pseudo-translog specification and determinants	• unemployment • population density • number of guesthouses • time trend	• grants • fiscal capacity
Stastna and Gregor (2010)	For the nonparametric DEA: homogenous bootstrapping	• increase in party concentration • voters' involvement	• population size • distance to the centre • share of university-

	For the parametric SFA: time-variant pseudo-translog specification and determinants	• local council with a smaller share of left-wing representatives	educated citizens • capital expenditures • subsidies per capita • share of self-generated revenues
Geys, Heinemann and Kalb (2010)	For the parametric SFA: inefficiency term in the translogarithmic equation	• fiscal autonomy • voters' involvement	• unemployment • political concentration • small share of left-wing party's participation in the council
Nieswand and Seiferd (2011)	Nonparametric: bootstrapped truncated regression	• population density	• distance from capital • median income • share of elderly population
Loikkanen, Susiluoto and Funk (2011)	For the nonparametric DEA: OLS	• dense urban structures • inhabitants' education • share of municipal workers between 30 and 49 years • city managers' education • cooperation of political parties	• unemployment • population • peripherality
Mahabil (2011)	For the nonparametric FDH: Tobit regression model	• financial reporting capacity • experience of the municipal manager • percentage of the council controlled by the majority party in the council • refuse removal services that are outsourced • technical approach to the provision of free basic electricity • targeted approach to the provision of free basic water and sanitation	• local taxes as a percentage of total revenue

This table extends and updates the overview of Afonso and Fernandes (2005)

The results shows that many socio-economic, political, demographic, geographic determinants and time factors (in Kalb, 2010) have an impact on municipal efficiency. The complex environment for municipalities necessitates that they operate under different institutional and legal frameworks within their respective countries. That is one of the key explanations for the presence of positive and negative signs for the same variable in these studies.

From a methodological point of view, it is evident in Table 19 that researchers frequently use the Tobit regression model as a second-stage estimation methodology after the first stage DEA and/or FDH efficiency scores have been estimated in order to find the determinants of efficiency, i.e. to find the impact of explanatory variables on efficiency scores.

Tobin (1958) proposes a model to describe the relationship between a non-negative dependent variable and an independent variable. The Tobit non-negative dependent variable censored at an upper value to one is a convenient method given that the DEA and FDH scores vary from 0 to 1. However, this method has some disadvantages related to the likely correlation between the efficiency scores and the explanatory variables or violates the normality assumption in the regression (Balaguer-Coll et al., 2007). That is why the Kernel Graphical Estimate of Joint Density Functions (Kernel estimation) is used in the second-stage estimation as well as to explain the determinants of the DEA and FDH efficiency scores (Balaguer-Coll et al., 2007). A bootstrap is also used for statistical inference in the second-stage estimation (Stastna & Gregor, 2010; Nieswand & Seiferd, 2011) or even OLS (Loikkanen, Susiluoto & Funk, 2011; Loikkanen & Susiluoto, 2005) after the DEA and FDH efficiency scores have been estimated.

Explanatory variables and their effect on the efficiency of municipalities. Several variables prove to have a significant effect on the efficiency of municipalities in providing public services in the studies in Table 19. It is hypothesised that the **education variable** would have a positive effect on efficiency since the more educated the citizens are, the more credible is the monitoring of the municipality's administration accountability. Also, more education will mean higher quality in the labour market and more competitive municipalities. A positive effect of education on efficiency is found in the studies of De Borger et al. (1994), Loikkanen and Susiluoto (2005), Afonso and Fernandes (2005), Loikkanen and Susiluoto (2006), Loikkanen et al. (2011), and Mahabil (2011). A direct connection between education and voters is also found in the literature (Muller, 2003) and thus one can expect a higher **number of voters** will have a positive effect on a municipality's efficiency. On the other hand, education can also have a negative impact on efficiency (De Borger & Kerstens, 1996; Stastna & Gregor, 2010). The reason is that higher education and productivity may increase the reservation wage for the public sector. Depending on what prevails, the income or the credible monitoring effect, the net impact will be negative or positive on municipal efficiency. The effect of causality is also important (Stastna & Gregor, 2010). Namely, a more efficient municipality may attract more educated citizens rather than more education bringing more municipal efficiency. Thus, the final effect is ultimately dependent on the characteristics of the country and municipalities.

Several **fiscal variables** are used when studying own revenues, fiscal capacity (share of own local revenues in total revenues), local tax rates, fiscal autonomy (current expenditures covered by local taxes), wealth measured as personal income and personal income tax. It seems reasonable that a local government highly capable of generating its own revenues would end up with softer budget control and be less motivated to manage it efficiently (Balaguer-Coll et al., 2002; 2007). In addition, higher wealth of citizens might increase opportunity costs to monitor and hold municipalities accountable. The second-generation fiscal federalism literature explains the negative impact of own taxes on municipality efficiency with the principal-agent microeconomic failure. Namely, the presence of asymmetric information between electorates (the principals) and politicians (the agents) can be seen as the main reason the government's performance is inefficient

(Boetti et al., 2009). Not only does the size of a municipality's total revenues impact efficiency, but so too does the composition of the municipality's revenues. Hence, one must be careful here because more fiscal autonomy (less central government grants) might increase electoral accountability (Boetti et al., 2009) and thus lead to a hard budget constraint; eventually this would lead to more efficient municipalities.

When talking about the composition of total municipal revenues, the negative correlation between **grants** from the central government and municipal efficiency is explained with the 'flypaper-effect'. Namely, taxpayers are unable to know the real extent of the local government's budget constraint when the degree of fiscal imbalance is high (Oates, 1999); in other words, citizens find it more difficult to ascertain the level of grants rather than the level of taxes (Boetti et al., 2009). On the other side, Inman (2008) argues that the flypaper effect is best seen as an outcome of political institutions and the associated incentives of elected officials. Interestingly, Rodriguez-Pose and Kroijer (2009) find that, while grants (transfers to local governments) are negatively correlated with economic growth, taxes assigned at the local level evolve from having a significantly negative to a significantly positive correlation with the national growth rate.

A high **fiscal dependency** ratio of municipalities on central government can also create a moral hazard and fiscal illusion (Kalb, 2010). Expectations of local politicians for a bailout would end in a soft budget constraint. Therefore, there is a negative effect of high fiscal dependency on municipal efficiency.

The effect of **unemployment** is also ambiguous as it implies both higher spending on unemployment benefits (cost effect) and lower demand for high quality public services (preference effect) (Geys, Heinemann & Kalb 2010). It really depends on a country's characteristics. In the literature on municipal efficiency, only Kalb (2010) finds that the preference effect prevails, i.e. the higher unemployment rate in German municipalities creates lower demand for public services because of lower purchasing power, thus making municipalities more efficient. The cost effect requires higher spending on unemployment benefits and thus less efficiency for municipalities. The cost effect prevails in Loikkanen and Susiluoto (2005), Loikkanen and Susiluoto (2006), Geys et al. (2010), and Loikkanen et al. (2011).

The **geographical distance** from the capital and regional centres has a negative effect because of the emigration of skilled workers leaving municipalities with less educated and skilled citizens living there, thus creating a negative effect on efficiency (Nieswand & Seiferd, 2011).

Higher income and purchasing power of citizens can have a negative effect on municipal efficiency because the citizens decide to spend less time on monitoring due to the increased opportunity cost to monitor local government. This creates the potential for inefficiencies in these municipalities (Nieswand & Seiferd, 2011).

Regarding **political variables**, a negative impact on efficiency is expected if the mayor has **the same political affiliation** as that of the central government due to the political family effect. The more **concentrated** a municipal council is (strong government), the less political bargaining is expected and will thus end in an efficient municipality. On the other side, a coalition of many parties in a municipal council (weak government) will end in a less efficient municipality (Vanden Eeckaut, Tulkens & Jamar 1993). However, a positive effect on municipal efficiency might occur if the political parties reach more **cooperative** solutions instead of fighting zero-sum games.

Population density affects the cost of providing services and a higher density provides more efficiency (De Borger & Kerstens, 1996; Loikkanen & Susiluoto, 2005; Loikkanen & Susiluoto, 2006; Kalb, 2010; Nieswand & Seiferd, 2011; Loikkanen et al., 2011). Thus, the effect of the cost advantage due to a regional concentration of services might outweigh the potential effect of an increase in property prices. On the other side, Geys and Moesen (2008) find that larger and more densely populated municipalities tend to be less efficient because a significant part of the observed inefficiencies are driven by scale inefficiencies. Population density is considered a proxy for urban/rural municipal difference as well.

1.3 Review of studies of municipal efficiency by authors

While taking into account the availability of data constraints, in this section we shall provide a more detailed review of studies on the efficiency of municipalities and their determinants by authors in order to have a more solid basis for the selection of the variables and methodology in this work.

Vanden Eeckaut et al. (1993) use data that comprise a cross-section of 235 Belgium municipalities in 1986. They use the FDH and DEA to estimate the efficiency in the first stage of the estimation and current expenditures as input variables. As output variables, they use: population, length of roads, population over 65 years, beneficiaries of minimal subsistence grants, students in local primary school, and number of crimes registered in the municipality. Political explanatory variables used are: political affiliation of the mayor, number of positions obtained by each political party, and number of votes obtained by each party. They also take account of the effect of the parties in the ruling majority, strong government, dual majorities and multiple majorities. They find that strong local governments lead to more efficient municipalities. Moreover, they find that municipalities run by nationwide parties lead to less inefficiency.

De Borger and Kerstens (1996) use a population of all 589 Belgian municipalities to calculate efficiency scores for five different reference methodologies, including two nonparametric ones (FDH and variable returns to scale, DEA) and three parametric frontiers (one deterministic and two stochastic). As an input variable, they use total current expenditures and, as an output, they use five variables (beneficiaries of minimum subsistence grant, students in local primary schools, surface area of public recreational facilities, total population, and fraction of the population older than 65

years). As explanatory variables, they use economic and political variables. They use the Tobit censored regression model for the nonparametric approach and OLS for the parametric approach. Personal income per capita proves to be negatively correlated with efficiency, possibly because the citizens of high-income municipalities may be less motivated to monitor municipal expenditures due to high opportunity costs. For a given level of service provision, high tax prices may increase voters' awareness about controlling public expenditures, especially if cost comparisons between municipalities are easily deciphered. This is why they expect, and indeed find, a positive correlation between municipal efficiency and local tax rates. Municipality operations are partly funded by block grants and these may induce the flypaper effect, i.e. a negative correlation with municipal efficiency which they empirically prove. De Borger and Kerstens (1996) use two types of political variables: the number of coalition parties and the number of dummies indicating the participation of a particular political family in the ruling coalition (liberal and socialist parties). With these political variables, they follow the property rights and principal-agent literature that suggest a number of reasons why politicians and public managers may lack proper incentives to effectively audit and control expenditures. Their empirical evidence is that socialist rule has a positive effect and the effect of liberals on efficiency is unclear. Cost efficiency may be affected by the size and composition of political coalitions, as arbitrage in the political bargaining process may require more explicit or implicit side payments depending on the number and nature of the coalition partners (Vanden Eeckaut, 1993). Finally, they include as an explanatory variable the share of the adult population which has completed primary school as their final educational achievement. As expected, this proved to be positively associated with efficiency. This variable was included because it is believed that the political participation of the citizens may enhance the performance of a municipality. They also hypothesise that population density may affect the costs of providing a given bundle of public services, i.e. cost, and hence measured cost inefficiency rises with lower population density. Population density proves to have a positive impact on efficiency.

Athanassopoulos and Triantis (1998) estimate the efficiency of 172 Greek municipalities. Greek local authorities are either municipalities or communes. This study focuses solely on the Greek municipalities since they provide a wide range of community services in contrast to the communes which only serve as registrars. Municipalities with a population of over 2,000 inhabitants were chosen because of the uniformity of the services they provide and their relatively large size. This means that 172 out of the total 250 (68%) Greek municipalities are analysed in this study. They use current expenditures as the input variable and number of resident families, average residential area, building area, industrial area and tourism area as outputs in the first-stage estimation. In the second stage of the Tobit estimation, Athanassopoulos and Triantis (1998) find that population density, state grants and parties affiliated to the central government negatively affect the efficiency of municipalities, a high share of fees and charges in municipal income and a high investment share in total expenditures positively affect a municipality’s efficiency.

Worthington (2000) compares the efficiency scores obtained from DEA and SFA using Australian local government data. The DEA-based Tobit regression identifies the level of debt service and current assets as being positively related to cost efficiency, whereas the number of staff per thousand population is negatively related. On the other hand, an identical SFA regression finds that cost efficiency is negatively related to current assets, staff per thousand population and the average residential property rate. For input, they use the number of full-time workers, financial expenditures and other expenditures (materials). For output, they use population, potable water, sewerage, waste collection and length of sealed and unsealed roads in kilometres. Their paper compares the two DEA and SFA approaches and argues that the SFA's biggest advantage lies in the fact that it introduces a disturbance term representing noise, measurement error, and exogenous shocks beyond the control of municipalities. This, in turn, permits decomposition of the deviations from the efficient frontier into two components, inefficiency and noise. However, similar to other econometric approaches, an assumption regarding the distribution (usually normal) of this noise must be made along with those required for the inefficiency term and the production technology. The main effect here is that, when using the stochastic frontier approach, a considerable structure is imposed upon the data by the stringent parametric form and distributional assumptions.

The research by Balaguer-Coll et al. (2002) aims to find out to what extent inefficiency arises from external factors beyond the control of municipalities or, on the other hand, to what extent it is due to inadequate management of productive resources. They obtained outputs from information gathered in a survey of local infrastructure and equipment devised by the Ministry for Public Administration. Inputs came from the budget data of local authorities in the Valencian community which presented information to the Valencian audit institution in the years under study (1992–1995). The sample was made up of 258 municipalities. As an input in the first stage of the estimation, they use current expenditures. As an output, they differentiate and use production variables and quality variables. The information available on the variable of the quality of services provided is of a categorical nature (the quality of the services offered is arranged in three classifications: good, normal or bad). The specification of the production variables relies on essential services covered by municipalities. They use the number of inhabitants as a proxy for the basic administrative services provided to citizens. Other output variables are: number of lighting points, collected waste and road infrastructure. They also introduce the number of votes obtained by the governing party in the previous legislature as a quality »proxy«. It logically follows that this satisfaction derives from a whole legislative period, and not from one particular year. The per capita tax revenue and level of per capita grants also affect efficiency levels. The results obtained indicate that entities with higher tax revenues and/or those receiving higher grants are the most inefficient in the management of their resources. It therefore seems reasonable to expect that a local authority with a high capacity for obtaining resources would be less motivated to manage them adequately.

Afonso and Fernandes (2005) use the total population of 287 Portuguese municipalities in 2001. As a DEA input, they use the current expenditures and as an output they

construct a so-called Local Government Output Indicator (LGOI), used as a composite output measure in the first-stage DEA estimation. For the second-stage estimation, they use a Tobit regression. In Portugal there are currently 308 municipalities, 278 of which are located on the Portuguese mainland, while the remaining 30 are overseas municipalities belonging to the (politically) autonomous regions of Madeira and Azores. Afonso and Fernandes (2005) find that education and purchasing power is positively correlated with efficiency as well as population density. The distance of a municipality to the district capital is negatively correlated to the efficiency of municipalities.

Loikkanen and Susiluoto (2006) estimate efficiency in 353 Finnish municipalities. As the DEA input variable, they use the sum of net operating costs for providing health care, social services, cultural activities and education each year, evaluated at 1995 prices (they also include a proportional share of administrative costs in these activities). As DEA output variables, they use children in day care, basic health care-visits, dental care-visits, b***ed wards*** in ***basic health*** care, care of the elderly, care of handicapped people, teaching hours in schools, libraries and total loans. In the second-stage estimation (Tobit regression), they find that peripheral location, high income level (high wages), large population, high unemployment, diverse service structure and a big share of services bought from other municipalities tend to reduce the efficiency of municipal service provision. A big share of the municipal workers in the age group 35–49, dense urban structure, a large share of services bought from the private sector and a high education level of its inhabitants tend to increase efficiency. They also find that state grants reduced efficiency in the first years after the end of the grant-matching era of 1993. Later, during the block grant era, the grant variable was unrelated to efficiency. Political variables and turnover in local elections did not explain efficiency differences.

Balaguer-Coll et al. (2007) analyse the efficiency of local governments in the *Comunitat Valenciana* (Spain) and their main explanatory variables. They use DEA and FDH for the first stage of the estimation. For the second stage, they use political and fiscal variables. In the second stage of the estimation, Balaguer-Coll et al. (2007) introduce the nonparametric Kernel technique that has not previously been used in this field before. The Kernel technique focuses on graphical aspects of efficiency results, which provide a great deal of meaningful information given the peculiar distributions of nonparametric DEA efficiency scores, which are bounded at unity. For inputs, they use wages and salaries, expenditure on goods and services, current transfers, capital transfers, capital expenditures and, for the outputs, population, public parks area, number of lighting points, collected waste and road infrastructure. They also describe efficiency scores' distributions using Tukey box plots which are particularly informative since both DEA efficiency scores are bound by zero and unity. In both cases, a mass of observations reaches the upper bound and typically yields skewed distributions. Previous studies performing a two-stage analysis have considered estimation techniques such as OLS, or the Tobit censored regression model. Unfortunately, these methods have disadvantages related to the likely correlation between the efficiency scores and the explanatory variables (De Borger & Kerstens, 1996). That is why in the second-stage estimation Balaguer-Coll et al. (2007) use the nonparametric Kernel technique. The findings of the second-stage Kernel estimation are: efficiency decreases with tax

revenues, self-generated revenues, grants and deficit. In the case of loans and issued securities where the sign was hypothesised to be positive, the pattern is less clear. Regarding the political variable, specifically the governing party's share of votes, no conclusion can be drawn.

Gimenez and Prior (2007) analyse the total cost inefficiency and propose its decomposition into three additive components: short-term variable cost inefficiency; capacity utilisation of fixed inputs; and scale inefficiency. The second and third components correspond to the long-term cost efficiency notion. The analysis is focused in the region of Catalonia on 258 municipalities. They use a non-convex nonparametric estimation. The selection of inputs is based on budgetary variables reflecting the municipalities' costs: materials, current transfers and labour costs. For outputs they use population, urban areas, number of cars and buildings and ordinary refuse. The selection of outputs is based on the minimum services required of each municipality. They find that short-run variable cost inefficiency is more pronounced in small councils and larger municipalities have the advantage of being able to exercise better control over variable costs. One reason for this may well be that big municipalities have comparatively more skilled employees. They conclude that where better management control systems (financial, accounting or external) exist, a more effective execution of operating expenses is possible. In the long run as well, bigger municipalities have better efficiency. In summary: both short and long-term cost deviations indicate that the efficiency problems affect small municipalities. In the second stage, using the Tobit estimation they find that big municipalities, with low or medium income per capita, that have commercial and tourism activities are cost-efficient. In other words, in municipalities with these characteristics the relationship between the services consumed and the costs incurred appears to be optimal. The policy implications of their results suggest the need to separate short-term from long-term cost inefficiencies. Short-term inefficiencies can easily be controlled by simply cutting budgets. In contrast, long-term inefficiencies are harder to manage as they require a strategic perspective, time and a capacity to modify structural situations.

Geys and Moesen (2008) explore the determinants of local government technical efficiency using data from 300 Flemish municipalities in the year 2000. They use the parametric SFA estimation. Regarding outputs, they use the number of subsistence grants beneficiaries, the number of students in local primary schools, the size of public recreational facilities, the total length of municipal roads and the share of municipal waste collected through door to door collection. For the input variable, they use the current expenditures for these output services. For the determinants of efficiency, they use the per capita income level and the education level of the population (measured as the share of inhabitants over the age of 20 holding a university or college degree) based on the hypothesis that citizens earning a high income or who are highly educated might be more effective in demanding a more efficient government. They focus on the relationship between the socio-economic typology of municipalities (i.e. agricultural, residential, industrial, touristic or urbanised) and their level of efficiency. This suggests that the municipality's overall characteristic might affect the way it is run. One possible reason is that municipalities with, say, large agricultural or tourist activities face

different constraints than, say, municipalities with a predominantly industrial or residential set-up. However, they find that the socio-economic typology of a municipality is generally not significantly related to the efficiency with which municipality provides its core public services. They find that the municipal population's income, income inequality, education, home-ownership and unemployment level are not related to municipal efficiency, while population size and density as well as the municipal financial situation (grant revenues and levels of debt) show a strong correlation with efficiency. They also include an inequality measurement measured by the interquartile difference divided by the median income[32] of the population size, population density, share of owner-occupiers and unemployment rate. The effect of unemployment is ambiguous as it implies both higher spending on unemployment benefits (cost effect) and lower demand for public services which increases with income levels (preference effect), as explained in Geys et al. (2010). They also use three other control variables: long-term local public debt, fiscal surplus and general purpose grants. The political variable they use is the weighted average ideological position of all government parties (with weights equal to party seat shares in the local government). They find that population concentration and public debt are negatively correlated with the efficiency of municipalities, while grants are positively correlated with efficiency (the same findings are in Worthington, 2010) which is contrary to De Borger et al. (1994) for the same country but is measured in 1984. Geys and Moesen (2008) explain this divergence in results between 1985 and 2000 by pointing out that the grant system in Belgium was fundamentally changed in the late 1980s while also becoming a regional rather than a federal responsibility. The variables of income, income inequality, unemployment, education homeownership and political variables have no significant impact on municipal efficiency. They conclude that these (highly) tentative explanations would, however, require a more careful inspection and further research.

Boetti et al. (2009) use a sample of 262 municipalities belonging to the Province of Turin for their general municipal efficiency estimation. Of the total of 315 municipalities belonging to Turin, Turin and other municipalities with over 15,000 inhabitants are excluded from the sample in order to avoid potential biases in their analysis because of the huge heterogeneity. Also included are municipalities at 900 metres of altitude because of higher expenditures arising from the morphology of their territory. The input/output selection was done following the Italian institutional framework. The data used are from 2005. As input, they use current expenditures (for general administration, territorial and environment management, educational services, child and elderly care, road maintenance, local mobility and other social services). For output variables, they use the total population, the amount of waste collected, the total length of municipal roads, the number of people in need of care (i.e. those under 14 years of age – enrolled in nursery, primary and secondary schools, as well as those over 75 years of age). In their study, the optimal size of municipalities is between 2,000 and 5,000 inhabitants. They also find that inefficiency seems to decrease with a municipality's size. Regarding the determinants of efficiency, Boetti et al. (2009) find that a higher share of revenues from local taxes is positively correlated with the

[32] (Q3-Q1)/Median

efficiency of municipalities. De Borger and Kerstens (1996) use the local tax rates to proxy for fiscal autonomy and refer to the 'flypaper-effect' to explain the negative relationship. Boetti et al. (2009) also find that the significant and positive effect of higher current revenues on inefficiency is not due to a stronger incidence of grants, but of taxes as well as fees and charges. This confirms the evidence which emerges in Balaguer-Coll et al. (2002) and Balaguer-Coll et al. (2007): a local government that is highly capable of generating its own revenues will be less motivated to manage them efficiently. In general, the conclusion is that autonomous municipalities tend to exhibit less inefficient spending behaviours. Thus, if municipalities have a large amount of public resources available, they soften the budget constraint for mayors (Prud'Homme, 1995; Balaguer-Call et al., 2002; Balaguer-Call et al., 2007). The age and gender of the mayor do not significantly affect the efficiencies.

Kalb (2010) uses a broad panel (1990–2004) of 1,111 German municipalities to test a fiscal illusion bureaucracy model and to analyse the impact of intergovernmental grants on the cost efficiency of local jurisdictions. He finds that a higher degree of redistribution within a system of fiscal equalisation or an increase in the amount of grants received by a local jurisdiction leads to inefficiency in that jurisdiction. The same conclusion was drawn by Athanassopoulos and Triantis (1998), Balaguer-Coll et al. (2007), De Borger and Kerstens (1996), and Loikkanen and Susiluoto (2005) for Greece, Spain, Belgium, and Finland. Kalb uses the SFA translogarithnmic estimation approach proposed by Battese and Coelli (1995) which makes use of panel data on German municipalities. For inputs, they use total current expenditures. These include all spending on the current budget minus the difference between debt servicing and income from interest. Spending on the capital budget is not considered since, as they argue, large investments (in infrastructure projects) are infrequent events which inflate total spending in the year they emerge. For outputs they use: the number of students in public schools, the total population, the share of population older than 65, the number of employees covered by social security (at their place of work), and the surface area of public recovery areas. All of these variables represent approximations of important responsibilities of municipalities in Germany with regard to educational, infrastructural, social, economic and recreational services. For the explanatory of efficiency variables, he uses dummy variables for: abundant municipalities (high fiscal capacity), weak municipalities (low fiscal capacity), very weak municipalities (even lower fiscal capacity) and grants. Further, his estimation controls for: unemployment, population density, students at university, accommodation (to count for tourism: hostels, hotels), political concentration in the council and share of the left wing party in the council. The abundant municipalities and grants are negatively correlated with efficiency. The unemployment rate is positively correlated (the preferences outweigh the cost effect), as well as population density (the effect of a cost advantage because of a regional concentration of services outweighs any potential increase in property prices) and accommodation (tourism activities). The time trend in the model is also positively correlated with efficiency and thus German municipalities are becoming more efficient over time.

Stastna and Gregor's (2010) research is considered to be the first global municipal efficiency study in the new EU member states. It measures the cost efficiency of 202 Czech municipalities. In their paper, they compare two different periods, 2003–2008 and 1994–1996, to measure the different political period and their findings for the two periods. Interestingly, they find that small municipalities improve efficiency significantly more than large municipalities. In an international comparison, the Czech Republic is considered quite fragmented, with 6,243 municipalities. Each municipality exercises both independent competencies and specific delegated powers; 1,226 take care of population registration, 617 provide building permits, 388 are municipalities of the »second type« and 205 are municipalities of an extended scope or the »third type«. They analyse municipalities of the extended type where independent competencies of a municipality include the provision of primary schools and kindergartens, primary health care, local police, fire departments, public utilities, territorial planning, maintenance of local roads, and garbage collection. The motivation to use only municipalities with extended power is to have a sufficiently homogeneous sample of municipalities in order to eliminate the risk of omitted variable bias and the resulting misspecification. For inputs, they use the total current spending (excluding social transfer payments and subsidies on education) and avoid capital spending as it is volatile and subject to co-financing from the EU structural funds. Stastna and Gregor (2010) select output variables primarily by following the existing literature in the field, by country specifics of the local public sector in the Czech Republic, data availability, and by the attempt to match each specific expenditure group with a group-specific set of output variables. Out of the political variables, voters' involvement, in terms of turnout at local elections, is positive for low costs and high efficiency (also see Geys et al. (2010) for German municipalities). The share of left-wing municipal council representatives (communists and social democrats) among the representatives of all parliamentary parties makes a municipality less efficient. Concerning the university-educated population, they find a robustly positive effect on inefficiency which is contrary to Afonso and Fernandes (2008), and De Borger and Kerstens (1996). The effects of a higher reservation wage plus extra demand for high-quality (non-core) services are likely to be behind this. For the political variables, the political concentration index in their research confirms the well-established weak-government hypothesis (low concentration increases costs). For the fiscal capacity, they confirm the predicted sign of the share of self-generated revenues; the higher the fiscal capacity, the softer the budget constraint and, therefore, the greater the inefficiency.

Geys et al. (2010) test if and how voter involvement in the political sphere is related to government efficiency using a panel of 987 German municipalities in 1998, 2002 and 2004. They find that voter involvement has a positive impact on cost efficiency. However, this efficiency-enhancing effect of voter involvement is significantly positively affected by the local governments' fiscal autonomy. Namely, weak fiscal autonomy can undermine voters' interest in and demand for an efficient production of public services. For the parametric estimation, they use a translogarithmic SFA specification. For the determinants of efficiency, they assume that the inefficiency term in the translogarithmic equation is a function of a set of community characteristics. For an input variable, they use municipal net current primary expenditures. These include all

spending in the current budget minus the difference between debt servicing and income from interest. They also do not include capital spending as this mainly refers to investment spending. Output is measured through six variables with respect to social needs, education, recreation and infrastructure: the number of students in local public schools, the number of kindergartens, the surface area of public recreational facilities, the total population, the population over age 65, and the number of employees paying social security contributions. For the inefficiency term estimation, the community characteristics' variables used are voter turnout, existence of free voter union and eligible voters to the total population (only EU immigrants were eligible). Other control variables used: unemployment rate, population density, political concentration in council and share of left-wing parties. They find a negative effect on efficiency from unemployment, high political concentration and low share of left-wing parties. A positive effect is associated with the more independent municipalities (higher fiscal autonomy). All three variables related to the voters' involvement have a positive effect on municipal efficiency, which is very similar to the findings of Borge, Falch & Tovmo (2008).

Nieswand and Seiferd (2011) use intermediate-level government because they constitute the intermediate level of local government for which analysis is still lacking. The potential for efficiency improvement does not seem to be exploited at this level yet. Secondly, departments play an important role in the shifting of power from national to local authorities. They use total expenditures as an input in order to incorporate all relevant input variables. For output variables, they want to concentrate on the mandatory tasks of the departments and consider social services (care for the elderly and the provision of minimum subsistence grants), secondary education, road construction, maintenance and general administration. In the second stage of the estimation, they choose three geographical factors (size, distance from Paris and coastal locations) and two socio-economic factors (median income and share of elderly people) that are assumed to have some impact on the spending efficiency of the French departments. It is considered that size is important in the economies of scale because the distance from Paris may cause a greater migration of highly skilled workers who may have limitations on exercising political influence and thus have a negative effect on efficiency. The coastal locations might require additional expenditures, e.g. for flood control or road and port construction and maintenance. Thus, coastal regions would likely have their spending efficiency negatively affected. Income is expected to have a negative correlation with efficiency on the grounds that the relationship between income and the community's monitoring of the government is negative. This is due to higher opportunity costs (households decide to spend less of their time on monitoring their government), which facilitates inefficiencies. In the second stage, using a bootstrapped truncated regression, they find the variables of size and coastal locations to be insignificant. For the variable of distance from Paris, they find that it negatively influences efficiency, possibly because of the skilled workers' need to migrate. A negative effect on efficiency is also correlated with the median income and a higher share of elderly people.

Some general findings from the studies:

- transfers from central government have a negative impact on a municipality's efficiency (De Borger et al., 1994; De Borger & Kerstens, 1996; Athanassopoulos & Triantis, 1998; Balaguer-Coll et al., 2002; Lokkainen & Susiluoto, 2004; Balaguer-Coll et al., 2007; Kalb, 2010; Stastna & Gregor, 2010);
- a typology of municipalities (tourism, commercial activities) can make them more efficient (Gimenez & Prior, 2007; Kalb, 2010);
- outsourcing and private sector involvement can make municipalities more efficient (Loikkanen & Susiluoto, 2005; Loikkanen & Susiluoto, 2006; Mahabil, 2011);
- local election turnout has a positive impact on a municipality's efficiency (Stastna & Gregor, 2010; Geys et al., 2010);
- mayor's education and experience have a positive impact on a municipality's efficiency (Loikkanen et al., 2011; Mahabil, 2011);
- distance from region's/country's centres/capital generally have a negative impact on a municipality's efficiency (Loikkanen & Susiluoto, 2005; Afonso & Fernandes, 2005; Loikkanen & Susiluoto, 2006; Stastna & Gregor, 2010; Nieswand & Seiferd, 2011; Loikkanen et al., 2011);
- population density, in general, has a positive effect on a municipality's efficiency (De Borger & Kerstens, 1996; Loikkanen & Susiluoto, 2005; Loikkanen & Susiluoto, 2006; Kalb, 2010; Nieswand & Seiferd, 2011; Loikkanen et al., 2011);
- unemployment level generally has a negative effect on a municipality's efficiency (Loikkanen & Susiluoto, 2005; Loikkanen & Susiluoto, 2006; Geys et al., 2010; Loikkanen et al., 2011);
- municipal debt is associated with more efficient municipalities (Worthington, 2000);
- municipal deficit is associated with less efficient municipalities (Balaguer-Coll et al., 2007);
- short-run variable cost inefficiency is more pronounced in small municipalities (Gimenez & Prior, 2007);
- larger municipalities are able to exercise better control over variable costs (Gimenez & Prior, 2007); and
- over time, municipalities are becoming more efficient (Kalb, 2010).

2 Methodological background

To measure efficiency, we will use frontiers or, more precisely, the mathematical programming frontier. The nonparametric method is DEA and it is the mathematical programming frontier[33]. The parametric method we will use is SFA[34]. For the second-stage estimation, we will use a nonparametric Kernel estimation to explain the DEA-VRS efficiency scores. For the SFA estimation, we will use the inefficiency term effects used in the SFA estimation.

[33] A detailed DEA programme is explained in Coelli (1996a).
[34] Detailed SFA model explanations are found in Coelli (1996b).

2.1 DEA frontiers

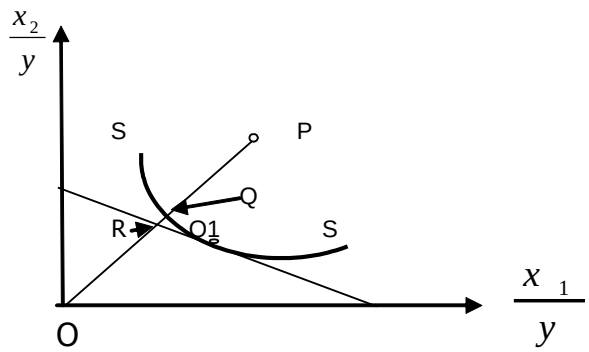
Since Charnes, Cooper & Rhodes (1978), some 2,800 published articles and dissertations related to DEA have appeared (Cooper, Seiford & Tone, 2000; Seiford, 2005). Woodbury, Dollery and Rao (2003) review the measurement of municipal efficiency in Australia and advance the argument that the present reliance on partial measures of performance is inadequate and should be heavily augmented by DEA. They summarise progress made in the measurement of efficiency on a state-by-state basis. On the basis of this evidence, they argue that DEA provides the best means of providing public policymakers with the necessary information on municipal performance.

DEA is a convenient method to use because it gives the flexibility needed to easily model a municipality's complex nature and the relationship between its multiple inputs and multiple outputs (as regressions cannot) and can also measure performance. Further, DEA is data-oriented in the sense it does not require any pre-assumptions as other parametric (statistical regressions) methods do. More formally, DEA directs its focus to frontiers and not central tendencies. Instead of fitting a regression plane through the centre of the data as in statistical regression, with DEA one calculates a piecewise linear surface to build upon the observations. DEA frontiers are more general than production functions because there are multiple production functions, one for each decision-making unit (DMU), with the frontier boundaries consisting of supports which are tangential to more efficient members of the set of such frontiers (Cooper, Seiford & Zue, 2004). As a result, DEA proves particularly proficient at uncovering relationships that remain hidden when using other methodologies.

Several benefits implicit in the DEA approach makes it attractive on the theoretical level. Given its nonparametric basis, it is possible to considerably vary the specification of inputs and outputs and the formulation of the production correspondence relating inputs to outputs. Thus, in cases where the usual axioms of production activity break down, like profit maximisation, then the programming approach may offer useful insights into the efficiency of these types of industries (Worthington, 2000). This is especially true in the case of local public sector activities that municipalities conduct. The disadvantages of DEA are that it does not accommodate statistical noise such as measure error, it is not capable of hypothesis testing and, when a newly added DMU is an outlier, it could affect the efficiency measurement. The SFA and DEA approaches address different questions, serve different purposes and have different informational requirements. With DEA, no accommodation is made for the types of bias resulting from environmental heterogeneity, external shocks, measurement error, omitted variables etc. Thus, the entire deviation from the frontier is assessed as being the result of inefficiency. This may lead to either an under- or over-statement of the level of inefficiency. As a nonstochastic technique, there is no possible way in which probability statements of the shape and placement of this frontier can be made (Worthington, 2000).

The dynamics of DEA are illustrated in Figure 9. A combination of two measures, technical and allocative efficiency, will provide the measure of economic (total) efficiency.

Figure 8. Illustration of DEA dynamics



Source: T. J. Coelli, *A Guide to DEAP Version 2.1: A Data Envelopment Analysis (Computer) Program*, 1996a

In Figure 9 we can see a firm that uses two inputs, x_1, x_2, and produces one output, y. The unit isoquant S-S is an isoquant of a fully efficient firm. There is a production frontier that corresponds with this isoquant and is for fully efficient firms only. The line which is tangent to the isoquant S-S is the technical rate of substitution and it measures how one of the inputs must adjust in order to keep the output constant when another input changes. But, in practice, we do not know the production frontier and it must be estimated from observations on a sample of firms. The estimation can be parametric or nonparametric. Thus, if a firm is operating inefficiently, say at point P, the measure of technical inefficiency can be represented by the distance QP. This distance represents the amount the inputs can be reduced without reducing the output. The percentage term by which all inputs need to be reduced to achieve technically efficient production is represented by the QP/OP ratio.

Technical efficiency (TE) in Figure 9 is thus:

$$TE = OQ / OP = 1 - QP / OP \quad (1)$$

It is obvious from equation (1) that TE will take a value between 0 and 1 and can be an indicator of the degree of technical inefficiency of a firm. For example, a firm that operates at point Q is fully efficient and proper TE takes the value of 1.

What we can see from Figure 9, and from equation (1) as well, is that point Q is technically efficient but allocatively inefficient. It requires the firm to reduce its production costs to be operational at the totally efficient point Q_1. Thus, the allocative efficiency (AE) of a firm that operates at point P is:

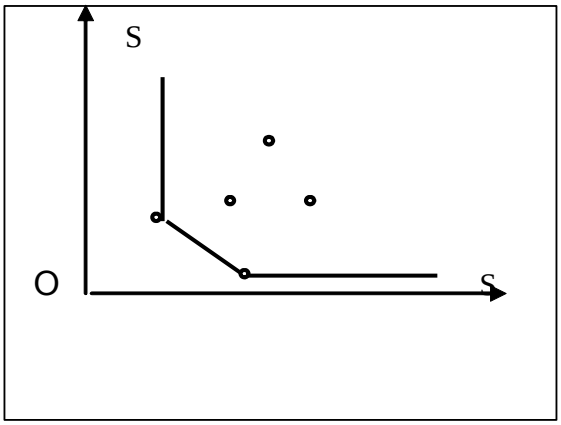
$$AE = OR / OQ \quad (2)$$

The distance RQ represents the reduction of production costs that would occur if production were performing at the technically and allocatively efficient point Q_1 instead of the technically efficient but allocatively inefficient point Q. Accordingly, total economic efficiency (EE) is:

$$EE = OR / OP = TE \cdot AE = OQ / OP \cdot OR / OQ \quad (3)$$

Farell (1957) suggests an estimation of a linear convex isoquant such that no point from the observed data lies to the left or below of it, as in Figure 10.

Figure 9. Linear convex isoquant

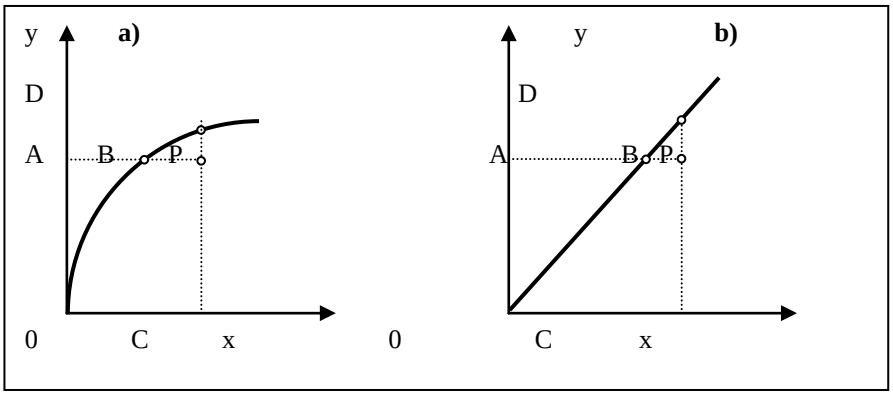


Source: T. J. Coelli, *A Guide to DEAP Version 2.1: A Data Envelopment Analysis (Computer) Program*, 1996a

Later, Charnes et al. (1978) use the Farell method and the term DEA for the first time. It is expected that municipalities exhibit variable returns to scale (VRS) rather than constant returns to scale (CRS). This suggests that for large municipalities there are decreasing returns to scale and increasing returns to scale for small municipalities. This reflects that public services offered in large cities are more complex than in small towns and that there are technical diseconomies of scale, probably due to the existence of agglomeration diseconomies (Balaguer-Coll et al., 2007).

Further, municipalities are exposed to exogenous outputs and can manage their long-run inputs more efficiently. That is why a DEA input orientation seems reasonable for estimating DEA efficiency scores for municipalities.
The distinction between CRS (b) and VRS (a) is illustrated in Figure 11.

Figure 10. Efficiency measures and returns to scale



Source: T. J. Coelli, *A Guide to DEAP Version 2.1: A Data Envelopment Analysis (Computer) Program*, 1996a

Graph a) in Figure 11 shows the case of decreasing returns to scale while graph b) shows an example of constant returns to scale. If we ask about the degree to which input quantities can be proportionally reduced so that the output will remain the same, we then see this movement in points P to B in both graphs. This is the input-oriented efficiency measure. Now, if we ask by how much the output can be proportionally expanded by using the same input quantities, this will be the movement from point P to point D in both graphs. What is different in both graphs is that the input/output distinction matters only in graph a) because the B to P distance is not the same as the distance between P and D as is the case in graph b). Therefore, we can say that where there are CRS it does not matter if our analysis is input- or output-oriented, although it does matter where there are VRS. This is the case of municipalities because they not only face pure technical efficiencies but scale efficiencies as well. That is why we will use DEA-VRS in our work.

For K-inputs and M-outputs in each of the N-DMUs, the KxN input matrix-X and the MxN output matrix-Y represent the data of all N-DMUs. The DEA-VRS linear programming model to be solved can then be illustrated as:

$$\begin{aligned} &\min_{\theta,\lambda} \theta, \\ &st \quad -y_i + Y\lambda \geq 0, \\ &\quad \theta x_i - X\lambda \geq 0, \\ &\quad I1' \lambda \leq 1 \\ &\quad \lambda \geq 0, \end{aligned} \tag{4}$$

Where $\theta \leq 1$ is a scalar, that is the efficiency score that measures the technical efficiency of the unit (x_i, y_i) and λ is a Nx1 vector of constants which measures the weights used to compute the location of an inefficient DMU if it were to become efficient (Coelli, Rao & Battese, 1998). The inefficient DMU would be projected on the production frontier as a linear combination, using those weights, of the peers of the inefficient DMU. The peers are other DMUs that are more efficient than the one analysed, and are therefore used as benchmarks for inefficient DMUs. The I1 is an n-dimensional vector of ones. The restriction $I1'\lambda = 1$ imposes convexity of the frontier accounting for the DEA-VRS model (Boetti et al., 2009).

If the input price ratio is known, then allocative efficiency at point P (Figure 9) is the ratio OR/OQ. Where the distance between R and Q is the reduction in production costs which would occur if production occurred at Q1 (the allocatively and technically efficient point), rather than at Q (the technically efficient, but allocatively inefficient point), the total economic efficiency would be the ratio OR/OP, with a cost reduction achievable at the distance between R and P.

However, in our case, we will only estimate technical efficiency. Allocative efficiency will not be estimated because information about prices was not available. For public firms, it is more difficult to find good indicators that express the quality of services provided (and, given their not-for-profit nature, the market prices for inputs and outputs) as already discussed. These difficulties are even more important when considering the efficiency of local governments, a problem that the economic literature started addressing in the 1990s (Boetti et al., 2009). Given that there is no wage flexibility as salary scales and allowances of municipal personnel are completely fixed, that all municipalities have access to the same capital market (and central government transfers), and obtain most of their funds from the same specialised financial institutions, the hypothesis of identical input prices across municipalities is quite reasonable (De Borger & Kerstens, 1996).

2.2 The Kernel nonparametric method

The distributions of efficiency scores derived from the first-stage DEA estimation differ substantially from the symmetric Gaussian bell-shape distribution. In such cases, it may not be correct to consider Ordinary Least Squares (OLS) or a Tobit censored regression as techniques in the second-stage estimation, given the assumptions inherent in these techniques. When the Tobit censored regression model is used in the second-stage estimation, there is a likely correlation between the DEA efficiency scores and the explanatory variables (Balaguer-Coll et al., 2007).

The DEA efficiency score for one municipality involves all of the other municipalities in the observation set. This circumstance indicates that at least one of the basic model assumptions is not met with the potential regression analysis. Namely, whether we consider OLS or Tobit models, in both cases, disturbances are assumed to be identically independently distributed (i.i.d.) drawings from a normal distribution. Since the

distributions of both the dependent variable and the disturbances are the same (only their means are different), we assume that the efficiency scores are independent, which is not true. In addition, the Tobit estimates are sensitive to any violation of the underlying assumptions (De Borger et al., 1994).

These issues led us to consider a nonparametric regression in our second-stage estimation which is less powerful in terms of prediction yet extremely informative for explanatory purposes. The approach builds on previous work of the authors Deaton (1989), DiNardo, Fortin & Lemieux (1996) or Marron & Schmitz (1992) (cited in Balaguer-Coll et al., 2007, p. 427). The main advantage of this model is its nonparametric nature that provides comprehensive graphical descriptions of the data that are directly informative about the problem at hand.

In this work, we will use the nonparametric Kernel regression in order to compensate for the likely correlation between the efficiency scores and the explanatory variables as well as to overcome the failure of the assumptions if we had used an OLS regression instead.

The nonparametric Kernel approach does not assume any functional form for two variables (say X and Y), but goes back to the statistical definition of conditional expectation. Instead of modelling the functional form directly, the joint density of (X, Y) and the marginal probability density function (pdf) of X is estimated. Choosing a parametric model for these densities would, however, imply the choice of a parametric model (choosing normality also implies linearity). If we do not know the model that we are estimating, there is no reason to know the model for the densities. The only way out of this situation is, therefore, to not assume any model for the densities at all and estimate them by some data-driven nonparametric method. The estimates of the joint and the marginal can then be used to obtain an estimate Y(X) of the conditional expectation at point X. These ideas make it obvious that the estimation of probability density functions is a central topic of nonparametric econometrics (Hagmann, 2003).

Thus, our second-stage nonparametric Kernel estimation takes the form:

$$DEA-VRS_i = m(X)_i + \varepsilon_i, \; i = 1,\ldots,N \quad (5)$$

DEA-VRS are technical efficiency scores from the first-stage estimation for each municipality-i from the total of N-municipalities. Xs-are the independent and explanatory variables. As Deaton (1989) points out, there is nothing that forces the points from this nonparametric estimation to lie along a straight line or along low-order polynomial, and the data are allowed to choose the shape of a function. E-views displays the fits of local polynomial Kernel regressions and the Kernel density estimator is actually replacing the »boxes« in a histogram with »bumps« that are smooth (Silverman, 1986; Hagmann, 2003). Smoothing is done by putting less weight on observations that are further from the point being evaluated. The Kernel density

estimate of series X at point x is estimated by: $y = f(x) = \frac{1}{Nh}\sum_{i=1}^{N} K\left(\frac{x - X_i}{h}\right)$ where N is the number of observations, h-is the bandwidth (or smoothing parameter) and K-is a Kernel weighting function that integrates to one and determines the shape of the bumps.

We use a Gaussian K-function (Balaguer-Coll et al., 2007): $K = \frac{1}{(2\pi)^{1/2}} \exp\left[-\frac{1}{2}\left(\frac{x - X_i}{h}\right)^2\right]$ where h is the bandwidth that controls the smoothness of the density estimate; where the larger is the bandwidth, the smoother is the estimate. The bandwidth selection is crucial for the density estimation (Silverman, 1986) and various methods for this have been suggested. Silverman uses a data-based automatic bandwidth of the type: $h = 0.9N^{-1/5} \min(s, R/1.34)$, where N is the number of observations, s is the standard deviation and R is the interquartile range of the series (the automatic bandwidth actually searches for the MSE-means square error as a goodness of fit measure (Hagmann, 2003)).

The local polynomial Kernel regression fits Y (which is the DEA-VRS efficiency scores) at each x value by choosing parameter β to minimise the weighted sum of squared residuals:

$$min \sum_{i=1}^{N}\left(DEA\text{-}VRS_i - \beta_0 - \beta_1(x - X_i) - \ldots - \beta_k(x - X_i)^k\right)^2 K\left(\frac{x - X_i}{h}\right) \quad (6)$$

Where N is the number of observations (in our case, the number of municipalities), h is the bandwidth (smoothing parameter) and K is the Kernel function that integrates to one. We specify the Nadaraya-Watson regression option with the Gaussian Kernel function and automatic bandwidth selection as Silverman (1986) suggested in E-Views.

2.3 SFA frontiers

Another method to estimate a frontier is parametric SFA. The biggest advantage of SFA lies in the fact that it introduces a disturbance term representing noise, measurement error, and exogenous shocks beyond the control of municipalities. This in turn permits the decomposition of deviations from the efficient frontier into two components – inefficiency and noise.

The parametric approaches to efficiency measurement developed by Aigner and Chu (1968), Aigner, Lovell and Schmidt (1977) and Meeusen and Van den Broeck (1977) allow for a distinction between the effects of measurement error and exogenous

municipality inefficiency by introducing a composed error term in the parametric frontier equation as presented in equation (7):

$$ln(C_i) = \beta ln\, y_i + (V_i + U_i) \quad (7)$$

Where C_i – is the cost of production of the i-th municipality;

β is a vector of unknown parameters;

y_i is a (k x 1) vector of transformations of the input prices and output of the i-th municipality;

V_i are independent identically distributed N (0, $\sigma^2{}_v$) random variables and are independent of U_i;

U_i are random variables (non-negative) which are assumed to account for the cost-inefficiency in production and are often assumed to be independently identically distributed.

The model in equation 7 is a stochastic frontier because it is bounded above by the stochastic variable $\beta \ln y_i + V_i$ and the stochastic frontier can vary about the deterministic part $\beta \ln y_i$.

A new statistic γ – defined to test whether inefficiency is significantly present in the model (Battese & Coelli, 1992; Battese & Coelli, 1995) – is presented:

$$\gamma = \frac{\sigma_U^2}{(\sigma_V^2 + \sigma_U^2)} \quad (8)$$

Here, if $\sigma^2{}_u$ =0 this means that there are no U_i firm effects (i.e. γ =0) and one should use the deterministic frontier instead. A value of γ =0 indicates that the deviations from the frontier are due entirely to noise, while a γ =1 indicates that all deviations are due to technical inefficiency.

3 The model

Measuring the inputs and outputs of municipality services is difficult, as argued by Balaguer-Coll et al. (2007). The problems range from limitations in databases, time, inconsistency of different variables and output versus outcome measurement (Yilmaz & Ebel, 2002) etc. Fletcher and Snee (1985) categorise data problems firstly in setting the objectives and, secondly, in measuring the outputs themselves.

In Macedonia, as already discussed in Chapter 2, a full-scale decentralisation agenda has been in effect since 2005 as a policy choice of the government after the Ohrid Framework Agreement that should help the process of building national cohesion. On the other side, increasing the fiscal autonomy of municipalities in Macedonia should improve both the efficiency and effectiveness of public services provided and expected by citizens. Transferring competencies from the central to the local government level requires skilled administration for better services for citizens. This goal is challenged by the inefficient implementation of equitable representation in employment at the administration level (a post-OFA requirement as previously discussed in Chapter 2). Our **contribution** to the literature here is that for the first time, to the best of our knowledge, we introduce the ethnic characteristics of municipalities in the literature on the general efficiency estimation of municipalities with DEA and SFA frontiers. Further, to the best of our knowledge, this is the first time that general municipal efficiency is estimated for an EU candidate country by using frontiers.

Our work has the following **goals**:

1. To quantify the efficiency of Macedonian municipalities using the nonparametric DEA technique and parametric SFA technique which is based on the relationship between the inputs and outputs in the case of employing DEA, or between a dependent variable and explanatory variables in the case of SFA.
2. To identify the determinants of this efficiency.

The ethnic heterogeneity may increase rent-seeking and reduce the incentive to spend on productive public services. Ethnic heterogeneity may also induce the provision of lower levels of social capital (Ranis, 2011). This argument builds on the assumption that different ethnic groups are exclusive, competing with one another, and primarily interested in furthering the welfare of their own group members (Ranis, 2011). In fact, the ethnic group in power has been argued to limit the spending on public goods to prevent those outside the ruling group from also benefiting and gaining strength (Olson, 1982).

Macedonia has large disparities among municipalities (as discussed in section 1.5). Given the parallel tendencies for consocial democracy and ethnically driven political pressures, the decentralisation process may negatively affect the efficiency of the provision of public goods at the municipal level. On the other side, the recent success of Macedonian municipalities in collecting their own revenues shows the potential for decentralisation to actually have a positive impact on Macedonian municipalities.

As stated in the introduction, this work aims to test the following **hypotheses**:

H1. Macedonian municipalities are on average relatively inefficient in providing services to citizens.

H2. Ethnic fragmentation contributes to the inefficiency of the decentralised service provision in Macedonia.

The selection of the data, inputs and outputs is based on:

- the decentralisation legal framework and constitutional requirements in Macedonia;
- principles when using the data: availability, relevancy, official sources, and no missing observations for municipalities;
- 2010 population data estimates from the State Statistical Office (SSO) of Macedonia. Ethnic fragmentation is calculated from the 2002 census data. Data on territorial area come from the Ministry of Local Government. The 2009 data on the length of roads are from the SSO. The municipality budget data are from the Treasury Department of the Ministry of Finance for 2010; and
- theoretical background and empirical studies in this area.

The selection of inputs is based on the principle that expenditures are a proxy for inputs of municipalities in order to provide quality services to their citizens. The selection of outputs is based on the minimum services that should be provided by municipalities in accordance with the legal framework of their competencies. Data on welfare improvements, as perceived by the citizens/consumers, are not available and thus only the output will be measured, not the outcome. However, later in section 4.6, we also use the 2008 database from the UNDP[35] on a sample of municipalities. We will use this data to assess the outcome of decentralisation within ethnically fragmented municipalities in Macedonia. Table 20 provides information on the methodology, variables and their sources used in our estimations.

Table 19. Information on the methodology, variables and their sources used in our estimations

Method/Variable	Source of data
FIRST STAGE:	
DEA-VRS ESTIMATION	
INPUT VARIABLES 1. Current expenditures	Ministry of Finance, 2010 Excel database received from the Treasury Department
OUTPUT VARIABLES 1. Population – ages 0–4 2. Population – ages 5–19 3. Population – ages 20–64 4. Population – ages over 65 5. Length of asphalt-equivalent roads (kilometres)	State Statistical Office (SSO), 2010 estimates of population 2009 for length of roads

(table continues)

[35] For more, see UNDP (2008) People Centred Analysis Report

Method/Variable	Source of data
SECOND STAGE: **NONPARAMETRIC KERNEL ESTIMATION TO ANALYSE DETERMINANTS OF THE DEA-VRS EFFICIENCY SCORES**	
DEPENDENT VARIABLE 1. DEA-VRS efficiency scores	Results from DEA-VRS estimation
INDEPENDENT VARIABLES 1. Ethnic fragmentation 2. Own revenues per capita 3. Density	SSO, for ethnic fragmentation calculation shares of ethnic groups from the 2002 census are used For own revenues Ministry of Finance, 2010 finance data received from the Treasury Department SSO, for density calculation from 2010 estimates of population and Ministry of Local Government for km^2 of area of a municipality
SFA ESTIMATION	

Cost function with explanatory variables	For current expenditures – Ministry of Finance, 2010 Excel database received from the Treasury Department
DEPENDENT VARIABLE 1. Current expenditures	
EXPLANATORY (OUTPUT) VARIABLES 1. Population – ages 0–4 2. Population – ages 5–19 3. Population – ages 20–64 4. Population – ages over 65 5. Length of asphalt-equivalent roads (kilometres)	For population and roads SSO, 2010 estimates of population and 2009 data for length of roads
EXPLANATORY VARIABLES (FOR INEFFICIENCY TERM): 1. Ethnic fragmentation-ETF 2. Own revenues per capita 3. Density 4. A dummy variable that represents the political affiliation of the mayor of the municipality if it is in line with the central government coalition 5. A dummy variable that represents the political affiliation of the mayor of the municipality if it is in line with the municipal council	SSO, for ethnic fragmentation calculation shares of ethnic groups from the 2002 census For own revenues Ministry of Finance, 2010 finance data received from the Treasury Department
	Estimates of population from 2010 for density calculation and from Ministry of Local Government for km^2 of area of a municipality For dummy variables state electoral commission data from 2009 local elections

Since the political variables are dummy variables (Table 20) we cannot use them in our second-stage Kernel estimation for the DEA efficiency scores.

4 Data

4.1 DEA input and output variables

Our analysis includes 74 observations out of 84 municipalities in Macedonia. Municipalities that comprise the capital city of Skopje (10 in all) are not taken into account for consistency reasons as they are operating under a separate law on the city of Skopje (*Official Gazette of the Republic of Macedonia,* no. 55/04) and, in addition, data on population are not available for all municipalities.

For our DEA-VRS efficiency analysis, we use one input and five outputs. The DEA-VRS inputs and outputs, with the employed proxy, are presented in Table 21.

Table 20. DEA inputs and outputs with proxies for inputs and outputs and descriptive statistics

Input	Proxy for	Mean	St. dev.	Min	Max
Current expenditures in Macedonian denars	Proxy for all inputs	78,313,853	101,501,673	8,429,267	468,804,461
Outputs					
Population – ages 0–4	Proxy for social services – kindergartens	1,113	1,303	3	6,348
Population – ages 5–19	Proxy for education services – primary and secondary schools	4,117	4,756	162	22,108
Population – ages 20–64	Proxy for administrative services to citizens (on-the-counter administrative jobs, decisions issuing etc.) and culture (libraries, museums, music and art etc.)	13,088	15,016	755	67,401

Input	Proxy for	Mean	St. dev.	Min	Max
Population – ages more than 65	Proxy for geriatric homes and/ services	2,363	2,692	310	13,772
Length of asphalt-equivalent roads (kilometres)	Proxy for general maintenance and winter maintenance of roads as well as transportation	118	65	11	301

The rationale for choosing current expenditures as an input is based on other studies and follows the competency of the Macedonian municipalities. We do not take capital expenditures into account as they are not recurrent and are incidental year-by-year. Further, we do not take account of the transfers from the central government to municipalities as municipalities do not have the competency to make decisions about these transfers. This is because we want to estimate a municipality's own spending allocation rather than the central government's spending allocation for municipal services. We also do not take donations and self-financing into account as they do not represent the own spending decisions of municipalities but donors' and citizens' contributions to municipal services. These 74 municipalities did not engage in any borrowing activities in 2010.

4.2 The ethnic fragmentation variable

The World Bank (2000) argues that the main reason for the rising interest in decentralisation in many countries is political stability rather than economic efficiency, growth or the other factors economists are accustomed to analysing. It is also argued that when a country finds itself deeply divided, especially along geographic or ethnic lines, decentralisation provides an institutional mechanism to bring opposition groups into a formal, rule-bound bargaining process. Indeed, after the OFA, decentralisation in Macedonia is a policy choice for bringing the diverse groups into a formal process to create the country's cohesion.

Ethnic fragmentation and economic performance have recently started to be a focus of academic research by economists (Alesina & La Ferrara, 2004). On the macroeconomic level, Easterly and Levine (1996) find that ethnic diversity is correlated with slow economic growth and, in fact, ethnic heterogeneity is a significant impediment to growth (Wunnava, Prasch & Mitra 2012). They explain this by finding an association between diversity and poor economic policies.

The efficiency of service provision most likely significantly varies among Macedonian municipalities. Thus, information about the determinants of their relative efficiency, especially the impact of ethnic fragmentation on it, is very important for policy makers in Macedonia and for the design of future distribution of the scarce centralised funds.

Ethnic diversity is expected to have a negative effect on the technical efficiency of Macedonian municipalities. Alesina, Baquir & Easterly (1999) present a model that links the heterogeneity of preferences across ethnic groups in a city to the amount and type of public good the city supplies. Results show that the shares of spending on productive public goods (e.g. education, roads, sewers and rubbish collection in US cities (metro areas/urban counties) are inversely related to the city's (metro area's/county's) ethnic fragmentation, even after controlling for other socio-economic and demographic determinants. The provision of public goods is lower in more ethnically fragmented localities and fiscal discipline is more problematic in ethnically fragmented localities. The Ethnic Fragmentation Indicator (ETF) used in their model is based on Easterly and Levine's (1996) work. In algebraic form, the indicator is:

$$ETF = ETHNIC = 1 - \sum_i (ethnic affiliation_i)^2 \quad (9)$$

This indicator measures the probability that randomly drawn people from a city belong to a different ethnic group (in the Macedonian case, ethnic affiliation being a share of the population: a) self-identified as **Macedonian;** b) self-identified as **Albanian;** or c) self-identified as **another ethnicity**). The mechanisms via how ethnic fragmentation affects the efficiency of public service delivery can be investigated through the: **heterogeneity of preferences**, **interest groups** and **social capital literature**. On the **heterogeneity of preferences**, public policies and ethnic origin are strongly correlated and political conflicts over public policies are fought more and more often along ethnic lines. If all ethnic groups are dissatisfied, this may be a good indication of the polarisation of these groups who have wound up in an unhappy position in the middle (Alesina et al., 1999). The result is that municipalities can spend less on public goods than they would have in the absence of such polarisation. Each ethnic group might have a different travel pattern and thus will have polarised preferences for local roads. This literature basically follows the Tibeout (1956) model on preferences. This model of preferences argues that citizens will sort them out in local communities that provide public goods they believe best fit their preferences. The more diverse the population is in terms of ethnic characteristics, the more likely it is that the needs and tastes for various public services will differ (Paddison, 1983).

The politics, **interest groups, patronage and public spending literature** argues that in polarised societies interest groups become political actors. Ethnic groups can then favour rent-seeking spending programmes and the patronage of their respective groups, thus undervaluing the public goods that benefit the whole community. While much of the relevant literature focuses on the diversity's impact on economic growth, there is evidence that it adversely affects income distribution, poverty levels as well as human development (Ranis, 2011). Further, polarised groups cannot agree on the type and mode of distribution of the costs of the fiscal adjustment which results in less fiscal discipline. According to Reilly (2001), in plural societies split along several cleavage lines the intermixture of ethnic identities with non-ethnic or cross-cutting issues should eventually create the potential for cross-ethnic coalitions. Often the creation of these coalitions is undermined by the dominance of an overarching group of identities and

loyalties in forming political identities as the accommodation of special interest groups and might also lead to less efficient policies (Geys et al., 2010). The fact is that, since gaining independence, Macedonia has always had one Albanian political party in the government coalition sharing power with one Macedonian political party. This might have an adverse effect on municipal efficiency. In cities where ethnic groups are polarised and where politicians have ethnic constituencies, the share of spending on public goods is low (Habyariama, Humphreys, Posner & Weinstein 2007). Unless restrained, kin groups will function as patronage systems, reducing the efficiency of promotions to the advantage of the dominant kin group (Collier & Garg, 1998). Hence, in addition to worsening macroeconomic policies, ethnic fragmentation may reduce the efficiency of public service delivery.

Further, according to Ahmad & Brosio (2004), in socially polarised and/or ethnically fragmented societies voters tend to vote for those candidates they most closely identify with, irrespective of their public performance and policy records. Therefore, political competition between parties also concentrates on identity issues, and candidates are nominated from constituencies largely on the basis of demographic calculations of ethnicity and religion. This is relevant to the Macedonian reality where political parties and voters at local election are highly fragmented and follow demographic calculations of ethnicity. Like uninformed voters, polarised voters are less able to hold politicians accountable for their performance in office. The provision of public goods suffers the most in these conditions since politicians in polarised societies rarely internalise the society-wide costs and benefits of their policy decisions (Ahmad & Brosio, 2004). That is why it is important to look at ethnic fragmentation as a determinant of the efficiency of local public goods and services. Moreover, if some groups of voters, perhaps the local elite, mobilise themselves to influence public policies at the local level, then decentralisation might increase the risk of »capturing« public resources for the benefit of the non-poor (Bardhan, Pranab & Dilip, 2000). This risk is especially important for Macedonia with its relatively high level of poverty and inequality (as discussed in section 1.5).

Sometimes, a particular minority exerts more influence, perhaps because of its wealth and power or perhaps owing to historical factors. During the transition and restructuring of the economy, ethnic Macedonians' living standards lowered as the industrial sector shrank, whereas the Albanian ethnic group more easily adapted during the transition with its agricultural activities and remittances from emigration. After the OFA, the administrative sector was also under pressure for more ethnic minority representation, thus additionally shrinking the employment opportunities for the ethnic Macedonian majority (ESI, 2002). This definitely indicates that the Albanian minority exerts a greater influence. Perhaps this is due to its relative economic wealth and power, not only because of historical factors but also because of post-OFA requirements (while Albanians make up around 25% of the total population in Macedonia).

Social capital literature is based on Putnam's (1993) and North's (1990) work and the structural social capital explained as networking, communication, trust along with the cultural and linguistic differences that might affect the delivery of public services

(World Bank, 2002). Putnam (1993) shows that differences in the efficiency of regional governments in Italy – the northern ones being much more efficient than those in the south – result from the discrepancy in levels of social capital in both parts of the country. Coffe and Geys (2005) analyse data from 305 Flemish municipal governments and demonstrate that social capital leads to higher quality in the government's financial management, even after controlling for various socio-economic and political differences among municipalities. Thus, the cultural and linguistic difference between Albanians and Macedonians might affect the efficiency of public service delivery in Macedonian municipalities.

Ethnic fragmentation has various detrimental microeconomic effects that tend to reduce public sector performance, increase patronage and lower the level of trust among individuals. A country can either run performance politics or identity politics (Collier, 1998). Performance politics facilitate social capital and electors punish governments that deliver poor economic performance. Identity politics are actually a type of clientelism typically found in ethnically fragmented countries, especially in infant democracies such as Macedonia. Brosio (2000) in Galeotti, Salmon and Wintrobe (2000) argues that in infant democracies clientelistic politics are seen as an obstruction to a proper evolution of the country. Patterns of inter-group behaviour can be understood when considering that individuals may attribute positive utility to the well-being of members of their own group, and negative utility to the well-being of members of other groups (Tajfel, Billig, Bundy & Flament, 1971). Moreover, people have discriminatory community preferences. People care only about the welfare of those within their own ethnic group (Cutler & Glaeser, 1995). Analysis of group participation by Alesina and La Ferrara (2004) illustrates that where the population is heterogeneous individual utility from joining a group positively depends on the share of group members of one's own type and negatively on the share of group members of different types.

Political fragmentation is also very important given the ethnically politicised nature of Macedonian society. Ethnicity is politicised when political coalitions are organised along ethnic lines, or when access to political or economic benefits depends on ethnicity (Fearon, 2006 in Weingast & Witman (2006), as is the case in Macedonia. Ethnicity can be socially relevant in a country without it being so politicised, and the degree to which ethnicity is politicised can vary across countries over time. Fearon (2006) argues that »primordialists« believe there is no need to explain why ethnicity often forms the basis for political mobilisation and/or discrimination. Ethnic groups are naturally political, either because they have biological roots or because they are so deeply set in history and culture as to be unchangeable »givens« of social and political life. Thus, primordialists assume that certain ethnic categories are always socially relevant, and that political relevance automatically follows social relevance. Rabushka and Shepsle (1972) object to primordialist arguments, saying that they cannot make sense of the variations in the politicisation of ethnicity over time and space. In political economics work, sometimes ethnic groups are treated as an extreme form of interest group whose members share stable common preferences over all public policies. Further, »modernists« like Anderson (2006) in Weingast and Witman (2006) see ethnic groups as political

coalitions formed to advance the economic interests of their members (or leaders). Variation in the politicisation of ethnicity is then explained by an argument about when it makes economic sense to organise a coalition along ethnic lines. This is relevant for Macedonia because ever since its independence the political reality is that in the government coalition there has always been one ethnic Macedonian and one ethnic Albanian political party. Moreover, it is always the case that the opposition (an opposing ethnic Macedonian and an opposing ethnic Albanian political party) is accusing the Albanian/Macedonian coalition in power of betraying ethnic causes for the economic interests of the governing coalition parties' members.

4.3 Political variables

The estimation will not only concentrate on an evaluation of efficiency in terms of transforming primary inputs (financial resources) into specific outputs-services (roads, population), but also on an evaluation of a municipality as a DMU that organises the production process of multiple services. The municipal council is the legislative body of the municipality, it adopts the budget, establishes public institutions and communal enterprises, appoints managers upon the mayor's proposal, establishes the municipality's administrative organs, and so forth. The idea is that the budget is the instrument of local policies and politics and thus a reflection of how the programmes will be executed. Therefore, the budget process can also determine the efficiency in the provision of public services (Alesina et al., 1999). Table 22 explains the political dummy variables that we will use in the SFA estimation.

Table 21. Explanations of the dummy political variables used in the SFA estimation

Political variables	Explanation
MAYCENTRA	A dummy variable that represents the political affiliation of the mayor of the municipality when it is the same as the central government coalition. If yes, then the dummy equals 1
MAYCOUN	A dummy variable that represents the political affiliation of the mayor of the municipality when it is the same as the municipal council's majority. If yes, then the dummy equals 1

The effect on efficiency might be mixed. One hypothesis is that there can be a **positive association** between these political variables and efficiency since mayors, councillors, mayors and central government would have an incentive to lower costs and increase efficiency in order to ensure their »job security«. They could easily find cooperative solutions instead of playing zero-sum games. Another hypothesis is that there can be a

negative association between these political variables and efficiency. For example, if the governing party has an absolute majority, other parties or coalitions could possibly face greater difficulties in effectively controlling expenditures. Stastna and Gregor (2010) find that the higher is the political concentration (measured as the share of seats of political parties on the municipal council), the higher is the efficiency. Borge et al. (2008) also find that a high degree of party fragmentation (based on the party affiliation of the mayor and the deputy mayor and the share of seats held by their parties) contributes to low efficiency. Athanassopoulos and Triantis (1998) highlight a negative relationship between municipal efficiency and the parties affiliated with the central government due to the political family effect. Cost efficiency may be affected by the size and composition of political coalitions as arbitrage in the political bargaining process may require more explicit or implicit side payments depending on the number and nature of the coalition partners (Vanden Eeckaut et al., 1993; De Borger & Kerstens, 1996; Mueller, 1989).

4.4 Other explanatory variables

Besides ethnic fragmentation and political variables, we also include two additional explanatory variables for the efficiency of Macedonian municipalities. We use **own tax revenues per capita** as it has been an important indicator since the beginning of decentralisation in Macedonia. It reflects the devolution of decentralisation. Namely, at the start of decentralisation in 2005 the National Public Revenue Office (PRO) transferred the administration of property taxes to Macedonian municipalities. This indicator will reflect the increasing fiscal capacity of municipalities as well as their fiscal effort to collect their own revenues. De Borger and Kerstens (1996) use per capita personal income to reflect the fiscal capacity of Belgian municipalities. Their argument is that a higher fiscal capacity will lead to more income and may foster the featherbedding of mayors and politicians. Balaguer-Coll et al. (2002) find that a high per capita level of tax revenues has a negative influence on efficiency because a larger availability of public resources softens the budget constraint. Namely, the availability of more revenues from local taxes reduces the awareness of local politicians to control spending (Boetti et al., 2009).

In 2005, fiscal decentralisation gave Macedonia's municipalities the devolutionary power to administer their own taxes (property tax, property transfer tax, inheritance and gift tax). Before 2005, these were poorly administered by the central government's PRO simply because of the low tax administrative effort required and because the central-level taxes (VAT, personal income tax and profit tax) had priority over local government taxes. Since 2005, the revenues from local taxes have been administered by the municipalities and have been constantly rising. They give a solid base to municipalities to conduct their own programmes and decide their own priorities. That is why we want to test whether Macedonian municipalities with higher own revenues per capita (fiscal capacity) exercise softer budget constraints and end up being less efficient.

Accordingly, we hypothesise that revenues from own taxes, in accordance with the property rights and principal-agent literature, will have a negative impact on efficiency

as it seems reasonable that a local government which is highly capable of generating revenues would be less motivated to manage them efficiently (for example De Borger & Kerstens, 1996). On the other side, high taxes may increase voters' awareness of public expenditure as argued by Davis and Hayes (1993) and thus have a positive effect on municipal efficiency. Such awareness might, conversely, make efficiency worse and the situation could end being that bureaucrats have a preference for more visible projects rather than those which are less tangible. This is observable in Macedonia with the desire of Macedonian mayors to fill the Macedonian daily newspapers (for example, the daily Dnevnik: www.dnevnik.com.mk) with paid commercials proclaiming what they have achieved in their first year in office. Having many »achievements« is their daily obligation which should be provided in any case given the legal framework and their legal competencies.

In addition, we want to control for municipal heterogeneity in terms of scale efficiencies and that is why we include **population density** as well (Kalb, 2010). It can also be regarded as a proxy for the heterogeneity of property prices which tend to substantially differ between rural and urban communities. While a high population density points to cost advantages due to a regional concentration of services (De Borger & Kerstens, 1996), higher property prices in urban areas may make production more costly. Population density can be negatively correlated with efficiency, indicating that a significant part of the observed inefficiencies are driven by scale inefficiencies (Geys & Moesen, 2008). Therefore, the effect of population density on the level of municipalities' spending is ambiguous.

5 Estimation results

5.1 DEA-VRS estimation results

Once we define inputs and outputs for DEA-VRS, we estimate a common DEA-VRS frontier[36] for one period (year 2010 expenditures budget data and population estimates from the SSO of 2010) on the 74 municipalities in Macedonia. The results are illustrated in Table 23.

[36] We use the DEAP 2.1 software developed by Coelli (1996a).

Table 22. Summary statistics for the DEA-VRS efficiency scores by municipalities' population size classes

Size class	Mean	Median	St. dev.	Minimum	Maximum	Percent of efficient observations
All sizes	0.596	0.721	0.394	0.006	1.000	26/74 (35%)
POP < 5,000	0.502	0.477	0.384	0.007	1.000	4/17 (24%)
5,000 ≤ POP < 10,000	0.831	0.962	0.223	0.299	1.000	8/16 (50%)
10,000 ≤ POP < 15,000	0.810	0.921	0.306	0.015	1.000	5/10 (50%)
15,000 ≤ POP < 20,000	0.720	0.708	0.331	0.006	1.000	4/9 (44%)
20,000 ≤ POP < 60,000	0.400	0.249	0.419	0.006	1.000	4/16 (25%)
POP ≥ 60,000	0.218	0.056	0.386	0.013	1.000	1/6 (17%)

The estimated average efficiency of around 60% (0.596) means that municipalities would have to reduce their costs by 40% to achieve the maximum cost efficiency. It is therefore possible to conclude that there are relatively high variations in efficiency among municipalities and that their efficiency is, on average, low. Of course, one has to bear in mind that the efficiency scores are calculated according to the best practice in the sample (i.e. the most efficient municipality/ies named peers in the DEA-VRS estimation output). These peers and the heterogeneity of Macedonian municipalities might explain the relatively low efficiency scores of 0.006. Namely, Sampaio de Sousa, Cribari-Neto & Stosic (2005) argue that with non-parametric methods such as DEA inefficiencies due to the presence of atypical observations, measurement errors, omitted variables, and other statistical discrepancies are not taken into account. Thus, there is no formal description of the uncertainty and noise associated with the observed data and, on top of that, data heterogeneity in DEA may even worsen this problem and lead to a substantial underestimation of efficiency scores since the frontier is achieved by a small number of municipalities. When we carefully inspect the lowest DEA efficiency scores in Macedonian municipalities from the DEA estimation output (efficiency scores less than 0.010), we can see that one municipality is a peer to each one of these low efficiency municipalities.

An international comparison would most likely show even higher inefficiencies. However, international comparisons are difficult to conduct due to differences in decentralisation policy set ups, data and data collection so all studies of efficiency reported in section 4.1 are national or regional/provincial.

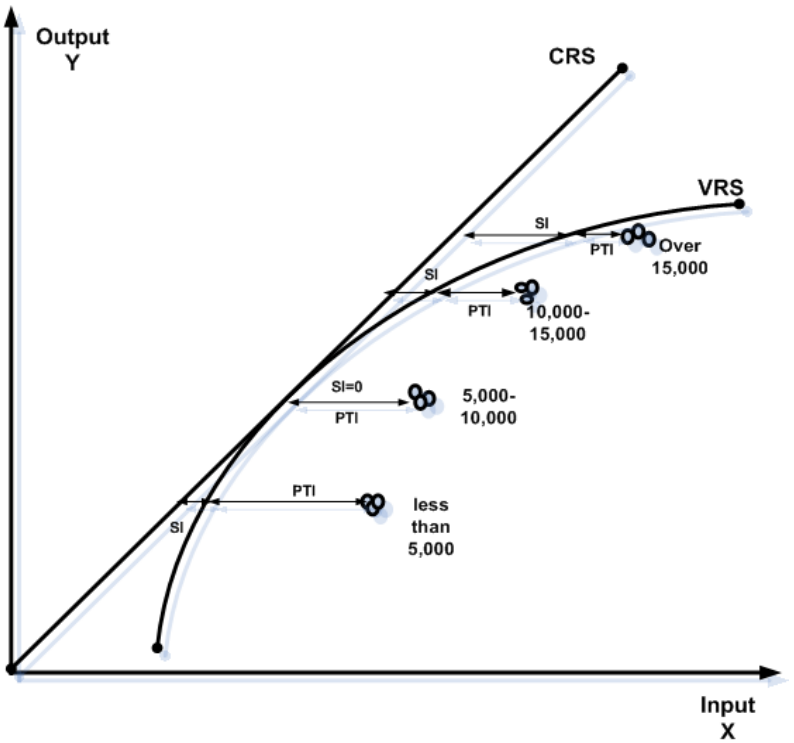
What we can also see in Table 23 is that, out of 74 municipalities, 26 (35%) are fully efficient with efficiency scores of 1. There are clearly economies of scale, we can see that municipalities with a population of less than 5,000 have an efficiency of 0.502, which is less than the national mean efficiency (0.596). Further, municipalities with a population of more than 20,000 have a level of efficiency (0.400 and 0.218) which is less than the national mean level of efficiency (0.596). The highest efficiencies are

found in municipalities with a population between 5,000 and 10,000 (0.831). The last column of Table 23 reveals that the number of most efficient municipalities within the proper size class is highest for municipalities with a population between 5,000 and 15,000 (50% of them are efficient). In addition, the number of efficient municipalities within the size class decreases for municipalities with a population of more than 15,000 people.

In Figure 12 we can see the Variable Returns to Scale (VRS) and Constant Returns to Scale (CRS) frontiers, along with the Scale Inefficiencies (SI) and Pure Technical Inefficiencies (PTI) depending on the size of the municipalities in Macedonia. Municipalities with a population of up to 10,000 have lower overall efficiency scores due to economies of scale inefficiencies. This effect was considered by Balaguer-Coll et al. (2002) and Balaguer-Coll et al. (2007). Namely, as illustrated in Figure 12, Macedonian municipalities that have a population of up to 10,000 are exhausting their increasing economies of scale. Municipalities with a population less than 5,000 have both PTI and SI. Municipalities with a population between 5,000 and 10,000 have no SI and only PTI. In addition, their PTI are lower than the PTI in municipalities with a population of less than 5,000. That is why in Table 23 we can see higher mean efficiency scores of 0.831 for municipalities with a population between 5,000 and 10,000 than the lower mean efficiency scores of 0.502 in municipalities with a population of less than 5,000 (simply because municipalities with a population between 5,000 and 10,000 have no scale inefficiencies).

A similar explanation holds for the decreasing overall mean efficiency scores for municipalities with a population between 10,000 and 15,000 and with mean efficiency scores of 0.810 purely because they have SI but are better off than municipalities with a population of less than 5,000 because they have higher PTI, i.e. they are closer to the efficient frontier. Finally, municipalities with a population of more than 15,000 have mean efficiency scores that are decreasing simply because their decreasing returns to scale are becoming bigger with an increasing population.

Figure 11. Breakdown of efficiency by population classes



Source: Adopted from M. T. Balaguer-Coll et al., *Efficiency and quality in local government management: The case of Spanish local authorities*, 2002

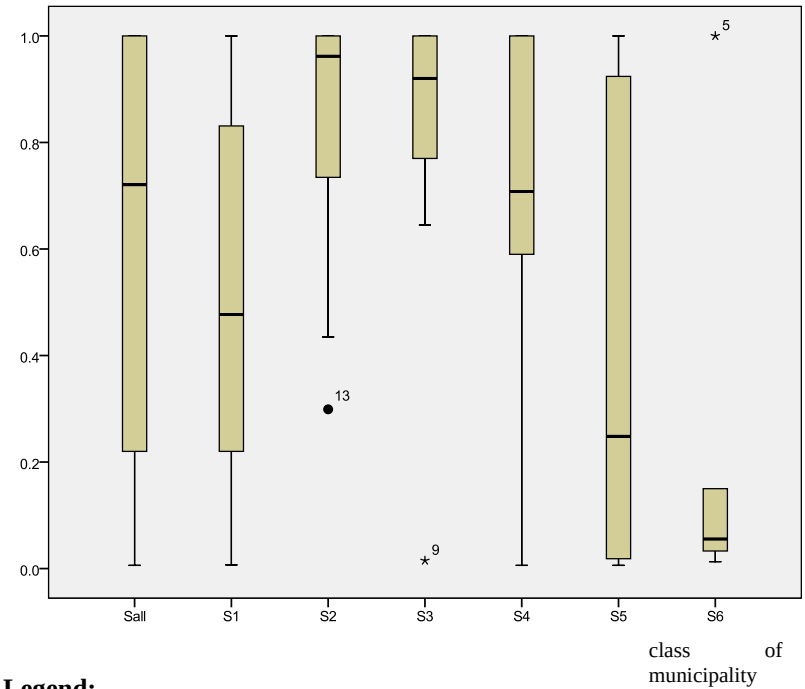
As Table 23 shows, in Macedonia the large municipalities (with a population of more than 10,000) exhibit decreasing returns to scale, probably since they produce a wider range of more complex services while the small municipalities show increasing returns to scale, perhaps because of the influence of fixed costs on current expenditures (say general administration). The same findings are reported in Boetti et al. (2009) and Balaguer (2002; 2007). Economies of scale and agglomeration externalities typically make larger municipalities more efficient; moreover, small governments are less efficient due to fiscal vulnerability or the absence of sufficient experience among local staff (Prud'homme, 1995). Another reason for this may be that big municipalities have comparatively more skilled employees, better management control systems (financial, accounting or external) and possibly execute operating expenses more effectively.

Small governments may also be captured by local interest groups (Bardhan, Pranab & Dilip 2000) or may be prone to moral hazard if dependent on transfers from the central government (Rodden, 2003). On the other hand, the higher electoral control that is typical at the local level may reduce incentives for incumbents regarding rent-seeking

(Seabright, 1996) and yardstick competition disciplines local representatives to not waste resources, thus making smaller municipalities efficient.

Balaguer et al. (2007) argues that Tukey-Whisker box plots are particularly informative in the case of efficiency scores obtained via linear programming techniques (bound by zero and unity) and for which a mass of observations achieves the upper bound and typically yield skewed distributions (as illustrated in the summary statistics in Table 23 as well). Moreover, Lovell, Walters and Wood (1994) say that skewness of DEA efficiency scores is rarely reported and that is why we also present Tukey-Whisker box plots for each class of municipality by population following Balaguer et al. (2007).

Figure 12. Tukey-Whisker box plot of DEA-VRS efficiency scores



Legend:
Sall – all municipalities
S1 – Municipalities with a population of less than 5,000
S2 – Municipalities with a population of 5,000 to 10,000
S3 – Municipalities with a population of 10,000 to 15,000
S4 – Municipalities with a population of 15,000 to 20,000
S5 – Municipalities with a population of 20,000 to 60,000
S6 – Municipalities with a population >60,000

The box plots in Figure 13 illustrate the existence of outliers in S2, S3 and S6. One municipality from all municipalities with a population of over 60,000 has a DEA-VRS score of 1, i.e. it is fully efficient. For each size class in Table 23, the box in Figure 13 represents the 50% mid-range values of the efficiency scores. The dark line in the middle of the boxes is the median of the technical efficiency scores for the proper class. The median-mean difference is not so high for Sall (all Macedonian municipalities) and for municipalities with a population of less than 5,000. For other size classes, the median-mean difference is higher. This illustrates greater unbalances among other size classes of municipalities. The hinges (the top and bottom of each box) reveal that technical efficiency varies less for municipalities with a population of between 5,000 and 15,000 and those with more than 60,000. The whiskers[37] show that if the data are distributed normally, approximately 95% of the data are expected to lie between them.

5.2 Kernel estimation results

Descriptive statistics for the ETF, per capita own tax revenues and density are given in Table 24.

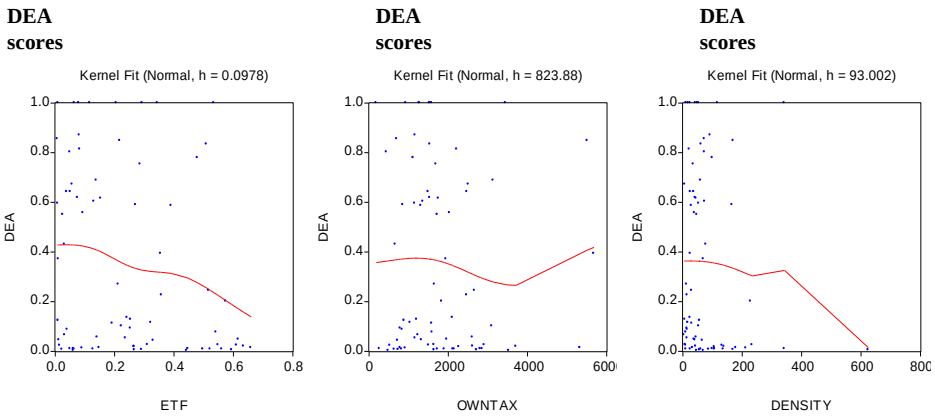
Table 23. Summary statistics for explanatory variables: ETF, per capita own tax revenues

Explanatory variables	Mean	St. dev.	Skewness	Kurtosis	Minimum	Maximum
ETF	0.242	0.198	0.577	2.060	0.008	0.660
Per capita own revenues	1,804	1,116	1.495	5.814	187	5,679
Density	78	95	3.246	16.719	4	625

Figure 14 illustrates the nonparametric regressions of the DEA-VRS efficiency scores on each of the explanatory variables estimated by Kernel smoothing, using the Nadaraya-Watson estimator. The bandwidth h is also illustrated in the graphs. The political variables are not taken into account as they are dummy variables and cannot be estimated for DEA-VRS with Kernel.

[37] Whiskers are the T-bars that extend from the boxes. They can extend to 1.5 times the height of the box or, if no case/row has a value in that range, to the minimum or maximum values.

Figure 13. Kernel estimation of the explanatory variables on the DEA-VRS efficiency scores

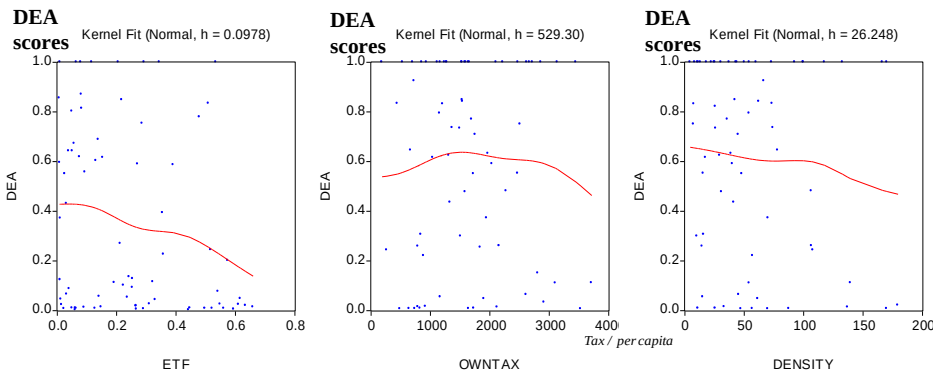


However, we must recognise the existence of outliers and the impact on the Kernel analysis for the own tax and density variable. In order to deal with the outliers in our Kernel estimation, we first use the Iglewicz and Hoaglin (1993) approach to detect outliers in our variables. Basically, we use a modified Z-score:

$$M_i = 0.6745 \cdot (X_i - median(X_i)) / MAD$$

where *MAD* (median absolute deviation) is $MAD = median\{abs[X_i - median(X_i)]\}$. Second, we make a new Kernel estimation of the explanatory variables on the DEA-VRS efficiency scores with the outliers taken out from the own tax and density variables. The results of this new Kernel estimation are illustrated in Figure 15 below.

Figure 14. Kernel estimation of the explanatory variables on the DEA-VRS efficiency scores without outliers



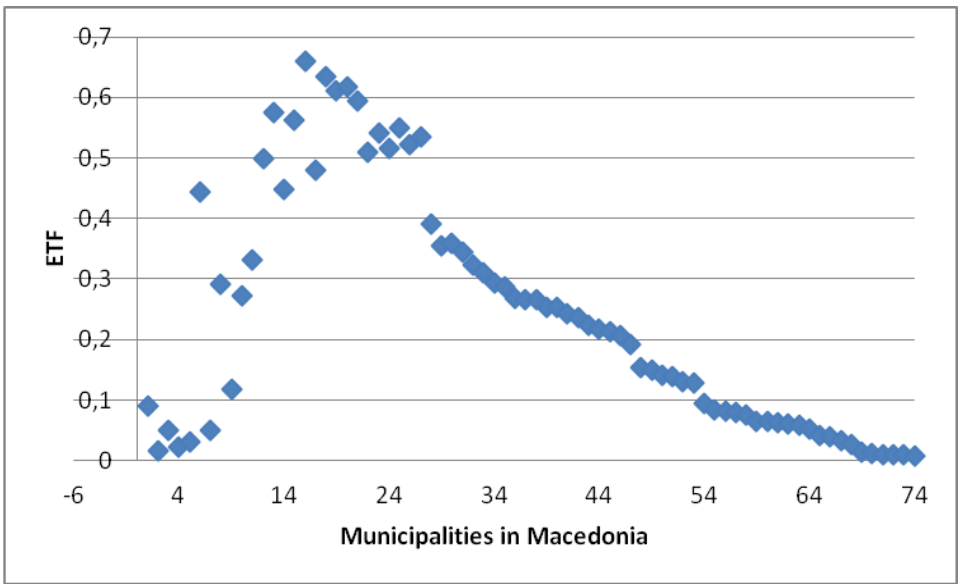
The nonparametric Kernel smoothing supports the hypothesised impact (signs/slopes) of the explanatory variables ETF and density. The own-tax variable impact on DEA-VRS shows an interesting pattern. Own tax has a positive impact on efficiency for smaller values of own revenues per capita (up to around 1,500 denars of own revenues per capita) and has a negative impact on efficiency for larger values of own revenues per capita (from around and over 1,500 denars of own revenues per capita). The hypothesised results and the estimated results are presented in Table 25.

Table 24. The hypothesised and estimated results from the Kernel second-stage estimation

Explanatory variable	Name in the graph	Hypothesised slope/sign	Estimated slope/sign
Ethnic fragmentation	ETF	-	-
Own revenues per capita	OWNTAX	-	+/-
Population density	DENSITY	-	-

The Kernel estimation in Figure 14 illustrates the **negative ETF impact on the DEA efficiency scores**. We can see that the more the fragmentation is balanced between ethnic groups (Macedonians, Albanians and others) in Macedonia (ETF around 0.6, see Figure 16), the less efficient the municipality will be (i.e. the more the fragmentation, the smaller the efficiency). Namely, from equation 9, $ETF = ETHNIC = 1 - \sum_i (ethnic affiliation_i)^2$ and from our approach to analysing Macedonians, Albanians and others (i.e. three ethnic groups for ethnic affiliation) our equation can have results from 0 to 0.666, as is also illustrated in Figure 16.

Figure 15. Ethnic fragmentation (ETF) in Macedonia



One possible explanation for the negative sign might be that if there is a greater ethnic balance between ethnic groups in one municipality, the political power is equal (homogenous) and the ethnic groups are engaging in bargaining zero-sum games and prolonging decision making that would bring changes towards the more efficient operation of municipalities.

The **own revenues per capita are slightly negatively correlated with the DEA-VRS efficiency scores (from around and over 1,500 denars of own revenues per capita)**. The negative relation between the share of current expenditures covered by local taxes and the DEA-VRS efficiency is in accordance with the predictions provided by electoral accountability models, which the second-generation theory of fiscal federalism relies on (Besley & Case, 1995; Besley & Smart, 2007; Bordignon, Cerniglia & Revelli, 2004; Hindriks & Lockwood, 2008). According to this framework, the presence of asymmetric information between electorates (the principals) and politicians (the agents) can be seen as the main reason for the government's inefficient performance. Our findings for the negative effect on municipal efficiency from own revenues per capita seems reasonable because municipalities that are highly capable of generating their own revenues will end up with softer budget control and be less motivated to manage it efficiently (Balaguer-Coll et al., 2002; Balaguer-Coll et al., 2007; Kalb, 2010; Mahabil, 2011). Our finding is also in line with other earlier analyses of general efficiency such as in Belgium (De Borger et al., 1994; De Borger & Kerstens, 1996) and Czech Republic (Stastna & Gregor, 2010). **For municipalities with their own revenues per capita of up to 1,500 denars, own revenues per capita have a positive impact on DEA-VRS efficiency.** A possible explanation is that these municipalities are not particularly capable of generating their own revenues and thus will end up with harder

budget control and will be more motivated to manage it efficiently. Of course, additional investigations of this issue are needed to confirm the proposed explanation.

In our findings, the higher the population per square kilometre (km^2) (density variable), the more the expenditures that are required. This confirms that **population density is negatively correlated with efficiency** (even if we disregard the one outlying municipality with a population of more than 600 per km^2 in Figure 14), indicating that a significant part of the observed inefficiencies might be driven by scale inefficiencies (Geys & Moesen (2008) also find that more densely populated municipalities tend be less efficient). Namely, while more populated municipalities are more technically efficient (closer to the frontier), their inefficiencies are becoming higher due to scale inefficiencies (as already shown in Figure 12). Athanassopoulos and Triantis (1998) also find that population density negatively affects the efficiency of municipalities. On the other side, population density does not have any significant effect in Afonso and Fernandes (2008). Geys et al. (2010) and Loikkanen and Susiluoto (2006) find a positive impact of density on municipal efficiency because the demand effect of the potential increase in property prices is less than the cost effect of the cost advantage of the regional concentration of service studies. This clearly requires additional study in relation to Macedonian municipalities.

5.3 SFA estimation results

We will use the SFA approach as well in order to test the significance and impact of the ethnic and other variables on the efficiency scores of Macedonian municipalities.

Estimation of the cost function in SFA requires a specification of the functional form. The Cobb-Douglas is not a locally flexible functional form, but is widely used in the literature because of its simplicity of application and its clarity of interpretation regarding its parameters (used in Boetti et al., 2009; Kalb, 2010; Stastna & Gregor, 2010). The biggest limitation of the Cobb-Douglas functional form is that the estimated values of the economies of scale and density do not vary with the size of the firms in the sample, but are assumed to be constant (Filippini, Hrovatin & Zoric 2007). Generally, the translog cost function, which is a more flexible functional form, offers an appropriate functional form for answering questions about economies of scale and density (as used by De Borger & Kerstens, 1996; Geys & Moesen, 2008; Kalb, 2010; Stastna & Gregor, 2010). However, it should be noted that the translog function is not without its own shortcomings. Since the translog functional form is a local approximation, the estimation results are reliably close to the approximation point, while its global properties are unsatisfactory (Filippini et al., 2007). Moreover, the translog function requires a relatively bigger sample in order to provide enough degrees of freedom for the larger number of parameters that need to be estimated.

For our SFA estimation, we estimate the translog and Cobb-Douglas SFA cost functional forms. In the cost function we do not use prices as the Macedonian local government institutional framework is such that there is no input price variability. There is no wage flexibility as the salary scales of municipal personnel are completely fixed.

Moreover, all municipalities have access to the same capital market and in fact obtain a large amount of their funds from the central government. Therefore, we make the assumption of identical input prices across the municipalities.

The Cobb-Douglas SFA estimation takes the algebraic form:

$$ln(C) = \beta_0 + \sum_{1}^{5} \beta_i * ln(OUT_i) + (V_i + U_i) \quad (10)$$

C is the cost of the local government which is actually the input variable of the DEA estimation and represents municipal expenditures. *OUT* are the same output variables used in the DEA-VRS estimation: population of age groups between 0 and 4, population of age groups between 5 and 19, population of age groups between 20 and 64, population over 65 and the length of roads; β are parameters that should be estimated. The random variables U_i are assumed to account for technical inefficiency in production and take the algebraic form:

$$U_i = \delta_0 + \sum_{i=1}^{5} \delta_i * z_i + w_i \quad (11)$$

In equation (11) $\sum_{i=1}^{5} \delta_i * z_i$ the three explanatory variables are already used in DEA-VRS (ETF, own tax revenues per capita and municipal density) plus the two political dummy variables (Table 20). The error term of equation (11), *w*, is defined by the truncation of the normal distribution with a zero mean and variance σ 2 (Battese & Coelli, 1995). The latter assumption assures that the inefficiency component, *u*, can only take values bigger than or equal to zero. The δ are the parameters that should be estimated.

The translog SFA estimation takes the algebraic form:

$$ln(C) = \beta_0 + \sum_{r=1}^{5} \beta_r * ln(OUT_r) + \frac{1}{2} * \sum_{r=1}^{5} \sum_{q=1}^{5} \beta_{rq}\, ln(OUT_r) ln(OUT_q) + (V_i + U_i) \quad (12)$$

The random variables U_i, which are assumed to account for technical inefficiency in production, have the same form as in the Cobb-Douglas SFA:

$$U_i = \delta_0 + \sum_{i=1}^{5} \delta_i * z_i + w_i \quad (13)$$

We estimated both the Cobb-Douglas SFA functional form and the translog SFA functional form. The translog SFA functional form had estimated parameters with signs that were not consistent with economic theory probably because our sample was too small to accommodate enough degrees of freedom. Thus, in our work the Cobb-Douglas functional form is employed. We also tested the deterministic versus the stochastic frontier with the likelihood ratio test and rejected the deterministic frontier as the preferred model at a 5% level of significance.

The results of the SFA estimation[38] of the Cobb-Douglas cost function are illustrated in Table 26. To simplify the interpretation, we invert all signs so that the positive signs in Table 26 indicate that the explanatory variable has a positive effect on municipal efficiency (rather than inefficiency).

Table 25. Results of the SFA estimation

	Variables $\beta_0 + \sum_{1}^{5} \beta_i * OUT_i \beta_1$	**SFA Cobb-Douglas model**
0	Intercept - β_0	9.532*** (21.457)[3)]
1	Population with ages 0-4	0.124** (1.893)
2	Population with ages 5-19	-0.698*** (-3.372)
3	Population with ages 20-64	1.113*** (4.282)
4	Population over 65	0.152 (1.160)
5	Roads	0.224*** (3.389)
	Variables $\delta_0 + \sum_{i=1}^{5} \delta_i * z_i$	
0	Intercept - δ_0	-0.074 (-0.531)
1	Density	-0.568E-03** (-1.995)
2	Own tax	-0.282E-03*** (-6.816)
3	ETF	-0.452*** (-3.018)
4	MAYCENTRA	0.212** (1.716)
5	MAYCOUN	0.01 (0.07)

[38] We use the Frontier version 4.1 developed by Tim Coelli (1996b).

	Sigma-squared	0.07*** (4.129)
	γ	0.999*** (26619.025)
	LL[1)]	-1.565
	LR[2)]	63.824

Notes:
74 observations
1) LL represents the log likelihood of the model.
2) LR is the one-sided likelihood ratio test for the null hypothesis that all coefficients of the model are 0 (not only coefficients related to the inefficiency term).
3) t-statistics in brackets
* significant at the 10% level of significance (with the critical value 1.293)
** significant at the 5% level of significance (with the critical value 1.665)
*** significant at the 1% level of significance (with the critical value 2.376)

From Table 26, we can see that the likelihood ratio (LR) test rejects the null hypothesis of valid restrictions ($\delta_1 =,...,= \delta_5 = \gamma = 0$) with 1% statistical significance (the critical chi-value for the test-statistic is 24.32). Thus, the variables (ETF, density, per capita own revenues, political affiliation of a mayor with that of the central government) that jointly explain the efficiency of Macedonian municipalities are statistically significant.

The statistic γ is significant and shows that technical inefficiency is present and the SFA should be used instead of the OLS estimation.

Table 26 also shows that the variables representing the population between 0–4 years of age (the kindergarten population) are significant. The population between the ages of 5–19, i.e. elementary and secondary schools, significantly influences municipal finances, but negatively. This is understandable in Macedonia as elementary and secondary schools are completely financed by the central government. The explanation of the findings here is that the more there are pupils of that age (and more demand for schools), the less expenditures the municipalities will have because their current own expenditures will be allocated to other priorities, leaving the central government to pay for the schools. The elderly population (over 65 years) is not a significant cost because there are only two homes for the elderly in Macedonia to finance (one in Skopje and the other in Bitola), and they are also financed by the central government just like the schools (Table 15). A longer length of roads will impose greater expenditure requirements on municipalities and this variable is significant.

For the determinants of the efficiency of Macedonian municipalities, we can see that all variables are significant except for the dummy variable of the same political affiliation of the mayor with that of the municipal council. The sign of the impact on efficiency is robust with the DEA-VRS efficiency scores and Kernel nonparametric estimation. **ETF, own tax revenues per capita and population density are negatively correlated with municipal efficiency.** The negative effect on municipal efficiency from own revenues

per capita in our case seems reasonable because municipalities that are highly capable of generating revenues will end up with softer budget control and be less motivated to manage it efficiently (Balaguer-Coll et al., 2002; Balaguer-Coll et al., 2007; Kalb, 2010; Mahabil, 2011). Our finding also supports the theory that ethnic fragmentation has a negative effect on municipal efficiency. Here, both DEA-VRS and SFA again give the same results.

Just like with the Kernel and SFA estimations, the greater the population per km^2 (density variable) the greater the expenditures that are required; this confirms that **population density is negatively correlated with efficiency** and indicates that a significant part of the observed inefficiencies might be driven by scale inefficiencies (Geys & Moesen, 2008). Namely, while more populated municipalities are more technically efficient (closer to the frontier), their inefficiencies are growing due to scale inefficiencies (as already illustrated in Figure 12). On the other side, population density is found to be positively related to efficiency in Geys et al., 2010; Loikkanen & Susiluoto, 2006, while other studies do not find any significant effects (Afonso & Fernandes, 2008). Again we stress that a further study of Macedonian municipalities and the effect of population density on efficiency is clearly required.

Our dummy variable that measures **the same political affiliation of the mayor with that of the central government coalition shows a positive impact on municipal efficiency.** Our finding is contrary to Vanden Eeckaut et al. (1993) and Athanassopoulos and Triantis' (1998) findings of a negative relationship between municipal spending and the parties affiliated to the central government. Borge et al. (2008) also find that a high degree of party fragmentation (based on the party affiliation of the mayor and the deputy mayor and the share of seats held by their parties) contributes to low efficiency. Brennan and Buchanan (1980) assume that politicians are politically unconstrained agents aiming to maximise power in line with the Leviathan hypothesis. In our case, it is not a surprise that the same political affiliation of the mayor with that of the central government can make a municipality more efficient simply because of the strong political competition in Macedonia. This heightened competition is due to the weak process of devoluting competencies and many decisions about local competencies depend on the central government's decisions. It is common practice in Macedonia for a mayor of the opposite political affiliation to the central government to have their projects delayed in that particular municipality because of the adverse influence of the central government on local matters in that municipality. Our finding confirms that a positive effect on municipal efficiency might occur simply because the same political affiliation of the mayor with that of the central government reaches cooperative solutions instead of fighting zero-sum games. Further, our findings support the view that in Macedonia the element of ideology is missing in the political parties. Political parties are named just to distinguish themselves from each other, while the name is not an attribute of a political programme or wing affiliation. They are catch-all parties that, while missing ideology, nurture ideologies of NATO and EU membership dogma (Vankovska, 2007). In such an environment, patronage of the central over the local government with a mayor of the same political affiliation can guarantee the support and realisation of local projects. This has nothing to do with behaviour in a

representative democracy: the battle for electoral support will lead the parties to adopt policies that reflect the preferences of the median voter (Sole Olle, 2006). Thus, policies at the local level in Macedonia do not reflect the preferences of the median voter but the preferences of the central government.

These findings empirically confirm the risks for Macedonia if politicians are to continue to exercise political patronage practices and deviate from efficiency in implementing the OFA (equitable representation and inefficient employment, for example), and if the international community that supported the OFA does not help with more resources to underpin the OFA project's expensive preferential policies. Macedonia is also at risk because of greater socioeconomic stratification and ethnic fragmentation. This is replicated amongst the electorate and might make it more difficult for political agents to make promises about public service provision to large fragments of voters. Macedonian voters might only believe promises made by candidates belonging to their own ethnic or religious group; those promises are therefore necessarily narrow and targeted to members of the respective ethnic groups. The combination of a relatively young democratic process and social heterogeneity at disaggregated levels might therefore create conditions for local politics to be particularly clientelistic, as argued by Brosio (2000) in Galeotti, Salmon & Wintrobe (2000).

In such a set up, politicians try to acquire the loyalty of voters by offering particularistic individually tailored goods and services instead of general public policies and legislation. Brosio (2000) in Galeotti et al. (2000) further argues that another tactic of transaction between the client and the patron is the recourse to ideological, political, ethnic or even religious ties between patron and client[39]. These political ties can be used for external financing between the central and local government and thus result in increasing the discretionary budget. The empirically supported political clientelistic ties and the significant effect of ethnic fragmentation in Macedonia might result in increasingly discretionary budgets at the level of municipalities.

When the credibility of political competitors is limited, clientelism can be viewed as the natural outcome of political competition (Keefer, 2002). For example, the UNDP (2009) finds that across municipalities in Macedonia 57% have little or no trust in local politicians and equally little for central-level politicians. Further, 76% believe there is corruption among local-level politicians (misuse of public funds and abuse of positions). In such a set up in Macedonia, political promises are only credible to »clients«. This has clear implications for public policy: the larger the number of clients, the greater the focus of central government spending on items targeted to specific political clients (municipalities with mayors of the same political affiliation) and, ultimately, the less that is spent on efficient projects across municipalities regardless of their political affiliation. That is why in our case, where politicians are less credible, clientelism generates positive impact on municipal efficiency simply because, instead of

[39] The recent Skopje 2014 project, driven by the central government in Macedonia, is seen by Albanian politicians as cultural projects tailored to just the Macedonian ethnic group, thus creating tensions across the ethnic spectrum in Macedonia.

keeping resources for themselves, patrons/central government are obliged to transfer the fruits of their office to clients/municipalities with the same political affiliation.

Finally, we can confirm the robustness of our estimates from the Kernel and single-stage SFA estimate. The SFA also gives us the opportunity to test the political dummy variables which was not possible with the Kernel estimation.

5.4 Comparing the DEA-VRS efficiency scores with the SFA efficiency scores

We compare the DEA-VRS efficiency scores with the SFA efficiency scores in Table 27.

Table 26. DEA-VRS efficiency scores and SFA efficiency scores

	DEA scores	SFA scores
Mean	0.596	0.579
Median	0.721	0.571
Maximum	1.000	1.000
Minimum	0.006	0.167
Std. Dev.	0.394	0.207

We can see that the mean cost efficiency is estimated at 57.9% with the SFA method and at 59.6% with the DEA-VRS method. Our results show that Macedonian municipalities, on average, could achieve the same output levels with about, on average, a 40% (DEA-VRS) to 42% (SFA) current spending reduction. The scores' distributions look concentrated around the mean more for the SFA than the DEA-VRS scores (median and mean difference). The standard deviation does not show very high values because of the presence of more extreme score estimates. Once again, we should keep in mind that the efficiency scores are calculated according to the best practice in the sample (i.e. most efficient municipality/ies). An international comparison would most likely show even higher inefficiencies. However, international comparisons are difficult to conduct due to differences in decentralisation policy set up, data and data collection so all studies of efficiency reported in section 4.1 are national or regional/provincial. Another implicit assumption is that all relevant variables with an impact on efficiency have been included in the estimation and that the estimated efficiency is not a result of heterogeneity.

In Table 28 we use the same classification of municipalities by size as in Table 23 in order to compare the DEA-VRS and SFA efficiency scores by size of municipality.

Table 27. Comparison of DEA-VRS efficiency scores and SFA efficiency scores by different municipal size classes

Size class	DEA efficiency scores	SFA efficiency scores
All sizes	0.596	0.579
POP < 5,000	0.502	0.585
5,000 ≤ POP < 10,000	0.831	0.585
10,000 ≤ POP < 15,000	0.810	0.720
15,000 ≤ POP < 20,000	0.720	0.614
20,000 ≤ POP < 60,000	0.400	0.551
POP ≥ 60,000	0.218	0.345

The importance of scale efficiency is reflected in the cost efficiencies from the SFA estimates just like with the DEA-VRS estimates (as shown in Table 23). Namely, we can see that the SFA cost efficiencies are also increasing from a municipality size of less than 5,000 (SFA efficiency scores = 0.585) up to a municipality size of 10,000 to 15.000 (SFA efficiency scores = 0.720), i.e. up to the moment when the increasing cost efficiencies are exhausted (Figure 12). From a municipality with a size of 10,000 to 15,000 to the most populated municipalities, the SFA efficiency scores are decreasing. The DEA-VRS efficiency scores reveal that increasing scale efficiencies are exhausted for the 5,000–10,000 size class, whereas the SFA efficiency scores show that increasing scale efficiencies are exhausted for the 10,000–15,000 size class.

Our findings compare with De Borger and Kerstens' (1996) who found that DEA and SFA yielded similar efficiency distributions and rankings for Belgian municipalities. This contrasts with the results of Worthington (2000) for Australian municipalities in that substantial differences arise in the efficiency indices derived from different reference technologies in the context of local public services.

6 Measuring the outcome as perceived by the citizens – subjective measures

In a production process of municipalities, first there is the transformation of inputs into outputs ready for »consumption« (municipal services). Second, these outputs ultimately have welfare effects on consumers (e.g., increasing perceptions and feelings of safety and welfare). Data on outcomes as perceived by the citizens/consumers was not available by municipalities in Macedonia. On the other side, a database of answers from a questionnaire from the UNDP's 2008 project[40] in Macedonia includes outcome data on a sample of municipalities and we will use this data to assess the outcome of decentralisation within ethnically fragmented municipalities in Macedonia.

The UNDP's database is from 2008 and comprises a sample of 39 municipalities (out of the total 84 in Macedonia) and represents 76% of the total Macedonian population.

[40] Previously (before 2008) known as an early warning report of the UNDP

We want to find out which of the issues raised by answers in the database are relevant to ethnic fragmentation at the municipal level in Macedonia. The simplest way is to analyse those answers that are significantly correlated with our constructed ethnic fragmentation indicator (ETF). In order to do that, we test the significance of the correlation coefficient between the ETF (Ethnic Fragmentation Indicator) and each of the answers from the UNDP's 2008 database (all answers are presented in Appendix F). We will then analyse only those answers that are significantly correlated with the ETF.

To test the significance of the correlation we will use the statistics: $t = R\sqrt{\frac{n-2}{1-R^2}}$ with 37 degrees of freedom (n=N-2=39-2=37), where N is the number of observations. The critical value t-statistic at a 5% level of significance is 1.687.

We will test the significance of the correlation coefficient R with the following assumptions about the sampling distribution of R:

- approximately normal (but bounded at -1.0 and +1.0) when N is large; and
- follows a *t* distribution – when N is small.

Statements that are significantly correlated with the Ethnic Fragmentation Indicator are presented in Table 29 together with the estimated significant correlation coefficient (at a 5% level of significance).

Table 28. Correlation coefficient between the ETF and statements from the UNDP's 2008 database

Question	Correlation coefficient-R
I was denied service because of my ethnicity	0.319
Very and rather dissatisfied with municipal services	0.417
Very and rather dissatisfied with neighbourhood environment	0.302
Have no trust in local media	-0.459
Have no trust in religious institutions	-0.291
Believe there is no corruption at municipal level	-0.312
A lot and some tension between men and women	-0.397
A lot and some tension between old and young people	-0.335
A lot and some tension between different ethnic group	-0.395
Worsening of the state of inter-ethnic relations in the country over the next 6 months	-0.295
No risk of violent ethnic conflict in the municipality	-0.550
Have few friends from different ethnic group	-0.733
Do not shop in stores owned by persons from different ethnic group	-0.648

Question	Correlation coefficient-R
Do not go in restaurants/cafe owned by persons from different ethnic group	-0.557
Do not conduct business with persons from different ethnic group	-0.563
Will not send children to schools where another ethnic group is majority	-0.592
Think that few members of their ethnic group have few friends from another ethnic group	-0.613
Think that few members of their ethnic group shop in stores owned by another ethnic group	-0.566
Think that few members of their ethnic group go in restaurants/cafe owned by persons from another ethnic group	-0.440
Think that few members of their ethnic group conduct business with persons from different ethnic group	-0.482
Think that few members of their ethnic group will send children to schools where another ethnic group is majority	-0.442
Think that few members of other ethnic group have friends from their ethnic group	-0.449
Think that few members of other ethnic group shop in stores owned by their ethnic group	-0.446
Think that mayor have influence to worsen ethnic relationships	0.305
Have no answer on question: What could be done at local level to improve inter-ethnic relations in your municipality?	-0.429
Not satisfied in general with the services provided by municipalities	0.293
Not satisfied with the opportunities for participation in local decision making provided by your council	0.301
In the immediate neighbourhood of their home, have many reasons to complain about lack of access to recreational or green areas	0.302
Rate social services in their municipalities with poor quality	0.322
Not treated fairly by municipal officials	0.444
Consider central government would do the best job in providing water supply	0.278
Consider local government would do the best job in providing water supply	-0.354
Have not given views on local services, or issues that affect them as a resident, by filling a questionnaire	0.319
Have not given views on local services, or issues that affect them as a resident, by sending letter or e-mail	0.270

Several interesting observations can be drawn from these findings. For the group of questions related to the denial of services and satisfaction, we can see that the dissatisfaction of municipal services, in general, is relatively higher the more ethnically fragmented a municipality is (R=0.319 and R=0.417, respectively). People are significantly more dissatisfied with the environment they live in the more ethnically

fragmented a municipality is (R=0.302). This is not explicitly because of ethnicity as people more often report they have been denied services because of their ethnicity the more ethnically fragmented a municipality is (R=-0.319).

On the other side, there is no significant correlation between ethnic fragmentation and career promotion, access to housing and access to educational institutions. This is a very positive indication for the integration process in the country as a whole.

Related to the group of questions of trust, R is significant for ethnic fragmentation, trust in the local media and trust in religious institutions, but not significantly correlated with trust in the government and in government institutions (schools, mayor, police etc.) as seen in Table 29 and Table 34 (in Appendix F which includes all statements from the questionnaire). Thus, the more ethnically fragmented a municipality is, the less people there have no trust in the media (R=-0.459) and in its religious institutions (R=-0.291). In general, fewer people join political parties and an increasing number of people are not voting in Macedonia (also see Daskalovski, 2010).

Ethnic fragmentation is significantly correlated with the perception of tension related to gender, age group and ethnicity but not with economically related tensions (rich/poor and management/workers). This may be because people are sharing the same general economic environment within the country so differences are more often expressed in the culture and the characteristics of each ethnic identity related to gender and age group. This is in line with Pal's (2010) arguments that culture, as reflected in social and religious norms, may be key to social organisation in a decentralised economy where local authorities are responsible for the provision of local public goods. There is a distinction between individualist and collectivist cultures which argues that the collectivist culture may promote rules to indulge in family, social and religious values at the cost of individual values which promote material gain and thus may result in an inefficient choice of pubic goods[41].

In relation to the perception of possible ethnic tensions and the mixing of people of different ethnic affiliations (by shopping in different stores, for example), we find that: more people expect a worsening of inter-ethnic relations in the country over the next 6 months the less a municipality is ethnically fragmented (R=-0,295) and more people do not expect violent ethnic conflicts in a municipality the less the municipality is ethnically fragmented (R=-0.550). This may indicate that people living in more ethnically homogeneous municipalities have different perceptions than people living in ethnically fragmented municipalities. Residents in more homogenous societies may not

[41] Data are used from Indonesia as a case in point to classify communities strictly adhering to traditional »adat« laws and the Islamic religion to promote a collectivist culture. Literally, an "adat community" translates to "an autonomous group of indigenous people who are able to manage their lives without knowing western laws and who have established their own regulations and social control. Adat laws are a set of local and traditional norms concerning marriage/divorce, birth, living arrangements of the elderly, inheritance, dispute resolution systems, land rights, gender roles and decision making in the household as well as in the community." (Pal, 2010).

know enough people from other ethnic groups so they tend to be more xenophobic and base their ideas on stereotypes about the behaviour of those ethnic groups.

The more ethnically fragmented a municipality, the fewer the people going to shops and restaurants, patronising businesses owned by persons with different ethnic groups, or sending their children to schools where another ethnic group is in the majority. This indicates that, despite the anecdotal perceptions in more ethnically homogenous municipalities about the worsening perspective of inter-ethnic relations in wider Macedonia, people in ethnically fragmented municipalities are mixing, doing business and have more friends from different ethnic groups, contrary to the perceptions of those people in more homogenous municipalities.

Another interesting perception is that the mayor has significant power to worsen the ethnic relationship in a more ethnically fragmented municipality (R=-0.305). There is no significant correlation between ethnic fragmentation and the perception that the media, politicians (central and local) and the education system have significant power to worsen the ethnic relationship in more ethnically fragmented municipalities. An important finding regarding the political part of decentralisation is that voters »see« the mayor as closer to them than central-level politicians and thus as being more influential in relation to local politics.

Finally, the more ethnically fragmented a municipality is, the fewer the people who have no answer to the question: »What could be done at local level to improve inter-ethnic relations in your municipality« (R=-0.429). This is another important finding showing that the participation of citizens/voters in local governance might not be at the right level. This should be considered more carefully by municipalities in Macedonia because people might have more answers on how to improve inter-ethnic relations in their municipality the more ethnically fragmented a municipality is. In general, we should be careful with such findings when arguing that decentralisation increases participation in decision making in Macedonia because it brings government closer to people, thereby making it more accessible, aware of local conditions and more responsive to people's demands. We further investigate the »citizen participation at the local level issue« and find that Albanians are slightly more interested in participating (36%) than Macedonians (34%), but the general interest in Macedonia in participating (35%) is low, which may be due to different reasons.

One explanation could be that the public (irrespective of ethnic background) does not believe they have much influence at all. According to a citizen survey in 2005 in England and Wales, the share of people not believing they have an influence on politics in their local areas was 61% (Tam, 2007). Tam (2007) believes that one determinant of this political distress might be social fragmentation (fewer people nowadays are engaged in group activities) which is very close to the structuralism approach of social capital as defined by the World Bank (2002). Borge et al. (2008) find that democratic participation (turnout at local elections) is associated with high municipal efficiency, and the effect is statistically significant. The effect is consistent with the hypothesis that politicians are more effectively monitored when voter turnout is high, but could also

mean that turnout is affected by factors such as political competition or the level of education (Mueller, 2003).

Related to satisfaction with municipal services, there is more dissatisfaction with municipal services in general, participation in local decision making, the lack of recreational and green areas, the poor social services and the poor performance of municipality officials, the more ethnically fragmented a municipality is. Ethnic fragmentation in a municipality is not significantly correlated with the water quality, the feeling of safety when walking around the area at night, medical services, educational services or public transportation.

The more ethnically fragmented a municipality is, the more the citizens believe the central government will do a better job in providing the supply of water than the local government. Regarding satisfaction with other services (electricity, garbage collection, social and health services, police, education, employment, public transportation), ethnic fragmentation is not significantly correlated with them.

Conclusion

Macedonia started its transition from a command to a market economy after it declared independence in 1991 from former Yugoslavia. Within Yugoslavia, it was part of the LDRs and was benefiting from subsidies from the MDRs. Even though Macedonian GNP was converging to Yugoslavia's average from 60% in 1955 to 65% in 1988 (World Bank 1993), Macedonia started its transition with a relatively high unemployment rate of 17.4%. In the time of former Yugoslavia, the collectivisation of farms and the initiation of large industrial enterprises attracted orthodox Macedonian communities to move to work in these large industrial enterprises in urban centres. Conversely, the Muslim communities retained their traditional rural locations, structures and activities along with their high birth rates, large household sizes and intensive emigration to Western Europe (Buzar, 2006). After attaining its independence, Macedonia began the process of privatisation in 1993. The transition has led to a U-shaped response of output with sluggish growth rates below the potential. There was a sharp drop in GDP in 2001 because of the ethnic clashes and a moderate drop in GDP in 2009 because of the global financial crisis. The real average GDP growth rate in the period between 1995 and 2000 was 3%, while the average real growth rate in 2002–2006 was 3.2%. The slow jobless growth of the economy has ended with one of the highest unemployment rates in Europe. The privatisation process went much slower than envisaged as insiders often had no incentive to modernise the privatised firms (Zalduendo, 2003). On the other side, the government was unwilling to push the loss-making enterprises into liquidation because that was considered politically sensitive. The wave of privatisation pushed many Orthodox Macedonians out of the declining large industrial enterprises into unemployment and poverty while Muslim communities managed to buffer the adverse effects of the transition with their agricultural activities and private transfers from abroad. Thus, the cumulated socioeconomic differences might be one of the determinants of the ethnic clashes in 2001.

In 1991, ethnic Albanians abstained from voting for the first Macedonian constitution. Soon claims of ethnic Albanians in Macedonia started to aim at proportional representation in all political institutions, more education in the Albanian language at the university level and changes to the constitution proclaiming Macedonia to be a multi-ethnic country made up, on an equal basis, of Macedonians and Albanians (About MAR, 2012). The 1999 Kosovo crisis nearly destabilised Macedonia because of the influx of almost 350,000 (17.2% of the total population of Macedonia) Kosovo Albanians in Macedonia (Donev, Onceva & Gligorov, 2002). In 2001, immediately after the Macedonian parliament ratified a border treaty with Serbia, ethnic Albanians

clashed with Macedonian armed forces. At the same time, Macedonia signed the stabilisation and association agreement with the EU. The clashes ended with the signing of the OFA in 2001, granting ethnic Albanians the rights they had been claiming since independence with the post-OFA constitution of 2001. It is difficult to conclude what the roots of the ethnic conflict in Macedonia were: Was it the different socioeconomic status of the ethnicities? Was it the constitution from 1991? Or was it just fighting over territory? The first few *communiqués* sent by the UCK (Albanian National Liberation Army) stated that their objective was the liberation of ethnic Albanians in Macedonia. Even after the subsequent *communiqués* and interviews since March 2001, the UCK emphasised that their armed struggle was aimed at constitutional rights and equality for Macedonia's ethnic Albanian population rather than the territorial disintegration of Macedonia (Ackermann, 2001). On the other side, in July 2001 the Macedonian Minister of Defence stated that Albanian extremists and terrorists were actually fighting over territory and hiding behind claims for more civil rights. Nominally, the OFA brought a new Macedonian constitution with preferential policies related to the decentralisation process, equitable representation of communities, establishment of a specific organ of consensus democracy – the Council for Inter-ethnic Relations, the use of languages as official when spoken by 20% of the population, and higher education opportunities for communities. These preferential policies viewed the ethnic conflict as a result of economic differences and viewed ethnic harmony as the proportional distribution of all groups at all levels and functions of society. Preferential choices for ethnic conflict reduction require more time, dedication, cooperation and resources. Given this, the international community's partnership and help for Macedonia is essential especially because the two »witnesses«, one from the USA and the other from the EU, are also signatories to the OFA agreement.

So far, besides the nominal position of the minister responsible for implementation of the OFA (so far, this has always been an Albanian representative) and his work to employ as many Albanians as possible in the administration, there is no clear transparent plan for how to implement the preferential policies. It remains to be debated why in Macedonia there is still a need to emphasise the OFA when it is already implemented in the constitution. Now, it is only up to the legal state to gain credibility and to be operational enough to implement the preferential policies. It is also questionable why there is no strategy or plan for how to implement these preferential policies and why the position of the minister for implementation of the OFA is not attractive to ethnic Macedonians.

Namely, there is always a risk of protecting the collective Albanian community's rights at the cost of the individual rights of the Macedonians and the minorities. The constitution is the order of justice and the order to establish the legal state and only respect and compliance with the constitution will prohibit the protection of collective rights at the cost of individual rights (Sharchevich, 2009). We saw that socioeconomic and demographic differences are not narrowing across the regions and ethnicities in Macedonia. Even though Albanians make up around 25% of the total population, it might be that their economic power is disproportionally stronger in Macedonia compared to ethnic Macedonians and thus their responsibility as a respectable partner

with ethnic Macedonians to build national cohesion is actually greater. This is important because, as Lijphard (1999) points out, one of the conditions for a consocial model to be efficient and operational is to have balanced power of the political segments. Certainly, it remains to be further investigated whether balanced power only considers population size (Vankovska, 2007) or whether population size in combination with economic power constitutes a balance of power. Of course, this requires more extensive interdisciplinary research that is beyond the scope of our work.

If we accept that economic differences and a lack of ethnic harmony brought the ethnic clashes and the post-OFA preferential policies in Macedonia, then unfortunately we must conclude that today the differences in the economy, social inclusion and demography are still persisting in Macedonia across the regions and the ethnic spectrum. There are differences in population growth rates between Macedonian and Albanian ethnic groups. The overall unemployment rate is relatively high, although it is officially even higher for the Albanian population than for the Macedonian one. The shadow economy in Macedonia is relatively large and, given that agricultural labour is not registered as employment in conjunction with the traditional agricultural activity of Albanians, this may have resulted in an overestimate of the unemployment rate among ethnic Albanians. The female activity rate is also low in the Polog region and the South-western region (where the Albanian ethnic group is concentrated) due to Albanian cultural factors related to female participation in the labour market. There is a large inflow of remittances in the Polog region (where the Albanian ethnic group is concentrated) that might explain why that region has the lowest GDP PPP ranking among all Macedonian regions and the highest median equivalised income compared to the country's median equivalised income (UNDP, 2008).

Moreover, there is sharp inequality among ethnic affiliations in Macedonia as the median equivalent household income is lower than the mean equivalent household income, thus more than one-half of households have an income below the average income. This is especially true for Roma. The quintile analysis of equivalised disposable income by ethnic affiliation also supports the fact that income inequality is sharp for the country and the ethnic groups. The S80/S20 analysis shows that the richest 20% receive 15 times more income than the poorest 20% of ethnic Macedonians. For the ethnic Albanians, the S80/S20 is 9 and the worst discrepancy of all is that of the Roma at 20. These results clearly illustrate that socio-economic differences in Macedonia across regions and across ethnic groups still persist and there is a risk that post-OFA government policies might not be addressing the main socio-economic reasons for the inter-ethnic clashes in 2001. The socio-economic and demographic differences that are considered determinants of the ethnic clashes are continuing in Macedonia across ethnic affiliations and regions. Not much progress has been made in the political economy of the ethnically fragmented Macedonian society during the transition, especially after the OFA in 2001 was put in place to address those differences.

As mentioned, the OFA brought a new Macedonian constitution with preferential policies related to the decentralisation process, equitable representation of communities,

the establishment of the Council for Inter-ethnic Relations and the use of languages. **Decentralisation** is considered to be a characteristic of the OFA and a preferential policy choice for bringing national cohesion rather than an economic instrument. However, the context for decentralisation, and particularly fiscal decentralisation in transition economies, is unfortunately very different from the context in market economies. Macedonia, as a transition economy, has a per capita income level lower than developed market economies and thus, if decentralisation is a superior good (one that is common to industrial countries), then Macedonia cannot absorb all of the potential benefits that decentralisation in general, and fiscal decentralisation in particular, can offer. Theoretically, it might be that fiscal decentralisation will offer advantages to countries with a lower level of development if the relationship between the development level and the presence of fiscal decentralisation is not monotonic. During the transition, Macedonia should not only focus on macroeconomic reform and privatisation but also on the structure of its taxes and transfers. It should simultaneously ensure that expenditure responsibilities are realigned between central and local government while taking care of balanced regional and municipal development. With decentralisation, especially after the OFA, Macedonian municipalities must build new institutional capacities to provide services formerly provided by the central government while, at the same time, providing for the participation of citizens, accountability, good governance and transparency. It must at all times aim to calm the ethnic unrest in administration, education and other responsibilities transferred from the central government. With decentralisation, problems resulting from years of underinvestment in roads, assets (buildings) in education, and kindergartens are now being transferred from the central to the local level, thereby creating fiscal stress on municipalities in Macedonia. On the other side, decentralisation helps increase the government's sensitivity to local conditions and needs and allows greater political representation for diverse political, cultural and ethnic groups in decision making. Moreover, it is evident in Macedonia that local governments can tax the fastest growing parts of their economic base more easily than the central government can, especially during the global economic crisis (the collection of revenues from local property taxes is rising year by year, demonstrating that revenues from property taxes administered by the local government are not elastic with economic cycles/downturns).

The dynamic of adopting laws and transferring responsibilities to local governments in post-OFA Macedonia should be carefully designed and monitored (which is missing in the Macedonian context); otherwise, the many benefits expected from decentralisation might end up being unfulfilled. There are many reasons to pay attention to when designing the proper dynamics of decentralisation and fiscal decentralisation in particular. **One** reason is that voter preferences in Macedonia are not as readily translated into budget outcomes as in industrial countries simply because of the lower fiscal transparency and accountability. The **second** reason, as seen at the last Macedonian local elections in 2009, is that during campaigns mayors talk more about national-level problems than about local problems (the local preferences are hence not revealed). Most importantly, central-level politicians are more active in local elections than local politicians with the result that local elections are seen as nothing more than a rehearsal for the parliamentary election. This is a reflection of not having a long enough

history of democratic experience (the same cycle is currently repeating itself as politicians in Macedonia are preparing for the 2013 local elections). The **third** reason is that decentralisation in Macedonia is more of a deconcentration and is less about fiscal autonomy and the devolution of power to the municipalities. In such a set up, reliance on the central government's funds/transfers to service public goods is retained and there are no mechanisms by which local voters can reveal their preferences. In the end, less can be gained from this form of decentralisation than in other industrial countries. This is simply because the power rests in the centre and is likely to lead to lobbying, continuous bargaining, uncertainty, conflict and economic fluctuations in the central and local governments' relations. It might also encourage clientelistic behaviour and preferences in municipalities where the mayors have the same political affiliation as that of the central government or even lead to obstacles being put before municipalities where mayors are not of the same political affiliation as the central government (as we empirically confirmed in our work). The **fourth** reason involves the inadequate financial transfers from the central government for some services (education and roads, for example) and forcing municipalities in Macedonia to inefficiently provide services while being unable to even maintain the depreciated assets. Further, inadequate financial transfers from the central government to the local government (unfunded mandates for municipalities in Macedonia) might create unsustainable fiscal stress on local governments due to the large fiscal gap. The **fifth** reason is, as we empirically confirmed, that ethnic diversity can affect the efficiency of public service delivery. The **sixth** reason is that there might be difficulties in decentralisation management given the lack of democratic experience, skills and knowledge. The **seventh** reason is that in Macedonia there are constitutional post-OFA requirements for the equal representation of ethnic minorities in local public administration, language requirements, and education requirements in order to align the country's unity along ethnic lines that are the direct responsibility of the municipalities. Thus, decentralisation can be considered the key policy choice for providing political stability and Macedonian national cohesion more than simply bringing economic efficiency.

These questions raise issues that are complex to address and to empirically test. On one hand, the need for higher economic growth in the sluggish Macedonian economic transition requires centralisation and not decentralisation at least from an efficiency point of view. On the other hand, there are the requirements to implement the post-OFA needs for decentralisation and for the country's cohesion. The environment is even more complex given that regional differences and differences across the ethnic spectrum persist in Macedonia (as already described).

Therefore, the main challenge in Macedonia is to find the right path for the economic and political arguments for decentralisation to converge. Thus, ethnic fragmentation in Macedonia between Albanians and Macedonians, with their differing linguistic and religious characteristics, might have a direct negative correlation with the efficiency of providing public services due to the heterogeneous ethnic preferences which prevent the removal of the deadweight loss. The role of local government in Macedonia may be to somehow find the preferences of the ethnic groups and then use coercive power to force them to pay for these public goods and services. If the Macedonian local government is

credible, it can avoid freeriding and ensure that public goods and services are optimally provided. For example, the Macedonian language is official throughout the territory of Macedonia and should be spoken by its citizens whatever their ethnic affiliation. Now, with primary and secondary schooling being the responsibility of the local government, they can gain credibility by mitigating the **language** segregation push policies of ethnic Albanians for example, and preventing the vicious cycle of low income in local governments (vicious cycle of segregation causing lower school funding, higher costs for schooling, safeguarding, and commuting to other schools and resulting in inferior education and thus increased poverty). Further, the central government must take the different variables into account when designing an upgrade of the development of decentralisation in Macedonia. Even though **equitable representation** was introduced, i.e. employment in public administration to assure the equitable representation of minority ethnic communities in all central and municipal public bodies, there are still concerns about whether the rules concerning competence and integrity that govern public administration are being respected. Ethnic Macedonians and ethnic Albanians are thinking within ethnic and political party borders that cannot bring qualitative and effective solutions. The risk of lower quality and even a paralysis of initiatives in the administration is high. Thus, the outcome will be lower quality public service delivery at the central and municipal levels of government.

The international community, certainly an actor during the post-OFA reality, must enhance its obligation to help speed up the process of implementing the goals of the post-OFA constitution. Defining what exactly that type of help should be, especially for municipalities and the decentralisation process, is beyond the scope of our work. Our work empirically indicates that ethnic fragmentation, political relations between the central and local government, the capability to collect own revenues and the population density of municipalities are important factors for the efficient provision of local public services. Questions like which steps should be taken for **more efficient decentralisation**, whether it should focus more on cohesion building in schools, kindergartens, municipal councils and political parties, or if the focus should be on encouraging ethnic Macedonians to take a proactive role in implementation of the post-OFA constitution will require more study. Municipalities might build new institutional capacities to provide the services formerly provided by the central government while at the same time providing for the participation of citizens, accountability and transparency. Simultaneously, they might focus on calming the ethnic unrest in administration, education and other transferred competencies from the central government. The **international community** must be reminded of its obligations as the theory of fiscal decentralisation was developed for industrial countries and thus influenced by the democratic processes of budget making. Decentralisation might be a superior good, as we discussed, and there is a relatively higher level of per capita income at which decentralisation and its benefits can be better absorbed than in countries with a relatively lower level of per capita income. That is why help from the international community with additional resources is a must, given the short time span of the democratic experience in Macedonia.

Decentralisation was not unknown to Macedonia before the OFA. The local government system in Macedonia was first introduced by the 1947 Law on Administrative and Territorial Organisation of Macedonia, organising Macedonia into cities and regions. In 1964, a communal system was established by the Law on Organising Municipalities and Regions. Pursuant to that law, municipalities were defined as a basic political-territorial organisation of self-governing working people and a basic socio-economic community of the citizens within their territory. The 1974 constitution of Yugoslavia established the delegation system and municipalities were the main socio-economic community based on the power and self-governing of the working class and all its citizens. The 1974 constitution further developed the concept of federalism and the new position of the republics to expand their competencies and build, using a bottom-up model, the delegation system from the municipalities to the federation of former Yugoslavia.

Since its independence in 1991, Macedonia has experienced three periods in the process of decentralisation. The first was one of centralisation between 1991 and 1995, which left the municipalities without competencies and without an efficient system of financing. During this period, the government focused on achieving macroeconomic stabilisation and privatisation. During the second period, namely 1995–2005, macroeconomic stabilisation in Macedonia was achieved but the overall economic performance was quite poor, as we already discussed. During this period, for the first time after independence, a new Law on Local Government was adopted in 1995 and a new Law on Territorial Organisation was adopted in 1996 introducing 123 municipalities. Both laws were products of a highly ethnically and politically motivated process. The third period is the post-OFA decentralisation period. The speed of decentralisation reforms greatly accelerated during 2004 as the Ministry of Local Government moved forward with a number of initiatives and intensified its contacts with the Macedonian association of local governments. At this time, a new law on territorial organisation was adopted, introducing the 84 municipalities. The city of Skopje was set apart as a special unit comprising 10 municipalities in accordance with a separate law on the city of Skopje. Practically speaking, the third period of decentralisation in Macedonia started in 2005 when the government adopted a detailed plan for the transfer of competencies and resources. Administrative decentralisation was planned in terms of the transfer of institutions, assets, employees and documentation. In that plan, the deconcentrated units of the line ministries were transferred to the local level as well. Together with the new Law on Financing Local Governments, this provided an efficient legal framework for the new modern process of decentralisation. In 2008, for example, the local governments' revenue share was already 4.59% of GDP compared to 0.88% of GDP in 1999.

However, there are still relatively large demographic and economic disparities among Macedonian municipalities. The most sparsely populated municipalities have a minimum of four persons per km^2, whereas the most densely populated ones have 16,193 people per km^2. In terms of infrastructure, the range of variation goes from a minimum of 20 people per km asphalt-equivalent to a maximum of 2,748 people per km asphalt-equivalent. The natural population growth across the municipalities is, on average, 0.4 with a minimum of 2.12 and a maximum of 2.01 demonstrating that some

municipalities are booming while others are showing negative trends. The ageing index also varies from a minimum ageing index of 0.13 to a maximum ageing index of 2.17. General conclusions here could be that the population in Macedonia is growing at a relatively slow rate but that territorial and ethnic disparities are still relatively high in terms of population concentration, population ageing and population growth. Economic disparities are also large across the municipalities in Macedonia. Average GDP at PPP for Macedonia is USD 6,850 per capita. But the variation across the municipalities ranges from a minimum of USD 734 per capita to a maximum of USD 53,466 per capita. In 2002, the average unemployment rate for Macedonia was 38.1% with a municipality minimum of 11.0% and a municipality maximum of 79.4%. There are two issues related to municipal data in Macedonia from which we can draw conclusions. The first is that statistics at the municipal level are taken from the 2002 census and new data at the municipal level are not available. The second is that when talking about local governments in Macedonia one cannot rely on average values. Data should be taken more often and more carefully analysed and the effect of outliers should always be taken into account.

Related to fiscal decentralisation, despite the increasing share of municipal revenues in GDP, Macedonian municipalities are still showing relatively high fiscal dependence on the central government. The municipal expenditures from transfers from the central government are almost 53% of the total municipal expenditures and central government transfers to municipalities are 52% of total local government revenues in Macedonia. Most of the central government transfers (85.91%) go to the education sector (out of which 81% is for wages and salaries). The block transfers from the central government to local governments in Macedonia cover wages and salaries for teachers and other employees in education, cultural homes, libraries, kindergartens, homes for the elderly, fire departments as well as maintenance of relevant buildings. In Macedonia, decentralisation is more of a deconcentration than devolution and local governments only serve as a financial channel of the central government for these competencies. There has therefore been no real devolution of these competencies as the local governments have no say in how to spend these transfers. Municipalities lack the means to take on full responsibility and assume that the central government is responsible for paying for these competencies. For example, the central government transfers for education, culture, kindergartens, homes for the elderly and fire fighting competencies amounted to EUR 204 million in 2010. In the same year, local governments paid for these competencies from their own budget and only spent EUR 5.4 million.

Local governments can in theory make a decision to allocate more money for these competencies from their own budget revenues to improve the quality and scope of these services for the citizens, but instead they consider the financing of these competencies to be a responsibility of the central government. That is why if we want to test the spending efficiency of Macedonian municipalities we should only take account of the expenditures made from their own municipal budgets and not the transfers from the central government because the spending decisions about the transfers from the central government are already made by the central government and not by the local governments. For the expenditure decisions related to a municipality's own budget

share, we can test if some local governments are more efficient than others. Yet these decisions also depend on other determinants like the fiscal capacity of the local governments, the management capacities of mayors, the rural or urban character of the local governments, political impact of the central government, ethnic fragmentation, population density etc.

Even though the literature on efficiency measurement at the level of municipalities is relatively recent, there are empirical studies that estimate the expenditure efficiency of municipalities and the determinants of this efficiency. In those studies, researchers use the nonparametric DEA and parametric SFA. The main difference between DEA and SFA is that DEA is a nonparametric approach and is suited to measuring efficiencies for multiple inputs/outputs information. On the other hand, SFA is a parametric approach. Measuring efficiency by using the nonparametric DEA is done in two stages. In the first stage, the efficiency scores are estimated with the DEA method and, in the second stage, parametric or nonparametric methods are used to identify the critical determinants of efficiency. Measuring efficiency by using the parametric SFA is done by simultaneously estimating the efficiency scores and the determinants of efficiency.

The input and output variable choice mainly depends on data availability, the institutional set up in the particular country and the goal of the study. The most commonly used input variable is current expenditures. Other input variables used include municipal staff, surface area of administrative buildings, labour expenses, operating costs and the age and gender of the mayor. Output variables are usually the population of age groups (to proxy for the proper competency of municipalities like kindergartens, primary, secondary schools and homes for the elderly), length of roads, lighting points, crime incidents, type of municipalities and waste collection.

The literature review showed that efficiency scores vary depending on the country and type of approach (DEA or SFA). Average efficiency scores can range from 50% in Greek municipalities (Athanassopoulos and Triantis 1998) to 78% in Italian municipalities (Boetti et al. 2009), and even to 94% in Belgian municipalities (De Borger and Kerstens 1996).

The results of estimating the determinants of municipal efficiency show that many socio-economic, political, demographic, geographic determinants have an impact on municipal efficiency. The complex environment for municipalities makes them operate under different institutional and legal set ups among countries. That is one of the key explanations of the positive and negative signs from the same variable in the studies. Some general findings from the studies are as follows:

- transfers from the central government have a negative impact on municipal efficiency (De Borger et al., 1994; De Borger & Kerstens, 1996; Athanassopoulos & Triantis, 1998; Balaguer-Coll et al., 2002; Lokkainen & Susiluoto, 2004; Balaguer-Coll et al., 2007; Kalb, 2010; Stastna & Gregor, 2010);
- the typology of municipalities (tourism, commercial activities) has an impact on municipal efficiency (Gimenez & Prior, 2007; Kalb, 2010);

- outsourcing and private sector involvement can make municipalities more efficient (Loikkanen & Susiluoto, 2005; Loikkanen & Susiluoto, 2006; Mahabil, 2011);
- local election turnout has a positive impact on municipal efficiency (Stastna & Gregor, 2010; Geys et al., 2010);
- the mayor's education and experience have a positive impact on municipal efficiency (Loikkanen et al., 2011; Mahabil, 2011);
- distance from a region/country to centres/capital in general have a negative impact on municipal efficiency (Loikkanen & Susiluoto, 2005; Afonso & Fernandes, 2005; Loikkanen & Susiluoto, 2006; Stastna & Gregor, 2010; Nieswand & Seiferd, 2011; Loikkanen et al., 2011);
- population density generally has a positive effect on municipal efficiency (De Borger & Kerstens, 1996; Loikkanen & Susiluoto, 2005; Loikkanen & Susiluoto, 2006; Kalb, 2010; Nieswand & Seiferd, 2011; Loikkanen et al., 2011);
- unemployment level in general has a negative effect on municipal efficiency (Loikkanen & Susiluoto, 2005; Loikkanen & Susiluoto, 2006; Geys et al., 2010; Loikkanen et al., 2011);
- municipal debt is associated with more efficient municipalities (Worthington, 2000);
- municipal deficit is associated with less efficient municipalities (Balaguer-Coll et al., 2007);
- short-run variable cost inefficiency is more pronounced in small municipalities (Gimenez & Prior, 2007);
- larger municipalities are able to exercise better control over variable costs (Gimenez & Prior, 2007); and
- municipalities are becoming more efficient over time (Kalb, 2010).

In our work we estimated the efficiency of Macedonian municipalities by using DEA-VRS and SFA. We hypothesised that ethnic fragmentation may have an impact on the efficiency of Macedonian municipalities and thus we tested the following hypotheses:
H1. Macedonian municipalities are on average relatively inefficient in providing services to citizens.
H2. Ethnic fragmentation contributes to the inefficiency of the decentralised service provision in Macedonia.

Our contribution to the literature is that for the first time, to the best of our knowledge, we introduced the ethnic characteristics of municipalities in the literature on the efficiency estimation of municipalities with DEA and SFA frontiers. Further, this is the first time general municipal efficiency has been estimated in an EU candidate country by using frontiers. Our work also contributes to the decentralisation debate in Macedonia and to the debate on policy issues related to the socio-economic and political post-OFA development of Macedonia.

The selection of inputs for the DEA-VRS efficiency estimation in this work was based on the principle that current expenditures are a proxy for inputs of municipalities in order to provide a quality service to their citizens. We did not take the capital

expenditures into account as they are not recurrent and are incidental year-by-year. Further, we did not take the transfers from the central government to municipalities into account as municipalities do not have the competency to make decisions about these transfers and, moreover, because we wanted to estimate the municipality's own rather than the central government's spending allocation for municipal services. We also did not take donations and self-financing into account as they do not represent own spending decisions of municipalities but the donors' and citizens' contributions for a municipality's services.

Data on welfare improvements as perceived by the citizens was not available and thus only the output was measured for the DEA-VRS and SFA estimation and not the outcome. However, we also used the 2008 database from the UNDP on a sample of municipalities and employed these data to assess the outcome of decentralisation within ethnically fragmented municipalities in Macedonia.

The selection of outputs was based on the minimum services that should be provided by municipalities in accordance with the legal framework of their competencies. Our estimation is based on 74 observations for analysis out of 84 municipalities in Macedonia. Municipalities that comprise the capital city of Skopje (10 of all) are not taken into account for consistency reasons as they are operating under a separate law on the city of Skopje. For outputs, we used the population in age groups: 0–4; 5–19; 20–64; over 65. Further, as outputs we used the length of roads. We wanted to proxy appropriately for following municipal responsibilities: kindergartens (age group 0–4); primary and secondary education (age group 5–19); administrative services to citizens (on-the-counter administrative job, decisions issuing etc.) and culture (libraries, museums, music and art etc.) for the age group 20–64; and homes for the elderly (age group over 65). General maintenance and winter maintenance of roads and transportation were also included.

Our model data selection was also a result of data availability. Future research should also address, at the very least, issues related to the fiscal dependency of local governments on central government, a typology of municipalities' (tourism, textile production and agriculture) private sector involvement, and distance from the capital city of Skopje.

The **DEA-VRS results confirm hypothesis H1** on the relatively low average efficiency of Macedonian municipalities of 0.596, which is comparable with the findings for Greek municipalities (50%). Out of 74 observed municipalities, 26 (35%) are fully efficient. Of course, one should bear in mind that the efficiency scores are calculated according to the best practice in the sample (i.e. the most efficient municipality/ies). An international comparison would most likely show even higher inefficiencies. However, international comparisons are difficult to conduct due to differences in decentralisation policy set up, data and data collection so all studies of efficiency from the literature review are national or regional/provincial. Another implicit assumption is that all relevant variables with an impact on efficiency have been included in the estimation and that the estimated efficiency is not a result of heterogeneity.

We also found that there are economies of scale as we can see that municipalities with a population of less than 5,000 have efficiency (0.502) which is less than the national mean efficiency (0.596). The biggest efficiencies were found in municipalities with a population of between 5,000 and 10,000 (0.831 average efficiency score). The number of the most efficient municipalities within the proper size class is highest for municipalities with a population of between 5,000 and 15,000 (50% of them are efficient). Moreover, the number of efficient municipalities within a size class decreases for municipalities with a population of more than 15,000. The estimated inefficiencies are in a range of around 40% with DEA-VRS, i.e. Macedonian municipalities can decrease their use of inputs by 40% to produce the same level of output of public services.

Further, we showed that Macedonian municipalities are exhausting their increasing economies of scale with a population of up to 10,000. Municipalities with a population of less than 5,000 have pure technical inefficiencies (PTI) but they also have scale inefficiencies (SI). Municipalities with a population from 5,000 to 10,000 have no SI and only have PTI. Municipalities with a population of over 10,000 have decreasing economies of scale. Their SI are growing in conjunction with their increasing population. The large municipalities in Macedonia (with populations over 10,000) exhibit decreasing returns to scale, probably since they produce a wider range of more complex services while the small municipalities show increasing returns to scale, perhaps because of the influence of fixed costs on current expenditures (say, general administration). The same findings are reported in Boetti et al. (2009) for Italian municipalities and Balaguer (2002; 2007) for Spanish municipalities. According to Prud'homme (1995), economies of scale and agglomeration externalities typically make larger municipalities more efficient; moreover, small governments are less efficient due to fiscal vulnerability or the absence of sufficient experience among local staff. Another reason for this may be that big municipalities have comparatively more skilled employees, better management control systems (financial, accounting or external) and possibly more effective execution of operating expenses. Small governments may also be captured by local interest groups (Bardhan, Pranab & Dilip 2000) or are prone to moral hazard if dependent on transfers from the central government (Rodden, 2003). On the other hand, higher electoral control typical at the local level reduces incentives for incumbents to rent-seek (Seabright, 1996) and yardstick competition disciplines local representatives not to waste resources, thus making smaller municipalities efficient. However, once again we stress the importance of data characteristics for our estimation. Namely, with the Tukey-Whisker box plot of the DEA-VRS efficiency scores, we found the existence of outliers and that the median-mean difference points to greater imbalances among municipalities.

For the second-stage DEA-VRS estimation to find the determinants of efficiency, or the lack thereof, we used a Kernel nonparametric estimation in order to compensate for the likely correlation between the efficiency scores and the explanatory variables. The Kernel nonparametric estimation was also chosen in order to overcome shortcomings related to the use of an OLS regression.

The Kernel estimation illustrates **the negative ETF impact on the DEA efficiency scores and confirms hypothesis H2**. We can see that the higher the fragmentation (a balanced number of ethnic groups: Macedonians, Albanians and others) in Macedonia, the less efficient a municipality will be. One possible explanation for the negative trend is that, if there is a greater ethnic balance among ethnic groups in one municipality, the political power becomes more balanced, the ethnic groups are bargaining zero-sum games and prolonging the decision-making process that would bring changes leading towards the more efficient operation of the municipalities. The mechanisms via which ethnic fragmentation affects efficiency in the delivery of public services can be investigated through the heterogeneity of preferences, interest groups and social capital literature. Investigating which exact mechanism affects efficiency in the delivery of public services in Macedonian municipalities is beyond the scope of this work.

The **own revenues per capita are slightly negatively correlated with the DEA efficiency scores**. The negative relationship between the share of current expenditures covered by local taxes and the DEA-VRS efficiency is in accordance with the predictions provided by electoral accountability models, which the second-generation theory of fiscal federalism relies on. According to this framework, the presence of asymmetric information among electorates (the principals) and politicians (the agents) can be seen as the main reason for the government's inefficient performance. Our findings for the negative effect on municipal efficiency from the own revenues per capita seem reasonable because municipalities that are highly capable of generating their own revenues will end up with softer budget control and would be less motivated to manage it efficiently.

What remains to be investigated and was not considered in our work is how the composition of municipal revenues (i.e. grants from central government) affects the efficiency of Macedonian municipalities because not only does the size of a municipality's total revenue matter but so too does the composition of that revenue. Namely, one must be careful because more fiscal autonomy (less central government grants) might increase the electoral accountability and thus lead to hard budget constraints and eventually to more efficient municipalities. The negative correlation between grants from the central government and municipal efficiency refers to the 'flypaper effect' to explain this relationship. Taxpayers are unable to know the real extent of a local government's budget constraint when the degree of fiscal imbalance is high; in other words, citizens find it more difficult to know the level of grants than to ascertain the level of taxes. A high fiscal dependency ratio of municipalities on central government can also create moral hazard, fiscal illusion and expectations of local politicians for bailouts and thus end in soft budget constraints. This remains to be investigated further in future work as it is outside the scope of our work.

In our findings, the greater the population per km^2 (density variable), the greater the expenditures that are required. This confirms that **population density is negatively correlated with efficiency** and indicates that a significant part of the observed inefficiencies might be driven by scale inefficiencies. Namely, while more populated municipalities are more technically efficient (closer to the frontier) their inefficiencies

are growing due to scale inefficiencies, as already discussed. In the literature, there are findings stating that not only does population density negatively affect the efficiency of municipalities, but it also has neither a significant effect nor a positive impact on municipal efficiency. This clearly requires additional study for Macedonian municipalities to investigate the effect of density on their efficiency.

We estimated both the **Cobb-Douglas SFA functional form** and the translog SFA functional form. The translog SFA functional form resulted in parameter estimates that had signs inconsistent with economic theory and we thus accepted the Cobb-Douglas functional form. In addition, we tested the deterministic versus the stochastic frontier with the likelihood ratio test and accepted the stochastic frontier as the preferred model at a 5% level of significance.

The average SFA cost efficiency was estimated at 57.9% with the SFA method as follows: Macedonian municipalities can achieve the same output levels with about, on average, a 40% (DEA-VRS) to 42% (SFA) current spending reduction. The score's distributions look concentrated around the mean in the SFA since the score's median is relatively close to the score's mean. With the SFA, the results showed that the cost efficiencies are increasing within municipalities with a population under 5,000 (SFA scores=0.585) up to a population of 10,000 to 15,000 (SFA scores=0.720), i.e. up to the moment when the increasing cost efficiencies are exhausted. In municipalities with a population ranging from 10,000 to 15,000 to the most populated municipalities, the SFA efficiency scores are decreasing. Our findings from the DEA-VRS and SFA are similar in support of the conclusion of economies of scale and similarly identify the interval where scale efficiencies are exhausted. Namely, the DEA-VRS efficiency scores found that increasing scale efficiencies are exhausted for the population size class of 5,000–10,000, whereas the SFA efficiency scores found that increasing scale efficiencies are exhausted for the population size class of 10,000–15,000. Thus, we might expect that scale efficiencies are exhausted in Macedonian municipalities with an average population size of 10,000.

For the SFA estimation, the variables representing the population between the ages of 0–4 years, that is the kindergarten population, are significant. The population between the ages of 5–19 years (i.e. elementary and secondary schools) significantly influences municipal finances, but negatively. This is understandable in Macedonia as elementary and secondary schools are completely financed by the central government. The explanation of this finding is that the more there are pupils of that age (more demand for schools), the less expenditures the municipalities will have because their current own expenditures will be allocated to other priorities, leaving the central government to pay for the schools with block grants. The elderly population (over 65 years old) is not significant and this is because there are only two homes for the elderly in Macedonia to finance (one in Skopje and the other in Bitola) and they are also financed by the central government just like the schools. A longer length of roads will impose greater expenditure requirements on municipalities and this variable is significant.

The results of the SFA estimation of the Cobb-Douglas cost function showed that **ETF, own tax revenues per capita and population density are negatively correlated with municipal efficiency.** A comparison of the SFA results and the DEA-VRS results showed that our results are robust.

Our dummy variable that measures **the same affiliation of the mayor with that of the central government coalition showed a significant positive impact on municipal efficiency.** Our finding is contrary to the political family framework findings of a negative relationship between municipal spending and the parties affiliated to the central government. In the case of Macedonia, it is not a surprise that the same political affiliation of a mayor with that of the central government can make municipalities more efficient simply because of the strong political competition in Macedonia. Moreover, this is due to the process of the devolution of competencies being so weak and many decisions for local competencies are dependent on central government (decentralisation is more deconcentration than devolution). It is common practice in Macedonia for a mayor affiliated with the opposite political party than that of the central government to create delays in projects in that particular municipality because of the adverse influence of central government on local matters. Our findings confirm that a positive effect might occur on municipal efficiency simply because a mayor with the same political affiliation as that of the central government reaches cooperative solutions instead of fighting zero-sum games. In addition, our findings support the view that in Macedonia the element of ideology is missing in the political parties. Political parties are named just to distinguish themselves from each other, while the name is not an attribute of any political programme or wing affiliation. They are catch-all parties that, while missing an ideology, nurture ideologies of NATO and EU membership dogma (Vankovska, 2007). In such an environment, patronage of the central over the local government with the same political affiliation as that of the mayor can guarantee the support and realisation of local projects. This has nothing to do with behaviour in a representative democracy; the battle for electoral support will lead the parties to adopt policies that reflect the preferences of the median voter (Sole Olle 2006). Thus, policies at the local level in Macedonia are not a reflection of the preferences of the median voter but those of the central government.

These findings empirically confirm the risks for Macedonia if politicians are to continue to exercise political patronage practices and deviate from efficiency in implementing the OFA (equitable representation and inefficient employment, for example), and if the international community that supported the OFA does not help with more resources to underpin the OFA's expensive preferential policies. Macedonia is also at risk because of greater socio-economic stratification and ethnic fragmentation. This is being replicated amongst the electorate and might make it more difficult for political agents to make promises about public service provision to large fragments of voters. Macedonian voters (of any ethnicity) might only believe promises made by candidates belonging to their own ethnic or religious group; those promises are therefore necessarily narrow and mainly target members of the respective ethnic groups. The combination of a relatively young democratic process and social heterogeneity at disaggregated levels might therefore create conditions for local politics to be particularly clientelistic, as argued by

Brosio (2000) in Galeotti et al. (2000). Finally, we showed that political fragmentation, just like ethnic fragmentation, is also very important and results in an ethnically politicised Macedonian society. Ethnicity is politicised when political coalitions are organised along ethnic lines, or when access to political or economic benefits depends on ethnicity as is the case in Macedonia.

For Macedonia, the manner in which the intergovernmental fiscal system works may prove to be crucial to national cohesion. The post-OFA decentralisation process has heightened local government demands for local political and ethnic control and more creative local autonomy. Yet the inadequate fiscal base and fiscal gap at the municipal level might give rise to growing tensions. Ethnic fragmentation even further complicates the reality in municipalities, especially with the requirements to implement the expensive preferential policies of the post-OFA constitution (for example, higher costs for education, translation costs to use different languages and the cost of security in schools).

With decentralisation and ethnic fragmentation, Macedonia could end up with regional groupings having less interest in public goods at the national level. In other words, the politicised ethnic groups formed at the local level might not be in a position to mobilise to pursue an encompassing interest at the national level. This practice fosters fear in ethnic Macedonians that the ethnic-Albanian-dominated municipalities will eventually unite in one form or another, leading to federalisation of the state – equated with secession and the collapse of the state (IDSCS Skopje, 2006). These words should be considered carefully by policy makers in Macedonia given that the politicised ethnic groupings at the local and regional level could cause a loss of momentum for the common interests of the nation. Further, the economic, technological and political changes seen on the global scale are producing limitations on the capacities of national governments, while enhancing the economic and political importance of local governments and the decentralisation process (Leo, 2006). Municipalities have become central to the study of fiscal federalism nowadays. That is why this research on municipal efficiency internalising ethnic fragmentation in Macedonia holds policy relevance for the central government and should be carefully considered when designing national polices in Macedonia.

When the credibility of political competitors is limited, clientelism can be viewed as the natural outcome of political competition (Keefer, 2002). For example, the UNDP (2009a) finds that across municipalities in Macedonia 57% have little or no trust in local politicians and the same share has no trust in central-level politicians as well. Of the respondents, 76% believe that local-level politicians are corrupt (misusing public funds and abusing positions). In such a set up in Macedonia, political promises are credible only to »clients«. This has clear implications for public policy: the larger the number of clients, the greater the focus of central government spending on items targeted to specific political clients (for example, municipalities with mayors of the same political affiliation, as empirically supported with our work) and, ultimately, the less that is spent on efficient projects across municipalities in Macedonia regardless of political affiliation (Keefer, 2002). That is why in our case, where politicians have less credibility, clientelism generates a positive impact on municipal efficiency only because, instead of keeping resources for themselves,

patrons/central government are obliged to transfer the fruits of their office to clients/municipalities with a mayor of the same political affiliation (Keefer, 2002).

In such a set up, politicians try to acquire the loyalty of voters by offering particularistic, individually tailored goods and services instead of general public policies and legislation. Brosio (2000) argues that another tactic of the transaction between client and patron is the recourse to ideological, political, ethnic or even religious ties between patrons and clients. These political ties can be used for external financing between central and local government and thus result in an increasingly discretionary budget. The empirically supported, political and clientelistic ties between the central government and municipalities in Macedonia and the significant effect of ethnic fragmentation can result in increasingly discretionary budgets at the municipal level.

We also observed several interesting trends when measuring citizens' satisfaction, i.e. outcome variables. Dissatisfaction with municipal services, in general, is relatively higher the more ethnically fragmented a municipality is and people more often report that they were denied services because of their ethnicity the more ethnically fragmented a municipality is. On the other side, there is no significant correlation between ethnic fragmentation and career promotion, access to housing and access to educational institutions. This is a very positive sign of the success of the integration process in the country as a whole.

Related to the level of trust, ethnic fragmentation was correlated with trust in local media and trust in religious institutions but not significantly correlated with trust in the government nor with trust in government institutions, including schools, the mayor's office and the police department. The more ethnically fragmented a municipality, the less people in those municipalities go to shops and restaurants owned by persons of different ethnicities, and/or conduct business with them, and will send their children to schools where another ethnic group is in the majority. This may indicate that people living in more ethnically homogeneous municipalities have different perceptions about ethnic cohesion than people living in ethnically fragmented municipalities. Residents in more homogenous municipalities may not know enough about the other ethnic groups so they tend to be more xenophobic and base their perceptions on stereotypes. On the other side, residents in heterogeneous municipalities are mixing, doing business and have more friends from different ethnic groups, contrary to the perception of people in more homogenous municipalities.

Another interesting perception is that the mayor has significantly more power to worsen the ethnic relationship the more ethnically fragmented a municipality is. There is no significant correlation between ethnic fragmentation and the perception that the media, politicians (central and local) and the education system have significant power/ability to worsen the ethnic relationship in ethnically fragmented municipalities. This is an important finding regarding the political part of decentralisation: voters must »see« that the mayor is closer to them than to the central-level politicians and is thus more influential in local politics.

References

About MAR (2010) avaliable at: http://www.cidcm.umd.edu/mar/chronology.asp?r=32.1793818849493&svr=6&lang=en_us&groupId=34301 (December 2, 2010).

Ackermann, A. (2001) *On the Razor's Edge: Macedonia Ten Years after Independence*, avaliable at: http://www.core-hamburg.de/documents/yearbook/english/01/ackermann.pdf (October 28, 2011).

Afonso, A., & Fernandes, S. (2005) *Assessing and Explaining the Relative Efficiency of Local Government: Evidence for Portuguese Municipalities*, avaliable at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=849247 (October 28, 2011).

Aigner, D. J., & Chu, S. F. (1968) On estimating industry production function. *American Economic Review*, 58(4), pp. 826–839.

Aigner, D. J., Lovell, A. K., & Schmidt, P. (1977). Formulation and estimation of stochastic frontier production function model. *Journal of Econometrics*, 6(1), pp 21–37.

Alesina, A., Baquir, R., & Easterly, W. (1999) *Public goods and Ethnic Division*, E-Library World Bank Policy Research Working Paper Series 2108, avaliable at: http://elibrary.worldbank.org/content/workingpaper/10.1596/1813-9450-2108 (July 27, 2005).

Alesina, A., & La Ferrara, E. (2004). *Ethnic diversity and economic performance*, *NBER Working paper series*, avaliable at: http://www.nber.org/papers/w10313 (October 29, 2011).

Anderson, L., Walberg, H. J., & Weinstein, T. (1998) Efficiency and effectiveness analysis of Chicago public elementary schools: 1989, 1991, 1993, *Educational Administration Quarterly*, 34(4), pp. 484–504.

Arcelus, F. J., Arocena, P., Cabases, F. & Pascual, P. (2007). On the Efficiency of the Delivery of Municipal Services. *Universidad Publica de Navarra Working Paper Series.* 92(07).

Arsovski, M., Kuzev, S., & Damjanovski, R. (2006). *Vojnata vo Makedonija vo 2001 godina* (Skopje: Matica Makedonska).

Athanassopoulos, A., & Triantis, K. (1998). Assessing aggregate cost efficiency and related policy implications for Greek local municipalities, *Information Systems and Operational Research*, 36(3),pp. 66–83.

Badinter, R. (2001) Une approche trop ethnique risquerait d'aggraver le mal actuel, *Le Mond*, avaliable at: http://www.radicalparty.org/en/node/5061452 (July 20, 2011).

Bailey, S. J. (1999) *Local government economics: Principles and Practic* (London: Macmillan Press Limited).

Bahl, R., Johnson, M., & Wasylenko, M. (1980) *State and local government expenditure determinants: The traditional view and a new approach* (Cambridge, Mass.: Ballinger).

Bahl, R., & Linn, F. (1992) *Urban public finance in developing countries* (New York: Oxford University Press).

Balaguer-Coll, M. T., Prior-Jimenez, D., & Vela-Bargues, J. M. (2002) *Efficiency and quality in local government management. The case of Spanish local authorities Universitat Autonoma de Barcelona, Working Paper 02/2002*, avaliable at: http://ideas.repec.org/p/bbe/wpaper/200202.html (July 15, 2004).

Balaguer-Coll, M. T., Tortosa-Ausina, E., & Prior, D. (2007) On the determinants of local government performance: A two stage nonparametric approach, *European Economic Review*, 51(2), pp. 425–451.

Bardhan, M., Pranab, K., & Dilip, M. (2000) Capture and governance at local and national levels, *American Economic Review*, 90(2), pp. 135–139.

Battese, G. E., & Coelli, T. J. (1992) Frontier production function, technical efficiency and panel data: with application to paddy farmers in India, *The Journal for Productivity Analysis*, 3, pp. 153–169.

Battese, G. E., & Coelli, T. J. (1995) A model for technical inefficiency effects in a SF production function for panel data, *Empirical Economics*, 20(2), pp. 325–332.

Besley, T., & Case, A. (1995) Incumbent behavior: Vote-seeking, tax-setting, and yardstick competition, *American Economic Review*, 85(1), pp. 25–45.

Besley, T., & Smart, M. (2007) Fiscal restraints and voter welfare, *Journal of Public Economics*, 91(3/4), pp. 755–773.

Bicanic, R. (1973). Economic policy of socialist Yugoslavia. *Cambridge University Press* .avaliable at: http://books.google.mk/books?hl=en&lr=&id=9oqMN10SxgIC&oi=fnd&pg=PR7&dq=BICANIC+R.+(1973):+Economic+policy+of+socialist+Yugoslavia&ots=9qnDjUG789&sig=5fLBJFPvVr9P53BRQfm7S8fDSWI&redir_esc=y#v=onepage&q&f=false (November 20, 2011).

Bird, R., Ebel, R., & Wallich, C. (1995), Decentralization of the Socialist State (Chapter 1). *World Bank*, avaliable at: http://books.google.mk/books?hl=en&lr=&id=NMjlCpHJ3VwC&oi=fnd&pg=PR7&dq=BIRD+R.,+EBEL+R.+and+WALLICH+C.+(1995):+%E2%80%9CDecentralization+of+the+Socialist+State,&ots=2cyKNlkaSL&sig=uLYCElqZ2Y-Er4sH8SwE5CLPWBk&redir_esc=y#v=onepage&q&f=false (November 21, 2011).

Bird, R, Ebel, R., & Wallich, C. (2001) Fiscal Decentralization in Transition Economies: A Long Way to Go. *Beyond transition – A World Bank Newsletter about reforming economies*, avaliable at: http://www.worldbank.org/html/prddr/trans/mar95/pgs7-10.htm (November 28, 2011).

Blanchard, O. (1997) *The economics of post-communist transition* (Oxford: Clarendon Press).

Boetti, L., Piacenza, M., & Turati, G. (2009) Fiscal decentralization and spending efficiency of local governments: An empirical investigation on a sample of Italian municipalities. *XXI Conference Public Choice e political economy; I fondamenti positivi della teoria di finanza pubblica 24–25 September*.

Bordignon, M., Cerniglia, F., & Revelli, F. (2004) Yardstick competition in intergovernmental relationships: theory and empirical predictions, *Economics Letters*, 83(3), pp. 325–333.

Borge, L. E., Falch, T., & Tovmo, P. (2008) Public sector efficiency: The roles of political and budgetary institutions, fiscal capacity and democratic participation, *Public Choice*, 136(3/4), pp. 475–495.

Brennan, G., & Buchanan, J. (1980) *The power to tax: Analytical foundations of fiscal constitution* (New York: Cambridge University Press).

Breuss, F., & Eller, M. (2003) *Efficiency and Federalism in the European Union-the optimal assignment of policy tasks to different levels of government*, avaliable at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=875846 (October 14, 2011).

Brueckner, J. K. (1982) A test for allocative efficiency in the local public sector, *Journal of Public Economics*, 19(3), pp. 311–331.

Buchanan, J. M. (1965). An economic theory of clubs, *Economica*, 32(125), pp. 1–14.

Buzar S. (2006) *Geographies of ethnopolitics: Unraveling the spatial and political economies of ethnic conflict, Occasional paper 7/06* (Oxford: St Antony's College).

Center for Economic Analyses – CEA. (2005) *Report on the labour market in Macedonia*, avaliable at: http://www.cea.org.mk/Documents/First_USAID_report_labour_final_4.pdf (February 20, 2006).

Center for Economic Analyses – CEA. (2006) *The future of local public finances*, avaliable at: http://www.cea.org.mk/Documents/Report_RBM_Mak.pdf (March 20, 2007).

Center for Economic Analyses – CEA. (2007) *Report on the new face of the IMF*, avaliable at: http://www.cea.org.mk/Documents/Third%20USAID%20report%20on%20IMF.pdf (June 5, 2008).

Center for Economic Analyses – CEA. (2008a) *A study on determinants and trends in remittance flows in Macedonia*, avaliable at: http://www.cea.org.mk/Documents/Macroeconomic%20perspective%20on%20remittance%20inflows%20CEA_7%20final.pdf (October 3, 2009).

Center for Economic Analyses – CEA. (2008b) *Report on some ex-post aspects of decentralizing primary education in Macedonia*, avaliable at: http://www.cea.org.mk/Documents/CEA%20to%20USAID%20report%20decentralization%20education_final_final.pdf (September 20, 2009).

Center for Economic Analyses – CEA. (2009) *Assessing handicraft shadow economy in Macedonia*, avaliable at: http://www.cea.org.mk/Documents/Shadow%20Economy%20in%20Macedonia%20Concept_1.pdf (October 20, 2011).

Center for Economic Analyses – CEA. (2010) *First USAID report labor*, avaliable at: http://www.cea.org.mk/Documents/First_USAID_report_labour_final_4.pdf (March 12, 2011).

Center for Economic Analyses – CEA. (2012) *Shadow economy in Macedonia*, avaliable at: http://www.cea.org.mk/documents/studii/CEA%20SHADOW%20ECONOMY%20IN%20MACEDONIA%20FINAL_4.pdf (May 20, 2012).

Charnes, A., Cooper, W. W., & Rhodes, E. (1978) Measuring efficiency of decision making units, *European Journal of Operational Research*, 2(4), pp. 429–444.

Coelli, T. J. (1996a). *A Guide to DEAP Version 2.1: A Data Envelopment Analysis (Computer) Program, University of New England, Department of Econometrics*,

CEPA Working Papers No. 96/8, avaliable at: http://www.owlnet.rice.edu/~econ380/DEAP.PDF (Retrieved February 20, 2006).

Coelli, T. J. (1996b). *A Guide to Frontier Version 4.1: A Computer Program for Stochastic Frontier Production and Cost Function Estimation, University of New England, Department of Econometrics, CEPA Working Papers No. 96/7*, avaliable at: https://r-forge.r-project.org/forum/attachment.php?attachid=10&group_id=275 &forum_id=908 (February 20, 2006).

Coelli, T. J., Rao, P. D. S., & Battese, G. E. (1998) *An introduction to efficiency and productivity analysis* (Boston: Kluwer Academic Publishers).

Coffe, H., & Geys, B. (2005) Institutional performance and social capital: An application to the local government level, *Journal of Urban Affairs*, 27(5), pp. 485–501.

Collier, P. (1998). *The political economy of ethnicity;* Paper prepared for the Annual World Bank Conference on Development Economics, Washington, D.C., April 20–21, avaliable at: http://www.csae.ox.ac.uk/workingpapers/pdfs/9808text.pdf (October 20, 2011).

Cooper, W., Seiford, L., & Tone, K. (2000) *Data envelopment analysis: A comprehensive text with models, applications references and DEA solver software* (Boston: Kluwer Academic Publishers).

Cooper, W., Seiford, L., & Zhue, J. (2004). Data envelopment analysis: History, models and interpretations, In Cooper, W. , Seiford, L. & Zhue, J. (eds.) *Handbook of data envelopment analysis* (Boston: Kluwer Academic Publishers), pp. 1–41.

Crawford, B. (1998). Explaining Cultural Conflict in Ex-Yugoslavia: Institutional Weakness, Economic Crisis, and Identity Politics. In Crawford, B. & Lipschutz, R. D. (eds.) *The Myth of »Ethnic Conflict« Politics, Economics and »Cultural Violence«* (Berkeley: University of California), pp. 201–264.

Cutler, D., & Glaeser, E. (1995) *Are ghettos good or bad?, NBER Working Paper No. 5163*, avaliable at: http://www.nber.org/papers/w5163 (October 16, 2011).

Damijan, J., Sousa, J., & Lamotte, O. (2008) *Does international openness affect productivity of local firms? Evidence from SEE, Institute for Economic Research Ljubljana, Working paper 42* avaliable at: http://www.ier.si/files/Working%20paper-42.pdf (October 25, 2011).

Davis, M. L., & Hayes, K. (1993) The demand for good government, *Review of Economics and Statistics*, 75(1), 148–152.

De Borger, B., Kerstens, K., Moesen, W., & Vanneste, J. (1994) Explaining differences in productive efficiency: An application to Belgian municipalities, *Public Choice*, 80(3/4), pp. 339–358.

De Borger, B., & Kerstens, K. (1996) Cost efficiency of Belgian local governments: A comparative analysis of FDH, DEA, and econometric approaches, *Regional Science and Urban Economics*, 26(2), pp. 145–170.

Deprins, D., Simar, L., & Tulkens, H. (1984) Measuring labour-efficiency in post offices. In: Marchand, M., Pestieau, P. & Tulkens, H. (eds.) *The Performance of Public Enterprises: Concepts and Measurement* (North-Holland: Amsterdam).

Diez-Ticio, A., & Mancebon, M. (2002). The efficiency of Spanish police service: An application of the multiactivity DEA model, *Applied Economics*, 34(3), pp. 351–362.

Dojcinoski, K. (2007) *Komunalniot system i lokalnata samouprava vo Skopje vo periodot 1944–2005 godina* (Skopje: Matica Makedonska).

Donev, D., Onceva, S., & Gligorov, I. (2002) Refugees crisis in Macedonia during the Kosovo crisis in 1999, *Croatian Medical Journal*, 43(2), pp. 184–189.

Easterly, W., & Levine, R. (1996) Africa's growth tragedy: Policies and ethnic divisions, *The Quarterly Journal of Economics*, 112(4), pp. 1203–1250.

European Agency for Reconstruction. (2007) Estimation of the costs of the transferred competences to Local Government Units, *EuropeAid to Macedonia: No. 05MAC01/07/11/001*.

European Bank for Reconstruction and Development – EBRD (2012) avaliable at: http://www.ebrd.com (December 10, 2012).

European Commission. (2011) *The Former Yugoslav Republic of Macedonia 2011 Progress Report*., avaliable at: http://ec.europa.eu/enlargement/pdf/key_documents/2011/package/mk_rapport_2011_en.pdf (January 12, 2012).

European Stability Initiative. (2002) *Ahmeti's village*, avaliable at: http://www.bits.de/public/documents/mazedonien/Ahmetivillage_01October2002_ps.pdf (April 15, 2007).

Eurostat. (2012) *S80/S20 income quintile share ratio by sex and selected age group (source: SILC)*, avaliable at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_di11&lang=en (January 12, 2012).

Ethnobarometer (2010) avaliable at: www.ethnobarometer.org (December 18, 2010).

Farrel, M. (1957) The measurement of productive efficiency, *Journal of the Royal Statistical Society, Series A (General)*, 120(3), pp. 253–290.

Filippini, M., Hrovatin, N., & Zoric, J. (2007) Cost efficiency of Slovenian water distribution utilities: an application of stochastic frontier methods, *Journal of Productivity Analysis*, 29(2), pp. 169–182.

Galeotti, G., Salmon, P., & Wintrobe, R. (2000) *Competition & structure: The political economy of collective decision* (Cambridge: Press Syndicate of the University of Cambridge).

Gerasimovski, D. (1997) *Prostornoto raspredeluvanje na naselenieto kako faktor za promenite vo mrežata na naselenite mesta vo Republika Makedonija* (Skopje: State Statistical Office Republic of Macedonia).

Geys, B., Heinemann, F., & Kalb, A. (2010) Voter involvement, fiscal autonomy and public sector efficiency: Evidence from German municipalities, *European Journal of Political Economy*, 26(2), pp. 265–278.

Geys, B., & Moesen, W. (2008) Exploring sources of local government technical inefficiency: Evidence from Flemish municipalities (Leuven: Katholieke Universiteit Leuven).

Gimenez, V. M., & Prior, D. (2007) Long- and short term cost efficiency frontier evaluation: Evidence from Spanish local governments, *Fiscal Studies*, 28(1), pp. 121–139.

Giugale, M., & Webb, S. (2000) *Achievements and challenges of fiscal decentralization* (Washington D.C: The World Bank).

Government of the Republic of Macedonia (2003a) *Operational program for decentralization of power 2003–2004* (Skopje: Government of the Republic Of Macedonia).

Government of the Republic of Macedonia (2003b) *Summary of the communication strategy for decentralization in the Republic of Macedonia* (Skopje: Government of the Republic Of Macedonia).

Government of the Republic of Macedonia (2004a). *Action Plan for realization of the programme for implementation of the decentralization process 2004–2007* (Skopje: Government of the Republic of Macedonia).

Government of the Republic of Macedonia (2004b) *Program for the implementation of the decentralization process 2004–2007* (Skopje: Government of the Republic of Macedonia).

Grootaert, C. & Van Bastelaer, T. (2002) *Understanding and measuring social capital: A multidisciplinary tool for practitioner* (Washington, D.C.: World Bank).

Grujoski, T. (2003) *Raspadot na Jugoslavija* (Skopje: Institute for National History).

Habyarimana, J., Humphreys, M., Posner, D., & Weinstein, J. (2007) Why does ethnic diversity undermine public good provision?, *American Political Science Review*, 101(4), pp. 709–725.

Hagmann, M. (2003) *Introduction to nonparametric econometrics*, unpublished manuscript, HEC Lausanne and FAME, avalaible at: http://www.scribd.com/doc/99154307/Hagmann-M-Introduction-to-Nonparametric-Econometrics-LN-HEC-Lausanne-amp-FEM-2003-32s-GL (October 25, 2011).

Hayo, B., & Voigt, S. (2010) *Determinants of Constitutional Change: Why do Countries Change their Form of Government?, CESIFO Working paper No. 3087*, avaliable at: http://www.cesifo-group.de/portal/pls/portal/docs/1/1185422.PDF (October 27, 2011).

Hindriks, J., & Lockwood, B. (2008) Decentralisation and electoral accountability: Incentives, separation and vote welfare, *Warwick Working Paper in Economics, No. 729*, avaliable at: http://wrap.warwick.ac.uk/1465/1/WRAP_Hendriks_twerp_729.pdf (October 24, 2011).

Horowitz, D. (2000) *Ethnic groups in conflict* (Berkeley: University of California Press).

Institute for regional and International Studies – IDSCS. (2006) *The process of decentralization in Macedonia: Prospects for ethnic conflict mitigation, enhanced representation, institutional efficiency and accountability*, avaliable at: http://www.iris-bg.org/files/Macedonia%20Decentralization%20Summary.pdf (October 20, 2011).

Iglewicz, B., & Hoaglin, D. (1993) *How to detect and handle outliers* (Milwaukee, Wisconsin: ASQC Quality Press).

Ihlanfeldt, K. R., & Sjoquist, D. (1990) Job accessibility and racial differences in youth employment rates, *The American Economic Review*, 8(1), pp. 267–276.

Inman, P. R. (2008) *The fly paper effect*, avaliable at: http://www.nber.org/papers/w14579 (October 16, 2011).

International Budget Partnership – IBP (2012) avalaiable at: http://www.internationalbudget.org/ (December 14, 2012).

International Monetary Fund. (2003) *Stand By Arrangement-SBA for Macedonia. IMF Report 03/131*, avaliable at: http://www.imf.org/external/pubs/cat/longres.aspx?sk=16553.0 (April 16, 2009).

International Monetary Fund. (2009) *Macedonia: Selected issues. Country Report No. 09/61*, avaliable at: http://www.imf.org/external/pubs/cat/longres.aspx?sk=22717.0 (April 16, 2009).

Johansen, H. (2004) Ethnic dimensions of regional development in Macedonia: A research report. *Eurasian Geography and Economics*, 45(7), pp. 534–544.

Jondrow, J., Lovell, C. A. K., Materov, I. S., & Schmidt, P. (1982) On the estimation of technical inefficiency in the stochastic frontier production function model, *Journal of Econometrics*, 19(2/3), pp. 233–238.

Joseph, R. (2006) *Politics and ethnicity; A comparative study*, (New York: Palgrave MacMillan).

Kalb, A. (2010) The impact of intergovernmental grants on cost efficiency: Theory and evidence from German municipalities, *Economic Analysis & Policy*, 40(1), pp. 23-48.

Kandeva, E. (2001). Stabilization of Local Governments: Local Governments in Central and Eastern Europe. *OSI/LGI*, avaliable at: http://lgi.osi.hu/publications/2001/81/Stab-1-18.pdf (October 27, 2011).

Keefer, P. (2002) *Clientelism, Credibility and Democracy* (Washington D.C.: World Bank).

Kekenovski, L., Uzunov, V., & Nikolov, M. (2006) *Merenje na transakcionite troshoci vo Makedonskata ekonomija* (FIOMM Publication).

Klugman, J. (1994) *Decentralisation: A survey of literature from a human development perspective*, *United Nations Development Programme Occasional Paper 13*, avaliable at: http://hdr.undp.org/en/reports/global/hdr1994/papers/jeni_klugman.pdf (October 20, 2011).

Koinova, M. (2001) *Three Outcomes of Ethnic Conflict: The Cases of Bulgaria, Macedonia and Yugoslavia*, avaliable at: http://home.medewerker.uva.nl/m.v.koinova/ (January 15, 2012).

Latifik, I. (1997) *Yugoslavia 1945–1990* (Beograd).

Leo, C. (2006) Deep federalism; Respecting community difference in national policy, *Canadian Journal of Political Science / Revue canadienne de science politique*, 39(3), pp. 481–506.

Liberati, P., & Sacchi, A. (2010) *Tax decentralization and local government size*, *Dipartimento di Economia Università degli Studi Roma Tre, Working paper 123*, avaliable at: http://dipeco.uniroma3.it/public/WP%20123%20Liberati%20Sacchi%202010.pdf (October 17, 2011).

Lijphard, A. (1999) *Patterns of democracy* (New Haven and London: Yale University Press).

Litvack, J. & Seddon, J. (2000) *Decentralization briefing notes, World Bank Institute working papers in collaboration with PREM network* (Washington D.C.: World Bank).

Local Government and Public Service Reform Initiative (2010) *Managing multiethnic cities of the SEE*, avaliable at: http://lgi.osi.hu/publications/2010/414/Managing_Multiethnic_Cities_final_WEB.pdf (October 29, 2011).

Loikkanen, H., & Susiluoto, I. (2005) Cost efficiency of Finnish municipalities in basic service provision 1994–2002, *Urban Public Economics Review*, 4, pp. 39–63.

Loikkanen, H., & Susiluoto, I. (2006) *Cost efficiency of Finnish municipalities in basic service provision 1994–2002, HECER Discussion paper 96* (Helsinki: Helsinki Center of Economic Research).

Loikkanen, H. A., Susiluoto, I., & Funk, M. (2011) *The Role of City Managers and External Variables in Explaining Efficiency Differences of Finnish Municipalities, Helsinki Center of Economic Research Discussion Paper No. 312*, avaliable at: https://helda.helsinki.fi/bitstream/handle/10138/24496/theroleo.pdf?sequence=1 (October 15, 2011).

Lovell, C. A. K., Walters, L. C., & Wood, L. L. (1994) Stratified models of education production using modified DEA and regression analysis, In: Charnes, A., Cooper, W. & Lewin, A. Y. (eds.) *Data envelopment analysis. Theory, methodology and applications* (Boston: Kluwer Academic Publishers), pp. 329–352.

Mahabil, J. (2011) Measuring efficiency of local government expenditure; An FDH Analysis of a sample of South African municipalities, In: *Technical report to financial and fiscal commission of SA*, avaliable at: http://www.info.gov.za/view/DownloadFileAction?id=148955 (October 16, 2011).

Martínez-Vázquez, J., & Mcnab, R. M. (2005) *Fiscal Decentralization, Macrostability and Economic Growth, International Studies Program Working Paper 05-06* (Atlanta: Andrew Young School of Policy Studies, Georgia State University).

Massey, D., & Fischer, M. (2000) How segregation concentrates poverty, *Ethnic and Racial Studies,* 23(4), pp. 670–691.

McMillan, M., & Cman, W. (2004) *University Efficiency: A Comparison and Consolidation of Results from Stochastic and Non-Stochastic Methods, University of Alberta working paper series Paper Number 2005-04*, avaliable at: http://www.uofaweb.ualberta.ca/economics2/pdfs/WorkingPaper-McMillan-UniversityEfficiency-Feb05.pdf (October 16, 2011).

Meeusen, W., & Van den Broeck, J. (1977) Efficiency estimation from Cobb-Douglas production functions with composed error, *International Economic Review*, 18(2), pp. 435–444.

Monteux, C. (2006) Decentralisation: The new delusion of ethnic conflict regulation, *International Journal on Multicultural Societies*, 8(2), pp. 162–182.

Monti, D. J. (1997) Ethnic economies, affirmative action, and mining cultural capital, *The American Sociologist*, 28(4), pp. 101–112.

Mueller, D. (1989) *Public choice II.* (Cambridge: Cambridge University Press).

Mueller, D. (2003) *Public choice III.* (Cambridge: Cambridge University Press).

Musgrave, R. (1959) *The theory of public finance* (New York: McGraw-Hill).

Musgrave, R. A. (1983) Who should tax, where, and what?, In: McLure, C. E. (ed.) *Tax Assignment in Federal Countries* (Canberra: Australian National University Press).

Nelson, M. (1987) Searching for Leviathan: Comments and extension, *American Economic Review*, 77(1), pp. 198–204.

Nieswand, M., & Seiferd, S. (2011) *Some determinants of intermediate local government spending efficiency: Evidence from French departments, DIW Berlin discussion paper 1130*, avaliable at: http://www.diw.de/documents/publikationen/73/diw_01.c.372972.de/dp1130.pdf (October 10, 2011).

Nikolov, M. (2002) *Is the workforce in Macedonia moving towards human capital production?,* avaliable at: http://www.cea.org.mk/Nikolov/Human%20capital%20production.pdf (July 10, 2008).

Nikolov, M. (2006). *Measuring the performance of kindergartens in Macedonia with data envelopment analysis,* avaliable at: http://www.cea.org.mk/Documents/CEA_Journal%20final%202nd%20issue.pdf (April 10, 2008).

Nikolov, M. (2009) *Budget Process in Macedonia: Recent Developments and Challenges,* avaliable at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1443394 (July 18, 2010).

Nikolov, M. (2012) *Report on the process of decentralization for 2011 and 2010 in Macedonia* (Skopje: Government of Macedonia).

Nikolovska, N., & Siljanovska-Davkova, G. (2001) *Macedonian transition in deficiency: From Unitarian to a bi-national state* (Skopje: Magor and Euro Balkan).

North, D. (1990) *Institutions, institutional change and economic performance* (Cambridge: Cambridge University Press).

Oates, W. (1972) *Fiscal federalism* (New York: Harcourt Brace Jovanovich).

Oates, W. (1985) Searching for Leviathan, *American Economic Review, 75*(4), pp. 748-757.

Oates, W. (1993) Fiscal decentralization and economic development, *National Tax Journal,* 46(2), pp. 237–243.

Oates, W. (1999) An essay on fiscal federalism, *Journal of Economic Literature,* 37(3), pp. 1120–1149.

Olson, M. (1982) *The rise and decline of nations* (New Haven: Yale University Press).

Organization for Security and Co-operation in Europe – OSCE (2010) avaliable at: http://www.osce.org/documents/mms/2009/04/37218_en.pdf (December 18, 2010).

Organization for Security and Co-operation in Europe – OSCE (2010) avaliable at: http://www.mia.com.mk/default.aspx?mId=16&vId=66835711&lId=2&title=SUBSERVICES+-+INTERVIEW (December 18, 2010).

O'Sullivan, A. (2007) *Urban economics* (6th Ed.) (Boston: McGraw-Hill).

Papazoglou, C., & Pentecost, E. (2003) *The dynamic adjustment of transition economy in the early stages of transformation. Bank of Greece working paper No. 3,* http://www.bankofgreece.gr/BogEkdoseis/Paper200303.pdf (October 10, 2011).

Popovski, V., & Panov, M. (1998) *Opštinite vo Republika Makedonija* (Skopje: Misla).

Prud'Homme, R. (1995) On the dangers of decentralization, *World Bank Research Observer,* 10(2), pp. 201–220.

Pupavac, V. (2000) Socialist Federal Republic of Yugoslavia's Multiethnic Rights Approach and the Politicization of Ethnicity, *Human Rights Law Review,* 5(2), pp. 3–8.

Putnam, R. (1993) *Making democracy work: Civic traditions in modern Italy,* (Princeton: Princeton University Press).

Ranis, G. (2011) *Diversity of communities and economic development, Yale University, Economics Department Working Paper No. 93,* avaliable at: http://ssrn.com/abstract=1924528 (October 23, 2011).

Ragaru, N. (2008) Macedonia between Brussels and Ohrid, In Batt, J. (ed.) *Is there an Albanian question? ISS Chaillot paper No. 107* (Skopje: Institute for Security Studies of EU), pp. 41–60.

Reilly, B. (2001) *Democracy in divided society: Electoral engineering for conflict management* (Cambridge: Cambridge University Press).

Rodden, J. (2003) Reviving Leviathan: Fiscal federalism and the growth of government, *International Organization*, 57(4), pp. 695–729.

Rodriguez-Pose, A., & Kroijer, A. (2009) *Fiscal decentralization and economic growth in Central and Eastern Europe*, *LEQS Paper No. 12/2009*, avaliable at: http://www2.lse.ac.uk/europeaninstitute/leqs/leqspaper12.pdf (October 4, 2011).

Rondinelli, D. (2000) What is decentralization?, In: Litvack, J. & Seddon, J. (eds) *Decentralization briefing notes. World Bank Institute Working papers in collaboration with PREM network*, avaliable at: http://capacity4dev.ec.europa.eu/public-pub.sector-reform-decentralisation/document/litvack-j-and-j-seddon-eds-2000-decentralisation-briefing-notes (October 29, 2011).

Rosen, H. S. (2002) *Public finance* (Boston: Irwin/McGraw-Hill).

Rudolph, J. (2006) *Politics and ethnicity: A comparative study* (New York: Palgrave Macmillan).

Samuelson, P. (1954) The pure theory of public expenditure, *The Review of Economics and Statistics*, 36(4), PP. 387–389.

Sampaio de Sousa, M., Cribari-Neto, F., & Stosic, B. D. (2005) Explaining DEA technical efficiency scores in an outlier corrected environment: The Case of Public Services in Brazilian Municipalities, *Brazilian Review of Econometrics*, 25(2), pp. 287–313.

Sharchevich, E. (2009) Bosnia and Herzegovina and controversies of the EU integration processes (Constitutional view), *Zeitschrift fur offentliches recht*, 64(2), pp. 237-249.

Scheinkman, J., & Shleifer, A. (1995) Economic growth in a cross-section of cities, *Journal of Monetary Economics*, 36(1), pp. 117–143.

Seabright, P. (1996) Accountability and decentralisation in government: An incomplete contracts model. *European Economic Review*, 40(1), pp. 61–89.

Seiford, L. (2005) *A Cyber-Bibliography for Data Envelopment Analysis (1978–2005)*, avaliable at: http://scholar.google.com/scholar?q=SEIFORD+L.+%282005%29%3A+%E2%80%9CA+Cyber-Bibliography+for+Data+Envelopment+Analysis+%281978---2005%29&btnG=&hl=en&as_sdt=0%2C5 (October 12, 2011).

Siljanovska-Davkova, G. (2007) *Globalisation, democracy and constitutional engineering as mechanism for resolving ethnic conflict* (Athens: VII-th World Congress of Constitutional Law).

Smith, A. (1991) *National identity* (Reno, NV: University of Nevada Press).

Sole Olle, A. (2006) The effect of party competition on budget outcomes: Empirical evidence from local governments in Spain, *Public Choice*, 125(1), pp. 145–176.

Stastna, L., & Gregor, M. (2010) *Local government efficiency: Evidence from Czech municipalities*, Research supported by CERGE-EI Foundation under a program of the Global Development Network, avaliable at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1978730 (October 13, 2011).

State Statistical Office Republic of Macedonia (2012) avaliable at: http://www.stat.gov.mk/Default_en.aspx (December 10, 2012).

State Statistical Office Republic of Macedonia. (2012b) *Соопштението е од областа: Животен стандард*, avaliable at: http://www.stat.gov.mk/PrikaziSoopstenie.aspx?rbrtxt=37 (June 12, 2012).

Stigler, G. (1957) The tenable range of functions of local government. In: U.S. Congress, Joint Economic Committee (eds), *Federal expenditure policy for economic growth and stability* (Washington, D.C.: Government Printing Office).

Spencer, M. (2000) *The lessons of Yugoslavia* (Amsterdam, London: JAI Press, Elsevier Science Inc.).

Svejnar, J. (2002) Transitional economies: Challenges and perspectives, *Journal of Economic Perspectives*, 16(1), pp. 3–28.

Swianiewicz, P. (2002) Consolidation or fragmentation? The size of local governments in Central and Eastern Europe, avalaible at: http://lgi.osi.hu/publications/2002/215/001-CF-front.pdf (April 12, 2008).

Tajfel, H., Billig, M., Bundy, R. P., & Flament, C. (1971) Social categorization and intergroup behavior, *European Journal of Social Psychology*, 1(2), pp. 149–178.

Tam, H. (2007) The case of progressive solidarity. In: Wetherell, M., Lafleche, M. & Berkeley, R. (eds.) *Identity, ethnic diversity & community cohesion* (London: Sage Publications Inc.), pp. 17–23.

Tanzi, V. (1995) Fiscal federalism and decentralization: A review of some efficiency and macroeconomic aspects, In: Brund, M. & Pleskovic, B. (eds.) *Annual World Conference on development economics* (Washington D.C.: World Bank), pp. 295–316.

Tiebout, C. (1956) A pure theory of local expenditure, *Journal of Political Economy*, 64(5), pp. 416–424.

Tobin, J. (1958) Estimation of relationships for limited dependent variables, *Econometrica*, 26(1), pp. 24–36.

United Nations Development Programme – UNDP. (2005) *Fiscal decentralization in transition economies: Case studies from the Balkans and the Caucasus*, avaliable at: http://europeandcis.undp.org/files/uploads/LG/FiscalDecentralization2005.pdf.

United Nations Development Programme – UNDP. (2008) *New People-Centred Analyses Report – Launching and Presentation of Findings*, avaliable at: http://www.undp.org.mk/Default.aspx?LCID=35&NewsID=281.

United Nations Development Programme – UNDP. (2009a) *People centered analysis – PCA report* (New Yourk: UNDP).

United Nations Development Programme – UNDP. (2009b). *Guidelines for processing of survey database and calculation of indicators for PCA* (New Yourk: UNDP).

Uzunov, N. (1966) *Ekonomika of Yugoslavia* (Skopje: University of Skopje).

Vanden Eeckhaut, P., Tulkens, H., & Jamar, M. A. (1993) Cost efficiency in Belgian municipalities, In: Fried, H. O., Lovell, C. A. K. & Schmidt, S. S. (eds.) *The measurement of productive efficiency* (Oxford: Oxford University Press), pp. 300–334.

Vankovska, B. (2007) *Politichki system* (Skopje: Bomat Grafiks).

Vodopivec, M., & Hribar-Milic, S. (1992) *The Slovenian labour market in transition. World Bank Working Papers WPS 1162*, avaliable at: http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1993/07/01/000009265_3961005010750/Rendered/PDF/multi_page.pdf (October 13, 2011).

Walks, R. A., & Bourne, L. S. (2006) Ghettos in Canada's cities? Racial segregation, ethnic enclaves and poverty concentration in Canadian urban areas, *The Canadian Geographer / Le Géographe canadien*, 50(3), pp. 273–297.

Weingast, B., & Witman, D. (2006) *Ethnic mobilization and ethnic violence*, The Oxford Handbook of Political Economy (Oxford: Oxford University Press).

Wetherell, M., Lafleche, M., & Berkeley, R. (2007) *Identity, ethnic diversity and community cohesion* (London: SAGE Publications).

Woodbury, K., Dollery, B., & Rao, P (2003) Is local government efficiency measurement in Australia adequate? An Analysis of the Evidence, *Public Performance & Management Review*, 27(2), pp. 77–91.

World Bank. (1993) *The costs and benefits of Slovenian independence. World Bank Working Papers WPS 1126*, avaliable at: http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/1993/04/01/000009265_3961004121321/Rendered/PDF/multi0page.pdf (April 13, 2008).

World Bank (2000) *Entering the 21st century. World Development Report 1999/2000* (Oxford: Oxford University Press).

World Bank. (2008) *Macedonia public expenditure review*, *Report No. 42155-MK*. avaliable at: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2008/03/03/000333038_20080303051431/Rendered/PDF/421550ER0P09621isclosed0Feb02802008.pdf (October 23, 2011).

Worthington, A. (1998) Efficiency in Australian building societies: An econometric cost function approach using panel data, *Applied Financial Economics*, 8(5), 459-467.

Worthington, A. (2000) Cost efficiency in Australian local government: a comparative analysis of mathematical programming and econometric approaches, *Financial Accountability & Management*, 16(3), pp. 201-224.

Worthington, A., & Dollery, B. (2001) Measuring efficiency in local government: An analysis of New South Wales municipalities' domestic waste management function, *Policy Studies Journal*, 29(2), pp. 232-249.

Wunnava, P., Prasch, R., & Mitra, A. (2012) *Globalization, institutions, and the ethnic divide: Recent longitudinal evidence*, *IZA DP No. 6459*, avaliable at: http://ftp.iza.org/dp6459.pdf (May 14, 2012).

Yilmaz, S., & Ebel, R. (2002) On the measurement and impact of the process of decentralization, *Policy Research Working Paper (2809), World Bank Institute*, avaliable at: http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/04/12/000094946_02040304241194/Rendered/PDF/multi0page.pdf (February 12, 2008).

Zalduendo, J. (2003) *Enterprise restructuring and transition: Evidence from Macedonia*, *IMF Working Paper No. 03/136*, avaliable at: http://www.imf.org/external/pubs/ft/wp/2003/wp03136.pdf (May 23, 2009).

Apendices

Appendix A. Main characteristics of IMF programmes in Macedonia

Table 1. Main characteristics of IMF programmes in Macedonia

	IMF	Stabilisation component	Adjustment component	GDP	SDR from IMF in million USD	Parliamentary Elections	Budget deficit
1994	STF (Systemic Transformation Facility)	IMF supported inflation fight success after the government failed to succeed in its programme		-1.8	40	1	-2.9
1995	SBA (stand-by arrangement)	Gross foreign reserves	Loss-making companies (25)	-1.1	35		-1.2
1996	SBA			1.2			-0.5
1997	ESAF (enhanced structural adjustment facility)		Treasury, VAT, deficit instead of surplus in the budget, flexibility of the labour market, programme not fulfilled	1.4	75		-0.4
1998	ESAF		Treasury, VAT, deficit instead of surplus in the budget, flexibility of the labour market, programme not fulfilled	3.4		1	-1.7

	IMF	Stabilisation component	Adjustment component	GDP	SDR from IMF in million USD	Parliamentary Elections	Budget deficit
1999	CCFF (compensatory and contingency financing facility)	Kosovo		4.3	19		0
2000	PRGF (poverty reduction and growth facility) 13/EFF (extended fund facility) 30		The tax burden relief on the direct taxes, public administration reform	4.5			2.5
2001				-4.5	44		-6.3
2002	SMP (staff monitored programme)		TAT moral hazard, programme not fulfilled	0.9		1	-5.6
2003	SBA		Flexibility of labour market	3.4	28		-1.7
2004	SBA			2.5			-0.9
2005	Three-year SBA			4.1*			3.8*
2006	Three-year SBA			4.0*		1	3.2*
2007	Three-year SBA			5.5*			
2008*							

Source: CEA, *Report on the new face of the IMF*, 2007

Note: Years in bold shows a parliamentary election year.
* Early Parliamentary elections. No arrangement with the IMF.

Appendix B. Chronology of Macedonian and Albanian relations during 1990–2001

Table 2. Chronology of Macedonian and Albanian relations during 1990–2001

Date(s)	Item
Feb 1, 1990	Over 2000 ethnic Albanians demonstrated in the district of Tetovo against the treatment of Albanians by the Macedonian majority. The protesters also demanded independence for regions in Western Macedonia where ethnic Albanians constitute a majority.
Aug 25, 1990	Nevzat Haliii, a former professor of English and graduate from the Cyril and Methodist University in Skopje, was elected chairman of the ethnic Albanian Party for Democratic Prosperity (PDP). The party's main objectives included the attainment of proportional representation in the government of Macedonia for the ethnic Albanian minority, and the furthering of communities cultural rights. Haliii Founded the PDP in 1990.
Nov 11 - Dec 12, 1990	During this month, the first free multiparty elections were conducted in Macedonia since 1938. In the three rounds of elections for Macedonia's National Assembly (Sobranie), no clear winner emerged. The ethnic Albanian Party for Democratic Prosperity-National Democratic Party (PDP-NDP) received 25 seats in the 120 seat National Assembly. The nationalist Internal Macedonian Revolutionary Organization-Democratic party for Macedonian National Unity (IMRO-DPMNU) gained 37 seats, and the League of Communists of Macedonia won 31 seats.
Nov 20, 1991	With the promulgation of a new constitution at a special session of the Sobranie, the Republic of Macedonia became an independent nation. The special session was boycotted by the PDP-NDP to protest the preamble of the constitution which formally declares Macedonia to be »the national state of the Macedonian people«. Formerly, under the Yugoslav constitution, the preamble defined Macedonia to be a nation of »the Macedonian people and the Albanian and Turkish minorities«.
Jan 11 - 12, 1992	A referendum on autonomy was organized by ethnic Albanians throughout Macedonia. Belgrade Radio, on January 15th, reported that 90% of those eligible to vote did so. The report also stated that 99% of the voters were in favor of autonomy. There were other reports that the results and effectiveness of the referendum remained uncertain. Nevertheless, the Macedonian government refused to recognize any results that the referendum might have reached.

Date(s)	Item
Mar 31, 1992	Approximately 40,000 ethnic Albanians demonstrated in the Macedonian capital of Skopje. The Protesters demanded that the Macedonian nation should remain unrecognized by the international community until the state granted ethnic Albanians the right to autonomy in regions and villages where ethnic Albanians make up the majority.
Sep 1992	Following two months of negotiations, a new government was formed to replace the ineffective »government of experts« led by Nikola Kljusev. The new government was led by a coalition of parties that includes the PDP-NDP, Social Democratic Union of Macedonia (SDUM, formerly the League of Communists), and the Reformist Forces of Macedonia-Liberal Party (RFM-LM). President Kiro Gligorov, and the Prime Minister, Branko Crvenkovski, wielded significant influence in the coalition. Nevertheless, the coalition was weak and basically existed to keep the nationalist policies of the IMRO-DPMNU from directing the country's direction.
Nov 6, 1992	Clashes between Macedonian police and ethnic Albanians in the predominantly Albanian neighborhood of Bit Pazar in Skopje left four dead, and 36 ethnic Albanians and police injured. Following the disturbance, police detained 87 people. The unrest exploded when police arrested, and allegedly severely beat, an ethnic Albanian youth charged with illicit dealing of cigarettes. During the unrest, over 50 shops were ransacked and several police vehicles destroyed. Gunfire was also exchanged between the Macedonian police and ethnic Albanians The rumor of the youth's beating, which infuriated ethnic Albanians, was apparently false.
Nov 8, 1992	Following the disturbances that occurred in Skopje, the Ministry of Interior announced the seizure of 2,000 leaflets calling on ethnic Albanians to wage war for the right to self-determination. The leaflets were found in three predominantly Albanian villages approximately 60 miles south of Skopje. They were signed by the »Ilirida Albanian youth Movement.« The place of origin of the leaflets remains uncertain, and reports have explored the possibility of a Serbian link.
Dec 18, 1992	Defense Minister, Viado Popovsky, announced that 700 United Nations Protection Force troops, along with 35 observers, 26 police officers, and 50 administrative personnel will be deployed in western Macedonia in January. The troops will mainly monitor the border separating Kosovo and Macedonia for any possible expansion of the conflict into Macedonia.

Date(s)	Item
Apr 8, 1993	Macedonia, under the temporary name of the Former Yugoslav Republic of Macedonia, was admitted into the United Nations. The PDP-NDP boycotted the session in which the Sobranie voted to accept the temporary name. They mainly argued that Macedonia should not receive international recognition until the country's record, in respect to its ethnic Albanian minority, improves significantly. The IMRO-DPMNU, along with a large segment of the Macedonian population, also strongly objected to the temporary name because of the influence that Greece exerted on the entire international recognition issue.
Jun 18, 1994	As tensions concerning the upcoming July population census escalated, ethnic Albanians and Macedonians clashed in the western city of Tetovo. A Macedonian youth was fatally stabbed in the dispute. Macedonian authorities said that they placed two ethnic Albanians under arrest for the incident as they apparently tried to flee the country. The specific reasons for the disturbance were not stated.
Jul 2, 1994	The Party for Democratic Prosperity walked out of the Macedonian parliament in a show of protest against the conviction of several ethnic Albanians accused of organizing separatist paramilitary activities. The PDP denounced the convictions as a political maneuver aimed at weakening the PDP and constraining Albanian rights. Among those convicted by a Skopje court were two high level PDP members. The General Secretary of the PDP, Mithad Emini, received an eight year sentence, and the former Deputy Defense Minister, Hisen Haskaj, received a six year sentence.
Aug 17, 1994	The BBC reports that the PDP has announced its new aim is no longer the federalization of Macedonia but the proportional representation of Albanians in all political institutions.
Oct 1994	In 2 rounds of Parliamentary elections, ethnic Albanians win 19 seats. Some Macedonian opposition parties boycott the second round of elections due to accusations of fraud against the ruling party.
Oct 13, 1994	Reuters reports that current Albanian demands include more education and media in their own language, more representation in central and local government, an Albanian-language university and a change in the constitution to put them on equal footing with the Macedonian majority.
Oct 13, 1994	Reuters reports that the PDP has held a rally in the northern town of Kumanovo.

Date(s)	Item
Nov 14, 1994	Macedonia's census shows that ethnic Albanians account for 22.9% of the country's population. The Albanians claim that the census was »irregular« and that they account for up to 40% of the population. Credible international observers dismiss these objections.
Dec 1994	The Macedonian government blocks the opening of an Albanian-language university in Tetovo declaring it illegal. They later bulldoze the building which was to house the university. Albanians complain that very few of them are able to attend the country's universities.
Jan 26, 1995	Macedonia's Ministry of Justice recognizes the Albanian language as the state's second official language.
Feb 10, 1995	Albanian Parliament members force Parliament's adjournment over the issue of ID cards that are to be printed only in Macedonian.
Feb 23, 1995	About 2,000 Macedonian students protest outside of Parliament demanding the closure of the Albanian-language university.
Feb 27, 1995	All 19 ethnic Albanian members of Parliament withdraw from Parliament demanding the right to use the Albanian language in Parliament and the approval of the Albanian-language university in Tetovo.
Mar 1995	The 1994, the US Department of State Report on Human Rights in Macedonia reports that the following forms of discrimination against ethnic Albanian continue to exist in Macedonia: limited access to Albanian-language media and education; poor representation in public sector jobs; poor representation in the police corps; poor representation in the military officer corps; denial of citizenship to many long-time ethnic Albanian residents of Macedonia as well as discrimination in the process of citizenship applications; and unfair drawing of voting districts which dilutes their voting strength.
May 1995	Several Albanian-language television and radio stations are closed by the government.
May 3, 1995	The dean of the illegal Albanian-language university is sentenced to two-and-a-half years in jail for inciting the February 17 riot outside the university. Others are later sentenced to lesser sentences on similar charges.
Nov 9, 1995	Macedonia joins the Council of Europe.
Sep 12, 1996	Representatives of the parliamentary group of the Albanian Party for

Date(s)	Item
	Democratic Prosperity and People's Democratic Party send a pro-memorium to the European parliament signed by the coordinator, Rahmi Tuda. They ask the European parliament to »put pressure on Macedonia to give up the nationalistic concept to create a Macedonian state, as that is contrary to the multiethnic reality of the country«. (BBC)
May 1997	It was reported that the mayor of Gostivar and his ethnic Albanian supporters had taken a confrontational stand by defying a ruling in May by Macedonia's constitutional court that other countries' flags (Albanian and Turkish) should not be flown in public. (Financial Times, December 17)
Jul 22, 1997	In an effort to defuse tension in Gostivar and the nearby town of Tetovo, parliament on July 7 passes a law allowing the controversial flags to be flown outside the town hall, but only on certain Macedonian national holidays. The mayors in both towns reject the law. (Financial Times)
Jul 22, 1997	Demands by ethnic Albanians for greater rights erupt into conflict on July 9 after the government send in special forces to take down the Albanian, Turkish and Macedonian national flags flying outside Gostivar's town hall. Police shoot and kill two young ethnic Albanians; a third man is beaten by police and later dies from his injuries, while several policemen receive bullet wounds. The Ministry of Interior says 312 people had been arrested, including the town's newly-elected radical mayor, Mr. Rufi Osmani. Officials suspect some of the Gostivar protestors had been brought in from Albania and Serbia. (Financial Times)
May 29, 1998	Arben Xhaferi, an ethnic Albanian political leader, admits that the ethnic Albanians in Macedonia are better off than those of any other Balkan country. (The Christian Science Monitor)
May 29, 1998	An additional 750 UN peacekeeping troops, including 350 Americans, are deployed to stabilize Macedonia’s border. (The Christian Science Monitor) The force is deployed in 1992 following concerns that any of Macedonia’s four neighbors – Serbia, Albania, Bulgaria and Greece – could undermine the country’s quest for independence and stability. (Financial Times, 22 July 1998)
Jul 22, 1998	The UN Security Council votes unanimously to add 250 troops to the UN Preventive Deployment Force (Unpredep) in Macedonia and to extend its mandate until the end of February 1999.

Date(s)	Item
Nov 1, 1998	The Internal Macedonian Revolutionary Organisation (VMRO) wins 46 seats in the two-round general election and negotiates to form a coalition government with the new pro-business Democratic Alternative Party and with the Democratic Party of Albanians (DPA).
Dec 1, 1998	Debates on the composition of the coalition government open in Parliament after two weeks of smooth negotiations. The Macedonian experiment in power-sharing includes even the most radical ethnic political parties. Ljupco Georgievski, the VMRO leader, says he expects no trouble from extremists in his party or in Mr. Xhaferi's. Arben Xhaferi, the leader of the Democratic Party of Albanians, says Albanians must now learn to work with Macedonians. (International Herald Tribune)
Jan 20, 1999	Members of the government coalition and ethnic Albanian parties in Macedonia back an appeal by Speaker Savo Klimovski to President Kiro Gligorov, asking Gligorov to sign the amnesty Law passed by parliament in December. The Law covers, among others, the ethnic Albanian mayors of Gostivar and Tetovo, Rufi Osmani and Alajdin Demiri. The assembly enact this Law on the 29th of December. The President does not give the final date on which he would present his stand on the amnesty law. (BBC)
Jan 22, 1999	Albania and Macedonia express their concerns over an influx of refugees from the Serbian province of Kosovo. (Deutsche Presse Agentur)
Feb 2, 1999	Macedonian Foreign Minister, Aleksandar Dimitrov, offers Macedonian territory for more NATO troops and for a possible intervention in the southern Serbian province of Kosovo and Metohija, during British Foreign Secretary, Robin Cook's, visit to Skopje on the 30th of January. According to unofficial figures, there are currently about 2,300 NATO troops in Macedonia, deployed in Skopje, Tetovo and Kumanovo. (BBC)
Feb 5, 1999	Arben Xhaferri, the leader of the Democratic Party of Albanians, says that he supports Kosovo achieving independence by political means. Speaking during a visit to Bulgaria, Xhaferri says that the situation of ethnic Albanians in Macedonia is quite different from that of ethnic Albanians in Kosovo. Albanians in Macedonia, states Xhaferri, have been politically, but never administratively, separate. This is why »it is impossible to talk of reshaping the borders in Macedonia«. Xhaferri concludes AI definitely believe that the Albanians have made a great contribution to the stability in Macedonia. (BBC)

Date(s)	Item
Feb 5, 1999	During his talks with the Yugoslav Ambassador to Skopje, Macedonian President, Kiro Gligorov, says that Macedonia does not support the demand of ethnic Albanians for the recognition of Serbia's southern province of Kosovo-Metohija as an independent state, and it is against any changes in Yugoslavia's borders. (BBC)
Feb 18, 1999	The leader of Macedonia's Democratic Party of Albanians, Arben Xhaferri, says that the emergence of the Kosovo Liberation Army (UCK) helps his party (DPA) become a part of the governing coalition in Macedonia. He says the existence of the UCK make the party's (DPA's) political adversaries look at it (DPA) in a different light and take the party and its policies more seriously. (BBC)
Feb 18, 1999	The leader of the ethnic Albanian party in the Macedonian government coalition, Arber Xhaferri, says he foresees the formation of an all-Albanian state in the long-term, maybe by the »beginning of the third millennium«. He says today's priority for the Albanian was to resolve the Kosovo problem. He predicts »a major war« if the current talks on Kosovo fail. (BBC)
Feb 26, 1999	A veto by China prevents the Security Council from authorizing an extension of the United Nations Preventive Deployment Force (UNPREDEP) in the former Yugoslav Republic of Macedonia for a further six months. (Presswire)
Feb 26, 1999	Reports from the Macedonian-Yugoslav border show that the number of Federal Republic of Yugoslavia citizens crossing into Macedonia fell drastically. Bedredin Ibraimi, a member of the ethnic Albanian government coalition party and Minister of Labour and Social Politics, says that Macedonia is »prepared to accept refugees from Kosovo.« He says that the UNHCR has ensured humanitarian aid for 20,000 refugees that are already in Macedonia. (BBC)
Feb 26, 1999	Skopje, 25th of February, Macedonian President, Kiro Gligorov, states during talks with a delegation of Serbian associations in the country that Macedonian territory will not be used for possible aggression by any military forces against Serbia and Yugoslavia. (BBC)
Mar 3, 1999	More than 5,000 ethnic Albanians are reported to have fled their homes for neighboring Macedonia in the wake of some of the heaviest fighting since the Kosovo peace talks were suspended last week. The U.N. High Commissioner for Refugees says at least 1,250 of them have already managed to cross the border into Macedonia. The other 4,000 are said to be camped out in the countryside near the border.

Date(s)	Item
	(Deutsche Presse Agentur)
Mar 24, 1999	NATO launches a war against Yugoslavia. Refugees from Kosovo leave for Albania and Macedonia.
Mar 31, 1999	Arben Xhaferri, the leader of an ethnic Albanian party which forms part of the government coalition, says that it is his party's duty to »stabilize Macedonia and achieve unity«, and urges Macedonian Albanians not to get directly involved in the Kosovo conflict. (BBC)
Apr 3, 1999	Macedonia decides to turn away 50,000 Kosovars on its border after concluding that a new influx of refugees could trigger economic chaos and political unrest in the country. (Agence France Presse)
Apr 22, 1999	Macedonian Prime Minister, Lubco Georgievski, warns that the influx of ethnic Albanian refugees from neighbouring Kosovo is threatening the demographic balance of his country. (Agence France Presse)
Apr 30, 1999	Macedonian officials say the demographic balance in Macedonia is being seriously affected by the influx of refugees. According to the UN High Commissioner for Refugees, there are over 150,000 Kosovo Albanian refugees currently taking shelter in Macedonia. The Macedonian leadership calls on western nations to take in as many refugees as they can, while some Albanian political parties think the refugees should stay in Macedonia. (Agence France Presse)
Apr 30, 1999	Arben Xhaferri, talks in Tetovo town hall with the politically active body and selected members of the Democratic Party of Albanians. Xhaferri reaffirms the party's support for the temporary government of Hashim Thaci in Kosovo. The determination to support Kosovo's independence is reiterated, as was DPA's opposition to sending ground troops, since this would only lead to autonomy, but not to the independence of Kosovo. (BBC)
May 6, 1999	The two largest parties of Albanians in Macedonia, the Party for Democratic Prosperity (PPD), and the Democratic Party of Albanians (PDP) issues a joint statement calling on all Kosovo political forces to continue their state-constituent efforts for Kosova's independence. The statement, signed by the party chairmen, invites the Albanian political forces to consolidate their ranks and make efforts to constitute the interim government of Kosova to conform to the Rambouillet Agreement, signed by Hashim Thaci, Ibrahim Rugova and Rexhep Qosja. (BBC)

Date(s)	Item
May 29, 1999	The Albanian party, which is part of the ruling coalition, says Albanians of Macedonia are no longer satisfied with their status of national minority and want the same status as the Slavs. »We want Macedonia to proclaim itself a multi-ethnic country made up on an equal basis of a Macedonian and an Albanian nation,« says Adelina Marku, spokeswoman of the Albanian Democratic Party based in Tetovo. She adds that the time is not yet ripe to modify the Macedonian constitution. (Agence France Presse)
Jun 9, 1999	The group of G-8 approve in Cologne, Germany the UN draft resolution on ending the war in Kosovo. The resolution is sent to NATO and the UN. It establishes the broad outlines of an UN-mandated international security force in Kosovo and gives NATO sole command of the peacekeeping force. The resolution also envisages that the KFOR, the NATO-led peace-implementation force, would march into Kosovo when Serb forces leave the province, and establish a civilian administration. The administration would help bring back the 860,000 ethnic Albanian refugees residing at this time in neighboring Macedonia and Albania (Los Angeles Times).
Jun 10, 1999	NATO suspends its air campaign against Yugoslavia. UN Security Council votes to authorize an international force to move into Kosovo. The resolution calls for the UN to create an interim administration that would give its residents »substantial autonomy« from Belgrade and lay the ground for a future autonomous government. The Kosovo rebels fighting Serb troops declared a cease-fire (The Buffalo News).
Feb 26, 2000	A fresh wave of ethnic violence breaks out in Bujanovac, a remote settlement of southern Serbia. NATO and ethnic Albanian sources in Kosovo say that the lion share of responsibility lies with radical irredentist elements of the KLA infiltrating Serbia from Kosovo. Violence is also reported in neighboring Macedonia (The Daily Telegraph).
Oct 2000	Ibrahim Rugova's LDK wins municipal elections in Kosovo with 58% of the vote (Financial Times).
Oct 8, 2000	Vojslav Kostunica becomes the newly elected Yugoslav president. Kostunica assumes the federal presidency only on the 7th of October after a popular uprising on the 5th of October forced Milosevic to concede defeat (St.Louis Post-Dispatch).
Feb 19, 2001	Ethnic Albanians clash with a military patrol in Macedonia. The ethnic Albanian insurgents wear the insignia of the new National

Date(s)	Item
	Liberation Army (NLA) (The Scotsman). Due to increasing violence, Macedonia put its troops on alert along the border with Kosovo.
Feb 19, 2001	A commentary in the Financial Times assesses the position of the Macedonian Prime Minister, Ljubco Georgievski, in the midst of his term in office. The analyst argues that some factors have strengthened the position of the government. These factors are the politics of multi-ethnic cooperation pursued by the ruling VMRO and its coalition partner, the Albanian Democratic Party; the implementation of structural reform in the country; the improved relationships with neighboring Greece. Simultaneously, Georgievski's government faces serious challenges. They are the economic plight of the population; the increasing frustration of ethnic Macedonians blaming the government for having given away too much power to the Albanian coalition partner; the scandal with the usage of sophisticated electronic equipment by the Ministry of Interior for the tapping of mobile phones of senior Macedonian politicians (Financial Times).
Feb 24, 2001	A regular Balkan summit aimed to promote economic cooperation and closer ties with the EU is held in Skopje, Macedonia. Chris Patten, EU commissioner for external affairs, warns that international aid for Kosovo would be reduced if ethnic Albanian separatists continue to launch cross-border attacks against security forces in southern Serbia. Javier Solana, EU foreign policy chief, says that Kosovo's chances of winning autonomy from Serbia would be affected if violence continues in the Presevo valley (Financial Times).
Feb 25, 2001	Macedonian military officials say that they are staging posts to prevent Albanian ethnic fighters from infiltrating their territory. Macedonian sources name the former KLA commander and leader of the Alliance for Kosovo, Ramush Haradinaj, as organizing incursions. Ethnic Albanian representatives on their side say incursions were organized by alienated former Albanian fighters who did not have coherent political goals or a cohesive political structure. Observers tend to link events in Macedonia and the Presevo valley in Serbia to an upsurge of violence against Serbs in Kosovo. Observers argue that Albanians were determined to build a greater Kosovo (The Observer).
Feb 25, 2001	Gorgi Trendafilov, a spokesman for the Macedonian army criticizes NATO-led peacekeepers in Kosovo for not controlling the movement of weapons and armed men on their side. President of Macedonia, Boris Trajkovski, asks for more action from the Kosovo-based peacekeepers. The leader of the Democratic Party of Macedonia, Arben Xhaferi, admits that some individuals and small groups could

Date(s)	Item
	be active in Macedonia but insists that there are no organized campaigns of ethnic Albanians against the Macedonian authorities (The New York Times).
Feb 28, 2001	NATO agrees to start dismantling the buffer zone around Kosovo because of growing evidence that Albanian separatist guerrillas are using it to stage incursions into southern Serbia. NATO Secretary General Lord Robertson orders an immediate political and military mission to the Macedonian capital Skopje (The Independent). In the meantime, ethnic Albanian militants fought separate battles with Serb and Macedonian forces. NATO official say Albanian fighters occupying the Macedonian village of Tanusevci exchanged fire with Macedonian army units. In the Presevo valley in Serbia, ethnic Albanian rebels clash with Serb forces near Bujanovac (The Daily Telegraph).
Mar 2, 2001	The 120 member Macedonian parliament ratify a long-awaited border treaty with Serbia. Only the small opposition Albanian Party for Democratic Prosperity vote against ratification on the grounds that political parties in Kosovo were not consulted. Some observers believe that the initiating of the border accord by Macedonian President, Trajkovski, and his Yugoslav counterpart, Kostunica, at the recent Balkan summit in Skopje might have triggered recent violations of the Macedonian border. The Democratic Party of Albanians, the main coalition partner of the Macedonian government, is working hard to diffuse fears that Tanusevci incident could lead to inter-ethnic clashes in Macedonia (Financial Times).
Mar 2, 2001	NATO issues a last minute appeal to Macedonia not to embark on a military offensive against ethnic Albanian guerrillas. The Macedonian authorities warn NATO that they are losing patience following the appearance of about 200 ethnic Albanian guerrillas in the border village of Tanusevci (The Daily Telegraph).
Mar 5, 2001	The Macedonian army announces mobilization (mediapool.bg).
Mar 6, 2001	Macedonian Prime-Minister, Ljubco Georgievski, holds talks with his Bulgarian, Greek and Albanian counterparts and calls for the UN to approve a three-mile buffer zone inside Kosovo on the border with Macedonia (Los Angeles Times). Bulgarian president, Peter Stoyanov, is quoted as saying that his government might consider sending troops to help Macedonia (St.Louis Post-Dispatch). A Greek foreign ministry spokesman says that the spread of ethnic Albanian unrest to Macedonia stems from the »selective implementation« of

Date(s)	Item
	UN-mandated pledges to disarm separatists (Los Angeles Times). The Albanian government condemns the violence and appeals to Kosovo's Albanian political leaders to distance themselves from it (The Daily Telegraph). In Washington, State Department spokesman Richard Boucher says »We strongly condemn the acts of violence by extremists who are seeking to undermine the stability of Macedonia, Kosovo and the region.« Russian President, Vladimir Putin, declares that the potential for extremism spilling beyond Kosovo is mounting. EU countries say they have delivered tough warnings to Albanian leaders in Kosovo. In the meantime, KFOR and Macedonian military officials met in Skopje, the Macedonian capital, to discuss Macedonia's military plans aimed at clearing out guerrillas. Officials from the US and NATO voice approval of tougher Macedonian action against the guerrillas (Los Angeles Times). Simultaneously, NATO is engaged in talks with Belgrade on preventing insurgents from entering the buffer zone between Kosovo and southern Serbia (The Guardian).
Mar 7, 2001	Macedonia's Defense Ministry claims that Macedonian positions have been attacked with mortar fire, as NATO peacekeepers join Macedonian units in a bid to seal off the guerrilla-held areas. As he addressed the parliament, the Macedonian president made a public promise to root out ethnic Albanian terrorism and extremism (The Daily Telegraph).
Mar 9, 2001	American peacekeepers open fire on Kosovar Albanian guerrillas near the border with Macedonia. Peacekeepers cross into Macedonia to take over positions held by the rebels fighting Macedonian forces. While US officials deny these claims, they acknowledge that there was confusion about the border (Star Tribune). Despite a spreading Albanian insurgency, the Bush administration tells NATO allies that it will not extend the American peacekeepers' mandate [to Macedonia] (The New York Times).
Mar 10, 2001	Ethnic Albanian rebels launch separate attacks on the Macedonian and the Yugoslav forces killing two people and wounding another three (The Washington Post). A Macedonian police official says that 300 to 500 armed ethnic Albanians, with a logistic base in Kosovo, are operating in a mountainous region in Macedonia bordering Kosovo (The New York Times). Greece and Bulgaria announce that they are sending military aid to Macedonia to help its struggle against the rebels (The Washington Post).
Mar 10, 2001	Yugoslav leaders and some Western analysts say that a recent wave of guerrilla raids in southern Serbia and northern Macedonia was aimed

Date(s)	Item
	at derailing the rapidly improving ties between NATO and the new democracies in the Balkans. James Lyon, a Yugoslav specialist for the non-governmental ICG, suggests that the rebels are trying to provoke a Serbian overreaction in a mistaken belief that NATO will again come to their aid as it did in 1999.
Mar 15, 2001	Skirmishes between ethnic Albanian insurgents and Macedonian authorities, which first began at the border village of Tanusevci and then spread to Kumanovo, reach Tetovo. Tetovo is a city in Western Macedonia populated mainly by ethnic Albanians (mediapool.bg).
Mar 15, 2001	President Trajkovski summons a Council for National Security for consultations on the crisis in the country. Prime Minister Georgievski says that a political motif lurks underneath the terrorist activities. The source of the crisis is in Kosovo. However, terrorist actions in Macedonia are conducted by well trained political saboteurs. Albanian Prime Minister, Ilir Meta, confirms that the Albanian government has no connections with the incident in Tetovo (mediapool.bg).
Mar 18, 2001	The Army for National Liberation announces that it has appointed its representative for talks with the Macedonian authorities (mediapool.bg).
Mar 19, 2001	Concerned with the safety of the citizens, the Macedonian government imposes a curfew in Tetovo from 7pm to 6am. (mediapool.bg)
Mar 21, 2001	The Macedonian government issues an ultimatum calling on the Albanian insurgents to disband and leave the country within 24 hours (mediapool.bg).
Mar 21, 2001	Albanian insurgents declare a cease-fire three hours before the ultimatum of the Macedonian government ended (mediapool.bg).
Mar 24, 2001	The EU leaders condemn the Albanian extremists in Macedonia and declare their solidarity with Macedonian authorities. The EU document expresses its support for the sovereignty and territorial integrity of the Republic of Macedonia, as well as for the inviolability of its borders. The EU leaders call on Macedonian president, Trajkovski, to try to prevent military escalation of the conflict (mediapool.bg).
Mar 24, 2001	US Secretary of State, Colin Powell, recommends that the Macedonian government consider constitutional changes which would

Date(s)	Item
	allow ethnic Albanians to receive their higher education in the Albanian language. Powell says that the US and their partners are considering strategies which would help the Macedonian military end the conflict. Simultaneously, Powell warns that excessive measures on behalf of the Macedonian authorities might alienate the ethnic Albanians in the country (mediapool.bg).
Mar 25, 2001	Macedonian security forces undertake an attack with tanks and helicopters against the terrorists in Tetovo. Prime Minister, Georgievski, says that the attack began immediately after the termination of the government ultimatum to the terrorists. Georgievski says that the government will turn to a political solution of the crisis after the attack (mediapool.bg).
Mar 26, 2001	The Party for Democratic Prosperity, the main opposition party of the ethnic Albanians in Macedonia, announces that it will leave the parliament in protest against the offensive of the Macedonian Army in the troubled areas in Western Macedonia (mediapool.bg).
Mar 27, 2001	Chief commander of the Army for National Liberation announces that his army is ready to reply to the attacks of the Macedonian Army (mediapool.bg).
Mar 29, 2001	Imer Imeri, leader of the Albanian opposition party for Democratic Prosperity, says that discussions on the major issues in Macedonian politics, the rights of the ethnic Albanians included, are preconditioned by the establishment of a large coalition government (mediapool.bg).
Mar 31, 2001	Macedonia announces an end to its offensive against the Albanian separatists (mediapool.bg).
Mar 31, 2001	Socialist opposition party leader, Branko Crvenkovski, threatens the government with street protest demonstrations if Prime Minister Georgievski does not accept the idea for the establishment of a large coalition government (mediapool.bg).
Apr 2, 2001	EU's foreign policy chief, Javier Solana, arrives in Skopje in a bid to help Macedonia and its ethnic communities find way out of the crisis. Brussels offers a »stabilization and association agreement« as a first step toward EU membership. Inter-ethnic dialogue is seen as an integral part of the path to EU membership. The only other Balkan state which had been promised such a deal in the past was Croatia. In response to the EU's activities, Macedonia is expected to begin a

Date(s)	Item
	broad political dialogue with the leaders of its Albanian community. President Trajkovski expresses readiness to join an all-party dialogue and revise parts of the Macedonian constitution. EU sources say that re-writing the constitution is a key demand (The Guardian). Demonstrators from Macedonia's Slav majority protest against anticipated changes in the constitution (Five Star Lift Edition).
Apr 2, 2001	In a telephone talk, Prime-Minister Ljubco Georgievski invites the leader of the opposition Social Democratic Alliance, Branko Crvenkovski, to discussions on the Grand coalition government. Georgievski and Crvenkovski talk before a meeting of President Trajkovski with all parliamentary factions.
Apr 2, 2001	President Trajkovski submits for discussions a document on the main trends in the recent Macedonian political process. The document points to two new developments in the situation in Macedonia since the beginning of the crisis: one was the elimination of the extremists' bases from Macedonian territory; the other was EU diplomacy toward the Macedonian crisis. All parliamentary factions are expected to attend the meeting. Premier Georgievski suggests the establishment of a grand coalition government to embrace all large parliamentary factions rather than a large coalition to incorporate all parliamentary factions. The leader of the Albanian Democratic Party, Arben Xhaferi, threatens to leave the government if the demands of the Albanian minority are not met within one month (mediapool.bg).
Apr 3, 2001	For first time since the beginning of the crisis, moderate Kosovar leader, Ibrahim Rugova, recommends that the Macedonian government talk with representatives of the Army for National Liberation. The opposition Albanian party in Macedonia, the Party for Democratic Prosperity, announces that it will not attend the discussions initiated by President Trajkovski with leaders of political parties because the basic document, submitted by the President, did not contain concrete suggestions on the rights of the ethnic Albanians (mediapool.bg).
Apr 4, 2001	NATO Secretary General, Lord Robertson, warns that parties supporting the armed extremists will be isolated. Robertson says that KFOR assumed responsibility to establish firm control on the Kosovar-Macedonian border. Robertson says that, already, 150 extremists have been arrested and submitted to the UN administration in Kosovo. President Trajkovski says that Robertson also talked on the disarmament of the paramilitary formations in Kosovo (mediapool.bg).

Date(s)	Item
Apr 9, 2001	In Luxembourg, a strong multiethnic delegation from Macedonia signs an agreement with the EU that calls for new political and economic relations with the 15-nation EU. The Stabilization and Association agreement holds out the promise of eventual EU membership to Macedonia if it introduces a package of reforms. Following weeks of shuttle diplomacy between Brussels and Skopje, the Macedonian government agrees to the »Europe Committee«, a round table spanning most of the political spectrum, establishes a debate on institutional reform.
Apr 13, 2001	US Secretary of State, Colin Powell's, first trip to the Balkans begin with a visit to Skopje, Macedonia. Powell holds talks with President Trajkovski, and later with foreign ministers of Albania, Bosnia, Bulgaria, Croatia, Greece, Hungary, Macedonia, Romania, Slovenia, Turkey and Yugoslavia. Officials say Powell's visit gives support to the government of President Trajkovski but also aims to speed up the dialogue among the five ethnic Albanian and Macedonian political parties on the reform of Macedonia's constitution. In response to the fighting in Macedonia, the US pledges $5.5 million, in addition to almost $ 50 million, for civilian programs to facilitate reforms. Powell also backs plans by Europe and Russia to hold elections in Kosovo as part of a plan to provide a political road map for the province but also to forestall calls for independence of Kosovo. Mr. Powell also meets Kosovo Albanian leaders, warning them that they face erosion of international support if they fail to denounce violence and isolate extremists' intent on destabilizing Macedonia.
Apr 19, 2001	Javier Solana, EU's Foreign Policy Chief, arrives in Skopje for a two day visit to help multiethnic dialogue. Solana will meet President Trajkovski, Prime-Minister Ljubco Georgievski and leaders of other political factions. After Macedonian political leaders sign an agreement on Macedonia's association with EU in the city of Luxembourg, the Macedonian politicians start discussing, in practical terms, the establishment of a grand coalition government. According to preliminary talks, the ruling VMRO should give 4 ministries to the opposition Social Democratic Alliance, while the Albanian governing party, the Democratic Party of Albanians should offer 2 ministries to the opposition Party of Democratic Prosperity (mediapool.bg).
Apr 20, 2001	The leader of the opposition Social Democratic Alliance, Branko Crvenkovski, says that his party will join the grand coalition on the condition that his party will hold the Ministry of Interior. Arben Xhaferi, leader of the Albanian Democratic Party, says that he will reach agreement on the solution of the crisis with other political

Date(s)	Item
	parties by mid June (mediapool.bg).
Jan 23, 2004	The Macedonian Assembly officially recognizes the University of Tetovo, where the language of instruction is primarily Albanian. (BBC Worldwide Monitoring, 01/23/2004, »Albania lauds Macedonian assembly's adoption of Tetovo university law«)
Apr 22, 2004 *(continued)*	Two new Albanian language newspapers are launched in Macedonia: Koha Ditore and Fakti. (BBC Worldwide Monitoring, 04/22/2004, »Two new Albanian-language dailies begin publication in Macedonia«)
Jul 23, 2004	Ethnic Macedonian protests against the redrawing of municipal boundaries that would give more power to Albanians turn into rioting in the town of Struga. (The New York Times, 07/24/2004, »Ethnic Macedonians Riot Over New Laws That Aid Albanians«)
Dec 22, 2005	Disabled Albanian veterans from the 2001 conflict participate in a roadblock to demand rights for themselves and their families. (BBC Worldwide Monitoring, 12/28/2005, »Ethnic Albanian rebel veterans block road in Macedonia«)
Mar 23, 2006	New Albanian-language media services are launched in Macedonia: ALSAT-M satellite TV, ALSAT radio and Gazeta Alternative newspaper. (BBC Worldwide Monitoring, 03/27/2006, »New Albanian-language daily, radio, satellite TV promoted in Macedonia«)
Jun 3, 2006	Democratic Party of Albanians (DPA) headquarters are demolished. They blame a rival Albanian party, the Party for Democratic Prosperity. (BBC Worldwide Monitoring, 06/04/2006, »Macedonia: PDSh blames demolished party office in Skopje district on BDI«)
Aug 26, 2006	The Democratic Union for Integration and the Party for Democratic Prosperity, both Albanian parties, hold a protest at which three police officers are injured. (BBC Worldwide Monitoring, 08/26/2006, »Macedonia: Three policemen injured in 'slight squabble' at Albanian protest«)
Nov 29, 2006	The Macedonian Minister of Education receives several death threats after dismissing the rector and several Albanian professors from the University in Tetovo. (BBC Worldwide Monitoring, 12/05/2006, »Macedonian education minister receives death threats«)

Source: Minorities at Risk (MAR) Project – About MAR, 2012. MAR Project is based at the Center for International Development and Conflict Management (CIDCM), at the University of Maryland, College Park

Appendix C. The Macedonian constitutions – a comparison between 1991 and 2001

The **1991 constitution** had the following preamble: »...Taking as the points of departure the historical, cultural, spiritual and statehood heritage of the Macedonian people and their struggle over centuries for national and social freedom as well as for the creation of their own state, and particularly the traditions of statehood and legality of the Krushevo Republic and the historic decisions of the Anti-Fascist Assembly of the People's Liberation of Macedonia, together with the constitutional and legal continuity of the Macedonian state as a sovereign republic within Federal Yugoslavia and the freely manifested will of the citizens of the Republic of Macedonia in the referendum of September 8th, 1991, as well as the historical fact that **Macedonia is established as a national state of the Macedonian people**, in which full equality as citizens and permanent co-existence with the Macedonian people is provided for Albanians, Turks, Vlachs, Romanies and other nationalities living in the Republic of Macedonia...«.

Following the OFA, the preamble of the new **2001 constitution** now reads as follows: »...**The citizens of the Republic of Macedonia, the Macedonian people, as well as citizens living within its borders who are part of the Albanian people, the Turkish people, the Vlach people, the Serbian people, the Romany people, the Bosnian people and others** taking responsibility for the present and future of their fatherland, aware of and grateful to their predecessors for their sacrifice and dedication in their endeavours and struggle **to create an independent and sovereign state of Macedonia**, and responsible to future generations to preserve and develop everything that is valuable from the rich cultural inheritance and coexistence within Macedonia, equal in rights and obligations towards the common good – the Republic of Macedonia – in accordance with the tradition of the Krushevo Republic and the decisions of the Antifascist People's Liberation Assembly of Macedonia, and the Referendum of September 8, 1991, have decided to establish the Republic of Macedonia as an independent, sovereign state, with the intention of establishing and consolidating the rule of law, guaranteeing human rights and civil liberties, providing peace and coexistence, social justice, economic well-being and prosperity in the life of the individual and the community, and, in this regard, through their representatives in the Assembly of the Republic of Macedonia, elected in free and democratic elections...«.

Appendix D. The two-phased approach to fiscal decentralisation in Macedonia

Table 3. Illustration of the two-phased approach to fiscal decentralisation in Macedonia

Phase	Starting date	Assignment of responsibility	Conditional on
1st Phase	1 July 2005 (with amendments on 30 Dec. 2004)	1. Transferring own revenues from tax sources (the PIT sharing) to municipalities (GOV) 2. Developing a methodology for transferring the capital and earmarked (GOV) 3. The local governments will start with implementation of the plan for resolving the arrears up to 31 January 2001 (local governments)	90% of the total municipalities comprising 90% of the total population providing: 1. At least 2 financial officers 2. At least 3 tax experts
2nd Phase	Conditional	Assignment of the responsibilities (for the block transfers): 1. Culture 2. Social welfare and child protection (kindergartens and homes for elderly) 3. Education (primary and secondary school) 4. Healthcare (public health organisations and primary care)	1. All the conditions from phase 1 are satisfied 2. The proper capacity of the financial officers (also in phase I) 3. Viable results of 24 months for on time and regular reporting confirmed by the Ministry of Finance 4. There are no accounts payable than usual ones (up to 90 days) 5. The phase commission will evaluate if all the conditions are satisfied 6. There is a written request from municipalities to the proper ministry and the Ministry of Finance to grant block transfers after all the conditions are satisfied.

Appendix E. The determinants of municipal general efficiency

Table 4. The determinants of municipal general efficiency and their impact (positive or negative) used in DEA, FDH and SFA studies and the authors of the studies

Determinants	Variable	Positive impact	Negative impact
Socio	education	De Borger (1994), Loikkanen and Susiluoto (2005), Afonso and Fernandes (2005), Loikkanen and Susiluoto (2006), Loikkanen et al. (2011), Mahabil (2011)	De Borger and Kerstens (1996), Stastna and Gregor (2010)
Economic	local tax rates/ revenues/residential property rates/fiscal autonomy/fiscal capacity	De Borger and Kerstens (1996), Boetti et al. (2009), Geys et al. (2010)	Worthington (2000), Balaguer-Coll et al. (2002), Balaguer-Coll et al. (2007), Boetti et al. (2009) (revenues per capita over median), Kalb (2010), Mahabil (2011)
	no. of staff per 1,000 population, municipal workers aged 35-49	Loikkanen and Susiluoto (2005), Loikkanen and Susiluoto (2006), Loikkanen (2011)	Worthington (2000)
	personal income/per capita income/high wages/purchasing power	Afonso and Fernandes (2005), Gimenez and Prior (2007) (low and medium)	De Borger (1994), De Borger and Kerstens (1996), Loikkanen and Susiluoto (2005), Loikkanen and Susiluoto (2006), Gimenez and Prior (2007) (high income), Nieswand and Seiferd (2011) (median income)
	transfers from central government		De Borger (1994), De Borger and Kerstens (1996), Athanassopoulos and Triantis (1998), Balaguer-Coll et al. (2002), Loikkanen and Susiluoto (2005), Balaguer-Coll et al. (2007), Kalb (2010), Stastna and Gregor (2010)
	investments in total expenditures	Athanassopoulos and Triantis (1998)	Stastna and Gregor (2010)

Determinants	Variable	Positive impact	Negative impact
	unemployment level	Kalb (2010)	Loikkanen and Susiluoto (2005), Loikkanen and Susiluoto (2006), Geys at al. (2010), Loikkanen et al. (2011)
	current assets	Worthington (2000) (with DEA)	Worthington (2000) (with SFA
	share of fees and charges in own municipal revenues	Athanassopoulos and Triantis (1998)	Stastna and Gregor (2010)
	deficit		Balaguer-Coll et al. (2007)
	debt/loans/securities	Worthington (2000)	
	typology of municipalities (agricultural, residential, industrial, touristic or urbanised)	Gimenez and Prior (2007) (tourism), Kalb (2010) (accommodation/tourism)	
	commercial activities	Balaguer-Coll et al. (2002), Gimenez and Prior (2007)	
	share of services bought from private sector/outsourcing of services	Loikkanen and Susiluoto (2005), Loikkanen and Susiluoto (2006), Mahabil (2011)	
Political	number of coalition parties	Stastna and Gregor (2010) (if low left-wing parties)	Vanden Eeckaut et al. (1993)
	electoral mandate		Boetti et al. (2009)
	Turnout	Stastna and Gregor (2010), Geys at al. (2010)	
	political concentration (structure of council) and political family	Vanden Eeckaut et al. (1993), De Borger and Kerstens (1996) (presence of socialist), Stastna and Gregor (2010), Mahabil (2011)	De Borger (1994) (presence of liberals), De Borger and Kerstens (1996), Geys at al. (2010)
	political affiliation of mayor/council with central government	Vanden Eeckaut et al. (1993)	Athanassopoulos and Triantis (1998)
Demographic	population	De Borger (1994), Balaguer-Coll et al. (2002), Balaguer-Coll et al. (2007), Gimenez and Prior (2007)	Loikkanen and Susiluoto (2005), Loikkanen and Susiluoto (2006), Stastna and Gregor (2010), Nieswand and Seiferd (2011) (share of elderly), Loikkanen et al. (2011)

Determinants	Variable	Positive impact	Negative impact
	population density	De Borger and Kerstens (1996), Loikkanen and Susiluoto (2005), Loikkanen and Susiluoto (2006), Kalb (2010), Nieswand and Seiferd (2011), Loikkanen et al. (2011)	Athanassopoulos and Triantis (1998)
	mayor's education/experience	Loikkanen et al. (2011) (education), Mahabil (2011) (experience)	
Geographic	distance of municipality to capital/regional centre/peripherality		Loikkanen and Susiluoto (2005), Afonso and Fernandes (2005), Loikkanen and Susiluoto (2006), Stastna and Gregor (2010), Nieswand and Seiferd (2011), Loikkanen et al. (2011)
Time	trend	Kalb (2010)	
	long run and short run	Gimenez and Prior (2007)	
	time periods comparison	Stastna and Gregor (2010),	

This table extends and updates the overview of Afonso and Fernandes (2005)

Appendix F. All statements (significant and insignificant correlation with ethnicity) from the UNDP's 2008 database

Table 5. All statements (significant and insignificant correlation with ethnicity) from the UNDP's 2008 database

Poverty line according to income
Another candidate with similar qualifications was chosen instead of me because of my ethnicity
I was denied career promotion because of my ethnicity
I was denied service because of my ethnicity
I was denied access to housing because of my ethnicity
I was denied access to the education institution that I wanted to attend because of my ethnicity
Very and rather dissatisfied with present standard of living
Very and rather dissatisfied with municipal services
Very and rather dissatisfied with neighbourhood environment
Have no trust in central government
Have no trust in municipal officials
Have no trust in local police
Have no trust in civil society/NGO
Have no trust in local media
Have no trust in municipal government
Have no trust in mayor
Have no trust in religious institutions
Have no trust in local schools
Have no trust in local health institutions
Believe there is no corruption in the Parliament
Believe there is no corruption at central level administration
Believe there is no corruption at local level administration
Believe there is no corruption at municipal level
Believe there is no corruption at judicial sector
Believe there is no corruption at police
Believe there is no corruption at health institutions
Believe there is no corruption in Education
A lot and some tension between rich and poor people
A lot and some tension between management and workers
A lot and some tension between men and women
A lot and some tension between old and young people
A lot and some tension between different ethnic group
Worsening of the state of inter-ethnic relations in the country over the last 6 months
Worsening of the state of inter-ethnic relations in the country over the next 6 months
No risk of violent ethnic conflict in the country

No risk of violent ethnic conflict in the municipality
Have few friends from different ethnic group
Do not shop in stores owned by persons from different ethnic group
Do not go in restaurants/cafe owned by persons from different ethnic group
Do not carry business with persons from different ethnic group
Will not send children to schools where another ethnic group is majority
Think that few members of their ethnic group have few friends from another ethnic group
Think that few members of their ethnic group shop in stores owned by another ethnic group
Think that few members of their ethnic group go in restaurants/cafe owned by persons from another ethnic group
Think that few members of their ethnic group carry business with persons from different ethnic group
Think that few members of their ethnic group will send children to schools where another ethnic group is majority
Think that few members of other ethnic group have friends from their ethnic group
Think that few members of other ethnic group shop in stores owned by their ethnic group
Think that few members of other ethnic group go in restaurants/cafe owned by persons from their ethnic group
Think that few members of other ethnic group carry business with persons from their ethnic group
Think that few members of other ethnic group will send children to schools where their ethnic group is majority
Think that media have influence to worsen ethnic relationships
Think that politicians at national level have influence to worsen ethnic relationships
Think that politicians at local level have influence to worsen ethnic relationships
Think that mayor have influence to worsen ethnic relationships
Think that educational system have influence to worsen ethnic relationships
Will vote for a mayor from different ethnic group
Have no answer on question: What could be done at local level to improve inter-ethnic relations in your municipality?
Think her life in the municipality worsen in general in the past 6 months
Think life of others in the municipality worsen in general in the past 6 months
Think her life in the municipality will worsen in general in the next 6 months
Think life of others in the municipality will worsen in general in the next 6 months
Not satisfied in general with the services provided by the municipality
Think that the process of decentralisation will improve the situation in the local community
Consider that have no influence over decisions made by the local municipal government
Not satisfied with the opportunities for participation in local decision making provided by your council
Would like to be more involved in the decisions in local community council to affect local area
In the immediate neighbourhood of their home, have many reason to complain about Lack of access to recreational or green areas
In the immediate neighbourhood of their home, have many reason to complain about water

quality
Think it is unsafe to walk around their area at night
Rate medical services in their municipality with poor quality
Rate educational services in their municipality with poor quality
Rate public transport services in their municipality with poor quality
Rate social services in their municipality with poor quality
Not satisfied with the services when asks the municipality officials to solve a problem
Not treated fairly by municipality officials
Consider central government would do the best job in providing Water supply
Consider local government would do the best job in providing Water supply
Consider private operator would do the best job in providing Water supply
Consider central government would do the best job in providing electricity supply
Consider local government would do the best job in providing electricity supply
Consider private operator would do the best job in providing electricity supply
Consider central government would do the best job in providing garbage collection
Consider local government would do the best job in providing garbage collection
Consider private operator would do the best job in providing garbage collection
Consider central government would do the best job in providing social services
Consider local government would do the best job in providing social services
Consider private operator would do the best job in providing social services
Consider central government would do the best job in providing health services
Consider local government would do the best job in providing health services
Consider private operator would do the best job in providing health services
Consider central government would do the best job in providing employment services
Consider local government would do the best job in providing employment services
Consider private operator would do the best job in providing employment services
Consider central government would do the best job in providing police services
Consider local government would do the best job in providing police services
Consider private operator would do the best job in providing police services
Consider central government would do the best job in providing education services
Consider local government would do the best job in providing education services
Consider private operator would do the best job in providing education services
Consider central government would do the best job in providing public transport
Consider local government would do the best job in providing public transport
Consider private operator would do the best job in providing public transport
Have not given views on local services, or issues that affect them as a resident, at a public meeting
Have not given views on local services, or issues that affect them as a resident, at a resident group
Have not given views on local services, or issues that affect them as a resident, at a meeting with council
Have not given views on local services, or issues that affect them as a resident, at a meeting with councillor

Have not given views on local services, or issues that affect them as a resident, by signing a petition
Have not given views on local services, or issues that affect them as a resident, by telephone
Have not given views on local services, or issues that affect them as a resident, by filling a questionnaire
Have not given views on local services, or issues that affect them as a resident, by sending letter or e-mail
Currently trying to start up a business
Think it is not relevant for the municipality to give them assistance to start up a business
My council is not making the local area a better place to live
My council Is not working to make the area safer
My council Is not working to make the area cleaner and greener
My council has not improved the centre of the municipality
My council Is not efficient and not well run
My council is not providing value for money
My council does not spend money wisely
My council is not trustworthy
My council is remote and impersonal
My council is not involving residents when making decisions
My council is not promoting interest of residents
My council is not listening concerns of the local residents
My council is not acting on concerns of the local residents
My council is not working well with other agencies to provide services
My council is not treating all types of people fairly
My council is not keeping its promises
My council does not provide enough for people like me
Does not pay for electricity bills
Does not pay for water
Does not pay for property taxes
Does not pay for other municipal taxes

Source: UNDP's 2008 database.